

1 Program

Charter School Mission Statement

Introduction

As the population of the United States has grown increasingly diverse, educational achievement has not been keeping pace. A major challenge for South Carolina and our nation lies in erasing disparities in educational attainment so that students from low-income backgrounds and minorities have the ability to complete secondary and postsecondary degrees. According to the College Board’s Advocacy & Policy Center, “a significant percentage of minority male students are falling outside of the system. Whether measured by unemployment rates, poverty, imprisonment or recidivism, the challenges facing minorities—both males and females—are stark and undeniable” (<http://advocacy.collegeboard.org/preparation-access/educational-crisis-facing-young-men-color>). Furthermore, the Association for Supervision and Curriculum Development (ASCD) reports, “only one-third to one-half of 11th graders are reaching a college- and career-ready level of achievement” (March 2011, *Educational Leadership*). Clearly, standard practices must change to provide *all* students with the opportunity to succeed.

In 1996, the South Carolina General Assembly recognized the need for additional innovation within the public school system and passed the South Carolina Charter Schools Act to “create new, innovative, and more flexible ways of educating children within the public school system.”

The children within ~~a the~~ 20-mile-radius ~~market area~~, which is all of Jasper County, the north and south areas of western Beaufort County—known as Sheldon and Bluffton, and the eastern most region of Hampton County—known as Yemassee, ~~as one example~~, are in particular need of new approaches to educational practice. The most recent AYP results continue to place them

academically “at risk”; that is, their performance has continued to fail to meet the standards for progress toward the 2020 South Carolina Performance Vision that all students graduate ready to compete in the economy. In addition, Jasper County’s on-time graduation rate, just to name one, fell 8.1 percent to 65.7 percent this past school year. Many of these students lack the fundamental skills they need to function as productive citizens. As Stephen Covey reminds us, “Factual knowledge alone is... no longer the great differentiator between those who succeed and those who do not.... Instead, the individuals who are emerging as the new ‘winners’—the new *thrivers*—of the twenty-first century are those who possess above-average creativity, strong analytical skills, a knack for foresight, and—surprise, surprise—good people skills.... They are the inventors, the designers, the listeners, the big-picture thinkers, the meaning makers, and the pattern recognizers—those who know how to optimize and creatively maneuver the facts, not just memorize or regurgitate them. All this they do while knowing how to effectively team with others” (Covey, S. *The Leader in Me: How Schools and Parents Around the World Are Inspiring Greatness, One Child at a Time*). The Royal Live Oaks Academy of the Arts & Sciences (RLOA) has been created to address the critical needs of students in these Lowcountry areas. The RLOA curriculum will provide students with the tools to develop and employ the key cognitive strategies they need to become the new *thrivers* who succeed as adults.

A) RLOA Mission Statement

The mission of RLOA is for the faculty, staff, students, parents, and community to provide an engaged learning environment that leads to the success of each individual student, while also challenging these students to become life-long learners, independent thinkers, respectful individuals, and responsible citizens, thus preparing them to enter a 21st century global economy. With this mission, RLOA will improve student learning; increase learning opportunities for

students; encourage the use of a variety of productive teaching methods; create new professional opportunities for teachers, including the opportunity to be responsible for the learning program at the school site; and assist South Carolina in reaching academic excellence. To succeed in this mission, the individual needs of each learner is the core of RLOA's mission, striving toward South Carolina's goal of achieving excellence through individual successes with every child served. No child deserves to fail; every child should taste success!

Educational Program

RLOA will establish a school culture that fosters academic pride, positive peer support, and a sense of personal responsibility for the school among students, parents, teachers, staff, and other community members. Our educational program is designed to address the individual needs of each student with diverse learning styles within a small school environment that will share core values in kindergarten through Grade 12. RLOA will open in Ridgeland (Jasper County) in August 2012 with 396 students in grades kindergarten through eighth grade, with a grade added each subsequent year through twelfth grade by 2017. There is no prerequisite for entrance into RLOA. Any family that resides within the RLOA service area (as described on the second paragraph of the narrative)—REMOVED; REPLACED WITH: South Carolina's SCPCSD willing to make the necessary commitment is welcome to attend. Such a commitment requires that all stakeholders (parents, students, and teachers) possess a steadfast determination to realize the mission of the school. If RLOA is oversubscribed, as we expect, during open enrollment in January 2012, a public lottery will be conducted in compliance with the South Carolina Charter Schools Act (1996).

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RLOA seeks to provide a brand of education that affords all students the opportunity to participate in a rigorous, college preparatory instructional setting that will prepare them for a demanding high school curriculum as well as life beyond the classroom. Our goal is to support the intent of the South Carolina Charter Schools Act by embracing high expectations for all students regardless of background, socioeconomic environment, family structure, or past academic performance.

To that end, curriculum for core subjects will be framed on the Common Core State Standards developed through the aegis of the College Board, which complies with South Carolina's state standards and has been adopted by the State of South Carolina. The focus of instruction will pivot around students' ability to utilize 10 key cognitive strategies: 1) make sense of problems and persevere in solving them; 2) reason abstractly and quantitatively; 3) construct viable arguments and critique the reasoning of others; 4) model with mathematics; 5) use appropriate tools strategically; 6) attend to precision; 7) look for and make use of structure; 8) look for and express regularity in repeated reasoning; 9) read and comprehend complex literary and informational texts independently and proficiently; and 10) develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.

Fulfilling the mission of RLOA requires us to create and uphold non-negotiable academic and behavioral standards that are both rigorous and practical. In an effort to **establish new forms of accountability**, we have composed seven criteria by which to judge our students' success:

- **Leadership** – All RLOA students will be given **leadership responsibilities** and taught to embrace the concept of a learning community in which leadership promotes a servant-first mentality that makes the needs of others a high priority.
- **Scholarship** – RLOA maintains that **every child can achieve high levels of academic excellence**. Students will learn to become effective readers, writers and communicators while becoming skilled critical thinkers in every subject area. To that end, RLOA’s curriculum will be aligned with the Common Core implementation plans, with its focus on content, process, learning strategies, ongoing performance-based assessments, and professional development through programs such as EdVISTA CARES Professional Development Program, the College Board’s SpringBoard Program, Advanced Placement Program, College Board Standards for College Success, and the College Board’s College Readiness Pathway (comprising ReadStep, PSAT/NMSQT, and the SAT). (See *Appendix A* for details of these programs and for letter indicating no conflict of interest of EdVISTA CARES.)
- **Character** - RLOA believes that **a person’s character is the true measure of that person**. We expect all persons involved with RLOA to conduct themselves as persons of integrity for the good of the community. By establishing boundaries and maintaining high expectations, students, parents, teachers, and staff will develop a culture that values great character.
- **Teamwork** - We desire to create **strong leaders** who are capable of working with each other and others to accomplish objectives that will benefit them and the community-at-large. The staff of RLOA will intentionally work to foster collaboration in all classes and activities by working in cross-disciplinary teams in the planning and implementation of instruction.

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- **Creativity** – RLOA exists to meet the needs of its students. Our staff will work diligently to assess the innate abilities and motivation preferences of our students in order to develop instructional practices that will **foster creativity**. Opportunities for the development of a variety of art forms will be nurtured and celebrated.
- **Problem-Solving and Service** - RLOA believes that the true definition of success includes **experiential learning that finds solutions for “real-world” problems**. Students thirst for relevant learning, learning that engages their minds in meaningful ways that can be related to the world in which they live. As ASCD defines problem-based learning, “Students are engaged problem solvers, identifying the root problem and the conditions needed for a good solution, pursuing meaning and understanding, and becoming self-directed learners. Teachers are problem-solving colleagues who model interest and enthusiasm for learning and are also cognitive coaches who nurture an environment that supports open inquiry” (*Educational Leadership*). RLOA students will pursue year-long projects that will entail partnership between members of the community and student initiatives in the arts, sciences, and technology. In addition, students will provide community service as a required part of the curriculum. They will be taught to use a “I can problem solve’ attitude that looks for solutions rather than one that shirks responsibilities and does not consider consequences of one’s actions. (Elements of the “I Can Problem Solve” [“An Interpersonal Cognitive Problem-Solving Program”], designed by Myrna B. Shure, will be incorporated in the RLOA curriculum. See **Appendix B** for details.)
- **Identity** - RLOA students will develop **a healthy self-image of themselves**. By eighth grade, RLOA students will view themselves as valuable members of our

school community as well as the community-at-large. In addition, RLOA students will develop a belief that they will attend college or other higher levels of learning.

These criteria will be assessed using both objective and subjective measures. In each area, we have set high individual expectations for our students, genuinely believing that all children can achieve the measures that have been set. This belief is not handicapped by prevailing stereotypes about the effects of poverty, race, or socioeconomic status. We understand the challenges of public education, but RLOA is committed to providing a school environment anchored by achievement of the criteria described above.

At RLOA, we understand that there are no shortcuts to success. Therefore, old-fashioned hard work will be a cornerstone of the school culture at RLOA. Our approach will include research-based practices of both the traditional and contemporary sort. The instructional program at RLOA can be summed up by the following practices:

High Expectations

RLOA holds to the belief that **ALL students can learn**, regardless of circumstance or background, and we make *no excuses* for lackluster academic or behavioral performance.

More Time

Allowing for more time in the classroom has proven to translate into higher pupil achievement. In an effort to **increase learning opportunities for students**, RLOA employs an extended instructional day and the option of half-day *Saturday School* in order to provide more time on

task for our students. Students with special needs and exceptionalities will have the opportunity for extra support and coaching during the extended times.

Personalized Instruction

RLOA teachers will work collaboratively in teams to plan and implement instruction in a manner that **individualizes students' needs**. Teacher teams will work with the same groups of students for two or more years to provide continuity, connection, and personalized learning.

Commitment to Motivate

RLOA faculty and staff have the mandate to make school **meaningful, relevant, and engaging** for our students. Every instructor must produce lessons that activate students' intrinsic motivations and create classroom environments that facilitate this outcome. To this end, every student is expected to embrace hard work as a part of the educational experience. This approach will, without a doubt, **improve student learning**.

Mission Driven

RLOA is committed to fulfilling the aims of its mission. Our duty to **develop the seven key areas of RLOA students** requires a persistent focus on results. Standardized test scores along with objective goals set for each of the seven key areas will be assessed regularly in order to ensure that students are prepared for lifelong success.

Empowering

On every level, RLOA stakeholders are empowered to make decisions specific to their experience. Administrators, teachers, parents, and students are all given a measure of freedom to

shape the educational experience as it pertains to them. Therefore, RLOA will uphold a commitment to engage a high-quality staff in decision making, **including the opportunity to influence the learning program** at the school.

The instructional framework of RLOA does not single out a particular instructional strategy, but rather allows for more creativity in instruction by lengthening students' time in school. We **encourage the use of a variety of productive teaching methods**, provided that the teaching is student-centered, differentiated, relevant, and consistent with the Common Core State Standards.

RLOA **will assist South Carolina in reaching academic excellence**. We have a long-term focus that begins with establishing high expectations for all students, engaging students and their families in a long-term commitment to high school completion and post-secondary success, and implementing activities that highlight and promote strong, positive attitudes toward schoolwork and career planning. Moreover, we believe that our educational model can have profoundly positive effects on communities as a whole. As neighborhoods and communities seek out answers to social problems such as substance abuse, gang violence, high drop-out rates, and rising unemployment among segments of the population, we are convinced that the answer can be found in innovative educational models.

i Student Population

RLOA will serve students in grades kindergarten through twelfth grade as indicated in ***Appendix C***. In the first year, we will serve K-8 students and add a grade each year through twelfth grade. The typical age range of RLOA K-8 students will be 6 – 14.

We choose to include primary, elementary, and middle school in our first year because our educational program is designed to include students who:

- are at risk or show deficiencies in literacy and math proficiency or have other special needs;
- have difficulty transitioning to the demands of subsequent levels of schooling;
- show a lack of effort or interest in their academic work (in the later grades);
- have a history of discipline problems leading to suspension, expulsion, and/or probation (in the later grades);
- show or express feelings of being disconnected from the school environment (in the later grades).

RLOA seeks to capture students both at the beginning of their formal education and at critical social and developmental junctures while the students are transitioning from a primary to an elementary, an elementary to a middle school, and a middle to high school mindset. Early intervention allows RLOA to bring students up to grade level and beyond each year and ready to make the transition into high school and, later, into college or the workplace. We feel that by starting in kindergarten, RLOA will be able to create academic and behavioral habits for success throughout the elementary and middle grade years and then in high school.

Because our school involves structures that are essential to our model, we expect RLOA students to commit to the school from the grade they enter RLOA through twelfth grade. We anticipate a twelfth grade graduating class in 2017 comprised mostly of students who have spent most or all of their schooling within our dynamic model.

ii Goals and Objectives

As listed in our mission statement, RLOA is committed to developing our students in seven key areas. We have set our goals and objectives to alignment with these areas.

GOAL #1 – LEADERSHIP

RLOA will provide opportunities for students to garner experience as **peer leaders**.

Objective 1.1 – In the expanded learning time, 100% of RLOA students will participate in programs that stress personal responsibility, the habits of mind of good citizenship, financial literacy, and entrepreneurship, from the most fundamental levels in the early grades to sophisticated understandings in higher grades. Students are expected to achieve passing scores or above in curricula such as the following:

- Kindergarten - *Junior Achievement** and *The Leader in Me***
- 1st Grade - *Junior Achievement* and *The Leader in Me*
- 2nd Grade - *Junior Achievement* and *The Leader in Me*
- 3rd Grade - *Junior Achievement* and *The Leader in Me*
- 4th Grade - *Junior Achievement* and *The Leader in Me*
- 5th Grade – *Junior Achievement* and *The Leader in Me*
- 6th Grade – *Junior Achievement* and *The Leader in Me*
- 7th Grade – *Junior Achievement; The Leader in Me, including the 7 Habits of Highly Effective Teens****

- 8th Grade - *Junior Achievement; The Leader in Me, including the 7 Habits of Highly Effective Teens*

See *Appendix D* for more details on the following:

Junior Achievement of Coastal South Carolina* teaches financial literacy, work readiness, and entrepreneurship. *The Leader in Me* is a Franklin Covey Education program that is designed to be integrated into a school's core curriculum and everyday language. It benefits schools and students in the following ways:

- Develops students who have the skills and self-confidence to succeed as leaders in the 21st century.
- Decreases discipline referrals.
- Teaches and develops character and leadership through existing core curriculum.
- Improves academic achievement.
- Raises levels of accountability and engagement among both parents and staff.

****The 7 Habits of Highly Effective Teens* is a Franklin Covey Education program that teaches teens to personalize and apply the habits of successful people: Be Proactive; Begin with the End in Mind; Put First Things First; Think Win-Win; Seek First to Understand, Then to Be Understood; Synergize; and Sharpen the Saw. It is incorporated in the *Leader in Me* educational program.

Each year a student attends RLOA, his or her scores are expected to improve.

Objective 1.2 – RLOA eighth-twelfth grade students will be expected to complete a **social entrepreneur project** before matriculating into the ninth grade. In subsequent

years, high school students will complete a **social entrepreneur project**. Students may complete the projects in teams.

Strategies to Accomplish Goal #1

- **Proven Curricula** – *Junior Achievement* has served more than 87 million students since 1919 and is aligned to meet South Carolina Academic Standards. *The Leader in Me* and *The 7 Habits of Highly Effective Teens* are part of the Franklin Covey Education Solutions to imbue responsible leadership skills in students at all ages. Recognized as one of *Time* magazine's 25 most influential Americans, Stephen R. Covey has dedicated his life to demonstrating how every person can truly control their destiny with profound, yet straightforward guidance. As an internationally respected leadership authority, family expert, teacher, organizational consultant, and author, his advice has given insight to millions.
- **Service-Learning** - The National Youth Leadership Council says that “service-learning actively engages participants in meaningful and personally relevant service activities.”
- **Student Led Conferences** – Students must take responsibility for their own education and develop the capacity to explain their educational experience to one or more adults.
- **Quality Instructors** – Teachers have a greater impact on student learning than any other factor.
- **Individual Learning Plans** – Leadership development will be slightly individualized using a student specific program or strategy of education that takes into consideration the student's strengths and weaknesses.

- **Community / Business Mentors** – Community entrepreneurs and business leaders will serve as mentors to students completing entrepreneur classes and service-learning projects.

GOAL #2 – SCHOLARSHIP

Once enrolled, every incoming RLOA student once enrolled will be **academically screened**—
REMOVED; REPLACED WITH: evaluated by a trained educator using an EdVISTA CARES evaluation model (i.e., a combination of one or more norm-referenced instruments; for example, the *Woodcock-Johnson Tests of Cognitive Abilities and Tests of Achievement* (general aptitude; executive functions; basic reading, writing, math, and listening skills; reading comprehension; *Gray Silent Reading Tests* (reading comprehension); *Nelson-Denny Reading tests* (vocabulary and reading comprehension); *Scholastic Abilities Tests for Adults* (aptitude and achievement tests for 16-year-olds and above); *Dynamic Indicators of Basic Early Literacy Skills (DIBELS)*; *The Comprehensive Test of Phonological Processing* (phonological awareness; phonological memory; rapid naming ability); and *The Lexile Framework for Reading* (matching readers with appropriate levels of text). Each RLOA student will be re-assessed, as needed, for special needs and exceptionalities. (See **Appendix A** for details about the EdVISTA CARES evaluation model.)

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Formative and summative assessments will be part of the core curriculum to best determine how instruction is matching the needs of each student.

RLOA will use a variety of productive teaching methods aimed at improving student learning.

Objective 2.1 – Each year, a majority—REMOVED; REPLACED WITH: 80 percent of RLOA students will meet RIT Range Growth Norms on the reading section of the Measures of Academic Progress (MAP) test.

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Objective 2.2– Each year, a majority—REMOVED; REPLACED WITH: 80 percent of RLOA students will meet RIT Range Growth Norms on the mathematics section of the Measures of Academic Progress (MAP) test.

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Strategies to Accomplish Goal #2

- **Data-driven Decision Making** – Whenever possible, educators will make academic decisions concerning students’ education based on valid, objective criteria.
- **Student Led Conferences** – Students must take responsibility for their own education and develop the capacity to explain their educational experience to one or more adults.
- **Quality Instructors** – Teachers have a greater impact on student learning than any other factor. Therefore, professional development of RLOA teachers will be of primary importance. Through our affiliation with the College Board’s administrator and coaching services, cognitive coaching and teacher workshops and institutes will be part and parcel of establishing and maintaining a professional learning community. (*See Appendix A for details.*)
- **Expanded Learning Time** – More time on task in the classroom allows students more practice to master concepts, more personal interaction with the instructor, and regular tutorial sessions. The goal of expanded learning time is that, as they

move through the grade levels, students will go from *learning to read* to *reading to learn*, from *learning to calculate* to *utilizing math models to solve real problems*, and from *learning to write* to *using writing as a tool to think, analyze, and share ideas in a cogent and concise manner*.

- **Individual Learning Plans** – RLOA staff will work with students and their families to develop a portfolio that identifies each student's likes and dislikes, academic strengths and weaknesses, family information, learning styles, and motivation preferences. These Learning Plans, along with data from academic screening, will allow teachers to better meet the individual needs of each child.
- **Personalized Learning** – Teacher-to-student ratios and team teaching will permit more teacher-student interaction and make classes more manageable. Year-long projects will require personal coaching opportunities for teachers to work closely with students.
- **Differentiated Instruction** – Every teacher has the mandate of assessing the needs of students in his/her classroom and working to meet those needs while still caring for the whole. Master teachers will work with classroom teachers to maximize the opportunities for addressing the individual needs of students.
- **Community Involvement** – Through field trips, in-town expeditions, and collaboration with leaders in the community, RLOA students will be exposed to the world around them, to create a better opportunity for comprehension and provide service experience.
- **Uniform Classroom Management Techniques** – All RLOA teachers will share similar classroom management practices to provide continuity for the students and promote outstanding organization among the student population.

- **School-Wide Technology Use** – Technology allows teachers to differentiate instruction for individual learners as well as prepare students as they enter the marketplace. Technology will be in the service of excellent instruction to maximize learning opportunities and individualized instruction.
- **Student Motivation** – Teachers will work to ensure that students are intrinsically motivated to learn.
- **Reading, Writing and Vocabulary Development** – Students will practice vocabulary acquisition, writing, and reading in a coordinated fashion in every core content area.

GOAL #3 - CHARACTER

RLOA will increase learning opportunities for students through a persistent focus on character education that defines traits and dispositions that are important criteria for good citizenship. To maximize the opportunity for character development, participation in the expanded learning time in programs such as *Junior Achievement*, *The Leader in Me*, and *The 7 Habits of Highly Effective Teens* (for students aged 13 and up), and *I Can Problem Solve* will draw attention to the habits of mind that students need to succeed as responsible citizens. -Each of these programs contains rubrics of excellence (i.e., Beginner, Improving, Mastering, Expert) that determine how well students have incorporated and mastered the concepts and habits of mind and how they employ them in their attitudes and behaviors. Elements of these programs will also be incorporated within the core curriculum in social studies, language arts, and mathematics. For example, the habit *Seek to Understand; Then Be Understood* would be incorporated into reading material in both English/Language Arts and Social Studies/History and tested based on the student's understanding of what promotes positive relationships. A further example, while studying the

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habit of *Sharpening the Saw* students would learn how to use mathematical principles to frame and solve problems. In the core content areas, students will be graded on their ability to act responsibly, consistently, and with purpose through questionnaires (Pass/Fail) and examinations on content (Grades A-F).

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Objective 3.1 – Each year, the percentage of students receiving disciplinary action will constitute a small percent—REMOVED: REPLACED WITH: no more than 20 percent of the student population.

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Objective 3.2 – Over the span of four years, the percentage of students receiving discipline referrals within a class cohort will decline among those students who have been enrolled at RLOA since kindergarten to no more than 5 percent of the student population.

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Strategies to Accomplish Goal #3

- **Uniform Classroom Management Techniques** – Students will receive consistent messages regarding proper behavior. Teachers will model appropriate behavior on a regular basis and provide daily visual barometers for students to assess their behavior. In addition, teachers will huddle frequently to discuss ways to encourage appropriate behavior.
- **Parental Involvement** – Parents will be encouraged to participate in all aspects of the school and are expected to work with the school concerning any discipline issues or breaches of integrity. Some strategies to increase such involvement include:

- Increasing direct communication with parents;
- Helping parents understand how character is formed;
- Sharing some of the research that shows the powerful influence of a parent;
- **RLOA Academic Leagues** will encourage parents and community members to assist students in developing excellence in a number of categories. Rubrics of excellence will measure each student's level of mastery (i.e., beginner, emerging expert, developing expert, expert) as they apprentice with experts in various fields.

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- **Writer's Workshop:** Best in different genres—mystery, adventure, detective, journalism, op ed
- **Battle of the Books:** Reading mastery in a number of genres, both fiction and nonfiction.
- **Performing Arts:** *Music:* solo, duet, trio, ensemble, choral, musical; *Drama; Debate; Art:* watercolor, oil, sculpture, pottery; *Film:* documentary, drama, comedy; *Fashion Design*
- **Science/Math:** Research project related to issue in community or region or with scientists, doctors, or engineers on specific areas of research
- **Computer Science/Math:** Graphic design, electronic game; solution to a specific problem with computer model
- **History:** Research specific group of people or era in region and present in multimedia format

- **Foreign Language:** Research culture and language of a group and present in multimedia format and food fair
 - Putting ideas and materials into parents' hands;
 - Sponsoring parenting workshops;
 - Integrating parents, especially new ones, into the school community through volunteer activities;
 - Involving parents on a planning committee for character education;
 - Helping parents understand and support the school's discipline policy and how it fits into the overall character effort.
- **Student Voice** – Student voice will be encouraged at RLOA. Students will be expected to model appropriate behavior for peers and encourage each other to be persons of integrity. Committees of students may also be convened to assist in addressing student discipline issues.
- **Family Meetings** – Groups of students – divided by grade level, gender, etc. – will participate in regular “family meetings” to discuss school dynamics and culture in hopes of increasing empathy among the student body.
- **Aims, Goals, Objectives (AGO)** - The AGO is a strategy to get students to focus directly and deliberately on the intention behind actions. It may be used as a tool to encourage students to consider the importance of integrity. Successful completion of programs such as *I Can Problem Solve* with at least a 90% score on examinations will provide students with the experience of seeing the consequences of their actions through role playing that incorporates rubrics of expectations.

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GOAL #4 – CREATIVITY

RLOA will encourage the use of a variety of productive teaching methods that are designed to consider—REMOVED; REPLACED WITH: development of the motivation preferences of each student.

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Objective 4.1 – Each year, RLOA parents and students will collaborate to develop or modify the Learning Plan for each student to improve student learning and self-direction.

Strategies to Accomplish Goal #4

- **Student Motivation** – Teachers will work to ensure that students are intrinsically motivated to learn. This process will allow students’ innate gifts and talents to be incorporated into their academic work. Teachers are responsible to assist students - through lesson differentiation - in developing their individual talents while teaching subject content.
- **Academic Leagues** — Teachers, parents, and community members will assist students in developing excellence in a number of categories, following specific rubrics, as outlined above:
 - **Writer’s Workshop**
 - **Battle of the Books**
 - **Performing Arts**
 - **Science/Math**
 - **Computer Science/Math**
 - **History**
 - **Foreign Language**

- **Individual Learning Plans** – These plans will be constructed to assist teachers in discovering and developing the intrinsic motivations of students.
- **Expanded Learning Time** – Through the expanded day and optional Saturday half-day sessions, students will have the opportunity to be coached in the particular art or technology they are pursuing or receive tutorials for areas in need of development.
- **Community Involvement** – Through mentorship with local artists, artisans, writers, technology experts, and community leaders, RLOA students will have opportunity to hone their skills on “real-world” projects.

GOAL #5 – PROBLEM SOLVING/ SERVICE / COMMUNITY ENGAGEMENT

RLOA will groom students to become valuable members of their community through the following expectations:

Objective 5.1 – Each year, 100% of RLOA students will perform a minimum of twenty (20) hours of community service. These service hours will be documented using a service log. They will learn essential lessons about problem solving and taking responsibility as they work within the community to improve the lives of others.

Students are expected to complete five (5) hours of service per grading period. Students who are not on target meeting Objective 5.1 will receive additional coaching from teachers and community volunteers and will commit extra time on task.

Objective 5.2 – Each year, 100% of RLOA students will create portfolios/presentations to showcase time spent in service to the community.

Strategies to Accomplish Goal #5

- **Service Learning** – Service-learning engages students in meaningful social initiatives that provide long-lasting benefits for the students and the community.
- **Expanded Learning Time** – Longer school days allow more time for classes and experiences outside of the core content areas. Optional half-day *Saturday School* gives students additional time for projects, Academic Leagues activities, tutorials, and coaching. It also allows students time within the school environment to plan and execute community service projects.
- **Multi-Media Portfolios** – Students use the media devices to document service-learning projects and show how they contribute to the long-term well-being of the targeted community.

GOAL #6 – IDENTITY

RLOA will assist students in developing healthy self-images and empower them to become responsible citizens.

Objective 6.1 – In year two of operation and beyond, a majority—REMOVED:
REPLACED WITH: 80 percent of RLOA seventh, eighth, and ninth grade students will indicate that they expect to pursue postsecondary education, as evidenced on a survey.

In subsequent years, as tenth, eleventh, and twelfth grades are added, a majority—

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REMOVED; REPLACED WITH: 90 percent of RLOA seventh through twelfth grade students will indicate they expect to pursue postsecondary education.

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Objective 6.2 – RLOA expects its students to view themselves as integrated members of the Lowcountry community. To this end, 100% of RLOA will become active members of their community by visiting at least three community attractions within a school year (i.e. libraries, museums, recycling centers, sporting events, zoo, etc.).

Strategies to Accomplish Goal #6

- **Travel** – Local expeditions around town and throughout the Lowcountry will help students identify with the Lowcountry community and develop a sense of ownership and responsibility for their surroundings. Field trips to local and distant colleges will assist students in developing a passion to attend college.
- **Daily Physical Activity** – Through physical education classes and structured daily recess, students will gain an appreciation for their health and embrace activity as a lifelong practice.
- **Integrated Physical Activity** – Teachers will be encouraged to incorporate physical movement into classroom lessons whenever possible.

GOAL #7 – TEAMWORK

The staff of RLOA will intentionally work to foster collaboration among staff and teachers and in all classes and many student activities.

Objective 7.1 – 100 percent of RLOA students will participate in sports as a part of the physical education curriculum.

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Strategies to Accomplish Goal #7

- **Collaborative Learning** – Students will work in cooperative groupings on a regular basis. This will allow every student the opportunity to learn and practice interpersonal skills. In addition, teachers will work in cooperative teams as part of the overall structure of instruction.
- **Athletics** – RLOA will develop an athletics program to allow all RLOA students the privilege of participating in a team sport to garner experience as a teammate.

GOAL #8 – EXCELLENCE

RLOA will assist South Carolina in reaching academic excellence.

Objective 8.1 – Each spring, parents, teachers, and students of RLOA will complete an online survey that is “designed to measure perceptions of three factors: home and school relations, the school’s learning environment, and the school’s social and physical environment.” At least 75% of parents, students, and teachers will answer affirmatively to the statements:

- I am satisfied with the learning environment in my school.
- I am satisfied with the social and physical environment in my school.
- I am satisfied with home and school relations.

Strategies to Accomplish Goal #8

- RLOA will use **all** of the previously mentioned strategies to assist South Carolina in reaching academic excellence.

iii Academic Standards

RLOA students are expected to meet or exceed the standards set by the South Carolina Department of Education (SCDE) and the Common Core State Standards, adopted by SCDE. Therefore, our educational goals are aligned with South Carolina Academic Standards. Several independent studies have recognized South Carolina as having some of the most rigorous standards in the nation. By aligning our goals with what South Carolina deems appropriate for each grade level we have maintained our expectation of high academic achievement.

I.

What Students Will Achieve in Key Content Areas

ENGLISH LANGUAGE ARTS (ELA)

Common Core Curriculum Maps ELA: Grade Span Description

Grades K-5

When children enter elementary school, they are full of curiosity about the world around them. They want to know how things work, where things come from, what various words mean, and why people and animals in stories act the way they do. As they begin to recognize words and listen to stories with others at school, their curiosity builds, as does their knowledge.

Some children entering kindergarten have begun to learn to read; others have not. The early elementary years are the prime time for children to make strides in reading, no matter what their level upon entering school. If they learn to sound out words accurately in the first few years of school, while building vocabulary, knowledge, and understanding, then reading in itself should not pose a problem for them later; but, if they enter third or fourth grade without knowing how to read confidently, it will be difficult for them to handle the schoolwork. They may need intensive remedial help with basic skills while other students are studying literature and other subjects. For this reason, it is essential that they learn to read confidently and fluently early. Therefore the K–1 maps (and eventually more) include a pacing guide of milestone instructional goals. This guide was written by Louisa Moats, a reading expert who was on the team that wrote the CCSS reading standards. Moats has paced the reading foundation standards logically across the unit maps. Concepts of print, phonological awareness, and text-reading fluency are all addressed in a developmental progression that interacts with and influences each other.

In the initial years of elementary school, children also discover new worlds of literature. Immersed in stories, sounds, and letters, they make connections between what they hear and what they read. Starting in kindergarten, children listen to a wide variety of excellent literary and nonfiction texts: stories, poems, songs, fables, myths, legends, biographies, and books on historical and scientific subjects. They hear literature read aloud to them daily, and they act out select stories. Through the diverse use of texts, topics are introduced and reintroduced in greater depth deliberately across the grades. The arts are integrated into the units; for example, students look at a collage by Henri Matisse in a unit on animals and listen to Sergei Prokofiev’s *Peter and the Wolf* in a unit on tales passed down from generation to generation. Certain units (such as “The Wild West” in Grade 2) are organized around geographical and historical topics, allowing

students to compare descriptions of events and characters. In their dramatic readings, students build expressiveness while experimenting with different voices. Thus, they start to grasp the rhythms, forms, and themes of literary language and build knowledge and vocabulary throughout the content areas. Every day, they are immersed in sounds, stories, and ideas, and the teacher leads them in lively discussions and activities.

By the end of second grade, students should be able to read simple storybooks fluently and to write in print. In addition, they have learned to use graphic organizers to plan their writing. In third grade they read chapter books and write reports, letters, stories, poems, and descriptions. Throughout the early grades, they learn basic grammatical and literary terms and start to understand word structure. As the act of reading becomes second nature, students can focus on the content of what they read. By reading a wide variety of genres centered on important historic and scientific themes, students build content knowledge and begin to comprehend at greater levels of depth and in a wider range of topics.

When students enter fourth grade, they have a background in mythology, poetry, fiction, folktales, and nonfiction texts on a variety of subjects. They may be interested in specific topics that have come up in their classes or that they have pursued on their own. They may have taken an interest in a particular subject or begun to study a musical instrument, dance, or art. All of this will fuel their reading and writing.

Students in fourth and fifth grades delve into literature and nonfiction: They continue to read and discuss a wide variety of literature, nonfiction, fables, and mythology, as well as essays and speeches, and to make connections with the arts—for instance, by examining art by

Michelangelo and a photograph from the Civil War. They learn about play, invention, investigation, and exploration, among other topics related to the life of the mind. They begin to understand the way in which literature offers insight into culture and history—for instance, by comparing Native American narratives with those of European settlers. As they read poetry, students practice their expressive delivery and learn about poetic elements, such as rhyme scheme, meter, stanza, metaphors, and similes, and how these contribute to the beauty and meaning of the poems. They learn to spend time with works that they do not immediately understand, allowing time for their understanding to grow. Certain units (such as “Clues to a Culture” in Grade 5) are organized around historical topics, allowing students to compare descriptions of events and characters. By the end of fifth grade, students are able to tackle serious topics such as life’s challenges and obstacles; civil and cultural strife; intellectual courage; and coming of age. They also recognize literature’s sounds, word play, nonsense, invention, beauty, mystery, and sheer fun. Through the diverse use of texts, topics are introduced and reintroduced in greater depth deliberately across the grades.

Students in grades four and five learn to collaborate with peers while writing reflective essays, reports, journals, stories, and responses to literature and arts. They also learn to create multimedia presentations. They build on their grammatical knowledge and demonstrate command of grammar and usage. Word study is an essential part of the units: Students learn multiple meanings of words, continuing their study of morphology and beginning to study etymology, thus gaining insight into the relationship between English and other languages, ancient and modern. In their essays, they are able to articulate a central idea and illustrate it with examples; to discuss themes in the works they have read; and to respond both formally and informally to literature. Class discussions allow students to explore questions and ideas together;

oral presentations allow them to draw on multiple resources, refine their speaking skills, and learn from each other.

Grades 6-8

In grades 6 – 8, students are ready for new levels of intellectual challenge. By following the Common Core Curriculum Maps up to this point, they have a strong background in mythology, folktales, and fables from around the world; classic and contemporary fiction and poetry; and literary nonfiction related to historical and select scientific topics. They should be able to write a short paper in which they articulate a central idea and support it with examples from texts.

Through the diverse use of texts, new topics are introduced and old ones reintroduced in greater depth deliberately across the middle school grades. As in the earlier grades, many units combine fictional narratives with historical accounts; students may build background knowledge while considering similarities and differences between fiction and nonfiction. For example, in seventh grade, students build upon the “Literary Heroes” unit from Grade 4, and then read about the Middle Ages, as they compare varying depictions of medieval characters. Students make connections between literature and science as well: In sixth grade, they read about flying from literary, historical, and scientific perspectives, and in seventh grade they consider to what extent the science in science fiction must be truthful.

The arts are integrated into the units, both for comparison with literature and for enrichment. Through class discussion, close reading, and careful writing, students deepen their understanding of all of these works and concepts. The suggested texts reflect a wide variety of cultural and personal perspectives and accommodate a range of interests. The unifying themes allow students to consider what seemingly disparate texts have in common; for instance, one unit focuses on

determination, another on survival in the wild, and another on the greater good. The arts are deeply integrated into select units; students look at how authors and artists are similar in a grade eight unit, “Authors and Artists.”

Students hone their writing skills through a variety of assignments and projects. They learn to write cogent arguments, responses to literature and informational text, narratives, reflective essays, and more. Each unit includes word study, with special attention to word origins and history. Students work with graphic organizers in order to clarify their ideas and plan their writing. They engage in discussions, give presentations, and deliver expressive readings of literature. By the end of eighth grade, students have learned many ways of looking at a text, have built historical, scientific, and cultural knowledge and understanding, and have learned to express their ideas clearly. They are prepared to explore literature as a subject in itself and to engage in close textual analysis.

Grades 9-12

Students who have followed the Common Core Curriculum Maps through elementary and middle school will enter high school with a rich foundation in fiction, drama, poetry, mythology, and literary nonfiction from a variety of cultures. In addition, they have started reading literature closely with attention to specific elements and have considered parallels between literature and the arts. Having built a foundation in a range of skills and understandings, they will be prepared for the academic rigors of high school.

While undergoing rapid intellectual and emotional changes, students in grades 9-12 are discovering some of their enduring interests. College and future careers take on importance.

Some students may have definite goals and plans, while others may be uncertain or ambivalent about their next steps. Both certainty and uncertainty play an important role in students' intellectual development; students should be encouraged to cultivate their existing passions and discover new ones. Young people at the high school age become increasingly interested in complex questions of humanity and history. Some may become absorbed in particular historical figures or events, others in a culture or time period. The high school maps allow students to read classic and contemporary literature closely while gaining wide exposure and exploring larger questions. Certain concepts such as irony recur frequently throughout the units and years; students come to understand them more deeply as they consider them in new contexts. In addition, high school students write on increasingly complex topics and learn to conduct research.

The ninth-grade curriculum exposes students to classic and contemporary literature across the main genres, from a variety of cultures; grades 10-12 focus on world, American, and European literature, respectively. Students learn to read texts closely, analyzing the nuances of words, the relation of form and content, and the layers of meaning. In addition to purely literary works, they read philosophical works; essays and speeches; essential documents and speeches regarding American democracy; and informational resources. Many suggested assignments involve memorization of a poem or passage. This allows students to pay close attention to the words, sounds, and structure. It helps students develop their speaking skills, as a memorized poem or other work can be practiced and refined. Moreover, once students have memorized a poem, they are able to carry it with them everywhere. It becomes part of their lives.

Seminar discussions play an important role in the high school curriculum. The seminar is a specific kind of class discussion in which students take responsibility for its leadership and development. During the seminars, students discuss questions such as: “Does Huckleberry Finn embody the values inherent in the American Dream? Why or why not?” As they explore such questions, they learn to define their terms carefully and substantiate their views with examples from the texts. The seminars often turn into lively arguments in which students learn to combine passion with reason, consider alternate points of view, acknowledge mistakes, refine their thinking, and treat all participants with respect and courtesy. They also hone students’ skills for working in groups, as they will be asked to do in both college and careers.

In high school, students learn to write substantial research essays on literary, historical, and philosophical topics. They learn to plan and outline their papers in detail and to make necessary adjustments as they go along. Consulting numerous primary and secondary sources at libraries and online, students learn how to evaluate divergent accounts and interpretations of literary works, historical events, and scientific and philosophical theories. The writing of research papers is emphasized in twelfth grade to prepare students for the rigorous writing required of them at the college level.

By the end of high school, students have a strong literary foundation. They have learned to read literature well and are familiar with many essential works of fiction, poetry, and drama from a range of cultures. Having memorized and recited many poems and passages, they are familiar with the rhythms and structures of literary language and grasp how the details of literature shed light on large questions. They know how to write a solid research paper, integrating information from multiple sources. They know how to state, defend, and discuss their opinions with civility

among their peers. Provided they have completed their work thoughtfully and thoroughly, they will be prepared for college and employment, civic participation, and a lifetime of intellectual curiosity.

Furthermore, according to the SCDE, the ultimate goal of the state's **English Language Arts (ELA) academic standards** is to teach students the skills and strategies needed to become productive, literate members of our society. Reading, writing, speaking, listening, and viewing are fundamental tools for learning, success in the workplace, and enriching our lives. Language arts instruction in South Carolina provides all students with the opportunity to use language in a lifetime of learning.

Literacy instruction is a continuous process that occupies a prominent position of importance in all K–12 classrooms in South Carolina. In today's increasingly complex world, literacy demands are intensifying and require more advanced levels of proficiency. Students need to become highly skilled, independent users of information in order to become responsible, productive citizens. Our ability to communicate is at the core of the human experience. Language skills are essential tools not only because they serve as the basis for future learning but also because they enhance the lives of students as human beings. Through instruction and immersion in a print-rich environment that includes a variety of literary and informational texts, students better understand and appreciate the English language and therefore ultimately become more proficient communicators.

South Carolina's academic standards represent what students from kindergarten through high school are expected to know and be able to do as readers, writers, communicators, and

researchers. Many of the indicators related to media, viewing, and communication are embedded within the writing and research standards and will be addressed through classroom instruction. Though standards including indicators that refer to viewing and media literacy are not tested on state assessments, these skills are crucial to the quality of life in a society permeated by media. Technology and media have a critical place in classroom instruction. The skills needed by students to navigate their visual culture, similar to those of traditional print literacy, are as important as reading and writing.

Teachers and administrators make informed and effective curricular and instructional decisions about nurturing their students as readers, writers, and communicators. While ELA teachers are responsible for their own body of content, many of these academic standards are tools for lifelong learning that all teachers will integrate on a regular basis. Rigorous application of reading, writing, speaking, listening, viewing, and researching belongs in all South Carolina classrooms.

RLOA will adhere to the guiding principles set forth by the SCDE. They are listed here in detail as the RLOA curriculum hinges on these principles:

Guiding Principle 1

An effective English language arts curriculum is framed within the context of a community of learners.

Classrooms should be places of joyful learning where students have the opportunity to read, write, and converse in a nurturing environment that supports independent and collaborative learning. RLOA teachers will create spaces where learners come together as a community in

which young people are encouraged to explore, take risks, and inquire about their world. Students need to be able to let teachers know who they are and to share the different perspectives they bring into the classroom. In such a context, students can learn about their classmates as individuals who each have unique ideas and talents to contribute.

Guiding Principle 2

Learning in English language arts is recursive.

Students at every grade level apply similar skills and strategies as they read increasingly more complex texts. Many reading and writing strategies do not change, but the difficulty and complexity of the texts provide the differentiation. As these skills and strategies are addressed frequently and over extended periods of time, students can come to acquire a deeper understanding and appreciation of more challenging texts, gaining sophistication as they grow as readers, writers, and learners.

Guiding Principle 3

Reading, writing, communication, and research are interdependent.

Reading, writing, speaking, listening, viewing, and researching are not discrete skills: each literacy strand intertwines with and supports the others, creating a tapestry of language. Effective use of language not only requires but extends students' thinking. As learners listen, view, discuss, or write, they engage in thought. Successful instruction is dependent upon the integration of the language arts with other content areas so that skills and concepts from multiple disciplines are woven together to support student learning. And when students undertake increasingly complex assignments that require them to communicate in response to what they are learning, they deepen their thinking about that topic.

Guiding Principle 4

An effective English language arts curriculum provides strategic and purposeful instruction in reading and writing.

Effective literacy instruction is explicit and systematic. It is intentional, based on assessed student needs, carried out in an organized manner, and clearly communicated to students. Quality instruction is responsive and authentic, connecting to student needs and relating to real-world purposes. Students at all levels—elementary, middle, and high school—need varied opportunities for reading, writing, listening, and speaking. Read-alouds, shared reading, and independent reading and writing experiences as well as reading and writing conferences, literature discussion groups, and strategy-based mini-lessons are all important instructional activities.

Guiding Principle 5

Oral language and expression is foundational to literacy learning and development.

Children develop oral language and literacy through appropriately challenging learning, and they need many opportunities to speak and listen. As they grow in vocabulary and concept development, they increase in their ability to use language to convey meaning. In view of the fact that written and spoken language develop together, it is vitally important that students be exposed to a language- and print-rich environment.

Students need to be given opportunities to participate in the kind of collaboration and discussion that arises out of meaningful contexts and experiences. They develop their understanding of graphic, textual, and structural features of print through exposure to nonfiction, fiction, poetry, and drama. In the primary grades, students progress from oral to written language. As they listen to stories read aloud, primary students develop comprehension and fluency. Beyond the primary grades, students continue to refine their use of oral language and their level of literacy through speaking and listening.

Guiding Principle 6

An effective English language arts curriculum uses literature from a variety of cultures and eras.

Students should be given a broad exposure to classic and contemporary literary works representing cultures within the United States and throughout the world. Reading provides a bridge to other times and places, allowing students to experience not only the world around them but also the worlds of ages past. Literature provides a landscape that helps shape who children are and where they want to go. The power of literature shows us that anything is possible. Students must have time to read within the school day, and they must be given choices among the texts that they will read. Collaboration among teachers, school media specialists, and local librarians is critical in matching books to readers. In order to foster a love of reading, teachers need to encourage independent reading within and outside of class.

Guiding Principle 7

An effective English language arts curriculum emphasizes writing as a centerpiece of the school curriculum.

Writing is thinking. As students write, they are engaged in a recursive process of critical, analytical, and reflective thinking. In order to learn to write well, students must write often and write for a variety of purposes. They need opportunities to study the craft of writing by reading the works of others and seeing models of quality texts. Students must learn to “read like writers” and “write like readers.” Common expectations about writing are developed across the curriculum. Teachers in all content areas must provide students with the opportunity to write every day, both in and out of school. As students begin to write cohesively about increasingly more sophisticated concepts and ideas, their writing helps to ensure their academic success.

Guiding Principle 8

An effective English language arts curriculum utilizes all forms of media to prepare students to live in an information-rich society.

In today's dynamic society, all forms of mass media are used to inform and persuade. Proficient students apply critical techniques to evaluate the validity of the information they encounter. In a culture where persuasive and invasive media messages abound, students need to think critically about what they read, hear, and view. The challenge for students is to respond to these media messages personally, critically, and creatively. The inclusion of media literacy in South Carolina's academic standards recognizes the powerful force of mass media in the twenty-first century.

Today's emerging technologies include many multimedia devices and programs that depend on the appropriate application of technology and thus require media literacy skills: digital photography, DVDs, CD-ROMs, high-definition digital television, Internet streaming, MP3 players, nonlinear (computer/video) editing, PDAs (personal digital assistants), PowerPoint presentations, blogs (Weblogs), and more.

The skills of critical inquiry—the ability to question and analyze a message, whether it be textual, visual, auditory, or a combination of these—are a crucial element in literacy instruction. The production of visual media is also a crucial element, enabling students to acquire and demonstrate an understanding of advertising, aesthetic techniques, audience, bias, propaganda, and intellectual purpose. Integrating into the ELA curriculum the vocabulary and skills associated with media presentations helps students develop lifelong habits of critical thinking.

Guiding Principle 9

An effective English language arts curriculum emphasizes informational text that is relevant to our increasingly complex and technological world.

Today's students are confronted with unprecedented amounts of information in a wide variety of print and nonprint forms. The ability to locate and use information effectively is an essential skill in the modern world. In many instances, information comes in unfiltered formats. Consumers of information must raise questions about the authenticity and reliability of sources. Now, more than ever, students need to be prepared to comprehend, analyze, and challenge what they read, hear, and see before making assumptions about its validity. Real-world texts are an integral and vital part of the ELA curriculum.

Guiding Principle 10

An effective English language arts curriculum teaches the strategies necessary for independent learning.

The purpose of education is to create individuals who are independent learners and thinkers. Students should be encouraged to equip themselves with learning strategies that they will practice intentionally and apply strategically. As contexts become more complex and challenging, students should be able to use such strategies with purpose and success. When they are able to determine their own learning strategies and to use those that work best for them, students become independent learners; as they become independent thinkers, they are free to pursue a lifetime of learning.

RLOA's curriculum will be aligned with the Common Core State Standards, using the guidelines and goals of the SCDE for **ELA** set forth below. These goals are specific, measureable, attainable, realistic and timely so that every student can assess their mastery in a particular area and every teacher can evaluate their instruction. They are outlined here in detail as RLOA's curriculum incorporates the goals of these standards.

KINDERGARTEN

KINDERGARTEN: READING

Understanding and Using Literary Texts

Standard K-1 The student will begin to read and comprehend a variety of literary **texts** in print and nonprint formats.

Students in kindergarten will begin to read four major types of literary **texts**: **fiction**, **literary nonfiction**, **poetry**, and drama. In the category of **fiction**, they read the following specific types of **texts**: picture books and fantasy. In the category of **literary nonfiction**, autobiographical and biographical sketches are read aloud to students. In the category of **poetry**, they read nursery and counting rhymes, songs, narrative poems, lyrical poems, humorous poems, and free verse.

Indicators

K-1.1 Summarize the **main idea** and details from literary **texts** read aloud.

K-1.2 Use pictures and words to make predictions regarding a story read aloud.

K-1.3 Understand that a narrator tells the story.

K-1.4 Find examples of sound devices (including **onomatopoeia** and **alliteration**) in **texts** read aloud.

K-1.5 Generate a retelling that identifies the **characters** and the **setting** in a story and relates the important events in sequential order.

K-1.6 Discuss how the author's choice of words affects the meaning of the **text** (for example, *yell* rather than *said*).

K-1.7 Use relevant details in summarizing stories read aloud.

K-1.8 Create responses to literary **texts** through a variety of methods (for example, writing, **creative dramatics**, and the visual and performing arts).

K-1.9 Recall the characteristics of fantasy.

K-1.10 Explain the cause of an event described in stories read aloud.

K-1.11 Read independently for pleasure.

KINDERGARTEN: READING

Understanding and Using Informational Texts

Standard K-2 The student will begin to read and comprehend a variety of informational **texts** in print and nonprint formats.

Kindergarten students read **informational (expository/persuasive/argumentative) texts** of the following types: informational trade books and magazine articles. They also read directions, graphs, and recipes embedded in informational **texts**.

Indicators

K-2.1 Summarize the **central idea** and details from informational **texts** read aloud.

K-2.2 Analyze **texts** during classroom discussions to make **inferences**.

K-2.3 Find facts in **texts** read aloud.

K-2.4 Create responses to informational **texts** through a variety of methods (for example, drawings, written works, and oral presentations).

K-2.5 Understand that headings and **print styles** (for example, italics, bold, larger type) provide information to the reader.

K-2.6 Understand **graphic features** (for example, illustrations and graphs).

K-2.7 Recognize tables of contents.

K-2.8 Explain the cause of an event described in a **text** read aloud.

K-2.9 Read independently to gain information.

KINDERGARTEN: READING

Learning to Read

Standard K-3 The student will learn to read by applying appropriate skills and strategies.

Indicators for this standard in kindergarten through grade two focus on beginning reading skills and strategies and support the five components—comprehension, **fluency**, phonemic awareness, phonics, and vocabulary—delineated by the National Reading Panel as central to a child's learning to read. Although the phonics and phonemic awareness indicators are separated, the National Reading Panel found that the most effective way of teaching phonemic awareness is in conjunction with phonics.

These indicators will be assessed by the classroom teacher.

Indicators

Oral Language Acquisition and Vocabulary Development

K-3.1 Use pictures and context to construct the meaning of unfamiliar words in **texts** read aloud.

K-3.2 Create a different form of a familiar word by adding an *-s* or *-ing* ending.

K-3.3 Use vocabulary acquired from a variety of sources (including conversations, **texts** read aloud, and the media).

K-3.4 Recognize **high-frequency words**.

K-3.5 Understand that multiple small words can make **compound words**.

Fluency

K-3.6 Use oral rhymes, poems, and songs to build **fluency**.

K-3.7 Use appropriate **voice** level when speaking.

Phonemic Awareness

K-3.8 Use beginning sounds, ending sounds, and **onsets** and **rimes** to generate words orally.

K-3.9 Create **rhyming words** in response to an oral prompt.

K-3.10 Create words by orally adding, deleting, or changing sounds.

K-3.11 Use blending to generate words orally.

Phonics

K-3.12 Match consonant and short-vowel sounds to the appropriate letters.

K-3.13 Recognize uppercase and lowercase letters and their order in the alphabet.

K-3.14 Identify beginning and ending sounds in words.

K-3.15 Classify words by categories (for example, beginning and ending sounds).

K-3.16 Use blending to begin reading words.

K-3.17 Begin to spell **high-frequency words**.

K-3.18 Use letters and relationships to sounds to write words.

Oral Language Acquisition and Comprehension Development

K-3.19 Use prior knowledge and life experiences to construct meaning from **texts**.

K-3.20 Recognize **environmental print** in such forms as signs in the school, road signs, restaurant and store signs, and logos.

Concepts about Print

K-3.21 Know the parts of a book (including the front and back covers, the title, and the author's name).

K-3.22 Carry out left-to-right and top-to-bottom directionality on the printed page.

K-3.23 Distinguish between letters and words.

KINDERGARTEN: WRITING

Developing Written Communications

Standard K-4 The student will begin to create written work that has a clear focus, sufficient detail, coherent organization, effective use of **voice**, and correct use of the conventions of written **Standard American English**.

Indicators

Oral Language Expression

K-4.1 Generate ideas for writing by using techniques (for example, participating in conversations and looking at pictures).

K-4.2 Generate complete sentences orally.

Early Writing Development

- K-4.3 Use pictures, letters, or words to tell a story from beginning to end.
- K-4.4 Use letters and relationships to sounds to write words.
- K-4.5 Begin to spell **high-frequency words**.
- K-4.6 Understand that a person's name is a proper noun.
- K-4.7 **Edit** writing with teacher support.
- K-4.8 **Revise** writing with teacher support.
- K-4.9 Use uppercase and lowercase letters.
- K-4.10 Use appropriate letter formation when printing.
- K-4.11 Identify sounds orally by segmenting words.

KINDERGARTEN: WRITING

Producing Written Communications in a Variety of Forms

Standard K-5 The student will begin to write for a variety of purposes and **audiences**.

Indicators

- K-5.1 Use symbols (drawings, letters, and words) to create written communications (for example, notes, messages, and lists) to inform a specific **audience**.
- K-5.2 Use symbols (drawings, letters, and words) to create narratives (for example, stories and journal entries) about people, places, or things.
- K-5.3 Use symbols (drawings, letters, and words) to create descriptions of personal experiences, people, places, or things.
- K-5.4 Use symbols (drawings, letters, and words) to create written pieces (for example, simple rhymes) to entertain others.

KINDERGARTEN: RESEARCHING

Applying the Skills of Inquiry and Oral Communication

Standard K-6 The student will begin to access and use information from a variety of sources.

Indicators

K-6.1 Generate *how* and *why* questions about a topic of interest.

K-6.2 Recognize that information can be found in print sources (for example, books, pictures, simple graphs, and charts) and **nonprint sources** (for example, videos, television, films, radio, and the Internet).

K-6.3 Classify information by constructing categories (for example, living and nonliving things).

K-6.4 Use complete sentences when orally communicating with others.

K-6.5 Follow one- and two-step oral directions.

GRADE 1

GRADE 1: READING

Understanding and Using Literary Texts

Standard 1-1 The student will read and comprehend a variety of literary **texts** in print and nonprint formats.

Students in grade one read four major types of literary **texts**: **fiction**, **literary nonfiction**, **poetry**, and **drama**. In the category of **fiction**, they read the following specific types of **texts**: picture books, fables, and fantasy. In the category of **literary nonfiction**, they read

autobiographical and biographical sketches. In the category of **poetry**, they read nursery and counting rhymes, songs, narrative poems, lyrical poems, humorous poems, and free verse.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

1-1.1 Summarize the **main idea** and supporting evidence in literary text during classroom discussion.

1-1.2 Use pictures and words to make and **revise** predictions about a given literary **text**.

1-1.3 Analyze a narrative **text** to determine the narrator.

1-1.4 Find an example of sound devices (including **onomatopoeia** and **alliteration**) in **texts** read aloud.

1-1.5 Generate a retelling that identifies the **characters** and the **setting** in a story and relates the important events in sequential order.

1-1.6 Explain how elements of **author's craft** (for example, **word choice**) affect the meaning of a given literary **text**.

1-1.7 Use relevant details in summarizing stories read aloud.

1-1.8 Create responses to literary **texts** through a variety of methods (for example, writing, **creative dramatics**, and the visual and performing arts).

1-1.9 Classify a **text** as either **fiction** or **nonfiction**.

1-1.10 Explain cause-and-effect relationships presented in literary **text**.

1-1.11 Read independently for extended periods of time for pleasure.

Grade 1: READING

Understanding and Using Informational Texts

Standard 1-2 The student will read and comprehend a variety of informational **texts** in print and nonprint formats.

Students in grade one read **informational (expository/persuasive/argumentative) texts** of the following types: informational trade books, textbooks, and magazine articles. They also read directions, graphs, and recipes embedded in informational **texts**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

1-2.1 Summarize the **central idea** and supporting evidence in an informational **text** during classroom discussion.

1-2.2 Analyze informational **texts** to draw conclusions and make **inferences** during classroom discussions.

1-2.3 Distinguish between facts and opinions.

1-2.4 Create responses to informational **texts** through a variety of methods (for example, drawings, written works, and oral presentations).

1-2.5 Understand that headings, subheadings, and **print styles** (for example, italics, bold, larger type) provide information to the reader.

1-2.6 Use **graphic features** (for example, illustrations, graphs, charts, and maps) as sources of information.

1-2.7 Use **functional text features** (including tables of contents).

1-2.8 Explain cause-and-effect relationships presented in informational **texts**.

1-2.9 Read independently for extended periods of time to gain information.

Grade 1: READING

Learning to Read

Standard 1-3 The student will learn to read by applying appropriate skills and strategies.

Indicators for this standard in kindergarten through grade two focus on beginning reading skills and strategies and support the five components—comprehension, **fluency**, phonemic awareness, phonics, and vocabulary—delineated by the National Reading Panel as central to a child’s learning to read. These indicators will be assessed by the classroom teacher. Although the phonics and phonemic awareness indicators are separated, the National Reading Panel found that the most effective way of teaching phonemic awareness is in conjunction with phonics.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

Oral Language Acquisition and Vocabulary Development

- 1-3.1 Use pictures, context, and letter-sound relationships to read unfamiliar words.
- 1-3.2 Identify **base words** and their **inflectional endings** (including *-s*, *-es*, *-ing*, *-ed*, *-er*, and *-est*).
- 1-3.3 Use vocabulary acquired from a variety of sources (including conversations, **texts** read aloud, and the media).
- 1-3.4 Recognize **high-frequency words** encountered in **texts**.
- 1-3.5 Understand the relationship between two or more words (including **synonyms**, **antonyms**, and **homonyms**).
- 1-3.6 Use structural analysis to determine the meaning of **compound words** and contractions.

Fluency

1-3.7 Use appropriate rate, word automaticity, phrasing, **intonation**, and expression to read fluently.

1-3.8 Use appropriate **voice** level and **intonation** when speaking and reading aloud.

Phonemic Awareness

1-3.9 Create **rhyming words** in response to an oral prompt.

1-3.10 Create words by orally adding, deleting, or changing sounds.

1-3.11 Use blending to generate words orally.

Phonics

1-3.12 Use **onsets** and **rimes** to decode and generate words.

1-3.13 Use knowledge of letter names and their corresponding sounds to spell words independently.

1-3.14 Organize a series of words by alphabetizing to the first letter.

1-3.15 Identify beginning, middle, and ending sounds in single-syllable words.

1-3.16 Classify words by categories (for example, beginning and ending sounds).

1-3.17 Use blending to read.

1-3.18 Spell three- and four-letter short-vowel words and **high-frequency words** correctly.

1-3.19 Use known words to spell new words.

Oral Language Acquisition and Comprehension Development

1-3.20 Use pictures and words to construct meaning.

1-3.21 Recognize **environmental print** (for example, signs in the school, road signs, restaurant and store signs, and logos).

Concepts about Print

1-3.22 Know the parts of a book (including the front and back covers, the title, and the names of the author and the illustrator).

1-3.23 Carry out left-to-right, top-to-bottom, and return-sweep directionality on the printed page.

1-3.24 Distinguish among letters, words, and sentences.

Grade 1: WRITING

Developing Written Communications

Standard 1-4 The student will create written work that has a clear focus, sufficient detail, coherent organization, effective use of **voice**, and correct use of the conventions of written **Standard American English**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

1-4.1 Generate ideas for writing by using techniques (for example, participating in conversations and looking at pictures).

1-4.2 Use simple sentences in writing.

1-4.3 Use pictures, letters, or words to tell a story from beginning to end.

1-4.4 Use grammatical conventions of written **Standard American English**, including

- personal pronouns
- common and proper nouns

- singular and plural nouns
- conjunctions (*and, but, or*).

1-4.5 **Revise** for **word choice** and simple sentence structure in written works.

1-4.6 **Edit** for the correct use of written **Standard American English**, including

- capitalization
 - first word of a sentence
 - names of people
 - pronoun *I*
- punctuation
 - periods
 - exclamation points
 - question marks
- spelling

- **high-frequency words** and
- three- and four-letter short-vowel words.

1-4.7 Use appropriate spacing between words.

1-4.8 Use appropriate word formation by writing from left to right the letters that spell a word.

1-4.9 Identify sounds orally and in writing by segmenting words.

Grade 1: WRITING

Producing Written Communications in a Variety of Forms

Standard 1-5 The student will write for a variety of purposes and **audiences**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

- 1-5.1 Create written communications (for example, thank you notes) for a specific **audience**.
- 1-5.2 Create narratives (for example, stories and journal entries) about people, places, actions, or things.
- 1-5.3 Create written pieces that describe personal experiences, people, places, or things and that use words that appeal to the senses.
- 1-5.4 Create written pieces (for example, simple rhymes and poems) to entertain others.

Grade 1: RESEARCHING

Applying the Skills of Inquiry and Oral Communication

Standard 1-6 The student will access and use information from a variety of sources.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

- 1-6.1 Generate *how* and *why* questions about a topic of interest.
- 1-6.2 Use print sources of information (for example, books, newspapers, pictures, charts, and graphs) and **nonprint sources** to access information.
- 1-6.3 Create categories (for example, plants and animals) to classify information.
- 1-6.4 Use the Internet with the aid of a teacher.
- 1-6.5 Use complete sentences when orally presenting information.
- 1-6.6 Follow one- and two-step oral directions.

GRADE 2

Grade 2: READING

Understanding and Using Literary Texts

Standard 2-1 The student will read and comprehend a variety of literary **texts** in print and nonprint formats.

Students in grade two read four major types of literary **texts**: **fiction**, **literary nonfiction**, **poetry**, and **drama**. In the category of **fiction**, they read the following specific types of **texts**: historical fiction, contemporary realistic fiction, picture books, **folktales**, fables, tall tales, and fantasy. In the category of **literary nonfiction**, they read autobiographical and biographical sketches. In the category of **poetry**, they read narrative poems, lyrical poems, humorous poems, and free verse.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

- 2-1.1 Analyze the details that support the expression of the **main idea** in a given literary **text**.
- 2-1.2 Analyze a given literary **text** to make, **revise**, and confirm predictions.
- 2-1.3 Analyze the **text** to determine the narrator.
- 2-1.4 Find examples of devices of **figurative language** (including **simile**) and sound devices (including **onomatopoeia** and **alliteration**).
- 2-1.5 Analyze a narrative **text** to identify **characters**, **setting**, and plot.
- 2-1.6 Explain the effect of the **author's craft** (for example, **word choice** and the use of **repetition**) on the meaning of a given literary **text**.
- 2-1.7 Create responses to literary **texts** through a variety of methods (for example, writing, **creative dramatics**, and the visual and performing arts).

2-1.8 Classify works of **fiction** (including **fables**, tall tales, and **folktales**) and works of **nonfiction** (including **biographies**) by characteristics.

2-1.9 Explain cause-and-effect relationships in literary **texts**.

2-1.10 Read independently for extended periods of time for pleasure.

Grade 2: READING

Understanding and Using Informational Texts

Standard 2-2 The student will read and comprehend a variety of informational **texts** in print and nonprint formats.

Students in grade two read **informational (expository/persuasive/argumentative) texts** of the following types: informational trade books, textbooks, magazine articles. They also read directions, maps, time lines, graphs, tables, charts, schedules, recipes, and photos embedded in informational **texts**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

2-2.1 Analyze the **central idea** and supporting evidence in an informational **text** during classroom discussion.

2-2.2 Analyze informational **texts** to draw conclusions and make **inferences** during classroom discussions.

2-2.3 Distinguish between facts and opinions in informational **texts**.

2-2.4 Create responses to informational **texts** through a variety of methods (for example, drawings, written works, and oral presentations).

2-2.5 Use headings, subheadings, and **print styles** (for example, italics, bold, larger type) to gain information.

2-2.6 Use **graphic features** (for example, illustrations, graphs, charts, maps, and diagrams) as sources of information.

2-2.7 Use **functional text features** (including tables of contents and glossaries) as sources of information.

2-2.8 Explain cause-and-effect relationships in informational **texts**.

2-2.9 Read independently for extended periods of time to gain information.

Grade 2: READING

Building Vocabulary

Standard 2-3 The student will use word analysis and vocabulary strategies to read fluently.

Indicators for this standard in kindergarten through grade two focus on beginning reading skills and strategies and support the five components—comprehension, **fluency**, phonemic awareness, phonics, and vocabulary—delineated by the National Reading Panel as central to a child’s learning to read. These indicators will be assessed by the classroom teacher.

At second grade, the five components are supported. However, the comprehension component is specifically addressed under standards 1 and 2. Phonemic awareness, although not explicitly stated, should be addressed with individual students as needed.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

Vocabulary Development

- 2-3.1 Use **context clues** to determine the meaning of unfamiliar words.
- 2-3.2 Construct meaning through a knowledge of **base words**, prefixes (including *un-*, *re-*, *pre-*, *bi-*, *mis-*, *dis-*) and suffixes (including *-er*, *-est*, *-ful*) in context.
- 2-3.3 Recognize **high-frequency words** in context.
- 2-3.4 Identify **idioms** in context.
- 2-3.5 Recognize **synonyms**, **antonyms**, and **homonyms** in context.
- 2-3.6 Use knowledge of individual words to determine the meaning of **compound words**.

Fluency

- 2-3.7 Use appropriate rate, word automaticity, phrasing, and expression to read fluently.

Phonics

- 2-3.8 Use knowledge of spelling patterns and **high-frequency words** to read fluently.
- 2-3.9 Analyze spelling patterns in context and parts of multisyllabic words (for example, **onsets** and **rimes**).
- 2-3.10 Spell frequently used irregular words correctly (for example, *was*, *were*, *says*, *said*, *who*, *what*, *why*).
- 2-3.11 Spell basic short-vowel, long-vowel, *r-* controlled, and **consonant-blend** patterns correctly.
- 2-3.12 Spell **high-frequency words**.
- 2-3.13 Apply knowledge of alphabetizing a series of words to the second and third letters.

Grade 2: WRITING

Developing Written Communications

Standard 2-4 The student will create written work that has a clear focus, sufficient detail, coherent organization, effective use of **voice**, and correct use of the conventions of written

Standard American English.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

2-4.1 Generate ideas for writing using prewriting techniques (for example, creating lists, having discussions, and examining **literary models**).

2-4.2 Use complete sentences (including simple sentences with compound subjects and predicates) in writing.

2-4.3 Create a paragraph that follows a logical sequence (including a beginning, middle, and end) and uses transitional words.

2-4.4 Use grammatical conventions of **Standard American English**, including

- personal pronouns
- common and proper nouns
- singular and plural nouns
- proper adjectives
- conjunctions (*and, but, or*).

2-4.5 **Revise** the organization and development of content and the quality of **voice** in written works.

2-4.6 **Edit** for the correct use of written **Standard American English**, including

- capitalization

- proper nouns
- initials of a person’s name
- courtesy titles (Mr., Ms.)
- days of the week
- months of the year
- titles of books, poems, and songs
- punctuation
 - apostrophes in contractions
 - commas in a series
 - commas in dates
 - quotation marks to show someone is speaking
- spelling
 - words that do not fit regular spelling patterns (for example, *was*, *were*, *says*, *said*)
 - **high-frequency words**
 - basic short-vowel, long-vowel, *r*- controlled, and **consonant-blend** patterns.

2-4.7 Use appropriate spacing between words when writing on a page.

2-4.8 Use correct letter formation when using manuscript or cursive writing.

Grade 2: WRITING

Producing Written Communications in a Variety of Forms

Standard 2-5 The student will write for a variety of purposes and **audiences**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

2-5.1 Create written communications (for example, directions and instructions) to inform a specific **audience**.

2-5.2 Create narratives (for example, stories and journal entries) that follow a logical sequence of events.

2-5.3 Create written pieces that describe objects, people, places, or events and that use words that appeal to the senses.

2-5.4 Create written pieces (for example, rhymes, poems, and songs) to entertain others.

Grade 2: RESEARCHING

Applying the Skills of Inquiry and Oral Communication

Standard 2-6 The student will access and use information from a variety of sources.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

2-6.1 Generate *how* and *why* questions about a topic of interest.

2-6.2 Use a variety of print sources (for example, books, pictures, charts, graphs, diagrams, and picture dictionaries) and **nonprint sources** to access information.

2-6.3 Create categories (for example, solids and liquids) to classify information.

2-6.4 Use the Internet with the aid of a teacher.

2-6.5 Use **Standard American English** when appropriate in conversations and discussions.

2-6.6 Follow multistep directions.

GRADE 3

Grade 3: READING

Understanding and Using Literary Texts

Standard 3-1 The student will read and comprehend a variety of literary **texts** in print and nonprint formats.

Students in grade three read four major types of literary **texts**: **fiction**, **literary nonfiction**, **poetry**, and **drama**. In the category of **fiction**, they read the following specific types of **texts**: chapter books, adventure stories, historical fiction, contemporary realistic fiction, picture books, **folktales**, **legends**, fables, tall tales, **myths**, and fantasy. In the category of **literary nonfiction**, they read personal essays, autobiographical and biographical sketches, and speeches. In the category of **poetry**, they read narrative poems, lyrical poems, humorous poems, and free verse.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

3-1.1 Analyze the details that support the expression of the **main idea** in a given literary **text**.

3-1.2 Analyze a given literary **text** to make, **revise**, and confirm predictions and draw conclusions.

3-1.3 Analyze the **text** to determine **first-person point of view**.

- 3-1.4 Distinguish among devices of **figurative language** (including **simile**, **metaphor**, **personification**, and **hyperbole**) and sound devices (including **onomatopoeia** and **alliteration**).
- 3-1.5 Analyze the relationship among **characters**, **setting**, and plot in a given literary **text**.
- 3-1.6 Analyze the effect of the **author's craft** (for example, **word choice** and sentence structure) on the meaning of a given literary **text**.
- 3-1.7 Create responses to literary **texts** through a variety of methods (for example, writing, **creative dramatics**, and the visual and performing arts).
- 3-1.8 Classify works of **fiction** (including **fables**, tall tales, and **folktales**) and works of **nonfiction** (including **biographies**) by characteristics.
- 3-1.9 Recognize the characteristics of poetry (including **stanza**, **rhyme scheme**, and **repetition**).
- 3-1.10 Analyze cause-and-effect relationships in literary **texts**.
- 3-1.11 Read independently for extended periods of time for pleasure.

Grade 3: READING

Understanding and Using Informational Texts

Standard 3-2 The student will read and comprehend a variety of informational **texts** in print and nonprint formats.

Students in grade three read **informational (expository/persuasive/argumentative) texts** of the following types: essays, historical documents, informational trade books, textbooks, news and feature articles, magazine articles, advertisements, encyclopedia entries, book reviews, journals, and speeches. They also read directions, maps, time lines, graphs, tables, charts, schedules, recipes, and photos embedded in informational **texts**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

- 3-2.1 Summarize evidence that supports the **central idea** of a given informational **text**.
- 3-2.2 Analyze informational **texts** to draw conclusions and make **inferences**.
- 3-2.3 Distinguish between facts and opinions in informational **texts**.
- 3-2.4 Create responses to informational **texts** through a variety of methods (for example, drawings, written works, and oral presentations).
- 3-2.5 Use headings, subheadings, **print styles**, captions, and chapter headings to gain information.
- 3-2.6 Use **graphic features** (including illustrations, graphs, charts, maps, diagrams, and **graphic organizers**) as sources of information.
- 3-2.7 Use **functional text features** (including tables of contents, glossaries, and indexes) as sources of information.
- 3-2.8 Analyze informational **texts** to identify cause-and-effect relationships.
- 3-2.9 Read independently for extended periods of time to gain information.

Grade 3: READING

Building Vocabulary

Standard 3-3 The student will use word analysis and vocabulary strategies to read fluently.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

- 3-3.1 Generate the meaning of unfamiliar and multiple-meaning words by using **context clues**.
- 3-3.2 Use **base words** and **affixes** to determine the meanings of words.

3-3.3 Interpret the meaning of **idioms** encountered in **texts**.

3-3.4 Read **high-frequency words** in **texts**.

3-3.5 Use **context clues** to determine the relationship between two or more words (including **synonyms**, **antonyms**, and **homonyms**).

3-3.6 Spell **high-frequency words**.

3-3.7 Spell correctly

- words that have blends
- contractions
- **compound words**
- orthographic patterns (for example, *qu*, consonant doubling, changing the ending of a word from -y to -ies when forming the plural), and
- common **homonyms**.

Grade 3: WRITING

Developing Written Communications

Standard 3-4 The student will create written work that has a clear focus, sufficient detail, coherent organization, effective use of **voice**, and correct use of the conventions of written

Standard American English.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

3-4.1 Generate and organize ideas for writing using prewriting techniques (for example, creating lists, having discussions, and examining **literary models**).

3-4.2 Use complete sentences (including compound sentences) in writing.

3-4.3 Create paragraphs that include a topic sentence with supporting details and logical transitions.

3-4.4 Use grammatical conventions of written **Standard American English**, including

- comparative and superlative adjectives
- prepositions and prepositional phrases
- conjunctions (*because, since, yet, until*)
- nominative and objective case pronouns.

3-4.5 **Revise** the organization and development of content and the quality of **voice** in written works.

3-4.6 **Edit** for the correct use of written **Standard American English**, including

- capitalization
 - geographic names
 - holidays
 - historical and special events
- punctuation
 - commas in addresses
 - commas in the greeting and closing of letters
 - commas in compound sentences
 - apostrophes in contractions and possessive nouns
 - periods in abbreviations
 - indentation of paragraphs
- spelling
 - misused **homonyms**

- **high-frequency** multisyllabic words
- words that have blends
- contractions
- **compound words**
- orthographic patterns (for example, *qu*, consonant doubling, changing the ending of a word from -y to -ies when forming the plural).

3-4.7 Use correct letter formation when using manuscript and cursive writing.

Grade 3: WRITING

Producing Written Communications in a Variety of Form

Standard 3-5 The student will write for a variety of purposes and **audiences**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

3-5.1 Create written communications (for example, friendly letters that include a greeting, body, closing, and signature and invitations that include the time, date, and place of the event).

3-5.2 Create narratives that include **characters** and **setting** and follow a logical sequence.

3-5.3 Create written descriptions about people, places, or events.

3-5.4 Create written pieces (for example, riddles and jokes) to entertain others.

Grade 3: RESEARCHING

Applying the Skills of Inquiry and Oral Communication

Standard 3-6 The student will access and use information from a variety of sources.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

3-6.1 Generate a topic for inquiry.

3-6.2 Use print sources (for example, books, magazines, charts, graphs, diagrams, dictionaries, encyclopedias, atlases, and thesauri) and **nonprint sources** (for example, pictures, photographs, video, and television) to access information.

3-6.3 Organize information by classifying or sequencing.

3-6.4 Paraphrase research information accurately and meaningfully.

3-6.5 Use the Internet as a source of information.

3-6.6 Use vocabulary (including **Standard American English**) that is appropriate for the particular **audience** or purpose.

3-6.7 Use appropriate **visual aids** (for example, pictures, objects, and charts) to support oral presentations.

GRADE 4

Grade 4: READING

Understanding and Using Literary Texts

Standard 4-1 The student will read and comprehend a variety of literary **texts** in print and nonprint formats.

Students in grade four read four major types of literary **texts**: **fiction**, **literary nonfiction**, **poetry**, and **drama**. In the category of **fiction**, they read the following specific types of **texts**: chapter books, adventure stories, historical fiction, contemporary realistic fiction, picture books,

folktales, **legends**, fables, tall tales, and **myths**. In the category of **literary nonfiction**, they read personal essays, autobiographical and biographical sketches, and speeches. In the category of **poetry**, they read narrative poems, lyrical poems, humorous poems, and free verse.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

- 4-1.1 Analyze the details that support the expression of the **main idea** in a given literary **text**.
- 4-1.2 Analyze literary **texts** to draw conclusions and make **inferences**.
- 4-1.3 Distinguish between **first-person and third-person points of view**.
- 4-1.4 Distinguish among devices of **figurative language** (including **simile**, **metaphor**, **personification**, and **hyperbole**) and sound devices (including **onomatopoeia** and **alliteration**).
- 4-1.5 Analyze the impact of **characterization** and **conflict** on plot.
- 4-1.6 Interpret the effect of the **author's craft** (for example, **word choice**, sentence structure, the use of **figurative language**, and the use of **dialogue**) on the meaning of literary **texts**.
- 4-1.7 Create responses to literary **texts** through a variety of methods (for example, writing, **creative dramatics**, and the visual and performing arts).
- 4-1.8 Classify works of **fiction** (including **fables**, tall tales, and **folktales**) and works of **nonfiction** (including **biographies** and personal essays) by characteristics.
- 4-1.9 Recognize the characteristics of poetry (including **stanza**, **rhyme scheme**, and **repetition**).
- 4-1.10 Analyze cause-and-effect relationships in literary **texts**.
- 4-1.11 Read independently for extended periods of time for pleasure.

Grade 4: READING

Understanding and Using Informational Texts

Standard 4-2 The student will read and comprehend a variety of informational **texts** in print and nonprint formats.

Students in grade four read **informational (expository/persuasive/argumentative) texts** of the following types: essays, historical documents, informational trade books, textbooks, news and feature articles, magazine articles, advertisements, encyclopedia entries, reviews (for example, book, movie, product), journals, and speeches. They also read directions, maps, time lines, graphs, tables, charts, schedules, recipes, and photos embedded in informational **texts**. In addition, they examine commercials, documentaries, and other forms of **nonprint informational texts**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

- 4-2.1 Summarize evidence that supports the **central idea** of a given informational **text**.
- 4-2.2 Analyze informational **texts** to draw conclusions and make **inferences**.
- 4-2.3 Analyze informational **texts** to locate and identify facts and opinions.
- 4-2.4 Create responses to informational **texts** through a variety of methods (for example, drawings, written works, and oral presentations).
- 4-2.5 Use headings, subheadings, **print styles, white space**, captions, and chapter headings to gain information.
- 4-2.6 Use **graphic features** (including illustrations, graphs, charts, maps, diagrams, and **graphic organizers**) as sources of information.
- 4-2.7 Use **functional text features** (including tables of contents, glossaries, indexes, and appendixes) as sources of information.

4-2.8 Analyze informational **texts** to identify cause-and-effect relationships.

4-2.9 Read independently for extended periods of time to gain information.

Grade 4: READING

Building Vocabulary

Standard 4-3 The student will use word analysis and vocabulary strategies to read fluently.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

4-3.1 Generate the meaning of unfamiliar and multiple-meaning words by using **context clues** (for example, those that provide an example or a definition).

4-3.2 Use **base words** and **affixes** to determine the meanings of words.

4-3.3 Interpret the meaning of **idioms** encountered in **texts**.

4-3.4 Spell correctly

- words with prefixes and suffixes
- multisyllabic words.

Grade 4: WRITING

Developing Written Communications

Standard 4-4 The student will create written work that has a clear focus, sufficient detail, coherent organization, effective use of **voice**, and correct use of the conventions of written

Standard American English.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

4-4.1 Generate and organize ideas for writing using prewriting techniques (for example, creating lists, having discussions, and examining **literary models**).

4-4.2 Use complete sentences in a variety of types (including simple and compound sentences) in writing.

4-4.3 Create multiple-paragraph compositions that include a **central idea** with supporting details and use appropriate transitions between paragraphs.

4-4.4 Use grammatical conventions of written **Standard American English**, including

- subject-verb agreement
- past, present, and future verb tenses
- conjunctions (*although, while, neither, nor*)
- adverbs of time, place, manner, and degree
- pronoun-antecedent agreement.

4-4.5 Use revision strategies to improve the organization and development of content and the quality of **voice** in written works.

4-4.6 **Edit** for the correct use of written **Standard American English**, including

- capitalization
 - titles of works of art
 - titles of magazines and newspapers
 - brand names
 - proper adjectives
 - names of organizations
- punctuation
 - quotation marks to indicate direct quotations or **dialogue**

- quotation marks to indicate titles of works (for example, articles, reports, chapters, and other short pieces) published within separately published works
- between main clauses
- underlining or italics to indicate titles of separately published works (for example, books and magazines)
 - spelling
- words with suffixes and prefixes
- multisyllabic words.

Grade 4: WRITING

Producing Written Communications in a Variety of Forms

Standard 4-5 The student will write for a variety of purposes and **audiences**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

- 4-5.1 Create informational pieces (for example, postcards, flyers, letters, and e-mails) that use language appropriate for the specific audience.
- 4-5.2 Create narratives containing details and a sequence of events that develop a plot.
- 4-5.3 Create written descriptions using language that appeals to the readers' senses.
- 4-5.4 Create written pieces (for example, skits and plays) to entertain others.

Grade 4: RESEARCHING

Applying the Skills of Inquiry and Oral Communication

Standard 4-6 The student will access and use information from a variety of sources.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

4-6.1 Clarify and refine a research topic.

4-6.2 Use print sources (for example, books, magazines, charts, graphs, diagrams, dictionaries, encyclopedias, atlases, thesauri, newspapers, and almanacs) and **nonprint sources** to access information.

4-6.3 Organize information by classifying or sequencing.

4-6.4 Paraphrase research information accurately and meaningfully.

4-6.5 Create a list of sources that contains information (including the author and title of a publication) necessary to properly credit and document the work of others.

4-6.6 Use the Internet as a source of information.

4-6.7 Use vocabulary (including **Standard American English**) that is appropriate for the particular **audience** or purpose.

4-6.8 Select appropriate graphics, in print or electronic form, to support written works and oral and visual presentations.

GRADE 5

Grade 5: READING

Understanding and Using Literary Texts

Standard 5-1 The student will read and comprehend a variety of literary texts in print and nonprint formats.

Students in grade five read four major types of literary texts: fiction, literary nonfiction, poetry, and drama. In the category of fiction, they read the following specific types of texts: chapter books, adventure stories, historical fiction, contemporary realistic fiction, science fiction, picture books, folktales, legends, tall tales, and myths. In the category of literary nonfiction, they read personal essays, autobiographical and biographical sketches, and speeches. In the category of poetry, they read narrative poems, lyrical poems, humorous poems, and free verse.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

- 5-1.1 Analyze literary texts to draw conclusions and make inferences.
- 5-1.2 Differentiate among the first-person, limited-omniscient (third person), and omniscient (third person) points of view.
- 5-1.3 Interpret devices of figurative language (including simile, metaphor, personification, and hyperbole) and sound devices (including onomatopoeia and alliteration).
- 5-1.4 Analyze literary texts to distinguish between direct and indirect characterization.
- 5-1.5 Interpret the effect of the author's craft (for example, tone, figurative language, dialogue, and imagery) on the meaning of literary texts.
- 5-1.6 Analyze the details that support the expression of the main idea in a given literary text.
- 5-1.7 Create responses to literary texts through a variety of methods (for example, writing, creative dramatics, and the visual and performing arts).
- 5-1.8 Analyze works of fiction (including legends and myths) and works of nonfiction (including speeches and personal essays) by characteristics.
- 5-1.9 Understand the characteristics of poetry (including stanza, rhyme scheme, repetition, and refrain).

5-1.10 Predict events in literary texts on the basis of cause-and-effect relationships.

5-1.11 Read independently for extended periods of time for pleasure.

Grade 5: READING

Understanding and Using Informational Texts

Standard 5-2 The student will read and comprehend a variety of informational texts in print and nonprint formats.

Students in grade five read informational (expository/persuasive/argumentative) texts of the following types: essays, historical documents, informational trade books, textbooks, news and feature articles, magazine articles, advertisements, encyclopedia entries, reviews (for example, book, movie, product), journals, and speeches. They also read directions, maps, time lines, graphs, tables, charts, schedules, recipes, and photos embedded in informational texts. In addition, they examine commercials, documentaries, and other forms of nonprint informational texts.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

5-2.1 Summarize the central idea and supporting evidence of a given informational text.

5-2.2 Analyze informational texts to draw conclusions and make inferences.

5-2.3 Analyze a given text to detect author bias (for example, unsupported opinions).

5-2.4 Create responses to informational texts through a variety of methods (for example, drawings, written works, and oral presentations).

5-2.5 Use titles, print styles, chapter headings, captions, subheadings, and white space to gain information.

5-2.6 Use graphic features (including illustrations, graphs, charts, maps, diagrams, and graphic organizers) as sources of information.

5-2.7 Use functional text features (including tables of contents, glossaries, indexes, and appendixes).

5-2.8 Predict events in informational texts on the basis of cause-and-effect relationships.

5-2.9 Read independently for extended periods of time to gain information.

Grade 5: READING

Building Vocabulary

Standard 5-3 The student will use word analysis and vocabulary strategies to read fluently.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

5-3.1 Use context clues (for example, those that provide an example, a definition, or a restatement) to generate the meanings of unfamiliar and multiple-meaning words.

5-3.2 Use Greek and Latin roots and affixes to determine the meanings of words within texts.

5-3.3 Interpret the meaning of idioms and euphemisms encountered in texts.

5-3.4 Spell correctly

- multisyllabic constructions
- double consonant patterns
- irregular vowel patterns in multisyllabic words.

Grade 5: WRITING

Developing Written Communications

Standard 5-4 The student will create written work that has a clear focus, sufficient detail, coherent organization, effective use of voice, and correct use of the conventions of written Standard American English.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

5-4.1 Generate and organize ideas for writing using prewriting techniques (for example, creating lists, having discussions, and examining literary models).

5-4.2 Use complete sentences in a variety of types (including simple, compound, and complex) in writing.

5-4.3 Create multiple-paragraph compositions that include a central idea with supporting details and use appropriate transitions between paragraphs.

5-4.4 Use grammatical conventions of written Standard American English, including

- irregular comparative and superlative adjectives
- irregular adverbs
- interjections
- past participles of commonly misused verbs
- subject-verb and pronoun-antecedent agreement with collective nouns.

5-4.5 Use revision strategies to improve the organization and development of content and the quality of voice in written works.

5-4.6 Edit for the correct use of written Standard American English, including

- capitalization
 - ethnic groups
 - national groups

- established religions and languages
- punctuation
 - colons
 - hyphens
- spelling
 - commonly confused words
 - multisyllabic constructions
 - double consonant patterns
 - irregular vowel patterns in multisyllabic words.

Grade 5: WRITING

Producing Written Communications in a Variety of Forms

Standard 5-5 The student will write for a variety of purposes and audiences.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

5-5.1 Create informational pieces (for example, book reviews and newsletter articles) that use language appropriate for the specific audience.

5-5.2 Create narratives that have a fully developed plot and a consistent point of view.

5-5.3 Create written descriptions using precise language and vivid details.

5-5.4 Create written pieces (for example, picture books, comic books, and graphic novels) to entertain a specific audience.

Grade 5: RESEARCHING

Applying the Skills of Inquiry and Oral Communication

Standard 5-6 The student will access and use information from a variety of sources.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

5-6.1 Clarify and refine a research topic.

5-6.2 Use print sources (for example, books, magazines, charts, graphs, diagrams, dictionaries, encyclopedias, atlases, thesauri, newspapers, and almanacs) and nonprint sources to access information.

5-6.3 Select information appropriate for the research topic.

5-6.4 Paraphrase research information accurately and meaningfully.

5-6.5 Create a list of sources that contains information (including author, title, and full publication details) necessary to properly credit and document the work of others.

5-6.6 Use the Internet as a source of information.

5-6.7 Use vocabulary (including Standard American English) that is appropriate for the particular audience or purpose.

5-6.8 Use appropriate organizational strategies to prepare written works and oral and visual presentations.

5-6.9 Select appropriate graphics, in print or electronic form, to support written works and oral and visual presentations.

GRADE 6

Grade 6: READING

Understanding and Using Literary Texts

Standard 6-1 The student will read and comprehend a variety of literary texts in print and nonprint formats.

Students in grade six read four major types of literary texts: fiction, literary nonfiction, poetry, and drama. In the category of fiction, they read the following specific types of texts: chapter books, adventure stories, historical fiction, contemporary realistic fiction, science fiction, folktales, tall tales, and myths. In the category of literary nonfiction, they read personal essays, classical essays, memoirs, autobiographical and biographical sketches, character sketches, and speeches. In the category of poetry, they read narrative poems, lyrical poems, humorous poems, and free verse.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

6-1.1 Analyze literary texts to draw conclusions and make inferences.

6-1.2 Differentiate among the first-person, limited-omniscient (third person), and omniscient (third person) points of view.

6-1.3 Interpret devices of figurative language (including simile, metaphor, personification, and hyperbole) and sound devices (including onomatopoeia and alliteration).

6-1.4 Analyze an author's development of characters, setting, and conflict in a given literary text.

6-1.5 Interpret the effect of the author's craft (including tone and the use of flashback and foreshadowing) on the meaning of literary texts.

6-1.6 Compare/contrast main ideas within and across literary texts.

6-1.7 Create responses to literary texts through a variety of methods (for example, written works, oral and auditory presentations, discussions, media productions, and the visual and performing arts).

6-1.8 Understand the characteristics of poetry (including stanza, rhyme scheme, repetition, and refrain) and drama (including stage directions and the use of monologues).

6-1.9 Analyze works of fiction (including legends and myths) and works of nonfiction (including speeches and personal essays) by characteristics.

6-1.10 Predict events in literary texts on the basis of cause-and-effect relationships.

6-1.11 Read independently for extended periods of time for pleasure.

Grade 6: READING

Understanding and Using Informational Texts

Standard 6-2 The student will read and comprehend a variety of informational texts in print and nonprint formats.

Students in grade six read informational (expository/persuasive/argumentative) texts of the following types: essays, historical documents, informational trade books, textbooks, news and feature articles, magazine articles, advertisements, encyclopedia entries, reviews (for example, book, movie, product), journals, and speeches. They also read directions, maps, time lines, graphs, tables, charts, schedules, recipes, and photos embedded in informational texts. In addition, they examine commercials, documentaries, and other forms of nonprint informational texts.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

- 6-2.1 Analyze central ideas within and across informational texts.
- 6-2.2 Analyze informational texts to draw conclusions and make inferences.
- 6-2.3 Summarize author bias based on the omission of relevant facts and statements of unsupported opinions.
- 6-2.4 Create responses to informational texts through a variety of methods (for example, drawings, written works, oral and auditory presentations, discussions, and media productions).
- 6-2.5 Interpret information that text elements (for example, print styles and chapter headings) provide to the reader.
- 6-2.6 Interpret information from graphic features (for example, illustrations, graphs, charts, maps, diagrams, and graphic organizers).
- 6-2.7 Interpret information from functional text features (for example, tables of contents and glossaries).
- 6-2.8 Predict events in informational texts on the basis of cause-and-effect relationships.
- 6-2.9 Identify propaganda techniques (including testimonials and bandwagon) in informational texts.
- 6-2.10 Read independently for extended periods of time to gain information.

Grade 6: READING

Building Vocabulary

Standard 6-3 The student will use word analysis and vocabulary strategies to read fluently.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

- 6-3.1 Use context clues (for example, those that provide an example, a definition, or restatement) to generate the meanings of unfamiliar and multiple-meaning words.
- 6-3.2 Analyze the meaning of words by using Greek and Latin roots and affixes within texts.
- 6-3.3 Interpret the meaning of idioms and euphemisms encountered in texts.
- 6-3.4 Distinguish between the denotation and the connotation of a given word.
- 6-3.5 Spell new words using Greek and Latin roots and affixes.

Grade 6: WRITING

Developing Written Communications

Standard 6-4 The student will create written work that has a clear focus, sufficient detail, coherent organization, effective use of voice, and correct use of the conventions of written Standard American English.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

- 6-4.1 Organize written works using prewriting techniques, discussions, graphic organizers, models, and outlines.
- 6-4.2 Use complete sentences in a variety of types (including simple, compound, and complex sentences) in writing.
- 6-4.3 Create multiple-paragraph compositions that include a central idea with supporting details and use appropriate transitions between paragraphs.
- 6-4.4 Use grammatical conventions of written Standard American English, including
 - main and subordinate clauses
 - indefinite pronouns

- pronoun-antecedent agreement
- consistent verb tenses.

6-4.5 Revise writing to improve clarity, tone, voice, content, and the development of ideas.

6-4.6 Edit for the correct use of written Standard American English, including

- punctuation
 - semicolon
 - commas to enclose appositives
 - commas to separate introductory clauses and phrases.

6-4.7 Spell correctly using Standard American English.

Grade 6: WRITING

Producing Written Communications in a Variety of Form

Standard 6-5 The student will write for a variety of purposes and audiences.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

6-5.1 Create informational pieces (for example, brochures, pamphlets, and reports) that use language appropriate for the specific audience.

6-5.2 Create narratives that have a fully developed plot and a consistent point of view.

6-5.3 Create written descriptions using precise language and vivid details.

6-5.4 Create persuasive writings (for example, print advertisements and commercial scripts) that develop a central idea with supporting evidence and use language appropriate for the specific audience.

Grade 6: RESEARCHING

Applying the Skills of Inquiry and Oral Communication

Standard 6-6 The student will access and use information from a variety of sources.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

6-6.1 Clarify and refine a research topic.

6-6.2 Use direct quotations, paraphrasing, or summaries to incorporate into written, oral, auditory, or visual works the information gathered from a variety of research sources.

6-6.3 Use a standardized system of documentation (for example, a list of sources with full publication information and the use of in-text citations) to properly credit the work of others.

6-6.4 Use vocabulary (including Standard American English) that is appropriate for the particular audience or purpose.

6-6.5 Use appropriate organizational strategies to prepare written works, oral and auditory presentations, and visual presentations.

6-6.6 Select appropriate graphics, in print or electronic form, to support written works, oral presentations, and visual presentations.

6-6.7 Use a variety of print and electronic reference materials.

6-6.8 Design and carry out research projects by selecting a topic, constructing inquiry questions, accessing resources, and organizing information.

GRADE 7

Grade 7: READING

Understanding and Using Literary Texts

Standard 7-1 The student will read and comprehend a variety of literary texts in print and nonprint formats.

Students in grade seven read four major types of literary texts: fiction, literary nonfiction, poetry, and drama. In the category of fiction, they read the following specific types of texts: chapter books, adventure stories, historical fiction, contemporary realistic fiction, science fiction, folktales, tall tales, and myths. In the category of literary nonfiction, they read personal essays, classical essays, memoirs, autobiographical and biographical sketches, character sketches, and speeches. In the category of poetry, they read narrative poems, lyrical poems, humorous poems, free verse, odes, songs/ballads, and epics.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

- 7-1.1 Analyze literary texts to draw conclusions and make inferences.
- 7-1.2 Explain the effect of point of view on a given narrative text.
- 7-1.3 Interpret devices of figurative language (including extended metaphor and oxymoron).
- 7-1.4 Analyze an author's development of the conflict and the individual characters as either static, dynamic, round, or flat in a given literary text.
- 7-1.5 Interpret the effect of an author's craft (including tone and the use of imagery, flashback, foreshadowing, symbolism, and irony) on the meaning of literary texts.
- 7-1.6 Analyze a given literary text to determine its theme.

7-1.7 Create responses to literary texts through a variety of methods (for example, written works, oral and auditory presentations, discussions, media productions, and the visual and performing arts).

7-1.8 Compare/contrast literary texts from various genres (for example, poetry, drama, novels, and short stories).

7-1.9 Read independently for extended periods of time for pleasure.

Grade 7: READING

Understanding and Using Informational Texts

Standard 7-2 The student will read and comprehend a variety of informational texts in print and nonprint formats.

Students in grade seven read informational (expository/persuasive/argumentative) texts of the following types: essays, historical documents, informational trade books, textbooks, news and feature articles, magazine articles, advertisements, encyclopedia entries, reviews (for example, book, movie, product), journals, and speeches. They also read directions, maps, time lines, graphs, tables, charts, schedules, recipes, and photos embedded in informational texts. In addition, they examine commercials, documentaries, and other forms of nonprint informational texts.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

7-2.1 Analyze central ideas within and across informational texts.

7-2.2 Analyze information within and across texts to draw conclusions and make inferences.

7-2.3 Identify author bias (for example, word choice and the exclusion and inclusion of particular information).

7-2.4 Create responses to informational texts through a variety of methods (for example, drawings, written works, oral and auditory presentations, discussions, and media productions).

7-2.5 Analyze the impact that text elements (for example, print styles and chapter headings) have on the meaning of a given informational text.

7-2.6 Analyze information from graphic features (for example, charts and graphs) in informational texts.

7-2.7 Identify the use of propaganda techniques (including glittering generalities and name calling) in informational texts.

7-2.8 Read independently for extended periods of time to gain information.

Grade 7: READING

Building Vocabulary

Standard 7-3 The student will use word analysis and vocabulary strategies to read fluently.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

7-3.1 Use context clues (for example, those that provide an example, a definition, a restatement, or a comparison/contrast) to generate the meanings of unfamiliar and multiple-meaning words.

7-3.2 Analyze the meaning of words by using Greek and Latin roots and affixes within texts.

7-3.3 Interpret the meaning of idioms and euphemisms encountered in texts.

7-3.4 Interpret the connotations of words to understand the meaning of a given text.

7-3.5 Spell new words using Greek and Latin roots and affixes.

Grade 7: WRITING

Developing Written Communications

Standard 7-4 The student will create written work that has a clear focus, sufficient detail, coherent organization, effective use of voice, and correct use of the conventions of written Standard American English.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

7-4.1 Organize written works using prewriting techniques, discussions, graphic organizers, models, and outlines.

7-4.2 Use complete sentences in a variety of types (including simple, compound, complex, and compound-complex).

7-4.3 Create multiple-paragraph compositions that include a central idea with supporting details and use appropriate transitions between paragraphs.

7-4.4 Use grammatical conventions of written Standard American English, including the reinforcement of conventions previously taught.

7-4.5 Revise writing to improve clarity, tone, voice, content, and the development of ideas.

7-4.6 Edit for the correct use of written Standard American English, including ellipses and parentheses.

7-4.7 Spell correctly using Standard American English.

Grade 7: WRITING

Producing Written Communications in a Variety of Forms

Standard 7-5 The student will write for a variety of purposes and audiences.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

7-5.1 Create informational pieces (for example, book, movie, or product reviews and news reports) that use language appropriate for a specific audience.

7-5.2 Create narratives (for example, personal essays or narrative poems) that communicate the significance of an issue of importance and use language appropriate for the purpose and the audience.

7-5.3 Create descriptions for use in other modes of written works (for example, narrative, expository, or persuasive).

7-5.4 Create persuasive pieces (for example, letters to the editor or essays) that include a stated position with supporting evidence for a specific audience.

Grade 7: RESEARCHING

Applying the Skills of Inquiry and Oral Communication

Standard 7-6 The student will access and use information from a variety of sources.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

7-6.1 Clarify and refine a research topic.

7-6.2 Use direct quotations, paraphrasing, or summaries to incorporate into written, oral, auditory, or visual works the information gathered from a variety of research sources.

7-6.3 Use a standardized system of documentation (including a list of sources with full publication information and the use of in-text citations) to properly credit the work of others.

7-6.4 Use vocabulary (including Standard American English) that is appropriate for the particular audience or purpose.

7-6.5 Use appropriate organizational strategies to prepare written works, oral and auditory presentations, and visual presentations.

7-6.6 Select appropriate graphics, in print or electronic form, to support written works, oral presentations, and visual presentations.

7-6.7 Use a variety of print and electronic reference materials.

7-6.8 Design and carry out research projects by selecting a topic, constructing inquiry questions, accessing resources, and selecting and organizing information.

GRADE 8

Grade 8: READING

Understanding and Using Literary Texts

Standard 8-1 The student will read and comprehend a variety of literary texts in print and nonprint formats.

Students in grade eight read four major types of literary texts: fiction, literary nonfiction, poetry, and drama. In the category of fiction, they read the following specific types of texts: chapter books, adventure stories, historical fiction, contemporary realistic fiction, science fiction, folktales, tall tales, and myths. In the category of literary nonfiction, they read personal essays, classical essays, memoirs, autobiographical and biographical sketches, character sketches, and

speeches. In the category of poetry, they read narrative poems, lyrical poems, humorous poems, free verse, odes, songs/ballads, and epics.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

- 8-1.1 Compare/contrast ideas within and across literary texts to make inferences.
- 8-1.2 Explain the effect of point of view on a given literary text.
- 8-1.3 Interpret devices of figurative language (including extended metaphor, oxymoron, and paradox).
- 8-1.4 Analyze a given literary text to determine its theme.
- 8-1.5 Analyze the effect of the author's craft (including tone and the use of imagery, flashback, foreshadowing, symbolism, irony, and allusion) on the meaning of literary texts.
- 8-1.6 Create responses to literary texts through a variety of methods (for example, written works, oral and auditory presentations, discussions, media productions, and the visual and performing arts).
- 8-1.7 Compare/contrast literary texts from various genres (for example, poetry, drama, novels, and short stories).
- 8-1.8 Read independently for extended periods of time for pleasure.

Grade 8: READING

Understanding and Using Informational Texts

Standard 8-2 The student will read and comprehend a variety of informational texts in print and nonprint formats.

Students in grade eight read informational (expository/persuasive/argumentative) texts of the following types: essays, historical documents, research reports, contracts, position papers (for example, persuasive brochures, campaign literature), editorials, letters to the editor, informational trade books, textbooks, news and feature articles, magazine articles, advertisements, encyclopedia entries, reviews (for example, book, movie, product), journals, and speeches. They also read directions, schedules, and recipes embedded in informational texts. In addition, they examine commercials, documentaries, and other forms of nonprint informational texts.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

8-2.1 Compare/contrast central ideas within and across informational texts.

8-2.2 Compare/contrast information within and across texts to draw conclusions and make inferences.

8-2.3 Analyze informational texts for author bias (for example, word choice and the exclusion and inclusion of particular information).

8-2.4 Create responses to informational texts through a variety of methods (for example, drawings, written works, oral and auditory presentations, discussions, and media productions).

8-2.5 Analyze the impact that text elements (for example, print styles and chapter headings) have on the meaning of a given informational text.

8-2.6 Analyze information from graphic features (for example, charts and graphs) in informational texts.

8-2.7 Identify the use of propaganda techniques (including card stacking, plain folks, and transfer) in informational texts.

8-2.8 Read independently for extended periods of time to gain information.

Grade 8: READING

Building Vocabulary

Standard 8-3 The student will use word analysis and vocabulary strategies to read fluently.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

8-3.1 Use context clues (for example, those that provide an example, a definition, a restatement, or a comparison/contrast) to generate the meanings of unfamiliar and multiple-meaning words.

8-3.2 Analyze the meaning of words by using Greek and Latin roots and affixes within texts.

8-3.3 Interpret the meaning of idioms and euphemisms encountered in texts.

8-3.4 Interpret the connotations of words to understand the meaning of a given text.

8-3.5 Spell new words using Greek and Latin roots and affixes.

Grade 8: WRITING

Developing Written Communication

Standard 8-4 The student will create written work that has a clear focus, sufficient detail, coherent organization, effective use of voice, and correct use of the conventions of written Standard American English.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

By the end of eighth grade, students should have mastered the concepts listed below. Review and/or reteaching may be necessary.

Conventions of Grammar	Mechanics of Editing
<p><u>Parts of Speech</u></p> <p>nouns (common and proper nouns, singular and plural nouns, collective nouns, agreement of nouns and their modifiers)</p> <p>pronouns (personal pronouns, nominative and objective-case pronouns, pronoun-antecedent agreement, indefinite pronouns, pronoun case)</p> <p>verbs (past, present, and future verb tenses; past participles of commonly misused verbs; subject-verb agreement; consistent verb tenses; verb formation)</p> <p>adverbs (adverbs of time, place, manner, and degree; irregular adverbs; formation of comparative and superlative adverbs)</p> <p>adjectives (comparative and superlative adjectives, proper adjectives, irregular comparative and superlative adjectives, formation of comparative and superlative adjectives)</p> <p>conjunctions (<i>and, but, or, because, since, yet, until, although, while, neither, nor</i>)</p> <p>prepositions and prepositional phrases</p> <p>interjections</p> <p><u>Usage</u></p> <ul style="list-style-type: none"> • subject-verb agreement • subject-verb and pronoun-antecedent agreement with collective nouns • main and subordinate clauses • idiomatic usage • placement of modifiers • shifts in construction 	<p><u>Capitalization</u></p> <p>first word of a sentence; the names of people; the pronoun <i>I</i>; proper nouns; the initials of a person's name; courtesy titles (for example, Mr. and Ms.); days of the week; months of the year; titles of books, poems, and songs; geographic names; holidays; historical and special events; titles of works of art; titles of publications; brand names; proper adjectives; names of organizations; names of ethnic and national groups; names of established religions and languages</p> <p><u>Punctuation</u></p> <p>end punctuation (periods, exclamation points, question marks)</p> <p>commas (to enclose appositives; to separate items in a series; in dates, addresses, and greetings and closings in letters; in compound sentences; between main clauses; to separate introductory clauses and long introductory phrases from the main body of sentences)</p> <p>periods in abbreviations</p> <p>apostrophes (contractions, possessive nouns)</p> <p>quotation marks (to show dialogue, in direct quotations, to indicate titles of short pieces within longer pieces, underlining or italics of titles of separately published works)</p> <p>colons</p> <p>hyphens</p> <p>semicolons</p> <p>ellipses</p> <p>parentheses</p> <p><u>Spelling</u></p> <p>high-frequency words; three- and four-letter short-vowel words; words that do not fit regular spelling patterns; basic short-vowel, long-vowel, <i>r</i>- controlled, and consonant-blend patterns; misused homonyms; commonly confused words; words that have blends; contractions; compound words; words with orthographic patterns; words with suffixes and prefixes; multisyllabic words; commonly confused words; double consonant patterns; irregular vowel patterns in multisyllabic words; and words with Greek and Latin roots and affixes</p>

Indicators

- 8-4.1 Organize written works using prewriting techniques, discussions, **graphic organizers**, models, and outlines.
- 8-4.2 Use complete sentences in a variety of types (including simple, compound, complex, and compound-complex).
- 8-4.3 Create multiple-paragraph compositions that include a **central idea** with supporting details and use appropriate transitions between paragraphs.
- 8-4.4 Use grammatical conventions of written **Standard American English**, including the reinforcement of conventions previously taught.
- 8-4.5 **Revise** writing to improve clarity, **tone**, **voice**, content, and the development of ideas.
- 8-4.6 **Edit** for the correct use of written **Standard American English**, including ellipses and parentheses.
- 8-4.7 Spell correctly using **Standard American English**.

Grade 8: WRITING

Producing Written Communications in a Variety of Form

Standard 8-5 The student will write for a variety of purposes and audiences.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

- 8-5.1 Create informational pieces (for example, reports and letters of request, inquiry, or complaint) that use language appropriate for the specific audience.
- 8-5.2 Create narratives (for example, memoirs) that communicate the significance of particular personal relationships.

8-5.3 Create descriptions for use in other modes of written works (for example, narrative, expository, and persuasive).

8-5.4 Create persuasive pieces (for example, editorials, essays, or speeches) that support a clearly stated position with concrete evidence.

Grade 8: RESEARCHING

Applying the Skills of Inquiry and Oral Communication

Standard 8-6 The student will access and use information from a variety of sources.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

8-6.1 Clarify and refine a research topic.

8-6.2 Use direct quotations, paraphrasing, or summaries to incorporate into written, oral, auditory, or visual works the information gathered from a variety of research sources.

8-6.3 Use a standardized system of documentation (including a list of sources with full publication information and the use of in-text citations) to properly credit the work of others.

8-6.4 Use vocabulary (including Standard American English) that is appropriate for the particular audience or purpose.

8-6.5 Use appropriate organizational strategies to prepare written works, oral and auditory presentations, and visual presentations.

8-6.6 Select appropriate graphics, in print or electronic form, to support written works, oral presentations, and visual presentations.

8-6.7 Use a variety of print and electronic reference materials.

8-6.8 Design and carry out research projects by selecting a topic, constructing inquiry questions, accessing resources, evaluating credibility, and selecting and organizing information.

As RLOA ninth, tenth, eleventh, and twelfth grades are added, the following high school course standards for ELA will be applied in accordance with the SCDE:

GRADE 9: ENGLISH 1

Grade 9: English 1: READING

Understanding and Using Literary Texts

Standard E1-1 The student will read and comprehend a variety of literary texts in print and nonprint formats.

Students in English 1 read four major types of literary texts: fiction, literary nonfiction, poetry, and drama. In the category of fiction, they read the following specific types of texts: chapter books, adventure stories, historical fiction, contemporary realistic fiction, young adult novels, science fiction, folktales, myths, satires, parodies, allegories, and monologues. In the category of literary nonfiction, they read classical essays, memoirs, autobiographical and biographical sketches, and speeches. In the category of poetry, they read narrative poems, lyrical poems, humorous poems, free verse, odes, songs/ballads, and epics.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

E1-1.1 Compare/contrast ideas within and across literary texts to make inferences.

E1-1.2 Analyze the impact of point of view on literary texts.

E1-1.3 Interpret devices of figurative language (including extended metaphor, oxymoron, pun, and paradox).

E1-1.4 Analyze the relationship among character, plot, conflict, and theme in a given literary text.

E1-1.5 Analyze the effect of the author's craft (including tone and the use of imagery, flashback, foreshadowing, symbolism, irony, and allusion) on the meaning of literary texts.

E1-1.6 Create responses to literary texts through a variety of methods (for example, written works, oral and auditory presentations, discussions, media productions, and the visual and performing arts).

E1-1.7 Compare/contrast literary texts from various genres (for example, poetry, drama, novels, and short stories).

E1-1.8 Read independently for extended periods of time for pleasure.

Grade 9: English 1: READING

Understanding and Using Informational Texts

Standard E1-2 The student will read and comprehend a variety of informational texts in print and nonprint formats.

Students in English 1 read informational (expository/persuasive/argumentative) texts of the following types: historical documents, research reports, essays (for example, social, political, scientific, historical, natural history), position papers (for example, persuasive brochures, campaign literature), editorials, letters to the editor, informational trade books, textbooks, news and feature articles, magazine articles, advertisements, journals, speeches, reviews (for example, book, movie, product), contracts, government documents, business forms, instruction manuals,

product-support materials, and application forms. They also read directions, schedules, and recipes embedded in informational texts. In addition, they examine commercials, documentaries, and other forms of nonprint informational texts.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

E1-2.1 Compare/contrast theses within and across informational texts.

E1-2.2 Compare/contrast information within and across texts to draw conclusions and make inferences.

E1-2.3 Analyze informational texts for author bias (including word choice, the exclusion and inclusion of particular information, and unsupported opinions).

E1-2.4 Create responses to informational texts through a variety of methods (for example, drawings, written works, oral and auditory presentations, discussions, and media productions).

E1-2.5 Analyze the impact that text elements have on the meaning of a given informational text.

E1-2.6 Analyze information from graphic features (for example, charts and graphs) in informational texts.

E1-2.7 Analyze propaganda techniques in informational texts.

E1-2.8 Read independently for extended periods of time to gain information.

Grade 9: English 1: READING

Building Vocabulary

Standard E1-3 The student will use word analysis and vocabulary strategies to read fluently.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

E1-3.1 Use context clues to determine the meaning of technical terms and other unfamiliar words.

E1-3.2 Analyze the meaning of words by using Greek and Latin roots and affixes.

E1-3.3 Interpret euphemisms and connotations of words to understand the meaning of a given text.

E1-3.4 Spell new words using Greek and Latin roots and affixes.

Grade 9: English 1: WRITING

Developing Written Communications

Standard E1-4 The student will create written work that has a clear focus, sufficient detail, coherent organization, effective use of voice, and correct use of the conventions of written Standard American English.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

By the beginning of high school, students should have mastered the concepts listed below.

Review and/or reteaching may be necessary.

Conventions of Grammar	Mechanics of Editing
<u>Parts of Speech</u> nouns (common and proper nouns, singular and plural nouns, collective nouns, agreement of nouns and their modifiers) pronouns (personal pronouns, nominative and objective-case pronouns, pronoun-antecedent agreement, indefinite pronouns, pronoun case) verbs (past, present, and future verb tenses; past participles of commonly misused verbs; subject-verb agreement; consistent verb tenses; verb formation) adverbs (adverbs of time, place, manner, and degree; irregular adverbs; formation of comparative and superlative adverbs) adjectives (comparative and superlative adjectives,	<u>Capitalization</u> first word of a sentence; the names of people; the pronoun <i>I</i> ; proper nouns; the initials of a person's name; courtesy titles (for example, Mr. and Ms.); days of the week; months of the year; titles of books, poems, and songs; geographic names; holidays; historical and special events; titles of works of art; titles of publications; brand names; proper adjectives; names of organizations; names of ethnic and national groups; names of established religions and languages <u>Punctuation</u> end punctuation (periods, exclamation points, question marks) commas (to enclose appositives; to separate items in a series; in dates, addresses, and greetings and closings in letters; in compound sentences; between main

<p>proper adjectives, irregular comparative and superlative adjectives, formation of comparative and superlative adjectives)</p> <p>conjunctions (<i>and, but, or, because, since, yet, until, although, while, neither, nor</i>)</p> <p>prepositions and prepositional phrases</p> <p>interjections</p> <p>Usage</p> <ul style="list-style-type: none"> • subject-verb agreement • subject-verb and pronoun-antecedent agreement with collective nouns • main and subordinate clauses • idiomatic usage • placement of modifiers • shifts in construction 	<p>clauses; to separate introductory clauses and long introductory phrases from the main body of sentences)</p> <p>periods in abbreviations</p> <p>apostrophes (contractions, possessive nouns)</p> <p>quotation marks (to show dialogue, in direct quotations, to indicate titles of short pieces within longer pieces, underlining or italics of titles of separately published works)</p> <p>colons</p> <p>hyphens</p> <p>semicolons</p> <p>ellipses</p> <p>parentheses</p> <p>Spelling (high-frequency words; three- and four-letter short-vowel words; words that do not fit regular spelling patterns; basic short-vowel, long-vowel, <i>r</i>- controlled, and consonant-blend patterns; misused homonyms; commonly confused words; words that have blends; contractions; compound words; words with orthographic patterns; words with suffixes and prefixes; multisyllabic words; commonly confused words; double consonant patterns; irregular vowel patterns in multisyllabic words; and words with Greek and Latin roots and affixes)</p>
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Indicators

E1-4.1 Organize written works using prewriting techniques, discussions, **graphic organizers**, models, and outlines.

E1-4.2 Use complete sentences in a variety of types (including simple, compound, complex, and compound-complex).

E1-4.3 Create multiple-paragraph compositions that have an introduction and a conclusion, include a coherent **thesis**, and use support (for example, definitions and descriptions).

E1-4.4 Use grammatical conventions of written **Standard American English**, including

- subject-verb agreement

- pronoun-antecedent agreement
- agreement of nouns and their modifiers
- verb formation
- pronoun case
- formation of comparative and superlative adjectives and adverbs
- idiomatic usage.

E1-4.5 **Revise** writing to improve clarity, **tone**, voice, content, and the development of ideas.

E1-4.6 **Edit** written pieces for correct use of **Standard American English**, including the reinforcement of the mechanics previously taught.

Grade 9: English 1: WRITING

Producing Written Communications in a Variety of Forms

Standard E1-5 The student will write for a variety of purposes and **audiences**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

E1-5.1 Create informational pieces (for example, letters of request, inquiry, or complaint) that use language appropriate for the specific **audience**.

E1-5.2 Create narratives (for example, personal essays, memoirs, or narrative poems) that use descriptive language to create **tone** and mood.

E1-5.3 Create descriptions for use in other modes of written works (for example, narrative, **expository**, and persuasive).

E1-5.4 Create persuasive pieces (for example, editorials, essays, speeches, or reports) that develop a clearly stated **thesis** and use support (for example, facts, statistics, and firsthand accounts).

E1-5.5 Create technical pieces (for example, proposals, instructions, and process documentation) that use clear and precise language appropriate for the purpose and **audience**.

Grade 9: English 1: RESEARCHING

Applying the Skills of Inquiry and Oral Communication

Standard E1-6 The student will access and use information from a variety of sources.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

E1-6.1 Clarify and refine a research topic.

E1-6.2 Use direct quotations, paraphrasing, or summaries to incorporate into written, oral, auditory, or visual works the information gathered from a variety of research sources.

E1-6.3 Use a standardized system of documentation (including a list of sources with full publication information and the use of in-text citations) to properly credit the work of others.

E1-6.4 Use vocabulary (including **Standard American English**) that is appropriate for the particular **audience** or purpose.

E1-6.5 Create written works, oral and auditory presentations, and visual presentations that are designed for a specific **audience** and purpose.

E1-6.6 Select appropriate graphics, in print or electronic form, to support written works, oral presentations, and visual presentations.

E1-6.7 Use a variety of print and electronic reference materials.

E1-6.8 Design and carry out research projects by selecting a topic, constructing inquiry questions, accessing resources, evaluating credibility, and organizing information.

GRADE 10: ENGLISH 2

Grade 10: English 2: READING

Understanding and Using Literary Texts

Standard E2-1 The student will read and comprehend a variety of literary **texts** in print and nonprint formats.

Students in English 2 read four major types of literary **texts**: **fiction**, **literary nonfiction**, **poetry**, and **drama**. In the category of **fiction**, they read the following specific types of **texts**: chapter books, adventure stories, historical fiction, contemporary realistic fiction, young adult novels, science fiction, **folktales**, **myths**, satires, parodies, allegories, and **monologues**. In the category of **literary nonfiction**, they read classical essays, memoirs, autobiographical and biographical sketches, and speeches. In the category of **poetry**, they read narrative poems, lyrical poems, humorous poems, free verse, odes, songs/ballads, and epics.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

E2-1.1 Compare/contrast ideas within and across literary **texts** to make **inferences**.

E2-1.2 Analyze the impact of **point of view** on literary **texts**.

E2-1.3 Analyze devices of **figurative language** (including **extended metaphor**, **oxymoron**, pun, and **paradox**).

E2-1.4 Analyze the relationship among **character**, plot, **conflict**, and **theme** in a given literary **text**.

E2-1.5 Analyze the effect of the **author's craft** (including **tone** and the use of **imagery**, **flashback**, **foreshadowing**, **symbolism**, irony, and **allusion**) on the meaning of literary **texts**.

E2-1.6 Create responses to literary **texts** through a variety of methods (for example, written works, oral and auditory presentations, discussions, media productions, and the visual and performing arts).

E2-1.7 Compare/contrast literary **texts** from various genres (for example, poetry, **drama**, novels, and short stories).

E2-1.8 Read independently for extended periods of time for pleasure.

Grade 10: English 2: READING

Understanding and Using Informational Texts

Standard E2-2 The student will read and comprehend a variety of informational **texts** in print and nonprint formats.

Students in English 2 read **informational (expository/persuasive/argumentative) texts** of the following types: historical documents, research reports, essays (for example, social, political, scientific, historical, natural history), position papers (for example, persuasive brochures, campaign literature), editorials, letters to the editor, informational trade books, textbooks, news and feature articles, magazine articles, advertisements, journals, speeches, reviews (for example, book, movie, product), contracts, government documents, business forms, instruction manuals, product-support materials, and application forms. They also read directions, schedules, and recipes embedded in informational **texts**. In addition, they examine commercials, documentaries, and other forms of **nonprint informational texts**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

E2-2.1 Compare/contrast theses within and across informational **texts**.

E2-2.2 Compare/contrast information within and across **texts** to draw conclusions and make **inferences**.

E2-2.3 Analyze informational **texts** for author **bias** (including **word choice**, the exclusion and inclusion of particular information, and unsupported opinions).

E2-2.4 Create responses to informational **texts** through a variety of methods (for example, drawings, written works, oral and auditory presentations, discussions, and media productions).

E2-2.5 Analyze the impact that **text elements** have on the meaning of a given informational **text**.

E2-2.6 Analyze information from **graphic features** (for example, charts and graphs) in informational **texts**.

E2-2.7 Analyze **propaganda techniques** in informational **texts**.

E2-2.8 Read independently for extended periods of time to gain information.

Grade 10: English 2: READING

Building Vocabulary

Standard E2-3 The student will use word analysis and vocabulary strategies to read fluently.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

E2-3.1 Use **context clues** to determine the meaning of technical terms and other unfamiliar words.

E2-3.2 Analyze the meaning of words by using Greek and Latin roots and **affixes**.

E2-3.3 Interpret **euphemisms** and the **connotations** of words to understand the meaning of a given **text**.

E2-3.4 Spell new words using Greek and Latin roots and **affixes**.

Grade 10: English 2: WRITING

Developing Written Communications

Standard E2-4 The student will create written work that has a clear focus, sufficient detail, coherent organization, effective use of **voice**, and correct use of the conventions of written **Standard American English**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

By the beginning of high school, students should have mastered the concepts listed below.

Review and/or reteaching may be necessary.

Conventions of Grammar	Mechanics of Editing
<p>Parts of Speech</p> <p>nouns (common and proper nouns, singular and plural nouns, collective nouns, agreement of nouns and their modifiers)</p> <p>pronouns (personal pronouns, nominative and objective-case pronouns, pronoun-antecedent agreement, indefinite pronouns, pronoun case)</p> <p>verbs (past, present, and future verb tenses; past participles of commonly misused verbs; subject-verb agreement; consistent verb tenses; verb formation)</p> <p>adverbs (adverbs of time, place, manner, and degree; irregular adverbs; formation of comparative and superlative adverbs)</p> <p>adjectives (comparative and superlative adjectives, proper adjectives, irregular comparative and superlative adjectives, formation of comparative and superlative adjectives)</p> <p>conjunctions (<i>and, but, or, because, since, yet, until, although, while, neither, nor</i>)</p> <p>prepositions and prepositional phrases</p>	<p>Capitalization</p> <p>first word of a sentence; the names of people; the pronoun <i>I</i>; proper nouns; the initials of a person's name; courtesy titles (for example, Mr. and Ms.); days of the week; months of the year; titles of books, poems, and songs; geographic names; holidays; historical and special events; titles of works of art; titles of publications; brand names; proper adjectives; names of organizations; names of ethnic and national groups; names of established religions and languages</p> <p>Punctuation</p> <p>end punctuation (periods, exclamation points, question marks)</p> <p>commas (to enclose appositives; to separate items in a series; in dates, addresses, and greetings and closings in letters; in compound sentences; between main clauses; to separate introductory clauses and long introductory phrases from the main body of sentences)</p> <p>periods in abbreviations</p> <p>apostrophes (contractions, possessive nouns)</p> <p>quotation marks (to show dialogue, in direct quotations, to indicate titles of short pieces within longer pieces, underlining or italics of titles of</p>

<p><i>interjections</i></p> <p>Usage</p> <ul style="list-style-type: none"> • subject-verb agreement • subject-verb and pronoun-antecedent agreement with collective nouns • main and subordinate clauses • idiomatic usage • placement of modifiers • shifts in construction 	<p>separately published works)</p> <p><i>colons</i></p> <p><i>hyphens</i></p> <p><i>semicolons</i></p> <p><i>ellipses</i></p> <p><i>parentheses</i></p> <p>Spelling (high-frequency words; three- and four-letter short-vowel words; words that do not fit regular spelling patterns; basic short-vowel, long-vowel, <i>r-</i> controlled, and consonant-blend patterns; misused homonyms; commonly confused words; words that have blends; contractions; compound words; words with orthographic patterns; words with suffixes and prefixes; multisyllabic words; commonly confused words; double consonant patterns; irregular vowel patterns in multisyllabic words; and words with Greek and Latin roots and affixes)</p>
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Indicators

E2-4.1 Organize written works using prewriting techniques, discussions, **graphic organizers**, models, and outlines.

E2-4.2 Use complete sentences in a variety of types (including simple, compound, complex, and compound-complex).

E2-4.3 Create multiple-paragraph compositions that have an introduction and a conclusion, include a coherent **thesis**, and use support (for example, definitions and descriptions).

E2-4.4 Use grammatical conventions of written **Standard American English**, including

- subject-verb agreement
- pronoun-antecedent agreement
- agreement of nouns and their modifiers
- verb formation
- pronoun case
- formation of comparative and superlative adjectives and adverbs

- idiomatic usage.

E2-4.5 **Revise** writing to improve clarity, **tone**, **voice**, content, and the development of ideas.

E2-4.6 **Edit** written pieces for the correct use of **Standard American English**, including the reinforcement of conventions previously taught.

Grade 10: English 2: WRITING

Producing Written Communications in a Variety of Forms

Standard E2-5 The student will write for a variety of purposes and **audiences**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

E2-5.1 Create informational pieces (for example, resumes, memos, letters of request, inquiry, or complaint) that use language appropriate for the specific **audience**.

E2-5.2 Create narrative pieces (for example, personal essays, memoirs, or narrative poems) that use **figurative language** and **word choice** to create **tone** and mood.

E2-5.3 Create descriptive pieces (for example, personal essays, travel writing, or restaurant reviews) that use sensory images and vivid **word choice**.

E2-5.4 Create persuasive pieces (for example, editorials, essays, speeches, or reports) that develop a clearly stated **thesis** and use support (for example, facts, statistics, and first-hand accounts).

E2-5.5 Create technical pieces (for example, proposals, instructions, and process documentation) that use clear and precise language suitable for the purpose and **audience**.

Grade 10: English 2: RESEARCHING

Applying the Skills of Inquiry and Oral Communication

Standard E2-6 The student will access and use information from a variety of sources.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

E2-6.1 Clarify and refine a research topic.

E2-6.2 Use direct quotations, paraphrasing, or summaries to incorporate into written, oral, auditory, or visual works the information gathered from a variety of research sources.

E2-6.3 Use a standardized system of documentation (including a list of sources with full publication information and the use of in-text citations) to properly credit the work of others.

E2-6.4 Use vocabulary (including **Standard American English**) that is appropriate for the particular **audience** or purpose.

E2-6.5 Create written works, oral and auditory presentations, and visual presentations that are designed for a specific **audience** and purpose.

E2-6.6 Select appropriate graphics, in print or electronic form, to support written works, oral presentations, and visual presentations.

E2-6.7 Use a variety of print and electronic reference materials.

E2-6.8 Design and carry out research projects by selecting a topic, constructing inquiry questions, accessing resources, evaluating credibility, and organizing information.

GRADE 11: ENGLISH 3

Grade 11: English 3: READING

Understanding and Using Literary Texts

Standard E3-1 The student will read and comprehend a variety of literary **texts** in print and nonprint formats.

Students in English 3 read four major types of literary **texts**: **fiction**, **literary nonfiction**, **poetry**, and **drama**. In the category of **fiction**, they read the following specific types of **texts**: chapter books, adventure stories, historical fiction, contemporary realistic fiction, **folktales**, **myths**, satires, parodies, allegories, and **monologues**. In the category of **literary nonfiction**, they read classical essays, memoirs, autobiographical and biographical sketches, and speeches. In the category of **poetry**, they read narrative poems, lyrical poems, humorous poems, free verse, odes, songs/ballads, and epics.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

E3-1.1 Compare/contrast ideas within and across literary **texts** to make **inferences**.

E3-1.2 Evaluate the impact of **point of view** on literary **texts**.

E3-1.3 Evaluate devices of **figurative language** (including **extended metaphor**, **oxymoron**, pun, and **paradox**).

E3-1.4 Evaluate the relationship among **character**, **plot**, **conflict**, and **theme** in a given literary **text**.

E3-1.5 Analyze the effect of the **author's craft** (including **tone** and the use of **imagery**, **flashback**, **foreshadowing**, **symbolism**, motif, **irony**, and **allusion**) on the meaning of literary **texts**.

E3-1.6 Create responses to literary **texts** through a variety of methods (for example, written works, oral and auditory presentations, discussions, media productions, and the visual and performing arts).

E3-1.7 Evaluate an author's use of genre to convey **theme**.

E3-1.8 Read independently for extended periods of time for pleasure.

Grade 11: English 3: READING

Understanding and Using Informational Texts

Standard E3-2 The student will read and comprehend a variety of informational **texts** in print and nonprint formats.

Students in English 3 read **informational (expository/persuasive/argumentative) texts** of the following types: historical documents, research reports, essays (for example, social, political, scientific, historical, natural history), position papers (for example, persuasive brochures, campaign literature), editorials, letters to the editor, informational trade books, textbooks, news and feature articles, magazine articles, advertisements, journals, speeches, reviews (for example, book, movie, product), contracts, government documents, business forms instruction manuals, product-support materials, and application forms. They also read directions, schedules, and recipes embedded in informational **texts**. In addition, they examine commercials, documentaries, and other forms of **nonprint informational texts**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

E3-2.1 Evaluate theses within and across informational **texts**.

E3-2.2 Compare/contrast information within and across **texts** to draw conclusions and make **inferences**.

E3-2.3 Analyze informational **texts** for author **bias** (including **word choice**, the exclusion and inclusion of particular information, and unsupported opinion).

E3-2.4 Create responses to informational **texts** through a variety of methods (for example, drawings, written works, oral and auditory presentations, discussions, and media productions).

E3-2.5 Evaluate the impact that **text elements** have on the meaning of a given informational **text**.

E3-2.6 Evaluate information from **graphic features** (for example, charts and graphs) in informational **texts**.

E3-2.7 Evaluate **propaganda techniques** and rhetorical devices in informational **texts**.

E3-2.8 Read independently for extended periods of time to gain information.

Grade 11: English 3: READING

Building Vocabulary

Standard E3-3 The student will use word analysis and vocabulary strategies to read fluently.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

E3-3.1 Use **context clues** to determine the meaning of technical terms and other unfamiliar words.

E3-3.2 Analyze the meaning of words by using Greek and Latin roots and **affixes**.

E3-3.3 Explain how American history and culture have influenced the use and development of the English language.

E3-3.4 Spell new words using Greek and Latin roots and **affixes**.

Grade 11: English 3: WRITING

Developing Written Communications

Standard E3-4 The student will create written work that has a clear focus, sufficient detail, coherent organization, effective use of **voice**, correct use of the conventions of written **Standard American English**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

By the beginning of high school, students should have mastered the concepts listed below.

Review and/or reteaching may be necessary.

Conventions of Grammar	Mechanics of Editing
<p><u>Parts of Speech</u></p> <p>nouns (common and proper nouns, singular and plural nouns, collective nouns, agreement of nouns and their modifiers)</p> <p>pronouns (personal pronouns, nominative and objective-case pronouns, pronoun-antecedent agreement, indefinite pronouns, pronoun case)</p> <p>verbs (past, present, and future verb tenses; past participles of commonly misused verbs; subject-verb agreement; consistent verb tenses; verb formation)</p> <p>adverbs (adverbs of time, place, manner, and degree; irregular adverbs; formation of comparative and superlative adverbs)</p> <p>adjectives (comparative and superlative adjectives, proper adjectives, irregular comparative and superlative adjectives, formation of comparative and superlative adjectives)</p> <p>conjunctions (<i>and, but, or, because, since, yet, until, although, while, neither, nor</i>)</p> <p>prepositions and prepositional phrases</p> <p>interjections</p> <p><u>Usage</u></p> <ul style="list-style-type: none"> subject-verb agreement subject-verb and pronoun-antecedent agreement with 	<p><u>Capitalization</u></p> <p>first word of a sentence; the names of people; the pronoun <i>I</i>; proper nouns; the initials of a person's name; courtesy titles (for example, Mr. and Ms.); days of the week; months of the year; titles of books, poems, and songs; geographic names; holidays; historical and special events; titles of works of art; titles of publications; brand names; proper adjectives; names of organizations; names of ethnic and national groups; names of established religions and languages</p> <p><u>Punctuation</u></p> <p>end punctuation (periods, exclamation points, question marks)</p> <p>commas (to enclose appositives; to separate items in a series; in dates, addresses, and greetings and closings in letters; in compound sentences; between main clauses; to separate introductory clauses and long introductory phrases from the main body of sentences)</p> <p>periods in abbreviations</p> <p>apostrophes (contractions, possessive nouns)</p> <p>quotation marks (to show dialogue, in direct quotations, to indicate titles of short pieces within longer pieces, underlining or italics of titles of separately published</p>

<p>collective nouns</p> <ul style="list-style-type: none"> • main and subordinate clauses • idiomatic usage • placement of modifiers • shifts in construction 	<p>works)</p> <p><i>colons</i></p> <p><i>hyphens</i></p> <p><i>semicolons</i></p> <p><i>ellipses</i></p> <p><i>parentheses</i></p> <p><u>Spelling</u> (high-frequency words; three- and four-letter short-vowel words; words that do not fit regular spelling patterns; basic short-vowel, long-vowel, <i>r</i>- controlled, and consonant-blend patterns; misused homonyms; commonly confused words; words that have blends; contractions; compound words; words with orthographic patterns; words with suffixes and prefixes; multisyllabic words; commonly confused words; double consonant patterns; irregular vowel patterns in multisyllabic words; and words with Greek and Latin roots and affixes)</p>
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Indicators

E3-4.1 Organize written works using prewriting techniques, discussions, **graphic organizers**, models, and outlines.

E3-4.2 Use complete sentences in a variety of types (for example, simple, compound, complex, and compound-complex).

E3-4.3 Create multiple-paragraph compositions that have an introduction and a conclusion, include a coherent **thesis**, and use support (for example, definitions and descriptions).

E3-4.4 Use grammatical conventions of written **Standard American English** to clarify and enhance meaning including

- subject-verb agreement

- pronoun-antecedent agreement
- agreement of nouns and their modifiers
- verb formation
- pronoun case
- formation of comparative or superlative adjectives and adverbs
- idiomatic usage.

E3-4.5 **Revise** writing to improve clarity, **tone**, **voice**, content, and the development of ideas.

E3-4.6 **Edit** written pieces for the correct mechanics and usage of written **Standard American English** including

- internal and end of sentence punctuation
- commas to indicate appositives
- word placement to avoid ambiguity
- appropriate coordination and subordination
- relationship between and among clauses
- placement of modifiers
- shifts in construction.

Grade 11: English 3: WRITING

Producing Written Communications in a Variety of Forms

Standard E3-5 The student will write for a variety of purposes and **audiences**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

E3-5.1 Create informational pieces (for example, resumes, memos, letters of request, inquiry, or complaint) that use language appropriate for the specific **audience**.

E3-5.2 Create narrative pieces (for example, personal essays, memoirs, or narrative poems) that use **figurative language** and **word choice** to create **tone** and mood.

E3-5.3 Create descriptive pieces (for example, personal essays, travel writing, or restaurant reviews) that use sensory images and vivid **word choice**.

E3-5.4 Create persuasive pieces (for example, editorials, essays, speeches, or reports) that develop a clearly stated **thesis** and use support (for example, facts, statistics, and firsthand accounts).

E3-5.5 Create technical pieces (for example, proposals, instructions, and process documentation) that use clear and precise language appropriate for the purpose and **audience**.

E3-5.6 Compose effective pieces of writing to respond to prompts in “on-demand” situations.

Grade 11: English 3: RESEARCHING

Applying the Skills of Inquiry and Oral Communication

Standard E3-6 The student will access and use information from a variety of sources.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

E3-6.1 Clarify and refine a research topic.

E3-6.2 Use direct quotations, paraphrasing, or summaries to incorporate into written, oral, auditory, or visual works the information gathered from a variety of research sources.

E3-6.3 Use a standardized system of documentation (including a list of sources with full publication information and the use of in-text citations) to properly credit the work of others.

E3-6.4 Use vocabulary (including **Standard American English**) that is appropriate for the particular **audience** or purpose.

E3-6.5 Create written works, oral and auditory presentations, and visual presentations that are designed for a specific **audience** and purpose.

E3-6.6 Select appropriate graphics, in print or electronic form, to support written works, oral presentations, and visual presentations.

E3-6.7 Use a variety of print and electronic reference materials.

E3-6.8 Design and carry out research projects by selecting a topic, constructing inquiry questions, accessing resources, evaluating credibility, and organizing information.

GRADE 11: ENGLISH 4

Grade 12: English 3: READING

Understanding and Using Literary Texts

Standard E4-1 The student will read and comprehend a variety of literary **texts** in print and nonprint formats.

Students in English 4 read four major types of literary **texts**: **fiction**, **literary nonfiction**, **poetry**, and **drama**. In the category of **fiction**, they read the following specific types of **texts**: adventure stories, historical fiction, contemporary realistic fiction, **myths**, satires, parodies, allegories, and **monologues**. In the category of **literary nonfiction**, they read classical essays, memoirs, autobiographical and biographical sketches, and speeches. In the category of **poetry**, they read narrative poems, lyrical poems, humorous poems, free verse, odes, songs/ballads, and epics.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

- E4-1.1 Compare/contrast ideas within and across literary **texts** to make **inferences**.
- E4-1.2 Evaluate the impact of **point of view** on literary **texts**.
- E4-1.3 Evaluate devices of **figurative language** (including **extended metaphor**, **oxymoron**, pun, and **paradox**).
- E4-1.4 Evaluate the relationship among **character**, **plot**, **conflict**, and **theme** in a given literary **text**.
- E4-1.5 Analyze the effect of the **author's craft** (including **tone** and the use of **imagery**, **flashback**, **foreshadowing**, **symbolism**, motif, **irony**, and **allusion**) on the meaning of literary **texts**.
- E4-1.6 Create responses to literary **texts** through a variety of methods, (for example, written works, oral and auditory presentations, discussions, media productions, and the visual and performing arts).
- E4-1.7 Evaluate an author's use of genre to convey **theme**.
- E4-1.8 Read independently for extended periods of time for pleasure.

Grade 12: English 4: READING

Understanding and Using Informational Texts

Standard E4-2 The student will read and comprehend a variety of informational **texts** in print and nonprint formats.

Students in English 4 read **informational (expository/persuasive/argumentative) texts** of the following types: historical documents, research reports, essays (for example, social, political, scientific, historical, natural history), position papers (for example, persuasive brochures, campaign literature), editorials, letters to the editor, informational trade books, textbooks, news and feature articles, magazine articles, advertisements, journals, speeches, reviews (for example,

book, movie, product), contracts, government documents, business forms instruction manuals, product-support materials, and application forms. They also read directions, schedules, and recipes embedded in informational **texts**. In addition, they examine commercials, documentaries, and other forms of **nonprint informational texts**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

E4-2.1 Evaluate theses within and across informational **texts**.

E4-2.2 Compare/contrast information within and across **texts** to draw conclusions and make **inferences**.

E4-2.3 Analyze informational **texts** for author **bias** (including **word choice**, the exclusion and inclusion of particular information, and unsupported opinion).

E4-2.4 Create responses to informational **texts** through a variety of methods (for example, drawings, written works, oral and auditory presentations, discussions, and media productions).

E4-2.5 Evaluate the impact that **text elements** have on the meaning of a given informational **text**.

E4-2.6 Evaluate information from **graphic features** (for example, charts and graphs in informational **texts**).

E4-2.7 Evaluate **propaganda techniques** and rhetorical devices in informational **texts**.

E4-2.8 Read independently for extended periods of time to gain information.

Grade 12: English 4: READING

Building Vocabulary

Standard E4-3 The student will use word analysis and vocabulary strategies to read fluently.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

E4-3.1 Use **context clues** to determine the meaning of technical terms and other unfamiliar words.

E4-3.2 Analyze the meaning of words by using Greek and Latin roots and **affixes**.

E4-3.3 Explain how British history and culture have influenced the use and development of the English language.

E4-3.4 Spell new words using Greek and Latin roots and **affixes**.

Grade 12: English 4: WRITING

Developing Written Communications

Standard E4-4 The student will create written work that has a clear focus, sufficient detail, coherent organization, effective use of **voice**, and correct use of the conventions of written **Standard American English**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

By the beginning of high school, students should have mastered the concepts listed below.

Review and/or reteaching may be necessary.

Conventions of Grammar	Mechanics of Editing
<u>Parts of Speech</u> nouns (common and proper nouns, singular and plural nouns, collective nouns, agreement of nouns and their modifiers) pronouns (personal pronouns, nominative and objective-case pronouns, pronoun-antecedent agreement, indefinite pronouns, pronoun case) verbs (past, present, and future verb tenses; past participles of commonly misused verbs; subject-	<u>Capitalization</u> first word of a sentence; the names of people; the pronoun <i>I</i> ; proper nouns; the initials of a person's name; courtesy titles (for example, Mr. and Ms.); days of the week; months of the year; titles of books, poems, and songs; geographic names; holidays; historical and special events; titles of works of art; titles of publications; brand names; proper adjectives; names of organizations; names of ethnic and

<p>verb agreement; consistent verb tenses; verb formation)</p> <p>adverbs (adverbs of time, place, manner, and degree; irregular adverbs; formation of comparative and superlative adverbs)</p> <p>adjectives (comparative and superlative adjectives, proper adjectives, irregular comparative and superlative adjectives, formation of comparative and superlative adjectives)</p> <p>conjunctions (<i>and, but, or, because, since, yet, until, although, while, neither, nor</i>)</p> <p>prepositions and prepositional phrases</p> <p>interjections</p> <p>Usage</p> <ul style="list-style-type: none"> • subject-verb agreement • subject-verb and pronoun-antecedent agreement with collective nouns • main and subordinate clauses • idiomatic usage • placement of modifiers • shifts in construction 	<p>national groups; names of established religions and languages</p> <p>Punctuation</p> <p>end punctuation (periods, exclamation points, question marks)</p> <p>commas (to enclose appositives; to separate items in a series; in dates, addresses, and greetings and closings in letters; in compound sentences; between main clauses; to separate introductory clauses and long introductory phrases from the main body of sentences)</p> <p>periods in abbreviations</p> <p>apostrophes (contractions, possessive nouns)</p> <p>quotation marks (to show dialogue, in direct quotations, to indicate titles of short pieces within longer pieces, underlining or italics of titles of separately published works)</p> <p>colons</p> <p>hyphens</p> <p>semicolons</p> <p>ellipses</p> <p>parentheses</p> <p>Spelling</p> <p>(high-frequency words; three- and four-letter short-vowel words; words that do not fit regular spelling patterns; basic short-vowel, long-vowel, <i>r</i>- controlled, and consonant-blend patterns; misused homonyms; commonly confused words; words that have blends; contractions; compound words; words with orthographic patterns; words with suffixes and prefixes; multisyllabic words; commonly confused words; double consonant patterns; irregular vowel</p>
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	patterns in multisyllabic words; and words with Greek and Latin roots and affixes)
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Indicators

E4-4.1 Organize written works using prewriting techniques, discussions, **graphic organizers**, models, and outlines.

E4-4.2 Use complete sentences in a variety of types (including simple, compound, complex, and compound-complex).

E4-4.3 Create multiple-paragraph compositions that have an introduction and a conclusion, include a coherent **thesis**, and use support (for example, definitions and descriptions).

E4-4.4 Use grammatical conventions of written **Standard American English** to clarify and enhance meaning including

- subject-verb agreement
- pronoun-antecedent agreement
- agreement of nouns and their modifiers
- verb formation
- pronoun case
- formation of comparative or superlative adjectives and adverbs
- idiomatic usage.

E4-4.5 **Revise** writing to improve clarity, **tone**, **voice**, content, and the development of ideas.

E4-4.6 **Edit** for the correct mechanics and usage of written **Standard American English** including

- internal and end of sentence punctuation
- commas to indicate appositives
- word placement to avoid ambiguity

- appropriate coordination and subordination
- relationship between and among clauses
- placement of modifiers
- shifts in construction.

Grade 12: English 4: WRITING

Producing Written Communications in a Variety of Forms

Standard E4-5 The student will write for a variety of purposes and **audiences**.

The teacher should continue to address earlier indicators as they apply to more difficult **texts**.

Indicators

E4-5.1 Create clear and concise career-oriented and technical writings (for example, memos, business letters, résumés, technical reports, and information analyses).

E4-5.2 Create narratives (for example, personal essays, memoirs, and narrative poems) that use descriptive language to enhance **voice** and **tone**.

E4-5.3 Create descriptive pieces (for example, personal essays, travel writing, or restaurant reviews) that use sensory images and vivid **word choice**.

E4-5.4 Create **persuasive writings** (for example, editorials, essays, speeches, or reports) that address a specific **audience** and use logical **arguments** supported by facts or expert opinions.

E4-5.5 Create technical pieces (for example, proposals, instructions, and process documentation) that use clear and precise language appropriate for the purpose and **audience**.

E4-5.6 Compose effective pieces of writing to respond to prompts in “on-demand” situations.

Grade 12: English 4: RESEARCHING

Applying the Skills of Inquiry and Oral Communication

Standard E4-6 The student will access and use information from a variety of sources.

The teacher should continue to address earlier indicators as they apply to more difficult texts.

Indicators

E4-6.1 Clarify and refine a research topic.

E4-6.2 Use direct quotations, paraphrasing, or summaries to incorporate into written, oral, auditory, or visual works the information gathered from a variety of research sources.

E4-6.3 Use a standardized system of documentation (including a list of sources with full publication information and the use of in-text citations) to properly credit the work of others.

E4-6.4 Use vocabulary (including **Standard American English**) that is appropriate for the particular **audience** or purpose.

E4-6.5 Create written works, oral and auditory presentations, and visual presentations that are designed for a specific **audience** and purpose.

E4-6.6 Select appropriate graphics, in print or electronic form, to support written works, oral presentations, and visual presentations.

E4-6.7 Use a variety of print and electronic reference materials.

E4-6.8 Design and carry out research projects by selecting a topic, constructing inquiry questions, accessing resources, evaluating credibility, and organizing information.

MATHEMATICS

RLOA's curriculum will be aligned with the Common Core State Standards, using the guidelines and goals of the SCDE for **Mathematics** set forth below. These goals are specific, measureable, attainable, realistic and timely so that every student can assess their mastery in a particular area and every teacher can evaluate their instruction.

Common Core State Standards: Mathematics

Mathematical Practices K-12

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Mathematics | Kindergarten

In kindergarten, instructional time should focus on two critical areas: (1) representing, relating, and operating on whole numbers, initially with sets of objects; (2) describing shapes and space. More learning time in kindergarten should be devoted to number than to other topics.

- (1) Students use numbers, including written numerals, to represent quantities and to solve quantitative problems, such as counting objects in a set; counting out a given number of objects; comparing sets or numerals;

and modeling simple joining and separating situations with sets of objects, or eventually with equations such as $5 + 2 = 7$ and $7 - 2 = 5$. (Kindergarten students should see addition and subtraction equations, and student writing of equations in kindergarten is encouraged, but it is not required.) Students choose, combine, and apply effective strategies for answering quantitative questions, including quickly recognizing the cardinalities of small sets of objects, counting and producing sets of given sizes, counting the number of objects in combined sets, or counting the number of objects that remain in a set after some are taken away.

(2) Students describe their physical world using geometric ideas (e.g., shape, orientation, spatial relations) and vocabulary. They identify, name, and describe basic two-dimensional shapes, such as squares, triangles, circles, rectangles, and hexagons, presented in a variety of ways (e.g., with different sizes and orientations), as well as three-dimensional shapes such as cubes, cones, cylinders, and spheres. They use basic shapes and spatial reasoning to model objects in their environment and to construct more complex shapes.

Counting and Cardinality

- Know number names and the count sequence.
- Count to tell the number of objects.
- Compare numbers.

Operations and Algebraic Thinking

- Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

Number and Operations in Base Ten

- Work with numbers 11–19 to gain foundations for place value.

Measurement and Data

- Describe and compare measurable attributes.
- Classify objects and count the number of objects in categories.

Geometry

- Identify and describe shapes.
- Analyze, compare, create, and compose shapes.

Counting and Cardinality

Know number names and the count sequence.

1. Count to 100 by ones and by tens.
2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

Count to tell the number of objects.

4. Understand the relationship between numbers and quantities; connect counting to cardinality.

a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.

b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.

c. Understand that each successive number name refers to a quantity that is one larger.

5. Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

Compare numbers.

6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.¹

7. Compare two numbers between 1 and 10 presented as written numerals.

Operations and Algebraic Thinking

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

1. Represent addition and subtraction with objects, fingers, mental images, drawings², sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.
3. Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$).
4. For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.
5. Fluently add and subtract within 5.

¹Include groups with up to ten objects.

²Drawings need not show details, but should show the mathematics in the problem.

Number and Operations in Base Ten

Work with numbers 11–19 to gain foundations for place value.

1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$); understand that these numbers are composed of ten ones and one,

two, three, four, five, six, seven, eight, or nine ones.

Measurement and Data

Describe and compare measurable attributes.

1. Describe measurable attributes of objects, such as length or weight.

Describe several measurable attributes of a single object.

2. Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. *For example, directly compare the heights of two children and describe one child as taller/shorter.*

Classify objects and count the number of objects in each category.

3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

Geometry

Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above, below, beside, in front of, behind, and next to.*
2. Correctly name shapes regardless of their orientations or overall size.
3. Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).

Analyze, compare, create, and compose shapes.

4. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).
5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
6. Compose simple shapes to form larger shapes. *For example, “Can you join these two triangles with full sides touching to make a rectangle?”*

Limit category counts to be less than or equal to 10.

Mathematics | Grade 1

In Grade 1, instructional time should focus on four critical areas: (1) developing understanding of addition, subtraction, and strategies for addition and subtraction within 20; (2) developing understanding of whole number relationships and place value, including grouping in tens and ones; (3) developing understanding of linear measurement and measuring lengths as iterating length units; and (4) reasoning about attributes of, and composing and decomposing geometric shapes.

- (1) Students develop strategies for adding and subtracting whole numbers based on their prior work with small numbers. They use a variety of models, including discrete objects and length-based models (e.g., cubes connected

to form lengths), to model add-to, take-from, put-together, take-apart, and compare situations to develop meaning for the operations of addition and subtraction, and to develop strategies to solve arithmetic problems with these operations. Students understand connections between counting and addition and subtraction (e.g., adding two is the same as counting on two). They use properties of addition to add whole numbers and to create and use increasingly sophisticated strategies based on these properties (e.g., “making tens”) to solve addition and subtraction problems within 20. By comparing a variety of solution strategies, children build their understanding of the relationship between addition and subtraction.

(2) Students develop, discuss, and use efficient, accurate, and generalizable methods to add within 100 and subtract multiples of 10. They compare whole numbers (at least to 100) to develop understanding of and solve problems involving their relative sizes. They think of whole numbers between 10 and 100 in terms of tens and ones (especially recognizing the numbers 11 to 19 as composed of a ten and some ones). Through activities that build number sense, they understand the order of the counting numbers and their relative magnitudes.

(3) Students develop an understanding of the meaning and processes of measurement, including underlying concepts such as iterating (the mental activity of building up the length of an object with equal-sized units) and the transitivity principle for indirect measurement.¹

(4) Students compose and decompose plane or solid figures (e.g., put two triangles together to make a quadrilateral) and build understanding of part-whole relationships as well as the properties of the original and composite shapes. As they combine shapes, they recognize them from different perspectives and orientations, describe their geometric attributes, and determine how they are alike and different, to develop the background for measurement and for initial understandings of properties such as congruence and symmetry.

Grade 1 Overview

Operations and Algebraic Thinking

- Represent and solve problems involving addition and subtraction.
- Understand and apply properties of operations and the relationship between addition and subtraction.
- Add and subtract within 20.
- Work with addition and subtraction equations.

Number and Operations in Base Ten

- Extend the counting sequence.
- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

Measurement and Data

- Measure lengths indirectly and by iterating length units.
- Tell and write time.
- Represent and interpret data.

Geometry

- Reason with shapes and their attributes.

Operations and Algebraic Thinking

Represent and solve problems involving addition and subtraction.

1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.²
2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Understand and apply properties of operations and the relationship between addition and subtraction.

3. Apply properties of operations as strategies to add and subtract.³ *Examples:*

If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known. (Commutative property of addition.) To add $2 + 6 + 4$, the second two numbers can be added to make

a ten, so $2 + 6 + 4 = 2 + 10 = 12$. (Associative property of addition.)

4. Understand subtraction as an unknown-addend problem. *For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8.*

Add and subtract within 20.

5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).

Work with addition and subtraction equations.

7. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. *For example, which of the following equations are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.*

8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = \square - 3$, $6 + 6 = \square$.*

Number and Operations in Base Ten

Extend the counting sequence.

1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

Understand place value.

2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
 - a. 10 can be thought of as a bundle of ten ones — called a “ten.”
 - b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
 - c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).

Students need not use formal terms for these properties.

3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.

Use place value understanding and properties of operations to add and subtract.

4. Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction;

relate the strategy to a written method and explain the reasoning used.

Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

5. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

6. Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Measurement and Data

Measure lengths indirectly and by iterating length units.

1. Order three objects by length; compare the lengths of two objects indirectly by using a third object.

2. Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.*

Tell and write time.

3. Tell and write time in hours and half-hours using analog and digital

clocks.

Represent and interpret data.

4. Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Geometry

Reason with shapes and their attributes.

1. Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.
2. Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.
3. Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.
4. Students do not need to learn formal names such as “right rectangular prism.”

Mathematics | Grade 2

In Grade 2, instructional time should focus on four critical areas: (1) extending understanding of base-ten notation; (2) building fluency with addition and subtraction; (3) using standard units of measure; and (4) describing and analyzing shapes.

(1) Students extend their understanding of the base-ten system. This includes ideas of counting in fives, tens, and multiples of hundreds, tens, and ones, as well as number relationships involving these units, including comparing. Students understand multi-digit numbers (up to 1000) written in base-ten notation, recognizing that the digits in each place represent amounts of thousands, hundreds, tens, or ones (e.g., 853 is 8 hundreds + 5 tens + 3 ones).

(2) Students use their understanding of addition to develop fluency with addition and subtraction within 100. They solve problems within 1000 by applying their understanding of models for addition and subtraction, and they develop, discuss, and use efficient, accurate, and generalizable methods to compute sums and differences of whole numbers in base-ten notation, using their understanding of place value and the properties of operations. They select and accurately apply methods that are appropriate for the context and the numbers involved to mentally calculate sums and differences for numbers with only tens or only hundreds.

(3) Students recognize the need for standard units of measure (centimeter and inch) and they use rulers and other measurement tools with the

understanding that linear measure involves an iteration of units. They recognize that the smaller the unit, the more iterations they need to cover a given length.

(4) Students describe and analyze shapes by examining their sides and angles. Students investigate, describe, and reason about decomposing and combining shapes to make other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades.

Operations and Algebraic Thinking

- Represent and solve problems involving addition and subtraction.
- Add and subtract within 20.
- Work with equal groups of objects to gain foundations for multiplication.

Number and Operations in Base Ten

- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

Measurement and Data

- Measure and estimate lengths in standard units.
- Relate addition and subtraction to length.
- Work with time and money.
- Represent and interpret data.

Geometry

- Reason with shapes and their attributes.

Operations and Algebraic Thinking

Represent and solve problems involving addition and subtraction.

1. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

Add and subtract within 20.

2. Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.

Work with equal groups of objects to gain foundations for multiplication.

3. Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.
4. Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

Number and Operations in Base Ten

Understand place value.

1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:
 - a. 100 can be thought of as a bundle of ten tens — called a “hundred.”
 - b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).
2. Count within 1000; skip-count by 5s, 10s, and 100s.
3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
4. Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.

Use place value understanding and properties of operations to add and subtract.

5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
6. Add up to four two-digit numbers using strategies based on place value and properties of operations.

7. Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
8. Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.
9. Explain why addition and subtraction strategies work, using place value and the properties of operations.

Measurement and Data

Measure and estimate lengths in standard units.

1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
2. Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.
3. Estimate lengths using units of inches, feet, centimeters, and meters.
4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Relate addition and subtraction to length.

5. Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.
6. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.

Work with time and money.

7. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.
8. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately. *Example: If you have 2 dimes and 3 pennies, how many cents do you have?*

Represent and interpret data.

9. Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.
10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

Geometry

Reason with shapes and their attributes.

1. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.⁵ Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
2. Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.
3. Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words *halves*, *thirds*, *half of*, *a third of*, etc., and describe the whole as two halves, three thirds, four fourths.

Recognize that equal shares of identical wholes need not have the same shape.

Mathematics | Grade 3

In Grade 3, instructional time should focus on four critical areas: (1) developing understanding of multiplication and division and strategies for multiplication and division within 100; (2) developing understanding of fractions, especially unit fractions (fractions with numerator 1); (3) developing understanding of the structure of rectangular arrays and of area; and (4) describing and analyzing two-dimensional shapes.

- (1) Students develop an understanding of the meanings of multiplication and division of whole numbers through activities and problems involving equal-sized groups, arrays, and area models; multiplication is finding an unknown product, and division is finding an unknown factor in these

situations. For equal-sized group situations, division can require finding the unknown number of groups or the unknown group size. Students use properties of operations to calculate products of whole numbers, using increasingly sophisticated strategies based on these properties to solve multiplication and division problems involving single-digit factors. By comparing a variety of solution strategies, students learn the relationship between multiplication and division.

(2) Students develop an understanding of fractions, beginning with unit fractions. Students view fractions in general as being built out of unit fractions, and they use fractions along with visual fraction models to represent parts of a whole. Students understand that the size of a fractional part is relative to the size of the whole. For example, $\frac{1}{2}$ of the paint in a small bucket could be less paint than $\frac{1}{3}$ of the paint in a larger bucket, but $\frac{1}{3}$ of a ribbon is longer than $\frac{1}{5}$ of the same ribbon because when the ribbon is divided into 3 equal parts, the parts are longer than when the ribbon is divided into 5 equal parts. Students are able to use fractions to represent numbers equal to, less than, and greater than one. They solve problems that involve comparing fractions by using visual fraction models and strategies based on noticing equal numerators or denominators.

(3) Students recognize area as an attribute of two-dimensional regions. They measure the area of a shape by finding the total number of same-size

units of area required to cover the shape without gaps or overlaps, a square with sides of unit length being the standard unit for measuring area. Students understand that rectangular arrays can be decomposed into identical rows or into identical columns. By decomposing rectangles into rectangular arrays of squares, students connect area to multiplication, and justify using multiplication to determine the area of a rectangle.

(4) Students describe, analyze, and compare properties of two-dimensional shapes. They compare and classify shapes by their sides and angles, and connect these with definitions of shapes. Students also relate their fraction work to geometry by expressing the area of part of a shape as a unit fraction of the whole.

Operations and Algebraic Thinking

- Represent and solve problems involving multiplication and division.
- Understand properties of multiplication and the relationship between multiplication and division.
- Multiply and divide within 100.
- Solve problems involving the four operations, and identify and explain patterns in arithmetic.

Number and Operations in Base Ten

- Use place value understanding and properties of operations to perform multi-digit arithmetic.

Number and Operations—Fractions

- Develop understanding of fractions as numbers.

Measurement and Data

- Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
- Represent and interpret data.
- Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
- Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

Geometry

- Reason with shapes and their attributes.

Grade 3 Overview

Operations and Algebraic Thinking

Represent and solve problems involving multiplication and division.

1. Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5×7 .*
2. Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are

partitioned equally into 8 shares, or as a number of shares when

56 objects are partitioned into equal shares of 8 objects each. *For*

example, describe a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.

3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

4. Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations*

$$8 \times ? = 48, 5 = \square \div 3, 6 \times 6 = ?.$$

Understand properties of multiplication and the relationship between multiplication and division.

5. Apply properties of operations as strategies to multiply and divide. *Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known.*

(Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by 3

$\times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative

property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one

can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)

6. Understand division as an unknown-factor problem. *For example, find*

$32 \div 8$ by finding the number that makes 32 when multiplied by 8.

Multiply and divide within 100.

7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

Solve problems involving the four operations, and identify and explain patterns in arithmetic.

8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

9. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.

For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.

Number and Operations in Base Ten

Use place value understanding and properties of operations to perform multi-digit arithmetic.

1. Use place value understanding to round whole numbers to the nearest 10 or 100.

2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

3. Multiply one-digit whole numbers by multiples of 10 in the range

10–90 (e.g., 9×80 , 5×60) using strategies based on place value and properties of operations.

Number and Operations—Fractions

Develop understanding of fractions as numbers.

1. Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.
2. Understand a fraction as a number on the number line; represent fractions on a number line diagram.
 - a. Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part based at 0 locates the number $1/b$ on the number line.
 - b. Represent a fraction a/b on a number line diagram by marking off a lengths $1/b$ from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.
3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
 - a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
 - b. Recognize and generate simple equivalent fractions, e.g., $1/2 = 2/4$, $4/6 = 2/3$. Explain why the fractions are equivalent, e.g., by

using a visual fraction model.

c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form $3 = 3/1$; recognize that $6/1 = 6$; locate $4/4$ and 1 at the same point of a number line diagram.*

d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

Measurement and Data

Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.

1. Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.
2. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).⁶ Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent

the problem.

Represent and interpret data.

3. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*
4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.

Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

5. Recognize area as an attribute of plane figures and understand concepts of area measurement.
 - a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area.
 - b. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.
6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
7. Relate area to the operations of multiplication and addition.

- a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
- b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
- c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.
- d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

- 8. Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

Geometry

Reason with shapes and their attributes.

1. Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
2. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as $\frac{1}{4}$ of the area of the shape.*

Mathematics | Grade 4

In Grade 4, instructional time should focus on three critical areas: (1) developing understanding and fluency with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends; (2) developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions by whole numbers; (3) understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.

- (1) Students generalize their understanding of place value to 1,000,000, understanding the relative sizes of numbers in each place. They apply their understanding of models for multiplication (equal-sized groups, arrays,

area models), place value, and properties of operations, in particular the distributive property, as they develop, discuss, and use efficient, accurate, and generalizable methods to compute products of multi-digit whole numbers. Depending on the numbers and the context, they select and accurately apply appropriate methods to estimate or mentally calculate products. They develop fluency with efficient procedures for multiplying whole numbers; understand and explain why the procedures work based on place value and properties of operations; and use them to solve problems. Students apply their understanding of models for division, place value, properties of operations, and the relationship of division to multiplication as they develop, discuss, and use efficient, accurate, and generalizable procedures to find quotients involving multi-digit dividends. They select and accurately apply appropriate methods to estimate and mentally calculate quotients, and interpret remainders based upon the context.

(2) Students develop understanding of fraction equivalence and operations with fractions. They recognize that two different fractions can be equal (e.g., $15/9 = 5/3$), and they develop methods for generating and recognizing equivalent fractions. Students extend previous understandings about how fractions are built from unit fractions, composing fractions from unit fractions, decomposing fractions into unit fractions, and using the meaning of fractions and the meaning of multiplication to multiply a fraction by a whole number.

(3) Students describe, analyze, compare, and classify two-dimensional shapes. Through building, drawing, and analyzing two-dimensional shapes, students deepen their understanding of properties of two-dimensional objects and the use of them to solve problems involving symmetry.

Grade 4 Overview

Operations and Algebraic Thinking

- Use the four operations with whole numbers to solve problems.
- Gain familiarity with factors and multiples.
- Generate and analyze patterns.

Number and Operations in Base Ten

- Generalize place value understanding for multidigit whole numbers.
- Use place value understanding and properties of operations to perform multi-digit arithmetic.

Number and Operations—Fractions

- Extend understanding of fraction equivalence and ordering.
- Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
- Understand decimal notation for fractions, and compare decimal fractions.

Measurement and Data

- Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.
- Represent and interpret data.
- Geometric measurement: understand concepts of angle and measure angles.

Geometry

- Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

Operations and Algebraic Thinking

Use the four operations with whole numbers to solve problems.

1. Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
 2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
 3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity.
- Assess the reasonableness of answers using mental computation and

estimation strategies including rounding.

Gain familiarity with factors and multiples.

4. Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.

Generate and analyze patterns.

5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. *For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.*

Number and Operations in Base Ten

Generalize place value understanding for multi-digit whole numbers.

1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. *For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.*

2. Read and write multi-digit whole numbers using base-ten numerals,

number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.

3. Use place value understanding to round multi-digit whole numbers to any place.

Use place value understanding and properties of operations to perform multi-digit arithmetic.

4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.

5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Number and Operations—Fractions

Extend understanding of fraction equivalence and ordering.

1. Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

2. Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

3. Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$.
- a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
 - b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples:* $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$; $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$; $2\frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$.
 - c. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
 - d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations

to represent the problem.

4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

- a. Understand a fraction a/b as a multiple of $1/b$. *For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.*
- b. Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. *For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as $6/5$. (In general, $n \times (a/b) = (n \times a)/b$.)*
- c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. *For example, if each person at a party will eat $3/8$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?*

Understand decimal notation for fractions, and compare decimal fractions.

5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. *For example, express $3/10$ as $30/100$, and add $3/10 + 4/100 = 34/100$.*
6. Use decimal notation for fractions with denominators 10 or 100. *For example, rewrite 0.62 as $62/100$; describe a length as 0.62 meters; locate*

0.62 on a number line diagram.

7. Compare two decimals to hundredths by reasoning about their size.

Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model.

Measurement and Data

Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

1. Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a twocolumn table. *For example, know that 1 ft is 12 times as long as 1 in.*

Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...

2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems. *For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.*

Represent and interpret data.

4. Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.*

Geometric measurement: understand concepts of angle and measure angles.

5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:

- a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle,” and can be used to measure angles.
- b. An angle that turns through n one-degree angles is said to have an angle measure of n degrees.

6. Measure angles in whole-number degrees using a protractor. Sketch

angles of specified measure.

7. Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.

Geometry

Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
2. Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.
3. Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

Mathematics | Grade 5

In Grade 5, instructional time should focus on three critical areas: (1) developing fluency with addition and subtraction of fractions, and developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions); (2) extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations; and (3) developing understanding of volume.

(1) Students apply their understanding of fractions and fraction models to represent the addition and subtraction of fractions with unlike denominators as equivalent calculations with like denominators. They develop fluency in calculating sums and differences of fractions, and make reasonable estimates of them. Students also use the meaning of fractions, of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for multiplying and dividing fractions make sense. (Note: this is limited to the case of dividing unit fractions by whole numbers and whole numbers by unit fractions.)

(2) Students develop understanding of why division procedures work based on the meaning of base-ten numerals and properties of operations. They finalize fluency with multi-digit addition, subtraction, multiplication, and division. They apply their understandings of models for decimals, decimal notation, and properties of operations to add and subtract decimals to hundredths. They develop fluency in these computations, and

make reasonable estimates of their results. Students use the relationship between decimals and fractions, as well as the relationship between finite decimals and whole numbers (i.e., a finite decimal multiplied by an appropriate power of 10 is a whole number), to understand and explain why the procedures for multiplying and dividing finite decimals make sense. They compute products and quotients of decimals to hundredths efficiently and accurately.

(3) Students recognize volume as an attribute of three-dimensional space. They understand that volume can be measured by finding the total number of same-size units of volume required to fill the space without gaps or overlaps. They understand that a 1-unit by 1-unit by 1-unit cube is the standard unit for measuring volume. They select appropriate units, strategies, and tools for solving problems that involve estimating and measuring volume. They decompose three-dimensional shapes and find volumes of right rectangular prisms by viewing them as decomposed into layers of arrays of cubes. They measure necessary attributes of shapes in order to determine volumes to solve real world and mathematical problems.

Operations and Algebraic Thinking

- Write and interpret numerical expressions.
- Analyze patterns and relationships.

Number and Operations in Base Ten

- Understand the place value system.
- Perform operations with multi-digit whole numbers and with decimals to hundredths.

Number and Operations—Fractions

- Use equivalent fractions as a strategy to add and subtract fractions.
- Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

Measurement and Data

- Convert like measurement units within a given measurement system.
- Represent and interpret data.
- Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

Geometry

- Graph points on the coordinate plane to solve real-world and mathematical problems.
- Classify two-dimensional figures into categories based on their properties.

Grade 5 Overview

Operations and Algebraic Thinking

Write and interpret numerical expressions.

1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
2. Write simple expressions that record calculations with numbers, and

interpret numerical expressions without evaluating them. *For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product.*

Analyze patterns and relationships.

3. Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. *For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.*

Number and Operations in Base Ten

Understand the place value system.

1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $1/10$ of what it represents in the place to its left.
2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote

powers of 10.

3. Read, write, and compare decimals to thousandths.

a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.

b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.

4. Use place value understanding to round decimals to any place.

Perform operations with multi-digit whole numbers and with decimals to hundredths.

5. Fluently multiply multi-digit whole numbers using the standard algorithm.

6. Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

7. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Number and Operations—Fractions

Use equivalent fractions as a strategy to add and subtract fractions.

1. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. *For example, $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$. (In general, $\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$.)*
2. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. *For example, recognize an incorrect result $\frac{2}{5} + \frac{1}{2} = \frac{3}{7}$, by observing that $\frac{3}{7} < \frac{1}{2}$.*

Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

3. Interpret a fraction as division of the numerator by the denominator ($\frac{a}{b} = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. *For example, interpret $\frac{3}{4}$ as the result of dividing 3 by 4, noting that $\frac{3}{4}$ multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size $\frac{3}{4}$. If 9 people*

want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?

4. Apply and extend previous understandings of multiplication to

multiply a fraction or whole number by a fraction.

a. Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. *For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$.)*

b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.

5. Interpret multiplication as scaling (resizing), by:

a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.

b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given

number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.

6. Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.¹

a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for $(1/3) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$ because $(1/12) \times 4 = 1/3$.*

b. Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$.*

c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, how much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $1/3$ -cup servings are in 2 cups of raisins?*

Measurement and Data

Convert like measurement units within a given measurement system.

1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

Represent and interpret data.

2. Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.*

Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
 - a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.
 - b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.
4. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
5. Relate volume to the operations of multiplication and addition and

solve real world and mathematical problems involving volume.

- a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.
- b. Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with wholenumber edge lengths in the context of solving real world and mathematical problems.
- c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

Geometry

Graph points on the coordinate plane to solve real-world and mathematical problems.

1. Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second

number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x -axis and x -coordinate, y -axis and y -coordinate).

2. Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

Classify two-dimensional figures into categories based on their properties.

3. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.

For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.

4. Classify two-dimensional figures in a hierarchy based on properties.

Mathematics | Grade 6

In Grade 6, instructional time should focus on four critical areas: (1) connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems; (2) completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers; (3) writing, interpreting, and using expressions and equations; and (4) developing understanding of statistical thinking.

(1) Students use reasoning about multiplication and division to solve ratio and rate problems about quantities. By viewing equivalent ratios

and rates as deriving from, and extending, pairs of rows (or columns) in the multiplication table, and by analyzing simple drawings that indicate the relative size of quantities, students connect their understanding of multiplication and division with ratios and rates. Thus students expand the scope of problems for which they can use multiplication and division to solve problems, and they connect ratios and fractions. Students solve a wide variety of problems involving ratios and rates.

(2) Students use the meaning of fractions, the meanings of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for dividing fractions make sense. Students use these operations to solve problems. Students extend their previous understandings of number and the ordering of numbers to the full system of rational numbers, which includes negative rational numbers, and in particular negative integers. They reason about the order and absolute value of rational numbers and about the location of points in all four quadrants of the coordinate plane.

(3) Students understand the use of variables in mathematical expressions. They write expressions and equations that correspond to given situations, evaluate expressions, and use expressions and formulas to solve problems. Students understand that expressions in different forms can be equivalent, and they use the properties of operations to rewrite expressions in equivalent forms. Students know that the solutions of an equation are the

values of the variables that make the equation true. Students use properties of operations and the idea of maintaining the equality of both sides of an equation to solve simple one-step equations. Students construct and analyze tables, such as tables of quantities that are in equivalent ratios, and they use equations (such as $3x = y$) to describe relationships between quantities.

(4) Building on and reinforcing their understanding of number, students begin to develop their ability to think statistically. Students recognize that a data distribution may not have a definite center and that different ways to measure center yield different values. The median measures center in the sense that it is roughly the middle value. The mean measures center in the sense that it is the value that each data point would take on if the total of the data values were redistributed equally, and also in the sense that it is a balance point. Students recognize that a measure of variability (interquartile range or mean absolute deviation) can also be useful for summarizing data because two very different sets of data can have the same mean and median yet be distinguished by their variability. Students learn to describe and summarize numerical data sets, identifying clusters, peaks, gaps, and symmetry, considering the context in which the data were collected. Students in Grade 6 also build on their work with area in elementary school by reasoning about relationships among shapes to determine area, surface area, and volume. They find areas of right triangles, other triangles, and special quadrilaterals by decomposing these shapes, rearranging

or removing pieces, and relating the shapes to rectangles. Using these methods, students discuss, develop, and justify formulas for areas of triangles and parallelograms. Students find areas of polygons and surface areas of prisms and pyramids by decomposing them into pieces whose area they can determine. They reason about right rectangular prisms with fractional side lengths to extend formulas for the volume of a right rectangular prism to fractional side lengths. They prepare for work on scale drawings and constructions in Grade 7 by drawing polygons in the coordinate plane.

Ratios and Proportional Relationships

- Understand ratio concepts and use ratio reasoning to solve problems.

The Number System

- Apply and extend previous understandings of multiplication and division to divide fractions by fractions.
- Compute fluently with multi-digit numbers and find common factors and multiples.
- Apply and extend previous understandings of numbers to the system of rational numbers.

Expressions and Equations

- Apply and extend previous understandings of arithmetic to algebraic expressions.
- Reason about and solve one-variable equations and inequalities.
- Represent and analyze quantitative relationships between dependent and independent variables.

Geometry

- Solve real-world and mathematical problems involving area, surface area, and volume.

Statistics and Probability

- Develop understanding of statistical variability.
- Summarize and describe distributions.

Grade 6 Overview

Ratios and Proportional Relationships

Understand ratio concepts and use ratio reasoning to solve problems.

1. Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.” “For every vote candidate A received, candidate C received nearly three votes.”*

2. Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship.

For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar." "We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger."

3. Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.

a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.

b. Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*

c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means $30/100$ times the quantity); solve problems involving finding the whole, given a part and the percent.

d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

The Number System

Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

1. Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, create a story context for $(2/3) \div (3/4)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because $3/4$ of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = ad/bc$.) How much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $3/4$ -cup servings are in $2/3$ of a cup of yogurt? How wide is a rectangular strip of land with length $3/4$ mi and area $1/2$ square mi?*

Compute fluently with multi-digit numbers and find common factors and multiples.

2. Fluently divide multi-digit numbers using the standard algorithm.
3. Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.
4. Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. *For example, express $36 + 8$ as $4(9 + 2)$.*

Apply and extend previous understandings of numbers to the system of rational numbers.

5. Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.
6. Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.
 - a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., $-(-3) = 3$, and that 0 is its own opposite.
 - b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.
 - c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
7. Understand ordering and absolute value of rational numbers.
 - a. Interpret statements of inequality as statements about the relative

position of two numbers on a number line diagram. *For example, interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right.*

b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write $-3\text{ }^{\circ}\text{C} > -7\text{ }^{\circ}\text{C}$ to express the fact that $-3\text{ }^{\circ}\text{C}$ is warmer than $-7\text{ }^{\circ}\text{C}$.*

c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. *For example, for an account balance of -30 dollars, write $|-30| = 30$ to describe the size of the debt in dollars.*

d. Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.*

8. Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

Expressions and Equations

Apply and extend previous understandings of arithmetic to algebraic expressions.

1. Write and evaluate numerical expressions involving whole-number exponents.
2. Write, read, and evaluate expressions in which letters stand for

numbers.

a. Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation “Subtract y from 5” as $5 - y$.*

b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression $2(8 + 7)$ as a product of two factors; view $(8 + 7)$ as both a single entity and a sum of two terms.*

c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = \frac{1}{2}$.*

3. Apply the properties of operations to generate equivalent expressions. *For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.*

4. Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is

substituted into them). *For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands for.*

Reason about and solve one-variable equations and inequalities.

5. Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
7. Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers.
8. Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

Represent and analyze quantitative relationships between dependent and independent variables.

9. Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express

one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. *For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.*

Geometry

Solve real-world and mathematical problems involving area, surface area, and volume.

1. Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
2. Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l w h$ and $V = b h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
3. Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these

techniques in the context of solving real-world and mathematical problems.

4. Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

Statistics and Probability

Develop understanding of statistical variability.

1. Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. *For example, “How old am I?” is not a statistical question, but “How old are the students in my school?” is a statistical question because one anticipates variability in students’ ages.*

2. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.

3. Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.

Summarize and describe distributions.

4. Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

5. Summarize numerical data sets in relation to their context, such as by:

- a. Reporting the number of observations.
- b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.
- c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
- d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

Mathematics | Grade 7

In Grade 7, instructional time should focus on four critical areas: (1) developing understanding of and applying proportional relationships; (2) developing understanding of operations with rational numbers and working with expressions and linear equations; (3) solving problems involving scale drawings and informal geometric constructions, and working with two- and three-dimensional shapes to solve problems involving area, surface area, and volume; and (4) drawing inferences about populations based on samples.

- (1) Students extend their understanding of ratios and develop understanding of proportionality to solve single- and multi-step problems. Students use their understanding of ratios and proportionality to solve

a wide variety of percent problems, including those involving discounts, interest, taxes, tips, and percent increase or decrease. Students solve problems about scale drawings by relating corresponding lengths between the objects or by using the fact that relationships of lengths within an object are preserved in similar objects. Students graph proportional relationships and understand the unit rate informally as a measure of the steepness of the related line, called the slope. They distinguish proportional relationships from other relationships.

(2) Students develop a unified understanding of number, recognizing fractions, decimals (that have a finite or a repeating decimal representation), and percents as different representations of rational numbers. Students extend addition, subtraction, multiplication, and division to all rational numbers, maintaining the properties of operations and the relationships between addition and subtraction, and multiplication and division. By applying these properties, and by viewing negative numbers in terms of everyday contexts (e.g., amounts owed or temperatures below zero), students explain and interpret the rules for adding, subtracting, multiplying, and dividing with negative numbers. They use the arithmetic of rational numbers as they formulate expressions and equations in one variable and use these equations to solve problems.

(3) Students continue their work with area from Grade 6, solving problems involving the area and circumference of a circle and surface area of three-dimensional

objects. In preparation for work on congruence and similarity in Grade 8 they reason about relationships among two-dimensional figures using scale drawings and informal geometric constructions, and they gain familiarity with the relationships between angles formed by intersecting lines. Students work with three-dimensional figures, relating them to two-dimensional figures by examining cross-sections. They solve real-world and mathematical problems involving area, surface area, and volume of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes and right prisms.

(4) Students build on their previous work with single data distributions to compare two data distributions and address questions about differences between populations. They begin informal work with random sampling to generate data sets and learn about the importance of representative samples for drawing inferences.

Ratios and Proportional Relationships

- Analyze proportional relationships and use them to solve real-world and mathematical problems.

The Number System

- Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

Expressions and Equations

- Use properties of operations to generate equivalent expressions.
- Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

Geometry

- Draw, construct and describe geometrical figures and describe the relationships between them.
- Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

Statistics and Probability

- Use random sampling to draw inferences about a population.
- Draw informal comparative inferences about two populations.
- Investigate chance processes and develop, use, and evaluate probability models.

Grade 7 Overview

Ratios and Proportional Relationships

Analyze proportional relationships and use them to solve real-world and mathematical problems.

1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the unit rate as the complex fraction $\frac{1/2}{1/4}$ miles per hour, equivalently 2 miles per hour.*
2. Recognize and represent proportional relationships between quantities.
 - a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.
 - b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
 - c. Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p , the relationship between the total cost and the number of items can be expressed as $t = pn$.*
 - d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.

3. Use proportional relationships to solve multistep ratio and percent problems. *Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.*

The Number System

Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

1. Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.
 - a. Describe situations in which opposite quantities combine to make 0. *For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.*
 - b. Understand $p + q$ as the number located a distance $|q|$ from p , in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.
 - c. Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.
 - d. Apply properties of operations as strategies to add and subtract

rational numbers.

2. Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.

a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.

b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.

c. Apply properties of operations as strategies to multiply and divide rational numbers.

d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.

3. Solve real-world and mathematical problems involving the four operations with rational numbers.

Expressions and Equations

Use properties of operations to generate equivalent expressions.

1. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, $a + 0.05a = 1.05a$ means that “increase by 5%” is the same as “multiply by 1.05.”*

Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For example: If a woman making \$25 an hour gets a 10% raise, she will make an additional $\frac{1}{10}$ of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.*
4. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.

- a. Solve word problems leading to equations of the form $px + q = r$

and $p(x + q) = r$, where p , q , and r are specific rational numbers.

Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?*

b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p , q , and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.*

Geometry

Draw, construct, and describe geometrical figures and describe the relationships between them.

1. Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
2. Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.
3. Describe the two-dimensional figures that result from slicing three-dimensional

figures, as in plane sections of right rectangular prisms
and right rectangular pyramids.

Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

4. Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
5. Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.
6. Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

Statistics and Probability

Use random sampling to draw inferences about a population.

1. Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
2. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in

estimates or predictions. *For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.*

Draw informal comparative inferences about two populations.

3. Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. *For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.*

4. Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. *For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.*

Investigate chance processes and develop, use, and evaluate probability models.

5. Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0

indicates an unlikely event, a probability around $1/2$ indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.

6. Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. *For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.*

7. Develop a probability model and use it to find probabilities of events.

Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.

a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. *For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.*

b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. *For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?*

8. Find probabilities of compound events using organized lists, tables,

tree diagrams, and simulation.

- a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.
- b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event.
- c. Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?*

Mathematics | Grade 8

In Grade 8, instructional time should focus on three critical areas: (1) formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations; (2) grasping the concept of a function and using functions to describe quantitative relationships; (3) analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem.

- (1) Students use linear equations and systems of linear equations to represent, analyze, and solve a variety of problems. Students recognize equations for

proportions ($y/x = m$ or $y = mx$) as special linear equations ($y = mx + b$), understanding that the constant of proportionality (m) is the slope, and the graphs are lines through the origin. They understand that the slope (m) of a line is a constant rate of change, so that if the input or x -coordinate changes by an amount A , the output or y -coordinate changes by the amount $m \cdot A$. Students also use a linear equation to describe the association between two quantities in bivariate data (such as arm span vs. height for students in a classroom). At this grade, fitting the model, and assessing its fit to the data are done informally. Interpreting the model in the context of the data requires students to express a relationship between the two quantities in question and to interpret components of the relationship (such as slope and y -intercept) in terms of the situation.

Students strategically choose and efficiently implement procedures to solve linear equations in one variable, understanding that when they use the properties of equality and the concept of logical equivalence, they maintain the solutions of the original equation. Students solve systems of two linear equations in two variables and relate the systems to pairs of lines in the plane; these intersect, are parallel, or are the same line. Students use linear equations, systems of linear equations, linear functions, and their understanding of slope of a line to analyze situations and solve problems.

(2) Students grasp the concept of a function as a rule that assigns to each input exactly one output. They understand that functions describe situations where one quantity determines another. They can translate among representations and partial

representations of functions (noting that tabular and graphical representations may be partial representations), and they describe how aspects of the function are reflected in the different representations.

(3) Students use ideas about distance and angles, how they behave under translations, rotations, reflections, and dilations, and ideas about congruence and similarity to describe and analyze two-dimensional figures and to solve problems. Students show that the sum of the angles in a triangle is the angle formed by a straight line, and that various configurations of lines give rise to similar triangles because of the angles created when a transversal cuts parallel lines. Students understand the statement of the Pythagorean Theorem and its converse, and can explain why the Pythagorean Theorem holds, for example, by decomposing a square in two different ways. They apply the Pythagorean Theorem to find distances between points on the coordinate plane, to find lengths, and to analyze polygons. Students complete their work on volume by solving problems involving cones, cylinders, and spheres.

The Number System

- Know that there are numbers that are not rational, and approximate them by rational numbers.

Expressions and Equations

- Work with radicals and integer exponents.
- Understand the connections between

proportional relationships, lines, and linear equations.

- Analyze and solve linear equations and pairs of simultaneous linear equations.

Functions

- Define, evaluate, and compare functions.
- Use functions to model relationships between quantities.

Geometry

- Understand congruence and similarity using physical models, transparencies, or geometry software.
- Understand and apply the Pythagorean Theorem.
- Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.

Statistics and Probability

- Investigate patterns of association in bivariate data.

Grade 8 Overview

The Number System

Know that there are numbers that are not rational, and approximate them by rational numbers.

1. Know that numbers that are not rational are called irrational.

Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.

2. Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2). *For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*

Expressions and Equations

Work with radicals and integer exponents.

1. Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$.*
2. Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.
3. Use numbers expressed in the form of a single digit times an integer

power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *For example, estimate the population of the United States as 3×10^8 and the population of the world as 7×10^9 , and determine that the world population is more than 20 times larger.*

4. Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.

Understand the connections between proportional relationships, lines, and linear equations.

5. Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. *For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.*

6. Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b .

Analyze and solve linear equations and pairs of simultaneous linear equations.

7. Solve linear equations in one variable.

- a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers).
- b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

8. Analyze and solve pairs of simultaneous linear equations.

- a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.
- b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. *For example, $3x + 2y = 5$ and $3x + 2y = 6$ have no solution because $3x + 2y$ cannot simultaneously be 5 and 6.*
- c. Solve real-world and mathematical problems leading to two linear equations in two variables. *For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.*

Functions

Define, evaluate, and compare functions.

1. Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.¹
2. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.*
3. Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. *For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points $(1,1)$, $(2,4)$ and $(3,9)$, which are not on a straight line.*

Use functions to model relationships between quantities.

4. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.

5. Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

Geometry

Understand congruence and similarity using physical models, transparencies, or geometry software.

1. Verify experimentally the properties of rotations, reflections, and translations:
 - a. Lines are taken to lines, and line segments to line segments of the same length.
 - b. Angles are taken to angles of the same measure.
 - c. Parallel lines are taken to parallel lines.
2. Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
3. Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
4. Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar twodimensional figures, describe a sequence that exhibits the similarity

between them.

5. Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. *For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.*

Understand and apply the Pythagorean Theorem.

6. Explain a proof of the Pythagorean Theorem and its converse.

7. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.

8. Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

9. Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.

Statistics and Probability

Investigate patterns of association in bivariate data.

1. Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities.

Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.

2. Know that straight lines are widely used to model relationships

between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.

3. Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.

For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.

4. Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects.

Use relative frequencies calculated for rows or columns to describe possible association between the two variables. *For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?*

Mathematics Standards for High School

The high school standards specify the mathematics that all students should study in order to be college and career ready. Additional mathematics that students should learn in order to take advanced courses such as calculus, advanced statistics, or discrete mathematics is indicated by (+), as in this example: (+) Represent complex numbers on the complex plane in rectangular and polar form (including real and imaginary numbers). All standards without a (+) symbol should be in the common mathematics curriculum for all college and career ready students. Standards with a (+) symbol may also appear in courses intended for all students.

The high school standards are listed in conceptual categories:

- Number and Quantity
- Algebra
- Functions
- Modeling
- Geometry
- Statistics and Probability

Conceptual categories portray a coherent view of high school mathematics; a student's work with functions, for example, crosses a number of traditional course boundaries, potentially up through and including calculus.

Modeling is best interpreted not as a collection of isolated topics but in relation to other standards. Making mathematical models is a Standard for Mathematical Practice, and specific modeling standards appear throughout the high school standards indicated by a star symbol (★).

The star symbol sometimes appears on the heading for a group of standards; in that case, it should be understood to apply to all standards in that group.

Mathematics | High School—Number and Quantity

Numbers and Number Systems. During the years from kindergarten to eighth grade, students must repeatedly extend their conception of number. At first, “number” means “counting number”: 1, 2, 3... Soon after that, 0 is used to represent “none” and the whole numbers are formed by the counting numbers together with zero. The next extension is fractions. At first, fractions are barely numbers and tied strongly to pictorial representations. Yet by the time students understand division of fractions, they have a strong concept of fractions as numbers and have connected them, via their decimal representations, with the base-ten system used to represent the whole numbers. During middle school, fractions are augmented by negative fractions to form the rational numbers. In Grade 8, students extend this system once more, augmenting the rational numbers with the irrational numbers to form the real numbers. In high school, students will be exposed to yet another extension of number, when the real numbers are augmented by the imaginary numbers to form the complex numbers.

With each extension of number, the meanings of addition, subtraction, multiplication, and division are extended. In each new number system—integers, rational numbers, real numbers, and complex numbers—the four operations stay the same in two important ways: They have the commutative, associative, and distributive properties and their new meanings are consistent with their previous meanings.

Extending the properties of whole-number exponents leads to new and productive notation. For example, properties of whole-number exponents suggest that $(5^{1/3})^3$ should be $5^{(1/3)3} = 5^1 = 5$ and that $5^{1/3}$ should be the cube root of 5.

Calculators, spreadsheets, and computer algebra systems can provide ways for students to become better acquainted with these new number systems and their notation. They can be used to generate data for numerical experiments, to help understand the workings of matrix, vector, and complex number algebra, and to experiment with non-integer exponents.

Quantities. In real world problems, the answers are usually not numbers but quantities: numbers with units, which involves measurement. In their work in measurement up through Grade 8, students primarily measure commonly used attributes such as length, area, and volume. In high school, students encounter a wider variety of units in modeling, e.g., acceleration, currency conversions, derived quantities such as person-hours and heating degree days, social science rates such as per-capita income, and rates in everyday life such as points scored per game or batting averages. They also encounter novel situations in which they themselves must conceive the attributes of interest. For example, to find a good measure of overall highway safety, they might propose measures such as fatalities per year, fatalities per year per driver, or fatalities per vehicle-mile traveled. Such a conceptual process is sometimes called quantification. Quantification is important for science, as when surface area suddenly “stands out” as an important variable in evaporation.

Quantification is also important for companies, which must conceptualize relevant attributes and create or choose suitable measures for them.

The Real Number System

- Extend the properties of exponents to rational exponents.
- Use properties of rational and irrational numbers.

Quantities

- Reason quantitatively and use units to solve problems

The Complex Number System

- Perform arithmetic operations with complex numbers.
- Represent complex numbers and their operations on the complex plane.
- Use complex numbers in polynomial identities and equations.

Vector and Matrix Quantities

- Represent and model with vector quantities.
- Perform operations on vectors.
- Perform operations on matrices and use matrices in applications.

Number and Quantity Overview

The Real Number System

Extend the properties of exponents to rational exponents.

1. Explain how the definition of the meaning of rational exponents

follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. *For example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5^{(1/3)3}$ to hold, so $(5^{1/3})^3$ must equal 5.*

2. Rewrite expressions involving radicals and rational exponents using the properties of exponents.

Use properties of rational and irrational numbers.

3. Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.

Quantities ★ N -Q

Reason quantitatively and use units to solve problems.

1. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
2. Define appropriate quantities for the purpose of descriptive modeling.
3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

The Complex Number System

Perform arithmetic operations with complex numbers.

1. Know there is a complex number i such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b real.
2. Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.
3. (+) Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers.

Represent complex numbers and their operations on the complex plane.

4. (+) Represent complex numbers on the complex plane in rectangular and polar form (including real and imaginary numbers), and explain why the rectangular and polar forms of a given complex number represent the same number.
5. (+) Represent addition, subtraction, multiplication, and conjugation of complex numbers geometrically on the complex plane; use properties of this representation for computation. *For example, $(-1 + \sqrt{3}i)^3 = 8$ because $(-1 + \sqrt{3}i)$ has modulus 2 and argument 120° .*
6. (+) Calculate the distance between numbers in the complex plane as the modulus of the difference, and the midpoint of a segment as the average of the numbers at its endpoints.

Use complex numbers in polynomial identities and equations.

7. Solve quadratic equations with real coefficients that have complex solutions.
8. (+) Extend polynomial identities to the complex numbers. *For example, rewrite $x^2 + 4$ as $(x + 2i)(x - 2i)$.*
9. (+) Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.

Vector and Matrix Quantities

Represent and model with vector quantities.

1. (+) Recognize vector quantities as having both magnitude and direction. Represent vector quantities by directed line segments, and use appropriate symbols for vectors and their magnitudes (e.g., \mathbf{v} , $|\mathbf{v}|$, $\|\mathbf{v}\|$, v).
2. (+) Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point.
3. (+) Solve problems involving velocity and other quantities that can be represented by vectors.

Perform operations on vectors.

4. (+) Add and subtract vectors.
 - a. Add vectors end-to-end, component-wise, and by the parallelogram rule. Understand that the magnitude of a sum of two vectors is typically not the sum of the magnitudes.
 - b. Given two vectors in magnitude and direction form, determine the

magnitude and direction of their sum.

c. Understand vector subtraction $\mathbf{v} - \mathbf{w}$ as $\mathbf{v} + (-\mathbf{w})$, where $-\mathbf{w}$ is the additive inverse of \mathbf{w} , with the same magnitude as \mathbf{w} and pointing in the opposite direction. Represent vector subtraction graphically by connecting the tips in the appropriate order, and perform vector subtraction component-wise.

5. (+) Multiply a vector by a scalar.

a. Represent scalar multiplication graphically by scaling vectors and possibly reversing their direction; perform scalar multiplication component-wise, e.g., as $c(v_x, v_y) = (cv_x, cv_y)$.

b. Compute the magnitude of a scalar multiple $c\mathbf{v}$ using $\|c\mathbf{v}\| = |c|\mathbf{v}$.

Compute the direction of $c\mathbf{v}$ knowing that when $|c|\mathbf{v} \neq 0$, the direction of $c\mathbf{v}$ is either along \mathbf{v} (for $c > 0$) or against \mathbf{v} (for $c < 0$).

Perform operations on matrices and use matrices in applications.

6. (+) Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network.

7. (+) Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled.

8. (+) Add, subtract, and multiply matrices of appropriate dimensions.

9. (+) Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive properties.

10. (+) Understand that the zero and identity matrices play a role in matrix

addition and multiplication similar to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse.

11. (+) Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimensions to produce another vector. Work with matrices as transformations of vectors.

12. (+) Work with 2×2 matrices as transformations of the plane, and interpret the absolute value of the determinant in terms of area.

Mathematics | High School—Algebra

Expressions. An expression is a record of a computation with numbers, symbols that represent numbers, arithmetic operations, exponentiation, and, at more advanced levels, the operation of evaluating a function. Conventions about the use of parentheses and the order of operations assure that each expression is unambiguous. Creating an expression that describes a computation involving a general quantity requires the ability to express the computation in general terms, abstracting from specific instances.

Reading an expression with comprehension involves analysis of its underlying structure. This may suggest a different but equivalent way of writing the expression that exhibits some different aspect of its meaning. For example, $p + 0.05p$ can be interpreted as the addition of a 5% tax to a price p . Rewriting $p + 0.05p$ as $1.05p$ shows that adding a tax is the same as multiplying the price by a constant factor.

Algebraic manipulations are governed by the properties of operations and exponents, and the conventions of algebraic notation. At times, an expression is the result of applying operations to simpler expressions. For example, $p + 0.05p$ is the sum of the simpler expressions p and $0.05p$. Viewing an expression as the result of operation on simpler expressions can sometimes clarify its underlying structure.

A spreadsheet or a computer algebra system (CAS) can be used to experiment with algebraic expressions, perform complicated algebraic manipulations, and understand how algebraic manipulations behave.

Equations and inequalities. An equation is a statement of equality between two expressions, often viewed as a question asking for which values of the variables the expressions on either side are in fact equal. These values are the solutions to the equation. An identity, in contrast, is true for all values of the variables; identities are often developed by rewriting an expression in an equivalent form.

The solutions of an equation in one variable form a set of numbers; the solutions of an equation in two variables form a set of ordered pairs of numbers, which can be plotted in the coordinate plane. Two or more equations and/or inequalities form a system. A solution for such a system must satisfy every equation and inequality in the system.

An equation can often be solved by successively deducing from it one or more simpler equations. For example, one can add the same constant to both sides without changing the solutions, but

squaring both sides might lead to extraneous solutions. Strategic competence in solving includes looking ahead for productive manipulations and anticipating the nature and number of solutions. Some equations have no solutions in a given number system, but have a solution in a larger system. For example, the solution of $x + 1 = 0$ is an integer, not a whole number; the solution of $2x + 1 = 0$ is a rational number, not an integer; the solutions of $x^2 - 2 = 0$ are real numbers, not rational numbers; and the solutions of $x^2 + 2 = 0$ are complex numbers, not real numbers.

The same solution techniques used to solve equations can be used to rearrange formulas. For example, the formula for the area of a trapezoid, $A = ((b_1 + b_2)/2)h$, can be solved for h using the same deductive process.

Inequalities can be solved by reasoning about the properties of inequality. Many, but not all, of the properties of equality continue to hold for inequalities and can be useful in solving them.

Connections to Functions and Modeling. Expressions can define functions, and equivalent expressions define the same function. Asking when two functions have the same value for the same input leads to an equation; graphing the two functions allows for finding approximate solutions of the equation. Converting a verbal description to an equation, inequality, or system of these is an essential skill in modeling.

Seeing Structure in Expressions

- Interpret the structure of expressions
- Write expressions in equivalent forms to solve problems

Arithmetic with Polynomials and Rational Expressions

- Perform arithmetic operations on polynomials
- Understand the relationship between zeros and factors of polynomials
- Use polynomial identities to solve problems
- Rewrite rational expressions

Creating Equations

- Create equations that describe numbers or relationships

Reasoning with Equations and Inequalities

- Understand solving equations as a process of reasoning and explain the reasoning
- Solve equations and inequalities in one variable
- Solve systems of equations
- Represent and solve equations and inequalities graphically

Algebra Overview

Seeing Structure in Expressions

Interpret the structure of expressions.

1. Interpret expressions that represent a quantity in terms of its context. ★
 - a. Interpret parts of an expression, such as terms, factors, and

coefficients.

b. Interpret complicated expressions by viewing one or more of their parts as a single entity. *For example, interpret $P(1+r)^n$ as the product of P and a factor not depending on P .*

2. Use the structure of an expression to identify ways to rewrite it. *For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.*

Write expressions in equivalent forms to solve problems.

3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. ★

a. Factor a quadratic expression to reveal the zeros of the function it defines.

b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.

c. Use the properties of exponents to transform expressions for exponential functions. *For example the expression $1.15t$ can be rewritten as $(1.151/12)^{12t} \approx 1.012^{12t}$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.*

4. Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. *For example, calculate mortgage payments.* ★

Arithmetic with Polynomials and Rational Expressions

Perform arithmetic operations on polynomials.

1. Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.

Understand the relationship between zeros and factors of polynomials.

2. Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a , the remainder on division by $x - a$ is $p(a)$, so $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$.
3. Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.

Use polynomial identities to solve problems.

4. Prove polynomial identities and use them to describe numerical relationships. *For example, the polynomial identity $(x^2 + y^2)^2 = (x^2 - y^2)^2 + (2xy)^2$ can be used to generate Pythagorean triples.*
5. (+) Know and apply the Binomial Theorem for the expansion of $(x + y)^n$ in powers of x and y for a positive integer n , where x and y are any numbers, with coefficients determined for example by Pascal's Triangle.

Rewrite rational expressions.

6. Rewrite simple rational expressions in different forms; write $a(x)/b(x)$

in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system.

7. (+) Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.

Creating Equations★

Create equations that describe numbers or relationships.

1. Create equations and inequalities in one variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions.*
2. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
3. Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. *For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.*
4. Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. *For example, rearrange Ohm's law $V =$*

IR to highlight resistance R.

Reasoning with Equations and Inequalities

Understand solving equations as a process of reasoning and explain the reasoning.

1. Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
2. Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.

Solve equations and inequalities in one variable.

3. Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
4. Solve quadratic equations in one variable.
 - a. Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form.
 - b. Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation.

Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b .

Solve systems of equations.

5. Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.

6. Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.

7. Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. *For example, find the points of intersection between the line $y = -3x$ and the circle $x^2 + y^2 = 3$.*

8. (+) Represent a system of linear equations as a single matrix equation in a vector variable.

9. (+) Find the inverse of a matrix if it exists and use it to solve systems of linear equations (using technology for matrices of dimension 3×3 or greater).

Represent and solve equations and inequalities graphically.

10. Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).

11. Explain why the x -coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using

technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. ★

12. Graph the solutions to a linear inequality in two variables as a halfplane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.

Mathematics | High School—Functions

Functions describe situations where one quantity determines another. For example, the return on \$10,000 invested at an annualized percentage rate of 4.25% is a function of the length of time the money is invested. Because we continually make theories about dependencies between quantities in nature and society, functions are important tools in the construction of mathematical models.

In school mathematics, functions usually have numerical inputs and outputs and are often defined by an algebraic expression. For example, the time in hours it takes for a car to drive 100 miles is a function of the car's speed in miles per hour, v ; the rule $T(v) = 100/v$ expresses this relationship algebraically and defines a function whose name is T .

The set of inputs to a function is called its domain. We often infer the domain to be all inputs for which the expression defining a function has a value, or for which the function makes sense in a given context.

A function can be described in various ways, such as by a graph (e.g., the trace of a seismograph); by a verbal rule, as in, “I’ll give you a state, you give me the capital city;” by an algebraic expression like $f(x) = a + bx$; or by a recursive rule. The graph of a function is often a useful way of visualizing the relationship of the function models, and manipulating a mathematical expression for a function can throw light on the function’s properties.

Functions presented as expressions can model many important phenomena. Two important families of functions characterized by laws of growth are linear functions, which grow at a constant rate, and exponential functions, which grow at a constant percent rate. Linear functions with a constant term of zero describe proportional relationships.

A graphing utility or a computer algebra system can be used to experiment with properties of these functions and their graphs and to build computational models of functions, including recursively defined functions.

Connections to Expressions, Equations, Modeling, and Coordinates.

Determining an output value for a particular input involves evaluating an expression; finding inputs that yield a given output involves solving an equation. Questions about when two functions have the same value for the same input lead to equations, whose solutions can be visualized from the intersection of their graphs.

Because functions describe relationships between quantities, they are frequently used in modeling. Sometimes functions are defined by a recursive process, which can be displayed effectively using a spreadsheet or other technology.

Interpreting Functions

- Understand the concept of a function and use function notation.
- Interpret functions that arise in applications in terms of the context.
- Analyze functions using different representations.

Building Functions

- Build a function that models a relationship between two quantities.
- Build new functions from existing functions.

Linear, Quadratic, and Exponential Models

- Construct and compare linear, quadratic, and exponential models and solve problems.
- Interpret expressions for functions in terms of the situation they model.

Trigonometric Functions

- Extend the domain of trigonometric functions using the unit circle
- Model periodic phenomena with trigonometric functions
- Prove and apply trigonometric identities

Functions Overview

Interpreting Functions

Understand the concept of a function and use function notation.

1. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.
2. Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
3. Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. *For example, the Fibonacci sequence is defined recursively by $f(0) = f(1) = 1$, $f(n+1) = f(n) + f(n-1)$ for $n \geq 1$.*

Interpret functions that arise in applications in terms of the context.

4. For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.* ★
5. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the*

function. ★

6. Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval.

Estimate the rate of change from a graph. ★

Analyze functions using different representations.

7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. ★

- a. Graph linear and quadratic functions and show intercepts, maxima, and minima.
- b. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.
- c. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.
- d. (+) Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.
- e. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.

8. Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

- a. Use the process of factoring and completing the square in a

quadratic function to show zeros, extreme values, and symmetry

of the graph, and interpret these in terms of a context.

b. Use the properties of exponents to interpret expressions for

exponential functions. *For example, identify percent rate of change*

in functions such as $y = (1.02)^t$, $y = (0.97)^t$, $y = (1.01)^{12t}$, $y = (1.2)^{t/10}$, and

classify them as representing exponential growth or decay.

9. Compare properties of two functions each represented in a different

way (algebraically, graphically, numerically in tables, or by verbal

descriptions). *For example, given a graph of one quadratic function and*

an algebraic expression for another, say which has the larger maximum.

Building Functions

Build a function that models a relationship between two quantities.

1. Write a function that describes a relationship between two quantities. ★

a. Determine an explicit expression, a recursive process, or steps for calculation from a context.

b. Combine standard function types using arithmetic operations. *For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.*

c. (+) Compose functions. *For example, if $T(y)$ is the temperature in the atmosphere as a function of height, and $h(t)$ is the height of a weather balloon as a function of time, then $T(h(t))$ is the temperature at the location of the weather balloon as a function of time.*

2. Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms. ★

Build new functions from existing functions.

3. Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. *Include recognizing even and odd functions from their graphs and algebraic expressions for them.*
4. Find inverse functions.
- a. Solve an equation of the form $f(x) = c$ for a simple function f that has an inverse and write an expression for the inverse. *For example, $f(x) = 2x^3$ or $f(x) = (x+1)/(x-1)$ for $x \neq 1$.*
 - b. (+) Verify by composition that one function is the inverse of another.
 - c. (+) Read values of an inverse function from a graph or a table, given that the function has an inverse.
 - d. (+) Produce an invertible function from a non-invertible function by restricting the domain.
5. (+) Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents.

Linear, Quadratic, and Exponential Models★

Construct and compare linear, quadratic, and exponential models and solve problems.

1. Distinguish between situations that can be modeled with linear functions and with exponential functions.
 - a. Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.
 - b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.
 - c. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.
2. Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).
3. Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.
4. For exponential models, express as a logarithm the solution to $ab^ct = d$ where a , c , and d are numbers and the base b is 2, 10, or e ; evaluate the logarithm using technology.

Interpret expressions for functions in terms of the situation they model.

5. Interpret the parameters in a linear or exponential function in terms of

a context.

Trigonometric Functions

Extend the domain of trigonometric functions using the unit circle.

1. Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.
2. Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.
3. (+) Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$, $\pi/4$ and $\pi/6$, and use the unit circle to express the values of sine, cosine, and tangent for $\pi-x$, $\pi+x$, and $2\pi-x$ in terms of their values for x , where x is any real number.
4. (+) Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.

Model periodic phenomena with trigonometric functions.

5. Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline. ★
6. (+) Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse to be constructed.
7. (+) Use inverse functions to solve trigonometric equations that arise

in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context. ★

Prove and apply trigonometric identities.

8. Prove the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta) = 1$ and use it to find $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ given $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ and the quadrant of the angle.

9. (+) Prove the addition and subtraction formulas for sine, cosine, and tangent and use them to solve problems.

Mathematics | High School—Modeling

Modeling links classroom mathematics and statistics to everyday life, work, and decision-making. Modeling is the process of choosing and using appropriate mathematics and statistics to analyze empirical situations, to understand them better, and to improve decisions. Quantities and their relationships in physical, economic, public policy, social, and everyday situations can be modeled using mathematical and statistical methods. When making mathematical models, technology is valuable for varying assumptions, exploring consequences, and comparing predictions with data.

A model can be very simple, such as writing total cost as a product of unit price and number bought, or using a geometric shape to describe a physical object like a coin. Even such simple models involve making choices. It is up to us whether to model a coin as a three-dimensional cylinder, or whether a two-dimensional disk works well enough for our purposes. Other situations—modeling a delivery route, a production schedule, or a comparison of loan amortizations—need more elaborate models that use other tools from the mathematical sciences.

Real-world situations are not organized and labeled for analysis; formulating tractable models, representing such models, and analyzing them is appropriately a creative process. Like every such process, this depends on acquired expertise as well as creativity.

Some examples of such situations might include:

- Estimating how much water and food is needed for emergency relief in a devastated city of 3 million people, and how it might be distributed.
- Planning a table tennis tournament for 7 players at a club with 4 tables, where each player plays against each other player.
- Designing the layout of the stalls in a school fair so as to raise as much money as possible.
- Analyzing stopping distance for a car.
- Modeling savings account balance, bacterial colony growth, or investment growth.
- Engaging in critical path analysis, e.g., applied to turnaround of an aircraft at an airport.
- Analyzing risk in situations such as extreme sports, pandemics, and terrorism.
- Relating population statistics to individual predictions.

In situations like these, the models devised depend on a number of factors: How precise an answer do we want or need? What aspects of the situation do we most need to understand, control, or optimize? What resources of time and tools do we

have? The range of models that we can create and analyze is also constrained by the limitations of our mathematical, statistical, and technical skills, and our ability to recognize significant variables and relationships among them. Diagrams of various kinds, spreadsheets and other technology, and algebra are powerful tools for understanding and solving problems drawn from different types of real-world situations.

One of the insights provided by mathematical modeling is that essentially the same mathematical or statistical structure can sometimes model seemingly different situations. Models can also shed light on the mathematical structures themselves, for example, as when a model of bacterial growth makes more vivid the explosive growth of the exponential function.

The basic modeling cycle involves (1) identifying variables in the situation and selecting those that represent essential features, (2) formulating a model by creating and selecting geometric, graphical, tabular, algebraic, or statistical representations that describe relationships between the variables, (3) analyzing and performing operations on these relationships to draw conclusions, (4) interpreting the results of the mathematics in terms of the original situation, (5) validating the conclusions by comparing them with the situation, and then either improving the model or, if it is acceptable, (6) reporting on the conclusions and the reasoning behind them. Choices, assumptions, and approximations are present throughout this cycle. In descriptive modeling, a model simply describes the phenomena or summarizes them in a compact form. Graphs of observations are a familiar descriptive model—for example, graphs of global temperature and atmospheric CO₂ over time.

Analytic modeling seeks to explain data on the basis of deeper theoretical ideas, albeit with parameters that are empirically based; for example, exponential growth of bacterial colonies (until cut-off mechanisms such as pollution or starvation intervene) follows from a constant reproduction rate. Functions are an important tool for analyzing such problems.

Graphing utilities, spreadsheets, computer algebra systems, and dynamic geometry software are powerful tools that can be used to model purely mathematical phenomena (e.g., the behavior of polynomials) as well as physical phenomena.

Modeling Standards Modeling is best interpreted not as a collection of isolated topics but rather in relation to other standards. Making mathematical models is a Standard for Mathematical Practice, and specific modeling standards appear throughout the high school standards indicated by a star symbol (★).

Mathematics | High School—Geometry

An understanding of the attributes and relationships of geometric objects can be applied in diverse contexts—interpreting a schematic drawing, estimating the amount of wood needed to frame a sloping roof, rendering computer graphics, or designing a sewing pattern for the most efficient use of material.

Although there are many types of geometry, school mathematics is devoted primarily to plane Euclidean geometry, studied both synthetically (without coordinates) and analytically (with coordinates). Euclidean geometry is characterized most importantly by the Parallel Postulate,

that through a point not on a given line there is exactly one parallel line. (Spherical geometry, in contrast, has no parallel lines.)

During high school, students begin to formalize their geometry experiences from elementary and middle school, using more precise definitions and developing careful proofs. Later in college some students develop Euclidean and other geometries carefully from a small set of axioms.

The concepts of congruence, similarity, and symmetry can be understood from the perspective of geometric transformation. Fundamental are the rigid motions: translations, rotations, reflections, and combinations of these, all of which are here assumed to preserve distance and angles (and therefore shapes generally). Reflections and rotations each explain a particular type of symmetry, and the symmetries of an object offer insight into its attributes—as when the reflective symmetry of an isosceles triangle assures that its base angles are congruent.

In the approach taken here, two geometric figures are defined to be congruent if there is a sequence of rigid motions that carries one onto the other. This is the principle of superposition. For triangles, congruence means the equality of all corresponding pairs of sides and all corresponding pairs of angles. During the middle grades, through experiences drawing triangles from given conditions, students notice ways to specify enough measures in a triangle to ensure that all triangles drawn with those measures are congruent. Once these triangle congruence criteria (ASA, SAS, and SSS) are established using rigid motions, they can be used to prove theorems about triangles, quadrilaterals, and other geometric figures.

Similarity transformations (rigid motions followed by dilations) define similarity in the same way that rigid motions define congruence, thereby formalizing the similarity ideas of "same shape" and "scale factor" developed in the middle grades.

These transformations lead to the criterion for triangle similarity that two pairs of corresponding angles are congruent.

The definitions of sine, cosine, and tangent for acute angles are founded on right triangles and similarity, and, with the Pythagorean Theorem, are fundamental in many real-world and theoretical situations. The Pythagorean Theorem is generalized to nonright triangles by the Law of Cosines. Together, the Laws of Sines and Cosines embody the triangle congruence criteria for the cases where three pieces of information suffice to completely solve a triangle. Furthermore, these laws yield two possible solutions in the ambiguous case, illustrating that Side-Side-Angle is not a congruence criterion.

Analytic geometry connects algebra and geometry, resulting in powerful methods of analysis and problem solving. Just as the number line associates numbers with locations in one dimension, a pair of perpendicular axes associates pairs of numbers with locations in two dimensions. This correspondence between numerical coordinates and geometric points allows methods from algebra to be applied to geometry and vice versa. The solution set of an equation becomes a geometric curve, making visualization a tool for doing and understanding algebra. Geometric shapes can be described by equations, making algebraic manipulation into a tool for geometric understanding, modeling, and proof. Geometric transformations of the graphs of equations correspond to algebraic changes in their equations.

Dynamic geometry environments provide students with experimental and modeling tools that allow them to investigate geometric phenomena in much the same way as computer algebra systems allow them to experiment with algebraic phenomena.

Connections to Equations. The correspondence between numerical coordinates and geometric points allows methods from algebra to be applied to geometry and vice versa. The solution set of an equation becomes a geometric curve, making visualization a tool for doing and understanding algebra. Geometric shapes can be described by equations, making algebraic manipulation into a tool for geometric understanding, modeling, and proof.

Congruence

- Experiment with transformations in the plane.
- Understand congruence in terms of rigid motions.
- Prove geometric theorems.
- Make geometric constructions.

Similarity, Right Triangles, and Trigonometry

- Understand similarity in terms of similarity transformations.
- Prove theorems involving similarity.
- Define trigonometric ratios and solve problems involving right triangles.
- Apply trigonometry to general triangles.

Circles

- Understand and apply theorems about circles.
- Find arc lengths and areas of sectors of circles.

Expressing Geometric Properties with Equations

- Translate between the geometric description and the equation for a conic section.
- Use coordinates to prove simple geometric theorems algebraically.

Geometric Measurement and Dimension

- Explain volume formulas and use them to solve problems.
- Visualize relationships between two-dimensional and three-dimensional objects.

Modeling with Geometry

- Apply geometric concepts in modeling situations.

Geometry Overview

Congruence

Experiment with transformations in the plane.

1. Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.
2. Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs.
Compare transformations that preserve distance and angle to those

that do not (e.g., translation versus horizontal stretch).

3. Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.
4. Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.
5. Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.

Understand congruence in terms of rigid motions.

6. Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.
7. Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.
8. Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.

Prove geometric theorems.

9. Prove theorems about lines and angles. *Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate*

*interior angles are congruent and corresponding angles are congruent;
points on a perpendicular bisector of a line segment are exactly those
equidistant from the segment's endpoints.*

10. Prove theorems about triangles. *Theorems include: measures of interior angles of a triangle sum to 180° ; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.*

11. Prove theorems about parallelograms. *Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.*

Make geometric constructions.

12. Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). *Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.*

13. Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.

Similarity, Right Triangles, and Trigonometry

Understand similarity in terms of similarity transformations.

1. Verify experimentally the properties of dilations given by a center and a scale factor:

- a. A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged.

- b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor.

2. Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.

3. Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.

Prove theorems involving similarity.

4. Prove theorems about triangles. *Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.*

5. Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.

Define trigonometric ratios and solve problems involving right triangles.

6. Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.
7. Explain and use the relationship between the sine and cosine of complementary angles.
8. Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems. ★

Apply trigonometry to general triangles.

9. (+) Derive the formula $A = \frac{1}{2} ab \sin(C)$ for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.
10. (+) Prove the Laws of Sines and Cosines and use them to solve problems.
11. (+) Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).

Circles

Understand and apply theorems about circles.

1. Prove that all circles are similar.
2. Identify and describe relationships among inscribed angles, radii, and chords. *Include the relationship between central, inscribed, and*

circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.

3. Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.
4. (+) Construct a tangent line from a point outside a given circle to the circle.

Find arc lengths and areas of sectors of circles.

5. Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.

Expressing Geometric Properties with Equations

Translate between the geometric description and the equation for a conic section.

1. Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.
2. Derive the equation of a parabola given a focus and directrix.
3. (+) Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.

Use coordinates to prove simple geometric theorems algebraically.

4. Use coordinates to prove simple geometric theorems algebraically. *For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point $(1, \sqrt{3})$ lies on the circle centered at the origin and containing the point $(0, 2)$.*
5. Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).
6. Find the point on a directed line segment between two given points that partitions the segment in a given ratio.
7. Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula. ★

Geometric Measurement and Dimension

Explain volume formulas and use them to solve problems.

1. Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. *Use dissection arguments, Cavalieri's principle, and informal limit arguments.*
2. (+) Give an informal argument using Cavalieri's principle for the formulas for the volume of a sphere and other solid figures.
3. Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems. ★

Visualize relationships between two-dimensional and three-dimensional objects.

4. Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.

Modeling with Geometry

Apply geometric concepts in modeling situations.

1. Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★
2. Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).★
3. Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).★

Mathematics | High School—Statistics and Probability★

Decisions or predictions are often based on data—numbers in context. These decisions or predictions would be easy if the data always sent a clear message, but the message is often obscured by variability. Statistics provides tools for describing variability in data and for making informed decisions that take it into account.

Data are gathered, displayed, summarized, examined, and interpreted to discover patterns and deviations from patterns. Quantitative data can be described in terms of key characteristics: measures of shape, center, and spread. The shape of a data distribution might be described as

symmetric, skewed, flat, or bell shaped, and it might be summarized by a statistic measuring center (such as mean or median) and a statistic measuring spread (such as standard deviation or interquartile range).

Different distributions can be compared numerically using these statistics or compared visually using plots. Knowledge of center and spread are not enough to describe a distribution. Which statistics to compare, which plots to use, and what the results of a comparison might mean, depend on the question to be investigated and the real-life actions to be taken.

Randomization has two important uses in drawing statistical conclusions. First, collecting data from a random sample of a population makes it possible to draw valid conclusions about the whole population, taking variability into account.

Second, randomly assigning individuals to different treatments allows a fair comparison of the effectiveness of those treatments. A statistically significant outcome is one that is unlikely to be due to chance alone, and this can be evaluated only under the condition of randomness. The conditions under which data are collected are important in drawing conclusions from the data; in critically reviewing uses of statistics in public media and other reports, it is important to consider the study design, how the data were gathered, and the analyses employed as well as the data summaries and the conclusions drawn.

Random processes can be described mathematically by using a probability model: a list or description of the possible outcomes (the sample space), each of which is assigned a probability. In situations such as flipping a coin, rolling a number cube, or drawing a card, it might be

reasonable to assume various outcomes are equally likely. In a probability model, sample points represent outcomes and combine to make up events; probabilities of events can be computed by applying the Addition and Multiplication Rules. Interpreting these probabilities relies on an understanding of independence and conditional probability, which can be approached through the analysis of two-way tables.

Technology plays an important role in statistics and probability by making it possible to generate plots, regression functions, and correlation coefficients, and to simulate many possible outcomes in a short amount of time.

Connections to Functions and Modeling.

Functions may be used to describe data; if the data suggest a linear relationship, the relationship can be modeled with a regression line, and its strength and direction can be expressed through a correlation coefficient.

Interpreting Categorical and Quantitative Data

- Summarize, represent, and interpret data on a single count or measurement variable.
- Summarize, represent, and interpret data on two categorical and quantitative variables.
- Interpret linear models.

Making Inferences and Justifying Conclusions

- Understand and evaluate random processes underlying statistical experiments.
- Make inferences and justify conclusions from sample surveys, experiments and observational studies.

Conditional Probability and the Rules of Probability

- Understand independence and conditional probability and use them to interpret data.
- Use the rules of probability to compute probabilities of compound events in a uniform probability model.

Using Probability to Make Decisions

- Calculate expected values and use them to solve problems.
- Use probability to evaluate outcomes of decisions.

Statistics and Probability Overview

Interpreting Categorical and Quantitative Data

Summarize, represent, and interpret data on a single count or measurement variable.

1. Represent data with plots on the real number line (dot plots, histograms, and box plots).
2. Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.
3. Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).
4. Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate.

Use calculators, spreadsheets, and tables to estimate areas under the normal curve.

Summarize, represent, and interpret data on two categorical and quantitative variables.

5. Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies).

Recognize possible associations and trends in the data.

6. Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.

- a. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. *Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.*
- b. Informally assess the fit of a function by plotting and analyzing residuals.
- c. Fit a linear function for a scatter plot that suggests a linear association.

Interpret linear models.

7. Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.

8. Compute (using technology) and interpret the correlation coefficient of a linear fit.

9. Distinguish between correlation and causation.

Making Inferences and Justifying Conclusions

Understand and evaluate random processes underlying statistical experiments.

1. Understand statistics as a process for making inferences about population parameters based on a random sample from that population.
2. Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. *For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?*

Make inferences and justify conclusions from sample surveys, experiments, and observational studies.

3. Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.
4. Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.
5. Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.
6. Evaluate reports based on data.

Conditional Probability and the Rules of Probability

Understand independence and conditional probability and use them to interpret data.

1. Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events (“or,” “and,” “not”).
2. Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.
3. Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A , and the conditional probability of B given A is the same as the probability of B .
4. Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. *For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.*
5. Recognize and explain the concepts of conditional probability and

independence in everyday language and everyday situations. *For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.*

Use the rules of probability to compute probabilities of compound events in a uniform probability model.

6. Find the conditional probability of A given B as the fraction of B 's outcomes that also belong to A , and interpret the answer in terms of the model.
7. Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model.
8. (+) Apply the general Multiplication Rule in a uniform probability model, $P(A \text{ and } B) = P(A)P(B|A) = P(B)P(A|B)$, and interpret the answer in terms of the model.
9. (+) Use permutations and combinations to compute probabilities of compound events and solve problems.

Using Probability to Make Decisions

Calculate expected values and use them to solve problems.

1. (+) Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions.
2. (+) Calculate the expected value of a random variable; interpret it as

the mean of the probability distribution.

3. (+) Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. *For example, find the theoretical probability distribution for the number of correct answers obtained by guessing on all five questions of a multiple-choice test where each question has four choices, and find the expected grade under various grading schemes.*

4. (+) Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. *For example, find a current data distribution on the number of TV sets per household in the United States, and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households?*

Use probability to evaluate outcomes of decisions.

5. (+) Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values.

a. Find the expected payoff for a game of chance. *For example, find the expected winnings from a state lottery ticket or a game at a fastfood restaurant.*

b. Evaluate and compare strategies on the basis of expected values. *For example, compare a high-deductible versus a low-deductible automobile insurance policy using various, but reasonable, chances of having a minor or a major accident.*

6. (+) Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).

7. (+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).

Note on Courses and Transitions

The standards themselves do not dictate curriculum, pedagogy, or delivery of content. In particular, states may handle the transition to high school in different ways. For example, many students in the U.S. today take Algebra I in the 8th grade, and in some states this is a requirement. The K-7 standards contain the prerequisites to prepare students for Algebra I by 8th grade, and the standards are designed to permit states to continue existing policies concerning Algebra I in 8th grade.

A second major transition is the transition from high school to post-secondary education for college and careers. The evidence concerning college and career readiness shows clearly that the knowledge, skills, and practices important for readiness include a great deal of mathematics prior to the boundary defined by (+) symbols in these standards. Indeed, some of the highest priority content for college and career readiness comes from Grades 6-8. This body of material includes powerfully useful proficiencies such as applying ratio reasoning in real-world and mathematical problems, computing fluently with positive and negative fractions and decimals, and solving real-world and mathematical problems involving

angle measure, area, surface area, and volume. Because important standards for college and career readiness are distributed across grades and courses, systems for evaluating college and career readiness should reach as far back in the standards as Grades 6-8. It is important to note as well that cut scores or other information generated by assessment systems for college and career readiness should be developed in collaboration with representatives from higher education and workforce development programs, and should be validated by subsequent performance of students in college and the workforce.

In addition, RLOA will draw from the SCDE standards as guidelines for instruction:

KINDERGARTEN

KINDERGARTEN: MATHEMATICAL PROCESSES

The mathematical processes provide the framework for teaching, learning, and assessing in mathematics at all grade levels. Instructional programs should be built around these processes.

Standard K-1: The student will have a basic understanding of the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

Indicators

- K-1.1 Apply substantive mathematical problem-solving strategies.
- K-1.2 Generate conjectures and exchange mathematical ideas.
- K-1.3 Explain and justify answers to simple problems.
- K-1.4 Analyze patterns by reasoning systematically.
- K-1.5 Generalize mathematical concepts.

K-1.6 Use a variety of forms of mathematical communication.

K-1.7 Generalize connections among mathematics, the environment, and other subjects.

K-1.8 Use multiple informal representations to convey mathematical ideas.

KINDERGARTEN: NUMBER AND OPERATIONS

Standard K-2: The student will demonstrate through the mathematical processes an emerging sense of quantity and numeral relationships, sets, and place values.

Indicators

K-2.1 Recall numbers, counting forward through 99 and backward from 10.

K-2.2 Translate between numeral and quantity through 31.

K-2.3 Compare sets of no more than 31 objects by using the terms *more than*, *less than*, and *the same as*.

K-2.4 Represent simple joining and separating situations through 10.

K-2.5 Understand that addition results in increase and subtraction results in decrease.

K-2.6 Analyze the magnitude of digits through 99 on the basis of their place values.

K-2.7 Represent the place value of each digit in a two-digit whole number.

K-2.8 Identify ordinal positions through 31st.

KINDERGARTEN: ALGEBRA

Standard K-3: The student will demonstrate through the mathematical processes an emerging sense of repeating and growing patterns and classification based on attributes.

Indicators

K-3.1 Identify simple growing patterns.

K-3.2 Analyze simple repeating and growing relationships to extend patterns.

K-3.3 Translate simple repeating and growing patterns into rules.

K-3.4 Classify objects according to one or more attributes such as color, size, shape, and thickness.

KINDERGARTEN: GEOMETRY

Standard K-4: The student will demonstrate through the mathematical processes an emerging sense of two- and three-dimensional geometric shapes and relative positions in space.

Indicators

K-4.1 Identify the two-dimensional shapes square, circle, triangle, and rectangle and the three-dimensional shapes cube, sphere, and cylinder.

K-4.2 Represent two-dimensional geometric shapes.

K-4.3 Use the positional words *near*, *far*, *below*, *above*, *beside*, *next to*, *across from*, and *between* to describe the location of an object.

K-4.4 Use the directional words *left* and *right* to describe movement.

KINDERGARTEN: MEASUREMENT

Standard K-5: The student will demonstrate through the mathematical processes an emerging sense of coin values and the measurement concepts of length, weight, time, and temperature.

Indicators

K-5.1 Identify a penny, a nickel, a dime, a quarter, and a dollar and the value of each.

K-5.2 Compare the lengths of two objects, both directly and indirectly, to order objects according to length.

K-5.3 Use nonstandard units to explore the measurement concepts of length and weight.

K-5.4 Identify rulers, yardsticks, and tape measures as devices used to measure length; scales and balances as devices used to measure weight; calendars and analog and digital clocks as devices used to measure time; and digital and standard thermometers as devices used to measure temperature.

K-5.5 Understand which measure—length, weight, time, or temperature—is appropriate for a given situation.

K-5.6 Use analog and digital clocks to tell time to the hour.

K-5.7 Use a calendar to identify dates, days of the week, and months of the year.

K-5.8 Recall equivalencies associated with time: 7 days = 1 week and 12 months = 1 year.

KINDERGARTEN: DATA ANALYSIS AND PROBABILITY

Standard K-6: The student will demonstrate through the mathematical processes an emerging sense of organizing and interpret data.

Indicators

K-6.1 Organize data in graphic displays in the form of drawings and pictures.

K-6.2 Interpret data in graphic displays in the form of drawings and pictures.

GRADE 1

GRADE 1: MATHEMATICAL PROCESSES

The mathematical processes provide the framework for teaching, learning, and assessing in mathematics at all grade levels. Instructional programs should be built around these processes.

Standard 1-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

Indicators

- 1-1.1 Apply substantive mathematical problem-solving strategies.
- 1-1.2 Generate conjectures and exchange mathematical ideas.
- 1-1.3 Explain and justify answers to simple problems.
- 1-1.4 Analyze patterns by reasoning systematically.
- 1-1.5 Generalize mathematical concepts.
- 1-1.6 Use a variety of forms of mathematical communication.
- 1-1.7 Generalize connections among mathematics, the environment, and other subjects.
- 1-1.8 Use multiple informal representations to convey mathematical ideas.

GRADE 1: NUMBER AND OPERATIONS

Standard 1-2: The student will demonstrate through the mathematical processes a sense of quantity and numeral relationships; the relationships among addition, subtraction, and related basic facts; and the connections among numeric, oral, and written-word forms of whole numbers.

Indicators

- 1-2.1 Translate between numeral and quantity through 100.
- 1-2.2 Use estimation to determine the approximate number of objects in a set of 20 to 100 objects.

- 1-2.3 Represent quantities in word form through *ten*.
- 1-2.4 Recognize whole-number words that correspond to numerals through *twenty*.
- 1-2.5 Compare whole-number quantities through 100 by using the terms *is greater than*, *is less than*, and *is equal to*.
- 1-2.6 Recall basic addition facts through $9 + 9$ and corresponding subtraction facts.
- 1-2.7 Summarize the inverse relationship between addition and subtraction.
- 1-2.8 Generate strategies to add and subtract without regrouping through two-digit numbers.
- 1-2.9 Analyze the magnitude of digits through 999 on the basis of their place values.

GRADE 1: ALGEBRA

Standard 1-3: The student will demonstrate through the mathematical processes a sense of numeric patterns, the relationship between addition and subtraction, and change over time.

Indicators

- 1-3.1 Analyze numeric patterns in addition and subtraction to develop strategies for acquiring basic facts.
- 1-3.2 Translate patterns into rules for simple addition and subtraction.
- 1-3.3 Illustrate the commutative property based on basic facts.
- 1-3.4 Analyze numeric relationships to complete and extend simple patterns.
- 1-3.5 Classify a number as odd or even.
- 1-3.6 Classify change over time as quantitative or qualitative.

GRADE 1: GEOMETRY

Standard 1-4: The student will demonstrate through the mathematical processes a sense of two- and three-dimensional geometric shapes, symmetry, and relative positions and directions in space.

Indicators

- 1-4.1 Identify the three-dimensional geometric shapes prism, pyramid, and cone.
- 1-4.2 Analyze the two-dimensional shapes circle, square, triangle, and rectangle.
- 1-4.3 Classify two-dimensional shapes as polygons or nonpolygons.
- 1-4.4 Identify a line of symmetry.
- 1-4.5 Use the positional and directional terms *north*, *south*, *east*, and *west* to describe location and movement.

GRADE 1: MEASUREMENT

Standard 1-5: The student will demonstrate through the mathematical processes a sense of the value of combinations of coins and the measurement of length, weight, time, and temperature.

Indicators

- 1-5.1 Use a counting procedure to determine the value of a collection of pennies, nickels, dimes, and quarters totaling less than a dollar.
- 1-5.2 Represent a nickel, a dime, a quarter, a half-dollar, and a dollar in combinations of coins.
- 1-5.3 Represent money by using the cent and dollar notations.
- 1-5.4 Use whole-inch units to measure the length of an object.
- 1-5.5 Generate common referents for whole inches.
- 1-5.6 Use common referents to make estimates in whole inches.

- 1-5.7 Use nonstandard units to measure the weight of objects.
- 1-5.8 Use analog and digital clocks to tell and record time to the half hour.
- 1-5.9 Illustrate past and future dates on a calendar.
- 1-5.10 Represent dates in standard form (June 1, 2007, for example) and numeric form (6-1-2007, for example).
- 1-5.11 Use Celsius and Fahrenheit thermometers to measure temperature.

GRADE 1: DATA ANALYSIS AND PROBABILITY

Standard 1-6: The student will demonstrate through the mathematical processes a sense of collecting, organizing, and interpreting data and of making predictions on the basis of data.

Indicators

- 1-6.1 Use survey questions to collect data.
- 1-6.2 Organize data in picture graphs, object graphs, bar graphs, and tables.
- 1-6.3 Interpret data in picture graphs, object graphs, bar graphs, and tables by using the comparative terms *more*, *less*, *greater*, *fewer*, *greater than*, and *less than*.
- 1-6.4 Predict on the basis of data whether events are *likely* or *unlikely* to occur.

GRADE 2

GRADE 2: MATHEMATICAL PROCESSES

The mathematical processes provide the framework for teaching, learning, and assessing in mathematics at all grade levels. Instructional programs should be built around these processes.

Standard 2-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

Indicators

- 2-1.1 Apply substantive mathematical problem-solving strategies.
- 2-1.2 Generate conjectures and exchange mathematical ideas.
- 2-1.3 Explain and justify answers to simple problems.
- 2-1.4 Analyze patterns by reasoning systematically.
- 2-1.5 Generalize mathematical concepts.
- 2-1.6 Use a variety of forms of mathematical communication.
- 2-1.7 Generalize connections among mathematics, the environment, and other subjects.
- 2-1.8 Use multiple informal representations to convey mathematical ideas.

GRADE 2: NUMBER AND OPERATIONS

Standard 2-2: The student will demonstrate through the mathematical processes an understanding of the base-ten numeration system; place values; and accurate, efficient, and generalizable methods of adding and subtracting whole numbers.

Indicators

- 2-2.1 Generate estimation strategies to determine the approximate number of objects in a set of no more than 1,000 objects.
- 2-2.2 Represent quantities in word form through *twenty*.
- 2-2.3 Represent multiples of ten in word form through *ninety*.

- 2-2.4 Compare whole-number quantities through 999 by using the terms *is less than*, *is greater than*, and *is equal to* and the symbols $<$, $>$, and $=$.
- 2-2.5 Interpret models of equal grouping (multiplication) as repeated addition and arrays.
- 2-2.6 Interpret models of sharing equally (division) in as repeated subtraction and arrays.
- 2-2.7 Generate strategies to add and subtract pairs of two-digit whole numbers with regrouping.
- 2-2.8 Generate addition and subtraction strategies to find missing addends and subtrahends in number combinations through 20.
- 2-2.9 Generate strategies to round numbers through 90 to the nearest 10.
- 2-2.10 Analyze the magnitude of digits through 9,999 on the basis of their place values.

GRADE 2

GRADE 2: ALGEBRA

Standard 2-3: The student will demonstrate through the mathematical processes an understanding of numeric patterns and quantitative and qualitative change.

- **Indicators**

- 2-3.1 Analyze numeric patterns in skip counting that uses the numerals 1 through 10.
- 2-3.2 Translate patterns into rules for simple multiples.
- 2-3.3 Analyze relationships to complete and extend growing and repeating patterns involving numbers, symbols, and objects.
- 2-3.4 Identify quantitative and qualitative change over time.
- 2-3.5 Analyze quantitative and qualitative change over time.

GRADE 2: GEOMETRY

Standard 2-4: The student will demonstrate through the mathematical processes an understanding of basic spatial reasoning and the connection between the identification of basic attributes and the classification of three-dimensional shapes.

Indicators

2-4.1 Analyze the three-dimensional shapes spheres, cubes, cylinders, prisms, pyramids, and cones according to the number and shape of the faces, edges, corners, and bases of each.

2-4.2 Identify multiple lines of symmetry.

2-4.3 Predict the results of combining and subdividing polygons and circles.

GRADE 2: MEASUREMENT

Standard 2-5: The student will demonstrate through the mathematical processes an understanding of the value of combinations of coins and bills and the measurement of length, weight, time, and temperature.

Indicators

2-5.1 Use a counting procedure to determine the value of a collection of coins and bills.

2-5.2 Use coins to make change up to one dollar.

2-5.3 Use appropriate tools to measure objects to the nearest whole unit: measuring length in centimeters, feet, and yards; measuring liquid volume in cups, quarts, and gallons; measuring weight in ounces and pounds; and measuring temperature on Celsius and Fahrenheit thermometers.

2-5.4 Generate common measurement referents for feet, yards, and centimeters.

2-5.5 Use common measurement referents to make estimates in feet, yards, and centimeters.

2-5.6 Predict whether the measurement will be greater or smaller when different units are used to measure the same object.

2-5.7 Use analog and digital clocks to tell and record time to the nearest quarter hour and to the nearest five-minute interval.

2-5.8 Match *a.m.* and *p.m.* to familiar situations.

2-5.9 Recall equivalencies associated with length and time: 12 inches = 1 foot, 3 feet = 1 yard, 60 minutes = 1 hour, and 24 hours = 1 day.

GRADE 2: DATA ANALYSIS AND PROBABILITY

Standard 2-6: The student will demonstrate through the mathematical processes an understanding of creating questions to collect data, organizing data, describing trends of a data set, and making predictions based on data.

Indicators

2-6.1 Create survey questions to collect data.

2-6.2 Organize data in charts, pictographs, and tables.

2-6.3 Infer trends in a data set as increasing, decreasing, or random.

2-6.4 Predict on the basis of data whether events are *more likely* or *less likely* to occur.

GRADE 3

GRADE 3: MATHEMATICAL PROCESSES

The mathematical processes provide the framework for teaching, learning, and assessing in mathematics at all grade levels. Instructional programs should be built around these processes.

Standard 3-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

Indicators

- 3-1.1 Analyze information to solve increasingly more sophisticated problems.
- 3-1.2 Construct arguments that lead to conclusions about general mathematical properties and relationships.
- 3-1.3 Explain and justify answers on the basis of mathematical properties, structures, and relationships.
- 3-1.4 Generate descriptions and mathematical statements about relationships between and among classes of objects.
- 3-1.5 Use correct, complete, and clearly written and oral mathematical language to pose questions, communicate ideas, and extend problem situations.
- 3-1.6 Generalize connections between new mathematical ideas and related concepts and subjects that have been previously considered.
- 3-1.7 Use flexibility in mathematical representations.
- 3-1.8 Recognize the limitations of various forms of mathematical representations.

GRADE 3: NUMBER AND OPERATIONS

Standard 3-2: The student will demonstrate through the mathematical processes an understanding of the representation of whole numbers and fractional parts; the addition and subtraction of whole numbers; accurate, efficient, and generalizable methods of multiplying whole numbers; and the relationships among multiplication, division, and related basic facts.

Indicators

- 3-2.1 Compare whole-number quantities through 999,999 by using the terms *is less than*, *is greater than*, and *is equal to* and the symbols $<$, $>$, and $=$.
- 3-2.2 Represent in word form whole numbers through *nine hundred ninety-nine thousand*.
- 3-2.3 Apply an algorithm to add and subtract whole numbers fluently.
- 3-2.4 Apply procedures to round any whole number to the nearest 10, 100, or 1,000.
- 3-2.5 Understand fractions as parts of a whole.
- 3-2.6 Represent fractions that are greater than or equal to 1.
- 3-2.7 Recall basic multiplication facts through 12×12 and the corresponding division facts.
- 3-2.8 Compare the inverse relationship between multiplication and division.
- 3-2.9 Analyze the effect that adding, subtracting, or multiplying odd and/or even numbers has on the outcome.
- 3-2.10 Generate strategies to multiply whole numbers by using one single-digit factor and one multidigit factor.
- 3-2.11 Use basic number combinations to compute related multiplication problems that involve multiples of 10.
- 3-2.12 Analyze the magnitude of digits through 999,999 on the basis of their place value.

GRADE 3: ALGEBRA

Standard 3-3: The student will demonstrate through the mathematical processes an understanding of numeric patterns, symbols as representations of unknown quantity, and situations showing increase over time.

Indicators

- 3-3.1 Create numeric patterns that involve whole-number operations.
- 3-3.2 Apply procedures to find missing numbers in numeric patterns that involve whole-number operations.
- 3-3.3 Use symbols to represent an unknown quantity in a simple addition, subtraction, or multiplication equation.
- 3-3.4 Illustrate situations that show change over time as increasing.

GRADE 3: GEOMETRY

Standard 3-4: The student will demonstrate through the mathematical processes an understanding of the connection between the identification of basic attributes and the classification of two-dimensional shapes.

Indicators

- 3-4.1 Identify the specific attributes of circles: center, radius, circumference, and diameter.
- 3-4.2 Classify polygons as either triangles, quadrilaterals, pentagons, hexagons, or octagons according to the number of their sides.
- 3-4.3 Classify lines and line segments as either parallel, perpendicular, or intersecting.
- 3-4.4 Classify angles as either right, acute, or obtuse.
- 3-4.5 Classify triangles by the length of their sides as either scalene, isosceles, or equilateral and by the size of their angles as either acute, obtuse, or right.
- 3-4.6 Exemplify points, lines, line segments, rays, and angles.
- 3-4.7 Analyze the results of combining and subdividing circles, triangles, quadrilaterals, pentagons, hexagons, and octagons.

3-4.8 Predict the results of one transformation—either slide, flip, or turn—of a geometric shape.

GRADE 3: MEASUREMENT

Standard 3-5: The student will demonstrate through the mathematical processes an understanding of length, time, weight, and liquid volume measurements; the relationships between systems of measure; accurate, efficient, and generalizable methods of determining the perimeters of polygons; and the values and combinations of coins required to make change.

Indicators

3-5.1 Use the fewest possible number of coins when making change.

3-5.2 Use appropriate tools to measure objects to the nearest unit: measuring length in meters and half inches; measuring liquid volume in fluid ounces, pints, and liters; and measuring mass in grams.

3-5.3 Recognize the relationship between meters and yards, kilometers and miles, liters and quarts, and kilograms and pounds.

3-5.4 Use common referents to make comparisons and estimates associated with length, liquid volume, and mass and weight: meters compared to yards, kilometers to miles, liters to quarts, and kilograms to pounds.

3-5.5 Generate strategies to determine the perimeters of polygons.

3-5.6 Use analog and digital clocks to tell time to the nearest minute.

3-5.7 Recall equivalencies associated with time and length: 60 seconds = 1 minute and 36 inches = 1 yard.

GRADE 3: DATA ANALYSIS AND PROBABILITY

Standard 3-6: The student will demonstrate through the mathematical processes an understanding of organizing, interpreting, analyzing and making predictions about data, the benefits of multiple representations of a data set, and the basic concepts of probability.

Indicators

- 3-6.1 Apply a procedure to find the range of a data set.
- 3-6.2 Organize data in tables, bar graphs, and dot plots.
- 3-6.3 Interpret data in tables, bar graphs, pictographs, and dot plots.
- 3-6.4 Analyze dot plots and bar graphs to make predictions about populations.
- 3-6.5 Compare the benefits of using tables, bar graphs, and dot plots as representations of a given data set.
- 3-6.6 Predict on the basis of data whether events are *likely*, *unlikely*, *certain*, or *impossible* to occur.
- 3-6.7 Understand when the probability of an event is 0 or 1.

GRADE 4

GRADE 4: MATHEMATICAL PROCESSES

The mathematical processes provide the framework for teaching, learning, and assessing in mathematics at all grade levels. Instructional programs should be built around these processes.

Standard 4-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

Indicators

- 4-1.1 Analyze information to solve increasingly more sophisticated problems.
- 4-1.2 Construct arguments that lead to conclusions about general mathematical properties and relationships.
- 4-1.3 Explain and justify answers to problems on the basis of mathematical properties, structures, and relationships on mathematical properties, structures, and relationships.
- 4-1.4 Generate descriptions and mathematical statements about relationships between and among classes of objects.
- 4-1.5 Use correct, complete, and clearly written and oral mathematical language to pose questions, communicate ideas, and extend problem situations.
- 4-1.6 Generalize connections between new mathematical ideas and related concepts and subjects that have been previously considered.
- 4-1.7 Use flexibility in mathematical representations.
- 4-1.8 Recognize the limitations of various forms of mathematical representations.

GRADE 4: NUMBER AND OPERATIONS

Standard 4-2: The student will demonstrate through the mathematical processes an understanding of decimal notation as an extension of the place-value system; the relationship between fractions and decimals; the multiplication of whole numbers; and accurate, efficient, and generalizable methods of dividing whole numbers, adding decimals, and subtracting decimals.

Indicators

- 4-2.1 Recognize the period in the place-value structure of whole numbers: units, thousands, millions, and billions.

- 4-2.2 Apply divisibility rules for 2, 5, and 10.
- 4-2.3 Apply an algorithm to multiply whole numbers fluently.
- 4-2.4 Explain the effect on the product when one of the factors is changed.
- 4-2.5 Generate strategies to divide whole numbers by single-digit divisors.
- 4-2.6 Analyze the magnitude of digits through hundredths on the basis of their place value.
- 4-2.7 Compare decimals through hundredths by using the terms *is less than*, *is greater than*, and *is equal to* and the symbols $<$, $>$, and $=$.
- 4-2.8 Apply strategies and procedures to find equivalent forms of fractions.
- 4-2.9 Compare the relative size of fractions to the benchmarks 0 , $\frac{1}{2}$, and 1 .
- 4-2.10 Identify common the fraction/decimal equivalents $\frac{1}{2} = .5$, $\frac{1}{4} = .25$, $\frac{3}{4} = .75$, $\frac{1}{3} \approx .33$, $\frac{2}{3} \approx .67$, multiples of $\frac{1}{10}$, and multiples of $\frac{1}{100}$.
- 4-2.11 Represent improper fractions, mixed numbers, and decimals.
- 4-2.12 Generate strategies to add and subtract decimals through hundredths.

GRADE 4: ALGEBRA

Standard 4-3: The student will demonstrate through the mathematical processes an understanding of numeric and nonnumeric patterns, the representation of simple mathematical relationships, and the application of procedures to find the value of an unknown.

Indicators

- 4-3.1 Analyze numeric, nonnumeric, and repeating patterns involving all operations and decimal patterns through hundredths.

4-3.2 Generalize a rule for numeric, nonnumeric, and repeating patterns involving all operations.

4-3.3 Use a rule to complete a sequence or a table.

4-3.4 Translate among, letters, symbols, and words to represent quantities in simple mathematical expressions or equations.

4-3.5 Apply procedures to find the value of an unknown letter or symbol in a whole-number equation.

4-3.6 Illustrate situations that show change over time as either increasing, decreasing, or varying.

GRADE 4: GEOMETRY

Standard 4-4: The student will demonstrate through the mathematical processes an understanding of the relationship between two- and three-dimensional shapes, the use of transformations to determine congruency, and the representation of location and movement within the first quadrant of a coordinate system.

Indicators

4-4.1 Analyze the quadrilaterals squares, rectangles, trapezoids, rhombuses, and parallelograms according to their properties.

4-4.2 Analyze the relationship between three-dimensional geometric shapes in the form of cubes, rectangular prisms, and cylinders and their two-dimensional nets.

4-4.3 Predict the results of multiple transformations of the same type—translation, reflection, or rotation—on a two-dimensional geometric shape.

4-4.4 Represent the two-dimensional shapes trapezoids, rhombuses, and parallelograms and the three-dimensional shapes cubes, rectangular prisms, and cylinders.

4-4.5 Use transformation(s) to prove congruency.

4-4.6 Represent points, lines, line segments, rays, angles, and polygons.

4-4.7 Represent with ordered pairs of whole numbers the location of points in the first quadrant of a coordinate grid.

4-4.8 Illustrate possible paths from one point to another along vertical and horizontal grid lines in the first quadrant of the coordinate plane.

GRADE 4: MEASUREMENT

Standard 4-5: The student will demonstrate through the mathematical processes an understanding of elapsed time; conversions within the U.S. Customary System; and accurate, efficient, and generalizable methods of determining area.

Indicators

4-5.1 Use appropriate tools to measure objects to the nearest unit: measuring length in quarter inches, centimeters, and millimeters; measuring liquid volume in cups, quarts, and liters; and measuring weight and mass in pounds, milligrams, and kilograms.

4-5.2 Compare angle measures with referent angles of 45 degrees, 90 degrees, and 180 degrees to estimate angle measures.

4-5.3 Use equivalencies to convert units of measure within the U.S. Customary System: converting length in inches, feet, yards, and miles; converting weight in ounces, pounds, and tons; converting liquid volume in cups, pints, quarts, and gallons; and converting time in years, months, weeks, days, hours, minutes, and seconds.

4-5.4 Analyze the perimeter of a polygon.

4-5.5 Generate strategies to determine the area of rectangles and triangles.

4-5.6 Apply strategies and procedures to determine the amount of elapsed time in hours and minutes within a 12-hour period, either a.m. or p.m.

4-5.7 Use Celsius and Fahrenheit thermometers to determine temperature changes during time intervals.

4-5.8 Recall equivalencies associated with liquid volume, time, weight, and length: 8 liquid ounces = 1 cup, 2 cups = 1 pint, 2 pints = 1 quart, 4 quarts = 1 gallon; 365 days = 1 year, 52 weeks = 1 year; 16 ounces = 1 pound, 2,000 pounds = 1 ton; and 5,280 feet = 1 mile.

4-5.9 Exemplify situations in which highly accurate measurements are required.

GRADE 4: DATA ANALYSIS AND PROBABILITY

Standard 4-6: The student will demonstrate through the mathematical processes an understanding of the impact of data-collection methods, the appropriate graph for categorical or numerical data, and the analysis of possible outcomes for a simple event.

Indicators

4-6.1 Compare how data-collection methods impact survey results.

4-6.2 Interpret data in tables, line graphs, bar graphs, and double bar graphs whose scale increments are greater than or equal to 1.

4-6.3 Organize data in tables, line graphs, and bar graphs whose scale increments are greater than or equal to 1.

4-6.4 Distinguish between categorical and numerical data.

4-6.5 Match categorical and numerical data to appropriate graphs.

4-6.6 Predict on the basis of data whether events are *likely*, *unlikely*, *certain*, *impossible*, or *equally likely* to occur.

4-6.7 Analyze possible outcomes for a simple event.

GRADE 5

GRADE 5: MATHEMATICAL PROCESSES

The mathematical processes provide the framework for teaching, learning, and assessing in mathematics at all grade levels. Instructional programs should be built around these processes.

Standard 5-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

Indicators

5-1.1 Analyze information to solve increasingly more sophisticated problems.

5-1.2 Construct arguments that lead to conclusions about general mathematical properties and relationships.

5-1.3 Explain and justify answers based on mathematical properties, structures, and relationships.

5-1.4 Generate descriptions and mathematical statements about relationships between and among classes of objects.

5-1.5 Use correct, clear, and complete oral and written mathematical language to pose questions, communicate ideas, and extend problem situations.

5-1.6 Generalize connections between new mathematical ideas and related concepts and subjects that have been previously considered.

5-1.7 Use flexibility in mathematical representations.

5-1.8 Recognize the limitations of various forms of mathematical representations.

GRADE 5: NUMBER AND OPERATIONS

Standard 5-2: The student will demonstrate through the mathematical processes an understanding of the place value system; the division of whole numbers; the addition and subtraction of decimals; the relationships among whole numbers, fractions, and decimals; and accurate, efficient, and generalizable methods of adding and subtracting fractions.

Indicators

5-2.1 Analyze the magnitude of a digit on the basis of its place value, using whole numbers and decimal numbers through thousandths.

5-2.2 Apply an algorithm to divide whole numbers fluently.

5-2.3 Understand the relationship among the divisor, dividend, and quotient.

5-2.4 Compare whole numbers, decimals, and fractions by using the symbols $<$, $>$, and $=$.

5-2.5 Apply an algorithm to add and subtract decimals through thousandths.

5-2.6 Classify numbers as prime, composite, or neither.

5-2.7 Generate strategies to find the greatest common factor and the least common multiple of two whole numbers.

5-2.8 Generate strategies to add and subtract fractions with like and unlike denominators.

5-2.9 Apply divisibility rules for 3, 6, and 9.

GRADE 5: ALGEBRA

Standard 5-3: The student will demonstrate through the mathematical processes an understanding of the use of patterns, relations, functions, models, structures, and algebraic symbols to represent quantitative relationships and will analyze change in various contexts.

Indicators

5-3.1 Represent numeric, algebraic, and geometric patterns in words, symbols, algebraic expressions, and algebraic equations.

5-3.2 Analyze patterns and functions with words, tables, and graphs.

5-3.3 Match tables, graphs, expressions, equations, and verbal descriptions of the same problem situation.

5-3.4 Identify applications of commutative, associative, and distributive properties with whole numbers.

5-3.5 Analyze situations that show change over time.

GRADE 5: GEOMETRY

Standard 5-4: The student will demonstrate through the mathematical processes an understanding of congruency, spatial relationships, and relationships among the properties of quadrilaterals.

Indicators

5-4.1 Apply the relationships of quadrilaterals to make logical arguments about their properties.

5-4.2 Compare the angles, side lengths, and perimeters of congruent shapes.

5-4.3 Classify shapes as congruent.

5-4.4 Translate between two-dimensional representations and three-dimensional objects.

5-4.5 Predict the results of multiple transformations on a geometric shape when combinations of translation, reflection, and rotation are used.

5-4.6 Analyze shapes to determine line symmetry and/or rotational symmetry.

GRADE 5: MEASUREMENT

Standard 5-5: The student will demonstrate through the mathematical processes an understanding of the units and systems of measurement and the application of tools and formulas to determine measurements.

Indicators

5-5.1 Use appropriate tools and units to measure objects to the precision of one-eighth inch.

5-5.2 Use a protractor to measure angles from 0 to 180 degrees.

5-5.3 Use equivalencies to convert units of measure within the metric system: converting length in millimeters, centimeters, meters, and kilometers; converting liquid volume in milliliters, centiliters, liters, and kiloliters; and converting mass in milligrams, centigrams, grams, and kilograms.

5-5.4 Apply formulas to determine the perimeters and areas of triangles, rectangles, and parallelograms.

5-5.5 Apply strategies and formulas to determine the volume of rectangular prisms.

5-5.6 Apply procedures to determine the amount of elapsed time in hours, minutes, and seconds within a 24-hour period.

5-5.7 Understand the relationship between the Celsius and Fahrenheit temperature scales.

5-5.8 Recall equivalencies associated with length, liquid volume, and mass:

10 millimeters = 1 centimeter, 100 centimeters = 1 meter, 1000 meters = 1 kilometer;

10 milliliters = 1 centiliter, 100 centiliters = 1 liter, 1000 liters = 1 kiloliter; and

10 milligrams = 1 centigram, 100 centigrams = 1 gram, 1000 grams = 1 kilogram.

GRADE 5: DATA ANALYSIS AND PROBABILITY

Standard 5-6: The student will demonstrate through the mathematical processes an understanding of investigation design, the effect of data-collection methods on a data set, the interpretation and application of the measures of central tendency, and the application of basic concepts of probability.

Indicators

- 5-6.1 Design a mathematical investigation to address a question.
- 5-6.2 Analyze how data-collection methods affect the nature of the data set.
- 5-6.3 Apply procedures to calculate the measures of central tendency (mean, median, and mode).
- 5-6.4 Interpret the meaning and application of the measures of central tendency.
- 5-6.5 Represent the probability of a single-stage event in words and fractions.
- 5-6.6 Conclude why the sum of the probabilities of the outcomes of an experiment must equal.

GRADE 6

GRADE 6: MATHEMATICAL PROCESSES

The mathematical processes provide the framework for teaching, learning, and assessing in mathematics at all grade levels. Instructional programs should be built around these processes.

Standard 6-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

Indicators

- 6-1.1 Generate and solve complex abstract problems that involve modeling physical, social, and/or mathematical phenomena.
- 6-1.2 Evaluate conjectures and pose follow-up questions to prove or disprove conjectures.
- 6-1.3 Use inductive and deductive reasoning to formulate mathematical arguments.
- 6-1.4 Understand equivalent symbolic expressions as distinct symbolic forms that represent the same relationship.
- 6-1.5 Generalize mathematical statements based on inductive and deductive reasoning.
- 6-1.6 Use correct and clearly written or spoken words, variables, and notations to communicate about significant mathematical tasks.
- 6-1.7 Generalize connections among a variety of representational forms and real-world situations.
- 6-1.8 Use standard and nonstandard representations to convey and support mathematical relationships.

GRADE 6: NUMBER AND OPERATIONS

Standard 6-2: The student will demonstrate through the mathematical processes an understanding of the concepts of whole-number percentages, integers, and ratio and rate; the addition and subtraction of fractions; accurate, efficient, and generalizable methods of multiplying and dividing fractions and decimals; and the use of exponential notation to represent whole numbers.

Indicators

- 6-2.1 Understand whole-number percentages through 100.
- 6-2.2 Understand integers.
- 6-2.3 Compare rational numbers and whole-number percentages through 100 by using the symbols \leq , \geq , $<$, $>$, and $=$.
- 6-2.4 Apply an algorithm to add and subtract fractions.
- 6-2.5 Generate strategies to multiply and divide fractions and decimals.
- 6-2.6 Understand the relationship between ratio/rate and multiplication/division.
- 6-2.7 Apply strategies and procedures to determine values of powers of 10, up to 10^6 .
- 6-2.8 Represent the prime factorization of numbers by using exponents.
- 6-2.9 Represent whole numbers in exponential form.

GRADE 6: ALGEBRA

Standard 6-3: The student will demonstrate through the mathematical processes an understanding of writing, interpreting, and using mathematical expressions, equations, and inequalities.

Indicators

- 6-3.1 Analyze numeric and algebraic patterns and pattern relationships.
- 6-3.2 Apply order of operations to simplify whole-number expressions.
- 6-3.3 Represent algebraic relationships with variables in expressions, simple equations, and simple inequalities.

6-3.4 Use the commutative, associative, and distributive properties to show that two expressions are equivalent.

6-3.5 Use inverse operations to solve one-step equations that have whole-number solutions and variables with whole-number coefficients.

GRADE 6: GEOMETRY

Standard 6-4: The student will demonstrate through the mathematical processes an understanding of shape, location, and movement within a coordinate system; similarity, complementary, and supplementary angles; and the relationship between line and rotational symmetry.

Indicators

6-4.1 Represent with ordered pairs of integers the location of points in a coordinate grid.

6-4.2 Apply strategies and procedures to find the coordinates of the missing vertex of a square, rectangle, or right triangle when given the coordinates of the polygon's other vertices.

6-4.3 Generalize the relationship between line symmetry and rotational symmetry for two-dimensional shapes.

6-4.4 Construct two-dimensional shapes with line or rotational symmetry.

6-4.5 Identify the transformation(s) used to move a polygon from one location to another in the coordinate plane.

6-4.6 Explain how transformations affect the location of the original polygon in the coordinate plane.

6-4.7 Compare the angles, side lengths, and perimeters of similar shapes.

6-4.8 Classify shapes as similar.

6-4.9 Classify pairs of angles as either complementary or supplementary.

GRADE 6: MEASUREMENT

Standard 6-5: The student will demonstrate through the mathematical processes an understanding of surface area; the perimeter and area of irregular shapes; the relationships among the circumference, diameter, and radius of a circle; the use of proportions to determine unit rates; and the use of scale to determine distance.

Indicators

6-5.1 Explain the relationships among the circumference, diameter, and radius of a circle.

6-5.2 Apply strategies and formulas with an approximation of π (3.14, or $\frac{22}{7}$) to find the circumference and area of a circle.

6-5.3 Generate strategies to determine the surface area of a rectangular prism and a cylinder.

6-5.4 Apply strategies and procedures to estimate the perimeters and areas of irregular shapes.

6-5.5 Apply strategies and procedures of combining and subdividing to find the perimeters and areas of irregular shapes.

6-5.6 Use proportions to determine unit rates.

6-5.7 Use a scale to determine distance.

GRADE 6: DATA ANALYSIS AND PROBABILITY

Standard 6-6: The student will demonstrate through the mathematical processes an understanding of the relationships within one population or sample.

Indicators

- 6-6.1 Predict the characteristics of one population based on the analysis of sample data.
- 6-6.2 Organize data in frequency tables, histograms, or stem-and-leaf plots as appropriate.
- 6-6.3 Analyze which measure of central tendency (mean, median, or mode) is the most appropriate for a given purpose.
- 6-6.4 Use theoretical probability to determine the sample space and probability for one- and two-stage events such as tree diagrams, models, lists, charts, and pictures.
- 6-6.5 Apply procedures to calculate the probability of complementary events.

GRADE 7

GRADE 7: MATHEMATICAL PROCESSES

The mathematical processes provide the framework for teaching, learning, and assessing in mathematics at all grade levels. Instructional programs should be built around these processes.

Standard 7-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

Indicators

- 7-1.1 Generate and solve complex abstract problems that involve modeling physical, social, or mathematical phenomena.
- 7-1.2 Evaluate conjectures and pose follow-up questions to prove or disprove conjectures.
- 7-1.3 Use inductive and deductive reasoning to formulate mathematical arguments.
- 7-1.4 Understand equivalent symbolic expressions as distinct symbolic forms that represent the same relationship.
- 7-1.5 Generalize mathematical statements based on inductive and deductive reasoning.
- 7-1.6 Use correct and clearly written or spoken words, variables, and notation to communicate about significant mathematical tasks.
- 7-1.7 Generalize connections among a variety of representational forms and real-world situations.
- 7-1.8 Use standard and nonstandard representations to convey and support mathematical relationships.

GRADE 7: NUMBER AND OPERATIONS

Standard 7-2: The student will demonstrate through the mathematical processes an understanding of the representation of rational numbers, percentages, and square roots of perfect squares; the application of ratios, rates, and proportions to solve problems; accurate, efficient, and generalizable methods for operations with integers; the multiplication and division of fractions and decimals; and the inverse relationship between squaring and finding the square roots of perfect squares.

Indicators

- 7-2.1 Understand fractional percentages and percentages greater than one hundred.
- 7-2.2 Represent the location of rational numbers and square roots of perfect squares on a number line.
- 7-2.3 Compare rational numbers, percentages, and square roots of perfect squares by using the symbols \leq , \geq , $<$, $>$, and $=$.
- 7-2.4 Understand the meaning of absolute value.
- 7-2.5 Apply ratios, rates, and proportions to discounts, taxes, tips, interest, unit costs, and similar shapes.
- 7-2.6 Translate between standard form and exponential form.
- 7-2.7 Translate between standard form and scientific notation.
- 7-2.8 Generate strategies to add, subtract, multiply, and divide integers.
- 7-2.9 Apply an algorithm to multiply and divide fractions and decimals.
- 7-2.10 Understand the inverse relationship between squaring and finding the square roots of perfect squares.

GRADE 7: ALGEBRA

Standard 7-3: The student will demonstrate through the mathematical processes an understanding of proportional relationships.

Indicators

- 7-3.1 Analyze geometric patterns and pattern relationships.
- 7-3.2 Analyze tables and graphs to describe the rate of change between and among quantities.
- 7-3.3 Understand slope as a constant rate of change.

- 7-3.4 Use inverse operations to solve two-step equations and two-step inequalities.
- 7-3.5 Represent on a number line the solution of a two-step inequality.
- 7-3.6 Represent proportional relationships with graphs, tables, and equations.
- 7-3.7 Classify relationships as either directly proportional, inversely proportional, or nonproportional.

GRADE 7: GEOMETRY

Standard 7-4: The student will demonstrate through the mathematical processes an understanding of proportional reasoning, tessellations, the use of geometric properties to make deductive arguments. the results of the intersection of geometric shapes in a plane, and the relationships among angles formed when a transversal intersects two parallel lines.

Indicators

- 7-4.1 Analyze geometric properties and the relationships among the properties of triangles, congruence, similarity, and transformations to make deductive arguments.
- 7-4.2 Explain the results of the intersection of two or more geometric shapes in a plane.
- 7-4.3 Illustrate the cross section of a solid.
- 7-4.4 Translate between two- and three-dimensional representations of compound figures.
- 7-4.5 Analyze the congruent and supplementary relationships—specifically, alternate interior, alternate exterior, corresponding, and adjacent—of the angles formed by parallel lines and a transversal.
- 7-4.6 Compare the areas of similar shapes and the areas of congruent shapes.
- 7-4.7 Explain the proportional relationship among attributes of similar shapes.

- 7-4.8 Apply proportional reasoning to find missing attributes of similar shapes.
- 7-4.9 Create tessellations with transformations.
- 7-4.10 Explain the relationship of the angle measurements among shapes that tessellate.

GRADE 7: MEASUREMENT

Standard 7-5: The student will demonstrate through the mathematical processes an understanding of how to use ratio and proportion to solve problems involving scale factors and rates and how to use one-step unit analysis to convert between and within the U.S. Customary System and the metric system.

Indicators

- 7-5.1 Use ratio and proportion to solve problems involving scale factors and rates.
- 7-5.2 Apply strategies and formulas to determine the surface area and volume of the three-dimensional shapes prism, pyramid, and cylinder.
- 7-5.3 Generate strategies to determine the perimeters and areas of trapezoids.
- 7-5.4 Recall equivalencies associated with length, mass and weight, and liquid volume:
 - 1 square yard = 9 square feet, 1 cubic meter = 1 million cubic centimeters,
 - 1 kilometer = $\frac{5}{8}$ mile, 1 inch = 2.54 centimeters; 1 kilogram = 2.2 pounds; and
 - 1.06 quarts = 1 liter.
- 7-5.5 Use one-step unit analysis to convert between and within the U.S. Customary System and the metric system.

GRADE 7: DATA ANALYSIS AND PROBABILITY

Standard 7-6: The student will demonstrate through the mathematical processes an understanding of the relationships between two populations or samples.

Indicators

- 7-6.1 Predict the characteristics of two populations based on the analysis of sample data.
- 7-6.2 Organize data in box plots or circle graphs as appropriate.
- 7-6.3 Apply procedures to calculate the interquartile range.
- 7-6.4 Interpret the interquartile range for data.
- 7-6.5 Apply procedures to calculate the probability of mutually exclusive simple or compound events.
- 7-6.6 Interpret the probability of mutually exclusive simple or compound events.
- 7-6.7 Differentiate between experimental and theoretical probability of the same event.
- 7-6.8 Use the fundamental counting principle to determine the number of possible outcomes for a multistage event.

GRADE 8

GRADE 8: MATHEMATICAL PROCESSES

The mathematical processes provide the framework for teaching, learning, and assessing in mathematics at all grade levels. Instructional programs should be built around these processes.

Standard 8-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

Indicators

- 8-1.1 Generate and solve complex abstract problems that involve modeling physical, social, or mathematical phenomena.
- 8-1.2 Evaluate conjectures and pose follow-up questions to prove or disprove conjectures.
- 8-1.3 Use inductive and deductive reasoning to formulate mathematical arguments.
- 8-1.4 Understand equivalent symbolic expressions as distinct symbolic forms that represent the same relationship.
- 8-1.5 Generalize mathematical statements based on inductive and deductive reasoning.
- 8-1.6 Use correct and clearly written or spoken words, variables, and notations to communicate about significant mathematical tasks.
- 8-1.7 Generalize connections among a variety of representational forms and real-world situations.
- 8-1.8 Use standard and nonstandard representations to convey and support mathematical relationships.

GRADE 8: NUMBER AND OPERATIONS

Standard 8-2: The student will demonstrate through the mathematical processes an understanding of operations with integers, the effects of multiplying and dividing with rational numbers, the comparative magnitude of rational and irrational numbers, the approximation of cube and square roots, and the application of proportional reasoning.

Indicators

- 8-2.1 Apply an algorithm to add, subtract, multiply, and divide integers.

8-2.2 Understand the effect of multiplying and dividing a rational number by another rational number.

8-2.3 Represent the approximate location of irrational numbers on a number line.

8-2.4 Compare rational and irrational numbers by using the symbols \leq , \geq , $<$, $>$, and $=$.

8-2.5 Apply the concept of absolute value.

8-2.6 Apply strategies and procedures to approximate between two whole numbers the square roots or cube roots of numbers less than 1,000.

8-2.7 Apply ratios, rates, and proportions.

GRADE 8: ALGEBRA

Standard 8-3: The student will demonstrate through the mathematical processes an understanding of equations, inequalities, and linear functions.

Indicators

8-3.1 Translate among verbal, graphic, tabular, and algebraic representations of linear functions.

8-3.2 Represent algebraic relationships with equations and inequalities.

8-3.3 Use commutative, associative, and distributive properties to examine the equivalence of a variety of algebraic expressions.

8-3.4 Apply procedures to solve multistep equations.

8-3.5 Classify relationships between two variables in graphs, tables, and/or equations as either linear or nonlinear.

8-3.6 Identify the coordinates of the x - and y -intercepts of a linear equation from a graph, equation, and/or table.

8-3.7 Identify the slope of a linear equation from a graph, equation, and/or table.

GRADE 8: GEOMETRY

Standard 8-4: The student will demonstrate through the mathematical processes an understanding of the Pythagorean theorem; the use of ordered pairs, equations, intercepts, and intersections to locate points and lines in a coordinate plane; and the effect of a dilation in a coordinate plane.

Indicators

8-4.1 Apply the Pythagorean theorem.

8-4.2 Use ordered pairs, equations, intercepts, and intersections to locate points and lines in a coordinate plane.

8-4.3 Apply a dilation to a square, rectangle, or right triangle in a coordinate plane.

8-4.4 Analyze the effect of a dilation on a square, rectangle, or right triangle in a coordinate plane.

GRADE 8: MEASUREMENT

Standard 8-5: The student will demonstrate through the mathematical processes an understanding of the proportionality of similar figures; the necessary levels of accuracy and precision in measurement; the use of formulas to determine circumference, perimeter, area, and

volume; and the use of conversions within and between the U.S. Customary System and the metric system.

Indicators

8-5.1 Use proportional reasoning and the properties of similar shapes to determine the length of a missing side.

8-5.2 Explain the effect on the area of two-dimensional shapes and on the volume of three-dimensional shapes when one or more of the dimensions are changed.

8-5.3 Apply strategies and formulas to determine the volume of the three-dimensional shapes cone and sphere.

8-5.4 Apply formulas to determine the exact (π) circumference and area of a circle.

8-5.5 Apply formulas to determine the perimeters and areas of trapezoids.

8-5.6 Analyze a variety of measurement situations to determine the necessary level of accuracy and precision.

8-5.7 Use multistep unit analysis to convert between and within U.S. Customary System and the metric system.

GRADE 8: DATA ANALYSIS AND PROBABILITY

Standard 8-6: The student will demonstrate through the mathematical processes an understanding of the relationships between two variables within one population or sample.

Indicators

8-6.1 Generalize the relationship between two sets of data by using scatterplots and lines of best fit.

8-6.2 Organize data in matrices or scatterplots as appropriate.

8-6.3 Use theoretical and experimental probability to make inferences and convincing arguments about an event or events.

8-6.4 Apply procedures to calculate the probability of two dependent events.

8-6.5 Interpret the probability for two dependent events.

8-6.6 Apply procedures to compute the odds of a given event.

8-6.7 Analyze probability using area models.

8-6.8 Interpret graphic and tabular data representations by using range and the measures of central tendency (mean, median, and mode).

HIGH SCHOOL

HIGH SCHOOL CORE AREA: ELEMENTARY ALGEBRA

The mathematical processes provide the framework for teaching, learning, and assessing in all high school mathematics core courses. Instructional programs should be built around these processes.

Standard EA-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

Indicators

EA-1.1 Communicate a knowledge of algebraic relationships by using mathematical terminology appropriately.

- EA-1.2 Connect algebra with other branches of mathematics.
- EA-1.3 Apply algebraic methods to solve problems in real-world contexts.
- EA-1.4 Judge the reasonableness of mathematical solutions.
- EA-1.5 Demonstrate an understanding of algebraic relationships by using a variety of representations (including verbal, graphic, numerical, and symbolic).
- EA-1.6 Understand how algebraic relationships can be represented in concrete models, pictorial models, and diagrams.
- EA-1.7 Understand how to represent algebraic relationships by using tools such as handheld computing devices, spreadsheets, and computer algebra systems (CASs).

HIGH SCHOOL CORE AREA: ELEMENTARY ALGEBRA

Standard EA-2: The student will demonstrate through the mathematical processes an understanding of the real number system and operations involving exponents, matrices, and algebraic expressions.

Indicators

- EA-2.1 Exemplify elements of the real number system (including integers, rational numbers, and irrational numbers).
- EA-2.2 Apply the laws of exponents and roots to solve problems.
- EA-2.3 Carry out a procedure to perform operations (including multiplication and division) with numbers written in scientific notation.
- EA-2.4 Use dimensional analysis to convert units of measure within a system.

EA-2.5 Carry out a procedure using the properties of real numbers (including commutative, associative, and distributive) to simplify expressions.

EA-2.6 Carry out a procedure to evaluate an expression by substituting a value for the variable.

EA-2.7 Carry out a procedure (including addition, subtraction, multiplication, and division by a monomial) to simplify polynomial expressions.

EA-2.8 Carry out a procedure to factor binomials, trinomials, and polynomials by using various techniques (including the greatest common factor, the difference between two squares, and quadratic trinomials).

EA-2.9 Carry out a procedure to perform operations with matrices (including addition, subtraction, and scalar multiplication).

EA-2.10 Represent applied problems by using matrices.

HIGH SCHOOL CORE AREA: ELEMENTARY ALGEBRA

Standard EA-3: The student will demonstrate through the mathematical processes an understanding of relationships and functions.

Indicators

EA-3.1 Classify a relationship as being either a function or not a function when given data as a table, set of ordered pairs, or graph.

EA-3.2 Use function notation to represent functional relationships.

EA-3.3 Carry out a procedure to evaluate a function for a given element in the domain.

EA-3.4 Analyze the graph of a continuous function to determine the domain and range of the function.

EA-3.5 Carry out a procedure to graph parent functions (including $y = x$, $y = x^2$, $y = \sqrt{x}$, $y = |x|$, and $y = \frac{1}{x}$).

EA-3.6 Classify a variation as either direct or inverse.

EA-3.7 Carry out a procedure to solve literal equations for a specified variable.

EA-3.8 Apply proportional reasoning to solve problems.

HIGH SCHOOL CORE AREA: ELEMENTARY ALGEBRA

Standard EA-4: The student will demonstrate through the mathematical processes an understanding of the procedures for writing and solving linear equations and inequalities.

Indicators

EA-4.1 Carry out a procedure to write an equation of a line with a given slope and a y-intercept.

EA-4.2 Carry out a procedure to write an equation of a line with a given slope passing through a given point.

EA-4.3 Carry out a procedure to write an equation of a line passing through two given points.

EA-4.4 Use a procedure to write an equation of a trend line from a given scatterplot.

EA-4.5 Analyze a scatterplot to make predictions.

EA-4.6 Represent linear equations in multiple forms (including point-slope, slope-intercept, and standard).

- EA-4.7 Carry out procedures to solve linear equations for one variable algebraically.
- EA-4.8 Carry out procedures to solve linear inequalities for one variable algebraically and then to graph the solution.
- EA-4.9 Carry out a procedure to solve systems of two linear equations graphically.
- EA-4.10 Carry out a procedure to solve systems of two linear equations algebraically.

HIGH SCHOOL CORE AREA: ELEMENTARY ALGEBRA

Standard EA-5: The student will demonstrate through the mathematical processes an understanding of the graphs and characteristics of linear equations and inequalities.

Indicators

- EA-5.1 Carry out a procedure to graph a line when given the equation of the line.
- EA-5.2 Analyze the effects of changes in the slope, m , and the y-intercept, b , on the graph of $y = mx + b$.
- EA-5.3 Carry out a procedure to graph the line with a given slope and a y-intercept.
- EA-5.4 Carry out a procedure to graph the line with a given slope passing through a given point.
- EA-5.5 Carry out a procedure to determine the x -intercept and y-intercept of lines from data given tabularly, graphically, symbolically, and verbally.
- EA-5.6 Carry out a procedure to determine the slope of a line from data given tabularly, graphically, symbolically, and verbally.
- EA-5.7 Apply the concept of slope as a rate of change to solve problems.

EA-5.8 Analyze the equations of two lines to determine whether the lines are perpendicular or parallel.

EA-5.9 Analyze given information to write a linear function that models a given problem situation.

EA-5.10 Analyze given information to determine the domain and range of a linear function in a problem situation.

EA-5.11 Analyze given information to write a system of linear equations that models a given problem situation.

EA-5.12 Analyze given information to write a linear inequality in one variable that models a given problem situation.

HIGH SCHOOL CORE AREA: ELEMENTARY ALGEBRA

Standard EA-6: The student will demonstrate through the mathematical processes an understanding of quadratic relationships and functions.

Indicators

EA-6.1 Analyze the effects of changing the leading coefficient a on the graph of $y = ax^2$.

EA-6.2 Analyze the effects of changing the constant c on the graph of $y = x^2 + c$.

EA-6.3 Analyze the graph of a quadratic function to determine its equation.

EA-6.4 Carry out a procedure to solve quadratic equations by factoring.

EA-6.5 Carry out a graphic procedure to approximate the solutions of quadratic equations.

EA-6.6 Analyze given information to determine the domain of a quadratic function in a problem situation.

HIGH SCHOOL CORE AREA: INTERMEDIATE ALGEBRA

The mathematical processes provide the framework for teaching, learning, and assessing in all high school mathematics core courses. Instructional programs should be built around these processes.

Standard IA-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

Indicators

IA-1.1 Communicate a knowledge of algebraic relationships by using mathematical terminology appropriately.

IA-1.2 Connect algebra with other branches of mathematics.

IA-1.3 Apply algebraic methods to solve problems in real-world contexts.

IA-1.4 Judge the reasonableness of mathematical solutions.

IA-1.5 Demonstrate an understanding of algebraic relationships by using a variety of representations (including verbal, graphic, numerical, and symbolic).

IA-1.6 Understand how algebraic relationships can be represented in concrete models, pictorial models, and diagrams.

IA-1.7 Understand how to represent algebraic relationships by using tools such as handheld computing devices, spreadsheets, and computer algebra systems (CASs).

HIGH SCHOOL CORE AREA: INTERMEDIATE ALGEBRA

Standard IA-2: The student will demonstrate through the mathematical processes an understanding of functions, systems of equations, and systems of linear inequalities.

Indicators

- IA-2.1 Carry out a procedure to solve a system of linear inequalities algebraically.
- IA-2.2 Carry out a procedure to solve a system of linear inequalities graphically.
- IA-2.3 Analyze a problem situation to determine a system of linear inequalities that models the problem situation.
- IA-2.4 Use linear programming to solve contextual problems involving a system of linear inequalities.
- IA-2.5 Carry out procedures to perform operations on polynomial functions (including $f(x) + g(x)$, $f(x) - g(x)$, $f(x) \cdot g(x)$, and $f(x)/g(x)$).
- IA-2.6 Apply a procedure to write the equation of a composition of given functions.
- IA-2.7 Carry out a procedure to graph translations of parent functions
(including $y = x$, $y = x^2$, $y = \sqrt{x}$, $y = |x|$, and $y = \frac{1}{x}$).
- IA-2.8 Carry out a procedure to graph transformations of parent functions (including $y = x$, $y = x^2$, and $y = |x|$).
- IA-2.9 Carry out a procedure to graph discontinuous functions (including piecewise and step functions).
- IA-2.10 Carry out a procedure to determine the domain and range of discontinuous functions (including piecewise and step functions).

IA-2.11 Carry out a procedure to solve a system of equations (including two linear functions and one linear function with one quadratic function).

HIGH SCHOOL CORE AREA: INTERMEDIATE ALGEBRA

Standard IA-3: The student will demonstrate through the mathematical processes an understanding of quadratic equations and the complex number system.

Indicators

IA-3.1 Carry out a procedure to simplify expressions involving powers of i .

IA-3.2 Carry out a procedure to perform operations with complex numbers (including addition, subtraction, multiplication, and division).

IA-3.3 Carry out a procedure to solve quadratic equations algebraically (including factoring, completing the square, and applying the quadratic formula).

IA-3.4 Use the discriminant to determine the number and type of solutions of a quadratic equation.

IA-3.5 Analyze given information (including quadratic models) to solve contextual problems.

IA-3.6 Carry out a procedure to write an equation of a quadratic function when given its roots.

HIGH SCHOOL CORE AREA: INTERMEDIATE ALGEBRA

Standard IA-4: The student will demonstrate through the mathematical processes an understanding of algebraic expressions and nonlinear functions.

Indicators

- IA-4.1 Carry out a procedure to perform operations (including multiplication, exponentiation, and division) with polynomial expressions.
- IA-4.2 Carry out a procedure to determine specified points (including zeros, maximums, and minimums) of polynomial functions.
- IA-4.3 Carry out a procedure to solve polynomial equations (including factoring by grouping, factoring the difference between two squares, factoring the sum of two cubes, and factoring the difference between two cubes).
- IA-4.4 Analyze given information (including polynomial models) to solve contextual problems.
- IA-4.5 Carry out a procedure to simplify algebraic expressions involving rational exponents.
- IA-4.6 Carry out a procedure to simplify algebraic expressions involving logarithms.
- IA-4.7 Carry out a procedure to perform operations with expressions involving rational exponents (including addition, subtraction, multiplication, division, and exponentiation).
- IA-4.8 Carry out a procedure to perform operations with rational expressions (including addition, subtraction, multiplication, and division).
- IA-4.9 Carry out a procedure to solve radical equations algebraically.
- IA-4.10 Carry out a procedure to solve logarithmic equations algebraically.
- IA-4.11 Carry out a procedure to solve logarithmic equations graphically.
- IA-4.12 Carry out a procedure to solve rational equations algebraically.
- IA-4.13 Carry out a procedure to graph logarithmic functions.

IA-4.14 Carry out a procedure to graph exponential functions.

HIGH SCHOOL CORE AREA: INTERMEDIATE ALGEBRA

Standard IA-5: The student will demonstrate through the mathematical processes an understanding of conic sections.

Indicators

IA-5.1 Carry out a procedure to graph the circle whose equation is the form $x^2 + y^2 = r^2$.

IA-5.2 Carry out a procedure to write an equation of a circle centered at the origin when given its radius.

IA-5.3 Carry out a procedure to graph the ellipse whose equation is the form $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$.

IA-5.4 Carry out a procedure to write an equation of an ellipse centered at the origin when given information from among length of major axis, length of minor axis, and vertices.

IA-5.5 Carry out a procedure to graph the hyperbola whose equation is the form

$$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$$

IA-5.6 Carry out a procedure to write an equation of a hyperbola centered at the origin with specified vertices.

IA-5.7 Match the equation of a conic section with its graph.

HIGH SCHOOL CORE AREA: INTERMEDIATE ALGEBRA

Standard IA-6: The student will demonstrate through the mathematical processes an understanding of sequences and series.

Indicators

- IA-6.1 Categorize a sequence as arithmetic, geometric, or neither.
- IA-6.2 Carry out a procedure to write a specified term of an arithmetic or geometric sequence when given the n th term of the sequence.
- IA-6.3 Carry out a procedure to write a formula for the n th term of an arithmetic or geometric sequence when given at least four consecutive terms of the sequence.
- IA-6.4 Carry out a procedure to write a formula for the n th term of an arithmetic or geometric sequence when given at least four terms of the sequence.
- IA-6.5 Represent an arithmetic or geometric series by using sigma notation.
- IA-6.6 Carry out a procedure to calculate the sum of an arithmetic or geometric series written in sigma notation.
- IA-6.7 Carry out a procedure to determine consecutive terms of a sequence that is defined recursively.
- IA-6.8 Carry out a procedure to define a sequence recursively when given four or more consecutive terms of the sequence.
- IA-6.9 Translate between the explicit form and the recursive form of sequences.

HIGH SCHOOL CORE AREA: GEOMETRY

The mathematical processes provide the framework for teaching, learning, and assessing in all high school mathematics core courses. Instructional programs should be built around these processes.

Standard G-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

Indicators

- G-1.1 Demonstrate an understanding of the axiomatic structure of geometry by using undefined terms, definitions, postulates, theorems, and corollaries.
- G-1.2 Communicate knowledge of geometric relationships by using mathematical terminology appropriately.
- G-1.3 Apply basic rules of logic to determine the validity of the converse, inverse, and contrapositive of a conditional statement.
- G-1.4 Formulate and test conjectures by using a variety of tools such as concrete models, graphing calculators, spreadsheets, and dynamic geometry software.
- G-1.5 Use inductive reasoning to formulate conjectures.
- G-1.6 Use deductive reasoning to validate conjectures with formal and informal proofs, and give counterexamples to disprove a statement.
- G-1.7 Understand the historical development of geometry.
- G-1.8 Connect geometry with other branches of mathematics.
- G-1.9 Demonstrate an understanding of how geometry applies to in real-world contexts (including architecture, construction, farming, and astronomy).
- G-1.10 Demonstrate an understanding of geometric relationships (including constructions through investigations by using a variety of tools such as straightedge, compass, Patty Paper, dynamic geometry software, and handheld computing devices).

HIGH SCHOOL CORE AREA: GEOMETRY

Standard G-2: The student will demonstrate through the mathematical processes an understanding of the properties of basic geometric figures and the relationships between and among them.

Indicators

G-2.1 Infer missing elements of visual or numerical geometric patterns (including triangular and rectangular numbers and the number of diagonals in polygons).

G-2.2 Apply properties of parallel lines, intersecting lines, and parallel lines cut by a transversal to solve problems.

G-2.3 Use the congruence of line segments and angles to solve problems.

G-2.4 Use direct measurement to determine the length of a segment, degree of an angle, and distance from a point to a line.

G-2.5 Carry out a procedure to create geometric constructions (including the midpoint of a line segment, the angle bisector, the perpendicular bisector of a line segment, the line through a given point that is parallel to a given line, and the line through a given point that is perpendicular to a given line).

G-2.6 Use scale factors to solve problems involving scale drawings and models.

G-2.7 Use geometric probability to solve problems.

HIGH SCHOOL CORE AREA: GEOMETRY

Standard G-3: The student will demonstrate through the mathematical processes an understanding of the properties and special segments of triangles and the relationships between and among triangles.

Indicators

- G-3.1 Carry out a procedure to compute the perimeter of a triangle.
- G-3.2 Carry out a procedure to compute the area of a triangle.
- G-3.3 Analyze how changes in dimensions affect the perimeter or area of triangles.
- G-3.4 Apply properties of isosceles and equilateral triangles to solve problems.
- G-3.5 Use interior angles, exterior angles, medians, angle bisectors, altitudes, and perpendicular bisectors to solve problems.
- G-3.6 Apply the triangle sum theorem to solve problems.
- G-3.7 Apply the triangle inequality theorem to solve problems.
- G-3.8 Apply congruence and similarity relationships among triangles to solve problems.
- G-3.9 Apply theorems to prove that triangles are either similar or congruent.
- G-3.10 Use the Pythagorean theorem and its converse to solve problems.
- G-3.11 Use the properties of 45-45-90 and 30-60-90 triangles to solve problems.
- G-3.12 Use trigonometric ratios (including sine, cosine, and tangent) to solve problems involving right triangles.

HIGH SCHOOL CORE AREA: GEOMETRY

Standard G-4: The student will demonstrate through the mathematical processes an understanding of the properties of quadrilaterals and other polygons and the relationships between and among them.

Indicators

G-4.1 Carry out a procedure to compute the perimeter of quadrilaterals, regular polygons, and composite figures.

G-4.2 Carry out a procedure to find the area of quadrilaterals, regular polygons, and composite figures.

G-4.3 Apply procedures to compute measures of interior and exterior angles of polygons.

G-4.4 Analyze how changes in dimensions affect the perimeter or area of quadrilaterals and regular polygons.

G-4.5 Apply the properties and attributes of quadrilaterals and regular polygons and their component parts to solve problems.

G-4.6 Apply congruence and similarity relationships among shapes (including quadrilaterals and polygons) to solve problems.

HIGH SCHOOL CORE AREA: GEOMETRY

Standard G-5: The student will demonstrate through the mathematical processes an understanding of the properties of circles, the lines that intersect them, and the use of their special segments.

Indicators

G-5.1 Carry out a procedure to compute the circumference of circles.

G-5.2 Carry out a procedure to compute the area of circles.

G-5.3 Analyze how a change in the radius affects the circumference or area of a circle.

G-5.4 Carry out a procedure to compute the length of an arc or the area of a sector of a circle.

G-5.5 Apply the properties of the component parts of a circle (including radii, diameters, chords, sectors, arcs, and segments) to solve problems.

G-5.6 Apply the properties of lines that intersect circles (including two secants, two tangents, and a secant and a tangent) to solve problems.

G-5.7 Apply the properties of central angles, inscribed angles, and arcs of circles to solve problems.

HIGH SCHOOL CORE AREA: GEOMETRY

Standard G-6: The student will demonstrate through the mathematical processes an understanding of transformations, coordinate geometry, and vectors.

Indicators

G-6.1 Use the distance formula to solve problems.

G-6.2 Use the midpoint formula to solve problems.

G-6.3 Apply transformations—translation, reflection, rotation, and dilation—to figures in the coordinate plane by using sketches and coordinates.

G-6.4 Apply transformations (including translation and dilation) to figures in the coordinate plane by using matrices.

G-6.5 Carry out a procedure to represent the sum of two vectors geometrically by using the parallelogram method.

G-6.6 Carry out a procedure to determine the magnitude and direction of the resultant of two vectors by using a scale drawing and direct measurement.

G-6.7 Carry out a procedure to compute the magnitude of the resultant of two perpendicular vectors by using the Pythagorean theorem.

G-6.8 Carry out a procedure to determine the direction of the resultant of two perpendicular vectors by using a scale drawing and direct measurement.

HIGH SCHOOL CORE AREA: GEOMETRY

Standard G-7: The student will demonstrate through the mathematical processes an understanding of the surface area and volume of three-dimensional objects.

Indicators

G-7.1 Carry out a procedure to compute the surface area of three-dimensional objects (including cones, cylinders, pyramids, prisms, spheres, and hemispheres).

G-7.2 Carry out a procedure to compute the volume of three-dimensional objects (including cones, cylinders, pyramids, prisms, spheres, hemispheres, and composite objects).

G-7.3 Analyze how changes in dimensions affect the volume of objects (including cylinders, prisms, and spheres).

G-7.4 Apply congruence and similarity relationships among geometric objects to solve problems.

G-7.5 Apply a procedure to draw a top view, front view, and side view of a three-dimensional object.

G-7.6 Apply a procedure to draw an isometric view of a three-dimensional object.

HIGH SCHOOL CORE AREA: PRECALCULUS

The mathematical processes provide the framework for teaching, learning, and assessing in all high school mathematics core courses. Instructional programs should be built around these processes.

Standard PC-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

Indicators

PC-1.1 Communicate knowledge of algebraic and trigonometric relationships by using mathematical terminology appropriately.

PC-1.2 Connect algebra and trigonometry with other branches of mathematics.

PC-1.3 Apply algebraic methods to solve problems in real-world contexts.

PC-1.4 Judge the reasonableness of mathematical solutions.

PC-1.5 Demonstrate an understanding of algebraic and trigonometric relationships by using a variety of representations (including verbal, graphic, numerical, and symbolic).

PC-1.6 Understand how algebraic and trigonometric relationships can be represented in concrete models, pictorial models, and diagrams.

PC-1.7 Understand how to represent algebraic and trigonometric relationships by using tools such as handheld computing devices, spreadsheets, and computer algebra systems (CASs).

HIGH SCHOOL CORE AREA: PRECALCULUS

Standard PC-2: The student will demonstrate through the mathematical processes an understanding of the characteristics and behaviors of functions and the effect of operations on functions.

Indicators

PC-2.1 Carry out a procedure to graph parent functions (including $y = x^n$, $y = \log_a x$, $y = \ln$

$\frac{1}{x}$, $y = e^x$, $y = a^x$, $y = \sin x$, $y = \cos x$, $y = \tan x$, $y = \csc x$, $y = \sec x$, and $y = \cot x$).

PC-2.2 Carry out a procedure to graph transformations (including $-f(x)$, $a \cdot f(x)$, $f(x) + d$, $f(x - c)$, $f(-x)$, $f(b \cdot x)$, $|f(x)|$, and $f(1/x)$) of parent functions and combinations of transformations.

PC-2.3 Analyze a graph to describe the transformation (including $-f(x)$, $a \cdot f(x)$, $f(x) + d$, $f(x - c)$, $f(-x)$, $f(b \cdot x)$, $|f(x)|$, and $f(1/x)$) of parent functions.

PC-2.4 Carry out procedures to algebraically solve equations involving parent functions

or transformations of parent functions (including $y = x^n$, $y = \log_a x$, $y = \ln x$, $y = \frac{1}{x}$,

$y = e^x$, $y = a^x$, $y = \sin x$, $y = \cos x$, $y = \tan x$, $y = \csc x$, $y = \sec x$, and $y = \cot x$).

PC-2.5 Analyze graphs, tables, and equations to determine the domain and range of parent functions or transformations of parent functions (including $y = x^n$, $y = \log_a x$, $y = \ln x$, $y =$

$\frac{1}{x}$, $y = e^x$, $y = a^x$, $y = \sin x$, $y = \cos x$, $y = \tan x$, $y = \csc x$, $y = \sec x$, and $y = \cot x$).

PC-2.6 Analyze a function or the symmetry of its graph to determine whether the function is even, odd, or neither.

PC-2.7 Recognize and use connections among significant points of a function (including roots, maximum points, and minimum points), the graph of a function, and the algebraic representation of a function.

PC-2.8 Carry out a procedure to determine whether the inverse of a function exists.

PC-2.9 Carry out a procedure to write a rule for the inverse of a function, if it exists.

HIGH SCHOOL CORE AREA: PRECALCULUS

Standard PC-3: The student will demonstrate through the mathematical processes an understanding of the behaviors of polynomial and rational functions.

Indicators

PC-3.1 Carry out a procedure to graph quadratic and higher-order polynomial functions by analyzing intercepts and end behavior.

PC-3.2 Apply the rational root theorem to determine a set of possible rational roots of a polynomial equation.

PC-3.3 Carry out a procedure to calculate the zeros of polynomial functions when given a set of possible zeros.

PC-3.4 Carry out procedures to determine characteristics of rational functions (including domain, range, intercepts, asymptotes, and discontinuities).

PC-3.5 Analyze given information to write a polynomial function that models a given problem situation.

- PC-3.6 Carry out a procedure to solve polynomial equations algebraically.
- PC-3.7 Carry out a procedure to solve polynomial equations graphically.
- PC-3.8 Carry out a procedure to solve rational equations algebraically.
- PC-3.9 Carry out a procedure to solve rational equations graphically.
- PC-3.10 Carry out a procedure to solve polynomial inequalities algebraically.
- PC-3.11 Carry out a procedure to solve polynomial inequalities graphically.

HIGH SCHOOL CORE AREA: PRECALCULUS

Standard PC-4: The student will demonstrate through the mathematical processes an understanding of the behaviors of exponential and logarithmic functions.

Indicators

- PC-4.1 Carry out a procedure to graph exponential functions by analyzing intercepts and end behavior.
- PC-4.2 Carry out a procedure to graph logarithmic functions by analyzing intercepts and end behavior.
- PC-4.3 Carry out procedures to determine characteristics of exponential functions (including domain, range, intercepts, and asymptotes).
- PC-4.4 Carry out procedures to determine characteristics of logarithmic functions (including domain, range, intercepts, and asymptotes).
- PC-4.5 Apply the laws of exponents to solve problems involving rational exponents.
- PC-4.6 Analyze given information to write an exponential function that models a given problem situation.

- PC-4.7 Apply the laws of logarithms to solve problems.
- PC-4.8 Carry out a procedure to solve exponential equations algebraically.
- PC-4.9 Carry out a procedure to solve exponential equations graphically.
- PC-4.10 Carry out a procedure to solve logarithmic equations algebraically.
- PC-4.11 Carry out a procedure to solve logarithmic equations graphically.

HIGH SCHOOL CORE AREA: PRECALCULUS

Standard PC-5: The student will demonstrate through the mathematical processes an understanding of the behaviors of trigonometric functions.

Indicators

- PC-5.1 Understand how angles are measured in either degrees or radians.
- PC-5.2 Carry out a procedure to convert between degree and radian measures.
- PC-5.3 Carry out a procedure to plot points in the polar coordinate system.
- PC-5.4 Carry out a procedure to graph trigonometric functions by analyzing intercepts, periodic behavior, and graphs of reciprocal functions.
- PC-5.5 Carry out procedures to determine the characteristics of trigonometric functions (including domain, range, intercepts, and asymptotes).
- PC-5.6 Apply a procedure to evaluate trigonometric expressions.
- PC-5.7 Analyze given information to write a trigonometric function that models a given problem situation involving periodic phenomena.
- PC-5.8 Analyze given information to write a trigonometric equation that models a given problem situation involving right triangles.

- PC-5.9 Carry out a procedure to calculate the area of a triangle when given the lengths of two sides and the measure of the included angle.
- PC-5.10 Carry out a procedure to solve trigonometric equations algebraically.
- PC-5.11 Carry out a procedure to solve trigonometric equations graphically.
- PC-5.12 Apply the laws of sines and cosines to solve problems.
- PC-5.13 Apply a procedure to graph the inverse functions of sine, cosine, and tangent.
- PC-5.14 Apply trigonometric relationships (including reciprocal identities; Pythagorean identities; even and odd identities; addition and subtraction formulas of sine, cosine, and tangent; and double angle formulas) to verify other trigonometric identities.
- PC-5.15 Carry out a procedure to compute the slope of a line when given the angle of inclination of the line.

HIGH SCHOOL CORE AREA: PRECALCULUS

Standard PC-6: The student will demonstrate through the mathematical processes an understanding of the behavior of conic sections both geometrically and algebraically.

Indicators

- PC-6.1 Carry out a procedure to graph the circle whose equation is the form $(x-h)^2 + (y-k)^2 = r^2$.
- PC-6.2 Analyze given information about the center and the radius or the center and the diameter to write an equation of a circle.
- PC-6.3 Apply a procedure to calculate the coordinates of points where a line intersects a circle.

PC-6.4 Carry out a procedure to graph the ellipse whose equation is the form

$$\frac{(x-h)^2}{a^2} + \frac{(y-k)^2}{b^2} = 1$$

PC-6.5 Carry out a procedure to graph the hyperbola whose equation is the form

$$\frac{(x-h)^2}{a^2} - \frac{(y-k)^2}{b^2} = 1$$

PC-6.6 Carry out a procedure to graph the parabola whose equation is the form

$$y - k = a(x - h)^2$$

HIGH SCHOOL CORE AREA: DATA ANALYSIS AND PROBABILITY

The mathematical processes provide the framework for teaching, learning, and assessing in all high school mathematics core courses. Instructional programs should be built around these processes.

Standard DA-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

Indicators

DA-1.1 Execute procedures to conduct simple probability experiments and collect data by using manipulatives (including spinners, dice, cards, and coins).

DA-1.2 Execute procedures to find measures of probability and statistics by using tools such as handheld computing devices, spreadsheets, and statistical software.

DA-1.3 Execute procedures to conduct a simulation by using random number tables and/or technology (including handheld computing devices and computers).

DA-1.4 Design and conduct a statistical research project and produce a report that summarizes the findings.

DA-1.5 Apply the principles of probability and statistics to solve problems in real-world contexts.

DA-1.6 Communicate a knowledge of data analysis and probability by using mathematical terminology appropriately.

DA-1.7 Judge the reasonableness of mathematical solutions on the basis of the source of the data, the design of the study, the way the data are displayed, and the way the data are analyzed.

DA-1.8 Compare data sets by using graphs and summary statistics.

HIGH SCHOOL CORE AREA: DATA ANALYSIS AND PROBABILITY

Standard DA-2: The student will demonstrate through the mathematical processes an understanding of the design of a statistical study.

Indicators

DA-2.1 Classify a data-collection procedure as a survey, an observational study, or a controlled experiment.

DA-2.2 Compare various random sampling techniques (including simple, stratified, cluster, and systematic).

DA-2.3 Analyze a data-collection procedure to classify the technique used as either simple cluster, systematic, or convenience sampling.

DA-2.4 Critique data-collection methods and describe how bias can be controlled.

DA-2.5 Judge which of two or more possible experimental designs will best answer a given research question.

DA-2.6 Generate a research question and design a statistical study to answer a given research question.

HIGH SCHOOL CORE AREA: DATA ANALYSIS AND PROBABILITY

Standard DA-3: The student will demonstrate through the mathematical processes an understanding of the methodology for collecting, organizing, displaying, and interpreting data.

Indicators

DA-3.1 Use manipulatives, random number tables, and technology to collect data and conduct experiments and simulations.

DA-3.2 Organize and interpret data by using pictographs, bar graphs, pie charts, dot plots, histograms, time-series plots, stem-and-leaf plots, box-and-whiskers plots, and scatterplots.

DA-3.3 Select appropriate graphic display(s) from among pictographs, bar graphs, pie charts, dot plots, histograms, time-series plots, stem-and-leaf plots, box-and-whiskers plots, and scatterplots when given a data set or problem situation.

DA-3.4 Represent frequency distributions by using displays such as categorical frequency distributions/Pareto charts, histograms, frequency polygons, and cumulative frequency distributions/ogives.

DA-3.5 Classify a scatterplot by shape (including linear, quadratic, and exponential).

DA-3.6 Classify graphically and analytically the correlation between two variables as either positive, negative, or zero.

DA-3.7 Carry out a procedure to determine an equation of a trend line for a scatterplot exhibiting a linear pattern by using visual approximation.

DA-3.8 Carry out a procedure using technology to determine a line of best fit for a scatterplot exhibiting a linear pattern.

DA-3.9 Explain the meaning of the correlation coefficient r .

DA-3.10 Use interpolation or extrapolation to predict values based on the relationship between two variables.

HIGH SCHOOL CORE AREA: DATA ANALYSIS AND PROBABILITY

Standard DA-4: The student will demonstrate through the mathematical processes an understanding of basic statistical methods of analyzing data.

Indicators

DA-4.1 Classify a variable as either a statistic or a parameter.

DA-4.2 Compare descriptive and inferential statistics.

DA-4.3 Classify a variable as either discrete or continuous and as either categorical or quantitative.

DA-4.4 Use procedures and/or technology to find measures of central tendency (mean, median, and mode) for given data.

DA-4.5 Predict the effect of transformations of data on measures of central tendency, variability, and the shape of the distribution.

DA-4.6 Use procedures and/or technology to find measures of spread (range, variance, standard deviation, and interquartile range) and outliers for given data.

- DA-4.7 Use procedures and/or technology to find measures of position (including median, quartiles, percentiles, and standard scores) for given data.
- DA-4.8 Classify a distribution as either symmetric, positively skewed, or negatively skewed.
- DA-4.9 Explain the significance of the shape of a distribution.
- DA-4.10 Use a knowledge of the empirical rule to solve problems involving data that are distributed normally.
- DA-4.11 Use control charts to determine whether a process is in control.

HIGH SCHOOL CORE AREA: DATA ANALYSIS AND PROBABILITY

Standard DA-5: The student will demonstrate through the mathematical processes an understanding of the basic concepts of probability.

Indicators

- DA-5.1 Construct a sample space for an experiment and represent it as a list, chart, picture, or tree diagram.
- DA-5.2 Use counting techniques to determine the number of possible outcomes for an event.
- DA-5.3 Classify events as either dependent or independent.
- DA-5.4 Categorize two events either as mutually exclusive or as not mutually exclusive of one another.
- DA-5.5 Use the concept of complementary sets to compute probabilities.
- DA-5.6 Use the binomial probability distribution to solve problems.

- DA-5.7 Carry out a procedure to compute simple probabilities and compound probabilities (including conditional probabilities).
- DA-5.8 Use a procedure to find geometric probability in real-world contexts.
- DA-5.9 Compare theoretical and experimental probabilities.
- DA-5.10 Construct and compare theoretical and experimental probability distributions.
- DA-5.11 Use procedures to find the expected value of discrete random variables and construct meaning within contexts.
- DA-5.12 Understand the law of large numbers.
- DA-5.13 Carry out a procedure to compute conditional probability by using two-way tables.

SCIENCE

RLOA's curriculum will be aligned with the guidelines and goals of the SCDE for **SCIENCE** set forth below. These goals are specific, measureable, attainable, realistic and timely so that every student can assess their mastery in a particular area and every teacher can evaluate their instruction. They are outlined here as RLOA seeks to achieve these goals.

KINDERGARTEN

KINDERGARTEN: Scientific Inquiry

Standard K-1: The student will demonstrate an understanding of scientific inquiry, including the processes, skills, and mathematical thinking necessary to conduct a simple scientific investigation.

Indicators

- K-1.1 Identify observed objects or events by using the senses.
- K-1.2 Use tools (including magnifiers and eyedroppers) safely, accurately, and appropriately when gathering specific data.
- K-1.3 Predict and explain information or events based on observation or previous experience.
- K-1.4 Compare objects by using nonstandard units of measurement.
- K-1.5 Use appropriate safety procedures when conducting investigations.

KINDERGARTEN: Characteristics of Organisms

Standard K-2: The student will demonstrate an understanding of the characteristics of organisms. (Life Science)

Indicators

- K-2.1 Recognize what organisms need to stay alive (including air, water, food, and shelter).
- K-2.2 Identify examples of organisms and nonliving things.
- K-2.3 Match parents with their offspring to show that plants and animals closely resemble their parents.
- K-2.4 Compare individual examples of a particular type of plant or animal to determine that there are differences among individuals.
- K-2.5 Recognize that all organisms go through stages of growth and change called life cycles.

KINDERGARTEN: My Body

Standard K-3: The student will demonstrate an understanding of the distinct structures of human body and the different functions they serve. (Life Science)

Indicators

K-3.1 Identify the distinct structures in the human body that are for walking, holding, touching, seeing, smelling, hearing, talking, and tasting.

K-3.2 Identify the functions of the sensory organs (including the eyes, nose, ears, tongue, and skin).

KINDERGARTEN: Seasonal Changes

Standard K-4: The student will demonstrate an understanding of seasonal weather changes. (Earth Science)

Indicators

K-4.1 Identify weather changes that occur from day to day.

K-4.2 Compare the weather patterns that occur from season to season.

K-4.3 Summarize ways that the seasons affect plants and animals.

KINDERGARTEN: Exploring Matter

Standard K-5: The student will demonstrate the understanding that objects can be described by their observable properties. (Physical Science)

Indicators

K-5.1 Classify objects by observable properties (including size, color, shape, magnetic attraction, heaviness, texture, and the ability to float in water).

K-5.2 Compare the properties of different types of materials (including wood, plastic, metal, cloth, and paper) from which objects are made.

GRADE 1

GRADE 1: Scientific Inquiry

The skills of scientific inquiry, including a knowledge of the use of tools, will be assessed cumulatively on statewide tests. Students will therefore be responsible for the scientific inquiry indicators from all of their earlier grade levels.

Standard 1-1: The student will demonstrate an understanding of scientific inquiry, including the processes, skills, and mathematical thinking necessary to conduct a simple scientific investigation.

Indicators

1-1.1 Compare, classify, and sequence objects by number, shape, texture, size, color, and motion, using standard English units of measurement where appropriate.

1-1.2 Use tools (including rulers) safely, accurately, and appropriately when gathering specific data.

1-1.3 Carry out simple scientific investigations when given clear directions.

1-1.4 Use appropriate safety procedures when conducting investigations.

GRADE 1: Plants

Standard 1-2: The student will demonstrate an understanding of the special characteristics and needs of plants that allow them to survive in their own distinct environments. (Life Science)

Indicators

1-2.1 Recall the basic needs of plants (including air, water, nutrients, space, and light) for energy and growth.

1-2.2 Illustrate the major structures of plants (including stems, roots, leaves, flowers, fruits, and seeds).

1-2.3 Classify plants according to their characteristics (including what specific type of environment they live in, whether they have edible parts, and what particular kinds of physical traits they have).

1-2.4 Summarize the life cycle of plants (including germination, growth, and the production of flowers and seeds).

1-2.5 Explain how distinct environments throughout the world support the life of different types of plants.

1-2.6 Identify characteristics of plants (including types of stems, roots, leaves, flowers, and seeds) that help them survive in their own distinct environments.

GRADE 1: Sun and Moon

Standard 1-3: The student will demonstrate an understanding of the features of the sky and the patterns of the Sun and the Moon. (Earth Science)

Indicators

- 1-3.1 Compare the features of the day and night sky.
- 1-3.2 Recall that the Sun is a source of heat and light for Earth.
- 1-3.3 Recognize that the Sun and the Moon appear to rise and set.
- 1-3.4 Illustrate changes in the Moon's appearance (including patterns over time).

GRADE 1: Earth Materials

Standard 1-4: The student will demonstrate an understanding of the properties of Earth materials. (Earth Science)

Indicators

- 1-4.1 Recognize the composition of Earth (including rocks, sand, soil, and water).
- 1-4.2 Classify rocks and sand by their physical appearance .
- 1-4.3 Compare soil samples by sorting them according to properties (including color, texture, and the capacity to nourish growing plants).
- 1-4.4 Recognize the observable properties of water (including the fact that it takes the shape of its container, flows downhill, and feels wet).
- 1-4.5 Illustrate the locations of water on Earth by using drawings, maps, or models.
- 1-4.6 Exemplify Earth materials that are used for building structures or for growing plants.

GRADE 1: Exploring Motion

Standard 1-5: The student will demonstrate an understanding of the positions and motions of objects. (Physical Science)

Indicators

- 1-5.1 Identify the location of an object relative to another object.
- 1-5.2 Explain the importance of pushing and pulling to the motion of an object.
- 1-5.3 Illustrate the fact that sound is produced by vibrating objects.
- 1-5.4 Illustrate ways in which objects can move in terms of direction and speed (including straight forward, back and forth, fast or slow, zigzag, and circular).

GRADE 2

GRADE 2: Scientific Inquiry

The skills of scientific inquiry, including a knowledge of the use of tools, will be assessed cumulatively on statewide tests. Students will therefore be responsible for the scientific inquiry indicators from all of their earlier grade levels.

Standard 2-1: The student will demonstrate an understanding of scientific inquiry, including the processes, skills, and mathematical thinking necessary to conduct a simple scientific investigation.

Indicators

- 2-1.1 Carry out simple scientific investigations to answer questions about familiar objects and events.
- 2-1.2 Use tools (including thermometers, rain gauges, balances, and measuring cups) safely, accurately, and appropriately when gathering specific data in US customary (English) and metric units of measurement.

2-1.3 Represent and communicate simple data and explanations through drawings, tables, pictographs, bar graphs, and oral and written language.

2-1.4 Infer explanations regarding scientific observations and experiences.

2-1.5 Use appropriate safety procedures when conducting investigations.

GRADE 2: Animals

Standard 2-2: The student will demonstrate an understanding of the needs and characteristics of animals as they interact in their own distinct environments. (Life Science)

Indicators

2-2.1 Recall the basic needs of animals (including air, water, food, and shelter) for energy, growth, and protection.

2-2.2 Classify animals (including mammals, birds, amphibians, reptiles, fish, and insects) according to their physical characteristics.

2-2.3 Explain how distinct environments throughout the world support the life of different types of animals.

2-2.4 Summarize the interdependence between animals and plants as sources of food and shelter.

2-2.5 Illustrate the various life cycles of animals (including birth and the stages of development).

GRADE 2: Weather

Standard 2-3: The student will demonstrate an understanding of daily and seasonal weather conditions. (Earth Science)

Indicators

- 2-3.1 Explain the effects of moving air as it interacts with objects.
- 2-3.2 Recall weather terminology (including temperature, wind direction, wind speed, and precipitation as rain, snow, sleet, and hail).
- 2-3.3 Illustrate the weather conditions of different seasons.
- 2-3.4 Illustrate the weather conditions of different seasons.
- 2-3.5 Carry out procedures to measure and record daily weather conditions (including temperature, precipitation amounts, wind speed as measured on the Beaufort scale, and wind direction as measured with a windsock or wind vane).
- 2-3.6 Use pictorial weather symbols to record observable sky conditions.
- 2-3.7 Identify safety precautions that one should take during severe weather conditions.

GRADE 2: Properties and Changes in Matter

Standard 2-4: The student will demonstrate an understanding of the properties of matter and the changes that matter undergoes. (Physical Science)

Indicators

- 2-4.1 Recall the properties of solids and liquids.
- 2-4.2 Exemplify matter that changes from a solid to a liquid and from a liquid to a solid.

2-4.3 Explain how matter can be changed in ways such as heating or cooling, cutting or tearing, bending or stretching.

2-4.4 Recognize that different materials can be mixed together and then separated again.

GRADE 2: Magnetism

Standard 2-5: The student will demonstrate an understanding of force and motion by applying the properties of magnetism. (Physical Science)

Indicators

2-5.1 Use magnets to make an object move without being touched.

2-5.2 Explain how the poles of magnets affect each other (that is, they attract and repel one another).

2-5.3 Compare the effect of magnets on various materials.

2-5.4 Identify everyday uses of magnets.

GRADE 3

GRADE 3: Scientific Inquiry

The skills of scientific inquiry, including a knowledge of the use of tools, will be assessed cumulatively on statewide tests. Students will therefore be responsible for the scientific inquiry indicators from all of their earlier grade levels.

Standard 3-1: The student will demonstrate an understanding of scientific inquiry, including the processes, skills, and mathematical thinking necessary to conduct a simple scientific investigation.

Indicators

- 3-1.1 Classify objects by two of their properties (attributes).
- 3-1.2 Classify objects or events in sequential order.
- 3-1.3 Generate questions such as “what if?” or “how?” about objects, organisms, and events in the environment and use those questions to conduct a simple scientific investigation.
- 3-1.4 Predict the outcome of a simple investigation and compare the result with the prediction.
- 3-1.5 Use tools (including beakers, meter tapes and sticks, forceps/tweezers, tuning forks, graduated cylinders, and graduated syringes) safely, accurately, and appropriately when gathering specific data.
- 3-1.6 Infer meaning from data communicated in graphs, tables, and diagrams.
- 3-1.7 Explain why similar investigations might produce different results.
- 3-1.8 Use appropriate safety procedures when conducting investigations.

GRADE 3: Habitats and Adaptations

Standard 3-2: The student will demonstrate an understanding of the structures, characteristics, and adaptations of organisms that allow them to function and survive within their habitats. (Life Science)

Indicators

- 3-2.1 Illustrate the life cycles of seed plants and various animals and summarize how they grow and are adapted to conditions within their habitats.

3-2.2 Explain how physical and behavioral adaptations allow organisms to survive (including hibernation, defense, locomotion, movement, food obtainment, and camouflage for animals and seed dispersal, color, and response to light for plants).

3-2.3 Recall the characteristics of an organism's habitat that allow the organism to survive there.

3-2.4 Explain how changes in the habitats of plants and animals affect their survival.

3-2.5 Summarize the organization of simple food chains (including the roles of producers, consumers, and decomposers).

GRADE 3: Earth's Materials and Changes

Standard 3-3: The student will demonstrate an understanding of Earth's composition and the changes that occur to the features of Earth's surface. (Earth Science)

Indicators

3-3.1 Classify rocks (including sedimentary, igneous, and metamorphic) and soils (including humus, clay, sand, and silt) on the basis of their properties.

3-3.2 Identify common minerals on the basis of their properties by using a minerals identification key.

3-3.3 Recognize types of fossils (including molds, casts, and preserved parts of plants and animals).

3-3.4 Infer ideas about Earth's early environments from fossils of plants and animals that lived long ago.

- 3-3.5 Illustrate Earth's saltwater and freshwater features (including oceans, seas, rivers, lakes, ponds, streams, and glaciers).
- 3-3.6 Illustrate Earth's land features (including volcanoes, mountains, valleys, canyons, caverns, and islands) by using models, pictures, diagrams, and maps.
- 3-3.7 Exemplify Earth materials that are used as fuel, as a resource for building materials, and as a medium for growing plants.
- 3-3.8 Illustrate changes in Earth's surface that are due to slow processes (including weathering, erosion, and deposition) and changes that are due to rapid processes (including landslides, volcanic eruptions, floods, and earthquakes).

GRADE 3: Heat and Changes in Matter

Standard 3-4: The student will demonstrate an understanding of the changes in matter that are caused by heat.

Indicators

- 3-4.1 Classify different forms of matter (including solids, liquids, and gases) according to their observable and measurable properties.
- 3-4.2 Explain how water and other substances change from one state to another (including melting, freezing, condensing, boiling, and evaporating).
- 3-4.3 Explain how heat moves easily from one object to another through direct contact in some materials (called conductors) and not so easily through other materials (called insulators).
- 3-4.4 Identify sources of heat and exemplify ways that heat can be produced (including rubbing, burning, and using electricity).

GRADE 3: Motion and Sound

Standard 3-5: The student will demonstrate an understanding of how motion and sound are affected by a push or pull on an object and the vibration of an object. (Physical Science)

Indicators

- 3-5.1 Identify the position of an object relative to a reference point by using position terms such as “above,” “below,” “inside of,” “underneath,” or “on top of” and a distance scale or measurement.
- 3-5.2 Compare the motion of common objects in terms of speed and direction.
- 3-5.3 Explain how the motion of an object is affected by the strength of a push or pull and the mass of the object.
- 3-5.4 Explain the relationship between the motion of an object and the pull of gravity.
- 3-5.5 Recall that vibrating objects produce sound and that vibrations can be transferred from one material to another.
- 3-5.6 Compare the pitch and volume of different sounds.
- 3-5.7 Recognize ways to change the volume of sounds.
- 3-5.8 Explain how the vibration of an object affects pitch.

GRADE 4

GRADE 4: Scientific Inquiry

The skills of scientific inquiry, including a knowledge of the use of tools, will be assessed cumulatively on statewide tests. Students will therefore be responsible for the scientific inquiry indicators from all of their earlier grade levels.

Standard 4-1: The student will demonstrate an understanding of scientific inquiry, including the processes, skills, and mathematical thinking necessary to conduct a simple scientific investigation.

Indicators

- 4-1.1 Classify observations as either quantitative or qualitative.
- 4-1.2 Use appropriate instruments and tools (including a compass, an anemometer, mirrors, and a prism) safely and accurately when conducting simple investigations.
- 4-1.3 Summarize the characteristics of a simple scientific investigation that represent a fair test (including a question that identifies the problem, a prediction that indicates a possible outcome, a process that tests one manipulated variable at a time, and results that are communicated and explained).
- 4-1.4 Distinguish among observations, predictions, and inferences.
- 4-1.5 Recognize the correct placement of variables on a line graph.
- 4-1.6 Construct and interpret diagrams, tables, and graphs made from recorded measurements and observations.
- 4-1.7 Use appropriate safety procedures when conducting investigations.

GRADE 4: Organisms and Their Environments

Standard 4-2: The student will demonstrate an understanding of the characteristics and patterns of behavior that allow organisms to survive in their own distinct environments. (Life Science)

Indicators

4-2.1 Classify organisms into major groups (including plants or animals, flowering or nonflowering plants, and vertebrates [fish, amphibians, reptiles, birds, and mammals] or invertebrates) according to their physical characteristics.

4-2.2 Explain how the characteristics of distinct environments (including swamps, rivers and streams, tropical rain forests, deserts, and the polar regions) influence the variety of organisms in each.

4-2.3 Explain how humans and other animals use their senses and sensory organs to detect signals from the environment and how their behaviors are influenced by these signals.

4-2.4 Distinguish between the characteristics of an organism that are inherited and those that are acquired over time.

4-2.5 Explain how an organism's patterns of behavior are related to its environment (including the kinds and the number of other organisms present, the availability of food and other resources, and the physical characteristics of the environment).

4-2.6 Explain how organisms cause changes in their environment.

GRADE 4: Astronomy

Standard 4-3: The student will demonstrate an understanding of the properties, movements, and locations of objects in the solar system. (Earth Science)

Indicators

4-3.1 Recall that Earth is one of many planets in the solar system that orbit the Sun.

4-3.2 Compare the properties (including the type of surface and atmosphere) and the location of Earth to the Sun, which is a star, and the Moon.

- 4-3.3 Explain how the Sun affects Earth.
- 4-3.4 Explain how the tilt of Earth's axis and the revolution around the Sun results in the seasons of the year.
- 4-3.5 Explain how the rotation of Earth results in day and night.
- 4-3.6 Illustrate the phases of the Moon and the Moon's effect on ocean tides.
- 4-3.7 Interpret the change in the length of shadows during the day in relation to the position of the Sun in the sky.
- 4-3.8 Recognize the purpose of telescopes.

GRADE 4: Weather

Standard 4-4: The student will demonstrate an understanding of weather patterns and phenomena. (Earth Science)

Indicators

- 4-4.1 Summarize the processes of the water cycle (including evaporation, condensation, precipitation, and runoff).
- 4-4.2 Classify clouds according to their three basic types (cumulus, cirrus, and stratus) and summarize how clouds form.
- 4-4.3 Compare daily and seasonal changes in weather conditions (including wind speed and direction, precipitation, and temperature) and patterns.
- 4-4.4 Summarize the conditions and effects of severe weather phenomena (including thunderstorms, hurricanes, and tornadoes) and related safety concerns.

4-4.5 Carry out the procedures for data collecting and measuring weather conditions (including wind speed and direction, precipitation, and temperature) by using appropriate tools and instruments.

4-4.6 Predict weather from data collected through observation and measurements.

GRADE 4: Properties of Light and Electricity

Standard 4-5: The student will demonstrate an understanding of the properties of light and electricity. (Physical Science)

Indicators

4-5.1 Summarize the basic properties of light (including brightness and colors).

4-5.2 Illustrate the fact that light, as a form of energy, is made up of many different colors.

4-5.3 Summarize how light travels and explain what happens when it strikes an object (including reflection, refraction, and absorption).

4-5.4 Compare how light behaves when it strikes transparent, translucent, and opaque materials.

4-5.5 Explain how electricity, as a form of energy, can be transformed into other forms of energy (including light, heat, and sound).

4-5.6 Summarize the functions of the components of complete circuits (including wire, switch, battery, and light bulb).

4-5.7 Illustrate the path of electric current in series and parallel circuits.

4-5.8 Classify materials as either conductors or insulators of electricity.

4-5.9 Summarize the properties of magnets and electromagnets (including polarity, attraction/repulsion, and strength).

4-5.10 Summarize the factors that affect the strength of an electromagnet.

GRADE 5

GRADE 5: Scientific Inquiry

The skills of scientific inquiry, including a knowledge of the use of tools, will be assessed cumulatively on statewide tests. Students will therefore be responsible for the scientific inquiry indicators from all of their earlier grade levels.

Standard 5-1: The student will demonstrate an understanding of scientific inquiry, including the foundations of technological design and the processes, skills, and mathematical thinking necessary to conduct a controlled scientific investigation.

Indicators

5-1.1 Identify questions suitable for generating a hypothesis.

5-1.2 Identify independent (manipulated), dependent (responding), and controlled variables in an experiment.

5-1.3 Plan and conduct controlled scientific investigations, manipulating one variable at a time.

5-1.4 Use appropriate tools and instruments (including a timing device and a 10x magnifier) safely and accurately when conducting a controlled scientific investigation.

5-1.5 Construct a line graph from recorded data with correct placement of independent (manipulated) and dependent (responding) variables.

- 5-1.6 Evaluate results of an investigation to formulate a valid conclusion based on evidence and communicate the findings of the evaluation in oral or written form.
- 5-1.7 Use a simple technological design process to develop a solution or a product, communicating the design by using descriptions, models, and drawings.
- 5-1.8 Use appropriate safety procedures when conducting investigations.

GRADE 5: Ecosystems: Terrestrial and Aquatic

Standard 5-2: The student will demonstrate an understanding of relationships among biotic and abiotic factors within terrestrial and aquatic ecosystems. (Life Science)

Indicators

- 5-2.1 Recall the cell as the smallest unit of life and identify its major structures (including cell membrane, cytoplasm, nucleus, and vacuole).
- 5-2.2 Summarize the composition of an ecosystem, considering both biotic factors (including populations to the level of microorganisms and communities) and abiotic factors.
- 5-2.3 Compare the characteristics of different ecosystems (including estuaries/salt marshes, oceans, lakes and ponds, forests, and grasslands).
- 5-2.4 Identify the roles of organisms as they interact and depend on one another through food chains and food webs in an ecosystem, considering producers and consumers (herbivores, carnivores, and omnivores), decomposers (microorganisms, termites, worms, and fungi), predators and prey, and parasites and hosts.
- 5-2.5 Explain how limiting factors (including food, water, space, and shelter) affect populations in ecosystems.

GRADE 5: Landforms and Oceans

Standard 5-3: The student will demonstrate an understanding of features, processes, and changes in Earth's land and oceans. (Earth Science)

Indicators

5-3.1 Explain how natural processes (including weathering, erosion, deposition, landslides, volcanic eruptions, earthquakes, and floods) affect Earth's oceans and land in constructive and destructive ways.

5-3.2 Illustrate the geologic landforms of the ocean floor (including the continental shelf and slope, the mid-ocean ridge, rift zone, trench, and the ocean basin).

5-3.3 Compare continental and oceanic landforms.

5-3.4 Explain how waves, currents, tides, and storms affect the geologic features of the ocean shore zone (including beaches, barrier islands, estuaries, and inlets).

5-3.5 Compare the movement of water by waves, currents, and tides.

5-3.6 Explain how human activity (including conservation efforts and pollution) has affected the land and the oceans of Earth.

GRADE 5: Properties of Matter

Standard 5-4: The student will demonstrate an understanding of properties of matter. (Physical Science)

Indicators

- 5-4.1 Recall that matter is made up of particles too small to be seen.
- 5-4.2 Compare the physical properties of the states of matter (including volume, shape, and the movement and spacing of particles).
- 5-4.3 Summarize the characteristics of a mixture, recognizing a solution as a kind of mixture.
- 5-4.4 Use the processes of filtration, sifting, magnetic attraction, evaporation, chromatography, and floatation to separate mixtures.
- 5-4.5 Explain how the solute and the solvent in a solution determine the concentration.
- 5-4.6 Explain how temperature change, particle size, and stirring affect the rate of dissolving.
- 5-4.7 Illustrate the fact that when some substances are mixed together, they chemically combine to form a new substance that cannot easily be separated.
- 5-4.8 Explain how the mixing and dissolving of foreign substances is related to the pollution of the water, air, and soil.

GRADE 5: Forces and Motions

Standard 5-5: The student will demonstrate an understanding of the nature of force and motion.
(Physical Science)

Indicators

- 5-5.1 Illustrate the affects of force (including magnetism, gravity, and friction) on motion.
- 5-5.2 Summarize the motion of an object in terms of position, direction, and speed.
- 5-5.3 Explain how unbalanced forces affect the rate and direction of motion in objects.

5-5.4 Explain ways to change the effect that friction has on the motion of objects (including changing the texture of the surfaces, changing the amount of surface area involved, and adding lubrication).

5-5.5 Use a graph to illustrate the motion of an object.

5-5.6 Explain how a change of force or a change in mass affects the motion of an object.

GRADE 6

GRADE 6: Scientific Inquiry

The skills of scientific inquiry, including a knowledge of the use of tools, will be assessed cumulatively on statewide tests. Students will therefore be responsible for the scientific inquiry indicators from all of their earlier grade levels.

Standard 6-1: The student will demonstrate an understanding of technological design and scientific inquiry, including process skills, mathematical thinking, controlled investigative design and analysis, and problem solving.

Indicators

6-1.1 Use appropriate tools and instruments (including a spring scale, beam balance, barometer, and sling psychrometer) safely and accurately when conducting a controlled scientific investigation.

6-1.2 Differentiate between observation and inference during the analysis and interpretation of data.

6-1.3 Classify organisms, objects, and materials according to their physical characteristics by using a dichotomous key.

- 6-1.4 Use a technological design process to plan and produce a solution to a problem or a product (including identifying a problem, designing a solution or a product, implementing the design, and evaluating the solution or the product).
- 6-1.5 Use appropriate safety procedures when conducting investigations.

GRADE 6: Structures, Processes, and Responses of Plants

Standard 6-2: The student will demonstrate an understanding of structures, processes, and responses of plants that allow them to survive and reproduce. (Life Science)

Indicators

- 6-2.1 Summarize the characteristics that all organisms share (including the obtainment and use of resources for energy, the response to stimuli, the ability to reproduce, and process of physical growth and development).
- 6-2.2 Recognize the hierarchical structure of the classification (taxonomy) of organisms (including the seven major levels or categories of living things—namely, kingdom, phylum, class, order, family, genus, and species).
- 6-2.3 Compare the characteristic structures of various groups of plants (including vascular or nonvascular, seed or spore-producing, flowering or cone-bearing, and monocot or dicot).
- 6-2.4 Summarize the basic functions of the structures of a flowering plant for defense, survival, and reproduction.
- 6-2.5 Summarize each process in the life cycle of flowering plants (including germination, plant development, fertilization, and seed production).

- 6-2.6 Differentiate between the processes of sexual and asexual reproduction of flowering plants.
- 6-2.7 Summarize the processes required for plant survival (including photosynthesis, respiration, and transpiration).
- 6-2.8 Explain how plants respond to external stimuli (including dormancy and the forms of tropism known as phototropism, gravitropism, hydrotropism, and thigmotropism).
- 6-2.9 Explain how disease-causing fungi can affect plants.

GRADE 6: Structures, Processes, and Responses of Animals

Standard 6-3: The student will demonstrate an understanding of structures, processes, and responses of animals that allow them to survive and reproduce. (Life Science)

Indicators

- 6-3.1 Compare the characteristic structures of invertebrate animals (including sponges, segmented worms, echinoderms, mollusks, and arthropods) and vertebrate animals (fish, amphibians, reptiles, birds, and mammals).
- 6-3.2 Summarize the basic functions of the structures of animals that allow them to defend themselves, to move, and to obtain resources.
- 6-3.3 Compare the response that a warm-blooded (endothermic) animal makes to a fluctuation in environmental temperature with the response that a cold-blooded (ectothermic) animal makes to such a fluctuation.
- 6-3.4 Explain how environmental stimuli cause physical responses in animals (including shedding, blinking, shivering, sweating, panting, and food gathering).

- 6-3.5 Illustrate animal behavioral responses (including hibernation, migration, defense, and courtship) to environmental stimuli.
- 6-3.6 Summarize how the internal stimuli (including hunger, thirst, and sleep) of animals ensure their survival.
- 6-3.7 Compare learned to inherited behaviors in animals.

GRADE 6: Earth's Atmosphere and Weather

Standard 6-4: The student will demonstrate an understanding of the relationship between Earth's atmospheric properties and processes and its weather and climate. (Earth Science)

Indicators

- 6-4.1 Compare the composition and structure of Earth's atmospheric layers (including the gases and differences in temperature and pressure within the layers).
- 6-4.2 Summarize the interrelationships among the dynamic processes of the water cycle (including precipitation, evaporation, transpiration, condensation, surface-water flow, and groundwater flow).
- 6-4.3 Classify shapes and types of clouds according to elevation and their associated weather conditions and patterns.
- 6-4.4 Summarize the relationship of the movement of air masses, high and low pressure systems, and frontal boundaries to storms (including thunderstorms, hurricanes, and tornadoes) and other weather conditions.
- 6-4.5 Use appropriate instruments and tools to collect weather data (including wind speed and direction, air temperature, humidity, and air pressure).

- 6-4.6 Predict weather conditions and patterns based on weather data collected from direct observations and measurements, weather maps, satellites, and radar.
- 6-4.7 Explain how solar energy affects Earth's atmosphere and surface (land and water).
- 6-4.8 Explain how convection affects weather patterns and climate.
- 6-4.9 Explain the influence of global winds and the jet stream on weather and climatic conditions.

GRADE 6: Conservation of Energy

Standard 6-5: The student will demonstrate an understanding of the law of conservation of energy and the properties of energy and work. (Physical Science)

Indicators

- 6-5.1 Identify the sources and properties of heat, solar, chemical, mechanical, and electrical energy.
- 6-5.2 Explain how energy can be transformed from one form to another (including the two types of mechanical energy, potential and kinetic, as well as chemical and electrical energy) in accordance with the law of conservation of energy.
- 6-5.3 Explain how magnetism and electricity are interrelated by using descriptions, models, and diagrams of electromagnets, generators, and simple electrical motors.
- 6-5.4 Illustrate energy transformations (including the production of light, sound, heat, and mechanical motion) in electrical circuits.
- 6-5.5 Illustrate the directional transfer of heat energy through convection, radiation, and conduction.

- 6-5.6 Recognize that energy is the ability to do work (force exerted over a distance).
- 6-5.7 Explain how the design of simple machines (including levers, pulleys, and inclined planes) helps reduce the amount of force required to do work.
- 6-5.8 Illustrate ways that simple machines exist in common tools and in complex machines.

GRADE 7

GRADE 7: Scientific Inquiry

The skills of scientific inquiry, including a knowledge of the use of tools, will be assessed cumulatively on statewide tests. Students will therefore be responsible for the scientific inquiry indicators from all of their earlier grade levels.

Standard 7-1: The student will demonstrate an understanding of technological design and scientific inquiry, including process skills, mathematical thinking, controlled investigative design and analysis, and problem solving.

Indicators

- 7-1.1 Use appropriate tools and instruments (including a microscope) safely and accurately when conducting a controlled scientific investigation.
- 7-1.2 Generate questions that can be answered through scientific investigation.
- 7-1.3 Explain the reasons for testing one independent variable at a time in a controlled scientific investigation.
- 7-1.4 Explain the importance that repeated trials and a well-chosen sample size have with regard to the validity of a controlled scientific investigation.

- 7-1.5 Explain the relationships between independent and dependent variables in a controlled scientific investigation through the use of appropriate graphs, tables, and charts.
- 7-1.6 Critique a conclusion drawn from a scientific investigation.
- 7-1.7 Use appropriate safety procedures when conducting investigations.

GRADE 7: Cells and Heredity

Standard 7-2: The student will demonstrate an understanding of the structure and function of cells, cellular reproduction, and heredity.

(Life Science)

Indicators

- 7-2.1 Summarize the structures and functions of the major components of plant and animal cells (including the cell wall, the cell membrane, the nucleus, chloroplasts, mitochondria, and vacuoles).
- 7-2.2 Compare the major components of plant and animal cells.
- 7-2.3 Compare the body shapes of bacteria (spiral, coccus, and bacillus) and the body structures that protists (euglena, paramecium, amoeba) use for food gathering and locomotion.
- 7-2.4 Explain how cellular processes (including respiration, photosynthesis in plants, mitosis, and waste elimination) are essential to the survival of the organism.
- 7-2.5 Summarize how genetic information is passed from parent to offspring by using the terms *genes, chromosomes, inherited traits, genotype, phenotype, dominant traits, and recessive traits*.

- 7-2.6 Use Punnett squares to predict inherited monohybrid traits.
- 7-2.7 Distinguish between inherited traits and those acquired from environmental factors.

GRADE 7: Human Body Systems and Disease

Standard 7-3: The student will demonstrate an understanding of the functions and interconnections of the major human body systems, including the breakdown in structure or function that disease causes. (Life Science)

Indicators

- 7-3.1 Summarize the levels of structural organization within the human body (including cells, tissues, organs, and systems).
- 7-3.2 Recall the major organs of the human body and their function within their particular body system.
- 7-3.3 Summarize the relationships of the major body systems (including the circulatory, respiratory, digestive, excretory, nervous, muscular, and skeletal systems).
- 7-3.4 Explain the effects of disease on the major organs and body systems (including infectious diseases such as colds and flu, AIDS, and athlete's foot and noninfectious diseases such as diabetes, Parkinson's, and skin cancer).

GRADE 7: Ecology: The Biotic and Abiotic Environment

Standard 7-4: The student will demonstrate an understanding of how organisms interact with and respond to the biotic and abiotic components of their environment. (Earth Science, Life Science)

Indicators

- 7-4.1 Summarize the characteristics of the levels of organization within ecosystems (including populations, communities, habitats, niches, and biomes).
- 7-4.2 Illustrate energy flow in food chains, food webs, and energy pyramids
- 7-4.3 Explain the interaction among changes in the environment due to natural hazards (including landslides, wildfires, and floods), changes in populations, and limiting factors (including climate and the availability of food and water, space, and shelter).
- 7-4.4 Explain the effects of soil quality on the characteristics of an ecosystem.
- 7-4.5 Summarize how the location and movement of water on Earth's surface through groundwater zones and surface-water drainage basins, called watersheds, are important to ecosystems and to human activities.
- 7-4.6 Classify resources as renewable or nonrenewable and explain the implications of their depletion and the importance of conservation.

GRADE 7: The Chemical Nature of Matter

Standard 7-5: The student will demonstrate an understanding of the classifications and properties of matter and the changes that matter undergoes. (Physical Science)

Indicators

- 7-5.1 Recognize that matter is composed of extremely small particles called atoms.
- 7-5.2 Classify matter as element, compound, or mixture on the basis of its composition.
- 7-5.3 Compare the physical properties of metals and nonmetals.

- 7-5.4 Use the periodic table to identify the basic organization of elements and groups of elements (including metals, nonmetals, and families).
- 7-5.5 Translate chemical symbols and the chemical formulas of common substances to show the component parts of the substances (including NaCl [table salt], H₂O [water], C₆H₁₂O₆ [simple sugar], O₂ [oxygen gas], CO₂ [carbon dioxide], and N₂ [nitrogen gas]).
- 7-5.6 Distinguish between acids and bases and use indicators (including litmus paper, pH paper, and phenolphthalein) to determine their relative pH.
- 7-5.7 Identify the reactants and products in chemical equations.
- 7-5.8 Explain how a balanced chemical equation supports the law of conservation of matter.
- 7-5.9 Compare physical properties of matter (including melting or boiling point, density, and color) to the chemical property of reactivity with a certain substance (including the ability to burn or to rust).
- 7-5.10 Compare physical changes (including changes in size, shape, and state) to chemical changes that are the result of chemical reactions (including changes in color or temperature and formation of a precipitate or gas).

GRADE 8

GRADE 8: Scientific Inquiry

The skills of scientific inquiry, including a knowledge of the use of tools, will be assessed cumulatively on statewide tests. Students will therefore be responsible for the scientific inquiry indicators from all of their earlier grade levels.

Standard 8-1: The student will demonstrate an understanding of technological design and scientific inquiry, including process skills, mathematical thinking, controlled investigative design and analysis, and problem solving.

Indicators

- 8-1.1 Design a controlled scientific investigation.
- 8-1.2 Recognize the importance of a systematic process for safely and accurately conducting investigations.
- 8-1.3 Construct explanations and conclusions from interpretations of data obtained during a controlled scientific investigation.
- 8-1.4 Generate questions for further study on the basis of prior investigations.
- 8-1.5 Explain the importance of and requirements for replication of scientific investigations.
- 8-1.6 Use appropriate tools and instruments (including convex lenses, plane mirrors, color filters, prisms, and slinky springs) safely and accurately when conducting a controlled scientific investigation.
- 8-1.7 Use appropriate safety procedures when conducting investigations.

GRADE 8: Earth's Biological History

Standard 8-2: The student will demonstrate an understanding of Earth's biological diversity over time. (Life Science, Earth Science)

Indicators

- 8-2.1 Explain how biological adaptations of populations enhance their survival in a particular environment.
- 8-2.2 Summarize how scientists study Earth's past environment and diverse life-forms by examining different types of fossils (including molds, casts, petrified fossils, preserved and carbonized remains of plants and animals, and trace fossils).
- 8-2.3 Explain how Earth's history has been influenced by catastrophes (including the impact of an asteroid or comet, climatic changes, and volcanic activity) that have affected the conditions on Earth and the diversity of its life-forms.
- 8-2.4 Recognize the relationship among the units—era, epoch, and period—into which the geologic time scale is divided.
- 8-2.5 Illustrate the vast diversity of life that has been present on Earth over time by using the geologic time scale.
- 8-2.6 Infer the relative age of rocks and fossils from index fossils and the ordering of the rock layers.
- 8-2.7 Summarize the factors, both natural and man-made, that can contribute to the extinction of a species.

GRADE 8: Earth's Structure and Processes

Standard 8-3: The student will demonstrate an understanding of materials that determine the structure of Earth and the processes that have altered this structure. (Earth Science)

Indicators

- 8-3.1 Summarize the three layers of Earth—crust, mantle, and core—on the basis of relative position, density, and composition.
- 8-3.2 Explain how scientists use seismic waves—primary, secondary, and surface waves—and Earth’s magnetic fields to determine the internal structure of Earth.
- 8-3.3 Infer an earthquake’s epicenter from seismographic data.
- 8-3.4 Explain how igneous, metamorphic, and sedimentary rocks are interrelated in the rock cycle.
- 8-3.5 Summarize the importance of minerals, ores, and fossil fuels as Earth resources on the basis of their physical and chemical properties.
- 8-3.6 Explain how the theory of plate tectonics accounts for the motion of the lithospheric plates, the geologic activities at the plate boundaries, and the changes in landform areas over geologic time.
- 8-3.7 Illustrate the creation and changing of landforms that have occurred through geologic processes (including volcanic eruptions and mountain-building forces).
- 8-3.8 Explain how earthquakes result from forces inside Earth.
- 8-3.9 Identify and illustrate geologic features of South Carolina and other regions of the world through the use of imagery (including aerial photography and satellite imagery) and topographic maps.

GRADE 8: Astronomy: Earth and Space Systems

Standard 8-4: The student will demonstrate an understanding of the characteristics, structure, and predictable motions of celestial bodies. (Earth Science)

Indicators

- 8-4.1 Summarize the characteristics and movements of objects in the solar system (including planets, moons, asteroids, comets, and meteors).
- 8-4.2 Summarize the characteristics of the surface features of the Sun: photosphere, corona, sunspots, prominences, and solar flares.
- 8-4.3 Explain how the surface features of the Sun may affect Earth.
- 8-4.4 Explain the motions of Earth and the Moon and the effects of these motions as they orbit the Sun (including day, year, phases of the Moon, eclipses, and tides).
- 8-4.5 Explain how the tilt of Earth's axis affects the length of the day and the amount of heating on Earth's surface, thus causing the seasons of the year.
- 8-4.6 Explain how gravitational forces are influenced by mass and distance.
- 8-4.7 Explain the effects of gravity on tides and planetary orbits.
- 8-4.8 Explain the difference between mass and weight by using the concept of gravitational force.
- 8-4.9 Recall the Sun's position in the universe, the shapes and composition of galaxies, and the distance measurement unit (light year) needed to identify star and galaxy locations.
- 8-4.10 Compare the purposes of the tools and the technology that scientists use to study space (including various types of telescopes, satellites, space probes, and spectrosopes).

GRADE 8: Forces and Motion

Standard 8-5: The student will demonstrate an understanding of the effects of forces on the motion of an object. (Physical Science)

Indicators

- 8-5.1 Use measurement and time-distance graphs to represent the motion of an object in terms of its position, direction, or speed.
- 8-5.2 Use the formula for average speed, $v = d/t$, to solve real-world problems.
- 8-5.3 Analyze the effects of forces (including gravity and friction) on the speed and direction of an object.
- 8-5.4 Predict how varying the amount of force or mass will affect the motion of an object.
- 8-5.5 Analyze the resulting effect of balanced and unbalanced forces on an object's motion in terms of magnitude and direction.
- 8-5.6 Summarize and illustrate the concept of inertia.

GRADE 8: Waves

Standard 8-6: The student will demonstrate an understanding of the properties and behaviors of waves. (Physical Science)

Indicators

- 8-6.1 Recall that waves transmit energy but not matter.
- 8-6.2 Distinguish between mechanical and electromagnetic waves.
- 8-6.3 Summarize factors that influence the basic properties of waves (including frequency, amplitude, wavelength, and speed).
- 8-6.4 Summarize the behaviors of waves (including refraction, reflection, transmission, and absorption).
- 8-6.5 Explain hearing in terms of the relationship between sound waves and the ear.

8-6.6 Explain sight in terms of the relationship between the eye and the light waves emitted or reflected by an object.

8-6.7 Explain how the absorption and reflection of light waves by various materials result in the human perception of color.

8-6.8 Compare the wavelength and energy of waves in various parts of the electromagnetic spectrum (including visible light, infrared, and ultraviolet radiation).

HIGH SCHOOL

HIGH SCHOOL: CORE AREA STANDARDS

Physical Science: Scientific Inquiry

The skills of scientific inquiry, including a knowledge of the use of tools, will be assessed cumulatively on statewide tests. Students will therefore be responsible for the scientific inquiry indicators from all of their earlier grade levels.

Standard PS-1: The student will demonstrate an understanding of how scientific inquiry and technological design, including mathematical analysis, can be used appropriately to pose questions, seek answers, and develop solutions.

Indicators

PS-1.1 Generate hypotheses on the basis of credible, accurate, and relevant sources of scientific information.

PS-1.2 Use appropriate laboratory apparatuses, technology, and techniques safely and accurately when conducting a scientific investigation.

PS-1.3 Use scientific instruments to record measurement data in appropriate metric units that reflect the precision and accuracy of each particular instrument.

PS-1.4 Design a scientific investigation with appropriate methods of control to test a hypothesis (including independent and dependent variables), and evaluate the designs of sample investigations.

PS-1.5 Organize and interpret the data from a controlled scientific investigation by using mathematics (including formulas and dimensional analysis), graphs, models, and/or technology.

PS-1.6 Evaluate the results of a controlled scientific investigation in terms of whether they refute or verify the hypothesis.

PS-1.7 Evaluate a technological design or product on the basis of designated criteria (including cost, time, and materials).

PS-1.8 Compare the processes of scientific investigation and technological design.

PS-1.9 Use appropriate safety procedures when conducting investigations.

HIGH SCHOOL: CORE AREA STANDARDS

Physical Science: Chemistry: Structure and Properties of Matter

Standard PS-2: The student will demonstrate an understanding of the structure and properties of atoms.

Indicators

PS-2.1 Compare the subatomic particles (protons, neutrons, electrons) of an atom with regard to mass, location, and charge, and explain how these particles affect the properties of an atom (including identity, mass, volume, and reactivity).

PS-2.2 Illustrate the fact that the atoms of elements exist as stable or unstable isotopes.

PS-2.3 Explain the trends of the periodic table based on the elements' valence electrons and atomic numbers.

PS-2.4 Use the atomic number and the mass number to calculate the number of protons, neutrons, and/or electrons for a given isotope of an element.

PS-2.5 Predict the charge that a representative element will acquire according to the arrangement of electrons in its outer energy level.

PS-2.6 Compare fission and fusion (including the basic processes and the fact that both fission and fusion convert a fraction of the mass of interacting particles into energy and release a great amount of energy).

PS-2.7 Explain the consequences that the use of nuclear applications (including medical technologies, nuclear power plants, and nuclear weapons) can have.

HIGH SCHOOL: CORE AREA STANDARDS

Physical Science: Chemistry: Structure and Properties of Matter

Standard PS-3: The student will demonstrate an understanding of various properties and classifications of matter.

Indicators

PS-3.1 Distinguish chemical properties of matter (including reactivity) from physical properties of matter (including boiling point, freezing/melting point, density [with density calculations], solubility, viscosity, and conductivity).

PS-3.2 Infer the practical applications of organic and inorganic substances on the basis of their chemical and physical properties.

PS-3.3 Illustrate the difference between a molecule and an atom.

PS-3.4 Classify matter as a pure substance (either an element or a compound) or as a mixture (either homogeneous or heterogeneous) on the basis of its structure and/or composition.

PS-3.5 Explain the effects of temperature, particle size, and agitation on the rate at which a solid dissolves in a liquid.

PS-3.6 Compare the properties of the four states of matter—solid, liquid, gas, and plasma—in terms of the arrangement and movement of particles.

PS-3.7 Explain the processes of phase change in terms of temperature, heat transfer, and particle arrangement.

PS-3.8 Classify various solutions as acids or bases according to their physical properties, chemical properties (including neutralization and reaction with metals), generalized formulas, and pH (using pH meters, pH paper, and litmus paper).

HIGH SCHOOL: CORE AREA STANDARDS

Physical Science: Chemistry: Structure and Properties of Matter

Standard PS-4: The student will demonstrate an understanding of chemical reactions and the classifications, structures, and properties of chemical compounds.

Indicators

PS-4.1 Explain the role of bonding in achieving chemical stability.

PS-4.2 Explain how the process of covalent bonding provides chemical stability through the sharing of electrons.

PS-4.3 Illustrate the fact that ions attract ions of opposite charge from all directions and form crystal lattices.

PS-4.4 Classify compounds as crystalline (containing ionic bonds) or molecular (containing covalent bonds) based on whether their outer electrons are transferred or shared.

PS-4.5 Predict the ratio by which the representative elements combine to form binary ionic compounds, and represent that ratio in a chemical formula.

PS-4.6 Distinguish between chemical changes (including the formation of gas or reactivity with acids) and physical changes (including changes in size, shape, color, and/or phase).

PS-4.7 Summarize characteristics of balanced chemical equations (including conservation of mass and changes in energy in the form of heat—that is, exothermic or endothermic reactions).

PS-4.8 Summarize evidence (including the evolution of gas; the formation of a precipitate; and/or changes in temperature, color, and/or odor) that a chemical reaction has occurred.

PS-4.9 Apply a procedure to balance equations for a simple synthesis or decomposition reaction.

PS-4.10 Recognize simple chemical equations (including single replacement and double replacement) as being balanced or not balanced.

PS-4.11 Explain the effects of temperature, concentration, surface area, and the presence of a catalyst on reaction rates.

HIGH SCHOOL: CORE AREA STANDARDS

Physical Science: Physics: The Interactions of Matter and Energy

Standard PS-5: The student will demonstrate an understanding of the nature of forces and motion.

Indicators

PS-5.1 Explain the relationship among distance, time, direction, and the velocity of an object.

PS-5.2 Use the formula $v = d/t$ to solve problems related to average speed or velocity.

PS-5.3 Explain how changes in velocity and time affect the acceleration of an object.

PS-5.4 Use the formula $a = (v_f - v_i)/t$ to determine the acceleration of an object.

PS-5.5 Explain how acceleration due to gravity affects the velocity of an object as it falls.

PS-5.6 Represent the linear motion of objects on distance-time graphs.

PS-5.7 Explain the motion of objects on the basis of Newton's three laws of motion: inertia; the relationship among force, mass, and acceleration; and action and reaction forces.

PS-5.8 Use the formula $F = ma$ to solve problems related to force.

PS-5.9 Explain the relationship between mass and weight by using the formula $F_w = ma_g$.

PS-5.10 Explain how the gravitational force between two objects is affected by the mass of each object and the distance between them.

HIGH SCHOOL: CORE AREA STANDARDS

Physical Science: Physics: The Interactions of Matter and Energy

Standard PS-6: The student will demonstrate an understanding of the nature, conservation, and transformation of energy.

Indicators

PS-6.1 Explain how the law of conservation of energy applies to the transformation of various forms of energy (including mechanical energy, electrical energy, chemical energy, light energy, sound energy, and thermal energy).

PS-6.2 Explain the factors that determine potential and kinetic energy and the transformation of one to the other.

PS-6.3 Explain work in terms of the relationship among the force applied to an object, the displacement of the object, and the energy transferred to the object.

PS-6.4 Use the formula $W = Fd$ to solve problems related to work done on an object.

PS-6.5 Explain how objects can acquire a static electric charge through friction, induction, and conduction.

PS-6.6 Explain the relationships among voltage, resistance, and current in Ohm's law.

PS-6.7 Use the formula $V = IR$ to solve problems related to electric circuits.

PS-6.8 Represent an electric circuit by drawing a circuit diagram that includes the symbols for a resistor, switch, and voltage source.

PS-6.9 Compare the functioning of simple series and parallel electrical circuits.

PS-6.10 Compare alternating current (AC) and direct current (DC) in terms of the production of electricity and the direction of current flow.

PS-6.11 Explain the relationship of magnetism to the movement of electric charges in electromagnets, simple motors, and generators.

HIGH SCHOOL: CORE AREA STANDARDS

Physical Science: Physics: The Interactions of Matter and Energy

Standard PS-7: The student will demonstrate an understanding of the nature and properties of mechanical and electromagnetic waves.

Indicators

PS-7.1 Illustrate ways that the energy of waves is transferred by interaction with matter (including transverse and longitudinal/compressional waves).

PS-7.2 Compare the nature and properties of transverse and longitudinal/compressional mechanical waves.

PS-7.3 Summarize characteristics of waves (including displacement, frequency, period, amplitude, wavelength, and velocity as well as the relationships among these characteristics).

PS-7.4 Use the formulas $v = f\lambda$ and $v = d/t$ to solve problems related to the velocity of waves.

PS-7.5 Summarize the characteristics of the electromagnetic spectrum (including range of wavelengths, frequency, energy, and propagation without a medium).

PS-7.6 Summarize reflection and interference of both sound and light waves and the refraction and diffraction of light waves.

PS-7.7 Explain the Doppler effect conceptually in terms of the frequency of the waves and the pitch of the sound.

HIGH SCHOOL: CORE AREA STANDARDS

Biology: Scientific Inquiry

The skills of scientific inquiry, including a knowledge of the use of tools, will be assessed cumulatively on statewide tests. Students will therefore be responsible for the scientific inquiry indicators from all of their earlier grade levels.

Standard B-1: The student will demonstrate an understanding of how scientific inquiry and technological design, including mathematical analysis, can be used appropriately to pose questions, seek answers, and develop solutions.

Indicators

B-1.1 Generate hypotheses based on credible, accurate, and relevant sources of scientific information.

B-1.2 Use appropriate laboratory apparatuses, technology, and techniques safely and accurately when conducting a scientific investigation.

B-1.3 Use scientific instruments to record measurement data in appropriate metric units that reflect the precision and accuracy of each particular instrument.

B-1.4 Design a scientific investigation with appropriate methods of control to test a hypothesis (including independent and dependent variables), and evaluate the designs of sample investigations.

B-1.5 Organize and interpret the data from a controlled scientific investigation by using mathematics, graphs, models, and/or technology.

B-1.6 Evaluate the results of a controlled scientific investigation in terms of whether they refute or verify the hypothesis.

B-1.7 Evaluate a technological design or product on the basis of designated criteria (including cost, time, and materials).

B-1.8 Compare the processes of scientific investigation and technological design.

B-1.9 Use appropriate safety procedures when conducting investigations.

HIGH SCHOOL: CORE AREA STANDARDS

Biology

Standard B-2: The student will demonstrate an understanding of the structure and function of cells and their organelles.

Indicators

B-2.1 Recall the three major tenets of cell theory (all living things are composed of one or more cells; cells are the basic units of structure and function in living things; and all presently existing cells arose from previously existing cells).

B-2.2 Summarize the structures and functions of organelles found in a eukaryotic cell (including the nucleus, mitochondria, chloroplasts, lysosomes, vacuoles, ribosomes, endoplasmic reticulum [ER], Golgi apparatus, cilia, flagella, cell membrane, nuclear membrane, cell wall, and cytoplasm).

B-2.3 Compare the structures and organelles of prokaryotic and eukaryotic cells.

B-2.4 Explain the process of cell differentiation as the basis for the hierarchical organization of organisms (including cells, tissues, organs, and organ systems).

B-2.5 Explain how active, passive, and facilitated transport serve to maintain the homeostasis of the cell.

B-2.6 Summarize the characteristics of the cell cycle: interphase (called G1, S, G2); the phases of mitosis (called prophase, metaphase, anaphase, and telophase); and plant and animal cytokinesis.

B-2.7 Summarize how cell regulation controls and coordinates cell growth and division and allows cells to respond to the environment, and recognize the consequences of uncontrolled cell division.

B-2.8 Explain the factors that affect the rates of biochemical reactions (including pH, temperature, and the role of enzymes as catalysts).

HIGH SCHOOL: CORE AREA STANDARDS

Biology

Standard B-3: The student will demonstrate an understanding of the flow of energy within and between living systems.

Indicators

B-3.1 Summarize the overall process by which photosynthesis converts solar energy into chemical energy and interpret the chemical equation for the process.

B-3.2 Summarize the basic aerobic and anaerobic processes of cellular respiration and interpret the chemical equation for cellular respiration.

B-3.3 Recognize the overall structure of adenosine triphosphate (ATP)—namely, adenine, the sugar ribose, and three phosphate groups—and summarize its function (including the ATP-ADP [adenosine diphosphate] cycle).

B-3.4 Summarize how the structures of organic molecules (including proteins, carbohydrates, and fats) are related to their relative caloric values.

B-3.5 Summarize the functions of proteins, carbohydrates, and fats in the human body.

B-3.6 Illustrate the flow of energy through ecosystems (including food chains, food webs, energy pyramids, number pyramids, and biomass pyramids).

HIGH SCHOOL: CORE AREA STANDARDS

Biology

Standard B-4: The student will demonstrate an understanding of the molecular basis of heredity.

Indicators

B-4.1 Compare DNA and RNA in terms of structure, nucleotides, and base pairs.

B-4.2 Summarize the relationship among DNA, genes, and chromosomes.

B-4.3 Explain how DNA functions as the code of life and the blueprint for proteins.

B-4.4 Summarize the basic processes involved in protein synthesis (including transcription and translation).

B-4.5 Summarize the characteristics of the phases of meiosis I and II.

B-4.6 Predict inherited traits by using the principles of Mendelian genetics (including segregation, independent assortment, and dominance).

B-4.7 Summarize the chromosome theory of inheritance and relate that theory to Gregor Mendel's principles of genetics.

B-4.8 Compare the consequences of mutations in body cells with those in gametes.

B-4.9 Exemplify ways that introduce new genetic characteristics into an organism or a population by applying the principles of modern genetics.

HIGH SCHOOL: CORE AREA STANDARDS

Biology

Standard B-5: The student will demonstrate an understanding of biological evolution and the diversity of life.

Indicators

B-5.1 Summarize the process of natural selection.

B-5.2 Explain how genetic processes result in the continuity of life-forms over time.

B-5.3 Explain how diversity within a species increases the chances of its survival.

B-5.4 Explain how genetic variability and environmental factors lead to biological evolution.

B-5.5 Exemplify scientific evidence in the fields of anatomy, embryology, biochemistry, and paleontology that underlies the theory of biological evolution.

B-5.6 Summarize ways that scientists use data from a variety of sources to investigate and critically analyze aspects of evolutionary theory.

B-5.7 Use a phylogenetic tree to identify the evolutionary relationships among different groups of organisms.

HIGH SCHOOL: CORE AREA STANDARDS

Biology

Standard B-6: The student will demonstrate an understanding of the interrelationships among organisms and the biotic and abiotic components of their environments.

Indicators

B-6.1 Explain how the interrelationships among organisms (including predation, competition, parasitism, mutualism, and commensalism) generate stability within ecosystems.

B-6.2 Explain how populations are affected by limiting factors (including density-dependent, density-independent, abiotic, and biotic factors).

B-6.3 Illustrate the processes of succession in ecosystems.

B-6.4 Exemplify the role of organisms in the geochemical cycles (including the cycles of carbon, nitrogen, and water).

B-6.5 Explain how ecosystems maintain themselves through naturally occurring processes (including maintaining the quality of the atmosphere, generating soils, controlling the hydrologic cycle, disposing of wastes, and recycling nutrients).

B-6.6 Explain how human activities (including population growth, technology, and consumption of resources) affect the physical and chemical cycles and processes of Earth.

HIGH SCHOOL: CORE AREA STANDARDS

Chemistry: Scientific Inquiry

The skills of scientific inquiry, including a knowledge of the use of tools, will be assessed cumulatively on statewide tests. Students will therefore be responsible for the scientific inquiry indicators from all of their earlier grade levels.

Standard C-1: The student will demonstrate an understanding of how scientific inquiry and technological design, including mathematical analysis, can be used appropriately to pose questions, seek answers, and develop solutions.

Indicators

C-1.1 Apply established rules for significant digits, both in reading a scientific instrument and in calculating a derived quantity from measurement.

C-1.2 Use appropriate laboratory apparatuses, technology, and techniques safely and accurately when conducting a scientific investigation.

C-1.3 Use scientific instruments to record measurement data in appropriate metric units that reflect the precision and accuracy of each particular instrument.

C-1.4 Design a scientific investigation with appropriate methods of control to test a hypothesis (including independent and dependent variables), and evaluate the designs of sample investigations.

C-1.5 Organize and interpret the data from a controlled scientific investigation by using mathematics (including formulas, scientific notation, and dimensional analysis), graphs, models, and/or technology.

C-1.6 Evaluate the results of a scientific investigation in terms of whether they verify or refute the hypothesis and what the possible sources of error are.

C-1.7 Evaluate a technological design or product on the basis of designated criteria.

C-1.8 Use appropriate safety procedures when conducting investigations.

HIGH SCHOOL: CORE AREA STANDARDS

Chemistry

Standard C-2: Students will demonstrate an understanding of atomic structure and nuclear processes.

Indicators

C-2.1 Illustrate electron configurations by using orbital notation for representative elements.

C-2.2 Summarize atomic properties (including electron configuration, ionization energy, electron affinity, atomic size, and ionic size).

C-2.3 Summarize the periodic table's property trends (including electron configuration, ionization energy, electron affinity, atomic size, ionic size, and reactivity).

C-2.4 Compare the nuclear reactions of fission and fusion to chemical reactions (including the parts of the atom involved and the relative amounts of energy released).

C-2.5 Compare alpha, beta, and gamma radiation in terms of mass, charge, penetrating power, and the release of these particles from the nucleus.

C-2.6 Explain the concept of half-life, its use in determining the age of materials, and its significance to nuclear waste disposal.

HIGH SCHOOL: CORE AREA STANDARDS

Chemistry

Standard C-3: The student will demonstrate an understanding of the structures and classifications of chemical compounds.

Indicators

C-3.1 Predict the type of bonding (ionic or covalent) and the shape of simple compounds by using Lewis dot structures and oxidation numbers.

C-3.2 Interpret the names and formulas for ionic and covalent compounds.

C-3.3 Explain how the types of intermolecular forces present in a compound affect the physical properties of compounds (including polarity and molecular shape).

C-3.4 Explain the unique bonding characteristics of carbon that have resulted in the formation of a large variety of organic structures.

C-3.5 Illustrate the structural formulas and names of simple hydrocarbons (including alkanes and their isomers and benzene rings).

C-3.6 Identify the basic structure of common polymers (including proteins, nucleic acids, plastics, and starches).

C-3.7 Classify organic compounds in terms of their functional group.

C-3.8 Explain the effect of electronegativity and ionization energy on the type of bonding in a molecule.

C-3.9 Classify polymerization reactions as addition or condensation.

C-3.10 Classify organic reactions as addition, elimination, or condensation.

HIGH SCHOOL: CORE AREA STANDARDS

Chemistry

Standard C-4: The student will demonstrate an understanding of the types, the causes, and the effects of chemical reactions.

Indicators

C-4.1 Analyze and balance equations for simple synthesis, decomposition, single replacement, double replacement, and combustion reactions.

C-4.2 Predict the products of acid-base neutralization and combustion reactions.

C-4.3 Analyze the energy changes (endothermic or exothermic) associated with chemical reactions.

C-4.4 Apply the concept of moles to determine the number of particles of a substance in a chemical reaction, the percent composition of a representative compound, the mass proportions, and the mole-mass relationships.

C-4.5 Predict the percent yield, the mass of excess, and the limiting reagent in chemical reactions.

C-4.6 Explain the role of activation energy and the effects of temperature, particle size, stirring, concentration, and catalysts in reaction rates.

C-4.7 Summarize the oxidation and reduction processes (including oxidizing and reducing agents).

C-4.8 Illustrate the uses of electrochemistry (including electrolytic cells, voltaic cells, and the production of metals from ore by electrolysis).

C-4.9 Summarize the concept of chemical equilibrium and Le Châtelier's principle.

C-4.10 Explain the role of collision frequency, the energy of collisions, and the orientation of molecules in reaction rates.

HIGH SCHOOL: CORE AREA STANDARDS

Chemistry

Standard C-5: The student will demonstrate an understanding of the structure and behavior of the different phases of matter.

Indicators

C-5.1 Explain the effects of the intermolecular forces on the different phases of matter.

C-5.2 Explain the behaviors of gas; the relationship among pressure, volume, and temperature; and the significance of the Kelvin (absolute temperature) scale, using the kinetic-molecular theory as a model.

C-5.3 Apply the gas laws to problems concerning changes in pressure, volume, or temperature (including Charles's law, Boyle's law, and the combined gas law).

C-5.4 Illustrate and interpret heating and cooling curves (including how boiling and melting points can be identified and how boiling points vary with changes in pressure).

C-5.5 Analyze the energy changes involved in calorimetry by using the law of conservation of energy as it applies to temperature, heat, and phase changes (including the use of the formulas $q = mc\Delta T$ [temperature change] and $q = mL_v$ and $q = mL_f$ [phase change] to solve calorimetry problems).

C-5.6 Use density to determine the mass, volume, or number of particles of a gas in a chemical reaction.

C-5.7 Apply the ideal gas law ($pV = nRT$) to solve problems.

C-5.8 Analyze a product for purity by following the appropriate assay procedures.

C-5.9 Analyze a chemical process to account for the weight of all reagents and solvents by following the appropriate material balance procedures.

HIGH SCHOOL: CORE AREA STANDARDS

Chemistry

Standard C-6: The student will demonstrate an understanding of the nature and properties of various types of chemical solutions.

Indicators

C-6.1 Summarize the process by which solutes dissolve in solvents, the dynamic equilibrium that occurs in saturated solutions, and the effects of varying pressure and temperature on solubility.

C-6.2 Compare solubility of various substances in different solvents (including polar and nonpolar solvents and organic and inorganic substances).

C-6.3 Illustrate the colligative properties of solutions (including freezing point depression and boiling point elevation and their practical uses).

C-6.4 Carry out calculations to find the concentration of solutions in terms of molarity and percent weight (mass).

C-6.5 Summarize the properties of salts, acids, and bases.

C-6.6 Distinguish between strong and weak common acids and bases.

C-6.7 Represent common acids and bases by their names and formulas.

C-6.8 Use the hydronium or hydroxide ion concentration to determine the pH and pOH of aqueous solutions.

C-6.9 Explain how the use of a titration can determine the concentration of acid and base solutions

C-6.10 Interpret solubility curves to determine saturation at different temperatures.

C-6.11 Use a variety of procedures for separating mixtures (including distillation, crystallization filtration, paper chromatography, and centrifuge).

C-6.12 Use solubility rules to write net ionic equations for precipitation reactions in aqueous solution.

C-6.13 Use the calculated molality of a solution to calculate the freezing point depression and the boiling point elevation of a solution.

C-6.14 Represent neutralization reactions and reactions between common acids and metals by using chemical equations.

C-6.15 Analyze the composition of a chemical sample by using gas chromatography.

HIGH SCHOOL: CORE AREA STANDARDS

Physics: Scientific Inquiry

The skills of scientific inquiry, including a knowledge of the use of tools, will be assessed cumulatively on statewide tests. Students will therefore be responsible for the scientific inquiry indicators from all of their earlier grade levels.

Standard P-1: The student will demonstrate an understanding of how scientific inquiry and technological design, including mathematical analysis, can be used appropriately to pose questions, seek answers, and develop solutions.

Indicators

P-1.1 Apply established rules for significant digits, both in reading scientific instruments and in calculating derived quantities from measurement.

P-1.2 Use appropriate laboratory apparatuses, technology, and techniques safely and accurately when conducting a scientific investigation.

P-1.3 Use scientific instruments to record measurement data in appropriate metric units that reflect the precision and accuracy of each particular instrument.

P-1.4 Design a scientific investigation with appropriate methods of control to test a hypothesis (including independent and dependent variables), and evaluate the designs of sample investigations.

P-1.5 Organize and interpret the data from a controlled scientific investigation by using (including calculations in scientific notation, formulas, and dimensional analysis), graphs, tables, models, diagrams, and/or technology.

P-1.6 Evaluate the results of a controlled scientific investigation in terms of whether they refute or verify the hypothesis.

P-1.7 Evaluate conclusions based on qualitative and quantitative data (including the impact of parallax, instrument malfunction, or human error) on experimental results.

P-1.8 Evaluate a technological design or product on the basis of designated criteria (including cost, time, and materials).

P-1.9 Communicate and defend a scientific argument or conclusion.

P-1.10 Use appropriate safety procedures when conducting investigations.

HIGH SCHOOL: CORE AREA STANDARDS

Physics

Standard P-2: The student will demonstrate an understanding of the principles of force and motion and relationships between them.

Indicators

P-2.1 Represent vector quantities (including displacement, velocity, acceleration, and force) and use vector addition.

P-2.2 Apply formulas for velocity or speed and acceleration to one and two-dimensional problems.

P-2.3 Interpret the velocity or speed and acceleration of one and two-dimensional motion on distance-time, velocity-time or speed-time, and acceleration-time graphs.

P-2.4 Interpret the resulting motion of objects by applying Newton's three laws of motion: inertia; the relationship among net force, mass, and acceleration (using $F = ma$); and action and reaction forces.

P-2.5 Explain the factors that influence the dynamics of falling objects and projectiles.

P-2.6 Apply formulas for velocity and acceleration to solve problems related to projectile motion.

P-2.7 Use a free-body diagram to determine the net force and component forces acting upon an object.

P-2.8 Distinguish between static and kinetic friction and the factors that affect the motion of objects.

P-2.9 Explain how torque is affected by the magnitude, direction, and point of application of force.

P-2.10 Explain the relationships among speed, velocity, acceleration, and force in rotational systems.

HIGH SCHOOL: CORE AREA STANDARDS

Physics

Standard P-3: The student will demonstrate an understanding of the conservation, transfer, and transformation of mechanical energy.

Indicators

P-3.1 Apply energy formulas to determine potential and kinetic energy and explain the transformation from one to the other.

P-3.2 Apply the law of conservation of energy to the transfer of mechanical energy through work.

P-3.3 Explain, both conceptually and quantitatively, how energy can transfer from one system to another (including work, power, and efficiency).

P-3.4 Explain, both conceptually and quantitatively, the factors that influence periodic motion.

P-3.5 Explain the factors involved in producing a change in momentum (including impulse and the law of conservation of momentum in both linear and rotary systems).

P-3.6 Compare elastic and inelastic collisions in terms of conservation laws.

HIGH SCHOOL: CORE AREA STANDARDS

Physics

Standard P-4: The student will demonstrate an understanding of the properties of electricity and magnetism and the relationships between them.

Indicators

P-4.1 Recognize the characteristics of static charge and explain how a static charge is generated.

P-4.2 Use diagrams to illustrate an electric field (including point charges and electric field lines).

P-4.3 Summarize current, potential difference, and resistance in terms of electrons.

P-4.4 Compare how current, voltage, and resistance are measured in a series and in a parallel electric circuit and identify the appropriate units of measurement.

P-4.5 Analyze the relationships among voltage, resistance, and current in a complex circuit by using Ohm's law to calculate voltage, resistance, and current at each resistor, any branch, and the overall circuit.

P-4.6 Differentiate between alternating current (AC) and direct current (DC) in electrical circuits.

P-4.7 Carry out calculations for electric power and electric energy for circuits.

P-4.8 Summarize the function of electrical safety components (including fuses, surge protectors, and breakers).

P-4.9 Explain the effects of magnetic forces on the production of electrical currents and on current carrying wires and moving charges.

P-4.10 Distinguish between the function of motors and generators on the basis of the use of electricity and magnetism by each.

P-4.11 Predict the cost of operating an electrical device by determining the amount of electrical power and electrical energy in the circuit.

HIGH SCHOOL: CORE AREA STANDARDS

Physics

Standard P-5: The student will demonstrate an understanding of the properties and behaviors of mechanical and electromagnetic waves.

Indicators

P-5.1 Analyze the relationships among the properties of waves (including energy, frequency, amplitude, wavelength, period, phase, and speed).

P-5.2 Compare the properties of electromagnetic and mechanical waves.

P-5.3 Analyze wave behaviors (including reflection, refraction, diffraction, and constructive and destructive interference).

P-5.4 Distinguish the different properties of waves across the range of the electromagnetic spectrum.

P-5.5 Illustrate the interaction of light waves with optical lenses and mirrors by using Snell's law and ray diagrams.

P-5.6 Summarize the operation of lasers and compare them to incandescent light.

HIGH SCHOOL: CORE AREA STANDARDS

Physics

Two of physics standards 6 through 10 will be taught in addition to standards 1 through 5.

Standard P-6: The student will demonstrate an understanding of the properties and behaviors of sound.

Indicators

P-6.1 Summarize the production of sound and its speed and transmission through various media.

P-6.2 Explain how frequency and intensity affect the parts of the sonic spectrum.

P-6.3 Explain pitch, loudness, and tonal quality in terms of wave characteristics that determine what is heard.

P-6.4 Compare intensity and loudness.

P-6.5 Apply formulas to determine the relative intensity of sound.

P-6.6 Apply formulas in order to solve for resonant wavelengths in problems involving open and closed tubes.

P-6.7 Explain the relationship among frequency, fundamental tones, and harmonics in producing music.

P-6.8 Explain how musical instruments produce resonance and standing waves.

P-6.9 Explain how the variables of length, width, tension, and density affect the resonant frequency, harmonics, and pitch of a vibrating string.

HIGH SCHOOL: CORE AREA STANDARDS

Physics

Two of physics standards 6 through 10 will be taught in addition to standards 1 through 5.

Standard P-7: The student will demonstrate an understanding of the properties and behaviors of light and optics.

Indicators

P-7.1 Explain the particulate nature of light as evidenced in the photoelectric effect.

P-7.2 Use the inverse square law to determine the change in intensity of light with distance.

P-7.3 Illustrate the polarization of light.

P-7.4 Summarize the operation of fiber optics in terms of total internal reflection.

P-7.5 Summarize image formation in microscopes and telescopes (including reflecting and refracting).

P-7.6 Summarize the production of continuous, emission, or absorption spectra.

P-7.7 Compare color by transmission to color by reflection.

P-7.8 Compare color mixing in pigments to color mixing in light.

P-7.9 Illustrate the diffraction and interference of light.

P-7.10 Identify the parts of the eye and explain their function in image formation.

HIGH SCHOOL: CORE AREA STANDARDS

Physics

Two of physics standards 6 through 10 will be taught in addition to standards 1 through 5.

Standard P-8: The student will demonstrate an understanding of nuclear physics and modern physics.

Indicators

P-8.1 Compare the strong and weak nuclear forces in terms of their roles in radioactivity.

P-8.2 Compare the nuclear binding energy to the energy released during a nuclear reaction, given the atomic masses of the constituent particles.

P-8.3 Predict the resulting isotope of a given alpha, beta, or gamma emission.

P-8.4 Apply appropriate procedures to balance nuclear equations (including fusion, fission, alpha decay, beta decay, and electron capture).

P-8.5 Interpret a representative nuclear decay series.

P-8.6 Explain the relationship between mass and energy that is represented in the equation $E = mc^2$ according to Einstein's special theory of relativity.

P-8.7 Compare the value of time, length, and momentum in the reference frame of an object moving at relativistic velocity to those values measured in the reference frame of an observer by applying Einstein's special theory of relativity.

HIGH SCHOOL: CORE AREA STANDARDS

Physics

Two of physics standards 6 through 10 will be taught in addition to standards 1 through 5.

Standard P-9: The student will demonstrate an understanding of the principles of fluid mechanics.

Indicators

P-9.1 Predict the behavior of fluids (including changing forces) in pneumatic and hydraulic systems.

P-9.2 Apply appropriate procedures to solve problems involving pressure, force, volume, and area.

P-9.3 Explain the factors that affect buoyancy.

P-9.4 Explain how the rate of flow of a fluid is affected by the size of the pipe, friction, and the viscosity of the fluid.

P-9.5 Explain how depth and fluid density affect pressure.

P-9.6 Apply fluid formulas to solve problems involving work and power.

P-9.7 Exemplify the relationship between velocity and pressure by using Bernoulli's principle.

HIGH SCHOOL: CORE AREA STANDARDS

Physics

Two of physics standards 6 through 10 will be taught in addition to standards 1 through 5.

Standard P-10: The student will demonstrate an understanding of the principles of thermodynamics.

Indicators

P-10.1 Summarize the first and second laws of thermodynamics.

P-10.2 Explain the relationship among internal energy, heat, and work.

P-10.3 Exemplify the concept of entropy.

P-10.4 Explain thermal expansion in solids, liquids, and gases in terms of kinetic theory and the unique behavior of water.

P-10.5 Differentiate heat and temperature in terms of molecular motion.

P-10.6 Summarize the concepts involved in phase change.

P-10.7 Apply the concepts of heat capacity, specific heat, and heat exchange to solve calorimetry problems.

P-10.8 Summarize the functioning of heat transfer mechanisms (including engines and refrigeration systems).

HIGH SCHOOL: CORE AREA STANDARDS

Earth Science: Scientific Inquiry

The skills of scientific inquiry, including a knowledge of the use of tools, will be assessed cumulatively on statewide tests. Students will therefore be responsible for the scientific inquiry indicators from all of their earlier grade levels.

Standard ES-1: The student will demonstrate an understanding of how scientific inquiry and technological design, including mathematical analysis, can be used appropriately to pose questions, seek answers, and develop solutions.

Indicators

ES-1.1 Apply established rules for significant digits, both in reading scientific instruments and in calculating derived quantities from measurement.

ES-1.2 Use appropriate laboratory apparatuses, technology, and techniques safely and accurately when conducting a scientific investigation.

ES-1.3 Use scientific instruments to record measurement data in appropriate metric units that reflect the precision and accuracy of each particular instrument.

ES-1.4 Design a scientific investigation with appropriate methods of control to test a hypothesis (including independent and dependent variables), and evaluate the designs of sample investigations.

ES-1.5 Organize and interpret the data from a controlled scientific investigation by using mathematics (including calculations in scientific notation, formulas, and dimensional analysis), graphs, tables, models, diagrams, and/or technology.

ES-1.6 Evaluate the results of a controlled scientific investigation in terms of whether they refute or verify the hypothesis.

ES-1.7 Evaluate conclusions based on qualitative and quantitative data (including the impact of parallax, instrument malfunction, or human error) on experimental results.

ES-1.8 Evaluate a technological design or product on the basis of designated criteria (including cost, time, and materials).

ES-1.9 Communicate and defend a scientific argument or conclusion.

ES-1.10 Use appropriate safety procedures when conducting investigations.

HIGH SCHOOL: CORE AREA STANDARDS

Earth Science: Astronomy

Standard ES-2: Students will demonstrate an understanding of the structure and properties of the universe.

Indicators

ES-2.1 Summarize the properties of the solar system that support the theory of its formation along with the planets.

ES-2.2 Identify properties and features of the Moon that make it unique among other moons in the solar system.

ES-2.3 Summarize the evidence that supports the big bang theory and the expansion of the universe (including the red shift of light from distant galaxies and the cosmic background radiation).

ES-2.4 Explain the formation of elements that results from nuclear fusion occurring within stars or supernova explosions.

ES-2.5 Classify stars by using the Hertzsprung-Russell diagram.

ES-2.6 Compare the information obtained through the use of x-ray, radio, and visual (reflecting and refracting) telescopes.

ES-2.7 Summarize the life cycles of stars.

ES-2.8 Explain how gravity and motion affect the formation and shapes of galaxies (including the Milky Way).

ES-2.9 Explain how technology and computer modeling have increased our understanding of the universe.

HIGH SCHOOL: CORE AREA STANDARDS

Earth Science: Solid Earth

Standard ES-3: Students will demonstrate an understanding of the internal and external dynamics of solid Earth.

Indicators

ES-3.1 Summarize theories and evidence of the origin and formation of Earth's systems by using the concepts of gravitational force and heat production.

ES-3.2 Explain the differentiation of the structure of Earth's layers into a core, mantle, and crust based on the production of internal heat from the decay of isotopes and the role of gravitational energy.

ES-3.3 Summarize theory of plate tectonics (including the role of convection currents, the action at plate boundaries, and the scientific evidence for the theory).

ES-3.4 Explain how forces due to plate tectonics cause crustal changes as evidenced in earthquake activity, volcanic eruptions, and mountain building.

ES-3.5 Analyze surface features of Earth in order to identify geologic processes (including weathering, erosion, deposition, and glaciation) that are likely to have been responsible for their formation.

ES-3.6 Explain how the dynamic nature of the rock cycle accounts for the interrelationships among igneous, sedimentary, and metamorphic rocks.

ES-3.7 Classify minerals and rocks on the basis of their physical and chemical properties and the environment in which they were formed.

ES-3.8 Summarize the formation of ores and fossil fuels and the impact on the environment that the use of these fuels has had.

HIGH SCHOOL: CORE AREA STANDARDS

Earth Science: Earth's Atmosphere

Standard ES-4: The student will demonstrate an understanding of the dynamics of Earth's atmosphere.

Indicators

ES-4.1 Summarize the thermal structures, the gaseous composition, and the location of the layers of Earth's atmosphere.

ES-4.2 Summarize the changes in Earth's atmosphere over geologic time (including the importance of photosynthesizing organisms to the atmosphere).

ES-4.3 Summarize the cause and effects of convection within Earth's atmosphere.

ES-4.4 Attribute global climate patterns to geographic influences (including latitude, topography, elevation, and proximity to water).

ES-4.5 Explain the relationship between the rotation of Earth and the pattern of wind belts.

ES-4.6 Summarize possible causes of and evidence for past and present global climate changes.

ES-4.7 Summarize the evidence for the likely impact of human activities on the atmosphere (including ozone holes, greenhouse gases, acid rain, and photochemical smog).

ES-4.8 Predict weather conditions and storms (including thunderstorms, hurricanes, and tornados) on the basis of the relationship among the movement of air masses, high and low pressure systems, and frontal boundaries.

HIGH SCHOOL: CORE AREA STANDARDS

Earth Science: Earth's Hydrosphere

Standard ES-5: The student will demonstrate an understanding of Earth's freshwater and ocean systems.

Indicators

ES-5.1 Summarize the location, movement, and energy transfers involved in the movement of water on Earth's surface (including lakes, surface-water drainage basins [watersheds], freshwater wetlands, and groundwater zones).

ES-5.2 Illustrate the characteristics of the succession of river systems.

ES-5.3 Explain how karst topography develops as a result of groundwater processes.

ES-5.4 Compare the physical and chemical properties of seawater and freshwater.

ES-5.5 Explain the results of the interaction of the shore with waves and currents.

ES-5.6 Summarize the advantages and disadvantages of devices used to control and prevent coastal erosion and flooding.

ES-5.7 Explain the effects of the transfer of solar energy and geothermal energy on the oceans of Earth (including the circulation of ocean currents and chemosynthesis).

ES-5.8 Analyze environments to determine possible sources of water pollution (including industrial waste, agriculture, domestic waste, and transportation devices).

HIGH SCHOOL: CORE AREA STANDARDS

Earth Science: The Paleobiosphere

Standard ES-6: Students will demonstrate an understanding of the dynamic relationship between Earth's conditions over geologic time and the diversity of its organisms.

Indicators

ES-6.1 Summarize the conditions of Earth that enable the planet to support life.

ES-6.2 Recall the divisions of the geologic time scale and illustrate the changes (in complexity and/or diversity) of organisms that have existed across these time units.

ES-6.3 Summarize how fossil evidence reflects the changes in environmental conditions on Earth over time.

ES-6.4 Match dating methods (including index fossils, ordering of rock layers, and radiometric dating) with the most appropriate application for estimating geologic time.

ES-6.5 Infer explanations concerning the age of the universe and the age of Earth on the basis of scientific evidence.

SOCIAL STUDIES

RLOA's curriculum will be aligned with the Common Core State Standards, using the guidelines and goals of the SCDE for **SOCIAL STUDIES** set forth below. These goals are specific, measureable, attainable, realistic and timely so that every student can assess their mastery in a particular area and every teacher can evaluate their instruction.

KINDERGARTEN

KINDERGARTEN: CHILDREN AS CITIZENS: An Introduction to Social Studies

Standard K-1: The student will demonstrate an understanding of the way families live and work together now and the way they lived and worked together in the past.

Indicators

K-1.1 Compare the daily lives of children and their families in the United States in the past with the daily lives of children and their families today.

K-1.2 Explain how changes in modes of communication and transportation have changed the way that families live and work, including e-mail and the telephone as opposed to letters and messengers for communication and the automobile as opposed to the horse for transportation.

KINDERGARTEN: CHILDREN AS CITIZENS: An Introduction to Social Studies

Standard K-2: The student will demonstrate an understanding of rules and authority in a child's life.

Indicators

K-2.1 Explain the purposes of rules and laws and the consequences of breaking them, including the sometimes unspoken rules of sportsmanship and fair play.

K-2.2 Summarize the roles of people in authority in a child's life, including those of parents and teachers.

K-2.3 Identify people in the community and school who enforce the rules that keep people safe, including crossing guards, firefighters, and police officers.

KINDERGARTEN: CHILDREN AS CITIZENS: An Introduction to Social Studies

Standard K-3: The student will demonstrate an understanding of key American figures and symbols.

Indicators

K-3.1 Recognize the significance of things that exemplify the values and principles of American democracy, including the Pledge of Allegiance, songs such as “The Star-Spangled Banner” (our national anthem) and “America the Beautiful,” and the American flag.

K-3.2 Illustrate the significant actions of important American figures, including George Washington, Abraham Lincoln, and Martin Luther King Jr.

K-3.3 Identify the reasons for celebrating the national holidays, including Independence Day, Thanksgiving, President’s Day, and Martin Luther King Jr. Day.

KINDERGARTEN: CHILDREN AS CITIZENS: An Introduction to Social Studies

Standard K-4: The student will demonstrate an understanding of good citizenship.

Indicators

K-4.1 Identify qualities of good citizenship, including honesty, courage, determination, individual responsibility, and patriotism.

K-4.2 Demonstrate good citizenship in classroom behaviors, including taking personal responsibility, cooperating and respecting others, taking turns and sharing, and working with others to solve problems.

KINDERGARTEN: CHILDREN AS CITIZENS: An Introduction to Social Studies

Standard K-5: The student will demonstrate an understanding of his or her surroundings.

Indicators

K-5.1 Identify the location of school, home, neighborhood, community, city/town, and state on a map.

K-5.2 Provide examples of personal connections to places, including immediate surroundings, home, school, and neighborhood.

K-5.3 Construct a simple map.

K-5.4 Recognize natural features of the environment, including mountains and bodies of water, through pictures, literature, and models.

KINDERGARTEN: CHILDREN AS CITIZENS: An Introduction to Social Studies

Standard K-6: The student will demonstrate an understanding of different businesses in the community and the idea of work.

Indicators

K-6.1 Classify several community businesses according to the goods and services they provide.

K-6.2 Summarize methods of obtaining goods and services.

K-6.3 Match descriptions of work to the names of jobs in the school and local community, in the past and present, including jobs related to safety.

GRADE 1

GRADE 1: FAMILIES HERE AND ACROSS THE WORLD

Standard 1-1: The student will demonstrate an understanding of how individuals, families, and communities live and work together here and across the world.

Indicators

- 1-1.1 Summarize the characteristics that contribute to personal identity, including physical growth, the development of individual interests, and family changes over time.
- 1-1.2 Summarize ways in which people are both alike and different from one another in different regions of the United States and the world, including their culture, language, and jobs.
- 1-1.3 Illustrate personal and family history on a time line.
- 1-1.4 Compare the daily life of families across the world—including the roles of men, women, and children; typical food, clothes, and style of homes; and the ways the families earn their living.
- 1-1.5 Illustrate different elements of community life, including the structure of schools; typical jobs; the interdependence of family, school, and the community; and the common methods of transportation and communication.

GRADE 1: FAMILIES HERE AND ACROSS THE WORLD

Standard 1-2: The student will demonstrate an understanding of home, school, and other settings across the world.

Indicators

- 1-2.1 Identify a familiar area or neighborhood on a simple map, using the basic map symbols and the cardinal directions.

1-2.2 Compare the ways that people use land and natural resources in different settings across the world, including the conservation of natural resources and the actions that may harm the environment.

GRADE 1: FAMILIES HERE AND ACROSS THE WORLD

Standard 1-3: The student will demonstrate an understanding of how government functions and how government affects families.

Indicators

- 1-3.1 Identify the basic functions of government, including making and enforcing laws and protecting citizens.
- 1-3.2 Summarize of the concept of authority and give examples of people in authority, including school officials, public safety officers, and government officials.
- 1-3.3 Identify ways that government affects the daily lives of individuals and families in the United States, including providing public education, building roads and highways, and promoting personal freedom and opportunity for all.
- 1-3.4 Summarize possible consequences of an absence of laws and rules, including the potential for disorderliness and violence.

GRADE 1: FAMILIES HERE AND ACROSS THE WORLD

Standard 1-4: The student will demonstrate an understanding of the foundations and principles of American democracy.

Indicators

- 1-4.1 Recognize the basic values of American democracy, including respect for the rights and opinions of others, fair treatment for everyone, and respect for the rules by which we live.
- 1-4.2 Identify the different levels of government—local, state, and national.
- 1-4.3 Recall the contributions made by historic and political figures to democracy in the United States, including George Washington, Benjamin Franklin, Thomas Jefferson, Abraham Lincoln, Martin Luther King Jr., and Rosa Parks.

GRADE 1: FAMILIES HERE AND ACROSS THE WORLD

Standard 1-5: The student will demonstrate an understanding of the role of citizens in the American democracy.

Indicators

- 1-5.1 Recognize ways that all citizens can serve the common good, including serving as public officials and participating in the election process.
- 1-5.2 Summarize the rule-making process in a direct democracy (everyone votes on the rules) and in a representative democracy (an elected group of people make the rules).

GRADE 1: FAMILIES HERE AND ACROSS THE WORLD

Standard 1-6: The student will demonstrate an understanding of how and why people make economic choices and the importance of these choices for families.

Indicators

- 1-6.1 Explain the concept of scarcity and the way it forces individuals and families to make choices about which goods and services to obtain.
- 1-6.2 Explain methods for obtaining goods and services, including buying with money and bartering.
- 1-6.3 Identify ways that families and communities cooperate and compromise in order to meet their needs and wants.
- 1-6.4 Recognize the roles of producers and consumers and the ways in which they are interdependent.

GRADE 2

GRADE 2: COMMUNITIES HERE AND ACROSS THE WORLD

Standard 2-1: The student will demonstrate an understanding of cultural contributions made by people from the various regions of the United States.

Indicators

- 2-1.1 Recognize the basic elements that make up a cultural region in the United States, including language, customs, and economic activities.
- 2-1.2 Compare the historic traditions, customs, and cultures of various regions in the United States, including how traditions are passed between and among generations.

- 2-1.3 Summarize the cultural contributions of Native American nations, African Americans, and immigrant groups in different regions of the United States.
- 2-1.4 Recall stories and songs about regional folk figures who have contributed to the development of the cultural history of the United States, including Pecos Bill, Brer Rabbit, Paul Bunyan, Davy Crockett, and John Henry.

GRADE 2: COMMUNITIES HERE AND ACROSS THE WORLD

Standard 2-2: The student will demonstrate an understanding of the local community and the way it compares with other communities in the world.

Indicators

- 2-2.1 Locate on a map the places and features of the local community, including the geographic features (e.g., parks, water features) and the urban, suburban, and rural areas.
- 2-2.2 Recognize characteristics of the local region, including its geographic features and natural resources.
- 2-2.3 Summarize the roles of various workers in the community, including those who hold government jobs there.
- 2-2.4 Summarize changes that have occurred in the life of the local community over time, including changes in the use of the land and in the way that people earn their living there.
- 2-2.5 Compare the history and features of the local community with those of different communities around the world.

GRADE 2: COMMUNITIES HERE AND ACROSS THE WORLD

Standard 2-3: The student will demonstrate an understanding of origins, structure, and functions of local government.

Indicators

- 2-3.1 Recognize different types of local laws and those people who have the power and authority to enforce them.
- 2-3.2 Identify the roles of leaders and officials in local government, including law enforcement and public safety officials.
- 2-3.3 Explain the ways that local and state governments contribute to the federal system, including law enforcement and highway construction.

GRADE 2: COMMUNITIES HERE AND ACROSS THE WORLD

Standard 2-4: The student will demonstrate an understanding of the division of the world geographically into continents and politically into nation-states.

Indicators

- 2-4.1 Identify on a map the continents and the major nation-states of the world and distinguish between these two entities.
- 2-4.2 Summarize how nation-states interact with one another in order to conduct trade.

GRADE 2: COMMUNITIES HERE AND ACROSS THE WORLD

Standard 2-5: The student will demonstrate an understanding of trade and markets and the role of supply and demand in determining the price and allocation of goods within the community.

Indicators

2-5.1 Identify examples of markets and price in the local community and explain the roles of buyers and sellers in creating markets and pricing.

2-5.2 Summarize the concept of supply and demand and explain its effect on price.

2-5.3 Recognize that people's choices about what they buy will determine what goods and services are produced.

2-5.4 Identify the relationships between trade and resources both within and among communities, including natural, human, and capital resources.

GRADE 3

GRADE 3: SOUTH CAROLINA STUDIES

Standard 3-1: The student will demonstrate an understanding of places and regions and the role of human systems in South Carolina.

Indicators

3-1.1 Identify on a map the location and characteristics of significant physical features of South Carolina, including landforms; river systems such as the Pee Dee River Basin, the Santee River Basin, the Edisto River Basin, and the Savannah River Basin; major cities; and climate regions.

3-1.2 Interpret thematic maps of South Carolina places and regions that show how and where people live, work, and use land and transportation.

3-1.3 Categorize the six geographic regions of South Carolina—the Blue Ridge Mountain Region, the Piedmont, the Sand Hills, the Inner Coastal Plain, the Outer Coastal Plain, and the Coastal Zone—according to their different physical and human characteristics.

3-1.4 Explain the effects of human systems on the physical landscape of South Carolina over time, including the relationship of population distribution and patterns of migration to natural resources, climate, agriculture, and economic development.

GRADE 3: SOUTH CAROLINA STUDIES

Standard 3-2: The student will demonstrate an understanding of the exploration and settlement of South Carolina and the United States.

Indicators

3-2.1 Explain the motives behind the exploration of South Carolina by the English, the Spanish, and the French, including the idea of “for king and country.”

3-2.2 Summarize the activities and accomplishments of key explorers of South Carolina, including Hernando de Soto, Jean Ribault, Juan Pardo, Henry Woodward, and William Hilton.

3-2.3 Use a map to identify the sea and land routes of explorers of South Carolina and compare the geographic features of areas they explored, including the climate and the abundance of forests.

3-2.4 Compare the culture, governance, and geographic location of different Native American nations in South Carolina, including the three principal nations—Cherokee, Catawba, and Yemassee—that influenced the development of colonial South Carolina.

3-2.5 Summarize the impact that the European colonization of South Carolina had on Native Americans, including conflicts between settlers and Native Americans.

3-2.6 Summarize the contributions of settlers in South Carolina under the Lords Proprietors and the Royal colonial government, including the English from Barbados and the other groups who made up the diverse European population of early South Carolina.

3-2.7 Explain the transfer of the institution of slavery into South Carolina from the West Indies, including the slave trade and the role of African Americans in the developing plantation economy; the daily lives of African American slaves and their contributions to South Carolina, such as the Gullah culture and the introduction of new foods; and African American acts of resistance against white authority.

GRADE 3: SOUTH CAROLINA STUDIES

Standard 3-3: The student will demonstrate an understanding of the American Revolution and South Carolina’s role in the development of the new American nation.

Indicators

3-3.1 Analyze the causes of the American Revolution—including Britain’s passage of the Tea Act, the Intolerable Acts, the rebellion of the colonists, and the Declaration of Independence—and South Carolina’s role in these events.

3-3.2 Summarize the key conflicts and key leaders of the American Revolution in South Carolina and their effects on the state, including the occupation of Charleston by the British; the partisan warfare of Thomas Sumter, Andrew Pickens, and Francis Marion; and the battles of Cowpens and Kings Mountain.

3-3.3 Summarize the effects of the American Revolution in South Carolina, including the establishment of a new nation and a new state government and capital.

3-3.4 Outline the current structure of state government, including the branches of government; the names of the representative bodies; and the role that cities, towns, and counties play in this system.

GRADE 3: SOUTH CAROLINA STUDIES

Standard 3-4: The student will demonstrate an understanding of the events that led to the Civil War, the course of the War and Reconstruction, and South Carolina's role in these events.

Indicators

3-4.1 Compare the conditions of daily life for various classes of people in South Carolina, including the elite, the middle class, the lower class, the independent farmers, and the free and the enslaved African Americans.

3-4.2 Summarize the institution of slavery prior to the Civil War, including reference to conditions in South Carolina, the invention of the cotton gin, subsequent expansion of slavery, and economic dependence on slavery.

- 3-4.3 Explain the reasons for South Carolina's secession from the Union, including the abolitionist movement, states' rights, and the desire to defend South Carolina's way of life.
- 3-4.4 Outline the course of the Civil War and South Carolina's role in significant events, including the Secession Convention, the firing on Fort Sumter, the Union blockade of Charleston, and Sherman's march through South Carolina.
- 3-4.5 Summarize the effects of the Civil War on the daily lives of people of different classes in South Carolina, including the lack of food, clothing, and living essentials and the continuing racial tensions.
- 3-4.6 Explain how the Civil War affected South Carolina's economy, including destruction of plantations, towns, factories, and transportation systems.
- 3-4.7 Summarize the effects of Reconstruction in South Carolina, including the development of public education, racial advancements and tensions, and economic changes.

GRADE 3: SOUTH CAROLINA STUDIES

Standard 3-5: The student will demonstrate an understanding of the major developments in South Carolina in the late nineteenth century and the twentieth century.

Indicators

- 3-5.1 Summarize developments in industry and technology in South Carolina in the late nineteenth century and the twentieth century, including the rise of the textile industry, the expansion of the railroad, and the growth of the towns.

3-5.2 Summarize the effects of the state and local laws that are commonly known as Jim Crow laws on African Americans in particular and on South Carolinians as a whole.

3-5.3 Summarize the changes in South Carolina's economy in the twentieth century, including the rise and fall of the cotton/textile markets and the development of tourism and other industries.

3-5.4 Explain the impact and the causes of emigration from South Carolina and internal migration from the rural areas to the cities, including unemployment, poor sanitation and transportation services, and the lack of electricity and other modern conveniences in rural locations.

3-5.5 Explain the effects of the Great Depression and the New Deal on daily life in South Carolina, including the widespread poverty and unemployment and the role of the Civilian Conservation Corps.

3-5.6 Summarize the key events and effects of the civil rights movement in South Carolina, including the desegregation of schools (*Briggs v. Elliott*) and other public facilities and the acceptance of African Americans' right to vote.

3-5.7 Summarize the rights and responsibilities that contemporary South Carolinians have in the schools, the community, the state, and the nation.

GRADE 4

GRADE 4: UNITED STATES STUDIES TO 1865

Standard 4-1: The student will demonstrate an understanding of the exploration of the New World.

Indicators

4-1.1 Explain the political, economic, and technological factors that led to the exploration of the New World by Spain, Portugal, and England, including the competition between nation-states, the expansion of international trade, and the technological advances in shipbuilding and navigation.

4-1.2 Summarize the motivation and accomplishments of the Vikings and the Portuguese, Spanish, English, and French explorers, including Leif Eriksson, Christopher Columbus, Hernando de Soto, Ferdinand Magellan, Henry Hudson, John Cabot, and Robert LaSalle.

4-1.3 Use a map to identify the routes of various sea and land expeditions to the New World and match these to the territories claimed by different nations—including the Spanish dominance in South America and the French, Dutch, and English exploration in North America—and summarize the discoveries associated with these expeditions.

4-1.4 Explain the exchange of plant life, animal life, and disease that resulted from exploration of the New World, including the introduction of wheat, rice, coffee, horses, pigs, cows, and chickens to the Americas; the introduction of corn, potatoes, peanuts, and squash to Europe; and the effects of such diseases as diphtheria, measles, smallpox, and malaria on Native Americans.

GRADE 4: UNITED STATES STUDIES TO 1865

Standard 4-2: The student will demonstrate an understanding of the settlement of North America by Native Americans, Europeans, and African Americans and the interactions among these peoples.

Indicators

4-2.1 Use the land bridge theory to summarize and illustrate the spread of Native American populations.

4-2.2 Compare the everyday life, physical environment, and culture of the major Native American cultural groupings, including Eastern Woodlands, Southeastern, Plains, Southwestern, and Pacific Northwestern.

4-2.3 Identify the English, Spanish, and French colonies in North America and summarize the motivations for the settlement of these colonies, including freedom of worship, and economic opportunity.

4-2.4 Compare the European settlements in North America in terms of their economic activities, religious emphasis, government, and lifestyles.

4-2.5 Summarize the introduction and establishment of slavery in the American colonies, including the role of the slave trade; the nature of the Middle Passage; and the types of goods—rice, indigo, sugar, tobacco, and rum, for example—that were exchanged among the West Indies, Europe, and the Americas.

4-2.6 Explain the impact of indentured servitude and slavery on life in the New World and the contributions of African slaves to the development of the American colonies, including farming techniques, cooking styles, and languages.

4-2.7 Explain how conflicts and cooperation among the Native Americans, Europeans, and Africans influenced colonial events including the French and Indian Wars, slave revolts, Native American wars, and trade.

GRADE 4: UNITED STATES STUDIES TO 1865

Standard 4-3: The student will demonstrate an understanding of the conflict between the American colonies and England.

Indicators

4-3.1 Explain the political and economic factors leading to the American Revolution, including the French and Indian War; British colonial policies such as the Stamp Act, the Tea Act, and the so-called Intolerable Acts; and the American colonists' early resistance through boycotts, congresses, and petitions.

4-3.2 Summarize the roles of principal American, British, and European leaders involved in the conflict, including King George III, George Washington, Benjamin Franklin, Thomas Jefferson, John Adams, Thomas Paine, Patrick Henry, and the Marquis de Lafayette.

4-3.3 Explain the major ideas and philosophies of government reflected in the Declaration of Independence.

4-3.4 Summarize the events and key battles of the Revolutionary War, including Lexington and Concord, Bunker (Breed's) Hill, Charleston, Saratoga, Cowpens, and Yorktown.

4-3.5 Explain how the aid received from France, the Netherlands, and the alliances with Native American nations contributed to the American victory in the Revolutionary War.

4-3.6 Compare the daily life and roles of diverse groups of Americans during and after the Revolutionary War, including roles taken by women and African Americans such as Martha Washington, Mary Ludwig Hays McCauley (Molly Pitcher), Abigail Adams, Crispus Attucks, and Peter Salem.

4-3.7 Explain the effects of the American Revolution on African Americans and Native Americans, including how the war affected attitudes about slavery and contributed to the

inclusion of abolition in early state constitutions and how the Land Ordinance of 1785 and the Northwest Ordinance of 1787 that were developed by Congress influenced the future of Native Americans.

GRADE 4: UNITED STATES STUDIES TO 1865

Standard 4-4: The student will demonstrate an understanding of the beginnings of America as a nation and the establishment of the new government.

Indicators

4-4.1 Compare the ideas in the Articles of Confederation with those in the United States Constitution, including how powers are now shared between state and national government and how individuals and states are represented in the national congress.

4-4.2 Classify government activities according to the three branches of government established by the United States Constitution and give examples of the checks and balances that the Constitution provides among the branches.

4-4.3 Explain the role of the Bill of Rights in the ratification of the Constitution, including how the Constitution serves to guarantee the rights of the individual and protect the common good yet also to limit the powers of government.

4-4.4 Compare the roles and accomplishments of early leaders in the development of the new nation, including George Washington, John Adams, Thomas Jefferson, Alexander Hamilton, John Marshall, and James Madison.

4-4.5 Provide examples of how American constitutional democracy places important responsibilities on citizens to take an active role in the civil process.

4-4.6 Illustrate how the ideals of equality as described in the Declaration of Independence were slow to take hold as evident in the Three-Fifths Compromise and the Fugitive Slave Acts.

4-4.7 Compare the social and economic differences of the two political parties that began to form in the 1790s, led by Alexander Hamilton and Thomas Jefferson.

GRADE 4: UNITED STATES STUDIES TO 1865

Standard 4-5: The student will demonstrate an understanding of the westward movement and its impact on the institution of slavery.

Indicators

4-5.1 Summarize the major expeditions and explorations that played a role in westward expansion—including those of Daniel Boone, Lewis and Clark, and Zebulon Pike—and compare the geographic features of areas explored.

4-5.2 Explain the motives for the exploration in the West and the push for westward expansion, including the concept of manifest destiny, economic opportunities in trade, and the availability of rich land.

4-5.3 Summarize the events that led to key territorial acquisitions—including the Louisiana Purchase, the Florida Purchase, the Northwest Territory treaty, the annexation of Texas, and the Mexican Cession—as well as the motives for these acquisitions and the location and geographic features of the lands acquired.

4-5.4 Explain how territorial expansion and related land policies affected Native Americans, including their resistance to Americans' taking over the land, breaking treaties, and massacring the Native American people; the Indian Removal Act of 1830; and the Seminole Wars.

4-5.5 Use a map to illustrate patterns of migration and trade during the period of westward expansion, including the Santa Fe and the Oregon trails.

4-5.6 Compare the experiences of different groups who migrated and settled in the West, including their reasons for migrating, their experiences on the trails and at their destinations, the cooperation and conflict between and among the different groups, and the nature of their daily lives.

4-5.7 Explain how specific legislation and events affected the institution of slavery in the territories, including the Northwest Ordinance of 1787, the Missouri Compromise, the annexation of Texas, the Compromise of 1850, the Kansas-Nebraska Act, and the Dred Scott decision.

GRADE 4: UNITED STATES STUDIES TO 1865

Standard 4-6: The student will demonstrate an understanding of the Civil War and its impact on America.

Indicators

4-6.1 Compare the industrial North and the agricultural South prior to the Civil War, including the specific nature of the economy of each region, the geographic characteristics and boundaries of each region, and the basic way of life in each region.

4-6.2 Summarize the roles and accomplishments of the leaders of the abolitionist movement and the Underground Railroad before and during the Civil War, including those of Harriet Tubman, John Brown, Frederick Douglass, Harriet Beecher Stowe, Sojourner Truth, and William Lloyd Garrison.

4-6.3 Explain how specific events and issues led to the Civil War, including the sectionalism fueled by issues of slavery in the territories, states' rights, the election of 1860, and secession.

4-6.4 Summarize significant key battles, strategies, and turning points of the Civil War—including the battles of Fort Sumter and Gettysburg, the Emancipation Proclamation, the significance of the Gettysburg Address, and the surrender at Appomattox—and the role of African Americans in the War.

4-6.5 Compare the roles and accomplishments of key figures of the Civil War, including Abraham Lincoln, Ulysses S. Grant, Jefferson Davis, and Robert E. Lee.

4-6.6 Explain the impact of the Civil War on the nation, including its effects on the physical environment and on the people—soldiers, women, African Americans, and the civilian population of the nation as a whole.

GRADE 5

GRADE 5: UNITED STATES STUDIES: 1865 TO THE PRESENT

Standard 5-1: The student will demonstrate an understanding of Reconstruction and its impact on racial relations in the United States.

Indicators

5-1.1 Summarize the aims of Reconstruction and explain the effects of Abraham Lincoln's assassination on the course of Reconstruction.

5-1.2 Summarize the provisions of the Thirteenth, Fourteenth, and Fifteenth Amendments to the Constitution, including how the amendments protected the

rights of African Americans and sought to enhance their political, social, and economic opportunities.

5-1.3 Explain the effects of Reconstruction on African Americans, including their new rights and restrictions, their motivations to relocate to the North and the West, and the actions of the Freedmen's Bureau.

5-1.4 Compare the economic and social effects of Reconstruction on different populations, including the move from farms to factories and the change from the plantation system to sharecropping.

5-1.5 Explain the purpose and motivations behind the rise of discriminatory laws and groups and their effect on the rights and opportunities of African Americans in different regions of the United States.

GRADE 5: UNITED STATES STUDIES: 1865 TO THE PRESENT

Standard 5-2: The student will demonstrate an understanding of the continued westward expansion of the United States.

Indicators

5-2.1 Explain how aspects of the natural environment—including the principal mountain ranges and rivers, terrain, vegetation, and climate of the region—affected travel to the West and thus the settlement of that region.

5-2.2 Illustrate the effects of settlement on the environment of the West, including changes in the physical and human systems.

- 5-2.3 Summarize how railroads affected development of the West, including their ease and inexpensiveness for travelers and their impact on trade and the natural environment.
- 5-2.4 Provide examples of conflict and cooperation between occupational and ethnic groups in the West, including miners, ranchers, and cowboys; Native Americans and Mexican Americans; and European and Asian immigrants.
- 5-2.5 Explain the social and economic effects of the westward expansion on Native Americans, including changes in federal policies, armed conflicts, opposing views concerning land ownership, and Native American displacement.

GRADE 5: UNITED STATES STUDIES: 1865 TO THE PRESENT

Standard 5-3: The student will demonstrate an understanding of major domestic and foreign developments that contributed to the United States' becoming a world power.

Indicators

- 5-3.1 Explain how the Industrial Revolution was furthered by new inventions and technologies, including new methods of mass production and transportation and the invention of the light bulb, the telegraph, and the telephone.
- 5-3.2 Identify prominent inventors and scientists of the period and summarize their inventions or discoveries, including Thomas Edison, Alexander Graham Bell, the Wright Brothers, and Albert Einstein.
- 5-3.3 Explain the effects of immigration and urbanization on the American economy during the Industrial Revolution, including the role of immigrants in the work

force and the growth of cities, the shift from an agrarian to an industrial economy, and the rise of big business.

- 5-3.4 Summarize the significance of large-scale immigration and the contributions of immigrants to America in the early 1900s, including the countries from which they came, the opportunities and resistance they faced when they arrived, and the cultural and economic contributions they made to this nation.
- 5-3.5 Explain how building cities and industries led to progressive reforms, including labor reforms, business reforms, and Prohibition.
- 5-3.6 Summarize actions by the United States that contributed to the rise of this nation as a world power, including the annexation of new territory following the Spanish-American War and the role played by the United States in the building of the Panama Canal and in World War I.

GRADE 5: UNITED STATES STUDIES: 1865 TO THE PRESENT

Standard 5-4: The student will demonstrate an understanding of the economic boom-and-bust in America in the 1920s and 1930s, its resultant political instability, and the subsequent worldwide response.

Indicators

- 5-4.1 Summarize changes in daily life in the boom period of the 1920s, including the improved standard of living; the popularity of new technology such as automobiles, airplanes, radio, and movies; the Harlem Renaissance and the Great Migration; Prohibition; and racial and ethnic conflict.

- 5-4.2 Summarize the stock market crash of 1929 and the Great Depression, including economic weakness, unemployment, failed banks and businesses, and migration from rural areas.
- 5-4.3 Explain the immediate and lasting effect on American workers caused by innovations of the New Deal, including the Social Security Act, the Federal Deposit Insurance Corporation, and the Civilian Conservation Corps.
- 5-4.4 Explain the principal events related to the United States' involvement in World War II—including the bombing of Pearl Harbor, the invasion in Normandy, Pacific island hopping, the bombing of Hiroshima and Nagasaki—and the role of key figures in this involvement such as Winston Churchill, Franklin D. Roosevelt, Joseph Stalin, and Adolf Hitler.
- 5-4.5 Summarize the political and social impact of World War II, including changes in women's roles, in attitudes toward Japanese Americans, and in nation-state boundaries and governments.
- 5-4.6 Summarize key developments in technology, aviation, weaponry, and communication and explain their effect on World War II and the economy of the United States.
- 5-4.7 Explain the effects of increasing worldwide economic interdependence following World War II, including how interdependence between and among nations and regions affected economic productivity, politics, and world trade.

GRADE 5: UNITED STATES STUDIES: 1865 TO THE PRESENT

Standard 5-5: The student will demonstrate an understanding of the social, economic, and political events that influenced the United States during the Cold War era.

Indicators

- 5-5.1 Summarize the impact of cultural developments in the United States following World War II, including the significance of pop culture and mass media and the population shifts to the suburbs.
- 5-5.2 Summarize changes in the United States economy following World War II, including the expanding job market and service industry, consumerism, and new technology.
- 5-5.3 Explain the advancement of the civil rights movement in the United States, including key events and people: desegregation of the armed forces, *Brown v. Board of Education*, Martin Luther King Jr., Rosa Parks, and Malcolm X.
- 5-5.4 Explain the course of the Cold War, including differing economic and political philosophies of the Union of Soviet Socialist Republics (USSR) and the United States, the spread of Communism, McCarthyism, the Korean Conflict, the Berlin Wall, the space race, the Cuban missile crisis, and the Vietnam War.
- 5-5.5 Explain the political alliances and policies that impacted the United States in the latter part of the twentieth century, including the North Atlantic Treaty Organization (NATO), the United Nations, and the Organization of Petroleum Exporting Countries (OPEC).

GRADE 5: UNITED STATES STUDIES: 1865 TO THE PRESENT

Standard 5-6: The student will demonstrate an understanding of developments in the United States since the fall of the Soviet Union and its satellite states in 1992.

Indicators

- 5-6.1 Use a map to identify the regions of United States political involvement since the fall of the communist states, including places in the Middle East, Central America, the Caribbean, Africa, the Balkans in Europe, and Asia.
- 5-6.2 Explain how humans change the physical environment of regions and the consequences of such changes, including use of natural resources and the expansion of transportation systems.
- 5-6.3 Explain how technological innovations have changed daily life in the United States since the early 1990s, including changes in the economy and the culture that were brought about by computers, electronics, satellites, and mass communication systems.
- 5-6.4 Identify examples of cultural exchange between the United States and other countries that illustrate the importance of popular culture and the influence of American popular culture in other places in the world, including music, fashion, food, and movies.
- 5-6.5 Summarize the changes that have taken place in United States foreign policy since 1992, including the globalization of trade and the war on terrorism.
- 5-6.6 Compare the position of the United States on the world stage following World War I, World War II, and the collapse of the communist states.

GRADE 6

GRADE 6: ANCIENT CULTURES TO 1600

Standard 6-1: The student will demonstrate an understanding of the transition of humans from nomadic to settled life in the cradles of civilization.

Indicators

- 6-1.1 Analyze the hunter-gatherer communities in regard to their geographic, social, and cultural characteristics, including adaptation to the natural environment.
- 6-1.2 Explain the emergence of agriculture and its effect on early human communities, including the impact of irrigation techniques and the domestication of plants and animals.
- 6-1.3 Use maps, globes, and models in explaining the role of the natural environment in shaping early civilizations, including the role of the river systems of the Nile (Egyptian), Tigris-Euphrates (Sumerian, Babylonian, Phoenician), Huang He (Chinese), and Indus (Harappan); the relationship of landforms, climate, and natural resources to trade and other economic activities and trade; and the ways that different human communities adapted to the environment.
- 6-1.4 Compare the cultural, social, and political features and contributions of civilizations in the Tigris and Euphrates, Nile, Indus, and Huang He river valleys, including the evolution of language and writing systems, architecture, religious traditions and forms of social order, the division or specialization of labor, and the development of different forms of government.

- 6-1.5 Explain the role of economics in the development of early civilizations, including the significance and geography of trade networks and the agriculture techniques that allowed for an economic surplus and the emergence of city centers.

GRADE 6: ANCIENT CULTURES TO 1600

Standard 6-2: The student will demonstrate an understanding of life in ancient classical civilizations and their contributions to the modern world.

Indicators

- 6-2.1 Compare the origins, founding leaders, basic principles, and diffusion of major religions and philosophies as they emerged and expanded, including Judaism, Christianity, Islam, Buddhism, Hinduism, Confucianism, and Taoism.
- 6-2.2 Summarize the significant political and cultural features of the classical Greek civilization, including the concept of citizenship and the early forms of democratic government in Athens; the role of Alexander the Great as a political and military leader; and the contributions of Socrates, Plato, Archimedes, Aristotle, and others in philosophy, architecture, literature, the arts, science, and mathematics.
- 6-2.3 Summarize the significant political and cultural features of the classical Roman civilization, including its concepts of citizenship, law, and government; its contributions to literature and the arts; and its innovations in architecture and engineering such as roads, arches and keystones, and aqueducts.

- 6-2.4 Explain the expansion and the decline of the Roman Empire, including the political and geographic reasons for its growth, the role of Julius Caesar and Augustus, and the internal weaknesses and external threats that contributed to the Empire's decline.
- 6-2.5 Summarize the significant features of the classical Indian civilization, including the caste system and contributions to the modern world in literature, the arts, and mathematics.
- 6-2.6 Summarize the significant features of the classical Chinese civilization, including the Silk Road and contributions to the modern world such as gunpowder, paper, silk, and the seismograph.

GRADE 6: ANCIENT CULTURES TO 1600

Standard 6-3: The student will demonstrate an understanding of the Middle Ages and the emergence of the nation-states.

Indicators

- 6-3.1 Explain feudalism and its relationship to the development of European nation states and monarchies, including feudal relationships, the daily lives of peasants and serfs, the economy under the feudal/manorial system, and the fact that feudalism helped monarchs centralize power.
- 6-3.2 Explain the development of English government and legal practices, including the principles of the Magna Carta, its effect on the feudal system, and its contribution to the development of representative government in England.

- 6-3.3 Summarize the course of the Crusades and explain their effects, including their role in spreading Christianity and in introducing Asian and African ideas and products to Europe.
- 6-3.4 Explain the influence of the Roman Catholic Church in Europe, including its role in spreading Christianity and the fact that monasteries affected education and the arts by founding universities and preserving ancient language and learning.
- 6-3.5 Use a map to illustrate the origins and the spread of the bubonic plague through Central Asia, China, the Middle East, and Europe and explain the impact of the plague on society, including the plague's effect on people's daily lives, its role in bringing an end to the feudal system, and its impact on the global population.
- 6-3.6 Explain the contributions that the Byzantine Empire made to the world, including the Justinian Code and the preservation of ancient Greek and Roman learning and traditions, architecture, and government.

GRADE 6: ANCIENT CULTURES TO 1600

Standard 6-4: The student will demonstrate an understanding of changing political, social, and economic cultures in Europe, Asia, Africa, and the Americas.

Indicators

- 6-4.1 Compare the features and major contributions of the African civilizations of Ghana, Mali, and Songhai, including the influence of geography on their growth and the impact of Islam and Christianity on their cultures.

- 6-4.2 Summarize the features and major contributions of China, including its golden age of art and literature, the invention of gunpowder and woodblock printing, and commercial expansion and the rise of trade.
- 6-4.3 Summarize the features and major contributions of the Japanese civilization, including the Japanese feudal system, the Shinto traditions, and contributions in literature and the arts.
- 6-4.4 Compare the significant political, social, geographic, and economic features and the contributions of the Aztecan, Mayan, and Incan civilizations, including their forms of government and their contributions in mathematics, astronomy, and architecture.
- 6-4.5 Summarize the characteristics of the Islamic civilization and the geographic aspects of its expansion.

GRADE 6: ANCIENT CULTURES TO 1600

Standard 6-5: The student will demonstrate an understanding of the development and the impact of the Renaissance and the Reformation on Europe and rest of the world.

Indicators

- 6-5.1 Summarize the origins of the Renaissance and its spread throughout Europe, including interaction between Europeans and Muslims during the Crusades, political and economic changes, developments in commerce, and intellectual and artistic growth.
- 6-5.2 Summarize the features and contributions of the Italian Renaissance, including the importance of Florence and the accomplishments the Italians in art, music, literature, and architecture.

- 6-5.3 Explain the significance of humanism and the revival of classical learning in daily life during the Renaissance, including the effect of humanism on education, art, religion, and government.
- 6-5.4 Identify the key figures of the Renaissance and the Reformation and their contributions, including Leonardo da Vinci, Michelangelo, Johannes Gutenberg, John Calvin, and Martin Luther.
- 6-5.5 Provide examples of developments in the Renaissance that had a lasting impact on culture, politics, and government in Europe, including advances in printing technology and improved understanding of anatomy and astronomy.
- 6-5.6 Explain the principal causes and key events of the Reformation, including conflicts surrounding the Roman Catholic Church, the main points of theological differences, the regional patterns of the religious affiliations involved, and the key events and figures of the Counter Reformation.

GRADE 6: ANCIENT CULTURES TO 1600

Standard 6-6: The student will demonstrate an understanding of the age European exploration and settlement in the New World.

Indicators

- 6-6.1 Use a map to illustrate the principal routes of exploration and trade between Europe, Asia, Africa, and the Americas during the age of European exploration.
- 6-6.2 Compare the incentives of the various European countries to explore and settle new lands.

6-6.3 Illustrate the exchange of plants, animals, diseases, and technology throughout Europe, Asia, Africa, and the Americas (known as the Columbian Exchange), and explain the effect on the people of these regions.

GRADE 7

GRADE 7: CONTEMPORARY CULTURES: 1600 TO THE PRESENT

Standard 7-1: The student will demonstrate an understanding of the colonial expansion of European powers and their impact on world government in the seventeenth and eighteenth centuries.

Indicators

7-1.1 Use a map or series of maps to identify the colonial expansion of European powers in Africa, Asia, Oceania, and the Americas through 1770.

7-1.2 Explain how technological and scientific advances, including navigational advances and the use of gunpowder, affected various parts of the world politically, socially, and economically and contributed to the power of European nations.

7-1.3 Compare how European nations exercised political and economic influence differently in the Americas, including trading-post empires, plantation colonies, and settler colonies.

7-1.4 Summarize the characteristics of European colonial power and explain its effects on the society and culture of African nations, including instances of participation in and resistance to the slave trade.

7-1.5 Summarize the characteristics of European colonial powers in Asia and their effects on the society and culture of Asia, including global trade patterns and the spread of various religions.

7-1.6 Explain the emergence of capitalism, including the significance of mercantilism, a developing market economy, an expanding international trade, and the rise of the middle class.

GRADE 7: CONTEMPORARY CULTURES: 1600 TO THE PRESENT

Standard 7-2: The student will demonstrate an understanding of the concept of absolute monarchies and constitutional government in the seventeenth and eighteenth centuries.

Indicators

7-2.1 Summarize the essential characteristics of the limited government in England following the Glorious Revolution and the unlimited governments in France and Russia, including some of the restraints placed upon a limited government's power and how authoritarian and totalitarian systems are considered unlimited governments.

7-2.2 Summarize the ideas of the Enlightenment that influenced democratic thought and social institutions throughout the world, including the political philosophies of John Locke, Jean-Jacques Rousseau, and Baron de Montesquieu.

7-2.3 Outline the role and purposes of a constitution, including such functions as defining a relationship between a people and their government, describing the organization of government and the characteristics of shared powers, and protecting individual rights and promoting the common good.

GRADE 7: CONTEMPORARY CULTURES: 1600 TO THE PRESENT

Standard 7-3: The student will demonstrate an understanding of political, social, and economic upheavals that occurred throughout the world during the age of revolution, from 1770 through 1848.

Indicators

7-3.1 Summarize the achievements and contributions of the scientific revolution, including its roots, the development of the scientific method, and the interaction between scientific thought and traditional religious beliefs.

7-3.2 Explain the causes, key ideas, and effects of the French Revolution, including the influence of ideas from the American Revolution and the Enlightenment and ways that the Revolution changed social conditions in France and the rest of Europe.

7-3.3 Compare the development of Latin American independence movements, including the Haitian revolution, the role of Simón Bolívar in different independence movements, and the role of Father Miguel Hidalgo in the Mexican Revolution of 1810.

7-3.4 Explain the causes and course of the Industrial Revolution in Europe, Japan, and the United States, including the reasons that England was the first nation to industrialize, the impact of the growth of population and the rural-to-urban migration, the changes in the organization of work and labor, and the development of socialism.

7-3.5 Explain the impact of the new technology that emerged during the Industrial Revolution, including changes that promoted the industrialization of textile production in England and the impact of interchangeable parts and mass production.

7-3.6 Compare the emergence of nationalist movements across Europe in the nineteenth century, including the unification of Italy, the unification of Germany, and Napoleon’s role in the spreading of nationalism.

GRADE 7: CONTEMPORARY CULTURES: 1600 TO THE PRESENT

Standard 7-4: The student will demonstrate an understanding of the impact of imperialism throughout the world in the late nineteenth and early twentieth centuries.

Indicators

7-4.1 Summarize the economic origins of European imperialism, including the conflicts among European nations as they competed for raw materials and markets and for the establishment of colonies in Africa, Asia, and Oceania.

7-4.2 Use a map to illustrate the geographic extent of European imperialism in various regions, including Africa, Asia, the Middle East, South America, Australia, New Zealand, Siberia, and Canada.

7-4.3 Explain the causes and effects of the Spanish-American War and its reflection of the United States’ interest in imperial expansion, including this nation’s acquisition of the Philippines, Puerto Rico, and Guam; its temporary occupation of Cuba; and its rise as a world power.

7-4.4 Compare differing views with regard to colonization and the reactions of people under colonial rule in the late nineteenth and early twentieth centuries, including the Zulu War, the Sepoy Rebellion, and the Boxer Rebellion.

7-4.5 Summarize the significant features and explain the causes of Japan's imperial expansion in East Asia, including the defeat of the Russians in the Russo-Japanese War, the reasons for the expansion in Korea and Manchuria, and the rise of Japan as a world power.

GRADE 7: CONTEMPORARY CULTURES: 1600 TO THE PRESENT

Standard 7-5: The student will demonstrate an understanding of the causes and effects of world conflicts in the early twentieth century.

Indicators

7-5.1 Explain the causes and key events of World War I, including the rise of nationalism, ethnic and ideological conflicts in different regions, political and economic rivalries, the human costs of the mechanization of war, the Russian Revolution, and the entry of the United States into the War.

7-5.2 Explain the outcome and effects of World War I, including the conditions and failures of the League of Nations and the Treaty of Versailles and the effects of major treaties on population movement, the international economy, and shifts in borders.

7-5.3 Explain the worldwide depression that took place in the 1930s, including the economic crash of 1929 and political responses to the depression such as the New Deal in the United States, the rise of Nazism in Germany, and the economic retrenchment in Britain.

7-5.4 Summarize aspects of the rise of totalitarian governments in Germany, Italy, Japan, and the Soviet Union, including Fascist aggression and the responses of major powers and the rise of Joseph Stalin.

7-5.5 Explain the causes, key events, and outcomes of World War II, including the German, Italian, and Japanese drives for empire; the role of appeasement and isolationism in Europe and the United States; the major turning points of the war and the principal theaters of conflict; the importance of geographic factors; the roles of political leaders; and the human costs and impact of the war both on civilizations and on soldiers.

7-5.6 Summarize the Holocaust and its impact on European society and Jewish culture, including Nazi policies to eliminate the Jews and other minorities, the “Final Solution,” and the war crimes trials at Nuremberg.

GRADE 7: CONTEMPORARY CULTURES: 1600 TO THE PRESENT

Standard 7-6: The student will demonstrate an understanding of international developments in the post–World War II world, including the impact of the Cold War on the world.

Indicators

7-6.1 Summarize the political and economic transformation of Western and Eastern Europe after World War II, including the significance of the Truman Doctrine, the Marshall Plan, the North Atlantic Treaty Organization (NATO), the United Nations, the Warsaw Pact, and the European Economic Community (EEC).

7-6.2 Summarize the events of the Cold War, including the Soviet domination of Eastern Europe; the rise of the Communist party in China; the building of the Berlin wall; the economic and political competition for influence in Vietnam and Korea; the Cuban missile crisis; the revolutionary movements in Africa; the development of new military, nuclear, and space technology; and the threat of nuclear annihilation.

7-6.3 Explain the causes and major features of the political and social change that occurred in the Middle East in the post–World War II period, including the role of nationalism, the creation of the state of Israel, and ongoing conflicts in the region.

7-6.4 Compare features of nationalist and independence movements in different regions in the post–World War II period, including Mohandas Gandhi’s role in the nonviolence movement for India’s independence and the emergence of nationalist movements in African and Asian countries.

GRADE 7: CONTEMPORARY CULTURES: 1600 TO THE PRESENT

Standard 7-7: The student will demonstrate an understanding of the significant political, economic, geographic, scientific, technological, and cultural changes and advancements that took place throughout the world from the beginning of the twentieth century to the present day.

Indicators

7-7.1 Illustrate on a time line the events that contributed to the collapse of the Soviet Union and other communist governments in Europe, including economic failures and the emergence of new leaders.

7-7.2 Explain the significance and impact of the information, technological, and communications revolutions, including the role of television, satellites, computers, and the Internet.

7-7.3 Explain global influences on the environment, including the effects of increases in population, the growth of cities, and efforts by citizens and governments to protect the natural environment.

7-7.4 Summarize global efforts to advance human rights, including the United Nations' adoption and proclamation of the Universal Declaration of Human Rights, the end of colonialism by European nation-states, and the collapse of the apartheid system.

7-7.5 Compare the social, economic, and political opportunities for women in various nations and societies around the world, including those in developing and industrialized nations and within societies dominated by particular religions.

7-7.6 Explain the impact of increasing global economic interdependence in the late twentieth century and the early twenty-first century, including the significance of global communication, labor demands, and migration; the European Economic Community (EEC) and other trade agreements; and the oil crisis of the 1970s.

7-7.7 Summarize the dangers to the natural environment that are posed by population growth, urbanization, and industrialization.

GRADE 8

GRADE 8: SOUTH CAROLINA: ONE OF THE UNITED STATES

Standard 8-1: The student will demonstrate an understanding of the settlement of South Carolina and the United States by Native Americans, Europeans, and Africans.

Indicators

8-1.1 Summarize the culture, political systems, and daily life of the Native Americans of the Eastern Woodlands, including their methods of hunting and farming, their use of natural resources and geographic features, and their relationships with other nations.

8-1.2 Categorize events according to the ways they improved or worsened relations between Native Americans and European settlers, including alliances and land agreements between the English and the Catawba, Cherokee, and Yemassee; deerskin trading; the Yemassee War; and the Cherokee War.

8-1.3 Summarize the history of European settlement in Carolina from the first attempts to settle at San Miguel de Gualdape, Charlesfort, San Felipe, and Albemarle Point to the time of South Carolina's establishment as an economically important British colony, including the diverse origins of the settlers, the early government, the importance of the plantation system and slavery, and the impact of the natural environment on the development of the colony.

8-1.4 Explain the growth of the African American population during the colonial period and the significance of African Americans in the developing culture (e.g., Gullah) and economy of South Carolina, including the origins of African American slaves, the growth of the slave trade, the impact of population imbalance between African and European Americans, and the Stono Rebellion and subsequent laws to control the slave population.

8-1.5 Summarize the significant changes to South Carolina's government during the colonial period, including the proprietary regime and the period of royal government, and the significance of the Regulator movement.

8-1.6 Explain how South Carolinians used natural, human, and political resources to gain economic prosperity, including trade with Barbados, rice planting, Eliza Lucas Pinckney and indigo planting, the slave trade, and the practice of mercantilism.

8-1.7 Summarize the military and economic involvement of South Carolina in the French-British colonial rivalry.

GRADE 8: SOUTH CAROLINA: ONE OF THE UNITED STATES

Standard 8-2: The student will demonstrate an understanding of the American Revolution—the beginnings of the new American nation and South Carolina’s part in the development of that nation.

Indicators

8-2.1 Explain the interests and roles of South Carolinians in the events leading to the American Revolution, including the state’s reactions to the Stamp Act and the Tea Act; the role of Christopher Gadsden and the Sons of Liberty; and the role of the four South Carolina signers of the Declaration of Independence—Edward Rutledge, Arthur Middleton, Thomas Lynch Jr., and Thomas Heyward Jr.

8-2.2 Compare the perspectives and roles of different South Carolinians during the American Revolution, including those of political leaders, soldiers, partisans, Patriots, Tories/Loyalists, women, African Americans, and Native Americans.

8-2.3 Summarize the course and key conflicts of the American Revolution in South Carolina and its effects on the state, including the attacks on Charleston; the Battle of Camden; the partisan warfare of Thomas Sumter, Andrew Pickens, and Francis Marion; the Battle of Cowpens; and the Battle of Kings Mountain.

8-2.4 Summarize events related to the adoption of South Carolina’s first constitution, the role of South Carolina and its leaders in the Continental Congress, and the ratification of the United States Constitution, including Henry Laurens’s actions, Charles Pinckney’s role, and the importance of issues debated during the Philadelphia Convention for South Carolina.

8-2.5 Explain the economic and political tensions between the people of the Upcountry and the Lowcountry of South Carolina, including the economic struggles of both groups following the American Revolution, their disagreement over representation in the General Assembly and the location of the new capital city, and the transformation of the state's economy that was caused by the production of cotton and convinced Lowcountry men to share power with upcountry men.

GRADE 8: SOUTH CAROLINA: ONE OF THE UNITED STATES

Standard 8-3: The student will demonstrate an understanding of the American Civil War—its causes and effects and the major events that occurred during that time.

Indicators

8-3.1 Explain the importance of agriculture in antebellum South Carolina, including plantation life, slavery, and the impact of the cotton gin.

8-3.2 Explain the impact of key events leading to South Carolina's secession from the Union, including the nullification crisis and John C. Calhoun, the Missouri Compromise, the Tariff of 1832, the Compromise of 1850, the Kansas-Nebraska Act and subsequent armed conflict, the Dred Scott decision, the growth of the abolitionist movement, and the election of 1860.

8-3.3 Draw conclusions about how sectionalism arose from events or circumstances of racial tension, internal population shifts, and political conflicts, including the Denmark Vesey plot, slave codes, and the African American population majority.

8-3.4 Compare the attitudes of the unionists, cooperationists, and secessionists in South Carolina and summarize the reasons that the members of the South Carolina secession

convention in 1860 voted unanimously to secede from the Union, including concerns about states' rights and fears about abolition.

8-3.5 Compare the military strategies of the North and South with regard to specific events and geographic locations in South Carolina, including the capture of Port Royal, the Union blockade of Charleston, and Sherman's march through the state.

8-3.6 Compare the effects of the Civil War on daily life in South Carolina, including the experiences of plantation owners, women, Confederate and Union soldiers, African Americans, and children.

GRADE 8: SOUTH CAROLINA: ONE OF THE UNITED STATES

Standard 8-4: The student will demonstrate an understanding of the impact of Reconstruction on the people and government of South Carolina.

Indicators

8-4.1 Explain the purposes of Reconstruction with attention to the economic, social, political, and geographic problems facing the South, including reconstruction of towns, factories, farms, and transportation systems; the effects of emancipation; racial tension; tension between social classes; and disagreement over voting rights.

8-4.2 Summarize Reconstruction in South Carolina and its effects on daily life in South Carolina, including the experiences of plantation owners, small farmers, freedmen, women, and northern immigrants.

8-4.3 Summarize the events and the process that led to the ratification of South Carolina's constitution of 1868, including African American representation in the constitutional convention;

the major provisions of the constitution; and the political and social changes that allowed African Americans, Northerners, “carpetbaggers,” and “scalawags” to play a part in South Carolina state government.

8-4.4 Explain how events during Reconstruction improved opportunities for African Americans but created a backlash that, by the end of Reconstruction, negated the gains African Americans had made, including the philanthropy of northern aid societies, the assistance provided by the federal government such as the Freedmen’s Bureau, and their advancement in politics and education.

8-4.5 Summarize the successes and failures that occurred in South Carolina during Reconstruction, including the bribery of legislators, corruption in political parties, the development of public education, and violence during the election of 1876.

GRADE 8: SOUTH CAROLINA: ONE OF THE UNITED STATES

Standard 8-5: The student will demonstrate an understanding of major social, political, and economic developments that took place in the United States during the second half of the nineteenth century.

Indicators

8-5.1 Summarize the political, economic, and social conditions in South Carolina following the end of Reconstruction, including the leadership of Wade Hampton and the so-called Bourbons or Redeemers, agricultural depression and struggling industrial development, the impact of the temperance and suffrage movements, the development of the 1895 constitution, and the evolution of race relations and Jim Crow laws.

8-5.2 Compare key aspects of the Populist movement in South Carolina, including the economic and political roots of Populism, the leadership of Benjamin Tillman, conflicts between the Tillmanites and the Conservatives, the founding of land-grant colleges, and the increased racial conflicts and lynching.

8-5.3 Summarize the changes that occurred in South Carolina agriculture and industry during the late nineteenth century, including changes in crop production in various regions, and the growth of the textile industry in the Upcountry.

8-5.4 Compare migration patterns within South Carolina and in the United States as a whole in the late nineteenth century, including the population shift from rural to urban areas, migration between regions of the United States, the westward expansion, and the motivations for migration and settlement.

8-5.5 Summarize the human, agricultural, and economic costs of natural disasters and wars that occurred in South Carolina or involved South Carolinians in the late nineteenth century, including the Charleston earthquake of 1886, the hurricane of 1893, and the Spanish American War.

8-5.6 Explain the significance that the increased immigration into the United States in the late nineteenth century had for the state of South Carolina, including cultural and economic contributions of immigrants, opportunities and struggles experienced by immigrants, increased racial hostility, and the effect of racial and ethnic diversity on national identity.

GRADE 8: SOUTH CAROLINA: ONE OF THE UNITED STATES

Standard 8-6: The student will demonstrate an understanding of South Carolina's development during the early twentieth century.

Indicators

8-6.1 Summarize the progressive reform movement in South Carolina, including the motivation of progressives; child labor laws; Prohibition; improvements to roads, hospitals, and libraries; tax reforms; changes to local government systems; and the roles of significant state governors and women's groups.

8-6.2 Explain the impact of World War I on South Carolina, including the building of new military bases and the economic impact of emigration to industrial jobs in the North.

8-6.3 Summarize the political, social, and economic situation in South Carolina following World War I, including progress in suffrage for women, improvements in daily life in urban and rural areas, and changes in agriculture and industry.

8-6.4 Explain the causes and the effects of changes in South Carolina culture during the 1920s, including Prohibition, the boll weevil, the rise of mass media, increases in tourism and recreation, the revival of the Ku Klux Klan, and the Southern Literary Renaissance.

8-6.5 Explain the effects of the Great Depression and the lasting impact of New Deal programs on South Carolina, including the Rural Electrification Act, the Civilian Conservation Corps, Works Progress Administration and Public Works Administration building projects, the Social Security Act, and the Santee Cooper electricity project.

GRADE 8: SOUTH CAROLINA: ONE OF THE UNITED STATES

Standard 8-7: The student will demonstrate an understanding of South Carolina’s economic revitalization during World War II and the latter twentieth century.

Indicators

8-7.1 Summarize the significant aspects of the economic growth experienced by South Carolina during and following World War II, including the contributions of Governor Strom Thurmond in promoting economic growth; the creation of the State Development Board and the technical education system; the benefits of good road systems, a sea port, and the Savannah River site; and the scarcity of labor unions.

8-7.2 Provide examples of the expanding role of tourism in South Carolina’s economy, including the growth of resorts and development along the coast and the expanding transportation systems that allowed greater access to recreational sites.

8-7.3 Explain how the increased industrialization and mechanization, the reduction in cotton production, and the emigration of African Americans both resulted from and contributed to agricultural decline in South Carolina.

8-7.4 Explain the factors that influenced the economic opportunities of African American South Carolinians during the latter twentieth century, including racial discrimination, the *Briggs v. Elliott* case, the integration of public facilities and the civil rights movement, agricultural decline, and statewide educational improvement.

8-7.5 Explain the economic impact of twentieth century events on South Carolina, including the opening and closing of military bases, the development of industries, the influx of new citizens, and the expansion of port facilities.

HIGH SCHOOL

HIGH SCHOOL CORE AREA: GLOBAL STUDIES

Standard GS-1: The student will demonstrate an understanding of life in the classical civilizations and the contributions that these civilizations have made to the modern world.

Indicators

GS-1.1 Explain the influence of Athenian government and philosophy on other civilizations including the importance of Plato's *Republic* and the concepts of participatory government, citizenship, freedom, and justice.

GS-1.2 Summarize the essential characteristics of Roman civilization and explain their impact today, including the influence of other civilizations on Rome's development, the changes to Rome's political system over time, the economic structure of Roman trade and labor, and factors contributing to the decline of the empire.

GS-1.3 Explain the rise and growth of Christianity during the classical era, including patterns of expansion across continents, the effects of diffusion on religious beliefs and traditions, and the influence of Christianity on culture and politics.

GS-1.4 Explain the impact of religion in classical Indian civilization, including Hinduism and the effects of its beliefs and practices on daily life, changes that occurred as a result of Buddhist teachings, and the influence of religion on culture and politics.

HIGH SCHOOL CORE AREA: GLOBAL STUDIES

Standard GS-2: The student will demonstrate an understanding of the social, political, geographic, and economic changes that took place in Africa, Asia, Europe, and the Americas from the time of the Byzantine Empire through the Middle Ages.

Indicators

GS-2.1 Explain the influence of the Byzantine Empire, including the role the Empire played in preserving Hellenistic (Greek) and learning.

GS-2.2 Summarize the origins and expansion of Islam, including its basic beliefs, the emergence and the spread of an Islamic empire, the reasons for the split between Sunni and Shiite groups, and the changing role of women in the modern world.

GS-2.3 Summarize the economic, geographic, and social influences of trans-Saharan trade on Africa, including education and the growth of cities.

GS-2.4 Compare the origins and characteristics of the Mayan, Aztecan, and Incan civilizations, including their economic foundations, their political organization, their technological achievements, and their cultural legacies of art and architecture.

GS-2.5 Summarize the functions of feudalism and manorialism in medieval Europe, including the creation of nation-states as feudal institutions helped monarchies to centralize power and the evolution of the relationship between the secular states and Roman Catholic Church.

GS-2.6 Analyze the social, political, and economic upheaval and recovery that occurred in Europe during the Middle Ages, including the plague and the subsequent population decline, the predominance of religion and the impact of the Crusades, and the increasing interregional trade.

HIGH SCHOOL CORE AREA: GLOBAL STUDIES

Standard GS-3: The student will demonstrate an understanding of the influence of the Western world in the spread of new ideas that took place from the Renaissance through the eighteenth century.

Indicators

GS-3.1 Compare the impact of the Renaissance and the Reformation on life in Europe, including changes in the status of women, the revolution in art and architecture, the causes and effects of divisions in religious affiliation, and the presence of social oppression and conflict.

GS-3.2 Explain the long-term effects of political changes that occurred in Europe during the sixteenth, seventeenth, and eighteenth centuries, including the emergence of a strong monarchical form of government and the changes in the governments of England and France as they compare with one another.

GS-3.3 Summarize the origins and contributions of the scientific revolution.

GS-3.4 Explain the ways that Enlightenment ideas spread through Europe and their effect on European society, including the role of academies, salons, and publishing; the connection between the Enlightenment and the scientific revolution; and the political and cultural influence of thinkers such as John Locke, Voltaire, Jean-Jacques Rousseau, and Baron de Montesquieu.

HIGH SCHOOL CORE AREA: GLOBAL STUDIES

Standard GS-4: The student will demonstrate an understanding of the effects of the economic, geographic, and political interactions that took place throughout the world during the nineteenth century.

Indicators

GS-4.1 Explain the significant political, commercial, and cultural changes that took place in China in the nineteenth century, including the unification of Chinese culture and the motivations and effects of China's changing attitudes toward foreign trade and interaction.

GS-4.2 Explain the economic and cultural impact of European involvement on other continents during the era of European expansion.

GS-4.3 Compare the key elements of the revolutions that took place on the European and American continents in the nineteenth century, including social and political motivations for these revolutions and the changes in social organization that emerged following them.

GS-4.4 Explain the causes and effects of political, social, and economic transformation in Europe in the nineteenth century, including the significance of nationalism, the impact of industrialization for different countries, and the effects of democratization.

GS-4.5 Compare the political actions of European, Asian, and African nations in the era of imperial expansion, including the response of the Ottoman Empire to European commercial power, the motives and results of Russian expansion, the importance of British power in India, the collapse of Chinese government and society, the reasons for and the effects of Japan's transformation and expansion, and the resistance to imperialism.

HIGH SCHOOL CORE AREA: GLOBAL STUDIES

Standard GS-5: The student will demonstrate an understanding of the effects of economic, geographic, and political interactions that took place throughout the world during the early twentieth century.

Indicators

GS-5.1 Summarize the causes of World War I, including political and economic rivalries, ethnic and ideological conflicts, and nationalism and propaganda.

GS-5.2 Summarize the worldwide changes that took place following World War I, including the significance of the Russian Revolution; the rise of nationalist movements in India, Africa, and Southeast Asia; the revolutions and political change in China; and the creation of new states in Europe.

GS-5.3 Explain the impact of the Great Depression and political responses in Germany, Britain, and the United States, including Nazism, Fascism, retrenchment, and the New Deal.

GS-5.4 Explain the causes, key events, and outcomes of World War II, including the German, Italian, and Japanese drives for empire; the role of appeasement and isolationism in Europe and the United States; the major turning points of the War and the principal theaters of conflict; the importance of geographic factors during the War; and the political leaders during the time.

GS-5.5 Compare the ideologies and global effects of totalitarianism, Communism, Fascism, Nazism, and democracy in the twentieth century, including Lenin's adaptation of Marxism in Russia, the rise of Fascism and Nazism in Europe, and militarism in Japan prior to World War II.

GS-5.6 Exemplify the lasting impact of World War II, including the legacy of the Holocaust, the moral implications of military technologies and techniques such as the atomic bomb, the human costs of the war, and the establishment of democratic governments in European countries.

HIGH SCHOOL CORE AREA: GLOBAL STUDIES

Standard GS-6: The student will demonstrate an understanding of the effects of economic, geographic, and political interactions that have taken place throughout the world from the period of the Cold War to the present day.

Indicators

GS-6.1 Summarize the ideologies and global effects of Communism and democracy, including the effects of totalitarianism and Communism in China and the effects of Communism in Eastern Europe and Soviet Union.

GS-6.2 Summarize the worldwide effects of the Cold War, including the competition for power between the United States and the Soviet Union, the changing relationships between the Soviet Union and China, the response by popular culture, and the collapse of the communist states.

GS-6.3 Compare the challenges and successes of the movements toward independence and democratic reform in various regions following World War II, including the role of political ideology, religion, and ethnicity in shaping governments and the course of independence and democratic movements in Africa, Asia, and Latin America.

GS-6.4 Summarize the impact of economic and political interdependence on the world, including efforts to control population growth, economic imbalance and social inequality and efforts to address them, the significance of the world economy for different nations, and the influence of terrorist movements on politics in various countries.

**HIGH SCHOOL CORE AREA: UNITED STATES HISTORY AND THE
CONSTITUTION**

Standard USHC-1: The student will demonstrate an understanding of the settlement of North America.

Indicator

USHC-1.1 Summarize the distinct characteristics of each colonial region in the settlement and development of America, including religious, social, political, and economic differences.

HIGH SCHOOL CORE AREA: UNITED STATES HISTORY AND THE CONSTITUTION

Standard USHC-2: The student will demonstrate an understanding of the establishment of the United States as a new nation.

Indicators

USHC-2.1 Summarize the early development of representative government and political rights in the American colonies, including the influence of the British political system, the rule of law and the conflict between the colonial legislatures and the royal governors.

USHC-2.2 Explain the impact of the Declaration of Independence and the American Revolution on the American colonies and on the world at large.

USHC-2.3 Explain the development and effectiveness of the Articles of Confederation.

USHC-2.4 Summarize the creation of a new national government, including the new state constitutions, the country's economic crisis, the Founding Fathers and their debates at the Constitutional Convention, the impact of the Federalist Papers, and the subsequent ratification of the Constitution.

USHC-2.5 Analyze underlying political philosophies, the fundamental principles, and the purposes of the United States Constitution and the Bill of Rights, including the ideas behind the separation of powers and the system of checks and balances and the influence of the Magna Carta, the English Bill of Rights, and the colonial charters.

USHC-2.6 Compare differing economic and political views in the conflict between Thomas Jefferson and Alexander Hamilton that led to the emergence of the American two-party political system.

USHC-2.7 Summarize the origins and the evolution of the United States Supreme Court and the power it has today, including John Marshall's precedent-setting decisions such as that in *Marbury v. Madison*.

HIGH SCHOOL CORE AREA: UNITED STATES HISTORY AND THE CONSTITUTION

Standard USHC-3: The student will demonstrate an understanding of the westward movement and the resulting regional conflicts that took place in America in the nineteenth century.

Indicators

USHC-3.1 Explain the impact and challenges of westward movement, including the major land acquisitions, people's motivations for moving west, railroad construction, the displacement of Native Americans, and the its impact on the developing American character.

USHC-3.2 Explain how the Monroe Doctrine and the concept of manifest destiny affected United States' relationships with foreign powers, including the role of the Texas Revolution and the Mexican War.

USHC-3.3 Compare economic development in different regions of the country during the early nineteenth century, including agriculture in the South, industry and finance in the North, and the development of new resources in the West.

HIGH SCHOOL CORE AREA: UNITED STATES HISTORY AND THE CONSTITUTION

Standard USHC-4: The student will demonstrate an understanding of the causes and the course of the Civil War and Reconstruction in America.

Indicators

USHC-4.1 Compare the social and cultural characteristics of the North, the South, and the West during the antebellum period, including the lives of African Americans and social reform movements such as abolition and women's rights.

USHC-4.2 Explain how the political events and issues that divided the nation led to civil war, including the compromises reached to maintain the balance of free and slave states, the successes and failures of the abolitionist movement, the conflicting views on states' rights and federal authority, the emergence of the Republican Party and its win in 1860, and the formation of the Confederate States of America.

USHC-4.3 Outline the course and outcome of the Civil War, including the role of African American military units; the impact of the Emancipation Proclamation; and the geographic, political, and economic factors involved in the defeat of the Confederacy.

USHC-4.4 Summarize the effects of Reconstruction on the southern states and the roles of the Thirteenth, Fourteenth, and Fifteenth Amendments in that era.

USHC-4.5 Summarize the progress made by African Americans during Reconstruction and the subsequent reversals brought by Reconstruction's end, including the creation of the Freedmen's Bureau, gains in educational and political opportunity, and the rise of anti-African American factions and legislation.

HIGH SCHOOL CORE AREA: UNITED STATES HISTORY AND THE CONSTITUTION

Standard USHC-5: The student will demonstrate an understanding of major social, political, and economic developments that took place in the United States during the second half of the nineteenth century.

Indicators

USHC-5.1 Summarize developments in business and industry, including the ascent of new industries, the rise of corporations through monopolies and corporate mergers, the role of industrial leaders such as John D. Rockefeller and Andrew Carnegie, the influence of business ideologies, and the increasing availability of consumer goods and the rising standard of living.

USHC-5.2 Summarize the factors that influenced the economic growth of the United States and its emergence as an industrial power, including the abundance of natural resources; government support and protection in the form of tariffs, labor policies, and subsidies; and the expansion of international markets associated with industrialization.

USHC-5.3 Explain the transformation of America from an agrarian to an industrial economy, including the effects of mechanized farming, the role of American farmers in facing economic problems, and the rise of the Populist movement.

USHC-5.4 Analyze the rise of the labor movement, including the composition of the workforce of the country in terms of gender, race/ethnicity, and skills; working conditions for men, women, and children; and union protests and strikes and the government's reactions to these forms of unrest.

USHC-5.5 Explain the causes and effects of urbanization in late nineteenth-century America, including the movement from farm to city, the continuation of the women's suffrage movement, and the migration of African Americans to the North and the Midwest.

USHC-5.6 Explain the influx of immigrants into the United States in the late nineteenth century in relation to the specific economic, political, and social changes that resulted, including the growth of cities and urban ethnic neighborhoods, the restrictions on immigration that were imposed, and the immigrants' responses to the urban political machines.

USHC-5.7 Compare the accomplishments and limitations of the progressive movement in effecting social and political reforms in America, including the roles of Theodore Roosevelt, Jane Addams, W. E. B. DuBois, and Booker T. Washington.

HIGH SCHOOL CORE AREA: UNITED STATES HISTORY AND THE CONSTITUTION

Standard USHC-6: The student will demonstrate an understanding of foreign developments that contributed to the United States' emergence as a world power in the twentieth century.

Indicators

USHC-6.1 Analyze the development of American expansionism, including the change from isolationism to intervention, the rationales for imperialism based on Social Darwinism and expanding capitalism, and domestic tensions.

USHC-6.2 Explain the influence of the Spanish-American War on the emergence of the United States as a world power, including reasons for America's declaring war on Spain, United States interests and expansion in the South Pacific, debates between pro- and anti-imperialists over annexation of the Philippines, and changing worldwide perceptions of the United States.

USHC-6.3 Compare United States foreign policies in different regions of the world during the early twentieth century, including the purposes and effects of the Open Door policy with China, the United States role in the Panama Revolution, Theodore Roosevelt's "big stick diplomacy," William Taft's "dollar diplomacy," and Woodrow Wilson's "moral diplomacy."

USHC-6.4 Outline the causes and course of World War I, focusing on the involvement of the United States, including the effects of nationalism, ethnic and ideological conflicts, and Woodrow Wilson's leadership in the Treaty of Versailles and the League of Nations.

HIGH SCHOOL CORE AREA: UNITED STATES HISTORY AND THE CONSTITUTION

Standard USHC-7: The student will demonstrate an understanding of the economic boom-and-bust in America in the 1920s and 1930s, its resultant political instability, and the subsequent worldwide response.

Indicators

USHC-7.1 Explain the social, cultural, and economic effects of scientific innovation and consumer financing options in the 1920s on the United States and the world, including the advent of aviation, the expansion of mass production techniques, the invention of new home appliances, and the role of transportation in changing urban life.

USHC-7.2 Explain cultural responses to the period of economic boom-and-bust, including the Harlem Renaissance; new trends in literature, music, and art; and the effects of radio and movies.

USHC-7.3 Explain the causes and effects of the social conflict and change that took place during the 1920s, including the role of women and their attainment of the right to vote, the “Red Scare” and the Sacco and Vanzetti case, the resurgence of the Ku Klux Klan, immigration quotas, Prohibition, and the Scopes trial.

USHC-7.4 Explain the causes and effects of the stock market crash of 1929 and the Great Depression, including the disparity in incomes, limited government regulation, stock market speculation, and the collapse of the farm economy; wealth distribution, investment, and taxes; government policies and the Federal Reserve System; and the effects of the Depression on human beings and the environment.

USHC-7.5 Compare the first and second New Deals as responses to the economic bust of the Great Depression, including the rights of women and minorities in the workplace and the successes, controversies, and failures of recovery and reform measures such as the labor movement.

HIGH SCHOOL CORE AREA: UNITED STATES HISTORY AND THE CONSTITUTION

Standard USHC-8: The student will demonstrate an understanding of the impact of World War II on United States' foreign and domestic policies.

Indicators

USHC-8.1 Analyze the United States' decision to enter World War II, including the rise and aggression of totalitarian regimes in Italy under Benito Mussolini, in Germany under Adolf Hitler, and in Japan under Hideki Tojo; the United States' movement from a policy of isolationism to international involvement; and the Japanese attack on Pearl Harbor.

USHC-8.2 Summarize and illustrate on a time line the major events and leaders of World War II, including the Battle of the Bulge and the major battles at Midway, Normandy, Iwo Jima, and Okinawa; the turning points of the war for the Allies; the dropping of atomic bombs on Hiroshima and Nagasaki; and the roles of Franklin D. Roosevelt, Winston Churchill, Joseph Stalin, and Charles de Gaulle.

USHC-8.3 Summarize the impact of World War II and war mobilization on the home front, including war bond drives, rationing, the role of women and minorities in the workforce, and racial and ethnic tensions such as those caused by the internment of Japanese Americans.

USHC-8.4 Summarize the responses of the United States and the Allies to war crimes, including the Holocaust and war crimes trials.

USHC-8.5 Explain the lasting impact of the scientific and technological developments in America after World War II, including new systems for scientific research, medical advances, improvements in agricultural technology, and resultant changes in the standard of living and demographic patterns.

HIGH SCHOOL CORE AREA: UNITED STATES HISTORY AND THE CONSTITUTION

Standard USHC-9: The student will demonstrate an understanding of the social, economic, and political events that impacted the United States during the Cold War era.

Indicators

USHC-9.1 Explain the causes and effects of social and cultural changes in postwar America, including educational programs, expanding suburbanization, the emergence of the consumer culture, the secularization of society and the reemergence of religious conservatism, and the roles of women in American society.

USHC-9.2 Summarize the origins and course of the Cold War, including the containment policy; the conflicts in Korea, Africa, and the Middle East; the Berlin Airlift and the Berlin Wall; the Bay of Pigs and Cuban missile crisis; the nuclear arms race; the effects of the “Red Scare” and McCarthyism; and the role of military alliances.

USHC-9.3 Summarize the key events and effects of the Vietnam War, including the Gulf of Tonkin Resolution and the Tet offensive; the protests and opposition to the war; and the policies of presidents John Kennedy, Lyndon Johnson, and Richard Nixon.

USHC-9.4 Compare the domestic and foreign policies of the period—including Kennedy’s New Frontier, Johnson’s Great Society, and Nixon’s establishment of environmental protection and rapprochement with China—as well as relations with the Soviet Union and the continuing crises in the Middle East under all administrations from Harry Truman to Jimmy Carter.

USHC-9.5 Explain the movements for racial and gender equity and civil liberties, including their initial strategies, landmark court cases and legislation, the roles of key civil rights

advocates, and the influence of the civil rights movement on other groups seeking ethnic and gender equity.

HIGH SCHOOL CORE AREA: UNITED STATES HISTORY AND THE CONSTITUTION

Standard USHC-10: The student will demonstrate an understanding of developments in foreign policy and economics that have taken place in the United States since the fall of the Soviet Union and its satellite states in 1992.

Indicators

USHC-10.1 Summarize key events in United States foreign policy from the end of the Reagan administration to the present, including changes to Middle East policy, the impact of United States involvement in the Persian Gulf, and the rise of global terrorism.

USHC-10.2 Summarize key economic issues in the United States since the fall of communist states, including recession, the national debt and deficits, legislation affecting organized labor and labor unions, immigration, and increases in economic disparity.

HIGH SCHOOL CORE AREA: ECONOMICS

Standard ECON-1: The student will demonstrate an understanding of how scarcity and choice impact the economic activity of individuals, families, communities, and nations.

Indicators

ECON-1.1 Illustrate the relationship between scarcity—limited resources and unlimited human wants—and the economic choices made by individuals, families, communities, and nations, including how families must budget their income and expenses, how people use psychological and intellectual resources to deal with scarcity, and how local political entities as well as nation-states use scarce resources to satisfy human wants.

ECON-1.2 Explain the concept of opportunity costs and how individuals, families, communities, and nations make economic decisions on that basis, including analyzing marginal costs and marginal benefits and assessing how their choices may result in trade-offs.

ECON-1.3 Compare the four key factors of production—land, labor, capital, and entrepreneurship—and explain how they are used, including the specialization and division of labor that permits efficient use of scarce resources.

HIGH SCHOOL CORE AREA: ECONOMICS

Standard ECON-2: The student will demonstrate an understanding of markets and the role of supply and demand in determining price and resource allocation.

Indicators

ECON-2.1 Explain the law of supply and demand, including the relationships of critical determinants (e.g., consumer income, tastes, and preferences; technology; the price of inputs) and the effects of change on equilibrium, price, and quantity.

ECON-2.2 Explain the nature and role of competition in a market economy, including the determination of market price through competition among buyers and sellers and the conditions

that make industries more or less competitive, such as the effect of domestic and international competition and the quality, quantity, and price of products.

ECON-2.3 Explain economic incentives that lead to the efficient use of resources, including monetary and nonmonetary incentives, the ways in which people change their behavior in response to incentives, the relationship of incentives to the laws of supply and demand, and the role of private property as an incentive in conserving and improving scarce resources.

ECON-2.4 Explain the effect of shortages and surpluses in a market economy, including the effect of price controls (ceilings and floors) in causing shortages or surpluses, changes in the price of products as a result of surplus or shortage, and market mechanisms for eliminating shortages and surpluses and achieving market equilibrium.

HIGH SCHOOL CORE AREA: ECONOMICS

Standard ECON-3: The student will demonstrate an understanding of the sources of income and growth in a free-enterprise economy.

Indicators

ECON-3.1 Compare personal income distribution and functional income distribution, including how distribution of income affects public policy.

ECON-3.2 Explain the role of entrepreneurs in a market economy, including the costs and benefits of being an entrepreneur, the expectation of profit as the incentive for entrepreneurs to accept business risks, and the effect of changes in taxation and government regulation on entrepreneurial decisions.

ECON-3.3 Explain the causes and effects of economic growth, including the relationship between investment in human resources and in real capital, the alleviation of poverty, the increase in standards of living, and the creation of new employment opportunities.

HIGH SCHOOL CORE AREA: ECONOMICS

Standard ECON-4: The student will demonstrate an understanding of personal economic decision making to maximize the net benefits of personal income.

Indicators

ECON-4.1 Summarize types of personal economic decisions and choices that individuals make, including determining how to budget money; establishing short- and long-term financial goals and plans related to income, saving, and spending; utilizing loans and credit cards; and considering investment options.

ECON-4.2 Explain influences on personal economic decision making and choices, including the effect of education, career choices, and family obligations on future income; the influence of advertising on consumer choices; the risks and benefits involved in short- and long-term saving and investment strategies; and the effect of taxation and interest rates on household consumption and savings.

HIGH SCHOOL CORE AREA: ECONOMICS

Standard ECON-5: The student will demonstrate an understanding of the various economic institutions of a market economy.

Indicators

ECON-5.1 Compare the significant characteristics of a market economy with those of traditional and command economies, including differences in the roles of the government, individual firms, and households in decision making; types of economic institutions; the extent of consumer sovereignty/choice; and the role of private property rights, competition, and the profit motive.

ECON-5.2 Analyze the roles of and relationships among economic institutions in a market economy, including the banking system and its interaction with business firms and consumers, the economic circular flow model, the function of financial and securities markets, and the impact of labor unions on the American economy.

HIGH SCHOOL CORE AREA: ECONOMICS

Standard ECON-6: The student will demonstrate an understanding of the roles that federal, state, and local governments play in the operation of markets in the United States.

Indicators

ECON-6.1 Compare the various functions and roles of the government in the United States economy, including providing public goods, defining and enforcing property rights, correcting externalities and regulating markets, maintaining and promoting competition in the market, protecting consumers' rights, and redistributing income.

ECON-6.2 Summarize major sources of government revenue, including taxation at the federal, state, and local levels and tax revenues from personal income and payroll taxes, sales taxes, and property taxes.

HIGH SCHOOL CORE AREA: ECONOMICS

Standard ECON-7: The student will demonstrate an understanding of the national economy and economic policies in the United States.

Indicators

ECON-7.1 Compare measures of economic health, including the gross domestic product, consumer price indexes, personal income, disposable income, rates of inflation and deflation, and unemployment rates.

ECON-7.2 Explain the role of the money supply in a free-market economy, including various forms of the money supply in the United States and the effect of the banking system on the money supply.

ECON-7.3 Explain the purposes and effects of fiscal and monetary policies, including the structure and function of the Federal Reserve System and policies on unemployment, inflation, and economic growth.

ECON-7.4 Explain the types of goods and services that are funded with government revenues, including national defense, road construction and repair, public safety, health care, payments on the national debt, and education.

ECON-7.5 Contrast the costs and benefits of the American government's economic policies, including how policies designed to reduce unemployment may increase inflation and vice versa and how investment in factories, machinery, new technology, health education, and occupational training can raise standards of living.

HIGH SCHOOL CORE AREA: ECONOMICS

Standard ECON-8: The student will demonstrate an understanding of the principles of trade and economic development.

Indicators

ECON-8.1 Explain the basic principles of international trade, including the worldwide distribution of resources, the concept of absolute and comparative advantages that leads to specialization and trade, and the concepts of balance of trade and balance of payments that are used to measure international trade.

ECON-8.2 Summarize the outcomes of global trade, including gains made by individuals and nations through trade, increases in consumer choice and standard of living, and gains in production efficiency.

ECON-8.3 Compare the effects of unrestricted and restricted trade—including those of tariffs and quotas—on the economic and social interests of a nation-state.

ECON-8.4 Explain the basic concept of the foreign exchange market, including the operation of exchange rates and the effects of the dollar's gaining or losing value relative to other currencies.

ECON-8.5 Summarize global patterns of economic activity—including world trade partners, the geographic features of trade, and international political borders—and explain the impact of developing nations on the global economy.

HIGH SCHOOL CORE AREA: UNITED STATES GOVERNMENT

Standard USG-1: The student will demonstrate an understanding of the United States government—its origins and its functions.

Indicators

USG-1.1 Summarize arguments for the necessity and purpose of government and politics, including the idea that politics enables a group of people with diverse opinions and interests to reach collective decisions, the idea that government gives people the security they need in order to reach their full potential, and the idea that the purposes of government include enhancing economic prosperity and providing for national security.

USG-1.2 Summarize differing ideas about the purposes and functions of law, including the “rule of law” and the “rule of man” and the idea that the “rule of law” protects not only individual rights but also the common good and summarize the sources of laws, including nature, social customs, legislatures, religious leaders, and monarchs.

USG-1.3 Compare the characteristics of a limited and an unlimited government, including the idea that a civil society maintains a limited government: how a civil society provides the opportunity for individuals to associate for different purposes, how a civil society allows people to influence the government by means other than voting, how political and economic freedoms can limit government power, and how the government of a civil society differs from the governments in authoritarian and totalitarian regimes.

USG-1.4 Compare the characteristics and the advantages and disadvantages of confederal, federal, and unitary systems, including how power is distributed, shared, and limited in these systems.

USG-1.5 Compare the advantages and disadvantages of the ways in which power is distributed, shared, and limited to serve the purposes of constitutional government, including the criteria of effectiveness, the prevention of the abuse of power, and responsiveness to popular will.

USG-1.6 Analyze alternative forms of representation and the extent to which they serve the purposes of constitutional government, including arguments for and against representative government as distinguished from direct popular rule, common bases upon which representation has been established, different electoral systems, and differing theories of representation.

HIGH SCHOOL CORE AREA: GOVERNMENT

Standard USG-2: The student will demonstrate an understanding of the foundations of the American republic—its basic democratic principles and its political systems.

Indicators

USG-2.1 Summarize the basic principles of American democracy including popular sovereignty, the rule of law, the balance of power, the separation of powers, limited government, federalism, and representative government as expressed in the Declaration of Independence, the Federalist Papers, the Constitution, and the Bill of Rights.

USG-2.2 Explain philosophical influences on the development of American government, including the philosophy and practices of the Greeks and the Romans; the ideals of the Judeo-Christian tradition; and the ideas of such European thinkers as John Locke, Charles de Montesquieu, Thomas Hobbes, Niccolò Machiavelli, and Jean-Jacques Rousseau.

USG-2.3 Compare fundamental values, principles, and rights that are in conflict with one another in the American political system and the ways in which such conflicts are typically resolved, including conflicts that arise from diversity, conflicts between individual rights and social stability, and conflicts between liberty and equality.

USG-2.4 Summarize the significant ideals of the American republic, the discrepancy between those ideals and the realities of American society, and ways that such discrepancies might be reduced through social and political action.

USG-2.5 Explain factors that have shaped the distinctive characteristics of American society, including the belief in limited government, religious freedom, diversity of the population, and relative social equality.

HIGH SCHOOL CORE AREA: UNITED STATES GOVERNMENT

Standard USG-3: The student will demonstrate an understanding of the continuing role of the United States Constitution in the defining and shaping of American government and society.

Indicators

USG-3.1 Contrast the distribution of powers and responsibilities within the federal system, including the purpose, organization, and enumerated powers of the three branches; the workings of the Supreme Court; and the operation of the law-making process.

USG-3.2 Explain the organization and responsibilities of local and state governments, including the purposes and functions of state constitutions; reserved and concurrent powers in the states; the relationships among national, state, and local levels of government; and the structure and operation of South Carolina's government.

USG-3.3 Summarize the function of law in the American constitutional system, including the significance of the concept of the due process of law and the ways in which laws are intended to achieve fairness, the protection of individual rights, and the promotion of the common good.

USG-3.4 Summarize the process through which public policy is formed in the United States, including setting a public agenda and the role of political institutions, political parties, and special interest groups.

USG-3.5 Summarize features of the election process in the United States, including the roles of the political parties, the nomination process, the Electoral College, and the campaigns; the issues of campaign funding; and trends in voter turnout and citizen participation.

HIGH SCHOOL CORE AREA: UNITED STATES GOVERNMENT

Standard USG-4: The student will demonstrate an understanding of the United States' relations with other nation-states and its role in world affairs.

Indicators

USG-4.1 Summarize ways in which United States foreign policy is formulated and carried out, including current foreign policy issues and security interests; the impact of foreign policy on individual citizens; the influence and exchange of political ideas between nations; and America's contributions to the world in politics, environmentalism, technology, science, humanitarianism, and culture.

USG-4.2 Compare the roles of international organizations in world affairs, including the United Nations, the North Atlantic Treaty Organization (NATO), and the World Health Organization.

HIGH SCHOOL CORE AREA: UNITED STATES GOVERNMENT

Standard USG-5: The student will demonstrate an understanding of the concept of personal and civic rights and responsibilities and the role of the citizen in American democracy.

Indicators

USG-5.1 Classify the rights of United States citizens as personal, political, or economic and identify the significance and source of such rights and the conflicts that can arise when these rights are limited.

USG-5.2 Summarize commonly held personal and civic responsibilities and their significance in maintaining a democracy, including voting, serving as a juror, obeying the law, paying taxes, and serving in the military.

USG-5.3 Explain ways in which Americans can monitor and participate in politics and government, including engaging in political leadership or public service, analyzing and becoming informed about public issues and policy making, joining political parties and interest groups, voting, and volunteering in the community.

USG-5.4 Explain the process of naturalization in the United States, including naturalization laws and the criteria of length of residency, English language literacy, proof of character, knowledge of United States history, and support for the values and principles of American constitutional government.

USG-5.5 Summarize character traits that are important to the preservation and improvement of American democracy, including dispositions that encourage citizens to act as independent members of society, that foster respect for individual worth and human dignity, and that engage the citizen in public affairs.

PHYSICAL EDUCATION

RLOA's curriculum will be aligned with the Common Core State Standards, using the guidelines and goals of the SCDE for **PHYSICAL EDUCATION** set forth below. These goals are specific, measureable, attainable, realistic and timely so that every student can assess their mastery in a particular area and every teacher can evaluate their instruction.

Guideline #1

The student will demonstrate competence in motor skills and movement patterns needed to perform a variety of physical activities.

The intent of this guideline is the development of the physical skills needed to enjoy participation in physical activities. Mastering movement fundamentals establishes a foundation to facilitate continued motor skill acquisition and gives students the capacity for successful and advanced levels of performance to further the likelihood of participation on a daily basis. In the primary years, students develop maturity and versatility in the use of fundamental motor skills (e.g., running, skipping, throwing, striking) that are further refined, combined, and varied during the middle school years. These motor skills, now having evolved into specialized skills (e.g., a specific dance step, chest pass, catching with a glove, or the use of a specific tactic), are used in increasingly complex movement environments through the middle school years. On the basis of interest and ability, high school students select a few activities for regular participation within which more advanced skills are mastered. In preparation for adulthood, students acquire the skills to participate in a wide variety of leisure and work-related physical activities.

Guideline #2

The student will demonstrate understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performing of physical activities.

The intent of this guideline is the facilitation of learners' ability to use cognitive information to understand and enhance motor skill acquisition and performance. It enhances the ability to use the mind to control or direct one's performance. This includes the application of concepts from disciplines such as motor learning and development, sport psychology and sociology, and biomechanics and exercise physiology. It includes, for example, increasing force production through the summation of forces, knowing the effects of anxiety on performance, and understanding the principle of specificity of training. Knowledge of these concepts and principles and of how to apply them enhances the likelihood of independent learning and therefore more regular and effective participation in physical activity. In the lower elementary grades, emphasis is placed on establishing a movement vocabulary and applying introductory concepts. Through the upper elementary and middle school years, an emphasis is placed on applying and generalizing these concepts to real-life physical activity situations. In high school, emphasis is placed on students' independently and routinely using a wide variety of increasingly complex concepts. By graduation, the student has developed sufficient knowledge and ability to independently use his/her knowledge to acquire new skills while continuing to refine existing ones.

Guideline #3

The student will participate regularly in physical activity.

The intent of this guideline is the establishment of patterns of regular participation in meaningful physical activity. This standard connects what is done in the physical education class with the lives of students outside of the classroom. Although participation within the physical education class is important, what the student does outside the physical education class is critical to developing an active, healthy lifestyle that has the potential to help prevent a variety of health problems among future generations of adults. Students make use of the skills and knowledge learned in physical education class as they engage in regular physical activity outside of the physical education class. They demonstrate effective self-management skills that enable them to participate in physical activity on a regular basis. Voluntary participation often develops from the initial enjoyment that is derived from the activity coupled with the requisite skills needed for participation. As students develop an awareness of the relationships between activity and its immediate and identifiable effects on the body, regular participation in physical activity enhances the physical and psychological health of the body, social opportunities and relationships, and quality of life. Students are more likely to participate if they have opportunities to develop interests that are personally meaningful to them. Young children learn to enjoy physical activity yet also learn that a certain level of personal commitment and earnest work is required to reap the benefits from their participation. They partake in developmentally appropriate activities that help them develop movement competence and should be encouraged to participate in moderate to vigorous physical activity and unstructured play. As students mature, the structure of activity tends to increase and the opportunities for participation in different types of activity increase outside of the physical education class. Attainment of this standard encourages participation commensurate with contemporary recommendations regarding the type

of activity as well as the frequency, duration, and intensity of participation believed to support and sustain good health.

Guideline #4

The student will achieve and maintain a health-enhancing level of physical fitness.

The intent of this guideline is the development of students' knowledge, skills, and willingness to accept responsibility for personal fitness, leading to an active, healthy lifestyle. Students develop higher levels of basic fitness and physical competence as needed for many work situations and active leisure participation. Health-related fitness components include cardiorespiratory endurance [i.e., aerobic capacity], muscular strength and endurance, flexibility, and body composition. Expectations for improvement of students' fitness levels will be established on a personal basis, taking into account variation in entry levels and the long-term goal of achieving health-related levels of fitness based on criterion-referenced standards. For elementary children, the emphasis is on an awareness of fitness components and having fun while participating in health-enhancing activities that promote physical fitness. Middle school students gradually acquire a greater understanding of the fitness components, the ways each is developed and maintained, and the importance of each in overall fitness. Secondary students are able to design and develop an appropriate personal fitness program that enables them to achieve health-related levels of fitness.

Guideline #5

The student will exhibit responsible personal and social behavior that respects self and others in physical-activity settings.

The intent of this guideline is the achievement of self-initiated behaviors that promote personal and group success in activity settings. These include safe practices, adherence to rules and procedures, etiquette, cooperation and teamwork, ethical behavior, and positive social interaction. Key to this standard is developing respect for individual similarities and differences through positive interaction among participants in physical activity. Similarities and differences include characteristics of culture, ethnicity, motor performance, disabilities, physical characteristics (e.g., strength, size, shape), gender, age, race, and socioeconomic status. Achievement of this standard in the lower elementary grades begins with recognition of classroom rules, procedures, and safety. In the upper elementary levels, children learn to work independently, with a partner, and in small groups. Throughout elementary school, students begin to recognize individual similarities and differences and participate cooperatively in physical activity. In middle school, adolescents identify the purpose of rules and procedures and become involved in decision-making processes to establish the rules and procedures that guide specific activity situations. They participate cooperatively in physical activity with persons of diverse characteristics and backgrounds. High school students initiate responsible behavior, function independently and responsibly, and positively influence the behavior of others in physical activity settings. They participate with all people, avoid and resolve conflicts, recognize the value of diversity in physical activity, and develop strategies for inclusion of others. High school students begin to understand how adult work and family roles and responsibilities affect their decisions about physical activity and how physical activity, preferences, and opportunities change over time.

Guideline #6

The student will demonstrate awareness that physical activity provides the opportunity for health, enjoyment, challenge, self-expression, and social interaction.

The intent of this guideline is the development of an awareness of the intrinsic values and benefits of participation in physical activity that provides personal meaning. Physical activity provides opportunities for self-expression and social interaction and can be enjoyable, challenging, and fun. These benefits develop self-confidence and promote a positive self-image, thereby enticing people to continue participation in activity throughout the life span. Elementary children derive pleasure from movement sensations and experience challenge and joy as they sense a growing competence in movement ability. At the middle school level, participation in physical activity provides important opportunities for challenge, social interaction, and group membership, as well as opportunities for continued personal growth in physical skills and their applied settings. Participation at the high school level continues to provide enjoyment and challenge as well as opportunities for self-expression and social interaction. As a result of these intrinsic benefits of participation, students will begin to actively pursue life-long physical activities that meet their own needs.

KINDERGARTEN

Standard 1: The student will demonstrate competence in motor skills and movement patterns needed to perform a variety of physical activities. (Psychomotor Domain)

The student should develop fundamental movement patterns (for example, throwing, receiving, jumping, striking) to a level of mature form in simple conditions and gain control of the varied
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use of these patterns.

Indicators

K-1.1 Travel with control forward and sideways using a variety of locomotor skills (including run, jump, hop, gallop, and slide) and change directions in response to a signal or obstacle.

K-1.2 Move in general space in a controlled manner to avoid contact with people and objects and be able to stop in control on command.

K-1.3 Demonstrate beat awareness by moving to even and uneven rhythms (for example, galloping or sliding to the uneven rhythm of a drum beat or music).

K-1.4 Support body weight on a variety of body parts while maintaining stillness (for example, balancing on two hands and a foot).

K-1.5 Demonstrate controlled traveling, rolling, and balancing actions with or without equipment.

K-1.6 Throw, catch, kick, and strike objects under simple conditions (for example, tossing and catching in personal space, kicking and striking a stationary ball).

Standard 2: The student will demonstrate understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performing of physical activities.
(Cognitive Domain)

The student should develop an awareness of basic cognitive concepts associated with movement and learn how to use them to guide his or her performance in game skills, body management,

dance, and locomotion. The student should begin to recognize and apply some characteristics of mature fundamental motor patterns.

Indicators

K-2.1 Identify fundamental movement skills (for example, hop, jump, gallop, slide, catch, throw, strike).

K-2.2 Identify basic body and space awareness movement concepts (for example, body parts, body shapes, nonlocomotor movements such as bend and twist, personal and general space, high and low levels, directions, and pathways).

K-2.3 Identify a variety of spatial relationships with objects (for example, over, under, behind, beside, through).

K-2.4 Identify the physiological effects of moderate physical activity (for example, fast heart rate, rapid breathing).

Standard 3: The student will participate regularly in physical activity. (Psychomotor Domain)

The student should develop a positive attitude toward participating in physical activity and act on the general awareness that physical activity is both fun and good for him or her.

Indicator

K-3.1 Engage in a variety of physical activities during leisure time (for example, t-ball, riding a bicycle, tag, hide-and-seek).

Standard 4: The student will achieve and maintain a health-enhancing level of physical fitness.
(Psychomotor Domain)

The student should develop the ability to sustain physical activity intermittently for short periods of time, to enjoy being physically active, and to recognize the physiological signs associated with engagement in vigorous physical activity.

Indicators

K-4.1 Sustain moderate-to-vigorous physical activity for short periods of time.

K-4.2 Engage in sustained physical activity that causes an increased heart rate and rapid breathing.

K-4.3 Demonstrate muscular strength by supporting body weight for climbing, hanging, and momentarily supporting weight on hands (for example, maintaining a push-up position).

Standard 5: The student will exhibit responsible personal and social behavior that respects self and others in physical-activity settings. (Affective Domain)

The student should learn acceptable physical-activity behaviors and safe practices and develop the ability to apply them in a variety of settings. The student should begin to learn the concept of cooperation by participating in physical activities that require him or her to share space and equipment with others.

Indicators

K-5.1 Share physical-activity space and equipment willingly with others.

K-5.2 Interact positively with others in physical-activity settings (for example, treating others with respect during physical activity regardless of personal differences, including gender, skill level, or ethnicity).

K-5.3 Work independently and with others on physical-activity tasks.

K-5.4 Participate appropriately as a member of the class by following directions and classroom rules and using safe physical-activity practices.

Standard 6: The student will demonstrate awareness that physical activity provides the opportunity for health, enjoyment, challenge, self-expression, and social interaction. (Affective Domain)

The student should learn to enjoy the challenge of experiencing new movements and learning new skills. The student should come to associate positive feelings with participation in physical activity and should acquire a growing sense of confidence in his or her movement abilities.

Indicators

K-6.1 Participate willingly in individual and group physical activities.

K-6.2 Identify feelings resulting from participation in physical activities (for example, sense of excitement after running a 25 meter dash or completing the fun run).

K-6.3 Demonstrate a willingness to learn new fundamental movement skills and try new games.

K-6.4 Continue to participate in physical activities after being unsuccessful in initial attempts.

K-6.5 Identify his or her likes and dislikes with regard to participating in physical activities.

GRADES 1-2

Standard 1: The student will demonstrate competence in motor skills and movement patterns needed to perform a variety of physical activities. (Psychomotor Domain)

The student should learn to vary the ways in which he or she applies motor skills and begin to develop the ability to use motor skills in combination with one another. The student should gain the ability to adapt and adjust movement skills to uncomplicated yet changing environmental conditions and expectations and should learn to use mature forms of basic locomotor patterns. The student should begin to acquire abilities that demonstrate aesthetic performance in weight-bearing, balance, and dance activities.

The indicators that support this standard are intended to be taught in a developmentally appropriate manner from the beginning of the first grade through the end of the second grade. These indicators specify what students should know and be able to do by the end of grade two.

Indicators

2-1.1 Demonstrate mature form in locomotor skills (including walking, running, jumping, hopping, galloping, sliding, skipping, and leaping).

2-1.2 Use smooth transitions between combinations of locomotor skills and combinations of manipulative patterns (for example, from walking to running, galloping to skipping, catching to throwing).

2-1.3 Jump and land in various combinations (for example, one-foot takeoff to two-feet landing, two-feet takeoff to two-feet landing).

2-1.4 Perform simple dances and/or movement sequences to music.

2-1.5 Combine balance, weight transfer, and rolling movements into a sequence with a clear beginning and ending (for example, stork-stand balance, to a forward roll, to a donkey kick, to a knee scale balance finish).

2-1.6 Adapt kicking and striking to simple, changing environments (for example, kicking a moving ball, striking a friendly toss).

2-1.7 Toss a ball underhand using mature form (including places feet together and shoulders square to target, swings throwing arm straight back, shifts weight forward by stepping forward onto opposite foot, ball rolls off fingers, and finishes with throwing arm outstretched toward target).

2-1.8 Throw a hand-sized ball overhand with force to hit a wall 30 feet away.

2-1.9 Catch a self-tossed and partner-tossed object.

2-1.10 Use movement concepts to move in expressive ways (for example, traveling in a curved or zigzag pathway, moving body parts from one level to another, contrasting the speed or force of movement).

Standard 2: The student will demonstrate understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performing of physical activities.
(Cognitive Domain)

The student should develop the ability to identify and use critical elements/learning cues in applying fundamental movement skills. The student should gain the ability to identify and perform the movement concepts of space, effort, and relationships.

The indicators that support this standard are intended to be taught in a developmentally appropriate manner from the beginning of the first grade through the end of the second grade. These indicators specify what students should know and be able to do by the end of grade two.

Indicators

2-2.1 Identify the critical elements/learning cues of fundamental locomotor and manipulative skills (for example, bend knees when landing, steps with opposition when throwing, reach and give when catching).

2-2.2 Identify movement concepts and principles of movement to a variety of fundamental movement skills (for example, catching at different levels, skipping in different pathways, “giving” to receive force).

2-2.3 Use feedback to improve performance (for example, changing the hand position after recognizing an error).

2-2.4 Identify dominant hand and lead foot for performing fundamental movement skills.

2-2.5 Attribute differences in improved physical performance to appropriate practice and experience (for example, student recognizes that he or she is improving in the skill of throwing and catching a ball as a result of practicing in physical education class and playing on a t-ball team).

2-2.6 Identify physiological responses as a result of moderate-to-vigorous physical activity (for example, breathing rate, heart rate, amount of perspiration).

Standard 3: The student will participate regularly in physical activity. (Psychomotor Domain)

The student should develop a positive attitude toward regular physical activity and its effect on health. The student should acquire the ability to identify the social and psychological benefits of physical activity.

The indicator that supports this standard is intended to be taught in a developmentally appropriate manner from the beginning of the first grade through the end of the second grade. This indicator specifies what students should know and be able to do by the end of grade two.

Indicator

2-3.1 Participate regularly in moderate-to-vigorous physical activity in and outside of physical education class (for example, climbing on the rock wall or playground equipment during recess, riding a bicycle, playing little league baseball, playing in the park).

Standard 4: The student will achieve and maintain a health-enhancing level of physical fitness. (Psychomotor Domain)

The student should learn to perform a variety of activities that promote cardiovascular, musculoskeletal, and body-composition fitness. The student should develop the ability to sustain moderate-to-vigorous physical activity for progressively longer periods of time and should learn to recognize the physiological effects of physical activity.

The indicators that support this standard are intended to be taught in a developmentally appropriate manner from the beginning of the first grade through the end of the second grade. These indicators specify what students should know and be able to do by the end of grade two.

Indicators

2-4.1 Engage in warm-up to prepare the body for physical activity.

2-4.2 Participate in physical activity to increase aerobic capacity (for example, engages in a series of timed segments of locomotor activities without tiring easily or plays in a variety of games that increase breathing and heart rate).

2-4.3 Participate in physical activity to increase muscular strength and endurance (for example, moves transversely along a rock wall with little teacher assistance or travels hand-over-hand along horizontal ladder as in the monkey bars).

2-4.4 Participate in physical activity to improve and/or maintain flexibility.

Standard 5: The student will exhibit responsible personal and social behavior that respects self and others in physical-activity settings. (Affective Domain)

The student should learn safe physical-activity practices and physical education class rules and procedures and should learn to apply them with little or no reinforcement. Students should gain the ability not only to identify concepts such as cooperating, sharing, and being considerate of others but also to apply these concepts successfully in physical activity environments.

The indicators that support this standard are intended to be taught in a developmentally

appropriate manner from the beginning of the first grade through the end of the second grade. These indicators specify what students should know and be able to do by the end of grade two.

Indicators

2-5.1 Support and work cooperatively with another to complete an assigned physical education task (for example, tossing easily caught passes to a partner).

2-5.2 Treat others with respect during physical activities.

2-5.3 Play and cooperate with others during physical activities regardless of personal differences such as gender, skill level, race, or ethnicity (for example, demonstrate a willingness to share equipment with everyone in the group as opposed to a select few).

2-5.4 Apply rules, procedures, and safe practices during physical education class with few or no reminders.

Standard 6: The student will demonstrate awareness that physical activity provides the opportunity for health, enjoyment, challenge, self-expression, and social interaction. (Affective Domain)

The student should learn that new activities provide challenge and that an individual can express his or her feelings through activity. The student should acquire the ability to work cooperatively with others in physical-activity settings and the ability to identify the particular physical activities that he or she likes and dislikes.

The indicators that support this standard are intended to be taught in a developmentally

appropriate manner from the beginning of the first grade through the end of the second grade.

Indicators

- 2-6.1 Identify several physical activities that are personally enjoyable.
- 2-6.2 Try new physical activities alone or with peers.
- 2-6.3 Acknowledge the feelings resulting from the challenges, successes, and failures that physical activity can offer.
- 2-6.4 Express personal feelings on progress made while learning a new movement skill (for example, communicating to the teacher his or her excitement when making the Wall-of-Fame during the physical education class).
- 2-6.5 Use physical activity as a means of self-expression.

GRADES 3-5

Standard 1: The student will demonstrate competence in motor skills and movement patterns needed to perform a variety of physical activities. (Psychomotor Domain)

The student should gain the ability to demonstrate refined fundamental patterns, to perform variations and combinations of motor skills, and to apply basic offensive and defensive strategies in increasingly dynamic and complex environments. The student should learn to apply some specialized skills that are basic to particular movement forms (for example, basketball chest pass, soccer dribble) and learn to use those skills with a partner.

The indicators that support this standard are intended to be taught in a developmentally appropriate manner from the beginning of the third grade through the end of the fifth grade.

Indicators

- 5-1.1 Demonstrate mature form for all fundamental manipulative skills (for example, catching, striking, kicking).
- 5-1.2 Demonstrate mature form for combinations of fundamental locomotor skills (for example, running, walking, skipping, galloping).
- 5-1.3 Use basic motor skills during invasion games, net/wall activities, striking/fielding activities, and target activities in increasingly complex situations (for example, dodging and evading an opponent, traveling at different levels, speeds or directions).
- 5-1.4 Execute basic offensive and defensive strategies for an invasion game or net/wall activity (for example, travel and maintain control of an object in a two-on-one situation, receive and pass an object with a partner against a defender, place the ball away from an opponent in 4-square).
- 5-1.5 Demonstrate extension and control by supporting body weight on the hands (for example, cartwheels, handstands).
- 5-1.6 Apply movement concepts to sequenced gymnastics actions with smooth transitions both alone and with others (for example, perform a routine that includes balance-roll-balance with a change in direction).
- 5-1.7 Perform age-appropriate dances with given steps and sequences in rhythm to music.
- 5-1.8 Jump rope continuously, without error, for 30 seconds.

Standard 2: The student will demonstrate understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performing of physical activities.
(Cognitive Domain)

The student should learn to use critical elements/learning cues to refine his or her application of fundamental and selected specialized motor skills in increasingly complex environments as well as to provide feedback to others. The student should become aware of basic offensive and defensive strategies.

The indicators that support this standard are intended to be taught in a developmentally appropriate manner from the beginning of the third grade through the end of the fifth grade.

Indicators

5-2.1 Identify critical elements/learning cues of a skill to improve personal performance and provide feedback to others in fundamental movement skills and specialized game skills (for example, making a triangle to set the volleyball).

5-2.2 Identify basic offensive and defensive strategies in modified game situations (for example, moving to open space while in a three-on-two situation).

5-2.3 Recognize movement concepts that have an effect on the quality of complex movement performance (for example, the absorption and production of force, the transfer of weight, the relationship between practice and improvement of performance, the importance of warm-up and cool-down).

5-2.4 Identify the five components of health-related physical fitness (muscle strength, muscle endurance, aerobic capacity, flexibility, and body composition) and describe activities that correspond to each component.

5-2.5 Design goals based upon personal strengths and weaknesses as determined by fitness test results.

5-2.6 Describe how heart rate is used to monitor exercise intensity.

Standard 3: The student will participate regularly in physical activity. (Psychomotor Domain)

The student should begin to develop an awareness of participation in physical activity as a conscious decision and personal choice for both enjoyment and health-related benefits. The student should acquire the ability to reflect this knowledge in his or her personal decisions regarding physical activities outside of physical education class.

The indicators that support this standard are intended to be taught in a developmentally appropriate manner from the beginning of the third grade through the end of the fifth grade.

Indicators

5-3.1 Monitor his or her own participation in physical activity (for example, using a pedometer to count number of steps taken/distance traveled, using a heart rate monitor to check his or hers exercising heart rate, maintaining a physical activity log).

5-3.2 Identify opportunities available in the school and community for regular participation in physical activity (for example, Fun Runs or schoolwide walks, youth sports, county recreation programs, church leagues).

Standard 4: The student will achieve and maintain a health-enhancing level of physical fitness.
(Psychomotor Domain)

The student should develop the ability to match different types of physical activities with their underlying physical fitness components and to participate in moderate-to-vigorous physical activity in a variety of settings. The student should begin to acquire the ability to interpret the information provided by formal measures of physical fitness and to use this information to increase his or her current level of fitness.

The indicators that support this standard are intended to be taught in a developmentally appropriate manner from the beginning of the third grade through the end of the fifth grade.

Indicators

5-4.1 Achieve the age- and gender-specific health-related physical fitness standards defined by a state-approved fitness assessment.

5-4.2 Implement strategies to achieve health-related physical fitness goals (for example, maintains heart rate within the target heart rate zone for a specified length of time during an aerobic activity).

5-4.3 Select and participate in physical activities that develop and appropriately maintain each of the five components of health-related physical fitness (for example, jogging to increase aerobic capacity).

Standard 5: The student will exhibit responsible personal and social behavior that respects self and others in physical-activity settings. (Affective Domain)

The student should learn to identify the purpose for activity-specific rules, safe practices, procedures, and etiquette, and—with few reminders—should acquire the ability to follow these principles. The student should continue to develop cooperation skills to achieve a common goal while working with a partner or a small group. The student should continue to develop a respect for the strength as well as the limitations of others.

The indicators that support this standard are intended to be taught in a developmentally appropriate manner from the beginning of the third grade through the end of the fifth grade.

Indicators

5-5.1 Work cooperatively and productively in a small group to accomplish a set goal in both cooperative and competitive physical activities.

5-5.2 Identify and demonstrate the characteristics of good sportsmanship (for example, accept the teacher’s decision regarding a personal rule infraction without displaying negative reactions toward others).

5-5.3 Recognize the positive attributes that individuals of varying gender, race, ethnicity, and/or skill levels bring to physical activity in a group setting.

5-5.4 Participate in the establishment of rules, procedures, and standards of etiquette that are safe and effective for specific activity situations.

5-5.5 Take responsibility for his or her own actions without blaming others.

5-5.6 Participate willingly in physical activities with others who may be different in gender, race, ethnicity, and/or skill level.

Standard 6: The student will demonstrate awareness that physical activity provides the opportunity for health, enjoyment, challenge, self-expression, and social interaction. (Affective Domain)

The student should develop the ability to choose an appropriate level of challenge for him- or herself in physical activities and to realize that improvement in skills is achieved by effort and practice. The student should learn to enjoy participating in physical activities with peers whose skill levels are both different from and similar to his or her own and thereby to recognize that physical activity is an important avenue to many personal rewards.

The indicators that support this standard are intended to be taught in a developmentally appropriate manner from the beginning of the third grade through the end of the fifth grade.

Indicators

- 5-6.1 Seek to engage in physical activities that are personally enjoyable.
- 5-6.2 Recognize that effort and practice contribute to improvement and success.
- 5-6.3 Seek to engage in physical activities that are personally challenging.
- 5-6.4 Celebrate personal physical-activity successes and achievements along with those of others.
- 5-6.5 Recognize that physical activity is an opportunity for positive social interaction.
- 5-6.6 Explain why individuals are attracted to certain physical activities.

5-6.7 Recognize that skill competency leads to enjoyment of movement and physical activity.

GRADES 6-8

Standard 1: The student will demonstrate competence in motor skills and movement patterns needed to perform a variety of physical activities. (Psychomotor Domain)

The student should develop mature form for all basic manipulative, locomotor, and nonlocomotor skills and should gain an increased ability to use these skills in varying and complex situations. The student should demonstrate basic skills in modified versions of aquatics, dance, individual activities, dual activities, team sports, and outdoor pursuits.

The indicators that support this standard are intended to be taught in a developmentally appropriate manner from the beginning of the sixth grade through the end of the eighth grade.

Indicators

8-1.1 Demonstrate basic skills and tactics during a three-on-two modified team sport (for example, passing to open space during a three-on-two soccer game).

8-1.2 Use good technique in performing two different types of dances (for example, demonstrating correct steps with balance and control when performing a line dance and a folk dance).

8-1.3 Demonstrate in a modified situation the basic skills and tactics used for an individual activity and a dual activity (for example, demonstrate the four-step delivery skill without the bowling ball, demonstrate the tennis forehand from a tossed ball).

8-1.4 Demonstrate the basic skills that one uses in an outdoor pursuit (for example, reading a compass for orienteering, adjusting the seat height for biking, launching a canoe).

8-1.5 Demonstrate basic skills in aquatics (if access to facilities permits) (for example, bobbing, treading water, extension rescues).

Standard 2: The student will demonstrate understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performing of physical activities. (Cognitive Domain)

The student should come to understand and be able to apply more advanced movement and game strategies, to understand the critical elements/learning cues of advanced movement skills, and to identify characteristics representative of highly skilled performance. The student should develop the ability to identify and use basic offensive and defensive strategies.

The indicators that support this standard are intended to be taught in a developmentally appropriate manner from the beginning of the sixth grade through the end of the eighth grade.

Indicators

8-2.1 Identify critical elements/learning cues of movement forms that characterize a skilled performance in a particular physical activity or sport (for example, recognize “balance, eyes, elbows and follow through” as learning cues for performing a free throw).

8-2.2 Design a sequence of progressive rhythmic movement patterns (for example, create a repeatable aerobic sequence of four, eight count steps, with coordinated arm movements).

8-2.3 Identify the five components of health-related physical fitness (muscle strength, muscle endurance, aerobic capacity, flexibility, and body composition) and, with limited teacher assistance, use them to design a personal health-related physical fitness plan based on FITT (frequency, intensity, type, and time) training principles.

8-2.4 Integrate prior knowledge of movement concepts into new learning experiences in the physical-activity setting (for example, state the similarities between the overhand throwing pattern and the overhand volleyball serve).

8-2.5 Identify selected physical-activity experiences for social, emotional, and health benefits (for example, jogging to reduce stress, walking with a friend for social interaction).

8-2.6 Identify tactics within movement forms and explain how to use them effectively in modified situations (for example, explain why hitting the ball away from the opponent when playing tennis is an offensive strategy).

Standard 3: The student will participate regularly in physical activity. (Psychomotor Domain)

The student should develop an interest in a broad range of physical-activity experiences and increase his or her ability to find opportunities for participating in these activities. The student should learn to set and pursue physical-activity goals for him- or herself, understanding and appreciating the long-term health benefits.

The indicators that support this standard are intended to be taught in a developmentally appropriate manner from the beginning of the sixth grade through the end of the eighth grade.

Indicators

8-3.1 Monitor his or her own participation in physical activity (for example, maintains an activity log for a seven-day period, documenting progress toward achievement of personal goals).

8-3.2 Identify community resources to support varied opportunities for participation in physical activity outside of physical education class (for example, YMCA programs, city recreation programs, biking paths, walking trails).

Standard 4: The student will achieve and maintain a health-enhancing level of physical fitness.
(Psychomotor Domain)

The student should begin to develop knowledge of physical fitness training principles and the ways these principles can be utilized to improve health. The student should develop the ability to interpret the results of physical fitness assessments and, with little assistance from the teacher, to use this information to pursue his or her individual fitness goals.

The indicators that support this standard are intended to be taught in a developmentally appropriate manner from the beginning of the sixth grade through the end of the eighth grade.

Indicators

8-4.1 Achieve the age- and gender-specific health-related physical fitness standards defined by a state-approved fitness assessment (for example, scoring within the healthy fitness zone on Fitnessgram).

8-4.2 Implement a plan, with limited teacher assistance, to improve or maintain desired levels of health-related physical fitness (for example, when flexibility criteria is not achieved, select and perform appropriate exercises until the goal is achieved).

8-4.3 Participate in health-related physical fitness activities outside of the physical education class (for example, rollerblading after school, taking swim lessons, playing in a softball league).

Standard 5: The student will exhibit responsible personal and social behavior that respects self and others in physical-activity settings. (Affective Domain)

The student should practice appropriate problem-solving techniques to resolve conflicts. The student should cooperate with others to accomplish group goals in both cooperative and competitive settings. The student should respect the contributions of others, in physical activity settings made by those whose skill levels are dissimilar to their own. The student should understand the concept of physical activity as a microcosm of modern culture and society and should recognize the role of physical activity in understanding the diversity in modern culture. The indicators that support this standard are intended to be taught in a developmentally appropriate manner from the beginning of the sixth grade through the end of the eighth grade.

Indicators

8-5.1 Work cooperatively within a group to establish and achieve group goals in competitive as well as cooperative physical-activity settings (for example, consider ideas from all group members when creating an aerobic dance routine).

8-5.2 Recognize and resolve potential conflicts in physical-activity settings (for example, shows self-control by accepting a controversial decision of an official).

8-5.3 Accept differences among people and make an effort to include a diversity of participants in physical-activity events (for example, seeks out, participates with, and shows respect for peers with different ability levels).

8-5.4 Accept responsibility for behaving in a safe and productive manner in physical-activity settings (for example, without teacher prompting, use equipment as intended).

Standard 6: The student will demonstrate awareness that physical activity provides the opportunity for health, enjoyment, challenge, self-expression, and social interaction. (Affective Domain)

The student should learn that risk-taking, adventure, and competitive physical activities provide the opportunity for challenge, enjoyment, and positive social interaction. The student should gain a greater awareness of the aesthetic values, feelings, and avenues for self-expression that dance, gymnastics, and various sports activities can offer an individual.

The indicators that support this standard are intended to be taught in a developmentally appropriate manner from the beginning of the sixth grade through the end of the eighth grade.

Indicators

8-6.1 Seek and explore physical-activity opportunities that provide personal meaning and enjoyment (for example, participate in organized sports for the joy of competition, ride a mountain bike to enjoy nature trails).

8-6.2 Seek and explore health-enhancing physical activities that provide challenge and offer opportunities for problem solving, decision making, and appropriate risk-taking (for example, participate in physically challenging team building games).

8-6.3 Use movement to express personal feelings (for example, use appropriate movement qualities to express emotion such as demonstrating anger through forceful and strong bodily movements).

HIGH SCHOOL

Standard 1: The student will demonstrate competence in motor skills and movement patterns needed to perform a variety of physical activities. (Psychomotor Domain)

The student should develop competence in at least two different movement forms. The student should come to recognize the movement form competencies as establishing a foundation for continued motor skill acquisition and maintaining a physically active lifestyle.

Indicator

HS-1.1 Use basic and advanced skills and tactics to participate competently in two of the following movement forms: aquatics, dance, individual activities, dual activities, team sports, and outdoor pursuits.

Standard 2: The student will demonstrate understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performing of physical activities. (Cognitive Domain)

The student should learn to analyze motor performance and to use that information to improve his or her own performance. The student should use cognitive information to understand and enhance his or her motor skill acquisition and performance and to design a personal fitness program.

Indicators

HS-2.1 Analyze and evaluate his or her movement skills as well as those of others in selected activities (for example, using video analysis, personal inventory, survey data).

HS-2.2 Design a long-term plan for self-improvement in a movement form to achieve a desired level of skill (for example, develops an appropriate conditioning program for a self-selected movement form to engage in for life).

HS-2.3 Collect, analyze, and assess his or her own health-related physical fitness data as well as those of others (for example, collects data using Fitnessgram, explains the impact of participation in tennis on various components of fitness).

HS-2.4 Design a long-term personal fitness plan based on FITT (frequency, intensity, type, and time) training principles to improve or maintain health-related physical fitness (plans a summer personal conditioning program).

Standard 3: The student will participate regularly in physical activity. (Psychomotor Domain)

The student should come to recognize and understand the significance of physical activity with regard to the quality of life and should develop skills, interests, and desires to maintain an active, healthy lifestyle. The student should develop the ability to connect what is done in the physical education class with his or her life outside of that class. The student should come to feel empowered to assume an active role in managing his or her participation in physical activity now and throughout the future years.

Indicators

HS-3.1 Monitor his or her own participation in physical activity (for example, measures through the use of a pedometer, heart-rate monitor, and physical activity log).

HS-3.2 Identify community resources to support varied opportunities for participating in physical activity outside of physical education class (for example, researching community resources and presenting the information to class).

Standard 4: The student will achieve and maintain a health-enhancing level of physical fitness.
(Psychomotor Domain)

The student should learn to choose—and, on a regular basis, to participate in—physical activities that enable him or her to achieve and maintain a health-enhancing level of physical fitness.

Indicators

HS-4.1 Achieve the age- and gender-specific health-related physical fitness standards defined by a state-approved fitness assessment

HS-4.2 Implement a long-term personal fitness plan to improve or maintain health-related physical fitness based on FITT (frequency, intensity, type, and time) training principles.

Standard 5: The student will exhibit responsible personal and social behavior that respects self and others in physical-activity settings. (Affective Domain)

The student should learn to demonstrate leadership by holding him- or herself as well as others responsible for following safe practices, rules, procedures, and etiquette in all physical activity settings. The student should gain the ability to synthesize and evaluate his or her knowledge regarding the role of physical activity in a culturally diverse society.

Indicators

HS-5.1 Apply leadership skills by holding him- or herself as well as others responsible for resolving conflicts in a positive way; modeling proper etiquette; and following safe practices, rules, and procedures in all physical-activity settings (for example, shows leadership by diffusing conflict during competition).

HS-5.2 Evaluate his or her own ability to work cooperatively within a group to establish and achieve group goals in competitive and cooperative settings (for example, a student rates themselves according to Hellison's model of Teaching Responsibility through Physical Activity levels).

HS-5.3 Design and apply strategies for including persons of diverse backgrounds and abilities in group physical-activity settings (for example, invites less-skilled students to participate in a warm-up activity prior to class).

Standard 6: The student will demonstrate awareness that physical activity provides the opportunity for health, enjoyment, challenge, self-expression, and social interaction. (Affective Domain)

The student should acquire the ability to experience satisfaction and enjoyment while pursuing personal physical activity goals and to recognize that physical activity can provide a positive environment for social interaction.

Indicators

HS-6.1 Identify the potential benefits of various physical activities (for example, creates a pamphlet on the health benefits of pickleball).

HS-6.2 Identify physical activities that provide personal meaning and explain why they provide such meaning (for example, class presentations on working with others in a sport to achieve a common goal).

HS-6.3 Extrapolate how personal meanings derived from various physical activities may change and influence an individual's choices across the life span (for example, reflects on possible reasons for choosing to participate in a lifetime sport after high school).

FOREIGN LANGUAGES

RLOA will adhere to the SCDE guidelines and goals for learning a foreign language.

FOREIGN LANGUAGES: Communication:

Communicate in Languages Other Than English

Studying a language does not automatically result in the development of one's ability to use that language in real situations. Because the acquisition of communicative competence in a language involves more than learning the elements of that language, even those who master its vocabulary and grammar may not be able to understand the language when they encounter it outside the classroom.

In order to communicate successfully in another language, learners must develop strategies to assist them in bridging the communication gaps that exist because of differences in languages and cultures. The language class provides a safe haven for learners to practice and work through the challenges that one encounters when communicating with speakers of other languages.

Communicating successfully is a central goal of language learning.

The essential questions framing the Communication Goal are these:

- What does one need to know and be able to do in order to conduct effective interpersonal communication with those who speak a language that is not one's native tongue?

(interpersonal mode—two-way communication in which meaning is negotiated by both parties)

- What does one need to know and be able to do in order to correctly interpret what one hears and reads in a language that is not one's native tongue? (*interpretive mode*—one-way communication in which a single party derives meaning from reading or listening without negotiation)

- What does one need to know and be able to do in order to effectively present oral and written information in a language that is not one's native tongue? (*presentational mode*—communication by way of a prepared written or oral statement that an individual has prepared in advance and edited)

MODERN LANGUAGES COMMUNICATION: Interpersonal Mode

Essential Question 1.1

What does one need to know and be able to do in order to conduct effective interpersonal communication with those who speak a language that is not one's native tongue?

Standard 1.1

Students engage in conversations, provide and obtain information, express feelings and emotions, and exchange opinions.

The Interpersonal Mode is characterized by active negotiation of meaning among individuals. Participants observe and monitor one another to see how their meanings and intentions are being communicated. Adjustments and clarifications can be made accordingly. The Interpersonal Mode is most obvious in conversation, but it can be realized through reading and writing, such as the exchange of personal letters or of electronic mail messages.

Indicators

Beginning Stage Developing Stage Expanding Stage

The student will:

B-1.1-1 Indicate in the target language that he or she does not understand or cannot communicate a message adequately.

D-1.1-1 Use **circumlocution** and alternative phrasing in the target language when he or she cannot communicate a message adequately.

E-1.1-1 Employ **circumlocution** to communicate messages in the target language when he or she cannot communicate a message adequately.

B-1.1-2 Express basic courtesies in the target language and use appropriate behaviors.

D-1.1-2 Identify and respond appropriately in the target language to nonverbal cues.

E-1.1-2 Use the target language and the appropriate behaviors to initiate and sustain conversation.

B-1.1-3 Use the target language to give simple directions; understand simple directions given in the target language.

D-1.1-3 Use the target language to give directions and ask questions for clarification; understand directions given in the target language.

E-1.1-3 Use the target language to give directions for managing an unexpected situation; understand directions given in the target language for managing such a situation.

Beginning Stage Developing Stage Expanding Stage

The student will:

B-1.1-4 Use the target language to exchange personal information (e.g., names, home addresses, telephone numbers, e-mail addresses) with others.

D-1.1-4 Use the target language to exchange information on topics of personal interest with others.

E-1.1-4 Use the target language to exchange opinions and beliefs with others.

B-1.1-5 Use the target language to express personal needs in familiar situations.

D-1.1-5 Use the target language to express personal needs in detail in predictable situations.

E-1.1-5 Use the target language to respond appropriately to unexpected circumstances and situations.

B-1.1-6 Use the target language to express personal likes, dislikes, agreement, and disagreement regarding familiar topics.

D-1.1-6 Use the target language to express personal preferences and opinions with supporting details.

E-1.1-6 Use the target language to express personal feelings and ideas for the purpose of persuading others.

B-1.1-7 Use the target language to ask and answer simple questions.

D-1.1-7 Use the target language to ask and answer complex questions and to provide and request clarification when needed.

E-1.1-7 Use the target language to ask and answer open-ended questions and to sustain conversation.

MODERN LANGUAGES COMMUNICATION: Interpretive Mode

Essential Question 1.2

What does one need to know and be able to do in order to correctly interpret what one hears and reads in a language that is not one's native tongue?

Standard 1.2

Students understand and interpret written and spoken language on a variety of topics.

The Interpretive Mode is focused on the appropriate cultural interpretation of meanings that occur in written and spoken form where there is no recourse to the active negotiation of meaning

with the writer or the speaker. Such instances of “one-way” reading or listening include the cultural interpretation of texts, movies, radio and television broadcasts, and speeches.

Indicators

Beginning Stage Developing Stage Expanding Stage

The student will:

B-1.2-1 Respond appropriately to simple directions and commands given in the target language.

D-1.2-1 Respond appropriately to more complex directions and commands given in the target language.

E-1.2-1 Respond appropriately to complex directions, instructions, and commands given in the target language.

B-1.2-2 Identify **aural**, visual, and **context clues** in **authentic** target-language materials, in both oral and written forms.

D-1.2-2 Use **aural**, visual, and **context clues** to derive meaning from **authentic** target-language materials, in both oral and written forms.

E-1.2-2 Apply diverse strategies to derive meaning and discern details from **authentic** target-language materials, in both oral and written forms.

B-1.2-3 Identify the main idea in **authentic** target language materials, in both oral and written forms.

D-1.2-3 Identify the main idea and discern supporting details in **authentic** target language materials, in both oral and written forms.

E-1.2-3 Interpret and analyze **authentic** target language materials, in both oral and written forms.

Beginning Stage Developing Stage Expanding Stage

The student will:

B-1.2-4 Understand information on familiar topics that is conveyed in the target language in sentence-level oral and written presentations.

D-1.2-4 Understand information on a variety of topics that is conveyed in the target language in paragraph length oral and written presentations.

E-1.2-4 Understand information on a wide variety of topics that is conveyed in the target language in paragraph-length and longer oral and written presentations.

MODERN LANGUAGES COMMUNICATION: Presentational Mode

Essential Question 1.3

What does one need to know and be able to do in order to effectively present oral and written information in a language that is not one's native tongue?

Standard 1.3

Students present information, concepts, and ideas to an audience of listeners or readers on a variety of topics.

The Presentational Mode refers to the creation of messages in a manner that facilitates interpretation by members of the other culture where no direct opportunity for the active negotiation of meaning between members of the two cultures exists. Examples include the writing of reports and articles or the presentation of speeches.

Indicators

Beginning Stage Developing Stage Expanding Stage

The student will:

B-1.3-1 Use the target language to give simple directions and commands.

D-1.3-1 Use the target language to give directions and commands for simple processes.

E-1.3-1 Use the target language to explain a complex process incorporating detailed instructions.

B-1.3-2 Use visuals as support in communicating a message in the target language.

D-1.3-2 Use repetition, rephrasing, and gestures to assist in communicating a message in the target language.

E-1.3-2 Use multiple strategies to enhance the communication of a message in the target language.

B-1.3-3 Use the target language to express personal likes or dislikes regarding familiar topics.

D-1.3-3 Use the target language to express personal opinions on selected topics.

E-1.3-3 Use the target language to research and defend a position on a particular issue.

B-1.3-4 Use the target language to dramatize simple **authentic** materials (e.g., rhymes, songs, folktales).

D-1.3-4 Use the target language to summarize the main ideas of age-appropriate **authentic** materials (e.g., songs, folktales, short works of literature).

E-1.3-4 Use the target language to summarize and analyze **authentic** materials (e.g., songs, folktales, works of literature).

Beginning Stage Developing Stage Expanding Stage

The student will:

B-1.3-5 Use the target language to list and compare information from simple sources.

D-1.3-5 Use the target language to organize and summarize information from a variety of sources.

E-1.3-5 Use the target language to research and synthesize information from a variety of sources.

B-1.3-6 Communicate information in the target language in sentence-level oral and written presentations on familiar topics.

D-1.3-6 Communicate information in the target language in paragraph-length oral and written presentations on a variety of topics.

E-1.3-6 Communicate information in the target language in multi-paragraph length oral and written presentations on a wide variety of topics.

Cultures: Gain Knowledge and Understanding of Other Cultures

What Is Culture? The term *culture* includes the philosophical perspectives, the behavioral practices, and the products—both tangible and intangible—of a society. The diagram below illustrates how the products and the practices are derived from the philosophical perspectives that form the worldview of a cultural group. It also shows how these three components of culture are closely interrelated.

CULTURE FRAMEWORK

Perspectives

Practices Products

Because language is the primary vehicle for expressing cultural perspectives and participating in social practices, the study of a language provides opportunities for students to develop insights into a culture that are available in no other way. In reality, then, the true content of the modern

language course is not the grammar and the vocabulary of the particular language but the cultures expressed through that language. It is important that students become skilled observers and analysts of other cultures.

The essential questions framing the Cultures Goal area are these:

- Why does an understanding of the relationship between the practices and the perspectives of a given culture allow one to communicate with those who speak the language of that culture?
- Why does an understanding of the relationship between the products and the perspectives of a given culture allow one to communicate with those who speak the language of that culture?

MODERN LANGUAGES CULTURES

Essential Question 2.1

Why does an understanding of the relationship between the practices and the perspectives of a given culture allow one to communicate with those who speak the language of that culture?

Standard 2.1

Students demonstrate an understanding of the relationship between the practices and the perspectives of the cultures studied.

This standard focuses on the practices that are derived from the traditional ideas, attitudes, and values (*perspectives*) of a culture. “Cultural practices” refers to patterns of behavior accepted by a society and deal with aspects of culture such as rites of passage, the use of forms of discourse, the social “pecking order,” and the use of space. In short, they represent the knowledge of “what to do when and where.” It is important to understand the relationship between these practices and the underlying perspectives that represent the culture’s view of the world.

Indicators

Beginning Stage Developing Stage Expanding Stage

The student will:

B-2.1-1 Imitate language and behaviors that are appropriate to interactions in the target culture.

D-2.1-1 Use language and behaviors that are appropriate to interactions in the target culture.

E-2.1-1 Integrate appropriate words, phrases, behaviors, and **idioms** into personal interactions in the target culture.

B-2.1-2 Use the target language to identify behaviors and traits that are characteristic of everyday life in the target culture.

D-2.1-2 Use the target language to describe behaviors and traits that are characteristic of everyday life in the target culture.

E-2.1-2 Use the target language to analyze behaviors and traits that are characteristic of everyday life in the target culture.

B-2.1-3 Use the target language to identify the cultural practices that are particular to the target culture.

D-2.1-3 Use the target language to compare the cultural practices that are particular to the target culture.

E-2.1-3 Use the target language to analyze the cultural practices that are particular to the target culture.

B-2.1-4 Use the target language to identify social issues currently affecting the target culture.

D-2.1-4 Use the target language to describe the various perspectives on social issues currently affecting the target culture.

E-2.1-4 Use the target language to analyze the various perspectives on social issues currently affecting the target culture.

MODERN LANGUAGES CULTURES

Essential Question 2.2

Why does an understanding of the relationship between the products and the perspectives of a given culture allow one to communicate with those who speak the language of that culture?

Standard 2.2

Students demonstrate an understanding of the relationship between the products and perspectives of the cultures studied.

This standard focuses on the *products* of the culture studied and on how they reflect the *perspectives* of that culture. *Products* may be tangible (e.g., a painting, a cathedral, a piece of literature, a pair of chopsticks) or intangible (e.g., an oral tale, a dance, a sacred ritual, a system of education). Whatever the form of the product, its presence within the culture is required or justified by the underlying beliefs and values (*perspectives*) of that culture, and the cultural *practices* involve the use of that *product*.

Indicators

Beginning Stage Developing Stage Expanding Stage

The student:

B-2.2-1 Use the target language to identify tangible products and symbols of the target culture (e.g., toys, dress, types of dwellings, foods, flags, monuments, landmarks).

D-2.2-1 Use the target language to describe the use of tangible products and symbols of the target culture within that culture.

E-2.2-1 Use the target language to analyze the products and symbols of the target culture to determine their significance both within and beyond that culture.

B-2.2-2 Use the target language to identify and participate in artistic expressions of the target culture (e.g., songs, literature, dance, artworks).

D-2.2-2 Use the target language to describe relationships between the products and perspectives of the target culture.

E-2.2-2 Use the target language to analyze relationships between the products and perspectives of the target culture.

B-2.2-3 Use the target language to identify the contributions that the target culture has made to the world.

D-2.2-3 Use the target language to describe the contributions that the target culture has made to the world.

E-2.2-3 Use the target language to explain the effects of the target culture's contributions to the world.

Beginning Stage Developing Stage Expanding Stage

The student will:

B-2.2-4 Use the target language to identify social, economic, and political perspectives within the target culture.

D-2.2-4 Use the target language to describe social, economic, and political perspectives within the target culture.

E-2.2-4 Use the target language to explain the impact on current issues and world events that social, economic, and political perspectives within the target culture have had.

Connections Connect with Other Disciplines and Acquire Information

The study of modern languages is ideally suited to curriculum integration because it leads students to make valuable connections, both formally and informally, among the various disciplines. Learning a modern language not only allows students to “learn how to learn,” no matter what the topic or the discipline, but also empowers them to extend their ability to “know and do” in the world in which they live.

Language acquisition focuses on the broader education of students, encouraging teachers to use the classroom language-learning experience to reach across the disciplines and build upon the knowledge that students have already acquired. As they learn another language, students are afforded the opportunity to expand their sources of information and thus to broaden the depth and scope of their knowledge in general. With today’s technology, students can readily access information in the modern language they are studying, interact with native speakers of that language, and hear and view presentations in that language.

The essential questions framing the Connections Goal area are these:

- Why does an understanding of another language and culture increase one’s ability to function in a variety of disciplines?
- Why does an understanding of another language and culture broaden one’s ability to access information and to appreciate a variety of distinctive viewpoints?

MODERN LANGUAGES CONNECTIONS

Essential Question 3.1

Why does an understanding of another language and culture increase one's ability to function in a variety of disciplines?

Standard 3.1

Students reinforce and further their knowledge of other disciplines through the foreign language.

Learning today is no longer restricted to a specific discipline; it has become interdisciplinary. Just as reading cannot be limited to a particular segment of the school day but is central to all aspects of the school curriculum, so, too, can foreign language build upon the knowledge that students acquire in other subject areas. In addition, students can relate the information studied in other subjects to their learning of the foreign language and culture.

Indicators

Beginning Stage Developing Stage Expanding Stage

The student will:

B-3.1-1 Locate resources and identify information in the target language that will further his or her knowledge in other subject areas.

D-3.1-1 Locate resources and summarize information in the target language that will further his or her knowledge in other subject areas.

E-3.1-1 Locate resources and synthesize information in the target language that will further his or her knowledge in other subject areas.

MODERN LANGUAGES CONNECTIONS

Essential Question 3.2

Why does an understanding of another language and culture broaden one's ability to access information and to appreciate a variety of distinctive viewpoints?

Standard 3.2

Students acquire information and recognize the distinctive viewpoints that are only available through the foreign language and its cultures.

As a consequence of learning another language and gaining access to its unique means of communication and ways of thinking, students acquire new information and perspectives. As learners of a foreign language, they broaden the sources of information available to them. They have a “new window on the world.”

Indicators

Beginning Stage Developing Stage Expanding Stage

The student will:

B-3.2-1 Use the target language to identify viewpoints within the target culture that are expressed in sources intended for native speakers.

D-3.2-1 Use the target language to describe viewpoints within the target culture that are expressed in sources intended for native speakers.

E-3.2-1 Use the target language to summarize viewpoints within the target culture that are expressed in sources intended for native speakers.

Comparisons: Develop Insight into the Nature of Language and Culture

A major benefit of the study of a modern language is that students not only gain a deeper understanding of their native language and culture but also acquire a greater awareness of the interconnections between languages and cultures in general. The ability to make comparisons among diverse languages, social behaviors, and cultural views allows students to become keener observers and analyzers of their own society and communication system. By making such comparisons, students also develop their critical thinking abilities in important ways.

The essential questions framing the Comparisons Goal are these:

- How does a knowledge of another language enhance one's understanding of the nature of language in general?
- How does a knowledge of another language enhance one's understanding of culture and society in general?

COMPARISONS

Essential Question 4.1

How does a knowledge of another language enhance one's understanding of the nature of language in general?

Standard 4.1

Students demonstrate understanding of the nature of language through comparisons of the language studied and their own.

This standard focuses on the impact that learning the linguistic elements in the new language has

on students' ability to examine their own language, and to develop hypotheses about the structure and use of languages. . . . Activities can be systematically integrated into instruction that will assist students in understanding how languages work.

Indicators

Beginning Stage Developing Stage Expanding Stage

The student will:

B-4.1-1 Compare **cognates** and word borrowings between the target language and English.

D-4.1-1 Describe how the target language and English have influenced each other.

E-4.1-1 Explain the role of society in the changing nature of the target language.

B-4.1-2 Identify differences and similarities in **register** between the target language and English.

D-4.1-2 Use the appropriate **register** when speaking and writing in the target language.

E-4.1-2 Integrate the appropriate **register** when speaking and writing in the target language.

B-4.1-3 Recognize high frequency target-language **idioms** within limited contexts.

D-4.1-3 Use high-frequency target-language **idioms** within familiar contexts.

E-4.1-3 Use target-language **idioms** within a variety of contexts.

MODERN LANGUAGES: COMPARISONS

Essential Question 4.2

How does a knowledge of another language enhance one's understanding of culture and society in general?

Standard 4.2

Students demonstrate understanding of the concept of culture through comparisons of the

cultures studied and their own.

As students expand their knowledge of cultures through language learning, they continually discover perspectives, practices, and products that are similar to and different from those in their own culture. They develop the ability to hypothesize about cultural systems in general. Some students may make these comparisons naturally, others learn to do so. This standard helps focus this reflective process for all students by encouraging integration of this process into instruction from the earliest levels of learning.

Indicators

Beginning Stage Developing Stage Expanding Stage

The student will:

B-4.2-1 Use the target language to identify the products of the target culture and those of his or her native culture.

D-4.2-1 Use the target language to compare the products of the target culture with those of his or her native culture.

E-4.2-1 Use the target language to analyze the products from the target culture.

B-4.2-2 Use the target language to identify behavioral patterns and perspectives in the target culture that are similar to and different from those in his or her native culture.

D-4.2-2 Use the target language to compare behavioral patterns and perspectives in the target culture with those in his or her native culture.

E-4.2-2 Use the target language to interact effectively in a variety of social contexts within the target culture as well as within his or her native culture.

B-4.2-3 Use the target language to identify practices within the target culture that are similar to and different from those in his or her native culture.

D-4.2-3 Use the target language to compare practices that are particular to the target culture with those of his or her native culture.

E-4.2-3 Use the target language to analyze practices that are particular to the target culture with those of his or her native culture.

Communities Participate in Multilingual Communities at Home and around the World

The ability to communicate in other languages expands the employment opportunities for students both at home and abroad, allows them to pursue their personal interests with greater success, and gives them the means to contribute to society in more meaningful and effective ways. Ultimately, as a result of their ability to communicate in other languages, students have a greater insight into their own language and culture, are better able to connect with practitioners across the disciplines, and possess a deeper appreciation for the interdependence of people and communities throughout the world.

The Communities Goal combines elements from each of the other goal areas. The standards in this goal embrace the student's ability not only to use a modern language effectively but also to apply a knowledge of the perspectives, products, and practices of the culture in which that language is used. While some students are fortunate enough to have direct access to multilingual communities through their home backgrounds, all students benefit from an awareness of the many communities where not only English but other modern languages are spoken.

The essential question framing the Communities Goal is this:

- Why does an understanding of another language and culture allow one to participate more fully in the global community?

MODERN LANGUAGES COMMUNITIES

Essential Question 5.1

Why does an understanding of another language and culture allow one to participate more fully in the global community?

Standard 5.1

Students use the language both within and beyond the school setting.

This standard focuses on language as a tool for communication with speakers of the language throughout one's life: in schools, in the community, and abroad. In schools, students share their knowledge of language and culture with classmates and with younger students who may be learning the language. Applying what has been learned in the language program as defined by the other standards, students come to realize the advantages inherent in being able to communicate in more than one language and develop an understanding of the power of language.

Indicators

Beginning Stage, Developing Stage, Expanding Stage

The student will:

B-5.1-1 Use the target language to respond to target language speakers encountered outside of the classroom setting.

D-5.1-1 Use the target language to converse with target language speakers encountered outside of the classroom setting.

E-5.1-1 Use knowledge of the target language and culture to interact appropriately with target language speakers encountered outside of the classroom setting.

B-5.1-2 Share examples of the target language and culture with people encountered outside of the classroom setting.

D-5.1-2 Use the target language to initiate social connections with target language speakers encountered outside of the classroom setting.

E-5.1-2 Use the target language to establish and maintain social connections with target language speakers encountered outside of the classroom setting.

B-5.1-3 Identify examples of the target culture (e.g., restaurants, festivals, dramatic productions) in the local or regional community.

D-5.1-3 Use target-culture resources in the local or regional community to create opportunities for social interaction.

E-5.1-3 Perform community service using knowledge of the target language and/or the target culture.

MODERN LANGUAGES: Communication

BEGINNING STAGE

Essential Question 1.1

What does one need to know and be able to do in order to conduct effective interpersonal communication with those who speak a language that is not one's native tongue?

Standard 1.1

The Interpersonal Mode is characterized by active negotiation of meaning among individuals. Participants observe and monitor one another to see how their meanings and intentions are being communicated. Adjustments and clarifications can be made accordingly. . . . The Interpersonal Mode is most obvious in conversation, but [it] . . . can be realized through reading and writing, such as the exchange of personal letters or of electronic mail messages.

Indicators

The student will:

B-1.1-1 Indicate in the target language that he or she does not understand or cannot communicate a message adequately.

B-1.1-2 Express basic courtesies in the target language and use appropriate behaviors.

B-1.1-3 Use the target language to give simple directions; understand simple directions given in the target language.

B-1.1-4 Use the target language to exchange personal information (e.g., names, home addresses, telephone numbers, e-mail addresses) with others.

B-1.1-5 Use the target language to express personal needs in familiar situations.

B-1.1-6 Use the target language to express personal likes, dislikes, agreement, and disagreement regarding familiar topics.

B-1.1-7 Use the target language to ask and answer simple questions.

MODERN LANGUAGES: Communication

Essential Question 1.2

What does one need to know and be able to do in order to correctly interpret what one hears and

reads in a language that is not one's native tongue?

Standard 1.2

Interpretive Mode is focused on the appropriate cultural interpretation of meanings that occur in written and spoken form where there is no recourse to the active negotiation of meaning with the writer or the speaker. Such instances of "one-way" reading or listening include the cultural interpretation of texts, movies, radio and television broadcasts, and speeches.

Indicators

The student will:

B-1.2-1 Respond appropriately to simple directions and commands given in the target language.

B-1.2-2 Identify **aural**, visual, and **context clues** in **authentic** target-language materials, in both oral and written forms.

B-1.2-3 Identify the main idea in **authentic** target-language materials, in both oral and written forms.

B-1.2-4 Understand information on familiar topics that is conveyed in the target language in sentence-level oral and written presentations.

MODERN LANGUAGES: Communication

BEGINNING STAGE

Essential Question 1.3

What does one need to know and be able to do in order to effectively present oral and written information in a language that is not one's native tongue?

Standard 1.3

The Presentational Mode refers to the creation of messages in a manner that facilitates interpretation by members of the other culture where no direct opportunity for the active negotiation of meaning between members of the two cultures exists. Examples include the writing of reports and articles or the presentation of speeches.

Indicators

The student will:

B-1.3-1 Use the target language to give simple directions and commands.

B-1.3-2 Use visuals as support in communicating a message in the target language.

B-1.3-3 Use the target language to express personal likes or dislikes regarding familiar topics.

B-1.3-4 Use the target language to dramatize simple **authentic** materials (e.g., rhymes, songs, folktales).

B-1.3-5 Use the target language to list and compare information from simple sources.

B-1.3-6 Communicate information in the target language in sentence-level oral and written presentations on familiar topics.

MODERN LANGUAGES: Cultures

BEGINNING STAGE

Essential Question 2.1

Why does an understanding of the relationship between the practices and the perspectives of a given culture allow one to communicate with those who speak the language of that culture?

Standard 2.1

This standard focuses on the practices that are derived from the traditional ideas, attitudes, and values (*perspectives*) of a culture. “Cultural practices” refers to patterns of behavior accepted by a society and deal with aspects of culture such as rites of passage, the use of forms of discourse, the social “pecking order,” and the use of space. In short, they represent the knowledge of “what to do when and where.” It is important to understand the relationship between these practices and the underlying perspectives that represent the culture’s view of the world.

Indicators

The student will:

B-2.1-1 Imitate language and behaviors that are appropriate to interactions in the target culture.

B-2.1-2 Use the target language to identify behaviors and traits that are characteristic of everyday life in the target culture.

B-2.1-3 Use the target language to identify the cultural practices that are particular to the target culture.

B-2.1-4 Use the target language to identify social issues currently affecting the target culture.

MODERN LANGUAGES: Cultures

BEGINNING STAGE

Essential Question 2.2

Why does an understanding of the relationship between the products and the perspectives of a given culture allow one to communicate with those who speak the language of that culture?

Standard 2.2

This standard focuses on the *products* of the culture studied and on how they reflect the *perspectives* of that culture. *Products* may be tangible (e.g., a painting, a cathedral, a piece of literature, a pair of chopsticks) or intangible (e.g., an oral tale, a dance, a sacred ritual, a system of education). Whatever the form of the product, its presence within the culture is required or justified by the underlying beliefs and values (*perspectives*) of that culture, and the cultural *practices* involve the use of that *product*.

Indicators

The student will:

B-2.2-1 Use the target language to identify tangible products and symbols of the target culture (e.g., toys, dress, types of dwellings, foods, flags, monuments, landmarks).

B-2.2-2 Use the target language to identify and participate in artistic expressions of the target culture (e.g., songs, literature, dance, artworks).

B-2.2-3 Use the target language to identify the contributions that the target culture has made to the world.

B-2.2-4 Use the target language to identify social, economic, and political perspectives within the target culture.

MODERN LANGUAGES: Connections

BEGINNING STAGE

Essential Question 3.1

Why does an understanding of another language and culture increase one's ability to function in a variety of disciplines?

Standard 3.1

Learning today is no longer restricted to a specific discipline; it has become interdisciplinary. Just as reading cannot be limited to a particular segment of the school day but is central to all aspects of the school curriculum, so, too, can foreign language build upon the knowledge that students acquire in other subject areas. In addition, students can relate the information studied in other subjects to their learning of the foreign language and culture.

Indicator

The student will:

B-3.1-1 Locate resources and identify information in the target language that will further his or her knowledge in other subject areas.

MODERN LANGUAGES: Connections

BEGINNING STAGE

Essential Question 3.2

Why does an understanding of another language and culture broaden one's ability to access information and to appreciate a variety of distinctive viewpoints?

Standard 3.2

As a consequence of learning another language and gaining access to its unique means of communication and ways of thinking, students acquire new information and perspectives. As learners of a foreign language, they broaden the sources of information available to them. They have a “new window on the world.”

Indicator

The student will:

B-3.2-1 Use the target language to identify viewpoints within the target culture that are expressed in sources intended for native speakers.

MODERN LANGUAGES: Comparisons

BEGINNING STAGE

Essential Question 4.1

How does a knowledge of another language enhance one's understanding of the nature of language in general?

Standard 4.1

This standard focuses on the impact that learning the linguistic elements in the new language has on students' ability to examine their own language, and to develop hypotheses about the structure and use of languages. Activities can be systematically integrated into instruction that will assist students in understanding how languages work.

Indicators

The student will:

B-4.1-1 Compare **cognates** and word borrowings between the target language and English.

B-4.1-2 Identify differences and similarities in **register** between the target language and English.

B-4.1-3 Recognize high-frequency target-language **idioms** within limited contexts.

MODERN LANGUAGES: Comparisons

BEGINNING STAGE

Essential Question 4.2

How does a knowledge of another language enhance one's understanding of culture and society in general?

Standard 4.2

As students expand their knowledge of cultures through language learning, they continually discover perspectives, practices, and products that are similar to and different from those in their own culture. They develop the ability to hypothesize about cultural systems in general. Some students may make these comparisons naturally, others learn to do so. This standard helps focus this reflective process for all students by encouraging integration of this process into instruction from the earliest levels of learning.

Indicators

The student will:

B-4.2-1 Use the target language to identify the products of the target culture and those of his or her native culture.

B-4.2-2 Use the target language to identify behavioral patterns and perspectives in the target culture that are similar to and different from those in his or her native culture.

B-4.2-3 Use the target language to identify practices within the target culture that are similar to and different from those in his or her native culture.

MODERN LANGUAGES: Communities

BEGINNING STAGE

Essential Question 5.1

Why does an understanding of another language and culture allow one to participate more fully in the global community?

Standard 5.1

This standard focuses on language as a tool for communication with speakers of the language throughout one's life: in schools, in the community, and abroad. In schools, students share their knowledge of language and culture with classmates and with younger students who may be learning the language. Applying what has been learned in the language program as defined by the other standards, students come to realize the advantages inherent in being able to communicate in more than one language and develop an understanding of the power of language.

Indicators

The student will:

B-5.1-1 Use the target language to respond to target-language speakers encountered outside of the classroom setting.

B-5.1-2 Share examples of the target language and culture with people encountered outside of the classroom setting.

B-5.1-3 Identify examples of the target culture (e.g., restaurants, festivals, dramatic productions) in the local or regional community.

MODERN LANGUAGES: Communication

Developing

Learners in the **developing** stage have completed the first part of a **sequential, articulated program** consisting of prolonged instruction in the target language. Students in this stage will have received more than 250 hours of uninterrupted language study. The developing stage is not the equivalent of the second year of instruction.

Rather than merely naming and identifying, students at the developing stage are better able to describe ideas and things and to provide more details. They are starting to recombine phrases and sentences to meet the demands of a greater variety of contexts. They are not only able to express basic wants and needs but are also able to elaborate on them. Students at this stage are able to ask and answer questions, narrate and describe in sentences and groups of related sentences, and understand short oral and written passages. They continue to use strategies such as **context clues**, repetition, and paraphrasing to understand and communicate in the target language.

The developing stage is characterized by language production that moves from imitative to innovative. Developing students continue to extend their language skills, becoming more accurate in the language they produce, and are more reflective than automatic in their responses to situations or questions. They become able to comprehend a greater variety of texts and to generate responses and initiate interactions in the language in more complete and purposeful ways. They may move back and forth between the developing and beginning stages, however—showing confidence and language control in some situations and not in others.

Developing-stage learners recognize the interrelatedness of cultural products, practices, and perspectives and establish connections with the target culture. They use the language to expand their knowledge of other content areas and gain awareness of multiple viewpoints.

MODERN LANGUAGES: Communication

Essential Question 1.1

What does one need to know and be able to do in order to conduct effective interpersonal communication with those who speak a language that is not one's native tongue?

Standard 1.1

The Interpersonal Mode is characterized by active negotiation of meaning among individuals. Participants observe and monitor one another to see how their meanings and intentions are being communicated. Adjustments and clarifications can be made accordingly. The Interpersonal Mode is most obvious in conversation, but it can be realized through reading and writing, such as the exchange of personal letters or of electronic mail messages.

Indicators

The student will:

D-1.1-1 Use **circumlocution** and alternative phrasing in the target language when he or she cannot communicate a message adequately.

D-1.1-2 Identify and respond appropriately in the target language to nonverbal cues.

D-1.1-3 Use the target language to give directions and ask questions for clarification; understand directions given in the target language.

D-1.1-4 Use the target language to exchange information on topics of personal interest with others.

D-1.1-5 Use the target language to express personal needs in detail in predictable situations.

D-1.1-6 Use the target language to express personal preferences and opinions with supporting details.

D-1.1-7 Use the target language to ask and answer complex questions and to provide and request clarification when needed.

MODERN LANGUAGES: Communication

DEVELOPING STAGE

Essential Question 1.2

What does one need to know and be able to do in order to correctly interpret what one hears and reads in a language that is not one's native tongue?

Standard 1.2

The Interpretive Mode is focused on the appropriate cultural interpretation of meanings that occur in written and spoken form where there is no recourse to the active negotiation of meaning with the writer or the speaker. Such instances of "one-way" reading or listening include the cultural interpretation of texts, movies, radio and television broadcasts, and speeches.

Indicators

The student will:

D-1.2-1 Respond appropriately to more complex directions and commands given in the target language.

D-1.2-2 Use **aural**, visual, and **context clues** to derive meaning from **authentic** target language materials, in both oral and written forms.

D-1.2-3 Identify the main idea and discern supporting details in **authentic** target language materials, in both oral and written forms.

D-1.2-4 Understand information on a variety of topics that is conveyed in the target language in paragraph-length oral and written presentations.

MODERN LANGUAGES: Communication

DEVELOPING STAGE

Essential Question 1.3

What does one need to know and be able to do in order to effectively present oral and written information in a language that is not one's native tongue?

Standard 1.3

The Presentational Mode refers to the creation of messages in a manner that facilitates interpretation by members of the other culture where no direct opportunity for the active negotiation of meaning between members of the two cultures exists. Examples include the writing of reports and articles or the presentation of speeches.

Indicators

The student will:

D-1.3-1 Use the target language to give directions and commands for simple processes.

D-1.3-2 Use repetition, rephrasing, and gestures to assist in communicating a message in the target language.

D-1.3-3 Use the target language to express personal opinions on selected topics.

D-1.3-4 Use the target language to summarize the main ideas of age-appropriate **authentic** materials (e.g., songs, folktales, short works of literature).

D-1.3-5 Use the target language to organize and summarize information from a variety of sources.

D-1.3-6 Communicate information in the target language in paragraph-length oral and written presentations on a variety of topics.

MODERN LANGUAGES: Cultures

Essential Question 2.1

Why does an understanding of the relationship between the practices and the perspectives of a given culture allow one to communicate with those who speak the language of that culture?

Standard 2.1

This standard focuses on the practices that are derived from the traditional ideas, attitudes, and values (*perspectives*) of a culture. “Cultural practices” refers to patterns of behavior accepted by a society and deal with aspects of culture such as rites of passage, the use of forms of discourse, the social “pecking order,” and the use of space. In short, they represent the knowledge of “what to do when and where.” It is important to understand the relationship between these practices and the underlying perspectives that represent the culture’s view of the world.

Indicators

The student will:

D-2.1-1 Use language and behaviors that are appropriate to interactions in the target culture.

D-2.1-2 Use the target language to describe behaviors and traits that are characteristic of everyday life in the target culture.

D-2.1-3 Use the target language to compare the cultural practices that are particular to the target culture.

D-2.1-4 Use the target language to describe the various perspectives on social issues currently affecting the target culture.

MODERN LANGUAGES: Cultures

DEVELOPING STAGE

Essential Question 2.2

Why does an understanding of the relationship between the products and the perspectives of a given culture allow one to communicate with those who speak the language of that culture?

Standard 2.2

This standard focuses on the *products* of the culture studied and on how they reflect the *perspectives* of that culture. *Products* may be tangible (e.g., a painting, a cathedral, a piece of literature, a pair of chopsticks) or intangible (e.g., an oral tale, a dance, a sacred ritual, a system of education). Whatever the form of the product, its presence within the culture is required or justified by the underlying beliefs and values (*perspectives*) of that culture, and the cultural *practices* involve the use of that *product*.

Indicators

The student will:

D-2.2-1 Use the target language to describe the use of tangible products and symbols of the

target culture within that culture.

D-2.2-2 Use the target language to describe relationships between the products and perspectives of the target culture.

D-2.2-3 Use the target language to describe the contributions that the target culture has made to the world.

D-2.2-4 Use the target language to describe social, economic, and political perspectives within the target culture.

MODERN LANGUAGES: Connections

DEVELOPING STAGE

Essential Question 3.1

Why does an understanding of another language and culture increase one's ability to function in a variety of disciplines?

Standard 3.1

Learning today is no longer restricted to a specific discipline; it has become interdisciplinary.

Just as reading cannot be limited to a particular segment of the school day but is central to all aspects of the school curriculum, so, too, can foreign language build upon the knowledge that students acquire in other subject areas. In addition, students can relate the information studied in other subjects to their learning of the foreign language and culture.

Indicator

The student will:

D-3.1-1 Locate resources and summarize information in the target language that will further his

or her knowledge in other subject areas.

MODERN LANGUAGES: Connections

DEVELOPING STAGE

Essential Question 3.2

Why does an understanding of another language and culture broaden one's ability to access information and to appreciate a variety of distinctive viewpoints?

Standard 3.2

As a consequence of learning another language and gaining access to its unique means of communication and ways of thinking, students acquire new information and perspectives. As learners of a foreign language, they broaden the sources of information available to them. They have a “new window on the world.”

Indicator

The student will:

D-3.2-1 Use the target language to describe viewpoints within the target culture that are expressed in sources intended for native speakers.

MODERN LANGUAGES: Comparisons

DEVELOPING STAGE

Essential Question 4.1

How does a knowledge of another language enhance one's understanding of the nature of language in general?

Standard 4.1

This standard focuses on the impact that learning the linguistic elements in the new language has on students' ability to examine their own language, and to develop hypotheses about the structure and use of languages. Activities can be systematically integrated into instruction that will assist students in understanding how languages work.

Indicators

The student will:

D-4.1-1 Describe how the target language and English have influenced each other.

D-4.1-2 Use the appropriate **register** when speaking and writing in the target language.

D-4.1-3 Use high-frequency target-language **idioms** within familiar contexts.

MODERN LANGUAGES: Comparisons

DEVELOPING STAGE

Essential Question 4.2

How does a knowledge of another language enhance one's understanding of culture and society in general?

Standard 4.2

As students expand their knowledge of cultures through language learning, they continually discover perspectives, practices, and products that are similar to and different from those in their own culture. They develop the ability to hypothesize about cultural systems in general. Some students may make these comparisons naturally, others learn to do so. This standard helps focus this reflective process for all students by encouraging integration of this process into instruction

from the earliest levels of learning.

Indicators

The student will:

D-4.2-1 Use the target language to compare the products of the target culture with those of his or her native culture.

D-4.2-2 Use the target language to compare behavioral patterns and perspectives in the target culture with those in his or her native culture.

D-4.2-3 Use the target language to compare practices that are particular to the target culture with those of his or her native culture.

MODERN LANGUAGES: Communities

DEVELOPING STAGE

Essential Question 5.1

Why does an understanding of another language and culture allow one to participate more fully in the global community?

Standard 5.1

This standard focuses on language as a tool for communication with speakers of the language throughout one's life: in schools, in the community, and abroad. In schools, students share their knowledge of language and culture with classmates and with younger students who may be learning the language. Applying what has been learned in the language program as defined by the other standards, students come to realize the advantages inherent in being able to communicate in more than one language and develop an understanding of the power of language.

Indicators

The student will:

D-5.1-1 Use the target language to converse with target-language speakers encountered outside of the classroom setting.

D-5.1-2 Use the target language to initiate social connections with target-language speakers encountered outside of the classroom setting.

D-5.1-3 Use target-culture resources in the local or regional community to create opportunities for social interaction.

MODERN LANGUAGES: Communication

EXPANDING STAGE

Students who reach the **expanding** stage have completed a minimum of four years in a **sequential, articulated program** consisting of quality instruction in the target language.

Students in this stage will have received more than 500 hours of sequential language study. The expanding stage is not the equivalent of the third or fourth year of instruction.

Learners in the expanding stage create and initiate communication as they interact with others.

They take on full responsibility for engaging, maintaining, and furthering conversation.

Expanding students act independently in the target language to meet a wide variety of purposes.

They are comfortable using sources intended for native speakers, and they successfully incorporate culturally appropriate phrases and gestures into their communication.

Students at this stage use sentence-, paragraph-, and essay-length discourse appropriately to communicate with a wide variety of audiences. They refine their language skills and are increasingly accurate in the language they produce. They communicate effectively in more complex and involved situations, responding to problems and resolving those problems by using the target language more easily. They use multiple strategies to understand and communicate in the target language.

Expanding-stage learners analyze the interrelatedness of cultural products, practices, and perspectives and maintain connections with the target culture. They use the language of that culture to explore multidisciplinary issues and viewpoints. They also develop greater insights into their own language and culture as they progress in their language development and are increasingly able to make connections with communities beyond their own classroom.

MODERN LANGUAGES: Communication

EXPANDING STAGE

Essential Question 1.1

What does one need to know and be able to do in order to conduct effective interpersonal communication with those who speak a language that is not one's native tongue?

Standard 1.1

The Interpersonal Mode is characterized by active negotiation of meaning among individuals. Participants observe and monitor one another to see how their meanings and intentions are being communicated. Adjustments and clarifications can be made accordingly. The Interpersonal

Mode is most obvious in conversation, but [it] . . . can be realized through reading and writing, such as the exchange of personal letters or of electronic mail messages.

Indicators

The student will:

E-1.1-1 Employ **circumlocution** to communicate messages in the target language when he or she cannot communicate a message adequately.

E-1.1-2 Use the target language and the appropriate behaviors to initiate and sustain conversation.

E-1.1-3 Use the target language to give directions for managing an unexpected situation; understand directions given in the target language for managing such a situation.

E-1.1-4 Use the target language to exchange opinions and beliefs with others.

E-1.1-5 Use the target language to respond appropriately to unexpected circumstances and situations.

E-1.1-6 Use the target language to express personal feelings and ideas for the purpose of persuading others.

E-1.1-7 Use the target language to ask and answer open-ended questions and to sustain conversation.

MODERN LANGUAGES: Communication

Essential Question 1.2

What does one need to know and be able to do in order to correctly interpret what one hears and reads in a language that is not one's native tongue?

Standard 1.2

The Interpretive Mode is focused on the appropriate cultural interpretation of meanings that occur in written and spoken form where there is no recourse to the active negotiation of meaning with the writer or the speaker. Such instances of “one-way” reading or listening include the cultural interpretation of texts, movies, radio and television broadcasts, and speeches.

Indicators

The student will:

E-1.2-1 Respond appropriately to complex directions, instructions, and commands given in the target language.

E-1.2-2 Apply diverse strategies to derive meaning and discern details from **authentic** target language materials, in both oral and written forms.

E-1.2-3 Interpret and analyze **authentic** target-language materials, in both oral and written forms.

E-1.2-4 Understand information on a wide variety of topics that is conveyed in the target language in paragraph-length and longer oral and written presentations.

MODERN LANGUAGES: Communication

EXPANDING STAGE

Essential Question 1.3

What does one need to know and be able to do in order to effectively present oral and written information in a language that is not one’s native tongue?

Standard 1.3

The Presentational Mode refers to the creation of messages in a manner that facilitates interpretation by members of the other culture where no direct opportunity for the active negotiation of meaning between members of the two cultures exists. Examples include the writing of reports and articles or the presentation of speeches.

Indicators

The student will:

E-1.3-1 Use the target language to explain a complex process incorporating detailed instructions.

E-1.3-2 Use multiple strategies to enhance the communication of a message in the target language.

E-1.3-3 Use the target language to research and defend a position on a particular issue.

E-1.3-4 Use the target language to summarize and analyze **authentic** materials (e.g., songs, folktales, works of literature).

E-1.3-5 Use the target language to research and synthesize information from a variety of sources.

E-1.3-6 Communicate information in the target language in multi-paragraph-length oral and written presentations on a wide variety of topics.

MODERN LANGUAGES: Cultures

EXPANDING STAGE

Essential Question 2.1

Why does an understanding of the relationship between the practices and the perspectives of a

given culture allow one to communicate with those who speak the language of that culture?

Standard 2.1

This standard focuses on the practices that are derived from the traditional ideas, attitudes, and values (*perspectives*) of a culture. “Cultural practices” refers to patterns of behavior accepted by a society and deal with aspects of culture such as rites of passage, the use of forms of discourse, the social “pecking order,” and the use of space. In short, they represent the knowledge of “what to do when and where.” It is important to understand the relationship between these practices and the underlying perspectives that represent the culture’s view of the world.

Indicators

The student will:

E-2.1-1 Integrate appropriate words, phrases, behaviors, and **idioms** into personal interactions in the target culture.

E-2.1-2 Use the target language to analyze behaviors and traits that are characteristic of everyday life in the target culture.

E-2.1-3 Use the target language to analyze the cultural practices that are particular to the target culture.

E-2.1-4 Use the target language to analyze the various perspectives on social issues currently affecting the target culture.

MODERN LANGUAGES: Communication

EXPANDING STAGE

Essential Question 2.2

Why does an understanding of the relationship between the products and the perspectives of a given culture allow one to communicate with those who speak the language of that culture?

Standard 2.2

This standard focuses on the *products* of the culture studied and on how they reflect the *perspectives* of that culture. *Products* may be tangible (e.g., a painting, a cathedral, a piece of literature, a pair of chopsticks) or intangible (e.g., an oral tale, a dance, a sacred ritual, a system of education). Whatever the form of the product, its presence within the culture is required or justified by the underlying beliefs and values (*perspectives*) of that culture, and the cultural *practices* involve the use of that *product*.

Indicators

The student will:

E-2.2-1 Use the target language to analyze the products and symbols of the target culture to determine their significance both within and beyond that culture.

E-2.2-2 Use the target language to analyze relationships between the products and perspectives of the target culture.

E-2.2-3 Use the target language to explain the effects of the target culture's contributions to the world.

E-2.2-4 Use the target language to explain the impact on current issues and world events that social, economic, and political perspectives within the target culture have had.

MODERN LANGUAGES: Connections

EXPANDING STAGE

Essential Question 3.1

Why does an understanding of another language and culture increase one's ability to function in a variety of disciplines?

Standard 3.1

Learning today is no longer restricted to a specific discipline; it has become interdisciplinary. Just as reading cannot be limited to a particular segment of the school day but is central to all aspects of the school curriculum, so, too, can foreign language build upon the knowledge that students acquire in other subject areas. In addition, students can relate the information studied in other subjects to their learning of the foreign language and culture.

Indicator

The student will:

E-3.1-1 Locate resources and synthesize information in the target language that will further his or her knowledge in other subject areas.

MODERN LANGUAGES: Connections

EXPANDING STAGE

Essential Question 3.2

Why does an understanding of another language and culture broaden one's ability to access information and to appreciate a variety of distinctive viewpoints?

Standard 3.2

As a consequence of learning another language and gaining access to its unique means of communication and ways of thinking, students acquire new information and perspectives. As

learners of a foreign language, they broaden the sources of information available to them. They have a “new window on the world.”

Indicator

The student will:

E-3.2-1 Use the target language to summarize viewpoints within the target culture that are expressed in sources intended for native speakers.

MODERN LANGUAGES: Comparisons

EXPANDING STAGE

Essential Question 4.1

How does a knowledge of another language enhance one’s understanding of the nature of language in general?

Standard 4.1

This standard focuses on the impact that learning the linguistic elements in the new language has on students’ ability to examine their own language, and to develop hypotheses about the structure and use of languages. Activities can be systematically integrated into instruction that will assist students in understanding how languages work.

Indicators

The student will:

E-4.1-1 Explain the role of society in the changing nature of the target language.

E-4.1-2 Integrate the appropriate **register** when speaking and writing in the target language.

E-4.1-3 Use target-language **idioms** within a variety of contexts.

MODERN LANGUAGES: Comparisons

EXPANDING STAGE

Essential Question 4.2

How does a knowledge of another language enhance one's understanding of culture and society in general?

Standard 4.2

As students expand their knowledge of cultures through language learning, they continually discover perspectives, practices, and products that are similar to and different from those in their own culture. They develop the ability to hypothesize about cultural systems in general. Some students may make these comparisons naturally, others learn to do so. This standard helps focus this reflective process for all students by encouraging integration of this process into instruction from the earliest levels of learning.

Indicators

The student will:

E-4.2-1 Use the target language to analyze the products from the target culture.

E-4.2-2 Use the target language to interact effectively in a variety of social contexts within the target culture as well as within his or her native culture.

E-4.2-3 Use the target language to analyze practices that are particular to the target culture with those of his or her native culture.

MODERN LANGUAGES: Communities

EXPANDING STAGE

Essential Question 5.1

Why does an understanding of another language and culture allow one to participate more fully in the global community?

Standard 5.1

This standard focuses on language as a tool for communication with speakers of the language throughout one's life: in schools, in the community, and abroad. In schools, students share their knowledge of language and culture with classmates and with younger students who may be learning the language. Applying what has been learned in the language program as defined by the other standards, students come to realize the advantages inherent in being able to communicate in more than one language and develop an understanding of the power of language.

Indicators

The student will:

E-5.1-1 Use knowledge of the target language and culture to interact appropriately with target language speakers encountered outside of the classroom setting.

E-5.1-2 Use the target language to establish and maintain social connections with target language speakers encountered outside of the classroom setting.

E-5.1-3 Perform community service using knowledge of the target language and/or the target culture.

VISUAL AND PERFORMING ARTS

RLOA will adhere to the guidelines and goals for the visual and performing arts (i.e., dance, music, theatre, and visual arts) using the guidelines delineated in South Carolina’s content standards.

NATIONAL DANCE CONTENT STANDARDS

I. TECHNIQUE. Identifying and demonstrating movement elements and skills in performing dance.

Overview: The term *technique* as “the physical skills of a dancer that enable him or her to execute the steps and movements required in different dances” [*Visual and Performing Arts Content Standards for California Public Schools, Prekindergarten through Grade Twelve* (Sacramento: California Department of Education, 2001), 39]. Technique is necessary for students to become literate in dance basics and to acquire skills necessary to perform dance safely. Students need to be engaged in activities involving body awareness, movement **exploration**, and the understanding of the dance elements—body, time, **space**, and energy/force—in order to recognize how movement is fundamental to all human activity.

II. CHOREOGRAPHY. Understanding choreographic principles, processes, and structures.

Overview: Creative problem solving is basic to our daily lives and essential to the role of a choreographer. How we structure our world through principles and processes reflects our

perceptions as active members of a society. Students will experience the elements of **composition** by engaging in the processes of improvising, composing, refining, presenting, and evaluating a dance product.

III. NONVERBAL COMMUNICATION. Understanding dance as a way to create and communicate meaning.

Overview: The art of dance allows one to communicate ideas, concepts, and emotions nonverbally. Students will acquire the skills to create and interpret ideas, concepts, and feelings through dance.

IV. CRITICAL AND CREATIVE THINKING. Applying and demonstrating critical and creative thinking skills in dance.

Overview: Acquiring the skills for perceiving, responding, and analyzing multiple solutions to a problem is necessary for students to become productive in today's society. Students will develop skills to critically and creatively analyze works of dance and make decisions regarding their own creative choices.

V. HISTORY AND CULTURE. Demonstrating and understanding dance in various cultures and historical periods.

Overview: Dance is a link to the past and is an inseparable part of cultural understanding. Students will examine the role of dance in historical contexts and diverse social and cultural styles by studying various historical periods and cultures. This study enables the student to develop the basic knowledge and skills necessary to appreciate and understand humanity.

VI. HEALTHFUL LIVING. Making connections between dance and healthful living.

Overview: Vigorous movement is essential for personal health. Through dance, students learn how to respect their bodies; maintain healthy levels of strength, flexibility, and endurance; and appreciate the importance of proper nutrition for an active lifestyle.

VII. CONNECTIONS. Making connections between dance and other disciplines.

Overview: Dance is an integral part of every society that connects its past with the present through its various artistic and recreational outlets. Students will recognize the connections between dance and other subject areas while connecting dance to lifelong learning and career skills.

NATIONAL MUSIC CONTENT STANDARDS

I. SINGING. Singing, alone and with others, a varied repertoire of music.

II. PERFORMING ON INSTRUMENTS. Performing on instruments, alone and with others, a varied repertoire of music.

III. IMPROVISING. Improvising melodies, variations, and accompaniments.

IV. COMPOSING AND ARRANGING. Composing and arranging music within specified guidelines.

V. READING AND NOTATING. Reading and notating music.

VI. ANALYZING. Listening to, analyzing, and describing music.

VII. EVALUATING. Evaluating music and music performances.

VIII. MAKING CONNECTIONS. Understanding relationships between music, the other arts, and disciplines outside the arts.

IX. RELATING TO HISTORY AND CULTURE. Understanding music in relation to history and culture.

NATIONAL THEATRE CONTENT STANDARDS

I. STORY MAKING/SCRIPT WRITING. Script writing by the creation of improvisations and scripted scenes based on personal experience and heritage, imagination, literature, and history.

Overview: Students will improvise, write and refine scripts based on imagination, literature and history for informal and formal theatre productions.

II. ACTING. Acting by developing basic acting skills to portray characters who interact in improvised and scripted scenes.

Overview: Students will assume roles and interact in improvisations in early grades and later develop, communicate, and sustain character in informal and formal productions.

III. DESIGNING. Designing by developing environments for improvised and scripted scenes.

Overview: Students will visualize and describe environments that communicate locale and mood in early grades, and later develop designs and plans that clearly support the environment described in the script for informal and formal productions.

IV. DIRECTING. Directing by organizing rehearsals for improvised and scripted scenes.

Overview: Students will respond to direction and side coaching and demonstrate an understanding of the role of director in early grades and, later, interpret dramatic texts and organize and conduct the rehearsals for informal and formal theatre.

V. RESEARCHING. Researching by using cultural and historical information to support improvised and scripted scenes.

Overview: Students will locate, explore, examine and integrate information related to theatre.

VI. CONNECTING. Comparing and incorporating art forms by analyzing methods of presentation and audience response for theatre, dramatic media (such as film, television, and electronic media), and other art forms.

Overview: Students will connect, compare and incorporate ideas and concepts of theatre within the art form and to other disciplines.

VII. VALUING AND RESPONDING. Analyzing, evaluating, and constructing meanings from improvised and scripted scenes and from theatre, film, television, and electronic media productions.

Overview: Students will critique, assess, and derive meaning from theatrical experiences.

VIII. RELATING TO HISTORY AND CULTURE. Understanding context by analyzing the role of theatre, film, television, and electronic media in the community and in other cultures.

Overview: Students will understand and integrate information from past and present cultures to enhance their theatrical knowledge and experiences.

NATIONAL VISUAL ARTS CONTENT STANDARDS

I. Understanding and Applying Media, Techniques, and Processes

Creative Expression. Students will develop and expand their knowledge of visual arts media, techniques, and processes in order to express ideas creatively in their artworks.

II. Using Knowledge of Structures and Functions

Aesthetic Perception/Creative Expression. Students will demonstrate a knowledge of the elements and principles of design and show an aesthetic awareness of the visual and tactile qualities in the environment that are found in works of art.

III. Choosing and Evaluating a Range of Subject Matter, Symbols, and Ideas

Creative Expression/Aesthetic Valuing. Students will use a variety of subjects, symbols, and ideas in creating original artwork and will evaluate the use of these elements in the artworks of others.

IV. Understanding the Visual Arts in Relation to History and Cultures

Historical and Cultural Perception. Students will demonstrate a knowledge of artists, **art history**, and world cultures and will understand how the visual arts reflect, record, and shape cultures.

V. Reflecting upon and Assessing the Merits of Their Work and the Work of Others

Historical and Cultural Perception/Aesthetic Valuing. Students will use thorough **analysis**, **interpretation**, and judgment to make informed responses to their own artworks and those of others.

VI. Making Connections between Visual Arts and Other Disciplines

Historical and Cultural Perception. Students will demonstrate a knowledge of the connections among the content of visual arts, other disciplines, and everyday life.

2.

How RLOA's Instructional Program Meets or Exceeds SCDE'S Academic Standards

RLOA will use South Carolina's Academic Standards, as noted above, as a basis for its curriculum. To ensure compatibility between RLOA and other state and district schools, RLOA will adopt the SCDE uniform grading scale:

Numerical Grade	Letter Grade
93 – 100	A
85 – 92	B
77 – 84	C

70 – 76	D
≤ 69	F

3.

Provisions for Determining Student Achievement

RLOA will determine whether all students are achieving and attaining the academic standards through various assessment measures outlined in the section: Student Assessment. Such assessments include, but are not limited to:

- **Interviewing** – involves observing and questioning students to get an improved idea of their cognitive and communicative abilities.
- **Journals** – are ongoing written records, including drawings, which help instructors determine the degree to which students understand concepts and processes. It also allows for assessment of more subjective criteria, such as a student’s thoughts and feelings about a matter.
- **Self and Peer Evaluations** – asks students to reflect on or make a judgment about their own or a peer’s behavior and performance. They may be used to evaluate comprehension, attitude and performance.
- **Student Contracts** – are tools that require a student to review an issue, devise a plan to accomplish a goal, or investigate a topic. They can be used to determine a student’s organization ability and capacity for autonomy.

- **Student Portfolios** – are purposeful collections of student work that exhibit the student’s efforts, progress and achievements in one or more areas.
- **Individual Learning Plans** – are profiles of each student created to assist teachers in making instruction as student-specific as possible. The Learning Plan (LP) is used to determine what a student knows and how he or she learns best. It will continually be updated and assessed during the school year. It will include:
 - Standardized Testing Results
 - Teacher Observations
 - Affirmative Anecdotal Records
 - Student Records
 - Family Information (including pictures and reflections by relatives)
 - Community Reflections
 - Student Interests
 - Learning Style Inventory and/or Motivation Preference Assessment

RLOA students will participate in regular benchmark testing to assess knowledge of the curriculum standards and to ensure that as a school RLOA is achieving its academic objectives. The school maintains that achievement for all students requires that assessment become a **regular classroom practice**. Consequently, teachers will at minimum employ the following daily, weekly, monthly, and biannual assessment strategies to ensure that all RLOA students are meeting the stated objectives:

Daily

- **Homework Checks** – daily homework checks reinforce the practice of completing homework and provide the teacher with feedback.
- **Questioning** – questioning is a quick and easy way to check for understanding during or after a lesson
- **Daily Drill** – requiring students to enter the classroom and immediately complete an assignment helps a teacher to gauge student learning on a regular basis.

Weekly

- **Observation** – is an informal assessment of student behaviors, attitudes and skills. Anecdotal notes, checklists, audio and video recordings and photos may be used to formalize and document observations. Documented observation information may be added to a student's educational LP.
- **Rubrics** – are scoring tools that list the criteria for an assigned piece of work. A rubric lists the elements necessary to complete an assignment along with detailed gradations of quality for each performance element.
- **Homework** – refers to tasks assigned to students to be completed mostly outside of class. Daily homework assignments allow students to practice concepts learned in class, and gives teachers consistent feedback regarding student comprehension.
- **Tests** – may include any type of questioning such as true-false, matching, essays and multiple choice. All RLOA instructors are required to administer a weekly written assessment that will be collected and stored within each classroom.

Monthly

- **Formative and Summative Tests** – are tests that are administered and scored in a consistent manner. Teachers are responsible to develop formative and summative tests for their subject area that may be used as a benchmark measurement throughout the school year.
- **Writing Prompts** – are statements or groups of statements about a specific topic, constructed to motivate students' thoughts.
- **Performance Tasks** – are learning activities that are scored according to specified criteria.

Semiannual

- **Measures of Academic Progress (MAP)** – is a state-aligned computerized adaptive test that accurately reflects the instructional level of each student and measures growth over time. MAP can be used as a diagnostic, formative and summative assessment measure.

Other methods of assessment involve parents and include student-led conferencing and creative performances and exhibitions. RLOA will use these two assessments along with the others to support families in identifying areas of student success and weakness. The staff of RLOA will use these evaluation tools and methods to modify classroom instruction.

iv Educational and Curricular Program

1.

RLOA will teach all of the standards set forth by the SCDE with alignment to the added elements from the Common Core Curriculum Maps outlined above for ELA and Mathematics. The instructional program of RLOA will be able to exceed the academic standards adopted by the State Board of Education through the Common Core Curriculum and, beginning in Grade 6, the College Board's SpringBoard Program, Advanced Placement Program, College Board Standards for College Success, and the College Board's College Readiness Pathway (comprising ReadStep, PSAT/NMSQT, and the SAT). Throughout the life of the charter, teachers will work to revise and adapt the instructional program to meet the needs of our student population while maintaining a strong correlation with South Carolina state standards.

The content of classroom instruction is driven by the curriculum standards, not a book. Therefore, teachers will not depend on a single text book or program to support their instruction. Instead, teachers will draw on a variety of resources, including text books, primary sources, literature, hands-on manipulatives, games, teacher-made materials, public library materials, the internet, and reference materials.

English / Language Arts

A major cornerstone of RLOA's academic philosophy involves reading, writing and vocabulary development across the curriculum. All RLOA teachers are expected to:

- Regularly incorporate journal writing, laboratory reporting, or some other form of writing into their lessons;
- Develop objective assessment criteria for evaluating student writing;

- Emphasize vocabulary acquisition by posting vocabulary words inside the classroom, encouraging students to define unfamiliar words while reading, and regularly assessing students to ensure comprehension;
- Hold students accountable for carrying an independent reading book with them at all times and reading during moments of “free time”;
- Develop and implement scaffolding strategies that assist students in reading the varying types of text necessary for each content area.

Reading

Developing readers within our student population is one of our most significant responsibilities as a school. Reading is a way to gather information about the world and is an essential requirement for success in the 21st century. RLOA students will be taught reading in a sequential process, allowing newly acquired skills to build on the foundation of previously learned skills. The three key steps students will be taught in this progression are decoding, comprehension and retention.

Decoding

To ensure that all students achieve a basic level of reading, children learn to map letters to the sounds they represent. Through practice and constant repetition, all students will develop the phonemic awareness necessary to become proficient decoders of the English language.

Comprehension

Students will learn to recognize and understand sight words. Our goal is to continually build the vocabulary of each student so that word recognition becomes automatic. This allows students to concentrate on other aspects of a piece of writing, such as the meaning of whole sentences and paragraphs.

Retention

Finally, students must develop practices that assist them in remembering what has been read. Teachers will work to connect new reading material to the previous background knowledge of students. Instruction will also include active reading strategies such as highlighting, underlining and annotating a text. Students will not only pay more attention to the details of the text, but these strategies also create an easy avenue for review of the material.

To ensure that all students have the opportunity to become great readers, RLOA will employ a reader's workshop model to teach elements of reading that align with South Carolina Academic Standards. This model gives teachers the flexibility to incorporate all or a combination of the following "best practices" for reading instruction. Teachers will:

- Model and discuss his/her reading interests along with favorite strategies to increase comprehension and retention.
- Read aloud to students.
- Allow students the freedom to choose their own reading materials.

- Expose students to a wide and rich variety of texts.
- Use knowledge of the Greek and Latin roots of words to analyze their meaning.
- Teach reading as a process:
 - Use strategies that activate prior knowledge
 - Help students make and test predictions
 - Structure help during reading
 - Provide after-reading applications such as presentations or dramas
- Incorporate collaborative activities with lots of social interaction and discussion.
- Teach skills in the context of meaningful literature and/or experiences (across content areas).
- Encourage independent reading
- Incorporate vocabulary acquisition to enhance students' ability to learn and apply new concepts. The words a person owns are the concepts the person understands.

Writing

Writing is a means of discovery, a form of reasoning that allows us to think about what we know and understand. Therefore, RLOA will cultivate students' reasoning across the disciplines by employing a writer's workshop model to teach elements of writing that align with South Carolina Academic Standards. Students will have daily opportunities to compose writings across the content areas in a meaningful context that support the classroom curriculum. The workshop model also allows students to use the revision process to expand upon previous ideas, consider

the appropriate tone for varying audiences, and develop logical structures for organized writing. Each classroom will maintain a constant focus on proper grammar and spelling, giving teachers the opportunity to ensure that editing and revision strategies are well developed so that students may use them comfortably in middle and high school.

To ensure that all students have the opportunity to become great readers, RLOA teachers may incorporate all or a combination of the following “best practices” for writing instruction:

- Instructors modeling writing – drafting, revising, sharing – as a fellow author and as demonstration of processes.
- Increasing student ownership and responsibility by:
 - Helping students choose their own topics and goals for improvement.
 - Using brief teacher-student conferences.
 - Teaching students to review their own progress.
- Allowing students to write for real audiences, publishing for the class and for wider communities.
- Writing across the curriculum as a tool for learning.
- Using constructive and efficient evaluation that involves:
 - Brief informal responses as students work.
 - Thorough grading of just a few of student-selected, polished pieces.
 - Focusing on a few errors at a time.
 - Cumulative view of growth and self-evaluation.
 - Encouragement of risk taking and honest expression.

Vocabulary

Without proper word knowledge, RLOA students will never achieve academic success. The words we know are the concepts we own. Words allow students to access prior knowledge and are the basis for reading comprehension. For these reasons, RLOA will maintain a strong focus on vocabulary development across the curriculum. RLOA teachers may incorporate all or a combination of the following “best practices” for vocabulary instruction:

- Encourage wide reading of rich texts in all content areas to expose students to more words.
- Increase the quality of oral language to which students are exposed (storytelling, reading aloud, books on tape, etc.).
- Train students to recognize word parts when decoding a word.
 - Latin and Greek roots
 - Prefixes and suffixes
- Teach students to learn words from context by making connections between the word and the context in which it appears.
- Teach synonyms and antonyms.
- Use word walls and other display techniques.
- Use graphic organizers (i.e. definition map).
- Use other modalities (e.g., musical rhythm, tone, and lyrics to aid in remembering vocabulary words).

Mathematics

“Mathematics is a form of reasoning. Thinking mathematically consists of thinking in a logical manner, formulating and testing conjectures, making sense of things, and forming and justifying judgments, inferences, and conclusions. We demonstrate mathematical behavior when we recognize and describe patterns, construct physical and conceptual models of phenomena, create symbol systems to help us represent, manipulate, and reflect on ideas, and invent procedures to solve problems” (Battista, M. February, 1999. “The Mathematical Miseducation of America’s Youth”). RLOA will teach mathematics using an interdisciplinary approach that incorporates these behaviors into everyday instruction. We desire that our students gain the ability to reason mathematically and make connections between classroom instruction and “everyday life.”

RLOA teachers will employ the following instructional methods to ensure that RLOA students are provided the best opportunity for success in mathematics classrooms:

- Focus on meaning – Students will develop important mathematical ideas through authentic and meaningful experiences.
- Learning Environment – Teachers will support and encourage students to employ mathematical reasoning and will allow students to try innovative solutions to problems.
- Number Sense - Teaching mathematics with a focus on number sense encourages students to become problem solvers in a wide variety of situations and to view mathematics as a discipline where thinking is important.
- Manipulatives – Using manipulatives to create an opportunity for “hands-on” learning adds meaning to a lesson and provides a method of differentiation for instruction.

- Technology Integration – Students will use calculators and other tools for operations beyond basic computation.

In each grade level, math instruction will focus on mathematical processes, numbers and operations, algebra, geometry, measurement, data analysis, and probability.

Science

RLOA teachers will employ the following instructional practices to ensure that RLOA students are provided the best opportunity for success in science classrooms:

- Teaching Basic Lab Skills - Extensive training in safety and lab procedures, including training using basic lab tools such as dissection kits, balances, burners, etc.
- Integrating the Curriculum - Planning for the active application of science learning to contemporary technological issues and social choices.
- Collaborative Group Work – Students will work through the process of scientific inquiry efficiently and productively.

In each grade level, a scientific inquiry component will be taught along with specific standards in physical science, life science, and Earth and space science.

Social Studies

In 1992, the Board of Directors of National Council for the Social Studies, the primary membership organization for social studies educators, adopted the following definition:¹

“Social studies is the integrated study of the social sciences and humanities to promote civic competence. Within the school program, social studies provides coordinated, systematic study drawing upon such disciplines as anthropology, archaeology, economics, geography, history, law, philosophy, political science, psychology, religion, and sociology, as well as appropriate content from the humanities, mathematics, and natural sciences. The primary purpose of social studies is to help young people develop the ability to make informed and reasoned decisions for the public good as citizens of a culturally diverse, democratic society in an interdependent world.”

The SCDE echoes this position, stating that students need to understand basics in government, geography, economics, and history to become good citizens.

RLOA will teach Social Studies/ History with careful attention to link geographical, economical, historical and governmental content with issues that are relevant to the lives of RLOA students, making lessons more meaningful and more effective. This includes connecting civic education to service-learning experiences throughout the school year.

RLOA teachers will employ the following instructional practices to ensure that RLOA students are provided the best opportunity for success in social studies classrooms:

¹ "Curriculum Standards for Social Studies: I. Introduction | National Council for the Social Studies." [National Council for the Social Studies | Creating Effective Citizens](http://www.socialstudies.org/standards/introduction). 25 Mar. 2009 <<http://www.socialstudies.org/standards/introduction>>.

- English and Social Studies teachers will work collaboratively to identify major reading and writing goals for students and to develop interdisciplinary projects and assignments.
- Teachers will emphasize activities that engage students in inquiry and problem solving about significant human issues.
- Students will take advantage of opportunities to participate in wider social, political, and economic affairs so that they share a sense of responsibility for the welfare of their school and community.
- Students will inquire about the cultural groups they belong to and others represented in their school and community to promote the students' sense of ownership in the social studies curriculum.

Physical Education

Our physical education program is aligned with the South Carolina Academic Standards and the National Standards set forth by the National Association for Sport and Physical Education which state that every student should:

Standard 1: Demonstrate competency in motor skills and movement patterns needed to perform a variety of physical activities.

Standard 2: Demonstrate understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities.

Standard 3: Participate regularly in physical activity.

Standard 4: Achieve and maintains a health-enhancing level of physical fitness.

Standard 5: Exhibit responsible personal and social behavior that respects self and others in physical activity settings.

Standard 6: Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction.

For many of our students, the physical education program will provide an introductory experience to specific sports such as basketball, track, etc. These sports provide an ideal setting to teach and apply principles of teamwork. While engaging in PE, students will develop their interpersonal skills.

Visual and Performing Arts Education

RLOA's arts education program will be infused into each content area. Students will have an opportunity to explore many types of visual and performing arts during their tenure at RLOA. Through the Academic Leagues program, RLOA students will have the opportunity to explore their craft through the mentorship of professionals in the community.

Foreign Language

RLOA foreign language classes will be in alignment with the guidelines and goals of SCDE Standards for Modern Languages. While building an understanding of vocabulary and grammar, students will learn about other cultures and relate the content to issues and communities within the Lowcountry. RLOA will also examine avenues that allow students to interact with fluent

speakers of other languages on a regular basis in order to boost the likelihood of language acquisition.

Technology

RLOA will integrate technology education across the curriculum. Teachers are charged with the responsibility of including technology within instruction that involves hands-on operation by students. This may include the use of MP3 players, SmartBoards, laptops, cameras, calculators, cell phones, and other devices to meet course objectives.

Leadership Curriculum (Entrepreneurship)

RLOA will conduct leadership classes in entrepreneurship during the school day, the tutorial period, or at an optional Saturday School session.

Through involvement with *Junior Achievement* and *The Leader in Me* programs and mentorship programs with business leaders in the community, RLOA students will have opportunities to learn the basics of starting and operating a business and leading others. In addition, the curriculum will offer sessions on topics such as legal issues, e-commerce, marketing, accounting, and budgeting. For evidence of the alignment between South Carolina Academic Standards and *Junior Achievement*, please visit http://www.ja.org/programs/programs_correlat_sc.shtml. The document is too lengthy to include in this application (see **Appendix D** for overview). For evident of the alignment between South Carolina Academic Standards and *The Leader in Me*, please visit <http://www.TheLeaderInMe.org> (see **Appendix D** for overview).

RLOA reserves the right to add additional courses to the curriculum. For the good of our students, we commit to aligning future courses with all standards proposed by the South Carolina Department of Education.

2.

School Calendar and Daily Schedule

RLOA will follow the same school calendar as Jasper County which—REMOVED:
REPLACED WITH: a school calendar that meets the state requirement of 180 instructional days.

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Faculty and staff will have additional days for professional development and teacher workdays.

Optional Saturday School will normally occur ~~threeone~~ to ~~fourtwo~~ days per month, allowing for up to ~~3420~~ extra days per year. (See *Appendix D for a sample school calendar—REPLACED WITH APPENDIX E for the RLOA sample school calendar and daily schedule.*) RLOA staff

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will use methods through such sources as Pearson's *K12 Learning Suite* system to quantify attendance on all school days (see *Appendix E—REPLACED WITH F*).

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Optional Saturday School – Optional Saturday School is scheduled to begin at 8:30 a.m. and end at 12:30 p.m. on designated Saturdays. RLOA students will have the opportunity to use this extended time for tutorials, mentorship, arts, and sports programs. With optional extra days added to the schedule, students will be able to receive up to seventy (70) hours of additional instruction beyond the traditional school calendar. These extra hours will be used for the following activities:

- Field trips
- Visual and performing arts classes
- Experiential learning
- Remediation in core subjects for struggling students, especially in math, reading and language arts
- Sports programs

Segments of Saturday School will be taught by RLOA full time instructional staff. Parents and community volunteers will be incorporated into the program.

More time on task is central to the success of RLOA. Students attend school Monday through Thursday from 7:00 a.m. to 4:55 p.m. and on Friday from 7:00 a.m. to 2:30 p.m. The extra time each day, coupled with optional extra school days on Saturdays, will allow RLOA students to achieve significant academic and social progress. For example, at the beginning (7:00-7:45) and the end of the day (3:40-4:55), students will have the opportunity for tutoring or assistance with projects. (See *Appendix E* for a sample of our students' daily schedule.)

3.

Instructional Methods

RLOA teachers are expected to use a variety of instructional methods to teach each student and to enable their students to achieve academic goals in a rigorous setting. Learning Plans for each student complete with standardized test scores will guide instructors in making data-driven instructional decisions. The list of strategies highlights some of the more important methods that we will use to accomplish the curriculum standards.

Ensuring Quality Instructors in Every Classroom

RLOA is committed to providing a high-quality education to all students, to include innovative instructional tools and research-based best practices. However, study after study has confirmed that teachers have a greater impact on student learning than any other school related factor. In the report, *Effective Teachers in Every Classroom*, Strong American Schools published the following findings:²

- Students assigned to the most effective teachers gain a full additional year's worth of learning over students assigned to the least effective teachers.³
- Having strong teachers three years in a row can boost students' test scores as much as 50 percentile points (on a 100-point scale) above what they would gain with three ineffective teachers in a row.⁴
- If we were to provide low-income students with good teachers rather than merely average teachers for five years in a row, we could eliminate the achievement gap entirely.⁵

² Strong American Schools, and National Institute for Excellence in Teaching. POLICY TOOLKIT Section 2: Effective Teachers in Every Classroom. Rep.

³ Hanushek, E. A. (1992). The trade-off between child quantity and quality. *Journal of Political Economy*, 100(1), 84-117.

⁴ Haycock, K. (1998, Summer). Good teaching matters: How well-qualified teachers can close the gap. *Thinking K-16*, 3(2), 1-14. (page 3) Based on Sanders, W.L. & Rivers, J.C. (1996). *Cumulative and residual effects of teachers on future student academic achievement*. Knoxville, TN: University of Tennessee Value-Added Research and Assessment Center. (p. 9, Table 1)

⁵ Hanushek, E. (2006). Alternative school policies and the benefits of general cognitive skills. *Economics of Education Review*, 25, 447-462. (p. 456)

- Assigning students from any background to several ineffective teachers in a row deals them a crushing blow from which they seldom recover.⁶
- There are huge differences among teachers—even among colleagues in the same school—in terms of their ability to produce student-learning gains.⁷

The report went on to point out that the majority of school districts within the U.S. compensate teachers using a salary schedule totally based on years of experience and graduate school credits. Neither of these serves as a solid indicator to predict student achievement. Other studies found:

- The biggest improvements in teachers' effectiveness come *early* in their careers, typically during their first three to five years on the job.⁸
- One recent study found that teachers who earn master's degrees after they start teaching are, on average, *less* effective at improving student achievement than those who do not.⁹

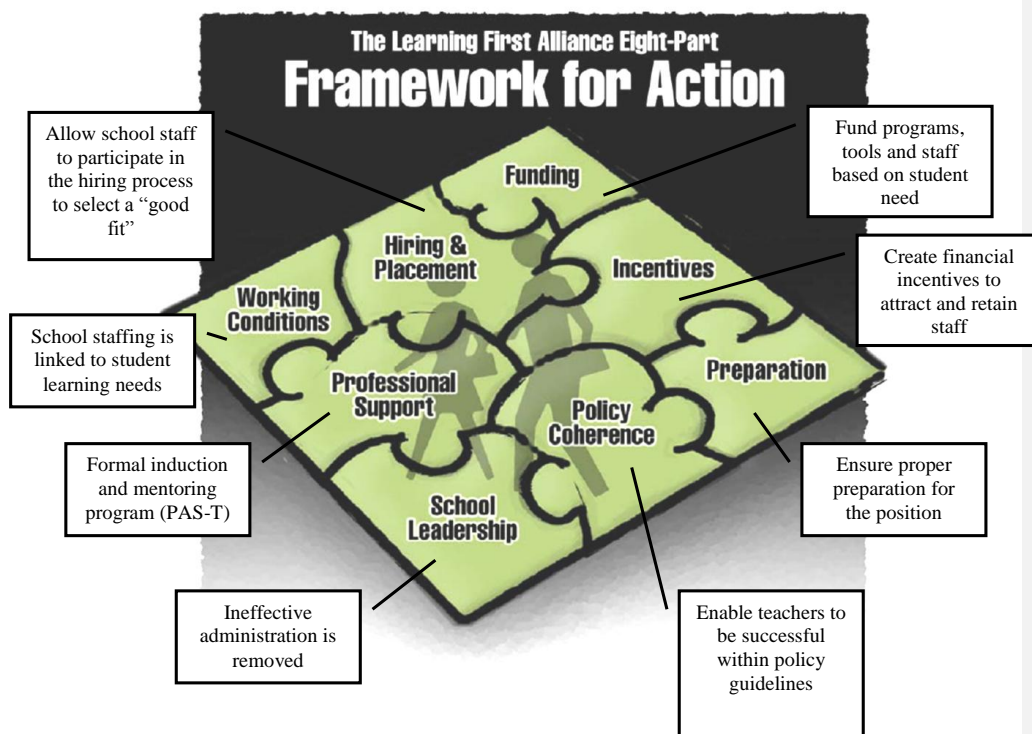
⁶ Babu, S. & Mendro, R. (2003). *Teacher accountability: HLM-based teacher effectiveness indices in the investigation of teacher effects on student achievement in a state assessment program*. Paper presented at the American Education Research Association annual meeting, April 2003. Based on their analysis of teacher effectiveness and student assignments in Dallas, Texas, the authors concluded, "A sequence of ineffective teachers with a student already low achieving is educationally deadly."

⁷ Nye, B., Konstantopoulos, S., & Hedges, L. V. (2004, Fall). How large are teacher effects? *Educational Evaluation and Policy Analysis*, 26(3), 237-257.

⁸ See for example, Rivkin, S., & Hanushek, E. (2003). How to improve the supply of high quality teachers. In Diane Ravitch (ed.), *Brookings Papers on Education Policy 2004*. Washington, DC: Brookings Institution Press.

⁹ Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2007, January). *How and why do credentials matter for student achievement?* Cambridge, MA: National Bureau for Economic Research. (pp. 32-33)

These remarkable findings have caused the RLOA Planning Committee to consider methods to best support the school's greatest resources – its teachers. RLOA is examining a variation of the Learning First Alliance's Eight Part Framework for Action as a means of assessing the school's potential to attract and maintain a quality instructional team.¹⁰



¹⁰ Learning First Alliance. *A Shared Responsibility: Staffing All High-Poverty, Low-Performing Schools with Effective Teachers and Administrators*. Rep. 2005.

RLOA reserves the right to offer performance-based compensation to teachers employed at the school. Although no concrete method for assessing and rewarding teacher performance has been drafted, RLOA will consider the following factors when designing formulas for performance-based compensation:

- Student achievement on norm-referenced and criterion-referenced standardized exams (most likely using value-added measures that take into account students' starting points and expected progress);
- Higher compensation for those who agree to take on classes with higher percentages of students requiring remediation;
- Striking a fair balance between individual rewards and group incentives;
- Additional compensation for accepting leadership roles within the school and community;
- Acquisition of additional certifications and professional development credits; and
- Amount of salary increase to be given (must be reasonable and effective);
- School finances.

School-Wide Technology Use

Students deserve the opportunity to interact with and manipulate technology in the classroom. While there are several definitions of what it means to be technology literate, it is important for the staff of RLOA to continually drive students to pursue new skills and become more and more technologically savvy. The Partnership for 21st Century Skills website reminds us that "People in the 21st century live in a technology and media-driven environment, marked by access to an

abundance of information, rapid changes in technology tools and the ability to collaborate and make individual contributions on an unprecedented scale.¹¹” The world changes at a more rapid pace than ever before and is becoming increasingly connected. New possibilities arise everyday. The Planning Committee desires that students use technology to become a part of the world around them. We will develop a learning environment where students are comfortable creating and sharing media. It is only fair that we give RLOA students every opportunity to succeed. They deserve a chance to see their dreams come true, and in today’s world, technological literacy is essential for that to happen. Technology is in the service of instruction, not the other way around. Therefore, it will be used as a tool rather than an end in itself.

RLOA will also use technology for the following instructional purposes:

- Differentiating instruction to meet individual needs
- Engaging and motivating students

Uniform Classroom Management Techniques

Robert Marzano defines classroom management as “the confluence of teacher actions in four distinct areas: (1) establishing and enforcing rules and procedures, (2) carrying out disciplinary actions, (3) maintaining effective teacher and student relationships, and (4) maintaining an appropriate mental set for management. While giving teachers plenty of freedom to manage their own classroom, RLOA demands certain standards be kept throughout the school to maintain consistency and strengthen the school culture.

¹¹ "The Partnership for 21st Century Skills - Partnership For 21st Century Skills Releases Updated Framework For 21st Century Learning." The Partnership for 21st Century Skills - Home. 16 Mar. 2009 <http://www.21stcenturyskills.org/index.php?option=com_content&task=view&id=360&Itemid=64>.

Establishing and Enforcing Rules and Procedures

RLOA has set clear and fair guidelines for student behavior that is outlined in Section 4(d) and further elaborated on in the student handbook (*See Appendix G*). All students are expected to conduct themselves as persons of integrity, pursuant with our focus area of Character.

In addition to rules, students will observe specified procedures in every classroom in the school. For instance, RLOA will implement a school-wide classroom management system for student work. Students will abide by a “binder management system” that will help them maintain organization.

Carrying Out Disciplinary Actions

RLOA sets high expectations for student achievement and makes no excuses for poor academic performance or misbehavior. Students are expected to abide by the stated rules and uphold a commitment to our seven core values of leadership, scholarship, character, teamwork, creativity, problem-solving, and identity. When students do not conduct themselves in a manner fitting a leader, consequences will be administered.

Maintaining Effective Teacher and Student Relationships

In his efforts to identify the dynamics of an effective student and teacher relationship, Theo Wubbels describes a teacher’s role in the relationship as someone who should be able to “set standards and maintain control while still allowing students the responsibility and freedom to

learn.¹² RLOA expects teachers to continually search for this balanced approach to the student-teacher relationship. Teachers will receive professional development and engage in professional collaboration regularly to sustain and/or improve this relationship.

Maintaining an Appropriate Mind Set

Research says that teachers who are “with it” are better classroom managers. A teacher who is “with it” (otherwise known as with-it-ness) is someone who constantly scans the classroom to discover inappropriate behavior and who intervenes before misconduct becomes disruptive.¹³ RLOA will provide professional development in this area as well as foster creative discussion among teachers in hopes of sustaining a school environment that consistently displays this awareness from classroom to classroom.

Service-Learning

RLOA is committed to developing a student body of servant leaders who are actively engaged in their community. Service-learning is an obvious match with our mission and will be incorporated into the school curriculum.

¹² Wubbels, T., Brekelmans, M., van Tartwijk, J., & Admiral, W. (1999). Interpersonal relationships between teachers and students in the classroom. In H.C. Waxman & H.J. Walbarg (Eds.), *New directions for teaching practice and research* (pp. 167). Berkeley, CA: McCutchan.

¹³ Brophy, J.E. (1996). *Teaching problem students*. New York: Guilford.

Learn and Serve defines service-learning as “a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities.” The National Youth Leadership Council (NYLC) elaborates further, saying, “service-learning actively engages participants in meaningful and personally relevant service activities.”

Our desire is for RLOA students to become lifelong engaged members of their community, seeking to use their talents and resources to benefit the community at large. Service learning affords leaders the opportunity to learn content in a relevant context, increase their capacity as servant leaders and better their communities. According to the NYLC, service-learning projects work best when they “fit the ages and developmental abilities of the participants, include interesting and engaging service activities, explore the context of the underlying societal issues the service addresses, and address needs that are important to the community being served.”

Academic Impact

The RMC Research Corporation cites several studies that reveal promising results of the academic impact of high quality service-learning on student achievement as well as civic and social development.¹⁴ These studies reported increases in student standardized test scores, grade point averages, ratings of school engagement and measures of attitude at several schools, including alternative programs.

¹⁴ RMC Research Corporation. (2007, May). Impacts of Service Learning on Participating K-12 Students. Scotts Valley, CA: National Service-Learning Clearinghouse.

Service-learning is regarded as a constructivist approach to teaching and learning; meaning that, by using this teaching strategy within the instructional environment, students learn how to learn by giving them the training to take the initiative for their own learning experiences. Allowing this type of flexibility within the curriculum differentiates teaching and propels students to become self-motivated, supporting our instructional goal of motivating students based on individual preferences. Constructivists support allowing students to actively construct knowledge by working through academic ideas in a way that is relevant to them.¹⁵ They also suggest that instruction be organized around a problem. This procedure allows students to acquire knowledge and further develop their problem-solving skills. Service learning shares this emphasis on students being actively involved in learning and problem-solving practices. Students develop into informed and engaged citizens while working to meet the needs of a community.

Character Education

Other research carried out by RMC discovered that students who took part in the *Partnerships in Character Education* project (character education project integrating service-learning components) reported greater increases in pro-social behaviors, such as altruism, caring, respect and ability to choose between right and wrong, than their peers in the comparison group.¹⁶ This research shows a correlation between two of RLOA's key areas of focus - character and

¹⁵ Brooks, Jacqueline Grennon, Martin Brooks. *In search of understanding: The case for constructivist classrooms*. Alexandria, VA Association for Supervision and Curriculum Development, 1999.

¹⁶ RMC Research Corporation. (2005, March). *Quick Guide: Curriculum Development for K-12 Service Learning*. Denver, Colorado, Corporation for National & Community Service

community engagement. This correlation will strengthen the mission of RLOA and allow the school to serve students more effectively.

Benefits of Service-Learning for Disadvantaged Youth

Low socioeconomic status (SES) is negatively connected to a broad range of indicators of child and adolescent well-being. On the other hand, growing up in poverty does not rob one of his or her identity. Service-learning can be a significant approach for building strengths and resources into the lives of young people, even those who are a product of poverty.

Eugene Roehlkepartain gives several ways that youth from disadvantaged situations benefit from participating in quality service-learning in a variety of different ways, including the following:¹⁷

- They are inclined to have a greater commitment to learning and better school attendance, grades, and academic success than low-income students who did not participate.
- They tend to be more likely to believe they are contributing to the community, to be engaged in learning and other positive outcomes.
- They tend to demonstrate more positive civic attitudes and behaviors than youth from their peers who do not volunteer.

Roehlkepartain also found that youth from disadvantaged backgrounds are less likely to serve others and are asked less frequently to do so. RLOA expects all students to participate in service learning opportunities regardless of family socioeconomic status. Ultimately, we desire that both

¹⁷ Eugene C. Roehlkepartain, Search Institute, December 2007

the students and the recipients find the service-learning experience *beneficial*, even *transforming*.

Daily Physical Activity

RLOA believes that physical activity is an important component of every student's life and school day. Despite the fact that most would agree on the importance of physical activity to combat student health related diseases such as juvenile diabetes and childhood obesity, *Recess Rules*, a report conducted by the Robert Wood Johnson Foundation, states that only 36 percent of children meet doctors' recommendations for physical activity.¹⁸ In response to these findings, RLOA students will enjoy a consistent physical education program along with a daily schedule that includes recess as an integral part of the day.

Student Motivation

One of RLOA's basic instructional principles is a commitment to student motivation. There is a strong link between student motivation and learning. Students more readily learn material that they find interesting and challenging, therefore, motivation plays a central role in the amount of time students will invest in their learning. RLOA is dedicated to using models of "motivation preferences" that build on the theories of multiple intelligences and temperament sorters, such as ConnectEd's Motivation Preferences, Needs, and Wants Survey (*See Appendix H*). This process fosters critical thinking, provides a positive feeling tone, heightens interest, and increases students' level of success. It is the responsibility of the instructor to guide and encourage

¹⁸ Robert Wood Johnson Foundation. *Recess Rules: Why the undervalued playtime may be America's best investment for healthy kids and healthy schools*. Rep. San Francisco: FENTON|Communications, 2007

students to be independent and self-motivated, help them explore their own strengths, and facilitate their personal and intellectual growth.

Reading, Writing, and Vocabulary Development Across the Curriculum

To produce scholars who are prepared for rigorous academics throughout high school and college, reading, writing, and vocabulary development will be incorporated into every subject area. By incorporating oral and written language into lessons, it is predicted that students will learn 2,500 more words each year.¹⁹ This strategy enables teachers to do more than simply give students facts; they are now empowering students to be lifelong learners. Literacy integration into the curriculum ensures that students' "knowledge [will] not simply [be] a list of facts and formulas that are relevant to the domain; instead, their knowledge is organized around core concepts of "big ideas" that guide their thinking about the domain."²⁰

Integrating literacy into the standards also allows teachers to adequately cover required standards each year. One study reviewed 100,000 test scores in reading and mathematics from Chicago public school students in grades two through eight. It proved that students who received authentic teaching had higher achievement.²¹ Another study, *Best Practice New Standards for Teaching and Learning in America's Schools*, supports holistic teaching. It recommends that

¹⁹ Beck, I., & McKeown, M. (1991). Conditions of vocabulary acquisition. In R. Barr, M.L. Kamil, P. Mosenthal, & P.D. Pearson (Eds.), *Handbook of reading research* (Vol. 2, pp. 789-814). White Plains, NY: Longman.

²⁰ Bradsford, J., Brown, A. & Cocking, R. (Eds.). (2000). *How people learn: Brain, mind, experiences, and school*. Washington, DC: National Research Council.

²¹ "You Can Teach for Meaning" in *Educational Leadership*. Jay McTighe, Elliott Seif, and Grant Wiggins (September, 2004). Alexandria, VA: Association for Supervision and Curriculum Development, Vol. 62, No. 1

teachers use authentic reading material with students and write throughout the curriculum. “Whether it is called Best Practice, or Whole Language, or integrated learning, or interdisciplinary studies, by some other name, or by no name at all, this movement is broad and deep and enduring. It is strongly backed by education research.”²²

Data-Driven Decision Making

In today’s education environment, accountability is paramount. School leaders cannot afford to make decisions solely based on intuition or for that matter, any other subjective criteria. Decisions concerning student achievement must be made using the most reliable methods available, which calls for data-driven decision making (DDDM). Data gives RLOA a platform for accountability systems. A RAND research paper by Julie A. Marsh, John F. Pane, and Laura S. Hamilton says that DDDM in education “refers to teachers, principals, and administrators systematically collecting and analyzing various types of data, including input, process, outcome and satisfaction data, to guide a range of decisions to help improve the success of students and schools.”²³

The RLOA Planning Committee fully understands that having raw data at one’s disposal does not guarantee the effective use of such data, and that invalid numbers or improper use can lead to poor decision making. As data is scrutinized and examined as a part of a larger context, it becomes actionable knowledge that is used to inform the decision making process. As the cycle

²² Zemelelman, S., Daniels, H. & Hyde, A. (1998). *Best practices new standards for teaching and learning in America’s schools*. Portsmouth, NH: Heinemann

²³ Marsh, Julie A., John F. Pane, and Laura S. Hamilton. Making Sense of Data-Driven Decision Making: Evidence from Recent RAND Research. Rep. RAND, 2006.

continues, the staff at RLOA will begin to formulate questions based on the results of the decisions, which in turn determine the type of input data to be collected to inform the next round of decisions.

Since standardized test results are generally summative in nature and usually occur at the end of the school year, they generally cannot be used to drive student learning. By the time the results come back, students have left school for the summer. For this reason, teachers and staff at RLOA will collect and analyze other forms of data, which may include surveys, student demographics, student ability levels, chapter and unit test results, observed activity, etc. This data will be used to make informed, objective decisions regarding::

- Professional development for teachers
- Student classroom assignments
- Funding areas
- Goal setting
- School initiatives

Student Led Conferences

Student Led Conferences (SLC) will serve as a time for students to meet with their parents, guardians or extended family members and explain their school progress. These conferences allow students to take ownership and assume a leadership role in their education, as well as further involve parents in the educational process. In preparation for the conference, students will maintain a data notebook. Test and quiz scores, examples of poor and good work, student

goals and plans for success are some examples of items kept in the data notebook. To properly prepare, students will be given 30 – 60 minutes each week to record this information. The data notebooks are kept at school and teachers will assist students with recording information.

At the beginning of each grading quarter, students will set academic goals for that quarter. Throughout the quarter, students will record and graph their test and quiz scores. Teachers will encourage students to reflect on their work by asking them to submit examples of high quality and low quality work.

Conferences will occur at the end of each semester. During the conference, a student will lead his or her parent through the notebook and explain each assignment and the grade received. Our intent is that each parent will see their student's reflection and feel like an integral part of their child's education.

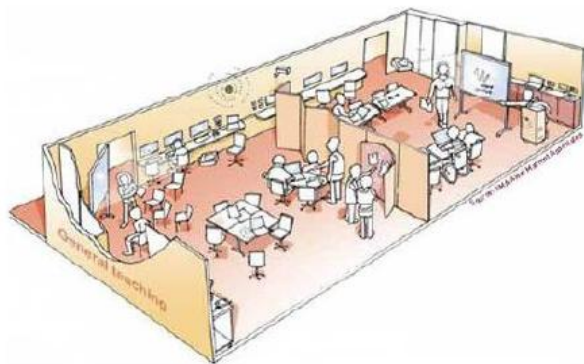
During the SLC, administrators, teachers and counselors may be present, but do not assertively participate in the conference. Rather, school personnel will serve as facilitators.

Collaborative Learning

As the world becomes a smaller place, no one is able to live in a vacuum. Even with the advent of technology that allows communication across oceans with ease, learning to cultivate interpersonal relationships is still incredibly valuable. Given our focus on teamwork, collaborative learning is a logical fit. RLOA will use several measures to ensure that students are working together to accomplish academic goals as well as the other aims of the mission.

Classroom Design

The design of the classrooms at RLOA will foster collaboration among the students and the teacher. Below is a visual depiction of a learning area set up to foster cooperation among the class.²⁴



Formal Learning Groups

Teams established to complete a specific task, such as perform a lab experiment, write a report, carry out a project or prepare a position paper. These groups may complete their work in a single session or over several weeks.

Individual Learning

This instructional method affords learners the opportunity to work at their own pace to complete a task or project.

²⁴ Partnership for 21st Century Skills. 21st Century Learning Environments. Rep.

Informal Learning Groups

These groups are ad hoc clusters of learners within a single session.

Study Teams

Study teams are long-term groups with stable membership whose primary responsibility is to provide members with support, encouragement and assistance in completing a learning session's requirements and assignments.

There are extensive benefits incorporated in using cooperative learning. Students learn from and teach one another. The learning process boosts their self-esteem and self accomplishments which in turn motivates them to perform better and succeed.²⁵ Collaborative learning gives students the opportunity to form bonds and relationships with peers outside of their comfort zone. They are able to diversify themselves and their learning by talking and interacting with other students. Students will be apt to achieve more and strive to do better with the motivation from the others in their group, which can lead to fewer inhibitions about classroom interaction and presenting material.

Expanded Learning Time

²⁵ Panitz, T. "Benefits of Cooperative Learning in Relation to Student Motivation." New Directions for Teaching and Learning. San Francisco: Josey-Bass, 1999. 78.

In order to fulfill the aims of its mission, RLOA will employ an extended school day, while also holding optional Saturday School three to four ~~one to two~~ times per month for four (4) hours. More time in school has translated into better results for students across the country.

Strong American Schools recently published a report outlining some of the benefits of extended learning time:²⁶

- Teachers of math, reading, writing, science and history will have more time to answer students' questions, explore topics in greater depth, and incorporate hands-on projects like science labs that require longer class periods. This aligns with findings which have shown that students only learn more when extended day programs increase the amount of academic learning time (precise time when students' focus is perfectly aligned with the content so that real learning is taking place).
- Literacy will improve because students will have time to learn reading skills and practice reading independently.
- More time will allow schools to better support struggling students and help them catch up with their peers. Schools will have time to provide regular education classes and smaller group tutoring for special education students, English Language Learners and others who need additional instruction. *An extended day affords RLOA the opportunity to have a daily tutorial session for every student to allow struggling students to receive extra help. Optional Saturday School also provides extra time for remediation when necessary.*

²⁶ Strong American Schools. Policy Toolkit, Section 3: Expanded Time and Support for Learning. Rep.

- Teachers will have more time to provide students with individualized and small group instruction. They can support struggling students and challenge high achievers. All students benefit from this personal attention. *All RLOA teachers are instructed to assess and accommodate the motivation preferences of students. Extra time makes this additional assessment feasible.*
- Expanding learning time allows schools to offer a wide range of enrichment programs such as art, music, and technology that engage students in ways that traditional academics do not. Students will have the ability to learn about subjects such as robotics and forensics, produce and perform plays, and learn instrumental music. They will have time for apprenticeships with local businesses and to try their hand at video production and computer animation. *The daily schedule for each RLOA student provides time for enrichment programs.*
- Teachers have more time to strengthen their teaching and the curriculum by planning collaboratively, observing each other and analyzing student data. *RLOA teachers will be given ample planning time to prepare lessons and work collaboratively with other teachers.*
- Parental connection with the school will improve. When the school day better aligns with the workday, parents are more likely to pick up their children at school and interact with teachers. If parents are not able to make it to school, they are still more likely to be at home when their children arrive from school.

Innovations

RLOA students will spend more time on task than students at traditional public schools. This scheduling element gives students who are performing below grade level an opportunity to excel and it is critical to RLOA's success. Students are required to attend classes from 7:00 am to 4:55 p.m., Monday thru Thursday and from 7:00 a.m. to 2:30 p.m. on Friday and encouraged to attend four (4) optional hours on scheduled Saturday Schools. This extended time gives students additional practice in core content areas while still allowing time for elective classes and extracurricular pursuits.

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Students are expected to complete, at minimum, an hour of homework each night to gain even more practice in academic skills. In order for students to meet this high expectation, RLOA has built a tutorial session into the daily schedule.

5.

High School Diploma

RLOA does not plan to issue a South Carolina State High School Diploma until 2017. RLOA will meet all South Carolina requirements for graduations, i.e., a student must pass the South

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Carolina high school exit examination (HSAP) in addition to earning a total of 24 prescribed units of credit. The unit requirements are distributed as follows:

<u>English/Language Arts</u>	<u>4.0</u>
<u>Mathematics</u>	<u>4.0</u>
<u>Science</u>	<u>3.0</u>
<u>U.S. History and Constitution</u>	<u>1.0</u>
<u>Economics</u>	<u>0.5</u>
<u>U.S. Government</u>	<u>0.5</u>
<u>Other Social Studies course(s)</u>	<u>1.0</u>
<u>Physical Education or Junior ROTC</u>	<u>1.0</u>
<u>Computer Science (including Keyboarding)*</u>	<u>1.0</u>
<u>Foreign Language or</u>	
<u>Career and Technology Education</u>	<u>1.0</u>
<u>Electives</u>	<u>7.0</u>
<u>24.0 Total</u>	

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6.

Individuals with Disabilities Education Act, Section 504 of the Rehabilitation Act, and the Americans with Disabilities Act

RLOA will comply with the Individuals with Disabilities Education Act, Section 504 of the Rehabilitation Act, and the Americans with Disabilities Act. Furthermore, RLOA will demonstrate adherence to the following legal principles which are outlined in the above-mentioned legislation:

- zero rejection of children with disabilities
- individualized education program
- free appropriate public education
- least restrictive environment
- due process and parental involvement
- nondiscriminatory evaluation
- participation in district and statewide assessments

Further, RLOA:

- adopts state district procedures to identify students with special needs, develop individualized education programs, and provide related and transition services.
- will employ or contract with a sufficient number of certified personnel in respective areas to implement special education requirements for students with disabilities, including the full range of services and placements that shall be made available to those students. The School District shall provide annual audits to help the school implement the special education requirements by identifying deficiencies and suggesting improvements as described in the School District Charter Schools Handbook.

- will follow the Special Education guidelines described in the School District Charter Schools Handbook.

In accordance with the Individuals with Disabilities Education Act, RLOA shall provide transition services including, but not limited to, the following:

- Assessing career interest, aptitudes, skills, and abilities.
- Counseling regarding career choices based on the assessment.
- Developing a transition plan as part of the student's Learning Plan, beginning at age 13 that identifies the student's exit goals and those activities that will help student reach the goals.
- Selecting vocational training and/or other appropriate course work.
- Identifying post-secondary options for employment, work training, or higher education.
- Teaching self-assessment, awareness and acceptance of the student's disability.
- Teaching self-advocacy.

Procedure for identifying students with special needs, developing IEP's, and providing related and transition services

Students with special needs, including students eligible under Section 504, will be identified through the effective procedures currently used by the Jasper School District Special Services Department. Students will be provided with a full range of services and placements to fulfill the special education requirements identified for students with disabilities.

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Under Section 504 and Title II, students with disabilities enrolled in public schools, including charter schools, are entitled to a Free Appropriate Public Education (FAPE). The Section 504 regulation includes several substantive and procedural requirements regarding the provision of FAPE. Among these requirements, a student with a disability must receive appropriate regular or special education and related aids and services. The requirement is designed so that the individual educational needs of the disabled student are met as adequately as the needs of non-disabled students and will be met by RLOA.

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At RLOA, an Individualized Education Program (IEP) will be developed in accordance with standard practices for each student with disabilities by team including:

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- parents or guardian;
- the student, where appropriate;
- the special education teacher and/or the special education related service provider as appropriate;
- at least one of the student's general education teachers;
- a school psychologist if evaluation results are discussed or if a reevaluation plan is developed by RLOA and
- other individuals who have knowledge or special expertise regarding the student, including related or specialized services personnel as appropriate.

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The IEP team will be responsible for the development of Individualized Education Plans. Further, the IEP team will determine appropriate services to be provided for students to include transition services, assistive technology services, and related supports.

Implementation of special education requirements, including the full range of services and placement that will be made available to those students

The student's IEP will reflect all the elements required by the Individuals with Disabilities Education Act, Section 504 of the Rehabilitation Act, and the Americans with Disabilities Act. The services will include intense elements:

- student's present levels of functioning and academic performance;
- measurable annual goals and, where appropriate, short-term objectives;
- special education, related services, and supplementary aids and services;
- a statement of program modifications and/or supports to be provided for the student;
- the extent (if any) to which the student will participate with non-disabled students in the general education class and extracurricular activities;
- any individual modification in the administration of state or other required assessments of student achievement needed for the student to participate in the assessments;
- projected date for the beginning of services and modification and anticipated frequency, location, and duration of services and modifications;
- how progress toward annual goals will be measured;
- **transition services for students ages 13 years and above; and**
- documentation that the student has been informed of his/her rights that will be transferred to the student upon reaching the age of majority;

Evaluation procedures will be administered in accordance with federal regulations to determine whether a student is disabled and the nature and extent of the special education and

related services that the student needs. The use of this term means procedures are used selectively with an individual student and does not include basic tests administered to or procedures used with all students in a school, grade, or class.

Prior to conducting any school-initiated evaluation, RLOA will request parental/guardian permission for the proposed action through written notification. The notification will include the following information:

- reasons for the requested evaluation and the name of the person who initiated the process;
- proposed evaluation procedures;
- statement that after obtaining parent permission for evaluation, the evaluation will be completed and that the parents/guardian will be informed of the evaluation schedule;
- description of the areas that are being assessed;
- description of how the findings of the evaluation will be used;
- statement that the parents will be informed of the results of the evaluation;
- description of all procedural safeguards available;
- statement of the parent's right to refuse permission for the evaluation, with the understanding that the RLOA or other agency can request an official hearing to present its reasons and try to obtain approval to conduct the evaluation;
- explanation of other rights pertaining to the evaluation process;
- list of the sources whereby parents may obtain free/low cost legal services;
- declaration that the student will not be placed in special education without the knowledge and written approval of the parent; and
- statement of any other factors relevant to the proposed action.

After obtaining parent/guardian permission for evaluation or following a decision through the official hearing (subject only to State Educational Agency appeal), the evaluation must be completed.

Following the evaluation, RLOA will notify the parents/guardian that the evaluation has been completed. The notice shall include the following, with the exception of the items specified which are pertinent to both permission for evaluation and placement:

- results of the evaluation and the educational implications;
- statement of the parents'/guardian(s)' rights to attend a meeting of the IEP team;
- a statement of the parents'/guardian's right of refusal of permission for placement;
- an explanation of other rights pertaining to the placement process;
- a full description of all procedural safeguards available;
- a declaration that the student will not be placed in special without the knowledge and written approval of the parent;
- a list of the sources where the parents/guardian may obtain free/low cost legal services; and
- a statement of any other factors relevant to the proposed action.

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RLOA will comply with all federal and state laws regarding accommodations for students with impairments and will not discriminate against individuals who are believed to be handicapped or who were handicapped at one time. The school will adhere to the criteria for eligibility, reporting, and official records for accommodations in Section 504. RLOA staff will receive professional development on an on-going basis to assure that students who may qualify are identified in a timely manner and instructional delivery as well as other interactions is conducted appropriately and effectively.

Implementation of transition services and assistive technology needs that will be addressed

Any student identified with a disability that meets eligibility requirements under the Individuals with Disabilities Act (revised 2004) and the administrative rules for special education for the state of South Carolina (including the requirement that the disability have an adverse impact on progress or participation in the general curriculum), will receive appropriate programs and services as set forth in the student's Individualized Education Plan (IEP). An IEP will be developed when the IEP team determines that a student is eligible for special education services under IDEA (as outlined in the aforementioned section). The IEP team will consist at a minimum: administrative representative (who has authority to commit the resources of the school/district); parent; general education teacher that services the student; a special education teacher, and the student (**for transition services**). Current data will be reviewed and a statement expressing present levels of academic achievement and functional performance will be developed, with corresponding observable and measurable goals set for the student. These goals will be carried out using a variety of service delivery options. A full continuum of programs and services will be considered with a placement decision to carry out the IEP in the least restrictive environment (LRE) that is appropriate for the student. Highly qualified special education teachers will be hired to facilitate the implementation of the IEPs, with the provision of such programming taking place either in the general education classroom or in a separate special education classroom, depending on determination from the IEP team. The SST will determine the need for the provision of itinerant special education services and any assisted technology needs such as: speech language impairments, hearing impairments, orthopedic impairments, vision impairments, as well as assistive technology and/or other related/supportive

services, e.g., orientation and mobility, physical and /or occupational therapy, which will be provided through outside contracted services that comply with all South Carolina requirements for certification and reporting processes.

According to the Learning Plan of special needs students, RLOA will provide related and supplementary services as designated in the Learning Plan.

C. Student Assessment

RLOA defines student assessment as the process of collecting, describing and analyzing information about the quality of student learning. The purpose of student assessment is to give students specific and timely feedback in order to improve achievement. The resulting data is used to drive quality instruction, refine curriculum objectives, inform professional development choices and modify the school design.

i Student Achievement and Progress Evaluation

RLOA categorizes assessment strategies in terms of their function. The stages of assessment include diagnostic, formative and summative measures.

Establishing a Foundation – Diagnostic Assessments

Diagnostic assessment provides teachers with an understanding of the prior knowledge and skills that a student possesses and highlights areas of strength and weakness. RLOA will create a baseline academic profile for all students as part of each student's Learning Plan. These profiles will be compiled from a combination of the following data:

- Scores from previously taken, state mandated criterion-referenced tests such as the Palmetto Assessment of State Standards (PASS).
- Scores from previously taken, norm-referenced tests such as the Measures of Academic Progress (MAP).
- Results from diagnostic tests aligned with SCDOE standards administered in the first week of attendance at RLOA.
- Scores from national, norm-referenced tests such as the *Woodcock-Johnson Tests of Cognitive Abilities and Tests of Achievement* and/or other instruments that are appropriate for the age and needs of the student, administered at the beginning of the school year.
- Informal assessments for English Language Learners administered during the beginning of the fall semester.

These test results will allow teachers to make data-driven decisions regarding Learning Plans and assist in decisions regarding allocation of time concerning specific skills and standards. Other diagnostic assessments that will be employed at RLOA will include but not be limited to:

- **Pre-tests** - Tests normally given prior to a unit of study that evaluate the background knowledge of the learner. Pre-tests may be compared to post-tests to measure the learning outcomes.

Getting to Know Students - *Formative Assessments*

Formative assessments are designed to track, support and guide students' progress toward the high expectations outlined in the mission of RLOA. They evaluate teaching and learning on a daily basis. Teachers constantly monitor student mastery of the standards-based curriculum through a series of assessment strategies. These strategies include but are not limited to:

- **Observation** as an informal assessment of student behaviors, attitudes and skills.
- **Exit tickets** are slips of paper that contain a question used to probe for student understanding. In most instances, they are given by the teacher when students are exiting the class.
- **One-minute papers**, in their basic format, are questions pertaining to the day's lessons that are given to a class during the last few minutes of instruction. Realistically, the exercise requires three to four minutes.
- **Questioning** involves asking students to answer questions about the day's lessons.
- **Journals and Learning Logs** are ongoing written records, including drawings, which help instructors determine the degree to which students understand concepts and processes.
- **Quizzes** are written examinations that measure student comprehension.
- **Lab reports** are accounts of experiments and what was discovered during the experiment.
- **Student-Led Conferences** are meetings between students, teachers and parents in which the student prepares to give an update on their successes and failures at school.
- **Interviewing** involves observing and questioning students to get an improved idea of their cognitive and communicative abilities.

- **Self and Peer Evaluations** asks students to reflect on or make a judgment about their own or a peer's behavior and performance. They may be used to evaluate comprehension, attitude and performance.
- **Student Contracts** are tools that require a student to review an issue, devise a plan to accomplish a goal or investigate a topic. They can be used to determine a student's organization ability and capacity for autonomy.
- **Student Portfolios** are purposeful collections of student work that exhibit the student's efforts, progress and achievements in one or more areas.
- **Measures of Academic Progress (MAP)** is a state-aligned computerized adaptive test that accurately reflects the instructional level of each student and measures growth over time. MAP can be used as a diagnostic, formative and summative assessment measure.

Measuring Progress - *Summative Assessments*

Summative assessments are used at the end of a course, project or unit of instruction to assess student mastery of the standards taught. These evaluation tools may be used at any time, but RLOA will stress their use at monthly and annual intervals. These strategies include but are not limited to:

- Projects
- Essays
- Unit tests
- Exams
- Lab reports
- Benchmark testing (MAPS, STAR)

- State-mandated tests (PASS)

Teachers are required to include summative assessments as a part of the long-range plan for a course. Grade level and department chairs will lead teams of teachers in reviewing assessment results and teachers will work collaboratively to modify instruction based on these figures. These evaluation strategies provide accountability for student learning and provide the staff of RLOA with reliable feedback to influence instruction.

ii Performance Goals Timeline

GOAL #1 – LEADERSHIP

RLOA will provide opportunities for students to garner experience as servant leaders.

Objective 1.1 – 100% of RLOA students will participate in programs that stress personal responsibility, the habits of mind of good citizenship, financial literacy, and entrepreneurship, from the most fundamental levels in the early grades to sophisticated understandings in higher grades. Students are expected to achieve passing scores or above in the curricula such as the following:

- Kindergarten - *Junior Achievement* and *The Leader in Me*
- 1st Grade - *Junior Achievement* and *The Leader in Me*
- 2nd Grade - *Junior Achievement* and *The Leader in Me*

- 3rd Grade - *Junior Achievement* and *The Leader in Me*
- 4th Grade - *Junior Achievement* and *The Leader in Me*
- 5th Grade – *Junior Achievement* and *The Leader in Me*
- 6th Grade – *Junior Achievement* and *The Leader in Me*
- 7th Grade – *Junior Achievement; The Leader in Me; The 7 Habits of Highly Effective Teens*
- 8th Grade - *Junior Achievement; The Leader in Me; The 7 Habits of Highly Effective Teens*

As students continue at RLOA, their scores are expected to improve significantly.

Assessment 1.1

Teacher developed grading scales will be used to assess proficiency in leadership classes. Students who do not display at least 80% mastery will utilize available supports and resources, including spending extra time on task outside of normal class periods, until they are able to demonstrate evidence of mastery.

Objective 1.2 – RLOA eighth-twelfth grade students will be expected to complete a social entrepreneur project before matriculating into the ninth grade. Students may complete the projects in teams. (In our first year of operation, RLOA will be comprised of kindergarten through eighth grades. As high school grades come on line in subsequent years, this objective will be met.)

Assessment 1.2

In the fall of each year, each eighth, ninth, tenth, eleventh, and twelfth grade student or group of students will be assigned a mentor to advise and monitor the project. (In our first year of operation, RLOA will be comprised of kindergarten through eighth grades. As high school grades come on line in subsequent years, this objective will be met.) Teachers, parents and community members will serve as mentors. Student progress will be assessed through a series of benchmarks during the school year. Students who are not on target towards meeting Objective 1.2 will receive additional coaching from teachers, parents and community volunteers and will commit extra time on task outside of normal class periods to complete the project.

GOAL #2 – SCHOLARSHIP

RLOA will encourage the use of a variety of productive teaching methods aimed at improving student learning.

Objective 2.1 – Each year, ~~80 percent a majority~~ of RLOA students will meet RIT Range Growth Norms on the reading section of the Measures of Academic Progress (MAP) test.

Assessment 2.1

Measures of Academic Progress (MAP) tests will be used as a diagnostic, formative and summative assessment for student achievement and growth in reading.

Objective 2.2– Each year, ~~80 percent a majority~~ of RLOA students will meet RIT Range Growth Norms on the reading section of the Measures of Academic Progress (MAP) test.

Assessment 2.2

Measures of Academic Progress (MAP) tests will be used as a diagnostic, formative and summative assessment for student achievement and growth in mathematics.

Assessment Strategies

Throughout the year, student academic achievement will be measured with formative assessments that may include but are not limited to:

- Measures of Academic Progress
- Teacher observation, questioning, interviewing
- Student Portfolios
- Lab Reports
- Journaling
- Quizzes

GOAL #3 - CHARACTER

Each year, at least 80 percent of RLOA students will meet RIT Range Growth Norms on the reading section of the Measures of Academic Progress (MAP) test.

Objective 3.1 – Each year, the percentage of students receiving disciplinary action will not exceed 20% of the student population.

Assessment 3.1

Each year, students receiving more than three discipline referrals will participate in an end-of-the-year conference involving teachers, parents and other significant

members of the student's support network to discuss the student's behavioral troubles. The team will discuss strategies that will direct the student towards appropriate behavior.

Objective 3.2 – Over the span of four years, the percentage of students receiving disciplinary action within a class cohort will decline among those students who have been enrolled at RLOA since kindergarten to no more than 5 percent of the student population.

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Assessment 3.2

Each year, 100% of grade level cohorts that maintain or increase upon the number of disciplinary actions within a given time period will participate in family meetings to discuss punitive and rehabilitative strategies to encourage appropriate behavior.

Additional Assessment Strategies

At the end of each semester, teachers, parents and students will anonymously complete a survey regarding the application and effectiveness of RLOA's policies for student conduct and resulting discipline procedures. The data will be used to assess the school's social and emotional climate.

GOAL #4 – CREATIVITY

RLOA will encourage the use of a variety of teaching methods that are designed to consider—
REMOVED; REPLACED WITH: development of the motivation preferences of each student.

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Objective 4.1 – Each year, RLOA parents and students will collaborate to develop or modify a Learning Plan (LP) for each RLOA student to improve student learning and self-direction.

Assessment 4.1

After individual learning plans are created or modified for each RLOA student, the names of each student will be entered into a database and the plans will be filed into the students' records.

GOAL #5 – PROBLEM SOLVING / SERVICE / COMMUNITY ENGAGEMENT

RLOA will groom students to become valuable members of their community who solve problems creatively and take responsibility for their actions.

Objective 5.1 – Each year, 100% of RLOA students will perform 20 hours of community service. These service hours will be documented using a service log. Teachers will collect, monitor and assist students in managing these logs on a regular basis.

Assessment 5.1

Students will document the service hours in a service log and submit the log to a teacher or other staff member. The names of students that garner community service hours will be logged into a database.

Objective 5.2 – Each year, 100% of RLOA students will create portfolios/presentations to showcase meaningful time spent in service to the community.

Assessment 5.2

Teachers will collect, monitor and assist students in managing these presentations.

The names of students that have submitted multimedia portfolios will be logged into a database.

GOAL #6 – IDENTITY

RLOA will assist students in developing healthy self-images and empower them to become responsible citizens.

Objective 6.1 – In year two of operation and beyond, a majority—REMOVED;
REPLACED WITH: 80 percent of RLOA seventh, eighth, and ninth grade students will
indicate that they expect to pursue postsecondary education, as evidenced on a survey. In
subsequent years, as tenth, eleventh, and twelfth grades are added, a majority—REMOVED;
REPLACED WITH: 90 percent of RLOA seventh through twelfth grade students will
indicate they expect to pursue postsecondary education.

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Assessment 6.1

Students will complete a survey that describe their desire to pursue postsecondary education. Teachers will compile a list of students who maintain this desire. The names of students who complete the survey will be logged into a database, and the survey will be placed into each student's LP.

Objective 6.2 – A comprehensive, educational and promotional tool for fitness and activity assessment for children known as the *Fitnessgram* will be given to each student in the fall

and again in the spring. At least 50% of the students performing in the Needs Improvement range will demonstrate gains towards the Healthy Fitness Zone. (A brochure giving an overview of the *Fitnessgram* software is included in *Appendix I*.)

Assessment 6.2

Each fall and spring, students will be screened for healthy fitness levels using the *Fitnessgram* measure. For those students who do not demonstrate gains, personal fitness plans will be created for them to achieve healthy fitness levels.

Objective 6.3 – RLOA expects its students to view themselves as integrated members of the Lowcountry community. To this end, 100% of RLOA students will become active members of their community by visiting at least three community attractions within a school year (i.e. libraries, museums, recycling centers, sporting events, zoo, etc.).

Assessment 6.3

RLOA plans to take periodic field trips throughout the year. Teachers will compile a list of students who have visited at least three community attractions. The names of students that have visited the attractions will be logged into a database.

GOAL #7 – TEAMWORK

The staff of RLOA will intentionally work to foster collaboration among staff and teachers and in all classes and many student activities.

Objective 7.1 – Each year, 100% of RLOA students will participate in sports as a part of the physical education curriculum.

Assessment 7.1

Students will complete written and kinesthetic assessments to demonstrate proficiency. The assessments will compose a portion of each student's physical education grade.

GOAL #8 – EXCELLENCE

RLOA will assist South Carolina in reaching academic excellence.

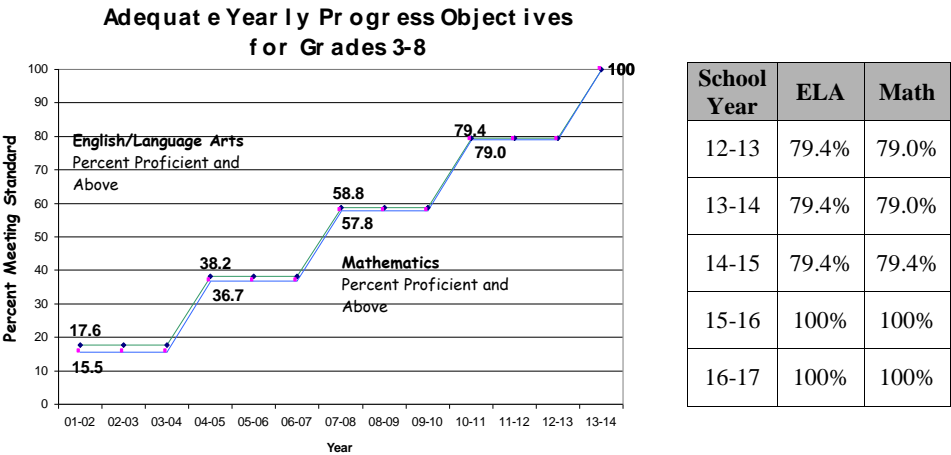
Objective 8.1 – Each spring, at least 85% of the parents, teachers and students of RLOA will complete a survey and show satisfaction with the school's learning environment, home and school relations and the school's social and physical environment.

Assessment 8.1

In the spring of each year, anonymous surveys will be conducted to assess student, teacher and parent satisfaction with the learning environment, the social and physical environment, and home school relations. The data will be used to assess the school in the identified areas. Points of weakness will be reviewed by the administration to form an improvement plan. Improvement plans will be implemented in the fall of the following school year.

RLOA students are expected to meet Adequate Yearly Progress (AYP) objectives consistent with the AYP objectives of South Carolina Public Schools published in the Consolidated State

Application Accountability Workbook. Thus, RLOA is required to meet the following measurable annual objectives on state-mandated tests of accountability:



iii Academic Assistance

RLOA believes that all students can achieve academic success. We understand that in order to achieve this end, some students will require extra academic support. For those students who do not perform at acceptable levels of proficiency in the statewide assessment program, we will offer the following services:

Tutoring: In addition to the tutorial session that each student receives on a daily basis, those requiring remediation in a subject will receive extra tutoring sessions from their classroom teachers during recess, lunch, and before and after regular school hours.

Optional Saturday School: The Saturday morning sessions are designed to provide extra time for students to focus on content that requires remediation as well as those who desire to work on special projects.

Remediation Plan: Students not performing at acceptable levels will have a remediation plan added to their Learning Plan. This Plan will be constructed by the subject area teacher in which the student is not performing, reviewed by the school director, and discussed with the legal guardian and any other pertinent support personnel. It must include a sequential plan to bring the student up to acceptable levels of performance.

Student Support Team: A support team consisting of a variety of persons, which may include an administrator, a counselor, a regular education teacher, a special education teacher, a social worker, a parent, a media specialist, a school psychologist, or other persons may be formed to develop strategies that will lead to better academic performance for a failing student.

2. Personnel

A. Administrative and Teaching Staff

RLOA will employ administrators and teachers in a manner consistent with the South Carolina Charter Schools Act of 1996.

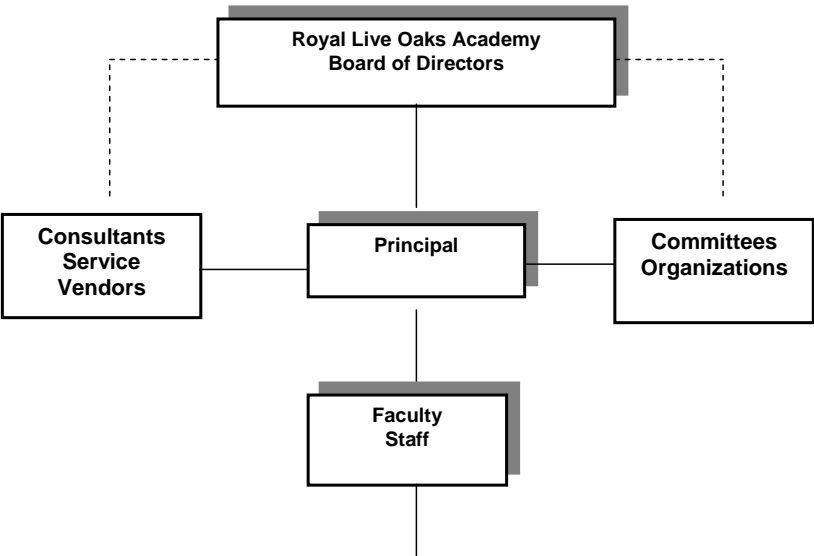
i Administrative Staff

Administrative Staff

RLOA will employ administrators and staff in a manner consistent with the South Carolina Charter Schools Act of 1996 and the No Child Left Behind Act of 2002. RLOA will employ the School Principal as the school's instructional and administrative leader. The chart below outlines the organizational structure.

SCHOOL DISTRICT—REMOVED; CCSMS REPLACED;

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Students

Principal

The RLOA Board of Directors will delegate to the Principal the authority for the management and execution of the day-to-day school activities, including management of the personnel and instructional leadership. The Principal serves as the liaison between the Board and the school. The Principal will be an experienced leader, committed to excellence in learning and academic innovation. The successful candidate for this position will possess the following experiences, skills, and qualities:

- Ability to lead highly energized teams characterized by honest and open communication, mutual respect, and commitment to the organization as a whole.
- Experience in small, progressive, urban learning communities.
- Great rapport with students, families, staff, and community members.
- Creative problem solving and entrepreneurial capacity to manage change and be responsive to community needs.

Responsibilities to include, but not limited to:

- Will ensure compliances with all school policies.
- Carry out the mission and create the culture for the charter school.

- Direct the institutional focus on student achievement with a school culture that maintains a relentless focus on motivating students to achieve academic results and encourages collaboration to meet the full range of student needs.
- Develop, refine, and provide input into the implementation of the school's academic program.
- Recruit competent, team-centered teachers who possess the requisite subject-area expertise and demonstrated success in working with middle and high school age students to prepare them to be highly competitive in high school and in college studies.
- Develop a system for ongoing evaluation of teacher performance and professional development that is linked with measurable results.
- Collaborate closely with other school leaders to plan and prepare for academic, social, fiscal, and other transition issues.
- Work with the board and the community to create a sustainable charter school that utilizes all available resources.
- Contribute to the creation of the school's extracurricular, intervention, service learning, and enrichment programs.
- Ensure that all grant and funding requirements of the school are met with goals and objectives appropriately measured and assessed.
- Build and maintain systems for managing information and communications such as scheduling and student management; developing the budget and tracking expenditures.
- Ensure that accurate and current student records are maintained according to the established recordkeeping format.

The Principal will meet the following minimum qualifications: (1) Master's degree and (2) South Carolina certification in administration or have at least one year of experience in the field of school-based administration. If RLOA hires an administrator that does not hold a current South Carolina certification (holds certification from another state or has experience), the administrator will complete all necessary courses the South Carolina Department of Education requires within ninety (90) days of accepting employment (*résumé of prospective Principal attached in **Appendix J***). In addition, the Principal will: (1) demonstrate outstanding oral and written communication skills; (2) exhibit a commitment to promoting academic freedom, trust, and respect among faculty members and school personnel; (3) be well versed in promoting a positive achievement-oriented climate among faculty and staff; (4) understand and be able to model "best practice" teaching; (5) demonstrate competence in modeling and implementing a curriculum; (7) demonstrate training and experience in adult mentoring; and (8) demonstrate training and experience in teacher development and evaluation.

Assistant Principal

The responsibilities of the Assistant Principal are to support curriculum, special education needs, professional teacher/staff development, and to perform other such duties as required by the Principal. The Assistant Principal will meet the following minimum qualifications: (1) Master's degree and (2) South Carolina certification in administration or have at least one year of experience in the field of school-based administration. If RLOA hires an associate administrator that does not hold a current South Carolina certification (holds certification from another state or has experience), the administrator will complete all necessary courses the South Carolina Department of Education

requires within ninety (90) days of accepting employment. In addition, the Assistant Principal will:

- (1) demonstrate outstanding oral and written communication skills; (2) exhibit a commitment to promoting academic freedom, trust, and respect among faculty members and school personnel; (3) be well versed in promoting a positive achievement-oriented climate among faculty and staff; (4) understand and be able to model “best practice” teaching; (5) demonstrate competence in modeling and implementing a curriculum; (7) demonstrate training and experience in adult mentoring; and (8) demonstrate training and experience in teacher development and evaluation.

Guidance Counselor

The Guidance Counselor is responsible for providing social and emotional support to students who face difficult home and family issues, or who demonstrate challenges in meeting RLOA’s strict behavioral expectations. Qualifications for this position include at least a master’s degree from a four-year college; ability to connect meaningfully with students and parents; strong verbal communication skills; professionalism; commitment to RLOA’s vision, mission, and values; and previous training or experience in counseling, guidance, and/or social work, as well as any qualification dictated by law. The Principal may assign other responsibilities to the Guidance Counselor, including those mandated by state laws, to promote student achievement. The South Carolina Guidance Framework will also serve as a reference for framing the Guidance Counselor’s roles.

Administrative Assistant

The Administrative Assistant will assist with a variety of administrative tasks, including answering phones, making copies, uniform and school supply sales, data entry, maintaining student information, and record-keeping. Qualifications for this position include strong organizational skills; verbal and written communication skills; computer proficiency; integrity; commitment to RLOA's School's vision, mission, and values; and previous experience in an office setting.

ii Teachers

Position	1	2	3	4	5
Master Teacher - K	1	1	1	1	1
Teacher – K	2	2	2	2	2
TA – K	1	1	1	1	1
Master Teacher - P	1	1	1	1	1
Teacher – 1	2	2	2	2	2
Teacher – 2	2	2	2	2	2
Teacher – 3	2	2	2	2	2
TA – P	2	2	2	2	2
Master Teacher - E	2	2	2	2	2
Teacher – 4	2	2	2	2	2
Teacher – 5	2	2	2	2	2
Teacher – 6	2	2	2	2	2
Teacher – 7	2	2	2	2	2
Teacher – 8	2	2	2	2	2
TA – E	3	3	3	3	3
Master Teacher - HS	0	1	1	2	2
Teacher - Math	0	1	1	2	2
Teacher - Science	0			2	2
Teacher - ELA	0	1	1	2	2

Teacher - Social Studies	0			2	2
TA – HS	0	0	2	3	3
Teacher - Foreign Language	0	1	1	1	1
Teacher - Technology	1	1	1	1	1
Teacher - PE/Health	1	1	1	1	1
Teacher – Music	C	C	C	C	C
Teacher – Art	C	C	C	C	C
EC Teacher	1	1	1	2	2
Guidance	0	1	1	2	2
Principal	1	1	1	1	1
Assistant Principal	0	1	1	1	1
Administrative Assistant	2	2	2	3	3

In accordance with the South Carolina Charter Schools Act of 1996 and the No Child Left Behind Act of 2002, RLOA will employ teachers of core academic areas who are certified and highly qualified, experienced or hold a baccalaureate degree or graduate degree in the core academic subject area they teach. Teachers with elementary certification may teach in any academic area and in any grades allowable by the status of their certification.

For visual and performing arts teachers, foreign language teachers, technology teachers, and other teaching positions necessary to fulfill the school's mission, RLOA may exercise its right to hire non-certified teachers not exceeding 25% of the faculty. However, the following requirements will be followed: part-time non-certified teachers must be considered *pro rata* in calculating staff percentages based on the hours which they are expected to teach; and a non-certified teacher must be appropriately qualified for the subject matter taught, must have earned a bachelor's degree at an

accredited college or university, and must meet the qualifications outlined in SC Code Ann. § 59-25-115.

RLOA will make decisions that identify the types of services a child will need and will consider staffing implications for delivering those services. Any teachers hired or contracted to meet the needs of exceptional children must meet qualifications that are in alignment with the South Carolina Charter Schools Act, the No Child Left Behind Act, and changes to IDEA in 2004 requiring that special education teachers meet the “highly qualified” standards of NCLB. Therefore, RLOA teachers of exceptional children must meet the following minimum criteria: (1) minimum of a Bachelor’s degree; (2) content knowledge demonstrated by achieving a passing score on state approved certification examinations, and (3) valid South Carolina Teaching Certificate in each area of disability for students needing special education with no waivers of any requirements.

Special education teachers needing additional certification to better assist students with special needs will be given one year to take coursework necessary to gain this certification. While they are becoming certified in necessary areas, we may avail ourselves of part-time special education teachers from a local district to provide the full range of necessary services for any and all children with special needs.

B) Employee Relations

i. Employment Process

RLOA will be an equal opportunity employer and will not discriminate against potential employees on the basis of disability, race, creed, color, gender, national origin, political affiliation, veteran status, religion, ancestry, marital status or sexual orientation. RLOA will follow all state and federal laws and regulations regarding employment practices.

RLOA places a high priority on school personnel. RLOA will recruit top-quality instructional and administrative staff to accomplish its mission of preparing all students for lifelong success.

It is the policy of the RLOA School Planning Committee and subsequent Boards to recruit and hire professional personnel on the basis of qualifications, merit and commitment to the mission and philosophy of RLOA.

The Principal or his/her designee will analyze each job vacancy prior to initiating the recruitment process to determine which recruitment strategies will be the most effective for the specific job vacancy. The Principal or his/her designee may consider any of the following marketing strategies:

- Internal and external searches
- Advertisements in local, state and regional newspapers
- Advertisements in professional publications
- Advertisements with college and university placement services
- Advertisements in online classifieds (Craigslist.com, etc.)
- Interviews with students enrolled in teacher education programs

- Special activities and events for prospective applicants
- Audiovisual packages and recruiting programs
- Email communications
- Social networking platforms (Facebook, Twitter, LinkedIn, etc.)

The Principal or his/her designee will oversee the design and creation of print and online media used to recruit qualified candidates. The advertisement will be published in accordance with all related legal and reporting requirements and will contain general information about the school, the educational and instructional programs, teacher benefits and student enrollment. The job vacancy advertisement will be based on the actual job description and/or criteria to be used in selecting the most qualified person for the position. The advertisement may also include such information as job title, major job responsibilities, location of the school, how to apply for the position, statement certifying that the employer is an equal opportunity employer, work schedule, minimum qualifications and deadline for receiving applications.

The Application Process

Each individual seeking employment at RLOA must submit an application online, by fax, by mail or in person. Each individual completing an application must submit the following documents to the appropriate personnel as part of the application process.

- An application form
- Copy of his/her South Carolina teaching credential
- Copy of diploma, degree or certificates

- Three professional references
- College transcripts (undergraduate and graduate, if applicable)

The applicant's file will be considered incomplete until the office has received these documents, except under special circumstances as approved by the Board of Directors on a case-by-case basis.

RLOA will advise all applicants for employment of the school's employment policy and application process, including a check of all criminal records. School personnel will also advise applicants that any falsification of information, either by omission or commission, will be grounds for disqualification from consideration or grounds for discharge, should they be employed.

Selection of Professional Personnel

The Principal or his/her designee will receive all applications for professional job vacancies. The Principal will then perform the initial screening.

The Principal has the authority to decide when and/or how structured interview techniques may be used, who will conduct the interview and who may assist/participate in the interview process. In making the decision, the school director may consider such factors as the level and/or impact of the position, areas of responsibility and the relationship of the position to other positions on the organizational chart.

In addition to the in-person interview, the selection process may also include a review of sample lessons, observation of teaching and the review of other appropriate documents.

The Principal is responsible for studying the references and credentials of the applicant as well as other application data. Utilizing the information gained during this phase of the selection process, he/she will determine who will be invited to participate in the interview process. The Principal will schedule and conduct the interview.

Following completion of the above, the Principal will confer with the Board of Directors to discuss and evaluate application materials from the chosen applicant and the application files for all persons who were given consideration. The Principal will also confer with the Board during the entire recruitment and selection process. This phase of the selection process serves as a check system to ensure that the person selected is, in fact, the most qualified.

Upon the completion of this phase and the identification of the most qualified person for the position, the Principal will submit a final recommendation to the Board of Directors. The Board may accept or reject the director's recommendation.

The Principal will notify applicants who were interviewed but not selected that the position has been filled. This step will be taken only after the selected candidate has accepted the offer of employment and the school has received the criminal record history.

ii. Teacher Evaluations

RLOA will use ADEPT to evaluate teachers. ADEPT is South Carolina's system for assisting, developing, and evaluating professional teaching. Based on state expectations (i.e., the ADEPT Performance Standards) that are aligned with nationally recognized professional standards, the ADEPT system forms a seamless continuum for educators throughout the entirety of their careers. In addition to applications for classroom-based teachers, the ADEPT system also includes standards and models for assisting, developing, and evaluating special area educators (i.e., school guidance counselors, library media specialists, and speech-language therapists).

The ten ADEPT Performance Standards (APS^s) for classroom-based teachers are grouped into four broad categories, or domains:

Domain 1: Planning

APS 1 Long-Range Planning

APS 2 Short-Range Planning of Instruction

APS 3 Planning Assessments and Using Data

Domain 2: Instruction

APS 4 Establishing and Maintaining High Expectations for Learners

APS 5 Using Instructional Strategies to Facilitate Learning

APS 6 Providing Content for Learners

APS 7 Monitoring, Assessing, and Enhancing Learning

Domain 3: Classroom Environment

APS 8 Maintaining an Environment That Promotes Learning

APS 9 Managing the Classroom

Domain 4: Professionalism

APS 10 Fulfilling Professional Responsibilities

The PAS-T model contains three contract levels:

INDUCTION: Instructors who have less than one (1) year of experience teaching at RLOA will be given Induction Contracts. Teachers employed using an Induction Contract will serve at will.

The Principal will create an Induction Program to assist teachers in their first year at RLOA. The program will include cycles of observation and feedback throughout the year. During this year teachers will be informed of the ADEPT performance standards (knowledge of curriculum, subject content, and developmental needs, instructional planning, instructional delivery, assessment, learning environment, communication, professionalism, student achievement) as well as prepared for the formal evaluation to follow in subsequent years.

Teachers serving under an Induction Contract will be required to maintain a portfolio that is reviewed by school administration at the end of the school year.

ANNUAL: Teachers can also be issued an Annual Contract. Teachers may be given an Annual Contract for a variety of reasons, but it will most likely be issued because they need an additional year of support prior to a formal evaluation year. The Principal may recommend that an Annual Contract be offered to an applicant, but final approval must be given by the RLOA Board of Directors. Teachers employed using an Annual Contract will serve at will.

CONTINUING: Continuing Contract teachers are placed by the Principal in a cycle of evaluation. Continuing Contract teachers in cycles one and two are informally evaluated using the ADEPT model. Teachers in cycle three receive a summative evaluation of their performance at the end of their cycle three year.

iii. Terms and Conditions of Employment

RLOA's Board of Directors will approve the terms and conditions of employment for all employees. Employees serving under Induction and Annual Contracts will serve at will. Continuing Contract teachers must earn a minimum of 120 renewal credits, as described in the renewal credit matrix, during the five-year validity period of the certificate in order to be eligible for certificate renewal.

The terms and conditions in the employment agreement will include but not be limited to: length of work year and work day; salary and payment schedule; vacation days; holidays; paid leave; notification of absence; insurance benefits; reimbursement; confidentiality.

An employee handbook outlining policies and procedures will be developed and approved by the RLOA School Planning Committee. The handbook will be given to all employees and revised annually. Employees will sign a statement indicating their receipt of the handbook and willful acceptance of the policies and procedures contained within. All policies and procedures in the handbook will comply with South Carolina and US federal laws.

C) Grievance and Termination Procedures

i Teacher Employment and Dismissal Procedures

All teachers under Induction and Annual Contracts will serve as at-will employees. RLOA retains the right to discipline or terminate an at will employee at any time. The authority to approve or negotiate any issues of contract or to terminate an employee is vested with the Board, following a recommendation from the school director. RLOA is not bound to use the following steps of discipline, but retains the discretion to determine the nature and severity of discipline and/or termination. In the event that employee discipline must occur, these steps will serve as a guideline:

1. Verbal Warning
2. Written Warning - *All employees will receive written notification of any disciplinary action or termination request and will have access to his/her employee file including evaluations.*
3. Final warning and/or probation
4. Termination

Employees serving at will have an opportunity for due process and a hearing with the Principal and ~~/or—REMOVED:~~ ADDED: also with the Board of Directors in alignment with the grievance procedures listed for administrative, paraprofessional, and non-teaching Staff.

For teachers serving under Continuing Contracts, the RLOA Planning Committee will adopt the procedures for the employment and dismissal of teachers outlined in S.C. Code Ann. § 59-25-410 et seq. (1990). The Principal will give written notice to the employee of intent not to offer an employment agreement no later than April 15 of each year. The teacher shall have an opportunity for due process and a hearing with the RLOA School Board of Directors. The decision of the RLOA Board of Directors will be final.

ii Employment and Dismissal Procedures for Administrative, Paraprofessional, and Non-teaching Staff

RLOA Planning Committee recognizes the need to provide an orderly means for the expeditious resolution of disputes concerning differences among employees and between employees and administrators. A grievance is defined as “a disagreement involving the work situation in which an individual or group of individuals believes that an injustice has been done due to lack of policy, an unfair policy, or the misapplication or misinterpretation of policy. Issues related to salary, benefits and insurance are not grievances and are not covered by this procedure.”

The Planning Committee and subsequent Boards will encourage employees to discuss their concerns or complaints informally with their supervisor(s). If, at any time, an employee feels that a formal mechanism for raising his or her concern or problem is needed, he or she should follow the procedure below.

Step 1: Any employee with a grievance issue shall review or discuss the grievance with his/her immediate supervisor within ten (10) days following either the event giving rise to the grievance or the time when the employee reasonably should have gained knowledge of its occurrence.

Step 2: If discussion does not solve the matter to the satisfaction of the employee, or if the employee is uncomfortable with an oral discussion of the matter, such employee shall have the right to present the grievance in writing to the Principal. This must occur within three (3) days of the discussion outlined in step 1, or within ten (10) days following either the event giving rise to the grievance or the time when the employee reasonably should have gained knowledge of its occurrence. The written grievance shall consist of a concise statement of the facts upon which the grievance is based and a reference to the specific provision of the policy, rule, or regulation in question. A copy of such grievance shall be filed with the Principal. The employee shall have the right to include in the appeal a request for a hearing before the Principal. Such hearing shall be conducted within five (5) working days after the Principal's receipt of such request, and the aggrieved employee shall be advised in writing of the time, place, and date of such hearing. The Principal shall take

action on the grievance within five (5) working days after receipt thereof, or if a hearing is requested, within five (5) working days after the conclusion of said hearing. The action taken and the reasons for the action shall be reduced to writing and copies sent to the grievant and the Board of Director's Chairperson. Failure on the part of the employee to attend the hearing established by the Principal after receiving notice thereof shall be deemed a waiver of the right to appeal and shall end the grievance procedure.

Step 3: After following the above procedure, an employee may request a meeting with the RLOA Board of Directors for the purpose of discussing the grievance which arose from his/her employment. The request will be made in writing to the Principal within five days of the Principal's response to the grievance. The Principal will, at the next regularly scheduled Board meeting, present to the Board the request that the grievance be heard, together with copies of all correspondence and responses from any lower supervisory levels. The Board will notify the employee of its decision (whether or not to meet with the grievant to discuss the grievance) within ten (10) days. Should the Board decide to discuss the grievance with the grievant, said discussion will be informal and non-adversarial for the discussion of employment as allowed under S. C. Code Ann. Section 30-4-70 (Supp. 1984).

3. Plans

A) Support for Formation of the Charter School

i Charter Committee

RLOA Charter Committee Members

NAME/ADDRESS	TITLE/PRIME ROLE(S)	RELEVANT EXPERTISE
Leslie A. Wicks, II P.O. Box 1330 Ridgeland, SC 29936	Chair: Executive Charter Committee; Chair: Business Development; Executive Charter Committee	Parent; Founder of various for-profit and non-profit corporations, former Chair of Economic Development Commission for a large central N.J. community; former real-estate developer; entrepreneurship coach
Karen M. Wicks, Ph.D. P.O. Box 1330 Ridgeland, SC 29936	Vice-Chair: Executive Charter Committee; Chair, Application Drafting	Learning Specialist: <i>Provider of cognitive-educational therapy to private clients with learning disabilities and specialized training for individuals preparing for standardized tests such as SATs, ACTs, GREs, etc. and licensing exams such as MCAT, PRAXIS, etc. (EdVISTA Learning Centers, Inc.)</i> Developer, Curriculum & Instructional Design: <i>Educational consultant and professional development designer and leader for school districts seeking learner-centered, differentiated instruction through the non-profit EdVISTA CARES, Inc. Collaborator on protocols for School-Wide Behavioral & Emotional Management Manual for Student Coping and Accountability and Educational Counseling</i>

		<p>Manual for Cognitive Behavioral Success for Middle School & High School.</p> <p>Consultant: <i>Consultant and tester</i> for norm-referenced standardized cognitive, achievement, and performance tests for national testing company.</p> <p>Former National Director for Curriculum & Instructional Development, The College Board, NY. <i>Directed and managed</i> national reform initiatives in secondary education. Co-authored publications on school initiatives. Collaborated with Harvard University's Project Zero experts on curriculum reform.</p> <p>Former Assistant, Dean of Humanities and Social Sciences, Professor of French, City University of New York</p> <p>Former Teacher of English, French, Music: middle and high school.</p>
Robert Frantz, Ph.D. 455 Shearwater Point Drive Bluffton, SC 29909	Secretary: Executive Charter Committee; Chair: Community Relations Sub-Committee	Retired college professor; parent; retired executive officer–US Marine Corps; retired airline captain of major U.S. carrier; founder and executive of several non-profit companies; volunteer, Boys & Girls Club; entrepreneurship coach
Mrs. Sheree Darien S.M. Regions Bank – Ridgeland 11004 N. Jacob Smart Blvd., POB 1480 Ridgeland, SC 29936	Executive Charter Committee Member; Community Relations sub-committee, Funding Source Sub-Committee	Parent; Community Leader and Bank Professional
Ms. Andrea Malloy Coastal Conservation League PBO 1861, Beaufort, SC 29901	Executive Charter Committee Member; Community Balance Sub-Committee	Serves as a Project Manger Interfacing with communities and the balance of nature in the Lowcountry communities

Mr. Bill Robinson Allendale County Council 452 Fairdale Street Allendale, SC 29810	Executive Charter Committee Member	Numerous leadership positions throughout the Lowcountry, including Allendale County Council Chair
Ms. Brenda Horton Smith United Country Realty 8008 E. Main Street Ridgeland, SC 29936	Executive Charter Committee Member ; Community Relations Sub-Committee	R.E. Sales Executive; community relations leader
Mr. Fred Minner POB 279 Ridgeland, SC 29936	Executive Charter Committee Member	Parent, grandparent; Jasper Country business leader; various business partnerships, R.E. development
David Arnold, Ph.D. 419 Lakeview Drive Ridgeland, SC 29936	Executive Charter Committee Member	Parent leadership, serving the greater Lowcountry entomological needs
Ms. Cynthia Mills, Mgr. POB 1265, 8058 E. Main St. Ridgeland, SC 29936	Executive Charter Committee Member ; Funding Sources Subcommittee	Manager of Bank of Walterboro/Ridgeland. Family leadership, parent
Rob McBrayer, D.V.M. 409 S. Green Street Ridgeland, SC 29936	Executive Charter Committee Member	Business Leadership; Entrepreneurship
Ms. Denise Horry 10 A Burr Way Bluffton, SC 29936	Executive Charter Committee Member	Business ownership, community leadership, parent
Mr. Bailey Preacher 601 Bailey Lane Ridgeland, SC 29936	Executive Charter Committee Member ; Community History & Traditions Sub-Committee	Parent; grandfather; community leadership
Ms. Thelma Alston 338 Morgan Dollar Road Ridgeland, SC 29936	Executive Charter Committee Member	Parent; grandmother; community leader; team health management
Ms. Amleht Alston 338 Morgan Dollar Road Ridgeland, SC 29936	Executive Charter Committee Member	Guidance Counselor; teacher; parent; children's advocate

ii Evidence of Support

The Planning Committee has shared the vision of RLOA within the 20-mile radius of our proposed site, which includes all of Jasper County, the north and south areas of western Beaufort County—known as Sheldon and Bluffton, and the eastern most region of Hampton County—known as Yemassee. Members spoke and disseminated information to civic groups, community leaders, housing agents, etc. In addition, information about the school (*see Appendix K*) was made available to the community through church-to-church- flyer/brochure campaigns, newspaper, radio announcements, social media outlets, person-to-person, and by presence at community events. All forms of advertisement contained a description of the educational program of RLOA, a phone number and an email address and/or website address as an avenue for interested members of the community to obtain more information (flyers contained only contact information). Once we receive our charter we will begin an intensive direct-mail campaign direct to all households of children aged 3 through 17.

At this point, RLOA’s Planning Committee has received numerous signed letters of support from community members, (*see Appendix K for examples of letters*; additional letters will be furnished upon request). The Planning Committee has also received numerous Parent Surveys that indicate student interest (*see Appendix L for a list of families who have shown strong interest in enrolling their children*; an additional list of potential students has been provided in Appendix L~~additional surveys are available upon request~~).

During the upcoming months, the Planning Committee will continue to promote RLOA throughout the RLOA market area, through a variety of avenues, which includes conducting community meetings around the area and parent- and student-targeted mailings to all households that have student-age children. The Planning Committee will also solicit and encourage Pre-Enrollment applications until enrollment commences in January 2012.

RLOA's focus on building leaders resonated with business and non-profit organizations within the RLOA market area (described earlier in the second paragraph of the narrative). At this point, RLOA has the wide support of local organizations through written letters and personal communications. *Appendix K* provides a representative sampling; for example, Anthony Garzilli of *Jasper County Sun*, Railroad Avenue, Ridgeland; Justine Rutledge of The Gift of Helping Hand Charitable Trust, Perry Street, Ridgeland; Cynthia White of D.A.V. & Elderly Assistants for Life, Perry Street, Ridgeland; Cynthia Mills of Bank of Walterboro, 8058 E. Main Street, Ridgeland; Jeffrey Williams of Books N Brew, 198 Okatie Village Dr., Suite 102, Bluffton; and Bryan Brown of Audi, 137 Auto Mall Blvd., Hardeeville.

B) Budget and Accounting System

i Annual Budget

The Board of Directors will determine the business and financial services protocol for our charter school. Currently the Charter Committee is exploring alternatives for our financial management (outsourcing, in-house) and will ultimately select the process that best suites our

fiscal needs as well as establishes us as sound stewards of public funds. Our spreadsheet formatted, *Five-Year Budget*, is attached. This budget has been prepared in accordance with State Department of Education (SDE) *Financial Accounting Handbook*, with reference to the *Funding Manual* and the *Single Audit Guide*. The Board of Directors will adopt an *Annual Operating Budget* during June preceding the start of the Fiscal Year and will receive and approve *Monthly Financial Statements* during the operational Fiscal Year.

1. Revenues:

i. Revenue account codes used in the attached budget are in accordance with the SDE *Financial Accounting Handbook* for South Carolina school districts.

ii. Documentation from the SCDE of estimated revenues for our sponsor school district, in accordance with the allocations in S.C. Code Ann. § 59-40-140(A)-(C), is ***Appendix M***.

iii. Our revenues do include grant revenue; specifically, the Charter School Program (CSP) Grant, Implementation Phase for both year 1 and year 2. Evidence that the projected funds are likely to be received is found in actual award data provided by SCDE:

During the three (3) most current grant cycles (2008, 2009, and 2010) 40 applications were submitted and 28 grants were awarded. This is a 70% award rate and we consider this solid evidence that supports our assumption.

The RFP for the 2011 grant cycle has not been published; however, our assumption is that those terms will mirror the 2010 RFP. The 23-page RFP document is posted on the SCDE website and is also available from the Charter Schools Office.

In accordance with recommendation from the Charter School Office, we have reviewed our attached *Five Year Budget* and we have prepared a contingency budget that removes CSP Grant revenue. This budget is available upon request.

2. Expenditures:

i. Expenditure account codes used in the attached budget are in accordance with the SDE *Financial Accounting Handbook* for South Carolina school districts.

ii. Anticipated expenditures follow the same budget codes (Fund, Function, Object) that are required of school districts operating in South Carolina. Costs associated with planning, implementation, and continued operation are included.

3. Budget and Accounting Management:

The Board of Directors will be responsible for the fiscal management of the school. As stated above, the Charter Committee is researching fiscal management options. Currently we have the

assistance of Kelley-Moser Consulting, LLC during the Application Phase of our charter initiative:

Bill Moser	803-808-0338 (Office)
Kelley-Moser Consulting, LLC	803-227-9421 (Mobile)
150 Harbor Glen Drive	803-808-0381 (Fax)
Lexington, SC 29072	bill@kelley-moser.com

ii. Annual Audit

Our annual audit is a statutory requirement; accordingly, we will comply with all aspects of this mandate.

We have reviewed the *Single Audit Guide* in detail, to include current *Highlights, Technical Notes, Audit Requirements*, and appropriate information in the *Compliance Supplement*. To this end, we are knowledgeable of the compliance requirements and suggested audit procedures.

We will solicit three bids from independent Certified Public Accountant (CPA) firms and we will select the firm that (a) has prior charter school auditing experience and (b) best meets our needs. The audit will engage our financial and administrative operations and will – in compliance with law – be conducted in the same manner as all schools in our school district.

We will adhere to accounting, reporting, and auditing procedures and requirements of our sponsor, which are those for all public schools operating in South Carolina by:

- Establishing policies and executing the corresponding internal fiscal control procedure to properly account for all revenue and expenses as directed in the *Financial Accounting Handbook* and *Funding Manual*.
- Maintaining appropriate records on a by-transaction basis thereby establishing our financial management system as “audit ready” at the conclusion of any given transaction.
- Making required reports (on-call, monthly, quarterly, annually) to appropriate agents and agencies.
- Ensuring that all accounting, reporting, and auditing procedures and requirements will comply with the published specifications of the Office of District Auditing and Field Services contained in the (a) *Single Audit Guide*, (b) *Financial Accounting Handbook*, and (c) *Funding Manual*.
- The Board of Directors will receive, review, and approve the Auditor’s Report prior to official reporting.

iii. Pupil Accounting System

In accordance with the guidelines set forth by the *South Carolina Pupil Accounting Manual* and the *South Carolina Student Accountability Manual*, we will adhere to the reporting procedures, policies, and regulations that apply to all public schools in South Carolina. Reports will be maintained and filed according to district, state, and federal requirements.

iv. *Negotiated Services Documentation*

Currently we have not negotiated any services with the local school district, our sponsor, or any other outside vendor. The Charter Committee is currently researching options (in-house, out-sourcing) for fiscal services, food services, custodial services, maintenance, curriculum, library and media services, pupil transportation services, and the like. We will thoroughly review all options and proceed with the protocol that best meets our financial needs and best sets us as sound guardians of public funds.

C) Insurance

RLOA will arrange for all necessary and applicable insurance policies for the school.

The school will carry the necessary Worker's Compensation Insurance and unemployment Compensation Insurance.

i. **Worker's Compensation Insurance**

The South Carolina Workers' Compensation Law is designed to provide medical and monetary benefits for an employee who sustains an accidental injury arising out of and in the course of his/her employment. The law provides medical care to bring about the earliest possible recovery from the injury, a percentage of wages and salary lost during the injured employee's disability, and, in case of death, compensation for the deceased employee's dependents. We will purchase worker's compensation insurance in the appropriate amounts. A statement setting out our ability to secure this insurance and an estimate of the cost of this insurance is included in *Appendix N*.

ii. **Liability Insurance**

We will purchase liability insurance, and the policy will cover at a minimum the limits of the South Carolina Tort Claims Act (S.C. Code Ann. § 15-78-120 (Supp. 2008)). Statements setting out our ability to secure this insurance and estimates of the cost of this insurance are included in *Appendix N*.

iii. **Property Insurance**

We will provide sufficient insurance to cover loss to the school building and contents for fire and theft. Statements setting out our ability to secure this insurance and estimates of the cost of this insurance are included in *Appendix N*.

iv. **Indemnity Insurance**

We will provide indemnity insurance against civil and criminal liability for the charter school to protect or sponsor, the members of the board of our sponsor, and the employees of our sponsor

acting in their official capacity with respect to all activities related to the charter school. A statement setting out our ability to secure this insurance and an estimate of the cost of this insurance is included in *Appendix N*.

v. **Automobile Insurance**

We will purchase automobile insurance, both property and liability insurance, to cover the cost of vehicles and transportation for charter school students. Statements setting out our ability to secure this insurance and estimates of the cost of this insurance are included in *Appendix N*.

vi. **Other Insurance**

No other insurance coverage is included at this time.

Transportation

i Transportation Needs

We are currently investigating all transportation options. Transportation will not be a barrier to attend RLOA. If parents choose to carpool, RLOA will assist by gathering the names of those interested so parents can form carpools. Parents will assume all responsibilities when carpooling as it is not a school sanctioned function.

ii School Bus

Based on current revenues, we are not able to provide bus transportation that will meet or exceed state and federal safety requirements; however, transportation challenges should not impede a student from attending RLOA. The Planning Committee or Board of Directors will seek to generate revenue sufficient enough to provide bus transportation. As additional revenues are available, including categorical funding that may release general funds, RLOA will explore the possibility of providing bus transportation. Should RLOA provide transportation for students via bus, the school will comply with all state requirements for drivers and training and the state safety requirements for school buses.

Bus Driver Requirements

All bus drivers who transport students to and from RLOA shall meet the following qualifications, which are in accordance with general School Driver Bus Driver Regulations:

1. US resident at least 18 years of age
2. Valid SC Driver's license. Must have had a driver's license issued from any state for at least one year
3. Valid Social Security Card
4. No more than 4 points against his or her license
5. Pass SLED check and pre-employment drug testing
6. Two job related references
7. Satisfactory interview with RLOA School Administrator
8. Attend a 5-day training class

9. Pass written and BTW (Behind the Wheel) tests
10. Have or obtain a CDL (Commercial Driver's License)

To be certified to drive a school bus for the state of South Carolina, bus drivers go through a rigorous training process which includes 40 hours of classroom instruction and testing as well as lengthy behind-the-wheel instruction and testing. And they must obtain a CDL (Commercial Driver's License). After becoming a school bus driver, every driver must attend periodical, state-mandated training classes.

School Bus Safety

South Carolina law states that any entity transporting preprimary, primary, or secondary school students to or from school, school-related activities, or child care, and utilizing a vehicle defined as a "school bus" under 49 U.S.C. Section 30125, as defined on April 5, 2000, must transport these students in a vehicle meeting federal school bus safety standards, as contained in 49 U.S.C. Section 30101, et seq., or any successor statutes, and all applicable federal regulations.

RLOA agrees to abide by all state and federal mandates regarding student safety while being transported by bus.

iii Contracted Services

At this point, RLOA does not plan to contract with a third party regarding transportation services.

iv Special Needs Students

If a student with special needs requires special transportation as stated in an IEP, such transportation will be provided by RLOA. We will comply with all national, state and local student transportation requirements.

Facilities and Equipment

i Identified Facility

The Planning Committee has identified an available building site of 25 acres in the town of Ridgeland and has engaged engineers and architects~~is in the due diligence stage between three possible sites for RLOA.~~

A sample floor plan that will meet the needs of the proposed facility is found in *Appendix O*.

Estimated Time Schedule:

Appendix P outlines our preliminary construction timeline to complete the RLOA facility.~~A preliminary construction renovation timeline for the RLOA facility is in Appendix P.~~

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Evidence of Architectural Services:

~~Once the site has been determined, A~~rchitectural services will be provided by MBAJ

Architecture (Contact information: Rob Johnson, 4020 Wake Forest Road, Suite 301, Raleigh, NC 27609; Office: 800-590-6225).

ii Equipment

Equipment for administration and instruction will be acquired as needed. It will include direct purchase through the Implementation Grant, direct purchase through restricted funding sources, direct purchase through the General Fund, surplus equipment from local colleges and universities, contributions, and donations. For the first year, this includes equipment and instructional materials for eighteen (18) classrooms, four (4) administrative offices and a library. The five-year projected budget includes funding for items such as classroom tables and chairs, media and technological aids instruction, science lab equipment storage facilities, etc.

4 Practices

Governance and Operation

i Non-Profit Corporation Status

RLOA is organized as a South Carolina non-profit corporation. The articles of incorporation and bylaws are included with this application (*See Appendix Q*).

ii Governing Board

1.

During the initial planning phase, a Charter Planning Committee was formed. This committee was responsible for creating and leading advisory committees related to one of the four major areas in the charter application: the educational plan, governance, finance and facility procurement. An additional committee was convened to market the school to all residents within a 20-mile radius of the proposed site in Ridgeland, which is all of Jasper County, the north and south areas of western Beaufort County—known as Sheldon and Bluffton, and the eastern most region of Hampton County—known as Yemassee. The Planning Committee will act as RLOA’s governing body throughout the planning and implementation process and into fall 2011. At a time before October 31, 2011 the parent and employee body of RLOA will elect a Board of Directors.

By the first Monday of September, 2011 a Nominating Committee consisting of two (2) parents of enrolled students, two (2) faculty members of the school and two (2) community members will be selected by the Principal. The current Chairperson of the Board of Directors will serve as

a non-voting advisor to the Nominating Committee. The Nominating Committee will follow the same procedures regarding nominations and voting as listed in the following section.

Within one year of taking office, all persons elected or appointed as members of a charter school board of trustees shall complete successfully an orientation program in the powers, duties, and responsibilities of a board member including, but not limited to, topics on policy development, personnel, instructional programs, school finance, school law, ethics, and community relations. The orientation must be provided at no charge by the State Department of Education or an association approved by the department.

2.

RLOA will conduct annual elections to ensure that all stakeholders have a role in the governance of the school. As representatives of the school and the community, RLOA Board members bring a diverse set of skills and backgrounds that represent a broad area of expertise. Those who choose to serve on the Board shall do so because they believe strongly in the mission of RLOA and commit to the role of an ambassador for the school.

In September of each year, a Nominating Committee consisting of two (2) parents of enrolled students, two (2) faculty members of the school and two (2) community members will be selected by the Principal. The current Chairperson of the Board of Directors will serve as a non-voting advisor to the Nominating Committee.

By the third week of September each year, the Nominating Committee will convene a public Pre-Election meeting and invite all employees, parents of enrolled students and interested community members to attend. The purpose of this meeting will be to explain the Board elections process, clarify who is eligible for Board membership and accept written nominations for candidates. Written nominations for candidates who may be either parents of enrolled students or interested members of the community at large will be accepted for one month after the Pre-Election meeting.

Individuals nominated for Board membership will be contacted by a member of the Nominating Committee to ensure that they have a thorough understanding of the Board's responsibilities, as well as individual member responsibilities, and are willing to serve.

Upon commencement of acceptance of written nominations, the Nominating Committee will be charged with evaluating the nominees and preparing a slate of candidates that is in compliance with the South Carolina Charter School Act (SCCSA 1996) and RLOA's bylaws. Consideration will be given to each candidate's individual background and experiences as well as to the slate as a whole, to ensure that the final ballot includes: (a) candidates with an unwavering belief in the mission and educational philosophy of RLOA; (b) no one who has been convicted of a felony, and (c) a minimum of seven (7) to a maximum of eleven (11) members in compliance with RLOA bylaws.

A final ballot will be composed and include three voting options:

- a) approval of the slate as presented, including the names and relevant expertise of the proposed nominees;
- b) approval of the slate as amended, in which voters will be able to amend the ballot by writing in the names(s) of any candidate(s) of their choice;
- c) a blank write-in ballot in which voters will be able to write in the names of any candidate(s) of their choice.

Additionally ballots will clearly indicate:

- a) the mailing address that they must be returned to and the date they must be received by in order to be counted towards the election;
- b) the date, place and time that votes may be cast on site at the school;
- c) the location of ballot box(s) where ballots may be placed.

Ballots will be sent home with each enrolled student. Parents will sign for the ballot and return the signed sheet to the school administrator via their child, indicating that the ballot has been received. For those who do not return the signed paper, ballots will be mailed to the mailing address on record. One vote will be allowed for each enrolled student. Additionally, each employee of the school will receive one vote.

Ballots will be opened and tallied by the Nominating Committee at a specially convened public meeting no later than the fourth Tuesday of November each year. The results will be announced at that meeting, publicized through the school's website and also through an official letter to all

parents and staff. The new elected Board of Directors will convene its first meeting on the third Tuesday of January each year, in compliance with RLOA's bylaws.

3.

RLOA shall be governed by a Board of Directors. The primary mission of the Board is to support and protect the mission of RLOA. All members will work to achieve the stated goals of the charter through proper governance, which includes assigning all matters related to the management of RLOA to appropriate employees.

The governance of RLOA encompasses general oversight, legal responsibilities, strategic planning, policy-making, and fiduciary obligations. The Board of Directors also ensures that the charter school is operated in an ethical manner.

The Governing Board, as a collective group, has the ultimate authority to:

- i. Employ and contract with teachers and nonteaching employees;
- ii. Ensure that all certified personnel and noncertified teachers, including volunteers, undergo background checks and other investigations before they are employed or allowed to volunteer at the school;
- iii. Contract for services, including but not limited to transportation, accounting, and legal services;

- iv. Develop pay scales, performance criteria, assessment criteria and discharging policies for the employees of RLOA, including the school's lead administrator;
- v. Decide all other matters related to the school's operation, including budgeting, curriculum, legal matters and operating procedures;
- vi. Ensure that the school will adhere to the same health, safety, civil rights, and disability rights requirements as are applied to all public schools operating in the same school district;
- vii. Convene advisory boards to give counsel to the Governing Board, the Principal or other staff;
- viii. Convene committees that prepare board-level issues for discussion.

Governing Board members also have the responsibility to:

- ix. Operate the charter in the *most* efficient manner;
- x. Ensure that ethical norms are respected;
- xi. Recuses themselves from any vote that may cause a conflict of interest;
- xii. Ensure effective organization planning;
- xiii. Ensure that adequate financial resources exist for RLOA to fulfill its mission;
- xiv. Assess its own performance;
- xv. Determine, monitor and strengthen RLOA's programs and services;
- xvi. Enhance the public standing of RLOA;
- xvii. Successfully complete a training program sponsored by the South Carolina Department of Education within one (1) year of taking office;
- xviii. Support the Principal in his or her performance.

4.

Freedom of Information Act (FOIA): The governing board and the staff of RLOA will comply with the Freedom of Information Act as stated at: <http://www.scstatehouse.gov/code/t30c004.htm>.

Specifically – the board will adhere to policies for each of the following:

Student Records:

Student records are subject to Family Education Rights to Privacy Act. The governing body will comply with the Freedom of Information Act that is included in Attachment 11. This will include, but is not limited to all policies regarding student, faculty and staff records, administrative records, and meetings. The board recognizes and agrees to comply with the following Family Educational Rights and Privacy Act (FERPA) requirements.

The Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. § 1232g; 34 CFR Part 99) is a Federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's education records. These rights transfer to the student when he or she reaches the age of 18 or attends a school beyond the

high school level. Students to whom the rights have transferred are "eligible students."

Parents or eligible students have the right to inspect and review the student's education records maintained by the school. Schools are not required to provide copies of records unless, for reasons such as great distance, it is impossible for parents or eligible students to review the records. Schools may charge a fee for copies.

Parents or eligible students have the right to request that a school correct records which they believe to be inaccurate or misleading. If the school decides not to amend the record, the parent or eligible student then has the right to a formal hearing. After the hearing, if the school still decides not to amend the record, the parent or eligible student has the right to place a statement with the record setting forth his or her view about the contested information.

Generally, schools must have written permission from the parent or eligible student in order to release any information from a student's education record. However, FERPA allows schools to disclose those records, without consent, to the following parties or under the following conditions (34 CFR § 99.31):

- School officials with legitimate educational interest;
- Other schools to which a student is transferring;
- Specified officials for audit or evaluation purposes;
- Appropriate parties in connection with financial aid to a student;
- Organizations conducting certain studies for or on behalf of the school;
- Accrediting organizations;

To comply with a judicial order or lawfully issued subpoena;

Appropriate officials in cases of health and safety emergencies; and

State and local authorities, within a juvenile justice system, pursuant to specific State law.

Schools may disclose, without consent, "directory" information such as a student's name, address, telephone number, date and place of birth, honors and awards, and dates of attendance. However, schools must tell parents and eligible students about directory information and allow parents and eligible students a reasonable amount of time to request that the school not disclose directory information about them. Schools must notify parents and eligible students annually of their rights under FERPA and maybe notified through special letter, inclusion in a PTA bulletin, student handbook, or newspaper article (left to the discretion of each school).

All materials, regardless of form, gathered by a public body during a search to fill an employment position, except that materials relating to not fewer than the final three applicants under consideration for a position must be made available for public inspection and copying. In addition to making available for public inspection and copying the materials described in this item, the public body must disclose, upon request, the number of applicants considered for a position. For the purpose of this item "materials relating to not fewer than the final three applicants" do not include an applicant's income tax returns, medical records, social security number, or information otherwise exempt from disclosure by this section.

Any data, records, or information developed, collected, or received by or on behalf of faculty, staff, employees, or students of a state institution of higher education or any public or private

entity supporting or participating in the activities of a state institution of higher education in the conduct of or as a result of study or research on medical, scientific, technical, scholarly, or artistic issues, whether sponsored by the institution alone or in conjunction with a governmental body or private entity until the information is published, patented, otherwise publicly disseminated, or released to an agency whereupon the request must be made to the agency. This item applies to, but is not limited to, information provided by participants in research, research notes and data, discoveries, research projects, proposals, methodologies, protocols, and creative works.

The exemptions in this item do not extend to the institution's financial or administrative records.

Administrative Records:

Administrative records are not exempt from public records requirements. RLOA will comply with all requirements for public records including right to inspect or copy public records and requirements regarding maintaining public records for reviews.

From SECTION 30-4-30. Right to inspect or copy public records; fees; notification as to public availability of records; presumption upon failure to give notice; records to be available when requestor appears in person.

(a) Any person has a right to inspect or copy any public record of a public body, except as otherwise provided by Section 30-4-40, in accordance with reasonable rules concerning time and place of access.

(b) The public body may establish and collect fees not to exceed the actual cost of searching for or making copies of records. Fees charged by a public body must be uniform for copies of the same record or document. However, members of the General Assembly may receive copies of records or documents at no charge from public bodies when their request relates to their legislative duties. The records must be furnished at the lowest possible cost to the person requesting the records. Records must be provided in a form that is both convenient and practical for use by the person requesting copies of the records concerned, if it is equally convenient for the public body to provide the records in this form. Documents may be furnished when appropriate without charge or at a reduced charge where the agency determines that waiver or reduction of the fee is in the public interest because furnishing the information can be considered as primarily benefiting the general public. Fees may not be charged for examination and review to determine if the documents are subject to disclosure. Nothing in this chapter prevents the custodian of the public records from charging a reasonable hourly rate for making records available to the public nor requiring a reasonable deposit of these costs before searching for or making copies of the records.

(c) Each public body, upon written request for records made under this chapter, shall within fifteen days (excepting Saturdays, Sundays, and legal public holidays) of the receipt of any such request notify the person making such request of its determination and the reasons therefore. Such a determination shall constitute the final opinion of the public body as to the public availability of the requested public record and, if the request is granted, the record must be furnished or made available for inspection or copying. If written notification of the determination of the public body as to the availability of the requested public record is neither mailed nor

personally delivered to the person requesting the document within the fifteen days allowed herein, the request must be considered approved.

(d) The following records of a public body must be made available for public inspection and copying during the hours of operations of the public body without the requestor being required to make a written request to inspect or copy the records when the requestor appears in person:

- (1) minutes of the meetings of the public body for the preceding six months;
- (2) all reports identified in Section 30-4-50(A)(8) for at least the fourteen-day period before the current day; and
- (3) documents identifying persons confined in any jail, detention center, or prison for the preceding three months.

Meetings. **From SECTION 30-4-70.** All meetings are public unless the meetings are permissible by law to be closed. The conditions under which meetings may be closed include; procedure; circumvention of chapter; disruption of meeting;

(a) A public body may hold a meeting closed to the public for one or more of the following reasons:

- (1) Discussion of employment, appointment, compensation, promotion, demotion, discipline, or release of an employee, a student, or a person regulated by a public body or the appointment of a person to a public body; however, if an adversary hearing involving the employee or client is held, the employee or client has the right to demand that the hearing be conducted publicly. Nothing contained in this item shall prevent the public body, in its discretion, from deleting the names of the other employees or clients whose records are submitted for use at the hearing.

(2) Discussion of negotiations incident to proposed contractual arrangements and proposed sale or purchase of property, the receipt of legal advice where the legal advice relates to a pending, threatened, or potential claim or other matters covered by the attorney-client privilege, settlement of legal claims, or the position of the public agency in other adversary situations involving the assertion against the agency of a claim.

(3) Discussion regarding the development of security personnel or devices.

(4) Investigative proceedings regarding allegations of criminal misconduct.

(5) Discussion of matters relating to the proposed location, expansion, or the provision of services encouraging location or expansion of industries or other businesses in the area served by the public body.

(b) Before going into executive session the public agency shall vote in public on the question and when the vote is favorable, the presiding officer shall announce the specific purpose of the executive session. As used in this subsection, "specific purpose" means a description of the matter to be discussed as identified in items (1) through (5) of subsection (a) of this section. However, when the executive session is held pursuant to Sections 30-4-70(a)(1) or 30-4-70(a)(5), the identity of the individual or entity being discussed is not required to be disclosed to satisfy the requirement that the specific purpose of the executive session be stated. No action may be taken in executive session except to (a) adjourn or (b) return to public session. The members of a public body may not commit the public body to a course of action by a polling of members in executive session.

(c) No chance meeting, social meeting, or electronic communication may be used in circumvention of the spirit of requirements of this chapter to act upon a matter over which the public body has supervision, control, jurisdiction, or advisory power.

(d) This chapter does not prohibit the removal of any person who willfully disrupts a meeting to the extent that orderly conduct of the meeting is seriously compromised.

(f) The Board of Trustees of the respective institution of higher learning, while meeting as the trustee of its endowment funds, if the meeting is in executive session specifically pursuant to Sections 59-153-80(A) or 59-153-320(C).

From SECTION 30-4-80. Notice of meetings of public bodies.

(a) All public bodies, except as provided in subsections (b) and (c) of this section, must give written public notice of their regular meetings at the beginning of each calendar year. The notice must include the dates, times, and places of such meetings. Agenda, if any, for regularly scheduled meetings must be posted on a bulletin board at the office or meeting place of the public body at least twenty-four hours prior to such meetings. All public bodies must post on such bulletin board public notice for any called, special, or rescheduled meetings. Such notice must be posted as early as is practicable but not later than twenty-four hours before the meeting. The notice must include the agenda, date, time, and place of the meeting. This requirement does not apply to emergency meetings of public bodies.

(d) Written public notice must include but need not be limited to posting a copy of the notice at the principal office of the public body holding the meeting or, if no such office exists, at the building in which the meeting is to be held.

(e) All public bodies shall notify persons or organizations, local news media, or such other news media as may request notification of the times, dates, places, and agenda of all public meetings, whether scheduled, rescheduled, or called, and the efforts made to comply with this requirement must be noted in the minutes of the meetings.

SECTION 30-4-90. Minutes of meetings of public bodies.

(a) All public bodies shall keep written minutes of all of their public meetings. Such minutes shall include but need not be limited to:

- (1) The date, time and place of the meeting.
- (2) The members of the public body recorded as either present or absent.
- (3) The substance of all matters proposed, discussed or decided and, at the request of any member, a record, by an individual member, of any votes taken.
- (4) Any other information that any member of the public body requests be included or reflected in the minutes.

(b) The minutes shall be public records and shall be available within a reasonable time after the meeting except where such disclosures would be inconsistent with Section 30-4-70 of this chapter.

(c) All or any part of a meeting of a public body may be recorded by any person in attendance by means of a tape recorder or any other means of sonic or video reproduction, except when a meeting is closed pursuant to Section 30-4-70 of this chapter, provided that in so recording there is no active interference with the conduct of the meeting. Provided, further, that the public body is not required to furnish recording facilities or equipment.

RLOA will comply fully with Title 30, Chapter 4 of the South Carolina Freedom of Information Act (FOIA). Meetings of the Board of Directors will be held at least six (6) times per year and conducted by the Board of Directors in accordance with all provisions of the current law and any amendments as they may be enacted.

Meetings

All meetings will be conducted in public according to the stipulations of the FOIA except for matters prescribed in Section 3-40-70 which include:

- (1) Discussion of employment, appointment, compensation, promotion, demotion, discipline, or release of an employee, a student, or a person regulated by a public body or the appointment of a person to a public body; however, if an adversary hearing involving the employee or client is held, the employee or client has the right to demand that the hearing be conducted publicly. Nothing contained in this item shall prevent the public body, in its discretion, from deleting the names of the other employees or clients whose records are submitted for use at the hearing.
- (2) Discussion of negotiations incident to proposed contractual arrangements and proposed sale or purchase of property, the receipt of legal advice where the legal advice relates to a pending, threatened, or potential claim or other matters covered by the attorney-client privilege, settlement of legal claims, or the position of the public agency in other adversary situations involving the assertion against the agency of a claim.
- (3) Discussion regarding the development of security personnel or devices.
- (4) Investigative proceedings regarding allegations of criminal misconduct.

(5) Discussion of matters relating to the proposed location, expansion, or the provision of services encouraging location or expansion of industries or other businesses in the area served by the public body.

Before going into executive session RLOA shall vote in public on the question and when the vote is favorable, the presiding officer shall announce the specific purpose of the executive session. As used in this subsection, "specific purpose" means a description of the matter to be discussed as identified in items (1) through (5) of subsection (a) of this section. However, when the executive session is held pursuant to Sections 30-4-70(a)(1) or 30-4-70(a)(5), the identity of the individual or entity being discussed is not required to be disclosed to satisfy the requirement that the specific purpose of the executive session be stated. No action may be taken in executive session except to (a) adjourn or (b) return to public session. The members of a public body may not commit the public body to a course of action by a polling of members in executive session.

Additionally, RLOA will adhere to the Family Education Rights and Privacy Act by respecting the purpose of privacy regulations which include:

- assuring consumer control over student information;
- setting boundaries on the use and disclosure of student records;
- establishing appropriate safeguards to protect privacy of student information.

All student records and administrative records will be secured on the premises of the school or at a site approved for their storage by the Board.

iii Administrative Structure

Principal

The Principal's performance will be supervised and evaluated by the Board of Directors. The Board will delegate its authority to the Director to execute the mission and program direction for RLOA. This includes maintaining a constant focus on the seven areas of achievement while ensuring that RLOA:

- Remains mission driven;
- Remains committed to motivating students;
- Allows for more time on task in the classroom;
- Maintains high expectations for all teachers and learners; and
- Empowers stakeholders a measure of freedom to shape the educational experience as it pertains to them.

The Principal's role also includes but is not limited to the following:

- Recommend for hire, manage, and evaluate instructional and non-instructional staff;
- Manage the school's finances and business operations;
- Serve as the chief instructional leader;
- Ensure compliance with state and local policies;
- Manage the facility maintenance and renovations; and
- Serve as the lead for cultivating community partnerships.

The chart below lists responsibilities of RLOA leadership. It outlines the distinct roles that the Board of Directors and the RLOA Administrator have in managing the school.

Responsibility	Board of Directors	Principal
Legal	<ul style="list-style-type: none"> • Takes the ultimate responsibility of maintaining the legal standards and ethical integrity of Royal Live Oaks Academy of Arts & Sciences Charter School. • Exercises fiduciary role to ensure that R:OA is properly managed. The board should have a mechanism to validate information from the administrator. • Avoids conflicts of interest by developing sound policies and carefully reviewing financial and business dealings. 	<ul style="list-style-type: none"> • Must provide information to the board to demonstrate that Royal Live Oaks Academy of Arts & Sciences Charter School is well managed. • Compiles information for annual filing requirements. • Consults with the board regarding any situation that could seemingly compromise the legal or ethical integrity of RLOA.
Finance & Accounting	<ul style="list-style-type: none"> • Approves the annual budget, making sure that it reflects the mission of RLOA. • Sets and approves policies concerning financial controls and practices to ensure that the finances of RLOA. • Reviews periodic financial reports (balance sheet, income statement, changes in financial position). 	<ul style="list-style-type: none"> • Prepares the annual budget with input from staff and finance committee. • Oversees preparation of periodic financial reports. • Implements proper financial controls.
Strategic Planning	<ul style="list-style-type: none"> • Establishes and maintains the mission-based focus of RLOA, ensuring that all future pursuits are focused towards the stated goals. • Reviews goals and objectives designed to meet the school's mission. 	<ul style="list-style-type: none"> • Executes the mission and program direction for RLOA while assisting the board in maintaining the focus and momentum for the school. • Develops specific program goals and objectives based on the mission.

	<ul style="list-style-type: none"> • Reviews strategic plan and progress toward goals. • Assesses compliance/progress in achieving educational and other outcomes agreed to in the charter contract. 	<ul style="list-style-type: none"> • Develops reports or oversees staff development of reports to demonstrate program progress.
Policy	<ul style="list-style-type: none"> • Develops and adopts written policies. • Responsible for reviewing policies periodically. 	<ul style="list-style-type: none"> • Identifies the need for new policies • Responsible for assuring the implementation of policies and for assisting the board in analyzing policy options.
Personnel	<ul style="list-style-type: none"> • Sets and reviews personnel policies. • Evaluates the lead administrator's performance and offers feedback for areas of growth. • Approves all hiring recommendations. 	<ul style="list-style-type: none"> • Implements personnel policies. • Recommends changes in personnel policies to the board. • Recommends all personnel for hire and evaluates performance of staff members (or delegates to appropriate supervisor). • Renders any judgments or assessments of staff activity for which no previous board expectations have been stated.
Resource Development	<ul style="list-style-type: none"> • Responsible for assuring long range commitments of resources; establishes a fund development plan and participates in its implementation. • Plan fundraising events. • Assist with all major grant proposals. • Approve business ventures that support mission. 	<ul style="list-style-type: none"> • Conduct research and maintain information database. • Assist in fund development efforts. • Develop grants, and other funding application. • Recommend and manage business ventures to support mission.
Board Accountability	<ul style="list-style-type: none"> • Establishes and communicates clear expectations of Board membership. 	<ul style="list-style-type: none"> • Facilitates training and information exchange for members of Board of Directors

	<ul style="list-style-type: none"> • Attend to discipline in Board attendance. 	<ul style="list-style-type: none"> • Facilitates effective communication among the Board of Directors.
Decision Making	<ul style="list-style-type: none"> • Defines and communicates the role of Board and lead administrator in making decisions. • Assures appropriate involvement of board directors in school decision making. 	<ul style="list-style-type: none"> • Makes action decisions within parameters set by the board, collaborates both with the other staff and Board in some decisions.
Community Relations	<ul style="list-style-type: none"> • Promotes the school to parents and the general public, including serving as ambassadors for RLOA to the broader community. • Promotes cooperative action with other schools including activities and occasions when the charter school should take part in coalitions, shared programs, joint action, etc. 	<ul style="list-style-type: none"> • Interprets the mission of RLOA to the community through direct involvement, public relations programs, including personal contact, descriptive program literature, and work with the media; works closely with the board for an effective division of labor. • Participates in efforts to support community betterment efforts.
Contracts	<ul style="list-style-type: none"> • Approves contracts 	<ul style="list-style-type: none"> • Manages contracts

Although the five-year projected budget includes a salary for an Assistant Principal beginning in Year 2, RLOA reserves the right not to employ other administrative staff, but rather utilize the extended work-day of its faculty to manage responsibilities that pertain to the entire school. Teachers who take on additional roles may be given a lighter teaching load than what is expected of other instructional staff members. Such responsibilities may include but are not limited to:

- Dean(s) of Student Discipline
 - Maintains high expectations for student discipline through a system of positive reinforcement for appropriate behavior and consequences for inappropriate behavior.
- Home Visit Director(s)

- Organizes at least one home visit per year, per student designed to update parents on student performance, attitudes, accomplishments and areas of weakness.
- School Event Coordinator(s)
 - Creates and implements school-wide events that engage students, teachers, staff, parents and community members, or any combination of these.
- Technology Development Coordinator
 - Researches and recommends technology that will enhance teaching and learning.
- Parent Involvement Coordinator(s)
 - Recruits and organizes parent volunteers.
- Director of Development / Grant Writing
 - Researches grant options that will assist RLOA in fulfilling its mission, and works with a team of staff &/or volunteers to compose the applications.
- Life Coordinator(s)
 - Develop methods to place RLOA alumni in the most suitable high school placement which may include traditional high school programs, magnet programs, charter schools, alternative programs, independent schools and boarding academies. Coordinators will also develop a system to encourage, monitor and support RLOA alumni in their pursuit of postsecondary education.

iv Parental, Community, and Educator Involvement

Parents and community members are all eligible for Governing Board election. Parents and teachers have substantial influence since their vote elects the governing body that holds the ultimate responsibility for ensuring the efficacy of RLOA.

Parents

As essential members of the school community, RLOA encourages parents to get involved in various aspects of school operation and governance, including but not limited to:

- Assisting teachers and other staff with their normal classroom duties
- Chaperoning field trips and service-learning projects
- Serving on committees that submit recommendations and make decisions concerning school issues
- Attending / teaching courses for parents
- Participating in school functions such as fundraisers
- Monitoring lunch and recess (when trained)

Teachers

RLOA is committed to allowing teachers to serve as leaders within the school and will function as a professional learning community (PLC). Richard DuFour says that the members of a PLC must be “dedicated to the idea that their organization exists to ensure that all students learn essential knowledge, skills and dispositions.” Dufour’s book lists several characteristics of an effective PLC:²⁷

²⁷ Dufour, Richard, Rebecca DuFour, Robert Eaker, and Thomas Many. Learning by Doing A Handbook for Professional Learning Communities at Work (Book & CD-ROM). New York: Solution Tree, 2006.

- Focus on Learning – the very essence of a learning community is a focus on and a commitment to the learning of each student
- Collaborative Culture - a PLC is composed of collaborative teams whose members work interdependently to achieve common goals linked to the purpose of learning for all
- Collective Inquiry – the teams in a PLC engage in collective inquiry into both best practices in teaching and best practices in learning
- Action Oriented – members of a PLC are action oriented: they move quickly to turn aspirations into actions and visions into reality
- Continuous Improvement – inherent to a PLC are a persistent disquiet with the status quo
- Results Orientation – members of a PLC realize that all of their efforts must be assessed on the basis of results rather than intentions.

The staff of RLOA will use professional learning communities as an effective (research supported) way to collaboratively make decisions regarding funding options, professional development, school culture, student discipline, etc.

Community Members

Community members will be vital to the success of RLOA. The surrounding community will support the goals and objectives of the school by:

- Serving as mentors to students who share similar career interests
- Providing opportunities for meaningful service-learning
- Visiting RLOA and addressing students

- Supporting hands-on and experiential learning by allowing “field visits”
- Volunteering to tutor students in core subjects

B) Admissions Policies and Procedures

RLOA will not discriminate on the basis of disability, race, creed, color, gender, national origin, religion, ancestry, or need for special education services.

i Enrollment Procedures

Any student living within the RLOA service area (earlier in the second paragraph of the narrative)—REMOVED; REPLACED WITH South Carolina’s SCPCSD is eligible to attend RLOA. There is no prerequisite for admission to RLOA. RLOA expects—REMOVED; REPLACED WITH: will encourage students and their parents to simply read, commit to, and sign the *Royal Live Oaks Academy of Arts & Sciences Charter School Achievement Agreement (Appendix R)*. A staff member from RLOA will travel to each student’s house to discuss the contents of the Agreement. This form affirms an agreement between the school, the student and the parent. It states that each party is committed to upholding a standard of excellence for the student and that all stakeholders will work diligently to support the student’s education. Our goal is to create a culture of high expectations among all stakeholders that views academic achievement and community involvement as keys to future success. REMOVED: RLOA

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reserves the right not to enroll a student who is ineligible to enroll in the Jasper County School District school.

1. Eligibility to Attend RLOA

All students located in the RLOA service area (a 20-mile radius that includes all of Jasper County, the north and south areas of western Beaufort County—known as Sheldon and Bluffton, and the eastern most region of Hampton County—known as Yemassee School District)—
REMOVED; REPLACED WITH: South Carolina’s SCPCSD are eligible to attend RLOA. As

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part of the school’s admissions policies and procedures, the Charter Committee and subsequent Boards and Administrations will publicize the charter school throughout the service area—
REMOVED; REPLACED WITH: a 20-mile radius of the school to ensure that all ethnicities,

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academic ability ranges, and socioeconomic levels are aware of this school choice option. Forty-four (44) kindergarten, forty-four (44) first graders, forty-four (44) second graders, forty-four (44) third graders, forty-four (44) fourth graders, forty-four (44) fifth graders, forty-four (44) sixth graders, forty-four (44) seventh graders, and forty-four (44) eighth graders will be recruited to enter the school for the first year of operation. As each year progresses, we will add one grade (44 students per grade) per year until we reach grade twelve (12).

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2. Manner in Which Applications Will Be Received and Processed

Applications will be available on the first day of the second semester, and formal recruitment of incoming students will begin in January of each calendar year for the following school year. In January, RLOA staff and parents will advertise open enrollment for all available grades. After this point, interested families will be able to meet with the RLOA and review the expectations of the school listed in the Achievement Agreement. A parent may enroll a student by submitting an application (*see sample in Appendix S*) in person, by fax, by email or via US mail. The form will be available for download on the RLOA website(www.royalliveoaksacademy.org) or for pick up at the school.

The deadline for submitting an application is March 30. If March 30 falls on a weekend, applications are due on the Friday before March 30 at 5pm. Should March 30 fall on a holiday, applications will be due by 5pm on the preceding business day. Families may continue to submit applications after the March 30 deadline. If the number of applications received before March 30 does not meet or exceed capacity, then applications will be received and admission will be given on a first come, first serve basis. If the number of applications received before the March 30 deadline exceeds the number of slots available, then a lottery will be held.

3. Method Through Which a Lottery Will Be Conducted If Applications Exceed the Capacity

If the number of applicants to RLOA exceeds capacity prior to the application deadline of March 30, a lottery (random selection process) will be conducted. The lottery will take place by the second Monday in April. Families involved in the lottery will be notified by phone or via US

mail, and attempts to contact families will be documented. The lottery will be conducted as a public meeting and will be held at the school facility.

The lottery will be videoed and carried out in the following manner:

1. a card bearing the name of each applicant will be made and sealed in an unmarked envelope;
2. the envelopes containing the cards will be placed in a transparent, plastic bin sufficiently large enough to allow the envelopes to be thoroughly shuffled (with the lid in place);
3. a representative from the RLOA will draw one envelope at a time, stopping to open the envelope and read the name of the applicant between each drawing;
4. two members of the Charter Committee or Board of Directors will record the names of the drawn applicants on two separate ledgers

This procedure will continue until all envelopes have been drawn and all names recorded.

Results from the random selection process will be posted on the RLOA website. The list will display students admitted into RLOA, and it will also form a waiting list by order of the lottery. As slots come open during the school year students will be admitted from the waiting list in the order of the lottery results. Any applications received during the year will be placed at the bottom of the waiting list.

4. Question of Priority Enrollment

RLOA may give enrollment priority to a sibling of a pupil already enrolled, children of a charter school employee, and children of the charter planning committee, provided their enrollment does not constitute more than twenty (20) percent of the enrollment of the charter school.

ii Students Outside the District

RLOA will not enroll out-of district students (i.e., the SCPCSD)—REMOVED; REPLACED WITH: enroll any student in South Carolina's SCPCSD.

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iii Student Appeals Process

If RLOA denies admission to a student for a reason other than results of a lottery, the student may appeal the denial to the State County School District Board of Trustees. The appeal must be in writing and state the grounds on which the appeal is based. The decision will be binding on the student and the charter school.

C) Racial Composition

RLOA will match the racial composition of the targeted student population and will comply with any desegregation plan or order in effect in the state district.

i Racial Composition

RLOA will comply with the South Carolina requirements for the racial composition of the student population the school intends to target. The RLOA Planning Committee. The Planning Committee will recruit students from across the RLOA market area (described earlier in the second paragraph of the narrative) to ensure that socioeconomic status or geographical location is not a hindrance in achieving a racial composition that does not vary from the norm.

ii Policies and Procedures

RLOA is committed to recruiting a diverse population of students without regard to race, religion, gender, natural origin, ancestry, disability, or need for special education services. Our recruitment efforts have and will continue to utilize strategies that ensure that all students within South Carolina (SCPCSD) the RLOA market area who desire to attend RLOA will have an opportunity to enroll.

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Current community outreach strategies include:

- Website – www.royalliveoaksacademy.org
 - The school website shares the mission of the school along with an overview of the education program. A parent may also use the site to pre-enroll a student or request more information via email or telephone.
- Direct Mail
 - Direct mail to households with school-age children throughout the RLOA market area.
- Flyers
 - Flyers & posters announcing RLOA as an educational option were posted at the following locations:
- Newspaper
 - Interviews
 - Advertisements
- Letters & Brochures
 - Letters and brochures announcing RLOA were mailed to the following churches:

Future community outreach strategies:

- The Planning Committee will continue to use flyers, brochures, and direct mail to inform the public of this public school choice option.

- Community Meetings

- The Planning Committee will hold informational meetings at various community locations. These meetings that will be advertised on the RLOA website as well as through flyers, and print media sources.

iii Desegregation Plan or Order

As evidenced in *Appendix U*, our sponsor is the South Carolina Public Charter School District, which is not under a desegregation order; therefore, RLOA is not under an order.

D. Student Conduct, Rights and Responsibilities, and Discipline Procedures

The student handbook contains the policies governing student conduct, student rights and responsibilities, and student discipline standards and procedures. A copy of the handbook can be found in *Appendix G*.

i. Student Conduct

Code of Conduct

The following rules regarding student conduct are in effect during the following times and in the following places:

- on the school grounds during, and immediately before or immediately after, school hours

- on the school grounds at any other time when the school is being used by a school group
- off the school grounds at a school activity, function or event
- en route to and from school or a school activity on a school vehicle
- at any time or in any place that impacts the school's ability to maintain order and discipline

Student Conduct Away from School Grounds or School Activities

The RLOA Board of Directors expects administrators to take appropriate action when information becomes available about student misconduct away from school grounds or school activities that may have a direct and detrimental effect on or seriously threaten the discipline, educational environment, safety or general welfare of students, faculty, staff and/or administrators of the RLOA. When assessing the impact of out-of-school behavior on the school, the director or his/her designee should take into consideration the seriousness of the alleged out-of-school offense and the protection of students, faculty, staff and administrators from the effects of violence, drugs and/or disruptions.

The Principal is directed to evaluate each situation on a case-by-case basis. At a minimum, the Principal or their designees should meet with the student upon his/her arrival at school, give the student notice of the concerns based on the reported out-of-school behavior and allow the student an opportunity to present his/her side of the story. Based upon all of the circumstances, including a finding that the alleged conduct will have a direct and immediate effect on the school or threatens the discipline, educational environment, safety or general welfare of students, faculty, staff and/or administrators of the school, the administration may either permit the student to attend classes as usual or may take appropriate disciplinary action including, but not limited to, in-school

suspension or out-of-school suspension in order to conduct an investigation into the matter. The parents/legal guardians of students will be notified of any action taken by the administration and offered the opportunity for a conference with the administration.

In the event the student is incarcerated based on his/her out-of-school conduct, the Principal or his/her designee will notify the student that he/she is to meet with the administration prior to returning to school.

At the conclusion of the inquiries to obtain more information on the matter, the Principal or his/her designee should take appropriate action which may include, but is not limited to, one or more of the following:

- returning the student to his/her normal class schedule and removing all evidence of suspension
- placing the student on probation and allowing the student to resume his/her normal class schedule
- placing the student on probation, allowing the student to continue class work, but restricting the student's participation in extracurricular activities and/or designated school activities, for example, clubs, study halls, pep rallies, student government activities and so forth
- suspending the student
- recommending placement in the District's alternative school
- recommending expulsion of the student for the remainder of the year

The disciplinary action taken must be supported by the evidence and take into full consideration the impact of the student's presence at school on the discipline, educational environment and safety or general welfare of other students, faculty, staff and/or administrators of the school.

Student Dress Code Policy

Students at RLOA are expected to wear the required uniform every day, unless otherwise indicated. The dress code policy is subject to change at any time.

The uniform will consist of the following:

- A RLOA t-shirt or polo is required for all students.
 - No jackets will be worn inside of the school building.
 - Shirts **MUST** be tucked in at all times.
- Neat blue jeans, beige (khaki) pants, shorts, skirt, or jumper.
 - Purchased by the parent at store of choice
 - Should be free of any designs, embellishments, or contrasting accent colors
 - No baggy pants
 - Pants cannot sag
 - Shorts, skirts, skorts, and jumpers should not be more than 1 inch above the knee
 - Clothing should not be tight
- Students may only wear white undershirts underneath their uniforms (short-sleeve or long-sleeve). Undershirts should fit properly.
- Belts should be black or brown. Belts are required for all items that have belt loops. Chains, pocket watches, or any other accessory should not be attached to the belt.

- Scarves, fabric, and other non-belt material may not be substituted for a belt. Belts can be worn only if they are sold as a belt.
- Shoes
 - No “flip-flops” or sandals
 - Any shoes with a heel taller than an inch are not allowed
 - All shoes, sneakers, or boots should be enclosed
 - Socks, tights, or pantyhose should always be worn with shoes
- No suspenders should be worn over any uniform shirt.
- Students and parents should make every effort to ensure that the uniform shirts and pants are cleaned regularly. Torn or worn clothing should be replaced.
- Any jewelry worn around the neck should be worn inside of the uniform shirt
- All girl earrings should not be larger than a dime (in length or circumference). Earrings should be free of rhinestones, glitter, or any other embellishment.
- Any earrings worn by a male scholar should not exceed the size of quarter inch.
- Hair should be free of glitter and a natural color.
- No headbands.
- Nails should be free of any artificial enhancement (acrylic, silk wraps, press-ons, rhinestones, etc). In addition, nails should be free of extravagant designs.

Students may not wear the following:

- Tight clothing
- Headwear such as bandanas, hats, scarves and caps.
- Any gang related attire

- Makeup with excessive coloring
- Large gold chains or other excessive jewelry
- Body tattoos or body piercings
- Attire with any reference to death (i.e. skulls, poison logos, etc.), alcohol, tobacco or uncontrolled substances

The school reserves the right to add to this list as concerns or problems arise.

Uniform Violation Consequences:

- Students who come to school not abiding by any of the above policies will receive a warning on their first violation.
- Blatant uniform violations (no uniform shirt or no khaki bottoms) or consistent violations (no belt for several days) will result in the parent being contacted immediately to bring the appropriate item and/or the student being sent home for the day.

The rationale behind the school's uniform policy is as follows:

The mission of RLOA is to develop well-disciplined scholars who will be prepared for a college preparatory high school when they leave our school. In light of this, all students will be taught how a RLOA leader acts, how a RLOA leader presents him or herself in appearance, and the skills necessary to be a RLOA leader. The school believes that students appear more scholarly when they are wearing an attractive uniform, and it believes that students will act more scholarly because they will feel good about their appearance.

Another value of the school is that of “teamwork”. Just as members on a sports team are required to wear a uniform in order to promote unity, so too are scholars of the RLOA team. Students in middle school often spend too much time and energy concerned with what students are wearing the name brand clothes. If our focus is on developing leaders, the students at RLOA will need to spend all of their time and energy focusing on their education, not on comparing clothing.

Personal Belongings

Students are not allowed to have the following items at school:

- Gum
- Candy
- Soda or strong “power” drinks
- Any illegal substance
- Weapons and toy weapons
- Matches or lighters
- Fireworks
- Stuffed animals or dolls
- PSPs or any other portable electronic game system, MP3 players, headphones, headsets (Bluetooth, etc.), portable radios or televisions, discman, iPod, no electronic item that accesses the internet, etc.
- Sunflower seeds
- Beepers Card games

The above list is not exhaustive and is subject to change. While cellular phones are allowed,

phones must be off during school hours. Students who chose to violate these rules will have their personal belongings confiscated. Items can only be retrieved by a parent or guardian. If an item is confiscated for a second time, it will be held until the end of the school year.

Telephone Use

Students may not use any school phone without permission from a teacher. Students will only be allowed to use the phone in case of an emergency. A teacher must dial the number for students. Students who use a phone without permission from a teacher will be subject to disciplinary procedures. Students are also not allowed to receive phone calls unless it is an emergency. Parents/guardians are asked to communicate messages and make transportation arrangements with the child before sending the child to school in the morning. If necessary, the Office Manager will deliver messages to students in class, but only in urgent situations will the student be pulled out of class to receive a phone call.

Human Rights Policy

RLOA brings together a diverse group of individuals. It is guided by the principle that respect and consideration for all individuals is foremost in all school activities. It is unlawful to discriminate against any individual based on race, color, religion, sex, nationality, sexual orientation, age or handicap status.

RLOA is not only obligated to uphold the law concerning equal opportunity but regards the spirit of these laws to be the very core of its values. RLOA wishes to stress that it is the responsibility of every member of the school community to observe and uphold the principles of equal opportunity

as they affect staff, faculty and students in all aspects of school life. It is the responsibility of every member of the RLOA community to actively promote appropriate workplace behavior. Coercion or harassment will not be tolerated and will result in appropriate discipline, up to and including, discharge.

Harassment and Bullying

As provided in the South Carolina Safe School Climate Act, RLOA prohibits acts of harassment, intimidation or bullying of a student by another student or students, staff, or third parties that interfere with or disrupt a student's ability to learn and the school's responsibility to educate its students in a safe and orderly environment whether in a classroom, on school premises, on a school related vehicle, at an official vehicle stop, at a school-sponsored activity or event, whether or not it is held on school premises, or at another program or function where the school is responsible for the student.

RLOA expects students to conduct themselves in an orderly, courteous, dignified and respectful manner. Students and employees have a responsibility to know and respect the policies, rules and regulations of the school and District.

Definitions

"Harassment, intimidation, or bullying" is defined as a gesture, an electronic communication, or a written, verbal, physical, or sexual act that a reasonable person should know will have the effect of:

- a) harming a student, physically or emotionally, or damaging a student's property, or

placing a student in reasonable fear of personal harm or damage to his property; or

b) insulting or demeaning a student or a group of students in such a way as to cause substantial disruption in, or substantial interference with, the orderly operation of the school.

Reporting

Any student who believes he/she has been subject to harassment, intimidation, or bullying should file a complaint with the Principal or his/her designee. Such a complaint may also be filed by a student's parent. If an employee receives a complaint of harassment, intimidation, or bullying or observes any behavior which could amount to harassment, intimidation, or bullying, the employee must transmit the complaint to the school's Principal or other designated contact person as soon as practicable.

Consequences for Engaging in Harassment, Intimidation, or Bullying

If the investigation determines that harassment, intimidation, or bullying has occurred, the administration shall take reasonable, timely, age-appropriate, and effective corrective action. Examples of corrective action include, but are not limited to, disciplinary action against the aggressor, up to and including termination of an employee or expulsion of a student; special training or other interventions; apologies; dissemination of statements that the school does not tolerate harassment, intimidation, or bullying; independent reassessment of student work; and/or tutoring.

Individuals, including students, employees, parents, and volunteers, may also be referred to law

enforcement officials. RLOA will take all other appropriate steps to correct or rectify the situation.

A student stays on “AP” until he or she has completed the number of silent lunch days, after-school days, and commitments associated with his or her specific punishment.

Administrative Punishment

“AP” will serve as a consequence for those students who disrupt the learning environment of other scholars or violate the school’s code of conduct in any other way.

What determines if a student is placed on “AP”?

When a student’s weekly paycheck amount falls below a certain amount she/he will be placed on “AP”. 5th graders receiving a paycheck amount of \$34 or below will be placed on “AP”. 6th and 7th graders receiving a paycheck amount of \$39 or below and 8th graders receiving a paycheck amount of \$44 or below will be placed on “AP”.

What does “AP” consist of?

Administrative Punishment has several components. When a student is on “AP”, he or she must attend silent lunch, write a given amount of commitments, and possibly attend after-school detention. Students on “AP” will not attend reward trips. After-school detention is scheduled on a needs-only basis. Afterschool detention will not be held on Fridays and Early Release Days unless otherwise indicated.

How long will a student be placed on “AP”?

The number of days a student will serve “AP” is determined by her/his weekly paycheck amount. This paycheck amount varies from grade level to grade level. “Level 1” paychecks earn a student 1 day of “AP”. “Level 2” paychecks earn a student 2 days of AP. “Level 3” paychecks earn a student 3 days of “AP.”

How will a student get out of the “AP”?

Students will be placed out of “AP” once they have served their time and all assignments are completed. Written assignments must be completed on the last day of “AP”. For example, if a student earns 2 days of “AP” and waits until the second day to try to complete her/his written work that student must stay that second day until the assignment is completed, or continue to participate in “AP.”

What happens if a child is on AP week after week?

Students placed on AP for consecutive weeks will receive additional consequences.

Number of Weeks on AP

2 = Parent conference

3 = Parent is required to sit in on class for at least half of a day

4 = Suspension and behavior plan

Although the weekly paycheck balance is the standard measure used to determine which students are placed on “AP”, the Principal and/or his designee may place students on “AP” at any time for

behavior that is deemed to be extremely inappropriate (such behavior might include laying a hand on another student, talking disrespectfully to an adult, etc.).

Levels of Infractions

Level 1

- Did not follow directions in class or in work
- Unorganized
- Not prepared for class
- Off task
- Missing materials
- Messy desk or lunch area
- Not tracking

Level 2

- Disturbing other teammates from learning (such as talking without permission)
- Negative attitude
- Playing around in hallway or bathroom
- Throwing/leaving trash on floor
- Talking to a student on the bench or talking while on the bench
- Grossly unorganized
- Not being a team player
- Gossiping/talking about other team members
- Dress code violation

Level 3

- Lying
- Cheating
- Copying
- Swearing
- Gross disrespect
- Stealing
- Electronic Devices
- Repeat Dress Code Offenders

Ensuring Consistency in Implementation

The Principal and other school staff members are intimately involved in the process and can assign or remove students from the Administrative Punishment.

Although the above procedures represent the consistent and planned approach for dealing with behavior problems, the school reserves the right to modify this system at any point in the school year. The school recognizes that management systems need to be flexible to meet the needs of teachers, parents and students. In the event that any major aspect of the paycheck system is changed, parents will be notified in writing about the revisions.

Discipline Policy

Students at RLOA are expected to abide by the RLOA Commitment to Excellence at all times.

For students who choose not to follow the expectations within this agreement, there will be consistent consequences in place. Consequences associated with this system include:

- Lunch/Break Detention
- After-School Detention
- Verbal correction
- Phone call home to parents
- Teacher-student-parent conference
- Behavior Contract
- Removal from extracurricular activities
- Additional assignments to be completed at home and/or at school.
- Detention during Saturday School
- Detention on non-Saturday Saturdays
- Mandatory Homework Study Hall after school
- Time-Out
- Loss of incentives and school trips
- Calling Plans, where the student must call the teachers to inform them when homework is completed
- Short-term suspension (removal from school for a period of ten or fewer days)

RLOA has adopted the following policies regarding specific prohibited behaviors:

1. Tobacco Use

(Policy JCDAB)

Students are not permitted to use or possess any tobacco products while in school buildings, on school grounds, on school vehicles, or at any time that a student is under the direct administrative jurisdiction of the school or school officials. Disciplinary actions will be handled in accordance with the Student Code of Conduct.

2. Computer Acceptable Use Rule

Each school year every person who uses a computer at RLOA must review the SCPCSD Acceptable Use Rule (Board Rule EFE).

3. Electronic Communication Devices

Electronic communication devices (including paging devices, cellular phones, walkie-talkies, etc.) are prohibited at RLOA. On the first violation, the device will be confiscated and will only be returned to the child's parent. Additional violations will result in the child being placed on "AP" or being suspended from school. The school also reserves the right to confiscate the device for an extended period of time if it is brought back on campus.

4. Weapons and/or Explosive Devices

Weapons and any other tool or instrument capable of inflicting bodily injury as a weapon are absolutely prohibited at RLOA, and any student found to be in possession of such property shall face expulsion or required transfer. Such items include, but are not limited to: any loaded or unloaded firearm, any object or gun from which projectile objects may be released (such as a BB gun, etc.), any knife (including pocket knives), any razor, any defensive device (gas repellant, mace, chemical sprays, etc.), any martial arts device, or any tool or instrument which school staff

could reasonably conclude as being used to harm someone else (such as a blackjack, chain, club, metal/brass knuckles, night stick, pipe, rings, ice pick, etc.). If any the above items are found on a student, law enforcement will be contacted immediately.

A student shall also not supply, possess, handle, use, threaten to use, or transmit any explosive device or item that ejects or releases a spray, foam, gas, spark, fire, smoke, odor, etc., including but not limited to: fireworks of any type or size, smoke bomb, paint bomb, stink bomb, any homemade bomb, or any form of gasoline, kerosene, explosive or corrosive chemicals, etc. Students found to be in violation of this policy are also subject to immediate mandatory transfer as well as legal action.

5. Threats or Violence Against Staff: Students shall not threaten, harass, or cause inappropriate bodily contact with and/or cause damage to the property of any school employee. Students found to be in violation of this policy shall be subject to short-term suspension, long-term suspension, expulsion or mandatory transfer as well as a referral to the local law enforcement agency.

6. Drugs/Substances: Students found to be in possession of or under the influence of any “drug,” including alcohol, alcoholic beverages, look-alike drugs, inhalants, pills, tablets, or illegal drugs or substances shall be subject to expulsion or immediate mandatory transfer. Parents of students who are required to take medication while at school must contact the main office before sending medication to school. The appropriate law enforcement agency will also be contacted when unlawful substances are found to be in the possession of a student.

7. Destruction or Theft of Property: Destruction of, theft of, and/or threats to destroy or damage or deface school, private, or public property can result in immediate disciplinary action as deemed appropriate by school staff.

8. Violence: Violence at RLOA will not be tolerated. Verbal threatening, fighting or intimidating students with or without actual physical contact, an attempt to hurt another, or actions which cause reasonable fear of immediate bodily harm is defined as an “assault” and may result in penalties ranging from short-term suspension to mandatory transfer. Fighting or making physical contact of an insulting, offensive, or provoking nature with another student is defined as “simple battery” and will result in penalties ranging from short-term suspension to expulsion. Students guilty of “aggravated battery” (maliciously causing bodily harm to another) or “aggravated assault” (an assault made with a deadly weapon or with an object or device that is likely to result in serious bodily harm) are subject to immediate expulsion. Students who participate in a fight by running to an altercation or by encouraging others to participate are also subject to punishment ranging from “AP” to short-term suspension. In addition to school sanctioned disciplinary actions, students may also be referred to the appropriate law enforcement agency.

9. Rude or Disrespectful Behavior: Students at RLOA are expected to operate with the utmost integrity at all times, and therefore discourteous or inappropriate language and/or behavior or gestures toward a staff member or student will result in penalties ranging from a paycheck deduction to suspension.

10. Skipping Class: Any student caught skipping class is subject to immediate consequences

ranging from paycheck deduction to short-term suspension.

11. Classroom Disturbance: The value of “Scholarship” is of the utmost importance at RLOA, and therefore classroom disturbances will not be tolerated. Any behavior that disrupts the instructional process, distracts students and/or teachers from classroom activities and studies, and/or creates a dangerous or fearful situation for students and/or staff will result in penalties ranging from a paycheck deduction to short-term suspension.

12. School Disturbance: Any act that may cause disruption of the school environment and/or threaten the safety or well-being of other students is strictly prohibited at RLOA. Such activities may include, but are not limited to, terroristic threats, gang-related activities, walk-outs, sit-downs, rioting, picketing, trespassing, inciting disturbances, threats to the school, pranks, etc. Penalties for such disturbances may range from short-term suspension to expulsion.

13. Profanity or Obscenity: Students at RLOA are expected to uphold the value of integrity at all times, and any use of profanity or obscenity will be considered a violation of this value. Such use includes, but is not limited to, profane, vulgar, obscene words or gestures; possession of profane, vulgar, or obscene material; accessing obscene material via the Internet; profane, vulgar, obscene or insulting racial, ethnic, or religious comments or actions. Penalties may range from paycheck deductions to short-term suspension, depending upon the severity of the violation.

14. Failure to Accept Disciplinary Action: Students are expected to follow the disciplinary actions set forth by any staff member at the school, and any students who fail to do so is subject to

immediate and harsh consequences. Refusing or failure to accept the “AP” status, serve detention, serve a suspension, or carry out any other disciplinary action imposed by a teacher or school administrator is grounds for immediate suspension.

15. Bus Misbehavior—section removed

15. Conduct Outside of School Hours: It is imperative that students recognize that as a RLOA leader, they are always representing the school. Therefore, any conduct outside of school hours or away from school that may adversely affect the educational process or endanger the health, safety, morals, reputation, or well-being of other students or staff members may result in punishment by the school.

16. Gambling: Gambling in all forms is strictly prohibited at RLOA. Acts such as betting money or items on card games, dice games, the outcome of games or activities and/or possession of gambling materials or paraphernalia may result in a variety of consequences ranging from “AP” to short-term suspension.

17. Providing False Information: Students engaging in any act that entails providing false information to the school will be subject to immediate consequences. Such offenses include such acts as falsifying school records, forging signatures, making or providing false statements, bribery, using an unauthorized User ID or password, etc. Penalties for such infractions may include short-term suspension.

18. Cheating: Cheating will absolutely not be tolerated at RLOA. Students found to be cheating will be placed on “AP” immediately and will participate in a parent conference. Cheating includes

copying someone else's work, having someone else complete an assignment, copying the answers from an answer key, going against the directions in seeking outside assistance, etc. Penalties range from being placed on "AP" to suspension.

19. Plagiarism: Students who copy an idea or the actual text from another source and claim that it is their own will be guilty of plagiarism. Plagiarizing is considered against the law and will be punished at RLOA. Penalties may range from paycheck deductions to suspension.

20. Sexual Misconduct: Sexual misconduct between or among students on school property or at any school activity or event, including, but not limited to, sexual contact, sexual assault, unwelcome sexual advances or comments, request for sexual favors, indecent exposure, insulting comments about sexual orientation, stalking etc. will be subject to swift and harsh consequences ranging from suspension to expulsion. Such matters will also be referred to law enforcement when appropriate.

21. Trespassing on School Property: Students at RLOA are not allowed to enter the premises of the school after hours or on the weekend without authorization or permission from a staff member. Students found to be trespassing may be suspended. When a student refuses to leave the school property and/or returns to the school after being instructed to leave the property, the student will be in violation of this policy and the matter will be referred to law enforcement. Students who have been suspended or expelled are strictly prohibited from entering the premises of the school at any time during the length of their suspension or expulsion.

22. Gang Activity or Association

(Summary of Policy JCDAE)

Gangs and activities of gangs are prohibited on or near school property and at school-sponsored events. A "gang" consists of two or more persons acting together for and with the purpose of committing an act of violence against another person.

The following conduct is prohibited at all times on school property and at school-sponsored events, regardless of where the events are held:

- Wearing, possessing, using, distributing, displaying or selling any clothing, jewelry, emblem, badge, symbol, sign, manner of grooming or other item that evidences or reflects membership in or affiliation with any gang
- Engaging in any act, either verbal or nonverbal, including, but not limited to, gestures or handshakes, that indicates membership in or affiliation with any gang
- Engaging in any act in furtherance of the interests of any gang activity, including, but not limited to, soliciting membership or affiliation with a gang; soliciting any person to pay for "protection"; or soliciting any person to engage in physical violence against any other person
- Painting, writing, engraving, or otherwise inscribing any gang-related graffiti, messages, symbols or signs on school property In determining as part of the implementation of this regulation whether certain acts or conduct are gang related, school officials should consult with local law enforcement. If school administration determines that a student has violated the prohibitions set forth in this policy, the student will be subject to exclusion from participation in extracurricular activities, detention, suspension, and/or expulsion,

dependent upon the specific circumstances of the offense. Students also may be referred to law enforcement. RLOA also reserves the right to permanently prohibit any student from wearing or displaying any article of clothing or accessory which the school or school district has determined to be a gang indicator.

RLOA exists to serve students and believes that all students deserve respect. The purpose of all disciplinary procedures at RLOA is to achieve our stated mission. Our desire is that all punitive acts be performed with a full measure of respect and compassion for the student, with intentions of correcting the errant behavior.

Suspension Policy

Short-Term Suspension Procedures

The Principal or his/her designee may impose a short-term suspension at their discretion. Before imposing a short-term suspension, the Principal shall verbally inform the student of the suspension, the reason for it, and whether it will be served in school or out of school. The student shall be given an opportunity to deny or explain the charges. The Principal shall also immediately notify the parent(s) or guardian(s) in writing that the student has been suspended from school. Written notice shall be provided by personal delivery, express mail delivery, or equivalent means reasonably calculated to assure receipt of such notice within 24 hours of the suspension at the last known address. Whenever possible, notification shall also be provided by telephone if the school has been provided with a contact telephone number for the parent(s) or guardian(s). Such notice

shall provide a description of the incident, or incidents, which resulted in the suspension and shall offer the opportunity for an immediate informal conference with the Principal.

Long-Term Suspension Procedures

The Principal may impose a long-term suspension of no more than 10 days. Such a suspension may be imposed only after the student has been found guilty at a formal suspension hearing. Upon determining that a student's action warrants a possible long-term suspension, the Principal will verbally inform the student that he or she is being suspended and is being considered for a long-term suspension and state the reasons for such actions. The Principal shall immediately notify the student's parent(s) or guardian(s) in writing. Written notice shall be provided by personal delivery, express mail delivery, or equivalent means reasonably calculated to assure receipt of such notice within 24 hours of suspension at the last known address. Where possible, notification also shall be provided by telephone if the school has been provided with a contact telephone number for the parent(s) or guardian(s). Such notice shall provide a description of the incident, or incidents, which resulted in a long-term suspension and shall offer the opportunity for an immediate informal conference with the Principal. At the formal hearing, the student and/or parent(s) or guardian(s) shall have the right to present evidence and ask questions. The principal, in consultation with teachers and staff, is responsible for making the final decision with regard to long-term suspensions.

Alternate Instruction

Students who are suspended will be provided with alternate instruction. Arrangements will be made between the school and each individual family for the delivery of services, pick-up/delivery

of work, and the making up of any missed assignments and classroom instructional support. All IDEA mandates will be followed for students with disabilities.

ii. Students with Disabilities

Due Process Procedures

Students with disabilities have the same rights and responsibilities as other students, and may be disciplined for the same behavioral offenses listed above. RLOA will follow IDEA procedural safeguards for disciplining students with a disability. A student's family may elect to appeal a decision by the Director for suspension to the Royal Live Oaks Academy of Arts & Sciences Charter School Board of Directors. The family may bring counsel with them if they so desire.

Special education students will be managed on a case-by-case basis. Based on their individual educational plans (IEP), students shall adhere to the disciplinary code of CCSMS, or will be monitored through the behavior management plan delineated in the IEP. RLOA's policy on suspension and expulsion of students with disabilities will adhere to the specific procedures for disciplinary actions that involve students with disabilities as outlined in the IDEA 1997 Amendments. The following guidelines will be implemented for compliance:

- School personnel can remove a student with a disability for 10 consecutive days or less at a time for violation of the school code of conduct (to the same extent applied to children without disabilities). School personnel can immediately remove up to 10 consecutive school days or less, the same child for separate incidences of misconduct.

- School personnel can also order a change of placement of a child with a disability to an appropriate interim alternative educational setting for up to 45 days for possession of weapons or drugs or the solicitation or sale of controlled substances while at school and school functions.
- If school personnel believe that a child is dangerous to himself/herself or others, they can ask a hearing officer in an expedited due process hearing to remove a student to an interim alternative educational setting for up to 45 days.
- 45-day interim alternative educational placements can be extended in additional 45-day increments if the hearing officer agrees that the child continues to be substantially likely to injure himself/herself or others if returned to his or her prior placement.
- School personnel can remove a child with a disability, including suspending or expelling for behavior that is not a manifestation of the child's disability, to the same extent as is done for children without disabilities, for the same behavior.
- School personnel can report crimes to appropriate law enforcement and judicial authorities.

School personnel can always ask the court for a temporary restraining order to protect a child or adults from harmful behaviors. (See IDEA Regulations 300.519-529 and 521 d.)

Suspension

Unless otherwise prohibited by the student's IEP, suspension proceedings may be initiated against disabled students. However, before any penalty of more than three days is imposed, the matter must be referred to the Multi-disciplinary Committee (MDC).

Expulsion or Exclusion

Unless otherwise prohibited by the student's IEP, exclusion or expulsion proceedings may be initiated against disabled students. Before any penalty of more than 10 cumulative school days (i.e., expulsion or exclusion) is imposed, however, the matter must be referred to the MDC before the exclusion or expulsion hearing takes place to determine what, if any, changes need to be proposed in the student's program and whether the specified disruptive behavior is a manifestation of or related to the student's disability.

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iii. Student Rights

A student desiring to appeal an expulsion must state the appeal in a written letter and submit the letter to both the school director and the RLOA. The Board of Directors will consider the appeal and make a decision regarding the matter within five (5) business days. The student will remain expelled during the appeal process and will receive alternative instruction during the waiting period.

iv Parental Notification

Each year, all RLOA parents and students will sign a statement stating they have received and reviewed a copy of the student-parent handbook. The handbook explains all disciplinary policies and procedures as well as general school information. The information will also be posted on the school's website and copies will always be available in the front office. Parents and students may contact the Principal with any questions or concerns they have about the handbook.

Parental Grievance Procedures

Step 1: Any parent with a grievance issue should review or discuss the grievance with the involved parties (teacher, administrator, etc.) within ten (10) days following either the event giving rise to the grievance or the time when the parent reasonably should have gained knowledge of its occurrence.

Step 2: If discussion does not solve the matter to the satisfaction of the parent, or if the parent is uncomfortable with an oral discussion of the matter, such parent shall have the right to present the grievance in writing to the school director. This must occur within three (3) days of the discussion outlined in step 1, or within ten (10) days following either the event giving rise to the grievance or the time when the parent reasonably should have gained knowledge of its occurrence. The written grievance shall consist of a concise statement of the facts upon which the grievance is based and a reference to the specific provision of the policy, rule, or regulation in question. A copy of such grievance shall be filed with the school director. The employee shall have the right to include

in the appeal a request for a hearing before the school director. Such hearing shall be conducted within five (5) working days after the Principal's receipt of such request, and the aggrieved employee shall be advised in writing of the time, place, and date of such hearing. The Principal shall take action on the grievance within five (5) working days after receipt thereof, or if a hearing is requested, within five (5) working days after the conclusion of said hearing. The action taken and the reasons for the action shall be reduced to writing and copies sent to the grievant and the Board of Director's Chairperson. Failure on the part of the parent to attend the hearing established by the school director after receiving notice thereof shall be deemed a waiver of the right to appeal and shall end the grievance procedure.

Step 3: After following the above procedure, a parent may request a meeting with the RLOA Board of Directors for the purpose of discussing the grievance. The request will be made in writing to the Principal within five (5) days of the Principal's response to the grievance. The Principal will, at the next regularly scheduled board meeting, present to the Board the request that the grievance be heard, together with copies of all correspondence and responses from any lower supervisory levels. The Board will notify the parent of its decision (whether or not to meet with the grievant to discuss the grievance) within ten (10) days.

E. Indemnification

RLOA assumes the liability for the activities of the charter school and agrees to indemnify and hold harmless the school district, its servants, agents, and employees from any and all liability,

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damage, expense, causes of actions, suits, claims, or judgments arising from injury to persons or property or otherwise that arises out of the act, failure to act, or negligence of the charter school, its agents and employees, in connection with or arising out of the activity of the charter school.