South Carolina Department of Education

Together, we can.

Common Core State Standards Initiative

Comparative Review Report

Prepared for the State Board of Education and

the Education Oversight Committee

June 2010

Dr. Jim Rex

State Superintendent of Education

June 4, 2010

Contents

Acknowledgments

Rita Bixler
District Office
Greenville

Mary Myers
Johnsonville Elementary
Florence Five

Melody Bradley
Corinth & Luther Vaughan
Elementary
Cherokee

Ann Sanderson
District Office
Dorchester Two

Catherine Brewer
District Office
Berkeley County

Verena Scriven
Lake Carolina Elementary School
Richland School District Two

Ed Dickey
Professor
University of South Carolina

Jennie Simons
District Office
Dorchester Two

Cindy Doolittle
District Office
Spartanburg Six

Dianne Steelman
District Office
Lexington One

Don Hardie
District Office
Lexington-Richland Five

Leigh Threat
Pickens High School
Pickens

Charlene Herlong
Saluda Elementary School
Saluda School District One

Ann Webb
Jesse Boyd Elementary
Spartanburg Seven

Mary Lostetter
District Office
Richland Two

Common Core Comparative Review Process Leadership Team

Sandra Goff
Coaching Specialist, Mathematics
Upstate Regional S²MART Center

Cathy Jones
Education Associate
Office of Standards and Support

Dr. Valerie Harrison
Deputy Superintendent
Division of Standards and Learning

Robin Rivers
Director
Office of Standards and Support

Dr. John Holton
Education Associate
Office of Standards and Support

Dr. Terrell Tracy
Coaching Specialist, Literacy
Upstate Regional S²MART Center

Introduction

In February 2010, the State Board of Education (SBE) adopted a goal to *ensure that the Common Core State Standards (CCSS) maintain South Carolina's rigorous expectations for student learning and, if so, adopt a development and implementation plan for the CCSS, aligned curriculum resources, formative/summative assessments, and professional development.* In preparation for meeting this goal, staff members at the South Carolina Department of Education (SCDE) and the Education Oversight Committee (EOC) agreed upon a process and timeline that would allow both bodies to receive staff recommendations on the adoption of the standards. Accommodations have been built into the Common Core State Standards Initiative (CCSSI) that respect each state's unique context and rights to set standards.

After the passage of the Education Accountability Act (EAA) in 1998, the SCDE and EOC staff agreed upon procedures for adopting education standards to carry out the intent of the General Assembly. The EAA requires a cyclical review of standards and assessments by academic area to ensure the state is maintaining high expectations for learning and teaching. The EAA mandates that the South Carolina academic standards reflect the highest level of academic skills to improve the curriculum and instruction in South Carolina's schools so that all students are given the opportunity to learn at unprecedented levels.

This Common Core State Standards Comparative Review Report provides to the SBE and the EOC information detailing South Carolina's efforts, including the following:

- specific details of the Common Core Comparative Review Process that the Common Core Comparative Review Panels (CCCRP) followed;

- information about the rigor and alignment of the CCSS with current South Carolina English language arts (ELA) and mathematics academic standards;

- national and state experts' perspectives of the quality of the CCSS; and

- findings and recommendations related to the adoption and implementation of the CCSS in South Carolina.

Process

With consensus of SCDE and EOC staff members, the procedures for adopting education standards were modified to accommodate the timeline for adopting the CCSS (See Appendices A and B). Staff from the SCDE and EOC jointly attended a November 2009 meeting convened by CCSSO and NGA to learn the details of the CCSSI and the timeline for adoption. During that meeting the group decided to request a joint meeting of the SBE and the EOC to provide an update to members of those groups on the CCSSI. That meeting was held February 8, 2010.

The SCDE's Division of Standards and Learning established a Leadership Team that convened practitioners to examine the draft CCSS documents. The CCSS review and alignment process focused on the criteria of comprehensiveness and balance, rigor, measurability, manageability, organization, and communication.

Because South Carolina's cyclical review process (See Appendix C) places a high premium on the participation of a variety of stakeholders, nominations were solicited from the SBE, the EOC, and South Carolina public school districts. Teachers, school and district administrators, representatives of professional organizations, and representatives of higher education were identified and designated for two CCCRP team panels, one for ELA and one for mathematics. The CCSS ELA standards integrate literacy skills for science and social studies to foster thematic instruction and real-life types of problem solving. To expand our perspective and to consider the inclusion of science and social studies content in the ELA standards, science and social studies practitioners were convened to discuss implications for those content areas if the CCSS are adopted (See Appendix D).

The CCCRP panels carefully compared the content and format of the final version of the CCSS with that of South Carolina's ELA and mathematics standards. This comparison resulted in a report on the alignment between the two sets of standards and an assessment of whether the CCSS are at least as rigorous as the current South Carolina standards. In many cases, the CCSS exceeded the rigor of the current South Carolina standards. Panel members conducted a standard-by-standard and content-to-content review of the CCSS and the South Carolina standards for assigned grade levels and content areas (ELA and mathematics) and calculated the percentage of standards that were in alignment with the South Carolina ELA or mathematics standards.

As part of the development process for the CCSS, feedback was solicited from a variety of stakeholders. The CCSSO and NGA writing panels used the feedback received to create the final version of the CCSS for ELA and mathematics. Although the CCSS standards were embargoed until June 2, 2010, participating states

received a confidential copy of the CCSS so that a final alignment between the South Carolina standards the CCSS could be completed before final approval is requested from the EOC on June 14, 2010 and the SBE on July 14, 2010.

The content area review groups found consistent evidence that the CCSS are written at a cognitive level which meets or exceeds the current rigor of the South Carolina academic standards. The SCDE recommends that the CCSS be adopted for use by South Carolina as its academic standards for ELA and mathematics with the option of adding the additional 15 percent as allowed.

To support a smooth transition for South Carolina's teachers and students, a comprehensive plan including goals, strategies, activities, and a timeline for implementation has been developed. This plan provides for the alignment and development of instructional resources, training, and ongoing support over the next three years. In addition, as part of this plan, groups of practitioners will work to ensure a seamless transition which may include the adding of standards currently included in the South Carolina standards and not found in the CCSS. Full implementation of the CCSS will occur during the 2013-14 school year. South Carolina will also participate in a multi-state consortium to facilitate the effective and efficient development of common assessments and other instructional resources.

Step 1   Indicator-to-Indicator Alignment Analysis

Question: What percentage of South Carolina's ELA and mathematics indicators is found in the CCSS?

Rationale: This process was used to assist the CCCRP in the identification and evaluation of the South Carolina indicators in comparison to the CCSS to make decisions about the content that is to be deleted, included in the support materials, or included in the fifteen percent allowed by the CCSSI.

To facilitate this work, each team member was given a data collection sheet that listed each South Carolina standard and its indicators (See Appendix E). Panel members used the following coding system for determining alignment between South Carolina's academic standards in ELA or mathematics and the kindergarten through grade twelve CCSS (ELA/mathematics) documents:

- (A) A match exists between the CCSS and the South Carolina standards indicator at the SAME grade level, or
- (B) A match exists between the CCSS and the South Carolina standards indicator but at a DIFFERENT grade level, or
- (C) No match exists between the two documents at any grade level.

A fourth column on the data collection sheet allowed panel members to provide qualifying comments of differences between the standards and indicators in the two documents. The fifth column on the data collection sheet asked the reviewing panel member to indicate if the two standards documents required similar cognitive demands.

The CCCRP began its alignment review using the CCSS version released prior to March 9, 2010. An additional alignment review was conducted using the draft CCSS version released by CCSSO and NGA on March 10, 2010. The conclusions included in this report, dated June 4, 2010, reflect the findings for the final version of the CCSS released on June 2, 2010. Preliminary versions of the CCSS were released to states on May 14 for ELA and May 25 for mathematics.

Indicator-to-Indicator Alignment Analysis for English Language Arts Kindergarten through Grade Two

Alignment and Cognitive Level between SC ELA and CCSS		
Grade Level	**Alignment**	**Cognitive Level***
Kindergarten	87%	= to >
Grade One	87%	= to >
Grade Two	86%	= to >

*At every grade band, the CCSS were equivalent to, or even exceeded, the demand of South Carolina's standards.

An 87 percent correlation exists between the South Carolina ELA standards and the CCSS for kindergarten through grade two. Concepts included in South Carolina's standards but not emphasized in the CCSS in this grade band include the following: making inferences, recognizing environmental print, distinguishing between fact and opinion, alphabetical order, following directions, and generating ideas for writing. In addition, cause and effect is included only in informational text.

Differences often result based on the language or examples used or a shift in the grade level placement, e.g. *Classify works of fiction (SC)* versus *Explain major differences between poetry and prose (CCSS).*

Overall, both sets of standards are rigorous, but the area of writing at this level is not as stringent in the CCSS as compared to the South Carolina ELA standards. However, the standards which address language in the CCSS document are more detailed in the areas of phonics and phonemic awareness than in the South Carolina standards.

Grades Three through Five

Alignment and Cognitive Level between SC ELA and CCSS		
Grade Level	**Alignment**	**Cognitive Level***
Grade Three	93%	= to >
Grade Four	93%	= to >
Grade Five	95%	= to >

*At every grade band, the CCSS were equivalent to, or even exceeded, the demand of South Carolina's standards.

A 94 percent correlation exists between the third through fifth grade band of the South Carolina ELA standards and the CCSS. Differences are again noted based on the wording used in the CCSS document. (e.g. *Classify works of fiction* versus *Demonstrate understanding of common features of legend, myths, and folk- and fairytales)*. One area not addressed directly in the CCSS is prediction. In a few instances, the grade-level designation comes at a higher grade level in the CCSS than in the current South Carolina standards.

Grades Six through Eight

Alignment and Cognitive Level between SC ELA and CCSS		
Grade Level	**Alignment**	**Cognitive Level***
Grade Six	96%	= to >
Grade Seven	100%	= to >
Grade Eight	100%	= to >

*At every grade band, the CCSS were equivalent to, or even exceeded, the demand of South Carolina's standards.

The correlation between the CCSS and the South Carolina standards for grades six through eight shows a 99 percent alignment. Grade-level placement of standards in the CCSS is very similar to the South Carolina ELA standards. The language of the CCSS continues to present opportunities for clarification.

English 1–English 4

Alignment and Cognitive Level between SC ELA and CCSS		
Grade Level	**Alignment**	**Cognitive Level***
English 1	97%	= to >
English 2	97%	= to >
English 3	98%	= to >
English 4	98%	= to >

*At every grade band, the CCSS were equivalent to, or even exceeded, the demand of South Carolina's standards.

The CCSS and the South Carolina standards show another close alignment for the high school English courses at 98 percent. While the specific devices of *figurative language* (SC) and *figures of speech* (CCSS) differ between the two documents, this can be addressed by adding to or deleting from what South Carolina currently includes in its standards. In addition, the CCSS do not include *Spell new words using Greek and Latin roots and affixes* at the high school level; however, the study of Greek and Latin roots related to vocabulary is included in the CCSS in earlier grades.

Overall, the kindergarten through grade twelve CCSS for ELA maintain the same level of higher thinking skills and rigor as the current South Carolina ELA standards. An overall alignment of 95 percent exists between the two sets of standards, with the differences often just in the terminology. Ongoing professional development, coupled with a bridge document, will ensure that South Carolina teachers have the necessary information to provide effective instruction using the CCSS.

Indicator-to-Indicator Alignment Analysis for Mathematics

Kindergarten through Grade Five

Alignment and Cognitive Level between SC Mathematics and CCSS		
Grade Level	**Alignment**	**Cognitive Level***
Kindergarten	75%	>=
Grade One	77%	>=
Grade Two	82%	>=
Grade Three	93%	>=
Grade Four	88%	>=
Grade Five	93%	>=

*At every grade band, the CCSS were equivalent to, or even exceeded, the demand of South Carolina's standards.

The CCSS are not organized around the five content strands used in the South Carolina standards; therefore, at each grade level in kindergarten through grade five, indicators related to algebra and data and probability are not explicitly mentioned. The improvement made to the final version of the CCSS has addressed many of these issues by including additional content related to these two areas. For example, in fourth grade, there is a standard that directly addresses generating and analyzing patterns.

Although several of the South Carolina probability indicators were not included in the final version of the CCSS, all of the South Carolina indicators are addressed in middle school in more depth. As a result, their exclusion from the kindergarten through grade five curricula is acceptable. In terms of data, the CCSS embed the use graphs and plots strategically to display data collected as students work in other content such as measurement.

The CCSS also place a greater emphasis on operations with fractions and decimals in grades three through five than do the South Carolina indicators; therefore, professional development for elementary teachers will be essential.

The South Carolina indicators that can be used as instructional strategies will be included in the support materials for each grade level.

Grades Six through Eight

Alignment and Cognitive Level between SC Mathematics and CCSS		
Grade Level	**Alignment**	**Cognitive Level***
Grade Six	88%	>=
Grade Seven	79%	>=
Grade Eight	85%	>=

*At every grade band, the CCSS were equivalent to, or even exceeded, the demand of South Carolina's standards.

The South Carolina indicators that are not aligned with the CCSS come from multiple strands. After the release of the National Math Panel Report in June 2008, many of those indicators had been previously identified by the South Carolina standards writing committee as indicators that needed to be clarified or deleted during the next state standards revision process, for example, South Carolina indicator 8-4.2 which requires student to use ordered pairs, equations, intercepts and intersections to locate points and lines in a coordinate plane.

Middle school content has traditionally been focused on building competency and fluency with fractions, decimals and percents. As a result of the CCSS addressing much of that content in grades three through five, professional development for middle school teachers will need to place a greater emphasis on other areas such as geometry and data and probability.

High School

Alignment and Cognitive Level between SC Mathematics and CCSS		
Grade Level	**Alignment**	**Cognitive Level***
Elementary Algebra	100%	>=
Intermediate Algebra	89%	>=
Geometry	79%	>=
Pre-Calculus	100%	>=
Probability and Statistics	83%	>=

*At every grade band, the CCSS were equivalent to, or even exceeded, the demand of South Carolina's standards.

The CCSS for high school is not organized around courses but around functional categories such as functions, algebra and modeling. This required South Carolina reviewers to search for indicators across categories.

The alignment of content between the CCSS and the South Carolina standards is high in Elementary Algebra, Intermediate Algebra and Pre-Calculus but appears to be not as strong in Geometry and Probability and Statistics. Despite the exclusion of certain South Carolina indicators from these courses, it is the opinion of the reviewers that the CCSS will raise the expectations of students beyond the current levels. The focus should be on going into more depth with significant concepts that are foundational to subsequent math coursework - whether in high school, college, or the workforce.

Step 2   Content-to-Content Alignment Analysis

Question: What percentage of the CCSS content in the entire document for ELA and mathematics is South Carolina teachers already teaching?

Rationale: This step compares instructional content; that is, the process ensures a direct comparison and compensates for the fact that the alignment analysis is comparing documents created from different assumptions. The step will also assist the CCCRP in the identification of what content would be new to South Carolina teachers in the event that the CCSS are adopted. In addition, the analysis will show how close South Carolina is to meeting the expectations of the CCSS.

The ELA and mathematics content described in the CCSS was compared with the content found in South Carolina standards. This step makes it possible to compare the content coverage required by the CCSS with that required by the state standards. In both content areas, an overall alignment of 97 percent between the CCSS and the South Carolina standards was found.

Content-to-Content Alignment Analysis Findings for ELA

Grade Level	Content Alignment Percentages	New Content
Kindergarten	94%	Four of the SC indicators for this grade level are not included in the CCSS. These deal with characteristics of fantasy, environmental print, following one- and two-step directions, and generating ideas for writing.
Grade One	94%	Four of the SC indicators for this grade level are not included in the CCSS. These deal with facts and opinions, alphabetizing words to the first letter, environmental print, and following one-and two step oral directions.
Grade Two	94%	Three of the SC indicators for this grade level are not included in the CCSS. These deal with alphabetizing words, generating ideas for writing and following multi-step directions.
Grade Three	98%	One of the SC indicators for this grade level is not included in the CCSS. This indicator deals with creating responses to text.
Grade Four	100%	No new content
Grade Five	100%	No new content
Grade Six	100%	No new content
Grade Seven	100%	No new content
Grade Eight	100%	No new content

English 1	97%	One of the SC indicators for this course is not included in the CCSS. This indicator deals with using Greek and Latin roots and affixes to spell words.
English 2	97%	One of the SC indicators for this course is not included in the CCSS. This indicator deals with using Greek and Latin roots and affixes to spell words.
English 3	98%	One of the SC indicators for this course is not included in the CCSS. This indicator deals with using Greek and Latin roots and affixes to spell words.
English 4	98%	One of the SC indicators for this course is not included in the CCSS. This indicator deals with using Greek and Latin roots and affixes to spell words.

The following pages provide a detailed listing of the CCSS ELA content and the corresponding South Carolina ELA indicators in red (e.g., K-2.1). Where there is an increase in the cognitive level in the CCSS, this is indicated by ICL in red font. Content that is included in the CCSS and not in the South Carolina standards is noted by the letters SC.

Reading Standards for Literature

Kindergartners:	Grade 1 students:	Grade 2 students:
1. With prompting and support, ask and answer questions about key details in a text. K-1.1, K-6.1	1. Ask and answer questions about key details in a text. 1-6.1	1. Ask and answer such questions as *who*, *what*, *where*, *when*, *why*, and *how* to demonstrate understanding of key details in a text. 2-6.1
2. With prompting and support, retell familiar stories, including key details. K-1.1, K-1.5	2. Retell stories, including key details, and demonstrate understanding of their central message or lesson. 1-1.1, 1-1.5, 1-1.7	2. Recount stories, including fables and folktales from diverse cultures, and determine their central message, lesson, or moral. 2-1.1, 2-1.5, 2-1.8
3. With prompting and support, identify characters, settings, and major events in a story. K-1.5	3. Describe characters, settings, and major events in a story, using key details. 1-1.5, 1-1.8	3. Describe how characters in a story respond to major events and challenges. 2-1.5

4. Ask and answer questions about unknown words in a text. K-3.1, K-6.1	4. Identify words and phrases in stories or poems that suggest feelings or appeal to the senses. 1-1.4, 1-1.6	4. Describe how words and phrases (e.g., regular beats, alliteration, rhymes, repeated lines) supply rhythm and meaning in a story, poem, or song. 2-1.4, 2-1.6
5. Recognize common types of texts (e.g., storybooks, poems). 1.1.9	5. Explain major differences between books that tell stories and books that give information, drawing on a wide reading of a range of text types. 1-1.9, 1-2.2, 1-6.2	5. Describe the overall structure of a story, including describing how the beginning introduces the story and the ending concludes the action. 2-1.1, 2-1.5
6. With prompting and support, name the author and illustrator of a story and define the role of each in telling the story.K-3.21	6. Identify who is telling the story at various points in a text. 1-1.3	6. Acknowledge differences in the points of view of characters, including by speaking in a different voice for each character when reading dialogue aloud. 2-1.5
7. With prompting and support, describe the connection between pictures or other illustrations and the overall story in which they appear. K-1.2	7. Refer to pictures, illustrations, and details in a story to describe characters, setting, or events. 1-1.2	7. Use information from illustrations, other visual elements (e.g., maps), and the words in a print or digital text to demonstrate understanding of the characters, setting, or plot. 2-1.1, 2-2.6
8. (Not applicable to literature)	8. (Not applicable to literature)	8. (Not applicable to literature)
9. With prompting and support, compare and contrast the adventures and experiences of characters in familiar stories. K-1.5	9. Compare and contrast the adventures and experiences of characters in stories. 1-1.2	9. Compare and contrast two or more versions of the same story (e.g., Cinderella stories) by different authors or from different cultures. 2-1.2
10. Actively engage in group reading activities with purpose and understanding. K-1.11	10. With prompting and support, read appropriately complex prose and poetry for grade 1. 1-1.11	10. By the end of the year, read literature, including stories, poetry, and drama, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range. 2-1.10

Grade 3 students:	Grade 4 students:	Grade 5 students:
1. Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. 3-1.1, 3-1.2	1. Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. 4-1.1, 4-1.2	1. Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. 5-1.2, 5-1.5
2. Recount stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text. 3-1.1, 3-1.5 ,3-1.8	2. Determine a theme of a story, drama, or poem from details in the text; summarize the text. 4-1.1, 4-1.5	2. Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text. 5-1.5, 5-1.6
3. Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events. 3-1.5	3. Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions). 4-1.5	3. Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact). 5-1.4, 5-1.6
4. Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language. 3-1.4, 3-1.6	4. Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology (e.g., *Herculean*), drawing on a wide reading of classic myths from a variety of cultures and periods. 4-1.4, 4-1.6	4. Determine the meaning of words and phrases as they are used in a text, including figurative language such as metaphors and similes. 5-1.3

5. Refer to parts of stories, dramas, and poems when writing or speaking about a text, using terms such as *chapter*, *scene*, and *stanza*; describe how each successive part builds on earlier sections. 3-1.5, 3-1.7, 3-1.9	5. Explain major differences between poems, drama, and prose, and refer to the core structural elements of poems (e.g., stanza, verse, rhythm, meter) and drama (e.g., casts of characters, setting descriptions, dialogue, acts, scenes, stage directions) when writing or speaking about a text. 4-1.7, 4-1.8, 4-1.9	5. Explain how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem. 5-1.1, 5-1.7, 5-1.9
6. Distinguish their own point of view from that of the narrator or those of the characters. 3-1.3	6. Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations. 4-1.3	6. Describe how a narrator's or speaker's point of view influences how events are described. 5-1.2
7. Explain how specific images and illustrations contribute to or clarify a story (e.g., create mood, emphasize particular aspects of characters or settings). 3-1.1, 3-1.5	7. Integrate information gained from illustrations and other visual elements in a text with the words to demonstrate understanding of how the characters, setting, and plot interact and develop. 4-1.2, 4-1.5	7. Analyze how visual and multimedia elements in conjunction with words contribute to the meaning, tone, or beauty of a text (e.g., graphic novel, multimedia presentation of fiction). 5-1.1, 5-6.9
8. (Not applicable to literature)	8. (Not applicable to literature)	8. (Not applicable to literature)
9. Compare and contrast the themes, settings, and plots of stories written by the same author about the same or similar characters (e.g., in books from a series). 3-1.2, 3-1.6	9. Compare and contrast the treatment of similar themes and topics (e.g., opposition of good and evil) and patterns of events (e.g., the quest) in stories, myths, and traditional literature from different cultures. 4-1.2, 4-1.6	9. Compare and contrast stories in the same genre (e.g., mysteries and adventure stories) on their approaches to similar themes and topics. 5-1.1, 5-1.5

10. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 2–3 text complexity band independently and proficiently. 3-1.10	10. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range. 4-1.11	10. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4–5 text complexity band independently and proficiently. 5-1.11
Grade 6 students:	**Grade 7 students:**	**Grade 8 students:**
1. Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. 6-1.1, 6-1.10, 6-3.1, 6-3.3, 6-3.4	1. Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. 7-1.1	1. Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text. 8-1.2
2. Determine a theme or central idea of a text and analyze its development over the course of the text; summarize the text. 6-1.6	2. Determine a theme or central idea of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot; summarize the text. 7-1.4, 7-1.6	2. Determine a theme or central idea of a text and analyze its development over the course of the text, including how it is conveyed through particular details; provide an accurate summary of the text distinct from personal opinions or judgments. 8-1.4
3. Describe how a particular story's or drama's plot unfolds in a series of episodes as well as how the characters respond or change as the plot moves toward a resolution. 6-1.4	3. Analyze how particular elements of a story or drama interact (e.g., how setting shapes the characters or plot). 7-1.4	3. Analyze how particular lines of dialogue or incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision. 8-1.4

4. Determine the meaning of words and phrases as they are used in a text, including figures of speech and the connotations (associations) of particular words and phrases; analyze the impact of a specific word choice on meaning and tone. 6-1.3, 6-1.5	4. Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of rhymes and other repetitions of sounds (e.g., alliteration) on a specific verse or stanza of a poem or section of a story or drama. 7-1.3, 7-1.5, 7-3.4	4. Determine the meaning of words and phrases as they are used in a text, including analogies or allusions to other texts; analyze the impact of specific word choices on meaning and tone. 8-1.3, 8-1.5, 8-3.1
5. Analyze how a particular sentence, chapter, scene, or stanza fits into the overall structure of a text and contributes to the development of the theme, setting, or plot. 6-1.6	5. Analyze how a drama's or poem's form or structure (e.g. sonnet, soliloquy) contributes to its meaning. 7-1.5	5. Compare and contrast the structure of two or more texts and analyze how the differing structure of each text contributes to its meaning and style. 8-1.1, 8-1.5
6. Explain how an author establishes and develops the point of view of the narrator or speaker in a text. 6-1.2	6. Analyze how an author establishes and contrasts the points of view of different characters or narrators in a text. 7-1.2, 7-1.5, 8-1.2	6. Explain how differences in the point of view of characters and the audience or reader (e.g., created through the use of dramatic irony) creates such effects as suspense or humor. 8-1.1, 8-1.2, 8-1.5
7. Compare and contrast the experience of reading a story, poem, or dram to listening to or viewing an audio, video, or live version of the text, including contrasting what they —see and —hear when reading the text to what they perceive when they listen or watch. SC	7. Compare and contrast a story, poem, or drama to its audio, filmed, staged, or multimedia version, analyzing the effects of techniques unique to each medium (e.g., lighting, sound, color, camera focus and angles). SC	7. Analyze the extent to which a filmed or live production of a story or drama stays faithful to or departs from the text or script, evaluating the choices made by the director or actors. SC
8. (Not applicable to literature)	8. (Not applicable to literature)	8. (Not applicable to literature)

9. Compare and contrast texts in different forms or genres (e.g., stories and poems; historical novels and fantasy stories) in terms of their approaches to similar themes and topics. 6-1.6, 6-1.9	9. Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history. 7-1.4	9. Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new. 6-1.6
10. By the end of the year, read and comprehend literature, including stories, dramas, and poems, in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range. 6-1.10	10. By the end of the year, read and comprehend literature, including stories, dramas, and poems, in the grades 6–8 text complexity band proficiently, with scaffolding as necessary at the high end of the range. 7-1.8	10. By the end of the year, read and comprehend literature, including stories, dramas, and poems, in the grades 6–8 text complexity band independently and proficiently. 8-1.8

Grades 9–10 students:	Grades 11–12 students:
1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. E2-6.5, E2-6.7, E1-6.8	1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain. E4-6.5, E4-6.7, E4-6.8
2. Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text. E1-5.4, E1-6.3, E1-6.5	2. Determine two or more themes or central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to produce a complex account; provide an objective summary of the text. E4-5.4, E4-6.3, E4-6.5
3. Analyze how complex characters (e.g., those with multiple or conflicting motivations) develop over the course of a text, interact with other characters, and advance the plot or develop the theme. E1-4.5	3. Evaluate various explanations for characters' actions or for events and determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain. E4-4.5
4. Determine the meaning of words and phrases as they are used in the text and analyze the cumulative impact of several word choices on meaning and tone (e.g., how the language evokes a sense of time and place; how it sets a formal or informal tone). E1-5.2	4. Determine the meaning of words and phrases as they are used in the text and analyze the impact of specific word choices on meaning and tone, including words with multiple meanings or language that is particularly fresh, engaging, or beautiful. (Include Shakespeare as well as other authors.) E4-4.5

5. Analyze how an author's choices concerning how to structure a text, order events within it (e.g., parallel plots), and manipulate time (e.g., pacing, flashbacks) create such effects as mystery, tension, or surprise. E1-4.3	5. Analyze how an author's choices concerning how to structure specific parts of a text (e.g., the choice at what point to begin or end a story, the choice to provide a comedic or tragic resolution) contribute to its overall structure and meaning as well as its aesthetic impact. E4-4.5
6. Analyze a case in which grasping point of view requires distinguishing what is directly stated from what is implied (e.g., through the use of satire, sarcasm, irony, or understatement). E1-4.5	6. Analyze differences and similarities in points of view or cultural experience as reflected in various works from different countries, drawing on a wide reading of world literature. E4-4.5
7. Analyze the representation of a subject or a key scene in two different artistic mediums, including what is emphasized or absent in each treatment (e.g., Auden's —Musée des Beaux Arts and Breughel's *Landscape with the Fall of Icarus*). ICL	7. Analyze multiple interpretations of a story or drama (e.g., recorded or live production of a play or novel), evaluating how each version interprets the source text. (Include at least one play by Shakespeare as well as one play by an American dramatist.) ICL
8. (Not applicable to literature)	8. (Not applicable to literature)
9. Demonstrate knowledge of eighteenth-, nineteenth- and early-twentieth-century foundational works of American literature, drawing on how two or more texts from the same period treat similar themes or topics. E1-4.5	9. Analyze how an author draws on and transforms source material in a specific work (e.g., how Shakespeare draws on Ovid or the Bible or how a later author draws on a play by Shakespeare) in order to evaluate how the texts treat similar themes or topics. E4-4.5
10. By the end of grade 9, read and comprehend literature, including stories, dramas, and poems, in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range. By the end of grade 10, read and comprehend literature, including stories, dramas, and poems, in the grades 9–10 text complexity band independently and proficiently. E1-4.5, E2-4.5	10. By the end of grade 11, read and comprehend literature, including stories, dramas, and poems, in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range. By the end of grade 12, read and comprehend literature, including stories, dramas, and poems, in the grades 11–CCR text complexity band independently and proficiently. E3-4.5, E4-4.5

Reading Standards for Informational Text

Kindergartners:	Grade 1 students:	Grade 2 students:
1. With prompting and support, ask and answer questions about key details in a text. K-2.1, K-6.1	1. Ask and answer questions about key details in a text. 1-2.1, 1-6.1	1. Ask and answer such questions as *who*, *what*, *where*, *when*, *why*, and *how* to demonstrate understanding of key details in a text. 2-2.1. 2-6.1, 1-6.1
2. With prompting and support, identify the main topic and retell key details of a text. K-2.1	2. Identify the main topic and retell key details of a text. 1-2.1	2. Identify the main topic of a multiparagraph text as well as the focus of specific paragraphs within the text. 2-2.1, 2-4.3
3. With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text. ICL	3. Describe the connection between two individuals, events, ideas, or pieces of information in a text. ICL	3. Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. 2-2.8, 2-6.6
4. With prompting and support, ask and answer questions about unknown words in a text. K-6.1, K-3.1	4. Ask and answer questions to help determine or clarify the meaning of words and phrases in a text. 1-3.5, 1-3.6	4. Determine the meaning of words and phrases in a text relevant to a *grade 2 topic or subject area*. 2-3.1
5. Identify the front cover, back cover, and title page of a book. K-3.21	5. Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text. 1-2.5, 1-2.7	5. Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text quickly and efficiently. 2-2.5, 2-2.6, 2-2.7
6. Name the author and illustrator of a text and define the role of each in presenting the ideas or information in a text. K-3.21	6. Distinguish between information provided by pictures or other illustrations and information provided by the words in a text. 1-3.20	6. Identify the main purpose of a text, including what the author wants to answer, explain, or describe. SC

7. With prompting and support, describe the connection between pictures or other illustrations and the overall text in which they appear. K-1.2	7. Use pictures, illustrations, and details in a text to describe its key ideas. 1-3.20, 1-2.6	7. Explain how specific images and other illustrations contribute to and clarify a text (e.g., show how something works). 2-2.6
8. With prompting and support, identify the reasons an author gives to support points in a text. K-2.3	8. Identify the reasons an author gives to support points in a text. 1-2.3	8. Describe how reasons support specific points the author makes in a text. 2-1.6, 2-2.2
9. With prompting and support, identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures). ICL	9. Identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures). ICL	9. Compare and contrast the most important points presented by two texts on the same topic. ICL
10. Actively engage in group reading activities with purpose and understanding. K-2.9	10. With prompting and support, read appropriately complex informational texts for grade 1. 1-2.9	10. By the end of year, read and comprehend informational texts, including historical, scientific and technical texts, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range 2-2.9
Grade 3 students:	**Grade 4 students:**	**Grade 5 students:**
1. Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. 3-2.1, 3-2.2	1. Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. 4-2.2	1. Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. 5-2.2
2. Determine the main idea of a text; recount the key details and explain how they support the main idea. 3-2.1	2. Determine the main idea of a text and explain how it is supported by key details; summarize the text. 4-2.1	2. Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text. 5-2.1

3. Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. 3-2.8	3. Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text. 4-2.8	3. Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text. 5-2.8

4. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a *grade 3 topic or subject area.* 3-3.1	4. Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a *grade 4 topic or subject area.* 4-3.1	4. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a *grade 5 topic or subject area.* 5-3.1
5. Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic quickly and efficiently. 3-2.6, 3-2.7, 3-6.2, 3-6.5	5. Describe the overall structure of events, ideas, concepts, or information (e.g., chronology, comparison, cause/effect) in a text or part of a text. 4-2.8	5. Compare and contrast the organizational structure of events, ideas, concepts, or information (e.g., chronology, comparison, cause/effect, problem/solution) in two or more texts. 5-2.8
6. Distinguish their own point of view from that of the author of a text. 3-2.2, 3-2.3, 5-2.3	6. Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided. 5-2.3	6. Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent. 5-2.3

7. Use information gained from illustrations, other visual elements (e.g., maps, photographs), and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur). 3-2.6	7. Interpret factual information presented graphically or visually (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to understanding the text in which they appear. 4-2.6	7. Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. 5-6.2

8. Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence). 3-2.8	8. Explain how an author uses reasons and evidence to support particular points in a text. 4-2.1	8. Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence supports which point(s). 5-2.1, 5-2.3
9. Compare and contrast the most important points and key details presented in two texts on the same topic. ICL	9. Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably. ICL	9. Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. ICL
10. By the end of the year, read and comprehend informational texts, including historical, scientific, and technical texts, in the grades 2–3 text complexity band independently and proficiently. 3-2.9	10. By the end of year, read and comprehend informational texts, including historical, scientific, and technical texts, in the grades 4–5 text complexity band proficiently, with scaffolding as necessary at the high end of the range. 4-2.9	10. By the end of the year, read and comprehend informational text, including historical, scientific, and technical texts, in the grades 4–5 text complexity band level independently and proficiently. 5-2.9

Grade 6 students:	Grade 7 students:	Grade 8 students:
1. Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. 6-2.2, 6-2.6, 6-2.7	1. Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. 7-1.3, 7-2.2	1. Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text. 8-2.2
2. Determine a central idea of a text and analyze its development over the course of the text; summarize the text. 6-2.1, 6-2.8	2. Determine two or more central ideas in a text and analyze their development over the course of the text and their relationship to one another; summarize the text. 7-2.1	2. Determine a central idea of a text and analyze its development over the course of the text, including how it is conveyed through particular details; provide an accurate summary of the text distinct from personal opinions or judgments. 8-2.1

3. Analyze in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text (e.g., through examples or anecdotes). 6-2.2	3. Analyze the interactions between individuals, events, and ideas in a text (e.g., how ideas influence individuals or events, or how individuals influence ideas or events). 7-2.2	3. Analyze how a text makes connections among and distinctions between key individuals, ideas, or events (e.g., through comparisons, analogies, or categories). 8-2.3
4. Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of a specific word choice on meaning and tone. 6-3.1, 6-3.3, 6-3.4	4. Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of a specific word choice on meaning and tone. 7-3.4	4. Determine the meaning of words and phrases as they are used in a text, including analogies or allusions to other texts; analyze the impact of specific word choices on meaning and tone. 8-2.3, 8-3.1
5. Analyze how a particular sentence, paragraph, chapter, or section fits into the overall structure of a text and contributes to the development of the ideas. 6-1.5	5. Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to the development of the ideas. 7-2.5	5. Analyze in detail the structure of a specific paragraph in a text, including the role of particular sentences in developing and refining a key concept. 8-2.5
6. Determine an author's point of view or purpose in a text and explain how it is conveyed in the text. 6-2.3	6. Determine an author's point of view or purpose in a text and analyze how the author distinguishes his or her point of view from that of others. 7-2.3	6. Determine an author's point of view or purpose in a text and analyze how the author acknowledges and responds to conflicting evidence or viewpoints. 8-2.3
7. Integrate information presented in different formats (e.g., print or digital text, video, multimedia) to develop a coherent understanding of a topic or issue. 6-2.6, 6-2.7	7. Compare and contrast the experience of reading a text to experiencing an audio, video, or multimedia version of it, analyzing the text's portrayal in each medium (e.g., how the delivery of a speech affects the impact of the words). 7-2.6	7. Evaluate the advantages and disadvantages of using different mediums (e.g., print or digital text, video, multimedia) to present a particular topic or idea. 8-2.5, 8-2.6

8. Delineate and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not. 6-2.3	8. Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is sufficient to support the claims. 7-2.3	8. Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient and identifying when irrelevant evidence is introduced. 8-2.7
9. Compare and contrast one author's presentation of events with that of another (e.g., a memoir written by and a biography on the same person). 6-2.3	9. Analyze how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence or advancing different interpretations of facts. 7-2.3	9. Analyze a case in which two or more texts provide conflicting information on the same topic and identify where the texts disagree on matters of fact or interpretation. 8-2.3
10. By the end of the year, read and comprehend literary nonfiction in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range. 6-2.10	10. By the end of the year, read and comprehend literary nonfiction in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range. 7-2.10	10. By the end of the year, read and comprehend literary nonfiction in the grades 6–8 text complexity band independently and proficiently. 8-2.10

Grades 9–10 students:	Grades 11–12 students:
1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. E1-6.8	1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain. E1-4.1, E1-4.2
2. Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text. E1-5.4, E1-6.3, E1-6.5	2. Determine two or more central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to provide a complex analysis; provide an objective summary of the text. E4-5.4

3. Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them. ICL	3. Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text. ICL
4. Determine the meaning of words and phrases as they are used in a text and analyze the cumulative impact of several word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper). E1-5.2	4. Determine the meaning of words and phrases as they are used in a text and analyze how an author uses and refines the meaning of a key term or terms over the course of a text (e.g., how Madison defines *faction* in *Federalist* No. 10). E3-3.3
5. Analyze in detail how an author's ideas or claims are developed and refined by particular sentences, paragraphs, or larger portions of a text (e.g., a section or chapter). E1-4.2, E1-5.4, E2-4.2, E2-5.4	5. Analyze and evaluate the effectiveness of the structure an author uses in his or her exposition or argument, including whether the structure makes points clear, convincing, and engaging. E3-4.2, E3-4.2, E4-4.2, E4-5.4
6. Analyze documents of historical and literary significance, including seminal U.S. documents (e.g., the Declaration of Independence, the Preamble to the Constitution, the Bill of Rights), for their premises and purposes. E1-2.4, E2-2.4	6. Analyze how various authors express different points of view on similar events or issues, assessing the authors' assumptions, use of evidence, and reasoning, including analyzing seminal U.S. documents (e.g., *The Federalist*, landmark U.S. Supreme Court majority opinions and dissents).E3-2.4, E4-2.4
7. Evaluate the accounts of a subject in different mediums (e.g., a person's life story told in print or digital text, film, or multimedia), analyzing each version for which details are emphasized and how the account unfolds. E1-6.7, E2-6.7	7. Integrate and evaluate multiple sources of information presented in different formats (e.g., print or digital text, video, multimedia) in order to address a question or solve a problem, resolving conflicting information when possible. E2-5, E3-6.7, E4-6.7
8. Delineate and evaluate the argument and claims in a text, assessing the relevance and sufficiency of the evidence and the validity of the reasoning and identifying false statements and fallacious reasoning. 6-2.7, 7-2.7, 8-2.7, E1-5.4, E2-5.4	8. Delineate and evaluate the argument and claims in a text, assessing the relevance and sufficiency of the evidence and the validity of the reasoning, identifying and evaluating stated and unstated premises and assumptions. 6-2.7, 7-2.7, 8-2.7, E3-5.4, E4-5.4

9. Analyze a case in which authors disagree with or otherwise respond to one another's ideas or accounts of events, evaluating the strength of each author's evidence, reasoning, and interpretation. E1-5.4, E2-5.4	9. Synthesize information, explanations, and arguments from a range of sources to provide a coherent account of events or ideas, resolving conflicting information when possible. E3-5.4, E4-5.4
10. By the end of grade 9, read and comprehend literary nonfiction in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range. By the end of grade 10, read and comprehend literary nonfiction in the grades 9–10 text complexity band independently and proficiently. E1-2, E2-2	10. By the end of grade 11, read and comprehend literary nonfiction in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range. By the end of grade 12, read and comprehend literary nonfiction in the grades 11–CCR text complexity band independently and proficiently. E3-2, E4-2

Reading Standards: Foundational Skills (K–5)

Kindergartners:	**Grade 1 students:**
1. Demonstrate understanding of the organization and basic features of print. a. Follow words from left to right, top to bottom, and page-by-page. K-3.22 b. Recognize that spoken words are represented in written language by specific sequences of letters. K-3.23 c. Understand that words are separated by spaces in print. K-3.23 d. Recognize and name all upper- and lowercase letters of the alphabet. K-4.9	1. Demonstrate understanding of the organization and basic features of print. a. Recognize the distinguishing features of a sentence (e.g., first word, capitalization, ending punctuation). 1-3.23, 1-3.24, 1-4.6
2. Demonstrate understanding of spoken words, syllables, and sounds (phonemes). a. Recognize and produce rhyming words. K-3.9 b. Count, pronounce, blend, and segment syllables in spoken words. K-3.10 c. Blend and segment onsets and rimes of single-syllable spoken words. K-3.8 d. Isolate and pronounce the initial, medial vowel, and final sounds (phonemes) in three-phoneme (CVC) words.1 (This does not include CVCs ending with /l/, /r/, or /x/.) K-3.14 e. Add or substitute individual sounds (phonemes) in simple, one-syllable words to make new words. K-3.10	2. Demonstrate understanding of spoken words, syllables, and sounds (phonemes). a. Distinguish long from short vowel sounds in spoken single-syllable words. 2-3.11 b. Orally produce single-syllable words by blending sounds (phonemes), including consonant blends. 1-3.10, 1-3.11 c. Isolate and pronounce initial, medial vowel, and final sounds (phonemes) in spoken single-syllable words. 1-3.15 d. Segment spoken single-syllable words into their complete sequence of individual sounds (phonemes). 1-3.10

Kindergartners:	Grade 1 students:	Grade 2 students:
3. Know and apply grade-level phonics and word analysis skills in decoding words. a. Demonstrate basic knowledge of letter-sound correspondences by producing the primary or most frequent sound for each consonant. K-3.12 b. Associate the long and short sounds with the common spellings (graphemes) for the five major vowels. K-3.12 c. Read common high-frequency words by sight. (e.g., *the*, *of*, *to*, *you*, *she*, *my*, *is*, *are*, *do*, *does*). K-3.17 d. Distinguish between similarly spelled words by identifying the sounds of the letters that differ. K-3.16	3. Know and apply grade-level phonics and word analysis skills in decoding words. a. Know the spelling-sound correspondences for common consonant digraphs.(two letters that represent one sound). 2-3.11 b. Decode regularly spelled one-syllable words. 1-3.12 c. Know final -*e* and common vowel team conventions for representing long vowel sounds. 2-3.11 d. Use knowledge that every syllable must have a vowel sound to determine the number of syllables in a printed word. SC e. Decode two-syllable words following basic patterns by breaking the words into syllables. f. Read words with inflectional endings. 1-3.2 g. Recognize and read grade-appropriate irregularly spelled words. 1-3.4	3. Know and apply grade-level phonics and word analysis skills in decoding words. a. Distinguish long and short vowels when reading regularly spelled one-syllable words. 2-3.11 b. Know spelling-sound correspondences for additional common vowel teams. 2-3.11 c. Decode regularly spelled two-syllable words with long vowels. 2-3.11 d. Decode words with common prefixes and suffixes. 2-3.2 e. Identify words with inconsistent but common spelling-sound correspondences. 2-3.12, 2-4.6 f. Recognize and read grade-appropriate irregularly spelled words. 2-3.3, 2-4.6
4. Read emergent-reader texts with purpose and understanding. K-3.7	4. Read with sufficient accuracy and fluency to support comprehension. 1-3.7, 1-3.8 a. Read on-level text with purpose and understanding. b. Read on-level text orally with accuracy, appropriate rate, and expression.	4. Read with sufficient accuracy and fluency to support comprehension. 2-3.7 a. Read on-level text with purpose and understanding. b. Read on-level text orally with accuracy, appropriate rate, and expression.

	c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.	c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

Grade 3 students:	Grade 4 students:	Grade 5 students:
3. Know and apply grade-level phonics and word analysis skills in decoding words. 3-3, 3-4.6 a. Identify and know the meaning of the most common prefixes and derivational suffixes. 3-3.2 b. Decode words with common Latin suffixes. 5-3.2 c. Decode multisyllable words. 2-3.9 d. Read grade-appropriate irregularly spelled words. 3-3.4	3. Know and apply grade-level phonics and word analysis skills in decoding words. 4-3, 4-4.6 a. Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multi-syllabic words in context and out of context. 2-3.9, 4-3.2	3. Know and apply grade-level phonics and word analysis skills in decoding words. 5-3, 5-4.6 a. Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multi-syllabic words in context and out of context. 5-3.1, 5-3.2
4. Read with sufficient accuracy and fluency to support comprehension. 3-1.11, 3-2.9 a. Read on-level text with purpose and understanding. b. Read on-level prose and poetry orally with accuracy, appropriate rate, and expression. c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.	4. Read with sufficient accuracy and fluency to support comprehension. 4-1.11, 4-2.9 a. Read on-level text with purpose and understanding. b. Read on-level prose and poetry orally with accuracy, appropriate rate, and expression. c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.	4. Read with sufficient accuracy and fluency to support comprehension.5-1.11, 5-2.9 a. Read on-level text with purpose and understanding. b. Read on-level prose and poetry orally with accuracy, appropriate rate, and expression. c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

Writing Standards

Kindergartners:	Grade 1 students:	Grade 2 students:
1. Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book (e.g., *My favorite book is . . .*).K-5.4	1. Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure. 1-5.3, 1-5.4	1. Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., *because*, *and*, *also*) to connect opinion and reasons, and provide a concluding statement or section. 2-5.3, 2-5.4
2. Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic. K-5.2, K-5.3	2. Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure. 1-5.1	2. Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section. 2-5.1
3. Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened. K-5.2	3. Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure. 1-5.2	3. Write narratives in which they recount a well-elaborated event or short sequence of events, include details to describe actions, thoughts, and feelings, use temporal words to signal event order, and provide a sense of closure. 2-5.2
4. (Begins in grade 3)	4. (Begins in grade 3)	4. (Begins in grade 3)
5. With guidance and support from adults, respond to questions and suggestions from peers and add details to strengthen writing as needed. K-4.8	5. With guidance and support from adults, focus on a topic, respond to questions and suggestions from peers, and add details to strengthen writing as needed. 1-4.6	5. With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing. 2-4.6

6. With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers. SC	6. With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. SC	6. With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. SC
7. Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). K-4.1	7. Participate in shared research and writing projects (e.g., explore a number of —how-to books on a given topic and use them to write a sequence of instructions). 1-4.1	7. Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). 2-4.1
8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question. K-6.2	8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question. 1-6.2	8. Recall information from experiences or gather information from provided sources to answer a question. 2-6.2
9. (Begins in grade 4)	9. (Begins in grade 4)	9. (Begins in grade 4)
10. (Begins in grade 3)	10. (Begins in grade 3)	10. (Begins in grade 3)
Grade 3 students:	**Grade 4 students:**	**Grade 5 students:**
1. Write opinion pieces on familiar topics or texts, supporting a point of view with reasons. 3-4, 3-5 a. Introduce the topic or book they are writing about, state an opinion, and create an organizational structure that lists reasons. b. Provide reasons that support the opinion. c. Use linking words and phrases (e.g., *because*, *therefore*, *since*, *for example*) to connect opinion and reasons. d. Provide a concluding statement or section.	**1.** Write opinion pieces on topics or texts, supporting a point of view with reasons and information. 4-4, 4-5 a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer's purpose. b. Provide reasons that are supported by facts and details. c. Link opinion and reasons using words and phrases (e.g., *for instance*, *in order to, in addition*).	**1.** Write opinion pieces on topics or texts, supporting a point of view with reasons and information. 5-4, 5-5 a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which ideas are logically grouped to support the writer's purpose. b. Provide logically ordered reasons that are supported by facts and details. c. Link opinion and reasons using words, phrases, and clauses (e.g., *consequently*, *specifically*).

	d. Provide a concluding statement or section related to the opinion presented.	d. Provide a concluding statement or section related to the opinion presented.
2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly. 3-4, 3-5 a. Introduce a topic and group related information together; include illustrations when useful to aiding comprehension. b. Develop the topic with facts, definitions, and details. c. Use linking words and phrases (e.g., *also*, *another*, *and*, *more*, *but*) to connect ideas within categories of information. d. Provide a concluding statement or section.	2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly. 4-4, 4-5 a. Introduce a topic clearly and group related information in paragraphs and sections; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension. b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic. c. Link ideas within categories of information using words and phrases (e.g., *another*, *for example*, *also*, *because*). d. Use precise language and domain-specific vocabulary to inform about or explain the topic. e. Provide a concluding statement or section related to the information or explanation presented.	2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly. 5-4, 5-5 a. Introduce a topic clearly, provide a general observation and focus, and group related information logically; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension. b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic. c. Link ideas within and across categories of information using words, phrases, and clauses (e.g., *in contrast*, *especially*). d. Use precise language and domain-specific vocabulary to inform about or explain the topic. e. Provide a concluding statement or section related to the information or explanation presented.

3. Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. 3-5.2 a. Establish a situation and introduce a narrator and/or characters; organize an event sequence that unfolds naturally. b. Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences and events or show the response of characters to situations. c. Use temporal words and phrases to signal event order. d. Provide a sense of closure.	3. Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. 4-5.2 a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally. b. Use dialogue and description to develop experiences and events or show the responses of characters to situations. c. Use a variety of transitional words and phrases to manage the sequence of events. d. Use concrete words and phrases and sensory details to convey experiences and events precisely. e. Provide a conclusion that follows from the narrated experiences or events.	3. Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. 5-4.2 a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally. b. Use narrative techniques, such as dialogue, description, and pacing, to develop experiences and events or show the responses of characters to situations. c. Use a variety of transitional words, phrases, and clauses to manage the sequence of events. d. Use concrete words and phrases and sensory details to convey experiences and events precisely. e. Provide a conclusion that follows from the narrated experiences or events.
4. With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. 3-4	4. Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. 4-4	4. Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. 5-4

5. With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing. 3-4.5, 3-4.6	5. With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing. 4-4.5, 4-4.6	5. With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. 5-4.5, 5-4.6
6. With guidance and support from adults, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others. SC	6. With some guidance and support from adults, use technology, including the Internet, to produce and publish writing (using the keyboard) as well as to interact and collaborate with others. SC	6. With some guidance and support from adults, use technology, including the Internet, to produce and publish a minimum of two pages of writing (using the keyboard) as well as to interact and collaborate with others. SC
7. Conduct short research projects that build knowledge about a topic. 8-6.8	7. Conduct short research projects that build knowledge through investigation of different aspects of a topic. 8-6.8	7. Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. 8-6.8
8. Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. SC	8. Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources. SC	8. Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources. SC
9. (Begins in grade 4)	9. Draw evidence from literary or informational texts to support analysis, reflection, and research. ICL a. Apply *grade 4 Reading standards* to literature (e.g., ―Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text).	9. Draw evidence from literary or informational texts to support analysis, reflection, and research. ICL a. Apply *grade 5 Reading standards* to literature (e.g., ―Compare and contrast two or more characters, settings, or events in a story or a drama,

	b. Apply *grade 4 Reading standard*s to informational texts (e.g., Explain how an author uses reasons and evidence to support particular points in a text).	drawing on specific details in the text). b. Apply *grade 5 Reading standards* to informational texts (e.g., Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence supports which point[s]).
10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. SC	10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. SC	10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. SC
Grade 6 students:	**Grade 7 students:**	**Grade 8 students:**
1. Write arguments to support claims with clear reasons and relevant evidence. 6-2.1, 6-5.3, 6-5.4, 6-6.6 a. Introduce claim(s) and organize the reasons and evidence clearly. 6-5.4 b. Support claim(s) with clear reasons and relevant evidence, demonstrating an understanding of the topic or text. 6-5.4 c. Use words, phrases, and clauses to clarify the relationships among claim(s) and reasons. 6-5.3 d. Establish and maintain a formal style. 6-5.4 e. Provide a concluding statement or section that follows from the argument presented. 6-5.4	1. Write arguments to support claims with clear reasons and relevant evidence. 7-2.7, 7-4.3, 7-5.4 a. Introduce claim(s), acknowledge alternate or opposing claims, and organize the reasons and evidence logically. 7-4.1, 7-6.1 b. Support claim(s) with logical reasoning and relevant evidence, demonstrating an understanding of the topic or text. 7-6.2, 7-6.5 c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), reasons, and evidence. 6-5.3 d. Establish and maintain a formal style. 6-5.4	1. Write arguments to support claims with clear reasons and relevant evidence. 8-2.4, 8-2.7, 8-5.4 a. Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically. b. Support claim(s) with logical reasoning and relevant evidence, using credible sources and demonstrating an understanding of the topic or text. 8-6.2

	e. Provide a concluding statement or section that follows from and supports the argument presented. 6-5.4	c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence. 8-6.4 d. Establish and maintain a formal style. e. Provide a concluding statement or section that follows from and supports the argument presented. 6-5.4
2. Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. 6-5.1, 6-5.3, 6-6.6 a. Introduce a topic; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. 6-5.1 b. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples. 6-5.1 c. Use appropriate transitions to clarify the relationships among ideas and concepts. 6-4 d. Use precise language and domain-specific vocabulary to inform about or explain the topic. 6-5.3 e. Establish and maintain a formal style. 6-5.1, 6-5.3	2. Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. 7-2.4, 7-4.3, 7-5.1 a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. 7-4.1, 7-6.1 b. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples. 7-6.2, 7-6.5 c. Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts. 7-4	2. Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.8-1.6, 8-2.6, 8-5.1 a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. 8-6.6 b. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples. 8-5.3, 8-6.2 c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts. 8-4

f. Provide a concluding statement or section that follows from the information or explanation presented. 6-4	d. Use precise language and domain-specific vocabulary to inform about or explain the topic. 7-5.3 e. Establish and maintain a formal style. 7-5.1, 7-5.3 f. Provide a concluding statement or section that follows from and supports the information or explanation presented. 7-4	d. Use precise language and domain-specific vocabulary to inform about or explain the topic. 8-6.4 e. Establish and maintain a formal style. f. Provide a concluding statement or section that follows from and supports the information or explanation presented. 8-4
3. Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences. 6-5.2, 6-5.3, 6-6.6 a. Engage and orient the reader by establishing a context and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically. 6-5.2 b. Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters. 6-5.2, 6-5.3 c. Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another. d. Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events. e. Provide a conclusion that follows from the narrated experiences or events.	3. Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences. 7-4.3, 7-5.3, 7-6.2 a. Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically. 7-4.1, 7-6.5 b. Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters. 6-5.2, 6-5.3 c. Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another.	3. Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences. 8-5.2 a. Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically. 8-4.1, 8-6.5 b. Use narrative techniques, such as dialogue, pacing, description, and reflection, to develop experiences, events, and/or characters. 8-5.3, 8-6.2 c. Use a variety of transition words, phrases, and clauses to convey sequence, signal shifts from one time frame or setting to another, and show the relationships among experiences and events. 8-6.4

	d. Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events. e. Provide a conclusion that follows from and reflects on the narrated experiences or events.	d. Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events. e. Provide a conclusion that follows from and reflects on the narrated experiences or events.
4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. 6-4.1, 6-4.3	4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. 7-4.1, 7-4.3, 7-6.5	4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. 8-4.3, 8-4.5, 8-6.5
5. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. 6-4.5, 6-4.6	5. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed. 7-4.1, 7-4.5, 7-4.6	5. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed. 8-4.1, 8-4.5, 8-6.5
6. Use technology, including the Internet, to produce and publish a minimum of three pages of writing as well as to interact and collaborate with others.6-6.6	6. Use technology, including the Internet, to produce and publish a minimum of four pages of writing as well as to interact and collaborate with others. 7-6.6	6. Use technology, including the Internet, to produce and publish a minimum of five pages of writing as well as to interact and collaborate with others. 8-6.6
7. Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate. 6-6.1, 6-6.8	7. Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation. 7-6.8	7. Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration. 8-6.1, 8-6.8

8. Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources. 6-6.2, 6-6.3, 6-6.7	8. Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. 7-6.2, 7-6.3, 7-6.7	8. Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. 8-6.2, 8-6.3, 8-6.7
9. Draw evidence from literary or informational texts to support analysis, reflection, and research. 6-1.7, 6-2.4 a. Apply *grade 6 Reading standards* to literature (e.g., —Compare and contrast texts in different forms or genres (e.g., stories and poems; historical novels and fantasy stories) in terms of their approaches to similar themes and topics.). b. Apply *grade 6 Reading standards* to literary nonfiction (e.g., —Delineate and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not). 6-6.8	9. Draw evidence from literary or informational texts to support analysis, reflection, and research. 7-7.1 a. Apply *grade 7 Reading standards* to literature (e.g., —Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history]). b. Apply *grade 7 Reading standards* to literary nonfiction (e.g., —Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is sufficient to support the claims). 7-6.8	9. Draw evidence from literary or informational texts to support analysis, reflection, and research. 8-1.5, 8-1.6, 8-2.4, 8-6.8 a. Apply *grade 8 Reading standards* to literature (e.g., —Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new). b. Apply *grade 8 Reading standards* to literary nonfiction (e.g., —Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient and identifying when irrelevant evidence is introduced). 8-6.8

10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. 6-5	10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. 7-5.1, 7-5.2, 7-5.3, 7-5.4	10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. 8-5

Grades 9–10 students:	**Grades 11–12 students:**
1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. E1-5.4, E2-5.4	1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. E3-5.4, E4-5.4
a. Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence. E1-5, E2-5	a. Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences claim(s), counterclaims, reasons, and evidence. E3-5, E4-5
b. Develop claim(s) and counterclaims fairly, supplying evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level and concerns. E1-5, E2-5	b. Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level, concerns, values, and possible biases. E3-5, E4-5
c. Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. E1-5, E2-5	c. Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. E3-5, E4-5
d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. E1-5, E2-5	d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. E3-5, E4-5
e. Provide a concluding statement or section that follows from and supports the argument presented. E1-5, E2-5	e. Provide a concluding statement or section that follows from and supports the argument presented. E3-5, E4-5

2. Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content. E1-5, E2-5, E1-6, E2-6 a. Introduce a topic; organize complex ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. E1-5, E2-5, E1-6, E2-6 b. Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. E1-5, E2-5, E1-6, E2-6 c. Use appropriate and varied transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. E1-5, E2-5, E1-6, E2-6 d. Use precise language and domain-specific vocabulary to manage the complexity of the topic. E1-5, E2-5, E1-6, E2-6 e. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. E1-5, E2-5, E1-6, E2-6 f. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic). E1-5, E2-5, E1-6, E2-6	2. Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content. E3-5, E4-5, E3-6, E4-6 a. Introduce a topic; organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. E3-5, E4-5, E3-6, E4-6 b. Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. E3-5, E4-5, E3-6, E4-6 c. Use appropriate and varied transitions and syntax to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. E3-5, E4-5, E3-6, E4-6 d. Use precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic. E3-5, E4-5, E3-6, E4-6 e. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. E3-5, E4-5, E3-6, E4-6 f. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic). E3-5, E4-5, E3-6, E4-6

3. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences. E1-5.2, E2-5.2 a. Engage and orient the reader by setting out a problem, situation, or observation, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events. b. Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters. c. Use a variety of techniques to sequence events so that they build on one another to create a coherent whole. d. Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters. e. Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.	3. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences. E3-5.2, E4-5.2 a. Engage and orient the reader by setting out a problem, situation, or observation and its significance, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events. b. Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters. c. Use a variety of techniques to sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome (e.g., a sense of mystery, suspense, growth, or resolution). d. Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters. e. Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.
4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. E1-5.1, E2-5.1	4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. E3-5.1, E4-5.1
5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. E1-4, E2-4	5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. E3-4, E4-3
6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically. E1-6.7, E2-6.7	6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. E2-6.7, E3-6.7

7. Conduct short as well as more sustained research projects to answer a question (including a self-generate question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. E1-6, E2-6	7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. E3-6, E4-6
8. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation. E1-6, E2-6	8. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. E3-6, E4-6
9. Draw evidence from literary or informational texts to support analysis, reflection, and research. ICL a. Apply *grades 9–10 Reading standards* to literature (e.g., Demonstrate knowledge of eighteenth-, nineteenth- and early-twentieth-century foundational works of American literature, drawing on how two or more texts from the same period treat similar themes or topics). b. Apply *grades 9–10 Reading standards* to literary nonfiction (e.g., Delineate and evaluate the argument and claims in a text, assessing the relevance and sufficiency of the evidence and the validity of the reasoning and identifying false statements and fallacious reasoning).	9. Draw evidence form literary or informational texts to support analysis, reflection, and research. ICL a. Apply *grades 11–12 Reading standards* to literature (e.g., Analyze how an author draws on and transforms source material in a specific work (e.g., how Shakespeare draws on Ovid or the Bible or how a later author draws on a play by Shakespeare) in order to evaluate how the texts treat similar themes or topics). b. Apply *grades 11–12 Reading standards* to literary nonfiction (e.g., Delineate and evaluate the argument and claims in a text, assessing the relevance and sufficiency of the evidence and the validity of the reasoning, identifying and evaluating stated and unstated premises and assumptions).
10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences. SC	10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences. SC

Speaking and Listening Standards

Kindergartners:	Grade 1 students:	Grade 2 students:
1. Participate in collaborative conversations about *kindergarten topics and texts* with peers and adults in small and larger groups. ICL a. Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion). b. Continue a conversation through multiple exchanges.	1. Participate in collaborative conversations about *grade 1 topics and texts* with peers and adults in small and larger groups. ICL a. Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion). b. Build on others' talk in conversations by responding to the comments of others through multiple exchanges. c. Ask questions to clear up any confusion about the topics and texts under discussion.	1. Participate in collaborative conversations about *grade 2 topics and texts* with peers and adults in small and larger groups. ICL a. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion). b. Build on others' talk in conversations by linking their comments to the remarks of others. c. Ask for clarification and further explanation as needed about the topics and texts under discussion.
2. Confirm understanding of written texts read aloud or information presented orally or through media by asking and answering questions about key details. K-6.1	2. Demonstrate understanding of written texts read aloud or information presented orally or through media by asking and answering questions about key details and restating key elements. 1-6.1	2. Recount or describe key ideas or details from written texts read aloud or information presented orally or through media. 2-6.1
3. Ask and answer questions in order to seek help, get information, or clarify something that is not understood. K-6.1	3. Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood. 1-6.1	3. Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue. 2-6.1

4. Describe familiar people, places, things, and events and, with prompting and support, provide additional detail. K-5.3	4. Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly. 1-5.3	4. Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences. 2-5.3
5. Add drawings or other visual displays to descriptions as desired to provide additional detail. K-5.3, K-6.2	5. Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings. 1-5.3, 1-6.2	5. Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. 2-5.3,2-6.2
6. Speak audibly and express thoughts, feelings, and ideas clearly. K-3.7, K-6.4	6. Produce complete sentences when appropriate to task and situation. 1-6.5	6. Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification. 2-6.5
Grade 3 students:	**Grade 4 students:**	**Grade 5 students:**
1. Engage effectively in a range of collaborative discussions (one-on-one and in groups) on *grade 3 topics and texts*, building on others' ideas and expressing their own clearly. ICL a. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion). b. Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.	1. Engage effectively in range of collaborative discussions (one-on-one and in groups) on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly. ICL a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussions. b. Follow agreed-upon rules for discussions and carry out assigned roles.	1. Engage effectively in a range of collaborative discussions (one-on-one and in groups) on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly. ICL a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. b. Follow agreed-upon rules for discussions and carry out assigned roles.

c. Explain their own ideas and understanding in light of the discussion.	c. Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others. d. Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.	c. Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others. d. Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.
2. Identify the main ideas and supporting details of written texts read aloud or information presented graphically, orally, visually, or multimodally. 3-1.1	2. Paraphrase portions of written texts read aloud or information presented graphically, orally, visually, or multimodally. 4-1.1	2. Summarize written texts read aloud or information presented graphically, orally, visually, or multimodally. 5-1.1
3. Ask and answer questions about information from a speaker's, offering appropriate elaboration and detail. SC	3. Identify the reasons and evidence a speaker provides to support particular points. SC	3. Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence. SC
4. Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace. SC	4. Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace. SC	4. Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace. SC
5. Create engaging audio recordings of stories or poems that demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details. SC	5. Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes. SC	5. Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. 5-6.7

6. Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification. 3-6.6	6. Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion); use formal English when appropriate to task and situation. 4-6.6	6. Adapt speech to a variety of contexts and tasks, using formal English when appropriate to task and situation. 5-6.6

Grade 6 students:	**Grade 7 students:**	**Grade 8 students:**
1. Engage effectively in a range of collaborative discussions (one-on-one and in groups) on *grade 6 topics*, *texts*, *and issues*, building on others' ideas and expressing their own clearly. 6-6.4 a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. With guidance and support from adults, work with peers to set rules for collegial discussions, clear goals and deadlines, and individual roles as needed. c. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.	1. Engage effectively in a range of collaborative discussions (one-on-one and in groups) on *grade 7 topics*, *texts*, *and issues*, building on others' ideas and expressing their own clearly. 7-1.7, 7-2.4 a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. Work with peers to set rules for collegial discussions, clear goals and deadlines, and individual roles as needed. c. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.	1. Engage effectively in a range of collaborative discussions (one-on-one and in groups) on *grade 8 topics*, *texts*, *and issues*, building on others' ideas and expressing their own clearly. 8-1.7, 8-2.4 a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. Work with peers to set rules for collegial discussions, clear goals and deadlines, and individual roles as needed. c. Pose questions that connect the ideas of several speakers and elicit elaboration, and respond to others' questions and comments with relevant evidence, observations, and ideas.

d. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.	d. Acknowledge new information expressed by others and, when warranted, modify their own views and understanding.	d. Acknowledge new information expressed by others, and, when warranted, qualify or justify their own views and understanding in light of the evidence presented.
2. Interpret information presented in graphical, oral, visual or multimodal formats and explain how it contributes to a topic, text, or issue under study. 6-2.7	2. Analyze the main ideas and supporting details presented in graphical, oral, visual, or multimodal formats and explain how the ideas clarify a topic, text, or issue under study. 7-2.7	2. Determine the purpose of information in graphical, oral, visual, or multimodal formats and evaluate the motives (e.g., social, commercial, political) behind its presentation. 8-2.7
3. Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not. SC	3. Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance of the evidence. 7-2.3, 7-2.7	3. Delineate a speaker's argument and specific claims, evaluating the validity of the reasoning and sufficiency of the evidence. 8-2.7
4. Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation. 6-1.7, 6-2.4	4. Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation. 7-1.7, 7-2.4	4. Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation. 8-1.7, 8-2.4
5. Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information. 6-6.6	5. Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points. 7-6.6	5. Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest. 8-6.6
6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. 6-1.7, 6-2.4	6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. 7-1.7, 7-2.4	6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. 8-1.7, 8-2.4

Grades 9–10 students:	Grades 11–12 students:
1. Initiate and participate effectively in a range of collaborative discussions (one-on-one and in groups) on *grades 9–10 topics*, *texts*, *and issues*, building on others' ideas and expressing their own clearly and persuasively. SC a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. b. Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed. c. Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions. d. Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented.	1. Initiate and participate effectively in a range of collaborative discussions (one-on-one and in groups) on *grades 11–12 topics*, *texts*, *and issues*, building on others' ideas and expressing their own clearly and persuasively. SC a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. b. Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed. c. Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives. d. Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task.
2. Synthesize information from multiple graphical, visual, or multimodal sources with other information presented orally, noting any discrepancies among the data. SC	2. Integrate information from multiple graphical, oral, visual, or multimodal sources in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and resolving conflicting information when possible. SC
3. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence. SC, 6-2.7, 7-2.7, 8-2.7	3. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, assessing the stance, premises, links among ideas, word choice, points of emphasis, and tone used. SC

4. Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task. E1-6.5, E2-6.5	4. Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range or formal and informal tasks. E3-6.5, E4-6.5
5. Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest. E1-6.6, E1-6.7, E2-6.6, E2-6.7	5. Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest. E3-6.6, E3-6.7, E4-6.6, E4-6.7
6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. E1-6.4, E2-6.4	6. Adapt speech to a variety of contexts and tasks, demonstrating a command of formal English when indicated or appropriate. E3-6.4, E4-6.4

Language Standards

Kindergartners:	Grade 1 students:	Grade 2 students:
1. Observe conventions of grammar and usage when writing or speaking. a. Print many upper- and lowercase letters. K-4.9 b. Use frequently occurring nouns and verbs. c. Form regular plural nouns orally by adding /s/ or /es/ (e.g., *dog*, *dogs*; *wish*, *wishes*). K-3.2 d. Understand and use question words (interrogatives) (e.g., *who*, *what*, *where*, *when*, *why*, *how*). K-6.1 e. Use the most frequently occurring prepositions (e.g., *to*, *from*, *in*, *out*, *on*, *off*, *for*, *of*, *by*, *with*).	1. Observe conventions of grammar and usage when writing or speaking. a. Print all upper- and lowercase letters. K-4.9 b. Use common, proper, and possessive nouns. 1-4.4 c. Use singular and plural nouns with matching verbs in basic sentences (e.g., *He hops*; *We hop*). 1-4.4 d. Use personal, possessive, and indefinite pronouns (e.g., *I*, *me*, *my*; *they*, *them*, *their*, *anyone*, *everything*). 1-4.4 e. Use verbs to convey a sense of past, present, and future (e.g., *Yesterday I walked home*; *Today I walk home*; *Tomorrow I will walk home*). 4-3	1. Observe conventions of grammar and usage when writing or speaking. a. Use collective nouns (e.g., *group*). b. Form and use frequently occurring irregular plural nouns (e.g., *feet*, *children*, *teeth*, *mice*, *fish*). 1-4. c. Use reflexive pronouns (e.g., *myself*, *ourselves*). d. Form and use the past tense of frequently occurring irregular verbs (e.g., *sat*, *hid*, *told*). e. Use adjectives and adverbs, and choose between them depending on what is to be modified. 2-3, 3-3

f. Produce and expand complete sentences in shared language activities. K-4.2	f Use frequently occurring adjectives. 2-3 g. Use frequently occurring conjunctions (e.g., *and*, *but*, *or*, *so*, *because*). 1-4.4 h. Use determiners (e.g., articles, demonstratives). i. Use frequently occurring prepositions (e.g., *during*, *beyond*, *toward*). 3-3 j. Produce and expand complete simple and compound declarative, interrogative, imperative, and exclamatory sentences in response to questions and prompts. 2-3	f. Produce, expand, and rearrange complete simple and compound sentences (e.g., *The boy watched the movie*; *The little boy watched the movie*; *The action movie was watched by the little boy*). 2-3
2. Observe conventions of capitalization, punctuation, and spelling when writing. a. Capitalize the first word in a sentence and the pronoun *I*. 1-4.6 b. Recognize and name end punctuation. c. Write a letter or letters for most consonant and short-vowel sounds (phonemes). K-3.12 d. Spell simple words phonetically, drawing on knowledge of sound-letter relationships. K-3.4, K-3.7	2. Observe conventions of capitalization, punctuation, and spelling when writing. a. Capitalize dates and names of people. 1-4.6 b. Use end punctuation for sentences. 1-4.6 c. Use commas in dates and to separate single words in a series. 2-4.6 d. Use conventional spelling for words with common spelling patterns and for frequently occurring irregular words. 1-3.18 e. Spell untaught words phonetically, drawing on phonemic awareness and spelling conventions. 1-3.18	2. Observe conventions of capitalization, punctuation, and spelling when writing. a. Capitalize holidays, product names, and geographic names.3-3 b. Use commas in greetings and closings of letters. 3-3 c. Use an apostrophe to form contractions and frequently occurring possessives. 3-3 d. Generalize learned spelling patterns when writing words (e.g., *cage → badge*; *boy → boil*). 1-3 e. Consult reference materials, including beginning dictionaries, as needed to check and correct spellings.
3. (Begins in grade 3)	3. (Begins in grade 3)	3. (Begins in grade 3)
4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *kindergarten reading and content*.	4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 1 reading and content*, choosing flexibly from an array of strategies.	4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 2 reading and content*, choosing flexibly from an array of

a. Identify new meanings for familiar words and apply them accurately (e.g., knowing *duck* as a bird and learning the verb *to duck*). K-3.1 b. Use the most frequently occurring inflections and affixes (e.g., *-ed*, *-s*, *re-*, *un-*, *pre-*, *-ful*, *-less*) as a clue to the meaning of an unknown word. K-3.2	a. Use sentence-level context as a clue to the meaning of a word or phrase. 1-3.1 b. Use frequently occurring affixes as a clue to the meaning of a word. 1-3.2 c. Identify frequently occurring root words (e.g., *look*) and their inflectional forms (e.g., *looks*, *looked*, *looking*). 1-3.2	strategies. a. Use sentence-level context as a clue to the meaning of a word or phrase. 2-3.1 b. Determine the meaning of the new word formed when a known prefix is added to a known word (e.g., *happy/unhappy*, *tell/retell*). 2-3.2 c. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., *addition*, *additional*). 2-3.2 d. Use knowledge of the meaning of individual words to predict the meaning of compound words (e.g., *birdhouse*, *lighthouse*, *housefly*; *bookshelf*, *notebook*, *bookmark*). 2-3.6 e. Use glossaries and beginning dictionaries, both print and digital, to determine or clarify the meaning of words and phrases. 2-6.2
5. With guidance and support from adults, explore word relationships and nuances in word meanings. a. Sort common objects into categories (e.g., shapes, foods) to gain a sense of the concepts the categories represent. K-3.15 b. Demonstrate understanding of frequently occurring verbs and adjectives by relating them to their opposites (antonyms). 1-3.5, 1-4.4	5. With guidance and support from adults, demonstrate understanding of word relationships and nuances in word meanings. a. Sort words into categories (e.g., colors, clothing) to gain a sense of the concepts the categories represent. 1-3.16 b. Define words by category and by one or more key attributes (e.g., a *duck* is a bird that swims; a *tiger* is a large cat with stripes). 1-3.16	5. Demonstrate understanding of word relationships and nuances in word meanings. a. Identify real-life connections between words and their use (e.g., describe foods tha*t are spicy* or *juicy*). ICL b. Distinguish shades of meaning among closely related verbs (e.g., *toss*, *throw*, *hurl*) and closely related adjectives (e.g., *thin*, *slender*, *skinny*, *scrawny*). ICL

c. Identify real-life connections between words and their use (e.g., note places at school that are *colorful*).K-3.1, K-3.3 d. Distinguish shades of meaning among verbs describing the same general action (e.g., *walk*, *march*, *strut*, *prance*) by acting out the meanings.	c. Identify real-life connections between words and their use (e.g., note places at home that are *cozy*). ICL d. Distinguish shades of meaning among verbs differing in manner (e.g., *look*, *peek*, *glance*, *stare*, *glare*, *scowl*) and adjectives differing in intensity (e.g., *large*, *gigantic*) by defining or choosing them or by acting out the meanings. ICL	
6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts. K-3.21	6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using frequently occurring conjunctions to signal simple relationships (e.g., *I named my hamster Nibblet because she nibbles too much because she likes that*). 1-3.3, 1-3.21	6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe (e.g., *When other kids are happy that makes me happy*). 2-3.3
Grade 3 students:	**Grade 4 students:**	**Grade 5 students:**
1. Observe conventions of grammar and usage when writing or speaking. 3-3, 3-4 a. Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in particular sentences. b. Form and use regular and irregular plural nouns. c. Use abstract nouns (e.g., *childhood*). d. Form and use regular and irregular verbs. e. Form and use the simple (e.g., *I walked; I walk; I will walk*) verb tenses.	1. Observe conventions of grammar and usage when writing or speaking. 4-3, 4-4 a. Use relative pronouns (*who*, *whose*, *whom*, *which*, *that*) and relative adverbs (*where*, *when*, *why*). b. Form and use the progressive (e.g., *I was walking; I am walking; I will be walking*) verb aspects. c. Use modal auxiliaries (e.g., *can*, *may*, *must*) to convey various conditions.	1. Observe conventions of grammar and usage when writing or speaking. 5-3, 5-4 a. Explain the function of conjunctions, prepositions, and interjections in general and their function in particular sentences. b. Form and use the perfect (e.g., *I had walked; I have walked; I will have walked*) verb aspects. c. Use verb tense and aspect to convey various times, sequences, states, and conditions.

f. Ensure subject-verb and pronoun-antecedent agreement.* g. Form and use comparative and superlative adjectives and adverbs, and choose between them depending on what is to be modified. h. Use coordinating and subordinating conjunctions. i. Produce simple, compound, and complex sentences.	d. Order adjectives within sentences according to conventional patterns (e.g., *a small red bag* rather than *a red small bag*). e. Form and use prepositional phrases. f. Produce complete sentences, recognizing and correcting rhetorically poor fragments and run-ons.* g. Correctly use frequently confused words (e.g., *to*, *too*, *two*; *there*, *their*).*	d. Recognize and correct inappropriate shifts in verb tense and aspect.* e. Use correlative conjunctions.
2. Observe conventions of capitalization, punctuation, and spelling when writing. 3-4 a. Capitalize important words in titles. b. Use commas in addresses. c. Use commas and quotation marks in dialogue. d. Form and use possessives. e. Use conventional spelling for high-frequency and other studied words and for adding suffixes to base words (e.g., *sitting*, *smiled*, *cries*, *happiness*). f. Use spelling patterns and generalizations (e.g., word families, position-based spellings, syllable patterns, ending rules, meaningful word parts) in writing words. g. Consult reference materials, including beginning dictionaries, as needed to check and correct spellings.	2. Observe conventions of capitalization, punctuation, and spelling when writing. 4-4 a. Use correct capitalization. b. Use commas and quotation marks to mark direct speech and quotations from a text. c. Use a comma before a coordinating conjunction in a compound sentence. d. Spell grade-appropriate words correctly, consulting references as needed.	2. Observe conventions of capitalization, punctuation, and spelling when writing. 5-4 a. Use punctuation to separate items in a series.* b. Use a comma to separate an introductory element from the rest of the sentence. c. Use a comma to set off the words *yes* and *no* (e.g., *Yes, thank you*), to set off a tag question from the rest of the sentence (e.g., *It's true, isn't it?*), and to indicate direct address (e.g., *Is that you, Steve?*). d. Use underlining, quotation marks, or italics to indicate titles of works. e. Spell grade-appropriate words correctly, consulting references as needed.

3. Use language to achieve particular effects when writing or speaking. 3-5 a. Choose words and phrases for effect.*	3. Use language to enhance meaning and achieve particular effects when writing or speaking. 4-5 a. Choose words and phrases to convey ideas precisely.* b. Use punctuation for effect.*	3. Use language to enhance meaning, convey style, and achieve particular effects when writing or speaking. 5-5 a. Expand, combine, and reduce sentences for meaning, reader/listener interest, and style.
4. Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on *grade 3 reading and content*, choosing flexibly from a range of strategies. 3-3 a. Use sentence-level context as a clue to the meaning of a word or phrase. b. Determine the meaning of the new word formed when a known affix is added to a known word (e.g., *agreeable/disagreeable*, *comfortable/uncomfortable*, *care/careless*, *heat/preheat*). c. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., *company*, *companion*). d. Use glossaries or beginning dictionaries, both print and digital, to determine or clarify the precise meaning of key words and phrases.	4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 4 reading and content*, choosing flexibly from a range of strategies. 4-3 a. Use context (e.g., definitions, examples, or restatements in text) as a clue to the meaning of a word or phrase. b. Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., *telegraph*, *photograph*, *autograph*). c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases.	4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 5 reading and content*, choosing flexibly from a range of strategies. 5-3 a. Use context (e.g., cause/effect relationships and comparisons in text) as a clue to the meaning of a word or phrase. b. Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., *photograph*, *photosynthesis*). c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases.
5. Demonstrate understanding of word relationships *and* nuances in word meanings. ICL, 3-1.1, 3-1.4	5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. ICL, 4-1.3	5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. ICL, 5-1.3

a. Distinguish the literal and nonliteral meanings of words and phrases in context (e.g., *take steps*). b. Identify real-life connections between words and their use (e.g., describe people who are *friendly* or *helpful*). c. Distinguish shades of meaning among related words that describe states of mind or degrees of certainty (e.g., *knew*, *believed*, *suspected*, *heard*, *wondered*).	a. Explain the meaning of simple similes and metaphors (e.g., *as pretty as a picture*) in context. b. Recognize and explain the meaning of common idioms, adages, and proverbs. 4-1.4, 4-3.3 c. Demonstrate understanding of words by relating them to their opposites (antonyms) and to words with similar but not identical meanings (synonyms). 3-3.5	a. Interpret figurative language, including similes and metaphors, in context. 5-1.4 b. Recognize and explain the meaning of common idioms, adages, and proverbs. 5-3.3 c. Use the relationship between particular words (e.g., synonyms, antonyms, homographs) to better understand each of the words. 3-3.5
6. Acquire and use accurately grade-appropriate conversational, general academic, and domain-specific vocabulary, including words and phrases that signal spatial and temporal relationships (e.g., *After dinner that night we went looking for them*). SC	6. Acquire and use accurately grade-appropriate general academic and domain-specific vocabulary, including words and phrases that signal precise actions, emotions, or states of being (e.g., *quizzed*, *whined*, *stammered*) and words and phrases basic to a particular topic (e.g., *wildlife*, *conservation*, and *endangered* when discussing animal preservation). SC	6. Acquire and use accurately grade-appropriate general academic and domain-specific vocabulary, including words and phrases that signal contrast, addition, and other logical relationships (e.g., *however*, *although*, *nevertheless*, *similarly*, *moreover*, *in addition*). SC
Grade 6 students:	**Grade 7 students:**	**Grade 8 students:**
1. Observe conventions of grammar and usage when writing or speaking. 6-6.4, 6-6.5 a. Ensure that pronouns are in the proper case (subjective, objective, possessive). 6-4.7 b. Use intensive pronouns (e.g., *myself*, *ourselves*). c. Recognize and correct inappropriate shifts in pronoun number and person.* 6-4.7	1. Observe conventions of grammar and usage when writing or speaking. a. Explain the function of phrases and clauses in general and their function in specific sentences. 7-4.2, 7-4.4, 7-4.6 b. Choose among simple, compound, complex, and compound-complex sentences to signal differing relationships among ideas. 7-4.7	1. Observe conventions of grammar and usage when writing or speaking. 8-4.4 a. Explain the function of verbals (gerunds, participles, infinitives) in general and their function in particular sentences. 8-4 b. Form and use verbs in the active and passive voice. 8-4

d. Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents).* 6-4.7 e. Recognize variations from standard English in their own and others' writing and speaking, and identify and use strategies to improve expression in conventional language.* 6-4.7	c. Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.* 7-4.7	c. Form and use verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood. 8-4 d. Recognize and correct inappropriate shifts in verb voice and mood.*
2. Observe conventions of capitalization, punctuation, and spelling when writing. 6-6.4, 6-6.5 a. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements.* 6-4.6 b. Spell correctly. 6-3.5, 6-4.7	2. Observe conventions of capitalization, punctuation, and spelling when writing. 7-4.6 a. Use a comma to separate coordinate adjectives (e.g., *It was a fascinating, enjoyable movie* but not *He wore an old[,] green shirt*). b. Spell correctly. 7-3.5, 7-4.7	2. Observe conventions of capitalization, punctuation, and spelling when writing.8-4.4, 8-4.6, 8-4.7 a. Use punctuation (comma, ellipsis, dash) to indicate a pause or break. b. Use an ellipsis to indicate an omission. c. Spell correctly. 8-3.5, 8-4.7
3. Use language to enhance meaning, convey style, and achieve particular effects when writing or speaking. a. Vary sentence patterns for meaning, reader/listener interest, and style.* 6-4.2, 6-4.5 b. Maintain consistency in style and tone.* 6-4.5	3. Use language to enhance meaning, convey style, and achieve particular effects when writing or speaking. 7-4.5, 7-5.1, 7-5.2 a. Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.* 7-4	3. Use language to enhance meaning, convey style, and achieve particular effects when writing or speaking. a. Use verbs in the active and passive voice and in the conditional and subjunctive mood to achieve particular effects (e.g., emphasizing the actor or the action; expressing uncertainty or describing a state contrary to fact). 8-4
4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 6 reading and content*, choosing flexibly from a range of strategies.	4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 7 reading and content*, choosing flexibly from a range of strategies.	4. Determine or clarify the meaning of unknown and multiple-meaning words or phrases based on *grade 8 reading and content*, choosing flexibly from a range of strategies. 8-3.7, 8-3.2,

a. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. 6-3.1 b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., *audience*, *auditory*, *audible*). 6-3.2, 6-3.5 c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech. 6-3 d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).6-3	a. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. 7-3.1 b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., *belligerent*, *bellicose*, *rebel*). 7-3.2, 7-3.3, 7-3.5 c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech. 7-3 d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary). 7-3	a. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. 8-3.1 b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., *precede*, *recede*, *secede*). 8-3.2, 8-3.3 c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech. 8-3 d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary). 8-3
5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. 6-1.3 a. Interpret figures of speech (e.g., personification) in context. b. Use the relationship between particular words (e.g., cause/effect, part/whole, item/category) to better understand each of the words.	5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. 7-3.4 a. Interpret figures of speech (e.g., literary, biblical, and mythological allusions) in context. b. Use the relationship between particular words (e.g., synonym/antonym, analogy) to better understand each of the words.	5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. 8-1.3, 8-3.3, 8-3.4 a. Interpret figures of speech (e.g. verbal irony, puns) in context. b. Use the relationship between particular words to better understand each of the words.

c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., *stingy*, *scrimping*, *economical*, *unwasteful*, *thrifty*). 6-3.4	c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., *refined*, *respectful*, *polite*, *diplomatic*, *condescending*).	c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., *bullheaded*, *willful*, *firm*, *persistent*, *resolute*).
6. Acquire and use accurately grade-appropriate general academic and domain-specific vocabulary. 7-6.4	6. Acquire and use accurately grade-appropriate general academic and domain-specific vocabulary. 7-6.4	6. Acquire and use accurately grade-appropriate general academic and domain-specific vocabulary. 7-6.4

Grades 9–10 students:	**Grades 11–12 students:**
1. Observe conventions of grammar and usage when writing or speaking. E1-4, E2-4 a. Use parallel structure.* b. Use various types of phrases (noun, verb, adjectival, adverbial, participial, prepositional, absolute) and clauses (independent, dependent; noun, relative, adverbial) to add variety and interest to writing or presentations.	1. Observe conventions of grammar and usage when writing or speaking. E3-4, E4-4 a. Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contested. b. Resolve issues of complex or contested usage, consulting references (e.g., *Merriam-Webster's Dictionary of English Usage*, *Garner's Modern American English*) as needed.
2. Observe conventions of capitalization, punctuation, and spelling when writing. E1-4, E2-4 a. Use a semicolon (and perhaps a conjunctive adverb) to link two or more closely related independent clauses. E1-4, E2-4 b. Use a colon to introduce a list or quotation. c. Spell correctly. SC	2. Observe conventions of capitalization, punctuation, and spelling when writing. E3-4, E4-4 a. Observe hyphenation conventions. E3-4, E4-4 b. Spell correctly. SC
3. Use language to enhance meaning, convey style, and achieve particular effects when writing or speaking. a. Write and edit work so that it conforms to the guidelines in a style manual (e.g., *MLA Handbook*, Turabian's *Manual for Writers*) appropriate for the discipline and writing type. ICL	3. Use language to enhance meaning, convey style, and achieve particular effects when writing or speaking. a. Vary syntax for effect, consulting references (e.g., Tufte's *Artful Sentences*) for guidance as needed; apply an understanding of syntax to the study of complex texts when reading. ICL

4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grades 9–10 reading and content*, choosing flexibly from a range of strategies. a. Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. E1-3.1, E2-3.1 b. Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., *analyze*, *analysis*, *analytical*; *advocate*, *advocacy*). SC c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, or its etymology. SC d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary). SC	4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grades 11–12 reading and content*, choosing flexibly from a range of strategies. a. Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. E3-3.1, E4-3.1 b. Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., *conceive, conception, conceivable*). SC c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its standard usage. SC d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary). SC
5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. E1-3.3, E2-3.3 a. Interpret figures of speech (e.g., satire, sarcasm) in context and analyze their role in the text. E1-3.3, E2-3.3 b. Analyze nuances in the meaning of words with similar denotations. SC	5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. E3-3.3, E4-3.3 a. Interpret figures of speech (e.g., hyperbole, paradox) in context and analyze their role in the text. E3-3.3, E4-3.3 b. Analyze nuances in the meaning of words with similar denotations. SC
6. Acquire and use accurately general academic and domain-specific vocabulary sufficient for reading, writing, speaking, and listening at the college and career readiness level. E1-3, E2-3	6. Acquire and use accurately general academic and domain-specific vocabulary sufficient for reading, writing, speaking, and listening at the college and career readiness level. E3-3, E4-3

Content-to-Content Alignment Analysis Findings for Mathematics

The table below outlines the percentage of the CCSS content currently taught through the South Carolina mathematics standards at each grade level. Also included is the amount of new content at each grade level. This is a result of that content having previously been taught at a different grade level within the South Carolina standards.

For example, 91 percent of the CCSS content for grade one is currently included in South Carolina content at some grade level. The remaining nine percent will be content that will be new to South Carolina teachers because it was previously not part of our standards. Grade one teachers can expect to have five new concepts at that grade level because those concepts were previously taught at another grade level in the South Carolina standards.

Grade Level	Content Alignment Percentages	New Content at Each Grade Level
Kindergarten	96%	One of twenty-four CCSS will be new SC content related to creating larger shapes from simple shapes.
Grade One	91%	Two of the twenty-three CCSS will be new SC content related to addition of three whole numbers and understanding of the equals sign. There are five concepts that will be new content for first grade teachers.
Grade Two	96%	One of the twenty-seven CCSS will be new SC content related to addition and subtraction within 100 with problems involving length. There are eight concepts that will be new content for second grade teachers.
Grade Three	100%	No new SC content There are thirteen concepts that will be new content for third grade teachers.
Grade Four	100%	No new SC content There will fourteen concepts that will be new to fourth grade teachers.
Grade Five	100%	No new content There will be fourteen concepts that will be new to fifth grade teachers.

Grade Six	100%	No new content There will be eight concepts that will be new to sixth grade teachers.
Grade Seven	95%	Two of the thirty-nine CCSS standards will be new SC content. There will eight concepts that will be new to seventh grade teachers.
Grade Eight	100%	No new content There will be six concepts that will be new to eight grade teachers.
High School	92%	Fourteen of the one hundred eighty-four CCSS standards will be new SC content.

The following pages provide a detailed listing of the CCSS mathematics content and the corresponding South Carolina mathematics indicators in red (e.g., K-2.1). Content that is new to the South Carolina mathematics standards is labeled in red as NEW.

Kindergarten
Counting and Cardinality (K.CC)

1. Count to 100 by ones and by tens. K-2.1
2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1). K-2.1
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). K-2.2
4. Understand the relationship between numbers and quantities; connect counting to cardinality. NEW 1-2.3, 1-2.4
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. K-2.1
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. K-2.1
c. Understand that each successive number name refers to a quantity that is one larger. K-2.1
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. K-2.3
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. K-2.3

7. Compare two numbers between 1 and 10 presented as written numerals. K-2.2, K-2.3

Operations and Algebraic Thinking (K.OA)
1. Represent addition and subtraction with objects, fingers, mental images, drawings,2 sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. K-2.4
2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. K-2.4
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). K-2.4
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. K-2.4
5. Fluently add and subtract within 5. K-2.4

Number and Operations in Base Ten (K.NBT)
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 (such as 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. K-2.6, K-2.7

Measurement and Data (K.MD)
1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. K-5.3, K-5.5
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*. K-5.2, K-5.3, 1-5.7**.**
3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. K-3.4

Geometry (K.G)
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*. K-4.3
2. Correctly name shapes regardless of their orientations or overall size.K-4.3.1-4.1
3. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). K-4.1, K-4.2
4. Analyze and compare a variety of 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). K-4.1, K-4.2, 1-4.2
5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes. K-4.1, K-4.2
6. Compose simple shapes to form larger shapes. NEW

Grade One
Operations and Algebraic Thinking (1.OA)

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.5 NEW 2-2.8, 3-3.3
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.* NEW
3.   Apply properties of operations as strategies to add and subtract.6 *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.)* 1-3.2, 1-3.3
4.   Understand subtraction as an unknown-addend problem. *For example, subtract 10 – 8 by finding the number that makes 10 when added to 8.* NEW 2-2.8
5.   Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). 1-2.6
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). 1-2.6, 1-2.7
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.* NEW
8.   Determine the unknown number in a whole-number addition or subtraction equation. *For example, determine the unknown number that makes the equation true in each of the equations 8+? = 11, 5 =? - 3, 6 + 6 =?* NEW 2-2.8

Number and Operations in Base Ten (1.NBT)
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. 1-2.1**.**
2.   Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: 1-2.5
a.   10 can be thought of as a bundle of ten ones — called a "ten." 1-2.5
b.   The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. 1-2.5
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). 1-2.5
3.   Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <. 1-2.5

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. 1-2.8
5.   Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. 1-2.8
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. 1-2.8

Measurement and Data (1.MD)
1.   Order three objects by length; compare the lengths of two objects indirectly by using a third object. 1-5.5, 1-5.6, 2-5.4, 2-5.5
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.* 1-5.5, 1-5.6, 2-5.5
3.   Tell and write time in hours and half-hours using analog and digital clocks. K-5.4, K-5.6, 1-5.8
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. K-6.1, K-6.2, 1-6.2, 1-6.3, 2-6.2

Geometry (1.G)
1.   Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size) for a wide variety of shapes; build and draw shapes to possess defining attributes. 1-4.3
2.   Compose two-dimensional shapes (such as rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (such as cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. NEW 2-4.3
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. NEW 2-4.3

Grade Two
Operations and Algebraic Thinking (2.OA)
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.8 2-2.8, 3-3.3
2.   Fluently add and subtract within 20. By end of Grade 2, know from memory all sums of two one-digit numbers. NEW 1-2.6
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. NEW 1-3.5
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. 2-2.5

Number and Operations in Base Ten (2.NBT)
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: NEW 1-2.9
a.   100 can be thought of as a bundle of ten tens — called a "hundred." NEW 1-2.9
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). NEW 1-2.9
2.   Count within 1000; skip-count by 5s, 10s, and 100s. 2-3.1
3.   Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. 2-2.2, 2-2.3
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. 1-2.9, 2-2.4
5.   Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. 2-2.7
6.   Add up to four two-digit numbers using strategies based on place value and properties of operations. 2-2.7
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. 2-2.7
8.   Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900. 2-2.7
9.   Explain why addition and subtraction strategies work, using place value and the properties of operations. 1-2.7, 1-2.8, 2-2.7

Measurement and Data (2.MD)

1.   Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. NEW K-5.4, 1-5.4

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. 2-5.6

3.   Estimate lengths using units of inches, feet, centimeters, and meters. 2-5.4, 2-5.5

4.   Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. 2-5.6

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. NEW

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 on a number line diagram. 1-2.8, 2-2.8, 3-2.6

7.   Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. 2-5.7, 2-5.8

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?* 1-5.1, 1-5.2, 1-5.3, 2-5.1, 2-5.2, 3-5.1

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. 2-5.3

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 problems10 using information presented in a bar graph. 2-6.2, 3-6.2, 4-6.3

Geometry (2.G)

1.   Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. NEW 3-4.2

2.   Partition a rectangle into rows and columns of same-size squares and count to find the total number of them. NEW 3-4.7

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. NEW 3-2.5, 3-4.7

Grade Three
Operations and Algebraic Thinking (3.OA)

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.* 2-2.5, 3-2.7

2.   Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷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 ÷8. NEW 2-2.6, 5-2.3

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. 3-3.3

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* x *? = 48, 5 =* ☐÷ *3, 6* x *6 =?* 3-2.7

5.   Apply properties of operations as strategies to multiply and divide.[13] *Examples: If 6* x *4 = 24 is known, then 4* x *6 = 24 is also known.* (*Commutative property of multiplication.*) *3* x *5* x *2 can be found by multiplying 3* x *5 = 15 then multiplying 15* x *2 = 30, or by multiplying 5* x *2 = 10 then multiplying 3* x *10 = 30.* (*Associative property of multiplication.*) *Knowing that 8* x *5 = 40 and 8* x *2 = 16, one can find 8* x *7 as 8* x *(5 + 2) = (8* x *5) + (8* x *2) = 40 + 16 = 56.* (*Distributive property.*) 3-2.8, 5-3.4

6.   Understand division as an unknown-factor problem. *For example, divide 32 ÷8 by finding the number that makes 32 when multiplied by 8.* 3-2.8

7.   Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 x 5 = 40, one knows 40 ÷5 = 8) or properties of operations. By end of Grade 3, know from memory all products of one-digit numbers. 3-2.7, 3-2.8

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. NEW 4-3.5

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.* 3-2.9, 5-3.1

Number and Operations in Base Ten (3.NBT)

1.   Use place value understanding to round whole numbers to the nearest 10 or 100. 2-2.9, 3-2.4

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. 3-2.3

3. Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 x 80, 5 x 60) using strategies based on place value and properties of operations. 3-2.11

Number and Operations—Fractions (3.NF)

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*. 3-2.5

2. Understand a fraction as a number on the number line; represent fractions on a number line diagram. 3-2.5, 3-2.6

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. 3-2.6

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. 3-2.6

3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.

a. 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. NEW 4-2.8

b. 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.* NEW 4-2.8

c. Compare two fractions with the same numerator or the same denominator, by reasoning about their size; recognize that valid comparisons rely on the two fractions referring 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. NEW 4-2.9

Measurement and Data (3.MD)

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. 3-5.6, 5-5.6

2. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (*l*).17 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. 2-5.3, 3-5.2, 3-5.3, 3-5.4, 4-5.1

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 1 pet, 5 pets, or 10 pets.* 3-6.2, 3-6.3, 3-6.4, 4-6.2, 4-6.3

74

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. 3-5.2, 3-5.3, 4-5.1

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. NEW 4-5.5

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. NEW 4-5.5

6.   Measure areas by counting unit squares, using square cm, square m, square in, square ft, and improvised units. NEW 4-5.5

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. NEW 4-5.5, 5-5.4

b.   Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems; represent whole-number products as rectangular areas in mathematical reasoning. NEW 4-5.5, 5-5.4

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* x *b* and *a* x *c*; use area models to represent the distributive property in mathematical reasoning. NEW 4-5.5, 5-5.4

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. NEW 4-5.5, 5-5.4

8.   Solve real-world and mathematical problems involving perimeters of polygons, such as finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different area or with the same area and different perimeter. 3-5.5, 4-5.4, 5-5.4

Geometry (3.G)

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. NEW 4-4.1

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 is 1/4 of the area of the shape.* 3-4.7

Grade Four

Operations and Algebraic Thinking (4.OA)

1. Interpret a multiplication equation as a comparison, e.g., interpret 5 x 7 = 35 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. 3-2.7, 4-3.2

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. 4-3.5

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. 4-3.4, 4-3.5

4. Find the 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. NEW 5-2.6

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.* 2-3.3, 3-3.1, 3-3.2, 4-3.1, 4-3.2, 4-3.3

Number and Operations in Base Ten20   (4.NBT)

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 ÷ 70 = 10 by applying concepts of place value and division.* NEW 2-2.10, 3-2.12

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, using >, =, and < symbols to record the results of comparisons. NEW 2-2.10, 3-2.1, 3-2.2, 3-2.12

3. Use place value understanding to round multi-digit whole numbers to any place.2-2.10, 3-2.4, 4-2.1, 4-2.6

4. Add and subtract multi-digit whole numbers accurately and efficiently using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. NEW 3-2.3

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. 3-2.7, 3-2.10, 4-2.3, 4-2.5

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.4-2.5, 5-2.3

Number and Operations—Fractions   (4-NF)
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. 4-2.8
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 1/2; recognize that valid comparisons rely on the two fractions referring to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. 4-2.9, 5-2.7
3. Understand a fraction a/b with $a > 1$ as a sum of fractions 1/b.
a.   Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation (e.g., 3/8 = 1/8 + 1/8 + 1/8 and 3/8 = 1/8 + 2/8). Justify decompositions, e.g., by using a visual fraction model. NEW 5-2.8
b.   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.3-2.6, 4-2.11
c.   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. NEW 5-2.8
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 × (1/4), recording the conclusion by the equation 5/4 = 5* × (*1/4*). NEW 3-2.6
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* × (*2/5*) *as 6* × (*1/5*), *recognizing this product as 6/5.* (*In general, n* × (*a/b*) = (*n* × *a*)/*b*.) NEW 3-2.6
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?* NEW 6-2.5, 7-2.9**.**
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 100.23 *For example, express 3/10 as 30/100 and add 3/10 + 4/100 = 34/100.* 4-2.8

77

6.   Interpret a two-digit decimal as a fraction and use decimal notation for parts of wholes; round decimals to the nearest whole number by reasoning about their size. *For example, rewrite 1.62 as 1 62/100; describe a length as 1.62 meters; locate 1.62 on a number line diagram and round 1.62 to 2.* 4-2.7, 4-2.11
7.   Compare two decimals to hundredths by reasoning about their size; recognize that valid comparisons rely on the two decimals referring to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model. 4-2.7, 5-2.4

Measurement and Data (4.MD)
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 smaller unit. Record measurement equivalents in a two-column 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)* 2-5.9, 3-5.7, 4-5.8, 5-5.8
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. 3-5.1, 4-2.12, 4-5.6, 5-2.5, 5-2.8
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.* NEW 5-5.4
4.   Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 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.* NEW 3-6.2, 3-6.3, 5-2.8
5.   Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: 3-4.4, 3-4.6, 4-4.6, 5-5.2
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 1/360 of a circle is called a "one-degree angle," and can be used to measure angles. 4-5.2
b.   An angle that turns through *n* one-degree angles is said to have an angle measure of *n* degrees. 4-5.2
6.   Measure angles in whole-number degrees using a protractor; sketch angles of specified measure. NEW 5-5.2
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. NEW 6-4.2

Geometry (4.G)

1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines; identify these in two-dimensional figures. 3-4.3, 3-4.4, 3-4.6, 4-4.6, 4-5.2

2. Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of specified size. Recognize right triangles as a category, and identify right triangles. NEW 3-4.5

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. 1-4.4, 2-4.2, 5-4.6

Grade Five

Operations and Algebraic Thinking (5.OA)

1. Interpret grouping symbols in numerical expressions and evaluate expressions with grouping symbols. 6-3.2

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* x *(8 + 7); recognize that 3* x *(18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.* 4-3.4, 5-3.1, 5-3.3, 6 – 3.3

3. Generate two numerical patterns using two given rules. Graph pairs of corresponding terms on a coordinate plane, and identify apparent relationships between corresponding terms. *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.* 5-3.1, 6-3.1

Number and Operations in Base Ten (5.NBT)

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. 5-2.1

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 positive integer exponents to denote powers of 10. 6-2.7

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 x 100 + 4x 10 + 7x 1 + 3x (1/10) + 9 x (1/100) + 2 x (1/1000). 5-2.1

b. Compare two decimals to thousandths based on meanings of the digits, using >, =, and < symbols to record the results of comparisons. 5-2.4

4. Use place value understanding to round decimals to any place. 5 – 2.1

5. Fluently add, subtract, and multiply multi-digit whole numbers using the standard algorithm for each operation. NEW 4-2.3

6.   Find 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; express the quotient as a fraction or mixed number. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. 5-2.2

7.   Add, subtract, multiply, and divide decimals of one or two digits, 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. 5-2.5, 6-2.5

Number and Operations—Fractions (5-NF)

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, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)* NEW 6-2.4

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 2/5 + 1/2 = 3/7 by observing that 3/7 < 1/2.* 5-2.8, 6-2.4

3.   Interpret a fraction as the result of dividing the numerator by the denominator (*a/b = a ÷ b*); solve word problems involving division of whole numbers leading to fractional answers, e.g., by using visual fraction models or equations to represent the problem. *For example, interpret 3/4 as the result of dividing 3 by 4, noting that 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 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?* NEW 6-2.5

4.   Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

a.   Interpret the product (*a/b*) x *q* as *a* parts of a partition of *q* into *b* equal parts; equivalently, as the result of a sequence of operations *a* x *q* ÷ *b*. *For example, use a visual fraction model to show* (*2/3*) x *4 = 8/3, and create a story context for this equation; do the same with* (*2/3*) x (*4/5*) = *8/15. (In general,* (*a/b*) x (*c/d*) = *ac/bd.)* NEW 6 -2.5

b.   Find the area of a rectangle with fractional side lengths by tiling it, 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 – 5.4

5.   Interpret multiplication as scaling (resizing), including 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. NEW 4-2.4

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. NEW 6-2.5

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. NEW 6-2.5

7.   Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions NEW 6 – 2.5

a.   Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for ($1/3$) ÷ 4 and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that ($1/3$) ÷ 4 = 1/12 because ($1/12$) x 4 = 1/3.* NEW 6 – 2.5

b.   Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for 4 ÷ ($1/5$) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that 4 ÷ ($1/5$) = 20 because 20 x ($1/5$) = 4.* NEW 6 – 2.5

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?* NEW 6- 2.5

Measurement and Data (5.MD)
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. 4 – 5.3, 5 – 5.3, 5 – 5.8

2.   Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 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.* 5 – 2.8, 6 – 2.4, 6 – 2.5

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. 5-5.5

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. 5 – 5.5

4.   Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. 5 – 5.5

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 three-fold whole-number products as volumes, e.g., to represent the associative property of multiplication. 5 – 5.5
b.   Apply the formulas $V = l\,w\,h$ and $V = b\,h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real-world and mathematical problems; 5-5.5
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. 5-5.5

Geometry (5.G)

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).NEW 4 -4.8, 6 – 4.1
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. NEW 4 – 4.7, 4 – 4.8
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.* 5 – 4.1
4.   Classify two-dimensional figures in a hierarchy based on properties.5 -4.1

Grade Six

Ratios and Proportional Relationships (6.RP)

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. "* 6 – 2.6
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 paperbacks, which is a rate of $5 per paperback. "* 6 – 2.6
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. 6 – 2.6
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. NEW 8 -2.7

b.   Solve unit rate problems including 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?* 6 – 5.6

c.   Find a percentage 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 percentage. 6 – 2.1

d.   Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. NEW 8 – 5.7

The Number System (6.NS)

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) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (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?* 6-2.5

2.   Fluently divide multi-digit numbers using the standard algorithm for each operation. NEW 5 – 2.2

3.   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, debits/credits, 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 – 2.2

4.   Understand a rational number as a point on the number line. Extend number line diagrams and coordinate planes familiar from previous grades to represent negative numbers and their distance from 0. 6 – 2.2

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. 6-2.2

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. 6 – 2.2

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. 6 – 2.2

5.   Understand the ordering of rational numbers. 6 – 2.3

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. NEW 7 – 2.2, 7 – 2.3

b.   Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write –3 oC > –7 oC to express the fact that –3 oC is warmer than –7 oC.* NEW 7 – 1.1, 7 – 2.3

6.   Understand absolute value and its relationship to the order of rational numbers. NEW 7 – 2.4

a.   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.* NEW 7- 2.4

b.   Distinguish comparisons of absolute value from statements of order. *For example, recognize that an account balance less than –30 dollars represents a debt greater than 30 dollars.* 7 – 2.4

7.   Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane, including using coordinates and absolute value reasoning to find distances between points with the same first coordinate or the same second coordinate. 6 – 4.1

Expressions and Equations (6.EE)

1.   Evaluate numerical expressions involving whole-number exponents. 2.   Write, read, and evaluate expressions in which letters stand for numbers. 6 – 2.7

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.* 6 – 3.3

b.   Identify parts of an expression using mathematical language (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.* 6 – 3.3

c.   Evaluate expressions by substituting values for their variables, including when using formulas 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 = s3 and A = 6 s2 to find the volume and surface area of a cube with sides of length s = 1/2.* 6 – 3.2

3.   Apply the properties of operations as strategies to generate equivalent expressions. *For example, apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x; apply properties of operations to y + y + y to produce the equivalent expression 3y.* 6 – 3.4, 8 – 3.3

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.* 6 – 3.4

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 – 3.5

6.   Use variables to stand for numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can be used in cases where a number is unknown, or where, for the purpose at hand, it can be any number in a specified set. 6 – 3.5

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. 6 – 3.5

8.	Write a statement of 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 graphically on a number line diagram. NEW 7 – 3.5

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.* NEW 8 – 1.6, 8 – 3.5

Geometry (6.G)

1.	Find 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. NEW 4 – 5.5, 8 – 5.5

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. 5 – 5.5

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. 6 – 4.2

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. 5 – 5.4, 6 – 5.3

Statistics and Probability (6.SP)

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.* NEW 5 – 6.1

2.	Understand that a set of data collected to answer a statistical question has a distribution which can be described by its overall shape, center and spread. 5 – 6.2

3.	Recognize that a measure of center for a numerical data set summarizes all of its values using a single number, while a measure of variation describes how its values vary using a single number. 6 – 6.3

4.	Display numerical data in plots on a number line, including dot plots, histograms, and box plots. 6 – 6.2, 7 – 6.2

5.	Summarize numerical data sets in relation to their context, such as by:

a.	Reporting the number of observations. NEW 5 – 6.2

b.   Describing the nature of the attribute of investigation, including how it was measured and its units of measurement. NEW 5 – 6.2
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 was gathered. 5 – 6.3, 5 – 6.4,
6 – 6.3
d.   Relating the choice of measures of center and variability to the shape of the data distribution and the context in which
the data was gathered. 6 – 6.3

Grade Seven

Ratios and Proportional Relationships (7.RP)
1.   Compute unit rates associated with ratios of nonnegative rational numbers, including ratios of lengths, areas and other quantities measured in like or different units. *For example, If a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2 / 1/4 miles per hour, equivalently 2 miles per hour.* 7-5.1, 8 – 2.7
2.   Recognize and represent proportional relationships between covarying 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. 7-3.7, 8 -2.7
b.   Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. NEW 8-2.7
c.   Represent proportional relationships by equations. *For example, total cost, t, is proportional to the number, n, purchased at a constant price, p; this relationship can be expressed as t = pn.* 7-3.6
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. 7-3.6
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.* 7-2.5

The Number System (7.NS)
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. 7-2.8
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.* 7-2.8
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. 7-2.8, 7-2.4, 8-2.5

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. 7-2.8, 8 – 2.5

d.   Apply properties of operations as strategies to add and subtract rational numbers. 7 – 2.8, 8-2.1

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. 7-2.8, 7-2.9, 8-2.2

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/q is a rational number, then $-(p/q) = (-p)/q = p/(-q)$. Interpret products of rational numbers by describing real-world contexts. 7-2.8, 8-2.1,8-2.2

c.   Apply properties of operations as strategies to multiply and divide rational numbers. 8-2.1

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. 7-2.9

3.   Solve real-world and mathematical problems involving the four operations with rational numbers NEW 8-2.1, 8- 2.2

Expressions and Equations (7.EE)

1.   Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example, 32* x *3–5 = 3–3 = 1/33 = 1/27.* NEW EA – 2.2

2 Computations with rational numbers extend the rules for manipulating fractions to complex fractions.

2.   Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. NEW 8 – 3.3

3.   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. " NEW* 8-3.3

4.   Use numbers expressed in the form of a single digit times a whole-number 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* x *108 and the population of the world as 7* x *109, and determine that the world population is more than 20 times larger.* 7-2.7

5.   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 as strategies for calculating 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 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 3/4 inches long in the center of a door that is 27 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.* NEW 8 -3.4

6.   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 the 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?* 7 – 3.4

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.* 7-3.4, 7-3.5

Geometry (7.G)

1.   Solve problems involving scale drawings of geometric figures in the coordinate plane, such as computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. NEW 6 – 5.7, 8-5.1

2.   Draw (freehand, with ruler and protractor, and with technology) geometric shapes from given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the triangle is uniquely defined, ambiguously defined or nonexistent. NEW

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. 7 – 4.3

4.   Know the formulas for the area and circumference of a circle and solve problems; give an informal derivation of the relationship between the circumference and area of a circle. NEW 6 – 5.1, 6-5.2, 8-5.4

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. NEW 6 – 4.9

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. NEW 8 – 5.5

Statistics and Probability (7.SP)

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. 7 – 6.1

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.* 7 – 6.1

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 average deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.* 7 – 6.1

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.* 7- 6.1

5.   Understand that the probability of a chance event is a number between 0 and 1 expressing the likelihood of that 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. NEW 3 – 6.6, 3- 6.7

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- 6.5

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.* 7 – 6.5

b.   Develop a possibly non-uniform probability model 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? NEW

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. 7 – 6.5, 6- 6.4
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 for which the event occurs. 7 -6.5, 6 – 6.4
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?* 7 – 6.5, 6 – 6.4

Grade Eight

The Number System (8.NS)
1.   Understand informally that every number has a decimal expansion; the rational numbers are those with decimal expansions that terminate in 0s or eventually repeat. Know that other numbers are called irrational. 8-2.3, 8-2.4
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.* 8-2.3, 8-2.4

Expressions and Equations (8.EE).
1.   Use square root and cube root symbols to represent solutions to equations of the form $x2 = p$ and $x3 = p$, 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. 8-2.3, 8-2.4
2.   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. 8-5.6
3.   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.* 8-3.7
4.   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. 8-3.7

5. 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). 8-3.4

b. Solve linear equations with rational number coefficients, including equations that require expanding expressions using the distributive property and collecting like terms. 8-3.4

6. 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. NEW (EA)

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.* NEW (EA)

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.* NEW (EA)

Functions (8.F)

1. Understand that a function from one set (called the domain) to another set (called the range) is a rule that assigns to each element of the domain (an input) exactly one element of the range (the corresponding output). The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. 8-3.1

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.* 8-3.1

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 = s2 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.* 8-3.5

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; 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. 8-3.1, 8-3.6, 8-3.7

5. Describe qualitatively the functional relationship between two quantities by reading 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. 8-3.1, 8-3.7

Geometry (8.G)

1. Verify experimentally the properties of rotations, reflections, and translations: 6-4.5, 7-4.1, 7-4.9, 8-4.3

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 plane 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. NEW 6-4.7, 7-4.1

3. Describe the effect of dilations, translations, rotations and reflections on figures using coordinates. 6-4.6, 7-4.10, 8-4.4

4. Understand that a plane 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 figures, describe a sequence that exhibits the similarity between them. NEW 6-4.7, 7-4.1

5. Use informal arguments to establish facts about the angle sum and exterior angle of triangles, and about the angles created when parallel lines are cut by a transversal. *For example, arrange three copies of the same triangle so that the three angles appear to form a line, and give an argument in terms of transversals why this is so.* NEW 7-4.5

6. Explain a proof of the Pythagorean Theorem and its converse. 8-4.1

7. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. 8-4.1

8. Apply the Pythagorean Theorem to find the distance between two points in a coordinate system. 8-4.1

9. Know the formulas for the volume of cones, cylinders and spheres and solve real-world and mathematical problems. 7-5.2, 8-5.3

Statistics and Probability (8.SP)

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. 8-6.1

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. 8-6.1

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.* 8-3.1, 8-3.6, 8-3.7

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?* 8-6.1

Mathematics High School—Number and Quantity

The Real Number System (N-RN)
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. IA-4.5, EA-2.2
2.   Rewrite expressions involving radicals and rational exponents using the properties of exponents. IA-4.5, IA-4.7, EA-2.2
3.   Explain why sums and products of rational numbers are 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. EA-2.1

Quantities (N-Q)
1.   Compare measurements of two quantities of the same type (e.g., two lengths or two weights) expressed in different units to decide which quantity is larger. EA-2.4
2.   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. EA-2.4
3.   Define appropriate quantities for the purpose of descriptive modeling. NEW
4.   Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. 8-5.6

The Complex Number System (N-CN)
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. EA-2.1
2.   Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers. IA-3.1
3.   Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers. IA-3.2
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. PC-5.3
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. IA-3.2

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. NEW

7.　 Solve quadratic equations with real coefficients that have complex solutions. IA-3.3

8.　(+) Extend polynomial identities to the complex numbers. *For example, rewrite x^2 + 4 as* $(x + 2i)(x - 2i)$. IA-3.3

9.　(+) Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials. NEW

(+) Vector and Matrix Quantities (N-VM)

1.　Understand that vector quantities have both magnitude and direction. Represent vector quantities by directed line segments, and use appropriate symbols for vectors and their magnitudes (e.g., **v**, $|\mathbf{v}|$, $||\mathbf{v}||$, *v*). G-6.7, G-6.8

2.　Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point. G-6.5, G-6.8

3.　Solve problems involving velocity and other quantities that can be represented by vectors.* NEW

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. G-6.5

b.　Given two vectors in magnitude and direction form, determine the magnitude and direction of their sum. G-6.6

c.　Understand that vector subtraction **v** – **w** is defined as **v** + (–**w**), where –**w** is the additive inverse of **w**, with the same magnitude as **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. NEW

5.　Multiply a vector **v** by a scalar.

a.　Represent scalar multiplication graphically by scaling vectors and possibly reversing their direction; perform scalar multiplication component-wise, e.g., as $c(v_x, v_y) = (cv_x, cv_y)$. NEW

b.　Compute the magnitude of a scalar multiple *c***v** using $||c\mathbf{v}|| = |c|v$. c. Understand that when $|c|v = 0$, the direction of *c***v** is either along **v** (for $c > 0$) or against **v** (for $c < 0$). NEW

6.　Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network. EA-2.10

7.　Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled. EA-2.9, EA-2.10

8.　Add, subtract, and multiply matrices of appropriate dimensions. EA-2.9

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. EA-2.9

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. NEW

11.　Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimensions to produce another vector. Understand a matrix as a

transformation of vectors. NEW

12. Understand a 2 x 2 matrix as a transformation of the plane, and interpret the absolute value of the determinant in terms of area. NEW

Mathematics High School—Algebra
Seeing Structure in Expressions (A-SSE)

1. Interpret expressions that represent a quantity in terms of its context. PC-1.1
a. Interpret parts of an expression, such as terms, factors, and coefficients. EA-2.8
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.* EA-2.8
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 $(x^2 - y^2)(x^2 + y^2)$.* IA-4.3
3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.★ PC-1.1, PC-1.3
a. Factor a quadratic expression to reveal the zeros of the function it defines. IA-3.3, IA-4.3, PC-3.3, PC-3.4,PC-4.5
b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines. IA-3.3, IA-4.3
c. Use the properties of exponents to transform expressions for exponential functions. *For example the expression $1.15t$ can be rewritten as $(1.151/12)12t ≈ 1.01212t$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.* EA-2.2, PC-4.5, PC-4.10
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.* PC-1.3

Arithmetic with Polynomials and Rational Expressions (A-APR)
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. IA-2.5, IA-4.1, EA-2.5, EA-2.7
2. Understand 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 $p(x)$. PC-3.2
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. IA-4.2, PC-3.1, PC-3.6
4. Prove polynomial identities and use them to describe numerical relationships. *For example, the polynomial identity $(x2 + y2)2 = (x2 - y2)2 + (2xy)2$ can be used to generate Pythagorean triples.* IA-4.1
5. (+) Understand that the Binomial Theorem gives 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. The Binomial Theorem can be proved by mathematical induction or by a combinatorial argument. IA-4.1
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. IA-4.8, EA-2.5, PC-1.7, PC-3.4

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. IA-4.8, EA-2.5

Creating Equations   (A-CED)

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.* IA-3.5, IA-3.6, EA-5.9, PC-1.3

2.   Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. IA-4.4

3.   Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. *For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.* IA-2.3, PC-1.3, PC-1.4

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.* EA-3.7, PC-1.3

Reasoning with Equations and Inequalities (A-REI)

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. PC-2.4, PC-3.8, PC-4.7, PC-4.10

2.   Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise. IA-4.9, IA-4.12, PC-2.4, PC-3.8

3.   Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. Graph the solution set of an inequality on a number line. EA-4.7, EA-4.8, PC-2.4, PC-3.10

4.   Solve quadratic equations in one variable. EA-6.4

a.   Understand that the method of completing the square transforms any quadratic equation in x into an equation of the form $(x – p)^2 = q$ that has the same solutions. This leads to the quadratic formula. IA-3.3, IA-3.4

b.   Solve 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. IA-3.3, IA-3.4

5.   Understand 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. IA-2.1, IA-2.11

6.   Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables. IA-2.1, IA-2.11, EA-4.9, EA-4.10

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 x2 + y2 = 3. IA-2.1, IA-2.11, PC-6.3

8.   (+) Represent a system of linear equations as a single matrix equation in a vector variable. IA-2.11

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). IA-2.11

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 straight line). EA-5.1, PC-1.5, PC-3.10, PC-3.11

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. IA-2.11, EA-4.9, EA-4.10, PC-1.7, PC-4.9, PC-4.11, PC-5.11

12.   Graph the solutions to a linear inequality in two variables as a half-plane (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. IA-2.2, EA-5.12

Mathematics High School—Functions

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*). EA – 3.1, EA – 3.2, EA – 5.5, EA – 5.6

2.   Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context. EA – 3.3, PC – 5.6

3.   Understand 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 ≥ 1.* IA – 6.7

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.* PC – 1.5, 2.5, 2.6, 2.7, 3.1, 3.7, 4.1, 2.4, 4.3, 4.4, 4.7, 5.4, 5.5

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* EA – 3.4, 5 – 10, PC – 1.1,1.4,2.5,4.1,4.2,4.3,4.4,4.5

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. EA – 5.7

7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. EA – 6.3, EA - 6.5 PC – 1.5, 2.1, 3.1

a. Graph linear and quadratic functions and show intercepts, maxima, and minima. EA 3.5

b. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. EA – 3.5, IA – 2.7, 2.9, 2-10

c. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior. IA – 4.2

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. PC – 1.5, 3.4, 3.9

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. EA – 6.3, PC – 1.5, 3.7

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.* IA – 4.7

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.* IA – 1.5, EA – 1.5, PC 1.1, 1.5

Building Functions (F-BF)

1. Write a function that describes a relationship between two quantities PC – 1.5, 2.4, 4.6

a. Determine an explicit expression, a recursive process, or steps for calculation from a context. IA – 6.9

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. PC – 3.5

c. Compose functions. For example, if f(t) is the height of a falling body after t seconds, f(t – 12) is the height of the same body dropped 12 seconds later. PC – 3.5

2. Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms. IA-6.2 - IA -6.8

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. PC 1.5, 1.7, 2.2, 2.3, 2.4, 2.6, 2.7, 3.5

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) =2 x3 or f(x) = (x+1)/(x-1) for x =/1. PC 3.6, 4.7, 4.10
b. Verify by composition that one function is the inverse of another. IA – 2.6
c. Read values of an inverse function from a graph or a table, given that the function has an inverse. PC – 5.13
d. Produce an invertible function from a non-invertible function by restricting the domain. NEW

Linear, Quadratic, and Exponential Models   (F-LQE)
1. Distinguish between situations that can be modeled with linear functions and with exponential functions.
a. Understand that linear functions grow by equal differences over equal intervals; exponential functions grow by equal factors over equal intervals. PC – 4.3, EA – 5.10
b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. PC – 1.5
c. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another. PC – 1.5
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). IA – 6.1, PC-1.5
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. IA -4.2, PC – 1.5
4. For exponential models, express as a logarithm the solution to a bct = 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 IA – 4.10
5. Interpret the parameters in a linear, quadratic, or exponential function in terms of a context. EA – 6.6, PC – 1.4

Trigonometric Functions (F-TF)
1. Understand that the radian measure of an angle is the length of the arc on the unit circle subtended by the angle. PC – 5.1, 5.2
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. PC – 1.2,1.5, 5.1, 5.2
3. Use special triangles to determine geometrically the values of sine, cosine, tangent for π /3, π/4 and π/6, and use the unit circle to express the values of sine, cosine, and tangent for π-x, π+x, and 2π-x in terms of their values for x, where x is any real number. PC – 1.2, 5.6
4. Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions. PC 1.5, 2.6, 2.7
5. Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline. PC-1.5, 5.4, 5.7
6. Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing. PC – 5.13

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. PC – 5.17, 5.10

8.   Prove the Pythagorean identity $\sin2(\theta) + \cos2(\theta) = 1$ and use it to calculate trigonometric ratios. PC – 5.14

9.   Prove the addition and subtraction formulas for sine, cosine, and tangent and use them to solve problems. PC – 5.14

Geometry Mathematical Practices

Congruence (G-CO)

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. G – 1.1

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). G – 6.3

3.   Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself. G – 6.3

4.   Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments. G – 1.5

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. G – 6.3

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. G -3.8

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. G – 2.3, G – 3.9

8.   Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions. G – 2.3, G – 3.9

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.* G-2.2, G – 1.6

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 .*G – 1.6, 2.1, 3.6

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.* G – 1.6, 4.5

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.* G – 1.10, 2.5

13. Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle. G – 2.5

Similarity, Right Triangles, and Trigonometry (G-SRT)

1. Verify experimentally the properties of dilations:

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. 8-4.3

b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor. G – 2.6

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. G – 2.6, 3.9

3. Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar. G – 3.9

4. Prove theorems about triangles using similarity transformations. *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.* G – 7.4

5. Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures. G – 3.8, 4.6

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. G – 3.11, 3.12

7. Explain and use the relationship between the sine and cosine of complementary angles. G – 3.12

8. Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems. G – 3.10, 3.12

9. Derive the formula $A = 1/2 \, ab \sin(C)$ for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side. G – 3.2, PC – 5.9

10. Prove the Laws of Sines and Cosines and use them to solve problems. PC 5.12

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). PC- 5.12

Circles (G-C)

1. Prove that all circles are similar. G – 5.3

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.* G-5.5, 5.6, 5.7

3. Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle. G – 2.5

4.   Construct a tangent line from a point outside a given circle to the circle.
G – 2.5
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.
G – 5.4, 5.7

Expressing Geometric Properties with Equations (G-GPE)
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. G – 3.10
2.   Derive the equation of a parabola given a focus and directrix. IA-3.6
3.   (+) Derive the equations of ellipses and hyperbolas given two foci for the ellipse, and two directrices of a hyperbola. IA – 5.4, 5.6
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, √3) lies on the circle centered at the origin and containing the point (0, 2).* G – 6.1
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). EA-5.8
6.   Find the point on a directed line segment between two given points that partitions the segment in a given ratio. G – 6.2
7.   Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula. G-3.1, 3.2, 4.1, 4.2

Geometric Measurement and Dimension (G-GMD)
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.* G-5.1, 5.2
2.   (+) Give an informal argument using Cavalieri's principle for the formulas for the volume of a sphere and other solid figures. G – 7.2, 7.3
3.   Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems. G – 7.2
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. G – 7.3

Modeling with Geometry (G-MG)
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). G – 1.9
2.   Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot). G – 1.9, G – 1.2
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. G – 1.9, G – 1.2

Mathematics High School—Statistics and Probability

6. Represent data on two quantitative variables on scatter plots 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 and exponential models.* DA – 3.5

b Informally assess the fit of a function by plotting and analyzing residuals. DA – 3.8

c. Fit a linear function for scatter plots that suggest a linear association. DA – 3.7

7. Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. PC – 1.2, DA – 3.6

8. Compute (using technology) and interpret the correlation coefficient of a linear fit. DA – 3.9

9. Distinguish between correlation and causation. NEW

Making Inferences and Justifying Conclusions (S-IC)

1. Understand that statistics allows inferences to be made about population parameters based on a random sample from that population. DA – 1.4, 2.4, 4.1

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?* DA – 2.4

3. Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each. DA – 2.3

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. NEW

5. Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant. DA – 1.1, 1.3, 3.2, 2.5

6. Evaluate reports based on data. DA – 1.7, 1.4

Conditional Probability and the Rules of Probability (S-CP)

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"). DA – 5.4, 5.5

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. DA – 5.7

3. Understand the conditional probability of A given B as P(A 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. DA – 5.13

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.* DA – 5.13

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.* DA – 5.3

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. DA – 5.3

7.   Apply the Addition Rule, P(A or B) = P(A) + P(B) – P(A and B), and interpret the answer in terms of the model. DA – 5.7

8.   Apply the general Multiplication Rule in a uniform probability model, P(A and B) = P(A)P(B| A) =P(B)P(A|B), and interpret the answer in terms of the model. NEW

9.   Use permutations and combinations to compute probabilities of compound events and solve problems. DA – 5.2

(+) Using Probability to Make Decisions (S-MD)

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. DA – 5.1

2.   Calculate the expected value of a random variable; interpret it as the mean of the probability distribution. DA – 5.11

3.   Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can becalculated; 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.* DA – 5.10

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 T V sets would you expect to find in 100 randomly selected households?* DA – 5.10

5.   Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values. DA – 2.6

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 fast-food restaurant* .NEW

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.* NEW

6.   Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator). NEW

7.   Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).DA – 2.6

Step 3   Implications for Implementation

Question: Are there gaps and omissions in the CCSS, and how will they be addressed?

Rationale: This step compares instructional content and will assist the CCCRP in the identification of how to address any gaps or omissions in order to ensure a seamless vertical articulation of content.

CCCRP will review data from Steps 1 and 2 and will answer the following questions:

- Are there gaps or omissions in the CCSS, and if so, how are they to be addressed?
- Is the missing content important because it connects logically with the content in earlier and later grades?
- Is it necessary given what is known about learning the content?

ELA Implications for Implementation

The following chart lists indicators from the South Carolina standards where no match was found in the indicator-to-indicator or content-to-content alignment reviews. Implications for implementation through the inclusion in instruction, professional development, or the development of support documents are noted.

South Carolina Indicator	Implications
K-1.9 Recall the characteristics of fantasy.	Instructional implications: include with related to characteristics of texts including characters and setting as well as with the craft and structure standards.
K-3.20 Recognize environmental print in such forms as signs in the school, road signs, restaurant and store signs, and logos.	The definition of texts can be expanded to include environmental print as another type of text studied; include in bridge document.
K-4.1 Generate ideas for writing by using techniques (for example, participating in conversations).	Include as part of writing instruction related to writing types and purposes; although not explicitly stated, ideas must be generated before a student can create writing.
K-6.5 Follow one-and two-step oral directions.	Skill can be connected to Reading Standard - Informational Text (#3) when describing relationships between a series of events or steps in a technical process.
1-3.14 Organize series of words by alphabetizing to the first letter.	Include as part of instruction related to accessing and using print and electronic resources.
1-3.21 Recognize environmental print in such forms as signs in the school, road signs, restaurant and store signs, and logos.	The definition of texts can be expanded to include environmental print as another type of text studied; include in bridge document.
1-4.1 Generate ideas for writing by using techniques (for example, participating in conversations and looking at books).	Include as part of writing instruction related to writing types and purposes; although not explicitly stated, ideas must be generated before a student can create writing.
1-6.6 Follow one- and two-step oral directions.	Skill can be connected to Reading Standard - Informational Text (#3) when describing relationships between a series of events or steps in a technical process.
2-3.13 Apply knowledge of alphabetizing a series of words to the second and third letters.	Include as part of instruction related to accessing and using print and electronic resources.
2-4.1 Generate ideas for writing using prewriting techniques (for example, creating lists, having discussions, and examining literary modes).	Include as part of writing instruction related to writing types and purposes; although not explicitly stated, ideas must be generated before a student can create writing.

2-6.6 Follow multi-step directions.	Skill can be connected to Reading Standard - Informational Text (#3) when describing relationships between a series of events or steps in a technical process.
3-1.7 Create responses to literary texts through a variety of methods (for example, writing, creative dramatics, and the visual and performing arts).	Instructional implications: students can demonstrate knowledge of many of the Reading Standards for Literature by creating a response to something the student has read or had read to him.
E1-3.4 Spell new words using Greek and Latin roots and affixes. E2-3.4 Spell new words using Greek and Latin roots and affixes. E3-3.4 Spell new words using Greek and Latin roots and affixes. E4-3.4 Spell new words using Greek and Latin roots and affixes.	Integrate into instruction related to the production of various types of writing.

In addition to the implications listed above, a document which explicitly states the connection between the current South Carolina ELA standards and the CCSS will assist teachers in making the connection between the two documents. Support documents will need to be updated and/or revised to reflect a more deliberate connection to the CCSS.

A plan for communicating information about the CCSS to administrators, teachers, and parents will need to be developed and implemented. The steps for developing and implementing the plan are outlined in the state's Phase II application for Race to the Top. This plan can be accessed on the SCDE Web site at www.ed.sc.gov under the Division of Innovation and Support.

Mathematics Implications for Implementation

Kindergarten	
South Carolina Indicators	**Implications**
K-2.5 Understand that addition results in increase and subtraction results in decrease.[*]	Include in support material for kindergarten.
K-2.8 Identify ordinal positions through 31st.	Include in support material for kindergarten.
K-3.1 Identify simple growing patterns.*	Concept can be deleted in order to devote time to other concepts.
K-3.2 Analyze simple repeating and growing relationships to extend patterns.*	Concept can be deleted in order to devote time to other concepts.
K-3.3 Translate simple repeating and growing patterns into rules.*	Concept can be deleted in order to devote time to other concepts.
K-5.7 Use a calendar to identify dates, days of the week, and months of the year.	Include in support materials to reinforce counting concepts and naming items in a sequence.
K-5.8 Recall equivalencies associated with time: 7 days = 1 week and 12 months = 1 year.	Connected to indicator above.
K-4-4 Use the directional words *left* and *right* to describe movement.	Terms are naturally integrated into instruction at this grade level. Include in support material as part of other directional words.
K-5.1 Identify a penny, a nickel, a dime, a quarter, and a dollar and the value of each.	This indicator will be addressed in second grade when student solve problems with money.

Grade One	
South Carolina Indicators	**Implications**
1-2.1 Use estimation to determine the approximate number of objects in a set of 20 to 100 objects.	Include in first grade support material because estimation can be a embedded strategy.
1-3.1 Analyze numeric patterns in addition and subtraction to develop strategies for acquiring basic facts.	Include in support material as a strategy for acquiring basic facts.
1-3.4 Analyze numeric relationships to complete and extend simple patterns.	Concept can be deleted in order to devote time to other concepts.
1-3.6 Classify change over time as quantitative or qualitative.	Concept can be deleted in order to devote time to other concepts.
1-4.5 Use the positional and directional terms *north*, *south*, *east*, and *west* to describe location and movement.	Will be addressed in social studies

1-5.9 Illustrate past and future dates on a calendar.	Include in support material.
1-5.10 Represent dates in standard form (June 1, 2007, for example) and numeric form (6-1-2007, for example).	Concept is easily integrated into classroom instruction as part of recording daily work, etc.
1-5.11 Use Celsius and Fahrenheit thermometers to measure temperature.	Will be addressed in science in second grade where students collect temperature data.
1-6.1 Use survey questions to collect data.	Will be addressed in seventh grade in more depth; therefore, this indicator can be deleted from first grade.
1-6.4 Predict on the basis of data whether events are *likely* or *unlikely* to occur.	Will be addressed in seventh grade in more depth; therefore, this indicator can be deleted from first grade.

Grade Two	
South Carolina Indicators	**Implications**
2-2.1 Generate estimation strategies to determine the approximate number of objects in a set of no more than 1,000 objects.	Include in second grade support material because estimation can be a embedded strategy.
2-3.2 Translate patterns into rules for simple multiples.	Concept can be deleted in order to devote time to other concepts.
2-3.4 Identify quantitative and qualitative change over time.	Concept can be deleted in order to devote time to other concepts.
2-3.5 Analyze quantitative and qualitative change over time.	Concept can be deleted in order to devote time to other concepts.
2-6.1 Create survey questions to collect data.	Will be addressed in seventh grade.
2-6.3 Infer trends in a data set as increasing, decreasing, or random.	This concept will be addressed in depth in later grade and can be deleted from second grade.
2-6.4 Predict on the basis of data whether events are *more likely* or *less likely* to occur.	Will be addressed in seventh grade.

Grade Three	
South Carolina Indicators	**Implications**
3-3.4 Illustrate situations that show change over time as increasing.	Concept can be deleted in order to devote time to other concepts.
3-4.1 Identify the specific attributes of circles: center, radius, circumference, and diameter.	Will be addressed in seventh grade with area and circumference of circles.

3-6.5 Compare the benefits of using tables, bar graphs, and dot plots as representations of a given data set.	Include in support material to support discussion of other third grade standards.

Grade Four

South Carolina Indicators	Implications
4-2.2 Apply divisibility rules for 2, 5, and 10.	Include in support material for fourth grade.
4-2.4 Explain the effect on the product when one of the factors is changed.	Include in support material for fourth grade.
4-4.6 Illustrate situations that show change over time as either increasing, decreasing, or varying.	Concept can be deleted in order to devote time to other concepts.
4-5.7 Use Celsius and Fahrenheit thermometers to determine temperature changes during time intervals.	This is addressed in fourth grade science when students compare and measure weather conditions using appropriate tools.
4-5.9 Exemplify situations in which highly accurate measurements are required.	Include in support material for fourth grade.
4-6.1 Compare how data-collection methods impact survey results.	Include in support material for fourth grade to support discussion of other related concepts.

Grade Five

South Carolina Indicators	Implications
5-2.9 Apply divisibility rules for 3, 6, and 9.	Include in support materials for fifth grade to deepen understanding of division.
5-3.5 Analyze situations that show change over time.	Concept can be deleted in order to devote time to other concepts.
5-5.7 Understand the relationship between the Celsius and Fahrenheit temperature scales.	This is addressed in fourth grade science when students compare and measure weather conditions using appropriate tools.

Grade Six

South Carolina Indicators	Implications
6-2.8 Represent the prime factorization of numbers by using exponents.	Concept can be deleted in order to devote time to other concepts.
6-4.3 Generalize the relationship between line symmetry and rotational symmetry for two-dimensional shapes.	Concept can be deleted in order to devote time to other concepts.
6-4.4 Construct two-dimensional shapes with line or rotational symmetry.	Concept can be deleted in order to devote time to other concepts.

6-4.2 Apply strategies and procedures to estimate the perimeters and areas of irregular shapes.	Concept can be deleted in order to devote time to other concepts.
6-5.5 Apply strategies and procedures of combining and subdividing to find the perimeters and areas of irregular shapes.	Concept can be deleted in order to devote time to other concepts.

Grade Seven	
South Carolina Indicators	**Implications**
7-3.1 Analyze geometric patterns and pattern relationships.	Concept can be deleted in order to devote time to other concepts.
7-4.2 Explain the results of the intersection of two or more geometric shapes in a plane.	Concept can be deleted in order to devote time to other concepts.
7-4.4 Translate between two- and three-dimensional representations of compound figures.	Concept can be deleted in order to devote time to other concepts.
7-4.6 Compare the areas of similar shapes and the areas of congruent shapes.	Concept can be deleted in order to devote time to other concepts.
7-4.9 Create tessellations with transformations.	Concept can be deleted in order to devote time to other concepts.
7-4.10 Explain the relationship of the angle measurements among shapes that tessellate.	Concept can be deleted in order to devote time to other concepts.
7-5.4 Recall equivalencies associated with length, mass and weight, and liquid volume:	Concept can be deleted in order to devote time to other concepts.
7-6.6 Apply procedures to calculate the probability of mutually exclusive simple or compound events.	Concept can be deleted in order to devote time to other concepts since it is addressed in depth in high school.
7-6.7 Interpret the probability of mutually exclusive simple or compound events.	Concept can be deleted in order to devote time to other concepts since it is addressed in depth in high school.

Grade Eight	
South Carolina Indicators	**Implications**
8-4.2 Use ordered pairs, equations, intercepts, and intersections to locate points and lines in a coordinate plane.	This concept will be deleted. It was identified during the SC standards revision as an indicator that needed to deleted or revised.
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.	Include in support materials for discussion of 8-5.3 (8:G:9).

8-6.4 Apply procedures to calculate the probability of two dependent events.	Concept can be deleted in order to devote time to other concepts.
8-6.5 Interpret the probability for two dependent events.	Concept can be deleted in order to devote time to other concepts.
8-6.6 Apply procedures to compute the odds of a given event	Concept can be deleted in order to devote time to other concepts.
8-6.7 Analyze probability using area models.	Concept can be deleted in order to devote time to other concepts.

Elementary Algebra
None noted

Intermediate Algebra	
South Carolina Indicators	**Implications**
Carry out a procedure to solve a system of linear inequalities algebraically.	This indicator was identified to be deleted from the SC standards because of a mathematical error.
Use linear programming to solve contextual problems involving a system of linear inequalities.	Concept can be deleted in order to devote time to other concepts.
Carry out a procedure to simplify algebraic expressions involving logarithms.	Concept can be deleted in order to devote time to other concepts.
Carry out a procedure to solve logarithmic equations algebraically.	Concept can be deleted in order to devote time to other concepts.
Carry out a procedure to graph the circle whose equation is the form $x^2 + y^2 = r^2$.	Concept can be deleted in order to devote time to other concepts.
Translate between the explicit form and the recursive form of sequences.	Concept can be deleted in order to devote time to other concepts.

Geometry	
South Carolina Indicators	**Implications**
Understand the historical development of geometry.	Concept can be deleted in order to devote time to other concepts.
Infer missing elements of visual or numerical geometric patterns (including triangular and rectangular numbers and the number of diagonals in polygons).	Concept can be deleted in order to devote time to other concepts.
Use direct measurement to determine the length of a segment, degree of an angle, and distance from a point to a line.	Concept can be deleted in order to devote time to other concepts.
Use geometric probability to solve problems.	Concept can be deleted in order to devote time to other concepts.

Analyze how changes in dimensions affect the perimeter or area of triangles.	Concept can be deleted in order to devote time to other concepts.
Apply properties of isosceles and equilateral triangles to solve problems.	Concept can be deleted in order to devote time to other concepts.
Apply the triangle inequality theorem to solve problems.	Concept can be deleted in order to devote time to other concepts.
Apply procedures to compute measures of interior and exterior angles of polygons.	Concept can be deleted in order to devote time to other concepts.
Analyze how a change in the radius affects the circumference or area of a circle.	Concept can be deleted in order to devote time to other concepts.
Analyze how changes in dimensions affect the perimeter or area of quadrilaterals and regular polygons.	Concept can be deleted in order to devote time to other concepts.
Carry out a procedure to compute the surface area of three-dimensional objects (including cones, cylinders, pyramids, prisms, spheres, and hemispheres).	Concept can be deleted in order to devote time to other concepts.
Apply a procedure to draw a top view, front view, and side view of a three-dimensional object.	Concept can be deleted in order to devote time to other concepts.
Apply a procedure to draw an isometric view of a three-dimensional object.	Concept can be deleted in order to devote time to other concepts.

PreCalculus
None noted

Probability and Statistics	
South Carolina Indicators	**Implications**
Use interpolation or extrapolation to predict values based on the relationship between two variables.	Concept can be deleted in order to devote time to other concepts.
Classify a variable as either discrete or continuous and as either categorical or quantitative.	Concept can be deleted in order to devote time to other concepts.
Use control charts to determine whether a process is in control.	Concept can be deleted in order to devote time to other concepts.
Use the binomial probability distribution to solve problems.	Concept can be deleted in order to devote time to other concepts.
Use a procedure to find geometric probability in real-world contexts	Concept can be deleted in order to devote time to other concepts.
Compare theoretical and experimental probabilities.	Concept can be deleted in order to devote time to other concepts.

| Understand the law of large numbers. | Concept can be deleted in order to devote time to other concepts. |

Content Area Summaries

English Language Arts

The CCSS establish a "staircase" of increasing complexity in what students must be able to read so that all students are ready for the demands of college- and career-level reading no later than the end of high school. The standards also require the progressive development of reading comprehension so that students advancing through the grades are able to gain more from whatever they read. Through reading a diverse array of classic and contemporary literature as well as challenging informational texts in a range of subjects, students are expected to build knowledge, gain insights, explore possibilities, and broaden their perspective. Because the standards are building blocks for successful classrooms, but recognize that teachers, school districts and states need to decide on appropriate curricula, they intentionally do not offer a reading list. Instead, they offer numerous sample texts to help teachers prepare for the school year and allow parents and students to know what to expect at the beginning of the year. The standards mandate certain critical types of content for all students, including classic myths and stories from around the world, foundational U.S. documents, seminal works of American literature, and the writings of Shakespeare. The standards appropriately defer the many remaining decisions about what and how to teach to states, districts, and schools.

The ability to write logical arguments based on substantive claims, sound reasoning, and relevant evidence is a cornerstone of the writing standards, with opinion writing—a basic form of argument—extending down into the earliest grades. In the area of research—both short, focused projects (such as those commonly required in the workplace) and longer term in depth research—is emphasized throughout the standards but most prominently in the writing strand since a written analysis and presentation of findings is so often critical. Additionally, in the CCSS annotated samples of student writing accompany the standards and help establish adequate performance levels in writing arguments, informational/explanatory texts, and narratives in the various grades.

The CCSS expect that students will grow their vocabularies through a mix of conversations, direct instruction, and reading. The standards will help students determine word meanings, appreciate the nuances of words, and steadily expand their repertoire of words and phrases. The standards help prepare students for real life experience at college and in 21st century careers. The standards recognize that students must be able to use formal English in their writing and speaking, but that they must also be able to make informed, skillful choices among the many ways to express themselves through language. Vocabulary and conventions are treated in their own strand, not because skills in these areas should be handled in isolation, but because their use extends across reading, writing, speaking, and listening. Finally, just as media and technology are integrated in school and life in the twenty-first

century, skills related to media use (both critical analysis and production of media) are integrated throughout the standards.

The CCSS for ELA meet or exceed expectations for higher thinking skills and rigor when compared to the current South Carolina ELA standards. An overall alignment of 98 percent exists between the two sets of standards, with the differences often just in the terminology. Ongoing professional development, coupled with a bridge document, will ensure that South Carolina teachers have the necessary information to provide effective instruction using the CCSS.

Mathematics

The CCSS K-5 standards provide students with a *solid foundation in whole numbers, addition, subtraction, multiplication, division, fractions and decimals*, which help young students build the foundation to successfully apply more demanding math concepts and procedures and move into applications. In kindergarten the standards follow successful international models and recommendations from the National Research Council's Early Math Panel report by focusing kindergarten work on the number core: learning how numbers correspond to quantities and learning how to put numbers together and take them apart (the beginnings of addition and subtraction). The CCSS K-5 standards build on the best state standards to provide detailed guidance to teachers on how to navigate their way through knotty topics such as fractions, negative numbers, and geometry, and do so by maintaining a continuous progression from grade to grade. The standards stress not only procedural skill but also conceptual understanding to make sure students are learning and absorbing the critical information they need to succeed at higher levels - rather than the current practices by which many students learn enough to get by on the next test, but forget it shortly thereafter, only to review again the following year.

Having built a strong foundation in kindergarten through grade five, the CCSS prepare students for hands on learning in geometry, algebra and probability and statistics. Students who have completed seventh grade and mastered the content and skills through the seventh grade will be well-prepared for algebra in grade eight. The CCSS middle school standards are robust and provide a coherent and rich preparation for high school mathematics.

The CCSS high school standards require students to practice applying mathematical ways of thinking to real world issues and challenges; they prepare students to think and reason mathematically. The high school standards set *a* rigorous definition of college and career readiness, by helping students develop a depth of understanding and ability to apply mathematics to novel situations as expected in college and workforce situations. The CCSS high school standards emphasize mathematical modeling, the use of mathematics and statistics to analyze empirical situations, understand them better, and improve decisions. The standards emphasize the process of choosing and using appropriate mathematics and statistics to analyze empirical situations, to understand them better, and to improve decisions. When making mathematical models, the use of technology presented as a valuable tool for varying assumptions, exploring consequences, and comparing predictions with data in the CCSS mathematics.

A comparison between the *South Carolina Academic Standards for Mathematics 2007* with the CCSS for mathematics yields an alignment percentage of 97 percent. The percentage of indicators that appears in the South Carolina standards but not in the CCSS is a consequence of the different foundation for the two sets of documents. The CCSS are not based on the National Council of Teachers of Mathematics (2000) model standards. The CCSS instead begins with the assumption that the standards should provide a coherent foundation for teaching and learning mathematics. In addition, the CCSS are strongly aligned with the 2006 Focal Points document created by the National Council of Teachers of Mathematics. The expectations for teaching and learning in the CCSS for mathematics meet or exceed those in the current South Carolina standards.

Recommendations

The SCDE recommends that the CCSS be adopted by South Carolina as its academic standards for ELA and mathematics with the option of adding up to the additional 15 percent as allowed. A comprehensive plan for the transition to and the understanding and implementation of the CCSS will be developed as outlined in the state's Race to the Top application. Full implementation of the CCSS will occur during the 2013-14 school year. South Carolina will also participate in a multi-state consortium to facilitate the effective and efficient development of common formative and summative assessments. These partnerships will also assist with the development or adoption of other instructional resources.

Professional development will be essential to ensure that all teachers understand and know how to use the CCSS effectively in classroom instruction. In addition, support documents will need to be created or revised to ensure that teachers have the necessary understanding to effectively implement the standards.

Because of the semantic differences in ELA, a "bridge" document will be developed to clarify the wording used in the current South Carolina standards in light of the wording used in the CCSS. In mathematics many topics are placed either earlier or later in the curriculum than is customary in South Carolina mathematics standards. This reordering of standards will necessitate careful planning so that students entering a grade from which a topic has been moved will have the opportunity to learn that content and be successful. Teachers will be provided with instructional resource supports and rationales for the shifts from grade-to-grade to ensure that appropriate instruction is given.

Overall, the CCSS are easy to read, understand, and use for instructional planning. A comprehensive plan including goals, strategies, activities, and a timeline for implementation has been developed as part of South Carolina's resubmission of its Race to the Top application. To support a smooth transition for South Carolina's teachers and students, the plan provides for the alignment of resources, development of instructional resources, training, and ongoing support over the next three years.

Conclusions

The Fordham reviewers of the CCSS make it clear that while the new standards should be adopted by states, the challenge will be to "operationalize" the standards so that they can support a system that will turn out college and career ready students. The transition to and implementation of the CCSS will require the SCDE to focus on the essential question of how to ensure that all teachers in all schools have opportunities not only to become aware of the new standards but also to understand how to implement them in their classrooms. The SCDE must partner with districts to work out a system that makes the implementation of the standards into the day-to-day work of ELA, mathematics, social studies, and science teachers. The implementation cannot rely on the old system of "awareness" but must become the shared goal of the education community.

- The CCSS were developed in the same way that state standards are developed. The difference between local standards development and the CCSS development is that the CCSSI possesses a vast array of important intellectual and fiscal resources to draw upon in the development of the documents. The list of people who participated in working on the ELA and mathematics standards is a Who's Who of instructional scholarship and pedagogy. No state, much less a state with few resources like South Carolina, could possibly afford to put together such standards.

- Standards development is expensive. Not only is it costly to develop the documents themselves, but the acquisition of aligned curriculum resources and the provision of professional development for teachers are also costly. Finally, the development of assessments to provide accountability measures adds to the total cost. The CCSSI brings South Carolina a set of fully developed standards in ELA and mathematics. In addition, adopting the CCSS will make it possible for South Carolina to take advantage of the collaborative development of assessments with other states. The adoption of the CCSS permits South Carolina to focus its resources on the implementation of the standards rather than on the development of standards and assessments.

- Are the CCSS perfect? As Chester E. Finn observes, "Let's bear in mind that perfection is the wrong criterion by which to appraise these standards. Perfect standards do not exist. The right questions to ask as you consider these reviews, other commentators' opinions, and the draft standards themselves are the following: Are they significantly better than what we're using today? And how could they be improved?"

- Adoption of the CCSS will make it possible for South Carolina to be competitive for Phase II of the federal Race to the Top grant. South Carolina would be eligible for a grant in excess of $175 million of which a significant portion would be for implementing the standards at the state and district levels.

The CCSS should be carefully considered for adoption based on the following:

- Students will have higher, clearer, and fewer standards, resulting in clearer learning expectations for them, their teachers, and their parents.

- Students will learn with high, rigorous standards that are internationally benchmarked.

- Students will not lose the rigor of the South Carolina standards. In fact, in some areas the reviewers identified ways in which the CCSS would be much more demanding than the current standards in mathematics and ELA.

- Students will benefit from a strong stance in favor of mathematical computation, the conventions of the English language, good literature, and America's founding documents.

- Students will take common assessments and have access to instructional resources from the partnership with other states.

- Students' curricula, instruction, and assessment will be well-aligned with national assessments including the SAT, ACT, and the National Assessment of Educational Progress (NAEP).

Appendix A

Comparative Review Process

South Carolina
Department of Education
Together, we can.

SC EDUCATION
OVERSIGHT COMMITTEE

STATE BOARD OF EDUCATION
SOUTH CAROLINA DEPARTMENT OF EDUCATION
and
SOUTH CAROLINA EDUCATION OVERSIGHT COMMITTEE

Memorandum of Agreement

Comparative Review Process

The State Board of Education (SBE)/South Carolina Department of Education (SCDE) and the Education Oversight Committee (EOC) agree to the process outlined below for comparative reviews of the South Carolina academic content standards. The intent of the comparative review is to examine formally the recommendations of a national and/or international group regarding what students should be learning in an academic content area. The comparative review can be initiated upon the request of either the SBE or the EOC if the next scheduled cyclical review of a content area is four or more years from the date of the request. Our aim is to balance the needs for orderly and transparent documents key to the improvement of education in South Carolina with an equally orderly and transparent process for changing policy or practice that is likely to improve education in South Carolina.

The Comparative Review Process includes the following steps:

1. Following the publication of recommendations from a national or international group regarding what students should be learning, either the SBE or the EOC may request a comparative review of SC academic content standards relative to the identified report;

2. The SCDE and EOC staff shall agree on the composition of a small group which may include agency staff persons, SC curricular leaders, and postsecondary educators in the content area to conduct a comparative review to respond to the following questions:
   - What new knowledge or insight does the national or international research bring to the SC Standards?
   - Is resolution of the differences important to raising student achievement in SC?
   - Can the differences be addressed through editorial clarifications, availability of instructional supplements, and professional development?
   - Do the differences require substantive changes in the system as a whole (e.g., accountability, assessment, districts, schools, classrooms)?

3. The small group shall provide a set of recommendations, which may include initiating a full cyclical review, to the SBE and EOC. With approval of both bodies, the recommendations are adopted for implementation.

_____
South Carolina Department of Education

_____
Education Oversight Committee

_5-27-09_____
Date

_June 1, 2009_____
Date

Appendix B
Timeline for the Review and Alignment of the
Common Core State Standards Initiative (CCSSI)

2010	
January-March	Request nominations from State Board of Education (SBE) and Education Oversight Committee (EOC) for review panel members. Select panel members for Common Core Review Panel (CCRP). Convene the CCRP and begin alignment review of current South Carolina standards with Common Core State Standards (CCSS). Prepare report detailing alignment findings, adoption recommendations, and suggested modifications to current instructional practices, student learning expectations and assessments. Review national and international content area recommendations, model standards documents, research- based best practices, workplace skills expectations (WorkKeys, PSAT, SAT, ACT) for consistency with the CCSS.
February	Hold a joint meeting of the SBE and the EOC to review the essential components of the CCSSI and the comparative review process. Hold CCRP meetings. Designate CCSS writing panel members.
March	Prepare the CCCRP report for presentation to the SBE and the EOC based on the CCCRP findings.
April	Present the CCCRP report to the SBE Begin CCRP meetings. Hold public comment period.

May	Present the CCCRP report to EOC. Request First Reading approval from SBE for adoption of the CCSS. Hold public comment period.
June	Request approval from the EOC for adoption of the CCSS
July	Request Second Reading approval from SBE for adoption of the CCSS.

Appendix C
Procedures for the Cyclical Review of Current South Carolina
K—12 Academic Standards and for the Development of
New Academic Standards

This document, in its entirety, can be accessed from the SCDE Web site (www.ed.sc.gov) under the Office of Standards and Learning section.

Appendix D
Common Core Standards Review Template

This is sample of the sheet used by the panel in the first step of the CCCRP

Standard K-1	Standard K-1	The student will begin to read and comprehend a variety of literary **texts** in print and nonprint formats.				
		A	**B**	**C**	**Comments**	**Cognitive Demand**
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).					

Appendix E
Transition Plan for the Implementation of the CCSS
(from the Race to the Top application)

After the adoption of the CCSS in 2010, South Carolina will implement a high-quality plan for supporting a statewide transition to and implementation of internationally benchmarked kindergarten through grade twelve standards that build toward college and career readiness by the time of high school graduation during the 2013-14 school year. The implementation plan will contain the essential components of stakeholder involvement, communications, resources, training and technical assistance, and personnel dedicated to a successful transition to CCSS and assessments. South Carolina will draw on its previous experiences related to statewide rollout of standards to transition to the enhanced CCSS.

Essential to the successful transition to new standards and assessments is stakeholder involvement. South Carolina's Transition Team will include teachers, principals, superintendents, parents, other educators, and representatives from educational organizations, business and community, and postsecondary education representing both two- and four-year institutions.

The transition to and implementation of the enhanced standards and the high-quality assessments will be built upon the already developed South Carolina Standards Support System (S^3), implemented by the SCDE in 2008 to provide specific support to districts, building level administrators, and teachers so that they understand what students should know and be able to do, how to provide standards-based instruction, and how to identify what to accept as evidence that students have achieved the standards. The S^3 focuses on three areas to support the instructional cycle: South Carolina academic standards and standards support documents; model lessons and curriculum resources; and high-quality professional learning opportunities.

The adoption of enhanced standards will require the development of curriculum resources to support the standards. Because the new CCSS will support curriculum that will go deeper into a fewer number of topics in English language arts and mathematics, and because of the number of states involved, South Carolina anticipates opportunities for collaboration and for the sharing of resources among these states.

Materials, alignment reports, crosswalk documents, and formative and interim professional guides developed during the transition year will be made available to the education community and to stakeholders through a variety of formats including web postings, optical media, and print formats.

The tentative timeline for the transition to the CCSS is provided in this document for your information:

Timeline	Process
2009–2010	• Adoption and Communication
2010–2011	• Planning and Alignment
2012–2013	• Transition and Training
2013–2014	• Implementation
2014–Ongoing	• Evaluation and Ongoing Support

Bibliography

Common Core State Standards for English Language Arts and Literacy Standards for History/Social Studies &Science Common Core State Standards Initiative. (2010, March 10). Standards/*K12.* Retrieved 2010, from CoreStandards.org.

Common Core State Standards for Mathematics
Common Core State Standards Initiative. (2010, March 10). Standards/*K12.* Retrieved 2010, from CoreStandards.org.

Finn, C. E. (2010, March 16). *Back-to-Basics.* Retrieved May 2010, from National Review Online: http://www.nationalreview.com

Finn, J. C., Porter-Magee, K., Winkler, A. M., Carmichael, S. B., & Wilson, W. S. (2010). *Review of the Draft K-12 Common Core Standards.* Washington, D.C.: Thomas B. Fordham Institute.

Munson, Lynn, CCSSI's K-12 Standards Earn An A-(2010, March 10)
Retrieved 2010 from http://blog.commoncore.org

National Council of Teachers of Mathematics. (2006). *Focal Points: The Quest for Coherence.* Reston, VA, United States of America: National Council of Teachers of Mathematic.

National Mathematics Advisory Panel. (2008). *Final Report of the National Mathematics Advisory Panel.* United States Department of Education, Washington, D.C.

Schmidt, W., Houang, R., & Cogan, L. (2002). A Coherent Curriculum: The Case of Mathematics. *American Journal of Education , 26* (2).

South Carolina Academic Standards for English Language Arts
South Carolina Department of Education. (2010, May 11). *Academic Standards.* Retrieved 2010, from South Carolina Department of Education: http://ed.sc.gov/agency/Standards-and-Learning/Academic-Standards/

South Carolina Academic Standards for Mathematics (2007)
Retrieved 2010, from South Carolina Department of Education: http://ed.sc.gov/agency/Standards-and-Learning/Academic-Standards/

South Carolina Department of Education. (2010, May 11). *Academic Standards.* Retrieved 2010, from South Carolina Department of Education: http://ed.sc.gov/agency/Standards-and-Learning/Academic-Standards/