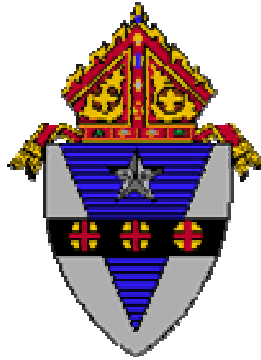


Archdiocese of Philadelphia



Curriculum Standards

English Language Arts and Mathematics

Grade Seven

INTRODUCTION

The mission statement of the Office of Catholic Education boldly proclaims that:

Catholic Schools form Catholic students to be full and practicing members of the Church, are centers of evangelization that call all to live fully the message of Jesus Christ, and are centers of academic excellence that rigorously prepare students to be life-long learners and contributing members of the global community.

From this we draw our primary focus, the faith formation of our students. Of major importance, too, is the academic preparation our students receive which will enable them to be college- and career-ready upon commencement from their experience in archdiocesan schools.

This document is a response to the call to prepare our students to become “contributing members of the global community.” It is the product of an in-depth study of the data related to existing curriculum, current research, input from respected professional organizations and hours of intense work and dialogue on the part of teachers and administrators from throughout the archdiocese.

Our data study encouraged us to build on the patterns of excellence which have been a hallmark of education in Archdiocesan schools. A review of the existing curriculum and input from many teachers called us to re-focus curriculum content so that instruction and learning would incorporate higher-level thinking and in-depth teaching. At the recommendation of the National Governors’ Association, we are moving forward with the adoption of the Common Core State Standards as the basis for curriculum content.

Included in this document are the Common Core State Standards for this level as well as the implementation guides prepared by the curriculum committee members who spent a great deal of time working on them.

As we move forward in the period of transition to full adoption of the Standards and to assessing archdiocesan students using national assessments, we feel confident that our teachers will continue to move forward with the same dedication that will prepare our students to stand shoulder-to-shoulder with the best students both nationally and internationally.

ACKNOWLEDGEMENTS

We would like to acknowledge the following curriculum committee members for their tireless efforts in the preparation of this document:

| English Language Arts | Mathematics | |
|---|-----------------------------------|------------------|
| Mary Tremper, Chairperson | Kate Reardon, Chairperson | |
| Mary Battson | Diane Brown | Jane Ries-Jacoby |
| Mary Finnegan | Mary Anne Corcoran | Donna Scully |
| Mary Katz | Karen Dorneman | Bridget Tigue |
| Celie Magee | Elizabeth Dowling | Andrea Triner |
| Mary McFillin | Mary Gill | Lynne Wlodarczyk |
| Sister Joan Felicia O'Reilly | Sue Macrone | |
| Early Childhood – Kathleen Smith | Assessment – Debbie Jaster | |

We are also grateful to the **Elementary Technology Committee** for preparing web links to these guidelines.

© Office of Catholic Education, Archdiocese of Philadelphia, 2011

Common Core Standards © Copyright 2010. National Governors Association Center for Best Practices and Council of Chief State School Officers. All rights reserved. Used with permission.

CONTENTS

| | |
|-------------------------------------|------------|
| ENGLISH LANGUAGE ARTS..... | 4 |
| Common Core State Standards..... | 5 |
| Implementation Guides..... | 42 |
| MATHEMATICS..... | 59 |
| Common Core State Standards..... | 60 |
| Implementation Guides..... | 91 |
| ASSESSMENT AND GRADING..... | 114 |
| WEB SITES AND RESOURCES..... | 117 |

NOTE:

The English Language Arts and Mathematics content are intentionally contained in the same document. With research indicating that skills should be presented in an integrated context, it is the hope that teachers will be more aware of the total curriculum at this level rather than isolated subject matter and make deliberate connections between skills presented in each area.

Also included at each level (with the exception of Kindergarten) are the Common Core State Standards for the grade below and the grade above each level. These are placed here so that, during the transition period leading up to full implementation of the Standards, the teacher is aware of skills that should have been presented at an earlier level and makes plans to incorporate these skills in the event that they have not been presented. It is important, too, that skills designated for higher levels are not anticipated at the current instructional level.



English Language Arts

Grade 7

Common Core State Standards – English Language Arts –Grade 6

Common Core State Standards – English Language Arts – Grade 7

Common Core Standards – English Language Arts – Grade 8

Archdiocesan Implementation Guides – Grade 7

Key Points In English Language Arts

Reading

- The standards 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 curriculum, 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.

Writing

- 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.
- 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.
- 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.

Speaking and Listening

- The standards require that students gain, evaluate, and present increasingly complex information, ideas, and evidence through listening and speaking as well as through media.
- An important focus of the speaking and listening standards is academic discussion in one-on-one, small-group, and whole-class settings. Formal presentations are one important way such talk occurs, but so is the more informal discussion that takes place as students collaborate to answer questions, build understanding, and solve problems.

Language

- The standards 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.

Media and Technology

- 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.



Key Features of the Standards

Reading: Text complexity and the growth of comprehension

The Reading standards place equal emphasis on the sophistication of what students read and the skill with which they read. Standard 10 defines a grade-by-grade “staircase” of increasing text complexity that rises from beginning reading to the college and career readiness level. Whatever they are reading, students must also show a steadily growing ability to discern more from and make fuller use of text, including making an increasing number of connections among ideas and between texts, considering a wider range of textual evidence, and becoming more sensitive to inconsistencies, ambiguities, and poor reasoning in texts.

Writing: Text types, responding to reading, and research

The Standards acknowledge the fact that whereas some writing skills, such as the ability to plan, revise, edit, and publish, are applicable to many types of writing, other skills are more properly defined in terms of specific writing types: arguments, informative/explanatory texts, and narratives. Standard 9 stresses the importance of the writing-reading connection by requiring students to draw upon and write about evidence from literary and informational texts. Because of the centrality of writing to most forms of inquiry, research standards are prominently included in this strand, though skills important to research are infused throughout the document.

Speaking and Listening: Flexible communication and collaboration

Including but not limited to skills necessary for formal presentations, the Speaking and Listening standards require students to develop a range of broadly useful oral communication and interpersonal skills. Students must learn to work together, express and listen carefully to ideas, integrate information from oral, visual, quantitative, and media sources, evaluate what they hear, use media and visual displays strategically to help achieve communicative purposes, and adapt speech to context and task.

Language: Conventions, effective use, and vocabulary

The Language standards include the essential “rules” of standard written and spoken English, but they also approach language as a matter of craft and informed choice among alternatives. The vocabulary standards focus on understanding words and phrases, their relationships, and their nuances and on acquiring new vocabulary, particularly general academic and domain-specific words and phrases.

Appendices A, B, and C

- Appendix A contains supplementary material on reading, writing, speaking and listening, and language as well as a glossary of key terms.

- Appendix B consists of text exemplars illustrating the complexity, quality, and range of reading appropriate for various grade levels with accompanying sample performance tasks.
 - Appendix C includes annotated samples demonstrating at least adequate performance in student writing at various grade levels
-
-

Anchor Standards for Reading 6-12

The grades 6–12 standards define what students should understand and be able to do by the end of each grade. They correspond to the College and Career Readiness (CCR) anchor standards below by number. The CCR and grade-specific standards are necessary complements—the former providing broad standards, the latter providing additional specificity—that together define the skills and understandings that all students must demonstrate.

Key Ideas and Details

1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
3. Analyze how and why individuals, events, and ideas develop and interact over the course of a text.

Craft and Structure

4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
5. Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.
6. Assess how point of view or purpose shapes the content and style of a text.

Integration of Knowledge and Ideas

7. Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words.¹
8. Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
9. Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

Range of Reading and Level of Text Complexity

10. Read and comprehend complex literary and informational texts independently and proficiently.

Note on range and content of student reading

To become college and career ready, students must grapple with works of exceptional craft and thought whose range extends across genres, cultures, and centuries. Such works offer profound insights into the human condition and serve as models for students' own thinking and writing. Along with high-quality contemporary works, these texts should be chosen from among seminal U.S. documents, the classics of American literature, and the timeless dramas of Shakespeare. Through wide and deep reading of literature and literary nonfiction of steadily increasing sophistication, students gain a reservoir of literary and cultural knowledge, references, and images; the ability to evaluate intricate arguments; and the capacity to surmount the challenges posed by complex texts.

¹ Please see "Research to Build Knowledge" in Writing and "Comprehension and Collaboration" in Speaking and Listening for additional standards relevant to gathering, assessing, and applying information from print and digital sources.

Anchor Standards for Writing

Text Types and Purposes¹

1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

3. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

Production and Distribution of Writing

4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.
6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

Research to Build and Present Knowledge

7. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
8. Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.
9. Draw evidence from literary or informational texts to support analysis, reflection, and research.

Range of Writing

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.

Note on range and content of student writing

For students, writing is a key means of asserting and defending claims, showing what they know about a subject, and conveying what they have experienced, imagined, thought, and felt. To be college- and career- ready writers, students must take task, purpose, and audience into careful consideration, choosing words, information, structures, and formats deliberately. They need to know how to combine elements of different kinds of writing—for example, to use narrative strategies within argument and explanation within narrative—to produce complex and nuanced writing. They need to be able to use technology strategically when creating, refining, and collaborating on writing. They have to become adept at gathering information, evaluating sources, and citing material accurately, reporting findings from their research and analysis of sources in a clear

and cogent manner. They must have the flexibility, concentration, and fluency to produce high-quality first-draft text under a tight deadline as well as the capacity to revisit and make improvements to a piece of writing over multiple drafts when circumstances encourage or require it.

Anchor Standards for Listening and Speaking 6-12

Comprehension and Collaboration

1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
3. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.

Presentation of Knowledge and Ideas

4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.
5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.
6. Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.

Note on range and content of student speaking and listening

To become college and career ready, students must have ample opportunities to take part in a variety of rich, structured conversations—as part of a whole class, in small groups, and with a partner—built around important content in various domains. They must be able to contribute appropriately to these conversations, to make comparisons and contrasts, and to analyze and synthesize a multitude of ideas in accordance with the standards of evidence appropriate to a particular discipline. Whatever their intended major or profession, high school graduates will depend heavily on their ability to listen attentively to others so that they are able to build on others' meritorious ideas while expressing their own clearly and persuasively.

New technologies have broadened and expanded the role that speaking and listening play in acquiring and sharing knowledge and have tightened their link to other forms of communication. The Internet has accelerated the speed at which connections between speaking, listening, reading, and writing can be made, requiring that students be ready to use these modalities nearly simultaneously. Technology itself is changing quickly, creating a new urgency for students to be adaptable in response to change.

Anchor Standards for Language 6-12

Conventions of Standard English

1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

Knowledge of Language

3. Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

Vocabulary Acquisition and Use

4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.
5. Demonstrate understanding of word relationships and nuances in word meanings.
6. Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Note on range and content of student language use

To be college and career ready in language, students must have firm control over the conventions of standard English. At the same time, they must come to appreciate that language is as at least as much a matter of craft as of rules and be able to choose words, syntax, and punctuation to express themselves and achieve particular functions and rhetorical effects. They must also have extensive vocabularies, built through reading and study, enabling them to comprehend complex texts and engage in purposeful writing about and conversations around content. They need to become skilled in determining or clarifying the meaning of words and phrases they encounter, choosing flexibly from an array of strategies to aid them. They must learn to see an individual word as part of a network of other words—words, for example, that have similar denotations but different

connotations. The inclusion of Language standards in their own strand should not be taken as an indication that skills related to conventions, effective language use, and vocabulary are unimportant to reading, writing, speaking, and listening; indeed, they are inseparable from such contexts.

ELA Standards for Grade 6

Reading: Literature

Key Ideas and Details

RL.6.1. Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

RL.6.2. Determine a theme or central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.

RL.6.3. 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.

Craft and Structure

RL.6.4. 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.

RL.6.5. 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.

RL.6.6. Explain how an author develops the point of view of the narrator or speaker in a text.

Integration of Knowledge and Ideas

RL.6.7. Compare and contrast the experience of reading a story, drama, or poem 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.

RL.6.8. (Not applicable to literature)

RL.6.9. 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.

Range of Reading and Level of Text Complexity

RL.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.

Reading: Informational Text

Key Ideas and Details

RI.6.1. Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

RI.6.2. Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.

RI.6.3. Analyze in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text (e.g., through examples or anecdotes).

Craft and Structure

RI.6.4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.

RI.6.5. 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.

RI.6.6. Determine an author's point of view or purpose in a text and explain how it is conveyed in the text.

Integration of Knowledge and Ideas

RI.6.7. Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue.

RI.6.8. Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not.

RI.6.9. 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).

Range of Reading and Level of Text Complexity

RI.6.10. 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.

Writing

Text Types and Purposes

W.6.1. Write arguments to support claims with clear reasons and relevant evidence.

- Introduce claim(s) and organize the reasons and evidence clearly.
- Support claim(s) with clear reasons and relevant evidence, using credible sources and demonstrating an understanding of the topic or text.
- Use words, phrases, and clauses to clarify the relationships among claim(s) and reasons.
- Establish and maintain a formal style.
- Provide a concluding statement or section that follows from the argument presented.

W.6.2. Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.

- 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.
- Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.
- Use appropriate transitions to clarify the relationships among ideas and concepts.
- Use precise language and domain-specific vocabulary to inform about or explain the topic.
- Establish and maintain a formal style.
- Provide a concluding statement or section that follows from the information or explanation presented.

W.6.3. Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.

- 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.
- Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters.
- Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another.
- Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events.
- Provide a conclusion that follows from the narrated experiences or events.

Production and Distribution of Writing

W.6.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)

W.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.

W.6.6. Use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of three pages in a single sitting.

Research to Build and Present Knowledge

W.6.7. Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate.

W.6.8. 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.

W.6.9. Draw evidence from literary or informational texts to support analysis, reflection, and research.

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”).

Apply grade 6 Reading standards to literary nonfiction (e.g., “Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not”).

Range of Writing

W.6.10. 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.

Speaking and Listening

Comprehension and Collaboration

SL.6.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.

- 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.
- Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.
- Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.
- Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.

SL.6.2. Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.

SL.6.3. Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.

Presentation of Knowledge and Ideas

SL.6.4. 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.

SL.6.5.. Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.

SL.6.6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

Language

Conventions of Standard English

L.6.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

- Ensure that pronouns are in the proper case (subjective, objective, possessive).
- Use intensive pronouns (e.g., myself, ourselves).
- Recognize and correct inappropriate shifts in pronoun number and person.*
- Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents).*
- Recognize variations from standard English in their own and others' writing and speaking, and identify and use strategies to improve expression in conventional language.*

L.6.2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

- Use punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements.*
- Spell correctly.

Knowledge of Language

L.6.3. Use knowledge of language and its conventions when writing, speaking, reading, or listening.

- Vary sentence patterns for meaning, reader/listener interest, and style.*
- Maintain consistency in style and tone.*

Vocabulary Acquisition and Use

L.6.4. 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.

- 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.
- Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).

- 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.
- 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).

L.6.5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

- Interpret figures of speech (e.g., personification) in context.
- Use the relationship between particular words (e.g., cause/effect, part/whole, item/category) to better understand each of the words.
- Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., stingy, scrimping, economical, un wasteful, thrifty).

L.6.6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Grade 7

Reading: Literature

Key Ideas and Details

RL.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.

RL.7.2. Determine a theme or central idea of a text and analyze its development over the course of the text; provide an objective summary of the text.

RL.7.3. Analyze how particular elements of a story or drama interact (e.g., how setting shapes the characters or plot).

Craft and Structure

RL.7.4. 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.

RL.7.5.. Analyze how a drama's or poem's form or structure (e.g., soliloquy, sonnet) contributes to its meaning.

RL.7.6. Analyze how an author develops and contrasts the points of view of different characters or narrators in a text.

Integration of Knowledge and Ideas

RL.7.7. Compare and contrast a written story, drama, or poem to its audio, filmed, staged, or multimedia version, analyzing the effects of techniques unique to each medium (e.g., lighting, sound, color, or camera [focus](#) and angles in a film).

RL.7.8. (Not applicable to literature)

RL.7.9. 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.

Range of Reading and Level of Text Complexity

RL.7.10. 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.

Reading: Informational Text

Key Ideas and Details

RI.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.

RI.7.2. Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text.

RI.7.3. 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).

Craft and Structure

RI.7.4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone.

RI.7.5. 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.

RI.7.6. Determine an author's point of view or purpose in a text and analyze how the author distinguishes his or her position from that of others.

Integration of Knowledge and Ideas

RI.7.7. Compare and contrast a text to an audio, video, or multimedia version of the text, analyzing each medium's portrayal of the subject (e.g., how the delivery of a speech affects the impact of the words).

RI.7.8. Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.

RI.7.9. 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.

Range of Reading and Level of Text Complexity

RI.7.10. 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.

Writing

Text Types and Purposes

W.7.1. Write arguments to support claims with clear reasons and relevant evidence.

- Introduce claim(s), acknowledge alternate or opposing claims, and organize the reasons and evidence logically.
- Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.
- Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), reasons, and evidence.
- Establish and maintain a formal style.
- Provide a concluding statement or section that follows from and supports the argument presented.

W.7.2. Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.

- 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.
- Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.

- Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.
- Use precise language and domain-specific vocabulary to inform about or explain the topic.
- Establish and maintain a formal style.
- Provide a concluding statement or section that follows from and supports the information or explanation presented.

W.7.3. Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.

- 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.
- Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters.
- Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another.
- Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events.
- Provide a conclusion that follows from and reflects on the narrated experiences or events.

Production and Distribution of Writing

W.7.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)

W.7.5. 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.

W.7.6. Use technology, including the Internet, to produce and publish writing and link to and cite sources as well as to interact and collaborate with others, including linking to and citing sources.

Research to Build and Present Knowledge

W.7.7. Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation.

W.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.

W.7.9. Draw evidence from literary or informational texts to support analysis, reflection, and research.

- 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”).
- Apply *grade 7 Reading standards* to literary nonfiction (e.g. “Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims”).

Range of Writing

W.7.10. 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.

Speaking and Listening

Comprehension and Collaboration

SL.7.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others’ ideas and expressing their own clearly.

- 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.
- Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.
- 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.
- Acknowledge new information expressed by others and, when warranted, modify their own views.

SL.7.2. Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.

SL.7.3. Delineate a speaker’s argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.

Presentation of Knowledge and Ideas

SL.7.4. 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.

SL.7.5. Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.

SL.7.6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

Language

Conventions of Standard English

L.7.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

- Explain the function of phrases and clauses in general and their function in specific sentences.
- Choose among simple, compound, complex, and compound-complex sentences to signal differing relationships among ideas.
- Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.*

L.7.2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

- Use a comma to separate coordinate adjectives (e.g., *It was a fascinating, enjoyable movie* but not *He wore an old[,] green shirt*).
- Spell correctly.

Knowledge of Language

L.7.3. Use knowledge of language and its conventions when writing, speaking, reading, or listening.

- Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.*

Vocabulary Acquisition and Use

L.7.4. 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.

- 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.
- Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., *belligerent*, *bellicose*, *rebel*).
- 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.
- 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).

L.7.5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

- Interpret figures of speech (e.g., literary, biblical, and mythological allusions) in context.
- Use the relationship between particular words (e.g., synonym/antonym, analogy) to better understand each of the words.
- Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., *refined*, *respectful*, *polite*, *diplomatic*, *condescending*).

L.7.6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Grade 8

Reading: Literature

Key Ideas and Details

- RL.8.1. Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
- RL.8.2. 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; provide an objective summary of the text.
- RL.8.3. 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.

Craft and Structure

- RL.8.4. Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.
- RL.8.5. 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.
- RL.8.6. Analyze how differences in the points of view of the characters and the audience or reader (e.g., created through the use of dramatic irony) create such effects as suspense or humor.

Integration of Knowledge and Ideas

- RL.8.7. 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.
- RL.8.8. (Not applicable to literature)
- RL.8.9. 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.

Range of Reading and Level of Text Complexity

RL.8.10. By the end of the year, read and comprehend literature, including stories, dramas, and poems, at the high end of grades 6–8 text complexity band independently and proficiently.

Reading: Informational Text

Key Ideas and Details

RI.8.1. Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.

RI.8.2. Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.

RI.8.3. Analyze how a text makes connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, [analogies](#), or categories).

Craft and Structure

RI.8.4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.

RI.8.5. 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.

RI.8.6. 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.

Integration of Knowledge and Ideas

RI.8.7. Evaluate the advantages and disadvantages of using different [mediums](#) (e.g., print or digital text, video, multimedia) to present a particular topic or idea.

RI.8.8. Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced.

RI.8.9. 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.

Range of Reading and Level of Text Complexity

RI.8.10. By the end of the year, read and comprehend literary nonfiction at the high end of the grades 6–8 text complexity band independently and proficiently.

Writing

Text Types and Purposes

W.8.1. Write arguments to support claims with clear reasons and relevant evidence.

- Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.
- Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.
- Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.
- Establish and maintain a formal style.
- Provide a concluding statement or section that follows from and supports the argument presented.

W.8.2. Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.

- 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.
- Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.
- Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.

- Use precise language and domain-specific vocabulary to inform about or explain the topic.
- Establish and maintain a formal style.
- Provide a concluding statement or section that follows from and supports the information or explanation presented.

W.8.3. Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.

- 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.
- Use narrative techniques, such as dialogue, pacing, description, and reflection, to develop experiences, events, and/or characters.
- 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.
- Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events.
- Provide a conclusion that follows from and reflects on the narrated experiences or events.

Production and Distribution of Writing

W.8.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)

W.8.5. 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.

W.8.6. Use technology, including the Internet, to produce and publish writing and present the [relationships](#) between information and ideas efficiently as well as to interact and collaborate with others.

Research to Build and Present Knowledge

W.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.

W.8.8. 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.

W.8.9. Draw evidence from literary or informational texts to support analysis, reflection, and research.

- 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”).
- 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; recognize when irrelevant evidence is introduced”).

Range of Writing

W.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).

Speaking and Listening

Comprehension and Collaboration

SL.8.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others’ ideas and expressing their own clearly.

- 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.
- Follow rules for collegial discussions and decision-making, track progress toward specific goals and deadlines, and define individual roles as needed.
- Pose questions that connect the ideas of several speakers and respond to others’ questions and comments with relevant evidence, observations, and ideas.
- Acknowledge new information expressed by others, and, when warranted, qualify or justify their own views in light of the evidence presented.

SL.8.2. Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.

SL.8.3. Delineate a speaker’s argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced.

Presentation of Knowledge and Ideas

SL.8.4. Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.

SL.8.5. Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.

SL.8.6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate

Language

Conventions of Standard English

L.8.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

- Explain the function of verbals (gerunds, participles, infinitives) in general and their function in particular sentences.
- Form and use verbs in the active and passive voice.
- Form and use verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood.
- Recognize and correct inappropriate shifts in verb voice and mood.*

L.8.2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

- Use punctuation (comma, ellipsis, dash) to indicate a pause or break.
- Use an ellipsis to indicate an omission.
- Spell correctly.

Knowledge of Language

L.8.3. Use knowledge of language and its conventions when writing, speaking, reading, or listening.

- 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).

Vocabulary Acquisition and Use

L.8.4. 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.

- 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.
- Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., *precede*, *recede*, *secede*).
- 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.
- 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).

L.8.5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

- Interpret figures of speech (e.g. verbal irony, puns) in context.
- Use the relationship between particular words to better understand each of the words.
- Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., *bullheaded*, *willful*, *firm*, *persistent*, *resolute*).

L.8.6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Literacy Standards for History/Social Studies 6-8

Key Ideas and Details

RH.6-8.1. Cite specific textual evidence to support analysis of primary and secondary sources.

RH.6-8.2. Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.

RH.6-8.3. Identify key steps in a text's description of a process related to history/social studies (e.g., how a bill becomes law, how interest rates are raised or lowered).

Craft and Structure

RH.6-8.4. Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.

RH.6-8.5. Describe how a text presents information (e.g., sequentially, comparatively, causally).

RH.6-8.6. Identify aspects of a text that reveal an author's point of view or purpose (e.g., loaded language, inclusion or avoidance of particular facts).

Integration of Knowledge and Ideas

RH.6-8.7. Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.

RH.6-8.8. Distinguish among fact, opinion, and reasoned judgment in a text.

RH.6-8.9. Analyze the relationship between a primary and secondary source on the same topic.

Range of Reading and Level of Text Complexity

RH.6-8.10. By the end of grade 8, read and comprehend history/social studies texts in the grades 6–8 text complexity band independently and proficiently.

Literacy Standards for Science and Technical Subjects

Key Ideas and Details

RST.6-8.1. Cite specific textual evidence to support analysis of science and technical texts.

RST.6-8.2. Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

RST.6-8.3. Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

Craft and Structure

RST.6-8.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.

RST.6-8.5. Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.

RST.6-8.6. Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.

Integration of Knowledge and Ideas

RST.6-8.7. Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

RST.6-8.8. Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.

RST.6-8.9. Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

Range of Reading and Level of Text Complexity

RST.6-8.10. By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently.

Writing Standards for History/Science/Technical Subjects 6-8

Text Types and Purposes

WHST.6-8.1. Write arguments focused on discipline-specific content.

- Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.
- Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.
- Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.
- Establish and maintain a formal style.
- Provide a concluding statement or section that follows from and supports the argument presented.

WHST.6-8.2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

- Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.
- Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.
- Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.
- Use precise language and domain-specific vocabulary to inform about or explain the topic.
- Establish and maintain a formal style and objective tone.
- Provide a concluding statement or section that follows from and supports the information or explanation presented.

WHST.6-8.3. (See note; not applicable as a separate requirement)

Production and Distribution of Writing

WHST.6-8.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

WHST.6-8.5. 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.

WHST.6-8.6. Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

Research to Build and Present Knowledge

WHST.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.

WHST.6-8.8. 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.

WHST.6-8.9. Draw evidence from informational texts to support analysis reflection, and research.

Range of Writing

WHST.6-8.10. Write routinely over extended time frames (time for 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.

Note

Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.





Measuring Text Complexity

Qualitative evaluation of the text

- Levels of meaning, structure, language conventionality and clarity, and knowledge demands

Quantitative evaluation of the text

- Readability measures and other scores of text complexity

Matching reader to text and task

- Reader variables (such as motivation, knowledge, and experiences) and task variables (such as purpose and the complexity generated by the task assigned and the questions posed)

Students in K–5 apply the Reading standards to the following range of text types, with texts selected from a broad range of cultures and periods.

| Literature | | | Informational Text |
|---|--|--|--|
| Stories | Dramas | Poetry | Literary Nonfiction and Historical, Scientific, and Technical Texts |
| Includes children's adventure stories, folktales, legends, fables, fantasy, realistic fiction, and myth | Includes staged dialogue and brief familiar scenes | Includes nursery rhymes and the subgenres of the narrative poem, limerick, and free verse poem | Includes biographies and autobiographies; books about history, social studies, science, and the arts; technical texts, including directions, forms, and information displayed in graphs, charts, or maps; and digital sources on a range of topics |

Texts Illustrating the Complexity, Quality, & Range of Student Reading 4-8

| | Literature: Stories, Drama, Poetry | Informational Texts: Literary Nonfiction and Historical, Scientific, and Technical Texts |
|-----|---|--|
| 4-5 | <ul style="list-style-type: none"> • <i>Alice’s Adventures in Wonderland</i> by Lewis Carroll (1865) • “Casey at the Bat” by Ernest Lawrence Thayer (1888) • <i>The Black Stallion</i> by Walter Farley (1941) • “Zlateh the Goat” by Isaac Bashevis Singer (1984) • <i>Where the Mountain Meets the Moon</i> by Grace Lin (2009) | <ul style="list-style-type: none"> • <i>Discovering Mars: The Amazing Story of the Red Planet</i> by Melvin Berger (1992) • <i>Hurricanes: Earth’s Mightiest Storms</i> by Patricia Lauber (1996) • <i>A History of US</i> by Joy Hakim (2005) • <i>Horses</i> by Seymour Simon (2006) • <i>Quest for the Tree Kangaroo: An Expedition to the Cloud Forest of New Guinea</i> by Sy Montgomery (2006) |
| 6-8 | <ul style="list-style-type: none"> • <i>Little Women</i> by Louisa May Alcott (1869) • <i>The Adventures of Tom Sawyer</i> by Mark Twain (1876) • “The Road Not Taken” by Robert Frost (1915) • <i>The Dark Is Rising</i> by Susan Cooper (1973) • <i>Dragonwings</i> by Laurence Yep (1975) • <i>Roll of Thunder, Hear My Cry</i> by Mildred Taylor (1976) | <ul style="list-style-type: none"> • “Letter on Thomas Jefferson” by John Adams (1776) • <i>Narrative of the Life of Frederick Douglass, an American Slave</i> by Frederick Douglass (1845) • “Blood, Toil, Tears and Sweat: Address to Parliament on May 13th, 1940” by Winston Churchill (1940) • <i>Harriet Tubman: Conductor on the Underground Railroad</i> by Ann Petry (1955) • <i>Travels with Charley: In Search of America</i> by John Steinbeck (1962) |

Note:

Given space limitations, the illustrative texts listed above are meant only to show individual titles that are representative of a wide range of topics and genres. (See Appendix B of the Common Core Standards for excerpts of these and other texts illustrative of K–5 text complexity, quality, and range.) At a curricular or instructional level, within and across grade levels, texts need to be selected around topics or themes that generate knowledge and allow students to study those topics or themes in depth. On the next page is an **example** of progressions of texts building knowledge across grade levels.

Implementation Guide – Grade 7 ELA

COMMON CORE STANDARDS: ELA

Implementing the Common Core Standards may seem to be a daunting task, however, the ELA Curriculum Committee has created four sample guidelines/templates to introduce you to the standards. We have provided a guideline for each of the four types of writing prescribed for each grade. You will see that we have correlated Reading Standards with each Writing piece. These guidelines are meant to be a starting point and while they are comprehensive they do not include every standard. Our intent is that teachers will plug-in other standards as needed. The book companies have created correlations to the Common Core Standards so you will have them to use as well, and you will have the flexibility to add ELA standards from each category (Reading, Writing, Speaking and Listening, and Language) depending on the theme or story.

Coding: ELA.7.A.1 refers to English Language Arts –Grade 7 Topic A – Skill 1

| | | |
|--|--|--|
| Persuasive text | Writing Standards: ELA7.I.1 Write arguments to support claims with clear reasons and relevant evidence. (i.e. Defend or deny: citizens today have the right to bear arms.) | Reading Standards: ELA7.E Key ideas and details; 7.F Integration of knowledge and ideas |
| Essential Questions <i>What should I be able to answer? What guides my thinking?</i> | Why is persuasion an important art to learn? How do I organize information into a persuasive essay? How do I gather relevant information? How do I develop a thesis statement? How do I write arguments to support claims? | Where do I gather information about my topic? How do I analyze what I read? How do I corroborate research information? |

| | | |
|--|--|--|
| <p>Assessment <i>What will I be expected to know, understand, and be able to do in order to demonstrate my learning?</i></p> | <p>show understanding of related content material through completion of a note-taking guide; conduct research and discern what is relevant to my topic and write note cards to gather together information; organize my research and use an organizational tool such as a graphic organizer or outline to guide the presentation of my argument; and complete an essay that presents my argument and includes supporting information and a conclusion.</p> | <p>utilize texts, the library, online, and other resources to gather information about my topic, demonstrating ability to locate information in a text and online; evaluate information for validity and usefulness based on prior knowledge and my thesis statement. compare the information from several sources in order to select that which best supports my topic through the use of a T chart or other graphic organizer.</p> |
| <p>Skills <i>What skills do I need to have in order to answer the essential questions?</i></p> | <p>7.K.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.K.9. Draw evidence from literary or informational texts to support analysis, reflection, and research. 7.1.a. Introduce claim(s), acknowledge alternate or opposing claims, and organize the reasons and evidence logically. 7.1.b. Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and</p> | <p>7.E. 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.E.2. Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text. 7.E.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.F. 4. Determine the meaning of words and phrases as they are used in a text, including</p> |

| | | |
|--|---|--|
| | <p>demonstrating an understanding of the topic or text.</p> <p>7.1.c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), reasons, and evidence.</p> <p>7.1.d. Establish and maintain a formal style.</p> <p>7.1.e. Provide a concluding statement or section that follows from and supports the argument presented.</p> <p>7.J.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> <p>7.J.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.</p> <p>7.J.6. Use technology, including the Internet, to produce and publish writing and link to and cite sources as well as to interact and collaborate with others, including linking to and citing sources.</p> <p>7.N. 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.</p> <p>7.N.1.a. Explain the function of phrases and clauses in general and their function in specific sentences.</p> | <p>figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone.</p> <p>7.F.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.</p> <p>7.F.6. Determine an author's point of view or purpose in a text and analyze how the author distinguishes his or her position from that of others.</p> <p>7.G. 7. Compare and contrast a text to an audio, video, or multimedia version of the text, analyzing each medium's portrayal of the subject (e.g., how the delivery of a speech affects the impact of the words).</p> <p>7.G.8. Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.</p> <p>7.G.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.</p> |
|--|---|--|

| | | |
|--|--|--|
| | <p>7.N.1.b. Choose among simple, compound, complex, and compound-complex sentences to signal differing relationships among ideas.</p> <p>7.N.1.c. Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.</p> <p>7.N.2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.</p> <p>7.N.2.a. Use a comma to separate coordinate adjectives (e.g., <i>It was a fascinating, enjoyable movie</i> but not <i>He wore an old[,] green shirt</i>).</p> <p>7.N.2.b. Spell correctly.</p> <p>7.O.3. Use knowledge of language and its conventions when writing, speaking, reading, or listening.</p> <p>7.O.3.a. Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.</p> <p>7.P.6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.</p> | <p>H.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.</p> |
|--|--|--|

| | | |
|---|--|---|
| Content <i>What content do I need to know in order to answer the essential questions?</i> | <p>Take organized notes from resources.</p> <p>Understand the writing process and purposes of writing.</p> <p>Know how to cite resources and the correct format for a bibliography.</p> <p>Be able to, through appropriate vocabulary, style, and tone, convey my arguments.</p> | <p>Locate and recognize which nonfiction resources are suitable for my topic and know how to evaluate them.</p> <p>Have knowledge of associated vocabulary: point of view, propaganda, inference, compare and contrast, argument, support.</p> <p>Know how to summarize nonfiction.</p> |
| Integration of Learning <i>How does this learning connect to my other areas (subjects) of learning?</i> | <p>This connects to social studies through understanding of the Constitution and the amendment process. This relates to technology as I use online resources and word processing programs.</p> | |
| Tools for Learning <i>Which tools will I use that will assist me in my learning?</i> | <p>Use a computer, the internet, the library, newspapers or other news media, and my social studies text to compile information for this essay</p> <p>use reference materials, such as dictionaries, thesauruses, glossaries, style manuals, and databases.</p> | <p>Texts, encyclopedia, dictionaries and glossaries, news papers and news media will be read/utilized.</p> |

Which 21st Century Skills are woven into this standard?

___ Critical Thinking/Problem Solving
 ___ Communications

___ Collaboration
 ___ Creativity/Innovation

What level of rigor will I be using? (A, C)___ _ What level of relevance will I be using?___ _ (B,D)

| | | |
|---|--|---|
| Narrative Writing | Writing Standards: ELA 7.I.3 Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences. | Reading Standards: ELA 7.A Key ideas and details; ELA 7.B Craft and structure |
| Essential Questions <i>What should I be able to answer? What guides my thinking?</i> | <p>Why do we tell stories?</p> <p>What is an interesting real or imagined experience that I can relate to others through a narrative?</p> <p>How do I use narrative techniques to develop my story?</p> <p>What is a satisfying ending to a story?</p> | <p>How does a writer create narrative pieces that respond to topic, purpose and audience?</p> <p>How do the elements of a narrative interact?</p> <p>How does an author present points of view of different characters and narrators?</p> <p>How does figurative language contribute to the enjoyment of the story?</p> <p>How does a writer create narrative pieces that respond to topic, purpose and audience?</p> |
| Assessment <i>What will I be expected to know, understand, and be able to do in order to demonstrate my learning?</i> | <p>Brainstorm ideas for an interesting narrative and create a plot diagram; and</p> <p>Write a narrative incorporating figurative language and use peer editing to refine the work.</p> | <p>Identify the elements of narratives,</p> <p>Discuss various points of view,</p> <p>Determine theme of a text,</p> <p>And identify figurative language.</p> |

| | | |
|--|---|--|
| <p>Skills <i>What skills do I need to have in order to answer the essential questions?</i></p> | <p>7.I.3 Write a narrative to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.</p> <p>7.I.3.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.</p> <p>7.I.3.b Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters.</p> <p>7.I.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.</p> <p>7.I.3.d Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events.</p> <p>7.I.3.e Provide a conclusion that follows from and reflects on the narrated experiences.</p> <p>7.J.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to the task, purpose and audience.</p> <p>7.J.5 With some guidance and support from peers and</p> | <p>7.A.2 Determine a theme or central idea of a text and analyze the development over the course of the text; provide an objective summary of the text.</p> <p>7.A.3 Analyze how particular elements of a story or drama interact (e.g. how setting shapes the characters or plot).</p> <p>7.B.4 Determine the meaning of words and phrases as they are used in a text, including figurative language 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.</p> <p>7.B.6 Analyze how an author develops and contrasts the points of view of different characters or narrators in a text.</p> <p>7.L.1 Engage effectively in a range of collaborative discussions with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.</p> <p>7.P.4 Determine or clarify the meaning of unknown or multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies.</p> |
|--|---|--|

| | | |
|--|---|--|
| | <p>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.</p> <p>7.N.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.</p> <p>7.N.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.</p> <p>7.O.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.</p> | <p>7.P.4.a Use context as a clue to the meaning of a word or phrase.</p> <p>7.P.4.b Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word.</p> <p>7.P.4.c Consult general and specialized reference materials, both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.</p> <p>7.P.4.d Verify the preliminary determination of a meaning of a word or phrase (e.g. by checking the inferred meaning in context or in a dictionary).</p> <p>7.P.5 Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.</p> <p>7.P.5.a Interpret figures of speech (e.g. literary, biblical, and mythological allusions) in context.</p> |
|--|---|--|

| | | |
|---|---|---|
| Content <i>What content do I need to know in order to answer the essential questions?</i> | Command of the conventions of standard English grammar, usage and conventions. Understand a plot diagram. | Identify elements of a short story. Recognize different genres of fiction. |
| Integration of Learning <i>How does this learning connect to my other areas (subjects) of learning?</i> | Use technology, including the Internet, to produce and publish writing. | Library skills |
| Tools for Learning <i>Which tools will I use that will assist me in my learning?</i> | Story map or other graphic organizer Grading rubric Word processing or other publishing program | Grade level texts Appropriate reading (short stories, novels) Dictionary, thesaurus |

Which 21st Century Skills are woven into this standard?

☐ Critical Thinking/Problem Solving
☐ Communications

☐ Collaboration
☐ Creativity/Innovation

What level of rigor will I be using? (A, C) ☐ What level of relevance will I be using? ☐ (B,D)

| | | |
|---------------------------|--|--|
| Informational text | Writing Standards: ELA7.I.2 Write informative texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. (i.e. Biography of a Saint) | Reading Standards: ELA7.A Key ideas and details; 7.C Integration of knowledge and ideas |
|---------------------------|--|--|

| | | |
|---|---|---|
| Essential Questions <i>What should I be able to answer? What guides my thinking?</i> | <p>How do I write an informational piece?</p> <p>How do I select a topic to produce a piece of informative writing?</p> <p>How do I find, evaluate, and summarize information for my writing?</p> <p>How do I present my information to my targeted audience? How do I organize my information through an introduction, development of the topic, and conclusion?</p> <p>How do I evaluate the style, vocabulary, and cohesion of the work?</p> | <p>How do I find and evaluate various sources of information related to a specific topic?</p> <p>How do I determine author's point of view compared to others?</p> <p>How do I assess reasoning for relevance and soundness?</p> <p>How do I summarize text?</p> |
| Assessment <i>What will I be expected to know, understand, and be able to do in order to demonstrate my learning?</i> | <p>compare and contrast information using graphic organizers;</p> <p>summarize information;</p> <p>outline order of presentation of information;</p> <p>utilize appropriate resource materials (dictionaries, texts, digital resources) to develop vocabulary;</p> <p>peer review and edit;</p> <p>publish a finished written informational piece (i.e. essay, PowerPoint, speech).</p> | <p>student will gather several sources of informational text with bibliographic notations;</p> <p>T chart or other graphic organizer used to compare/contrast author's purpose and point of view with examples for each source;</p> <p>evaluate materials for relevancy and validity.</p> |

| | | |
|--|---|--|
| <p>Skills <i>What skills do I need to have in order to answer the essential questions?</i></p> | <p>7.K.7 Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation.</p> <p>7.K.8 Gather relevant information from multiple print and digital sources.</p> <p>7.K.10 Write routinely over extended time frames for a range of discipline-specific tasks, purposes, and audiences.</p> <p>7.I.2 Write informative/explanatory text.</p> <p>7.I.2.a Introduce a topic clearly, organize ideas; include formatting where helpful.</p> <p>7.I.2.b Develop the topic.</p> <p>7.I.2.c Use appropriate transitions.</p> <p>7.I.2.d Use precise language and domain-specific vocabulary.</p> <p>7.I.2.e Establish and maintain a formal style.</p> <p>7.I.2.f Provide a concluding statement or section.</p> <p>7.L.1 Engage in collaborative discussions.</p> <p>7.J.4 Produce clear and coherent writing.</p> <p>7.J.5 With support from peers and adults, develop and strengthen writing.</p> <p>7.J.6 Use technology to produce and publish writing.</p> <p>7.N.1 Demonstrate command of conventions of</p> | <p>7.E.1 Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as implicitly.</p> <p>7.F.4 Determine the meaning of words and phrases as they are used in a text, including technical meanings, and analyze impact of word choice.</p> <p>7.F.5 Analyze the structure an author uses to organize text.</p> <p>7.F.6 Determine an author's point of view or purpose in a text.</p> <p>7.G.8 Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant.</p> <p>7.G.9 Analyze how two or more authors writing about the same topic shape their presentations of key information by emphasizing different emphasis or advancing different interpretation of facts.</p> |
|--|---|--|

| | | |
|--|--|--|
| | <p>standard English grammar and usage, including 7.N.1a,b,c.</p> <p>7.N.2 Demonstrate command of conventions of standard English mechanics, including 7.N.2a,b.</p> <p>7.O.3a Choose language that expresses ideas precisely and concisely.</p> <p>7.P.4c Consult general and specific reference materials to determine pronunciation and meaning.</p> <p>7.P.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases.</p> | |
| <p>Content <i>What content do I need to know in order to answer the essential questions?</i></p> | Basic research skills and knowledge of the writing process. | Determine point of view, identify propaganda, and discern fact v. opinion. |
| <p>Integration of Learning <i>How does this learning connect to my other areas (subjects) of learning?</i></p> | <p>The topic selected is relevant to content area learning.</p> <p>Technology is used to research and present information.</p> | <p>Library research skills</p> <p>Digital technology search skills</p> |

| | | |
|--|--|--|
| Tools for Learning <i>Which tools will I use that will assist me in my learning?</i> | I will use a computer, the internet, the library, and my religion text to compile information for this essay. I will use reference materials, such as dictionaries, thesauruses, glossaries, style manuals, and databases. | Texts, encyclopedia, dictionaries and glossaries, will be read/utilized. |
|--|--|--|

Which 21st Century Skills are woven into this standard?

___Critical Thinking/Problem Solving

___Collaboration

___Communications

___Creativity/Innovation

What level of rigor will I be using? (A, C)_____

What level of relevance will I be using? _____ (B,D)



| | | |
|-----------------|--|--|
| Research | Writing Standards: ELA.7.K – Research to Build and Present Knowledge (i.e. The Life and Times of an Explorer) | Reading Standards: ELA7.G- Integration of Knowledge and Ideas |
|-----------------|--|--|

| | | |
|---|--|--|
| Essential Questions <i>What should I be able to answer? What guides my thinking?</i> | <p>How do writers present information to a specific audience?</p> <p>How do writers avoid plagiarism when taking notes from sources?</p> <p>How do I prepare a Works Cited or Bibliography page?</p> <p>How does the writing process strengthen a piece of writing and develop communication skills?</p> | <p>How do I assess the accuracy and credibility of sources of information and the soundness of the information itself?</p> <p>How does comprehension of informational text contribute to learning?</p> <p>How do I give credit to the sources I used?</p> |
| Assessment <i>What will I be expected to know, understand, and be able to do in order to demonstrate my learning?</i> | <p>I will:</p> <p>formulate a thesis statement and support it based on research;</p> <p>paraphrase information and make notes for a Works Cited page or bibliography;</p> <p>organize information into logical order and write a research paper, keeping intended audience in mind;</p> <p>and employ revising and editing skills.</p> | <p>I will be able to:</p> <p>select and analyze resources for validity</p> <p>identify critical information</p> <p>analyze/discuss conflicting information</p> <p>assess whether resource reasoning is sound</p> <p>assess whether evidence is relevant and sufficient, and</p> <p>synthesize information to answer the research question.</p> |

| | | |
|--|--|---|
| <p>Skills <i>What skills do I need to have in order to answer the essential questions?</i></p> | <p>7. I.2.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.</p> <p>7. I.2.b Develop the topic with relevant facts definitions, concrete details, quotations, or other information and examples.</p> <p>7. I.2.c Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.</p> <p>7. I.2.d Use precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>7. I.2.e Establish and maintain a formal style.</p> <p>7. I.2.f Provide a concluding statement or section that follows from and supports the information or explanation presented.</p> <p>7.J.6 Use technology, including the internet, to produce and publish writing and link to and cite sources as well as to interact and collaborate with others, including linking to and citing sources.</p> <p>7.K.7 Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further</p> | <p>7. E.1 Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.</p> <p>7. E.2 Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text.</p> <p>7. E.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).</p> <p>7.F.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of specific word choice on meaning and tone.</p> <p>7.F.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.</p> <p>7.F.6 Determine an author’s point of view or purpose in a text and analyze how the author distinguishes his or her position from that of others.</p> |
|--|--|---|

| | | |
|--|--|--|
| | <p>research and investigation.</p> <p>7.N.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.</p> <p>7.N.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.</p> <p>7.O.3a Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.</p> | <p>7.G.8 Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.</p> <p>7.G.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.</p> <p>7.L.2 Analyze the main ideas clarify a topic, text, or issue under study.</p> <p>7.L.3 Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.</p> |
| <p>Content <i>What content do I need to know in order to answer the essential questions?</i></p> | <p>I must be able to: take notes, use the writing process including revising and peer editing skills, and know the requirements for a Works Cited or bibliography page.</p> | <p>Read for information and discern fact from opinion</p> <p>Recognizing quality resources</p> <p>Selecting pertinent information to support a thesis</p> |

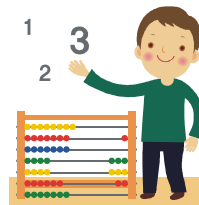
| | | |
|---|---|---|
| Integration of Learning <i>How does this learning connect to my other areas (subjects) of learning?</i> | Appropriate content area Word processing/multi-media or presentation software | Web search—technology Content area reading |
| Tools for Learning <i>Which tools will I use that will assist me in my learning?</i> | Word processing program Multi-media or presentation software Digital resources Writing text, style guides (i.e. MLA) | Dictionary Various primary and secondary sources Content area text(s) |

Which 21st Century Skills are woven into this standard? ___ Critical Thinking/Problem Solving ___ Collaboration
 ___ Communications ___ Creativity/Innovation

What level of rigor will I be using? (A, C)_____ What level of relevance will I be using?_____ (B,D)

Mathematics

Grade 7



Common Core State Standards – Grade Six
Common Core State Standards – Grade Seven
Common Core State Standards – Grade Eight
Implementation Guide – Grade Seven

Key Points In Mathematics

- The 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 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 K-5, students can do hands on learning in geometry, algebra and probability and statistics. Students who have completed 7th grade and mastered the content and skills through the 7th grade will be *well-prepared for algebra* in grade 8.
- The middle school standards are robust and provide a coherent and rich *preparation for high school mathematics*.
- The high school standards call on 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 college students and employees regularly do.
- The high school standards *emphasize mathematical modeling*, the use of mathematics and statistics to analyze empirical situations, understand them better, and improve decisions. For example, the standards state: Modeling links classroom mathematics and statistics to everyday life, work, and decision-making. It is the process of choosing and using appropriate mathematics and statistics to analyze empirical situations, to understand them better, and to improve decisions. Quantities and their relationships in physical, economic, public policy, social and everyday situations can be modeled using mathematical and statistical methods. When making mathematical models, technology is valuable for varying assumptions, exploring consequences, and comparing predictions with data.

Standards for Mathematical Practice

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education. The first of these are the NCTM process standards of problem solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council’s report *Adding It Up*: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately), and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one’s own efficacy).

1 Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

2 Reason abstractly and quantitatively.

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to *decontextualize*—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to *contextualize*, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

3 Construct viable arguments and critique the reasoning of others.

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

4 Model with mathematics.

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a

student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

5 Use appropriate tools strategically.

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

6 Attend to precision.

Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

7 Look for and make use of structure.

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y .

8 Look for and express regularity in repeated reasoning.

Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

Connecting the Standards for Mathematical Practice to the Standards for Mathematical Content

The Standards for Mathematical Practice describe ways in which developing student practitioners of the discipline of mathematics increasingly ought to engage with the subject matter as they grow in mathematical maturity and expertise throughout the elementary, middle and high school years. Designers of curricula, assessments, and professional development should all attend to the need to connect the mathematical practices to mathematical content in mathematics instruction.

The Standards for Mathematical Content are a balanced combination of procedure and understanding. Expectations that begin with the word “understand” are often especially good opportunities to connect the practices to the content. Students who lack understanding of a topic may rely on procedures too heavily. Without a flexible base from which to work, they may be less likely to consider analogous problems, represent problems coherently, justify conclusions, apply the mathematics to practical situations, use technology mindfully to work with the mathematics, explain the mathematics accurately to other students, step back for an overview, or deviate from a known procedure to find a shortcut. In short, a lack of understanding effectively prevents a student from engaging in the mathematical practices. In this respect, those content standards which set an expectation of understanding are potential “points of intersection” between the Standards for Mathematical Content and the Standards for Mathematical Practice. These points of intersection are intended to be weighted toward central and generative concepts in the school mathematics curriculum that most merit the time, resources, innovative energies, and focus necessary to qualitatively improve the curriculum, instruction, assessment, professional development, and student achievement in mathematics.



Mathematics Standards

Grade 6

In Grade 6, instructional time should focus on four critical areas: (1) connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems; (2) completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers; (3) writing, interpreting, and using expressions and equations; and (4) developing understanding of statistical thinking.

1. Students use reasoning about multiplication and division to solve ratio and rate problems about quantities. By viewing equivalent ratios and rates as deriving from, and extending, pairs of rows (or columns) in the multiplication table, and by analyzing simple drawings that indicate the relative size of quantities, students connect their understanding of multiplication and division with ratios and rates. Thus students expand the scope of problems for which they can use multiplication and division to solve problems, and they connect ratios and fractions. Students solve a wide variety of problems involving ratios and rates.

2. Students use the meaning of fractions, the meanings of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for dividing fractions make sense. Students use these operations to solve problems. Students extend their previous understandings of number and the ordering of numbers to the full system of rational numbers, which includes negative rational numbers, and in particular negative integers. They reason about the order and absolute value of rational numbers and about the location of points in all four quadrants of the coordinate plane.

3. Students understand the use of variables in mathematical expressions. They write expressions and equations that correspond to given situations, evaluate expressions, and use expressions and formulas to solve problems. Students understand that expressions in different forms can be equivalent, and they use the properties of operations to rewrite expressions in equivalent forms. Students know that the solutions of an equation are the values of the variables that make the equation true. Students use properties of operations and the idea of maintaining the equality of both sides of an equation to solve simple one-step equations. Students construct and analyze tables, such as tables of quantities that are in equivalent ratios, and they use equations (such as $3x = y$) to describe relationships between quantities.

4. Building on and reinforcing their understanding of number, students begin to develop their ability to think statistically. Students recognize that a data distribution may not have a definite center and that different ways to measure center yield different values. The median measures center in the sense that it is roughly the middle value. The mean measures center in the sense that it is the value that each data point would take on if the total of the data values were redistributed equally, and also in the sense that it is a balance point. Students recognize that a measure of variability (interquartile range or mean absolute deviation) can also be useful for summarizing data because two very different sets of data can have the same mean and median yet be distinguished by their variability.

Students learn to describe and summarize numerical data sets, identifying clusters, peaks, gaps, and symmetry, considering the context in which the data were collected. Students in Grade 6 also build on their work with area in elementary school by reasoning about relationships among shapes to determine area, surface area, and volume. They find areas of right triangles, other triangles, and special quadrilaterals by decomposing these shapes, rearranging or removing pieces, and relating the shapes to rectangles. Using these methods, students discuss, develop, and justify formulas for areas of triangles and parallelograms. Students find areas of polygons and surface areas of prisms and pyramids by decomposing them into pieces whose area they can determine. They reason about right rectangular prisms with fractional side lengths to extend formulas for the volume of a right rectangular prism to fractional side lengths. They prepare for work on scale drawings and constructions in Grade 7 by drawing polygons in the coordinate plane.

Grade 6 Overview

- **Ratios and Proportional Relationships**

- Understand ratio concepts and use ratio reasoning to solve problems.

- **The Number System**

- Apply and extend previous understandings of multiplication and division to divide fractions by fractions.
- Multiply and divide multi-digit numbers and find common factors and multiples.
- Apply and extend previous understandings of numbers to the system of rational numbers.

- **Expressions and Equations**

- Apply and extend previous understandings of arithmetic to algebraic expressions.
- Reason about and solve one-variable equations and inequalities.
- Represent and analyze quantitative relationships between dependent and independent variables.

- **Geometry**

- Solve real-world and mathematical problems involving area, surface area, and volume.

- **Statistics and Probability**

- Develop understanding of statistical variability.
- Summarize and describe distributions.

Ratios and Proportional Relationships

Understand ratio concepts and use ratio reasoning to solve problems.

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.RP.2. Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. *For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar.” “We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger.”*¹

6.RP.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.

- 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.
- Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*
- Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.
- Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

¹ Expectations for unit rates in this grade are limited to non-complex fractions

The Number System

Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

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 $(2/3) \div (3/4)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because $3/4$ of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = ad/bc$.) How much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $3/4$ -cup servings are in $2/3$ of a cup of yogurt? How wide is a rectangular strip of land with length $3/4$ mi and area $1/2$ square mi? Compute fluently with multi-digit numbers and find common factors and multiples.*

Compute fluently with multi-digit numbers and find common factors and multiples.

6.NS.2. Fluently divide multi-digit numbers using the standard algorithm.

6.NS.3. Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

6.NS.4. Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. *For example, express $36 + 8$ as $4(9 + 2)$. Apply and extend previous understandings of numbers to the system of rational numbers.*

Apply and extend previous understandings of numbers to the system of rational numbers.

6.NS.5. Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.

6.NS.6. Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.

- 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.
- 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.
- 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.NS.7. Understand ordering and absolute value of rational numbers.

- 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.*
- Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C .*
- Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. *For example, for an account balance of -30 dollars, write $|-30| = 30$ to describe the size of the debt in dollars.*
- Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.*

6.NS.8. Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

Expressions and Equations

Apply and extend previous understandings of arithmetic to algebraic expressions.

6.EE.1. Write and evaluate numerical expressions involving whole-number exponents.

6.EE.2. Write, read, and evaluate expressions in which letters stand for numbers.

- Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation “Subtract y from 5” as $5 - y$.*
- Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression $2(8 + 7)$ as a product of two factors; view $(8 + 7)$ as both a single entity and a sum of two terms.*
- Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = \frac{1}{2}$.*

6.EE.3. Apply the properties of operations to generate equivalent expressions. *For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.*

6.EE.4. Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands for. Reason about and solve one-variable equations and inequalities.*

Reason about and solve one-variable equations and inequalities.

6.EE.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.EE.6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

6.EE.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.EE.8. Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

Represent and analyze quantitative relationships between dependent and independent variables.

6.EE.9. Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.

Geometry

Solve real-world and mathematical problems involving area, surface area, and volume.

6.G.1. Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

6.G.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 $V = lwh$ and $V = bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

6.G.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.G.4. Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

Statistics and Probability

Develop understanding of statistical variability.

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.*

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

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

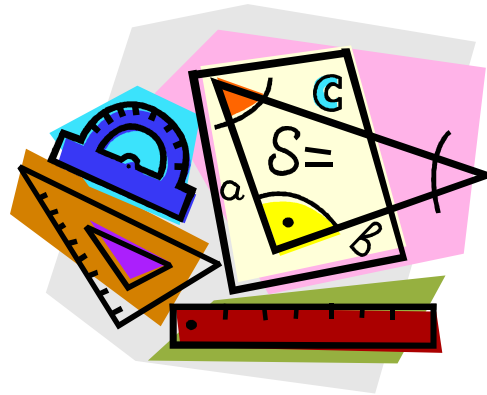
Summarize and describe distributions.

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

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

- Reporting the number of observations.

- Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.
- Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
- Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.



Grade 7

In Grade 7, instructional time should focus on four critical areas: (1) developing understanding of and applying proportional [relationships](#); (2) developing understanding of operations with rational numbers and working with expressions and linear equations; (3) solving problems involving scale [drawings](#) and informal geometric constructions, and working with two- and three-dimensional shapes to solve problems involving area, surface area, and volume; and (4) drawing inferences about populations based on samples.

Students extend their understanding of ratios and develop understanding of proportionality to solve single- and multi-step problems. Students use their understanding of ratios and proportionality to solve a wide variety of percent problems, including those involving discounts, interest, taxes, tips, and percent increase or decrease. Students solve problems about scale drawings by relating corresponding lengths between the objects or by using the fact that relationships of lengths within an object are preserved in similar objects. Students graph proportional relationships and understand the unit rate informally as a measure of the steepness of the related line, called the slope. They distinguish proportional relationships from other relationships.

2. Students develop a unified understanding of number, recognizing fractions, decimals (that have a finite or a repeating decimal representation), and percents as different representations of rational numbers. Students extend addition, subtraction, multiplication, and division to all rational numbers, maintaining the properties of operations and the relationships between addition and subtraction, and multiplication and division. By applying these properties, and by viewing negative numbers in terms of everyday contexts (e.g., amounts owed or temperatures below zero), students explain and interpret the rules for adding, subtracting, multiplying, and dividing with negative numbers. They use the arithmetic of rational numbers as they formulate expressions and equations in one variable and use these [equations](#) to solve problems.

3. Students continue their work with area from Grade 6, solving problems involving the area and circumference of a circle and surface area of three-dimensional objects. In preparation for work on congruence and similarity in Grade 8 they reason about relationships among two-dimensional figures using scale drawings and informal geometric constructions, and they gain familiarity with the relationships between angles formed by intersecting lines. Students work with three-dimensional figures, relating them to two-dimensional figures by examining cross-sections. They solve real-world and mathematical problems

involving area, surface area, and volume of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes and right prisms.

4. Students build on their previous work with single data distributions to compare two data distributions and address questions about differences between populations. They begin informal work with random sampling to generate data sets and learn about the importance of representative samples for drawing inferences.

Grade 7 Overview

• Ratios and Proportional Relationships

- Analyze proportional relationships and use them to solve real-world and mathematical problems.

• The Number System

- Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

• Expressions and Equations

- Use properties of operations to generate equivalent expressions.
- Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

• Geometry

- Draw, construct and describe geometrical figures and describe the relationships between them.
- Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

• Statistics and Probability

- Use random sampling to draw inferences about a population.
- Draw informal comparative inferences about two populations.
- Investigate chance processes and develop, use, and evaluate probability models.

Ratios and Proportional Relationships

Analyze proportional relationships and use them to solve real-world and mathematical problems.

7.RP.1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the unit rate as the complex fraction $\frac{1/2}{1/4}$ miles per hour, equivalently 2 miles per hour.*

7.RP.2. Recognize and represent proportional [relationships](#) between quantities.

- 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.
- Identify the constant of proportionality (unit rate) in tables, graphs, [equations](#), diagrams, and verbal descriptions of proportional relationships.
- Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p , the relationship between the total cost and the number of items can be expressed as $t = pn$.*
- 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.RP.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.

Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

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.

- 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.*

- 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.
- 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.
- Apply properties of operations as strategies to add and subtract rational numbers.

7.NS.2. Apply and extend previous understandings of multiplication and division and of [fractions](#) to multiply and divide rational numbers.

- 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.
- Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.
- Apply properties of operations as strategies to multiply and divide rational numbers.
- 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.NS.3. Solve real-world and mathematical problems involving the four [operations](#) with rational numbers.

¹ Computations with rational numbers extend the rules for manipulating fractions to complex fractions.

Expressions and Equations

Use properties of operations to generate equivalent expressions.

7.EE.1. Apply properties of [operations](#) as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.

7.EE.2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, $a + 0.05a = 1.05a$ means that “increase by 5%” is the same as “multiply by 1.05.”*

Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

7.EE.3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For example: If a woman making \$25 an hour gets a 10% raise, she will make an additional $\frac{1}{10}$ of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.*

7.EE.4. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.

- Solve word problems leading to [equations](#) of the form $px + q = r$ and $p(x + q) = r$, where p , q , and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?*
- Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p , q , and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a*

salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.

Geometry

Draw construct, and describe geometrical figures and describe the relationships between them.

7.G.1. Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.

7.G.2. Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.

7.G.3. Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.

Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

7.G.4. Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.

7.G.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.

7.G.6. Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

Statistics and Probability

Use random sampling to draw inferences about a population.

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.SP.2. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. *For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.*

Draw informal comparative inferences about two populations.

7.SP.3. Informally assess the [degree](#) of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. *For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.*

7.SP.4. Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. *For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.*

Investigate chance processes and develop, use, and evaluate probability models.

7.SP.5.7.SP.5. Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.

7.SP.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.SP.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.

- 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.*
- Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. *For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?*

7.SP.8. Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

- 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.
- Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event.
- 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?*

Grade 8

In Grade 8, instructional time should focus on three critical areas: (1) formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations; (2) grasping the concept of a function and using functions to describe quantitative relationships; (3) analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem.

1. Students use linear equations and systems of linear equations to represent, analyze, and solve a variety of problems. Students recognize equations for proportions ($y/x = m$ or $y = mx$) as special linear equations ($y = mx + b$), understanding that the constant of proportionality (m) is the slope, and the graphs are lines through the origin. They understand that the slope (m) of a line is a constant rate of change, so that if the input or x -coordinate changes by an amount A , the output or y -coordinate changes by the amount $m \cdot A$. Students also use a linear equation to describe the association between two quantities in bivariate data (such as arm span vs. height for students in a classroom). At this grade, fitting the model, and assessing its fit to the data are done informally. Interpreting the model in the context of the data requires students to express a relationship between the two quantities in question and to interpret components of the relationship (such as slope and y -intercept) in terms of the situation.

Students strategically choose and efficiently implement procedures to solve linear equations in one variable, understanding that when they use the properties of equality and the concept of logical equivalence, they maintain the solutions of the original equation. Students solve systems of two linear equations in two variables and relate the systems to pairs of lines in the plane; these intersect, are parallel, or are the same line. Students use linear equations, systems of linear equations, linear functions, and their understanding of slope of a line to analyze situations and solve problems.

2. Students grasp the concept of a function as a rule that assigns to each input exactly one output. They understand that functions describe situations where one quantity determines another. They can translate among representations and partial representations of functions (noting that tabular and graphical representations may be partial representations), and they describe how aspects of the function are reflected in the different representations.

3. Students use ideas about distance and angles, how they behave under translations, rotations, reflections, and dilations, and ideas about congruence and similarity to describe and analyze two-dimensional figures and to solve problems. Students show that the sum of the angles in a triangle is the angle formed by a straight line, and that various configurations of lines give rise to similar triangles because of the angles created when a transversal cuts parallel lines. Students understand the statement of the Pythagorean Theorem and its converse, and can explain why the Pythagorean Theorem holds, for example, by decomposing a square in two different ways. They apply the Pythagorean Theorem to find distances between points on the coordinate plane, to find lengths, and to analyze polygons. Students complete their work on volume by solving problems involving cones, cylinders, and spheres.

Grade 8 Overview

- **The Number System**

- Know that there are numbers that are not rational, and approximate them by rational numbers.

- **Expressions and Equations**

- Work with radicals and integer exponents.
- Understand the connections between proportional relationships, lines, and linear equations.
- Analyze and solve linear equations and pairs of simultaneous linear equations.

- **Functions**

- Define, evaluate, and compare functions.
- Use functions to model relationships between quantities.

- **Geometry**

- Understand congruence and similarity using physical models, transparencies, or geometry software.
- Understand and apply the Pythagorean Theorem.
- Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.

- **Statistics and Probability**

- Investigate patterns of association in bivariate data.

The Number System

Know that there are numbers that are not rational, and approximate them by rational numbers.

8.NS.1. Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal [expansion](#); for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.

8.NS.2. Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2). *For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*

Expressions and Equations

Expressions and Equations Work with radicals and integer exponents.

8.EE.1. Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$.

8.EE.2. Use square root and cube root symbols to represent solutions to [equations](#) of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.

8.EE.3. 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 times 10^8 and the population of the world as 7 times 10^9 , and determine that the world population is more than 20 times larger.*

8.EE.4. Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.

Understand the connections between proportional relationships, lines, and linear equations.

8.EE.5. Graph proportional [relationships](#), interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.

8.EE.6. Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b .

Analyze and solve linear equations and pairs of simultaneous linear equations.

8.EE.7. Solve linear equations in one variable.

- 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).
- Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

8.EE.8. Analyze and solve pairs of simultaneous linear equations.

- 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.
- 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.*
- Solve real-world and mathematical problems leading to two linear equations in two variables. *For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.*

Functions

Define, evaluate, and compare functions.

8.F.1. Understand that a function is a rule that assigns to each input exactly one output. The [graph](#) of a function is the set of ordered pairs consisting of an input and the corresponding output.¹

8.F.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.F.3. Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. *For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points $(1,1)$, $(2,4)$ and $(3,9)$, which are not on a straight line.*

Use functions to model relationships between quantities.

8.F.4. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) [values](#), including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.

8.F.5. Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

¹ Function notation is not required in Grade 8.

Geometry

Understand congruence and similarity using physical models, transparencies, or geometry software.

8.G.1. Verify experimentally the properties of rotations, reflections, and translations:

- a. Lines are taken to lines, and line segments to line segments of the same length.
- b. Angles are taken to angles of the same measure.
- c. Parallel lines are taken to parallel lines.

8.G.2. Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.

8.G.3. Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.

8.G.4. Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.

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

Understand and apply the Pythagorean Theorem.

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

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

Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

8.G.9. Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.

Statistics and Probability

Investigate patterns of association in bivariate data.

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.SP.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.SP.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.SP.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?*

Implementation Guide – Grade 7 Mathematics

Code: M.7.A.1 refers to: Mathematics –Grade 7 – Topic A – Skill 1

CATEGORY: - Ratios and Proportional Relationships Standard: M.7.A Analyze proportional relationships and use them to solve real-world and mathematical problems.

Essential Questions

*What should I be able to answer?
What guides my thinking?*

How do I use ratio and proportion in every day life ?

How are scale drawings and models used in the real world ?

How do I use ratio and proportion to solve multistep problems involving percents ?

Where do I find proportional relationships in science and nature ?

Assessment

*What will I be expected to know,
understand, and be able to do in
order to demonstrate my learning?*

Formative : Create word problems related to proportion and percent and give to other students to solve

Summative: Consumer math project involving a budget for vacation plans, or a budget for groceries or monthly family budget.

| | |
|--|---|
| <p>Skills <i>What skills do I need to have in order to answer the essential questions?</i></p> | <p>M.7.A. 1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. <i>For example, if a person walks $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the unit rate as the complex fraction $\frac{1/2}{1/4}$ miles per hour, equivalently 2 miles per hour.</i></p> <p>M.7.A. 2. Recognize and represent proportional relationships between quantities.</p> <p>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.</p> <p>b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p> <p>c. Represent proportional relationships by equations. <i>For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$.</i></p> <p>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.</p> <p>M.7.A. 3. Use proportional relationships to solve multi-step ratio and percent problems. <i>Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.</i></p> |
| <p>Content <i>What content do I need to know in order to answer the essential questions?</i></p> | <p>Use ratios, proportions and percents to represent relationships between quantities and measures</p> <p>Develop proportional thinking using concrete and graphic methods</p> |

| | |
|---|---|
| Integration of Learning <i>How does this learning connect to my other areas (subjects) of learning?</i> | Science-using proportions to make solutions, and interpreting graphs with data from lab experiments Examples; Pulse Rates: time trials, measurement, skeletal proportion |
| Tools for Learning <i>Which tools will I use that will assist me in my learning?</i> | Standard Specific tools and websites 4 C's tools and websites AIMS activities Rulers, calculators, graph paper, maps and scale drawings |

Which 21st Century Skills are woven into this standard? ___Critical Thinking/Problem Solving ___Collaboration
 ___Communications ___Creativity/Innovation

What level of rigor will I be using? (A, C)_____ What level of relevance will I be using? _____ (B,D)

CATEGORY: The Number System. Standard: M.7.B. Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

Essential Questions

*What should I be able to answer?
What guides my thinking?*

How will I apply the understanding of the study, properties, and operations of rational numbers to the real world?

Assessment

What will I be expected to know, understand, and be able to do in order to demonstrate my learning?

Formative: Use a unit collage – provide a list of key points to remember when computing rational numbers

Summative: performance assessment: Gold Seal Lesson *Love Letters and Numbers*

Skills

What skills do I need to have in order to answer the essential questions?

- M.7.B.** 1. Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.
- a. Describe situations in which opposite quantities combine to make 0. *For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.*
 - b. Understand $p + q$ as the number located a distance $|q|$ from p , in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.
 - c. Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.
 - d. Apply properties of operations as strategies to add and subtract rational numbers.

M.7.B. 2. Apply and extend previous understandings of multiplication and division and of fractions

| | |
|--|---|
| | <p>to multiply and divide rational numbers.</p> <p>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.</p> <p>b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.</p> <p>c. Apply properties of operations as strategies to multiply and divide rational numbers.</p> <p>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.</p> <p>M.7.B. 3. Solve real-world and mathematical problems involving the four operations with rational numbers. <i>[Computations with rational numbers extend the rules for manipulating fractions to complex fractions.]</i></p> |
| <p>Content What content do I need to know in order to answer the essential questions?</p> | <p>Operations with fractions, decimals, integers.</p> <p>Solve equations horizontally and vertically.</p> <p>Order of Operations; appropriateness of Distributive Property.</p> |

| | |
|---|---|
| Integration of Learning <i>How does this learning connect to my other areas (subjects) of learning?</i> | Physical education – batting averages, gains, losses Science – unit conversions Finance – balance accounts. |
| Tools for Learning <i>Which tools will I use that will assist me in my learning?</i> | Integer chips, number lines; fraction, decimal equivalencies; computer soft ware; calculators. |

Which 21st Century Skills are woven into this standard?

___Critical Thinking/Problem Solving

___Collaboration

___Communications

___Creativity/Innovation

What level of rigor will I be using? (A, C)_____

What level of relevance will I be using?_____ (B,D)

revised 2/15/2011

CATEGORY: Expressions and Equations. Standard M.7.C. Use properties of operations to generate equivalent expressions.

| | |
|--|--|
| <p>Essential Questions <i>What should I be able to answer? What guides my thinking?</i></p> | <p>How do I use algebraic expressions to analyze or solve problems? How do the properties contribute to algebraic understanding?</p> |
| <p>Assessment <i>What will I be expected to know, understand, and be able to do in order to demonstrate my learning?</i></p> | <p>Formative: Play <i>Silent Pass</i> with variables Fill in one answer and then pass to the next person writing an expression or equation with a variable. Be sure to designate each person in the group to use a different writing utensil or color. Summative: make a foldable describing properties with an example using variables</p> |
| <p>Skills <i>What skills do I need to have in order to answer the essential questions?</i></p> | <p>M.7.C. 1. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. M.7.C. 2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. <i>For example, $a + 0.05a = 1.05a$ means that “increase by 5%” is the same as “multiply by 1.05.”</i></p> |
| <p>Content <i>What content do I need to know in order to answer the essential questions?</i></p> | <p>Identify and use properties. Expand expressions. Evaluate expressions with addition and subtraction.</p> |

| | |
|---|---|
| Integration of Learning <i>How does this learning connect to my other areas (subjects) of learning?</i> | Science calculations |
| Tools for Learning <i>Which tools will I use that will assist me in my learning?</i> | Calculator, pencil, paper, interactive boards |

Which 21st Century Skills are woven into this standard?

___Critical Thinking/Problem Solving

___Collaboration

___Communications

___Creativity/Innovation

What level of rigor will I be using? (A, C)_____

What level of relevance will I be using?_____ (B,D)

revised 2/15/2011

CATEGORY: Expressions and Equations: Standard: M.7.D. Solve real-life mathematical problems using numerical and algebraic expressions and equations

| | |
|--|--|
| <p>Essential Questions <i>What should I be able to answer? What guides my thinking?</i></p> | <p>How does the use of variables help me to represent real-life and mathematical problems?</p> <p>How do estimates help to determine if my answer is reasonable?</p> <p>When do I use an inequality instead of an equation?</p> <p>Will solving algebraic equations help me in higher levels of mathematics?</p> |
| <p>Assessment <i>What will I be expected to know, understand, and be able to do in order to demonstrate my learning?</i></p> | <p>Formative Students will create word problems that can be solved algebraically and exchange with classmates.</p> <p>Summative: To use sports statistics, roller coaster velocity and census numbers to show understanding of expressions, equalities and inequalities.</p> |
| <p>Skills <i>What skills do I need to have in order to answer the essential questions?</i></p> | <p>M.7.D.1. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. <i>For example: If a woman making \$25 an hour gets a 10% raise, she will make an additional $\frac{1}{10}$ of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on</i></p> |

| | |
|--|--|
| | <p><i>the exact computation.</i></p> <p>M.7.D.2. 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.</p> <p>a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. <i>For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</i></p> <p>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. <i>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.</i></p> |
| <p>Content <i>What content do I need to know in order to answer the essential questions?</i></p> | <p>Solve multi-step equations using distributive property and order of operations</p> <p>Understand the importance of estimation to check answers and make predictions.</p> <p>Represent real life situations with equations and inequalities and graphs.</p> |

| | |
|---|--|
| Integration of Learning <i>How does this learning connect to my other areas (subjects) of learning?</i> | Science-use of equations and variables with formulas and balancing equations. Science -interpret and analyze results from experiments with equations and graphs |
| Tools for Learning <i>Which tools will I use that will assist me in my learning?</i> | Standard Specific tools and websites NETS tools and websites Calculator |

Which 21st Century Skills are woven into this standard?

___Critical Thinking/Problem Solving

___Collaboration

___Communications

___Creativity/Innovation

What level of rigor will I be using? (A, C)_____

What level of relevance will I be using?_____ (B,D)

CATEGORY: Geometry. Standard: M.7.E. Draw, construct, and describe geometrical figures and describe the relationships between them.

| | |
|---|--|
| Essential Questions <i>What should I be able to answer? What guides my thinking?</i> | How will the mastery of geometric constructions contribute to my understanding of geometry and its relevancy to the real world? |
| Assessment <i>What will I be expected to know, understand, and be able to do in order to demonstrate my learning?</i> | Formative: Make a scale drawing. Draw geometric shapes with given conditions Summative: performance assessment. – Design a floor plan – use actual and scale measures |
| Skills <i>What skills do I need to have in order to answer the essential questions?</i> | <p>M.7.E 1. Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.</p> <p>M.7.E 2. Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.</p> <p>M.7.E 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.</p> |
| Content <i>What content do I need to know in order to answer the essential questions?</i> | <p>Demonstrate competence with scale, ratio, and proportion.</p> <p>Identify and construct geometric figures.</p> <p>Recognize two and three dimensional objects.</p> <p>Manipulation of geometric tools and/or geometric software.</p> |

| | |
|---|--|
| Integration of Learning <i>How does this learning connect to my other areas (subjects) of learning?</i> | Cartography – interpreting map distances Art – enlarging pictures |
| Tools for Learning <i>Which tools will I use that will assist me in my learning?</i> | Manipulate objects for geometry.: ruler, protractor, geoboards, three dimensional figures, interactive boards Geometric Computer Soft ware. |

Which 21st Century Skills are woven into this standard? ___Critical Thinking/Problem Solving ___Collaboration
 ___Communications ___Creativity/Innovation

What level of rigor will I be using? (A, C)_____ What level of relevance will I be using?_____ (B,D)

CATEGORY: Geometry. Standard M.7.F. Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

| | |
|---|--|
| Essential Questions <i>What should I be able to answer? What guides my thinking?</i> | How can finding area, surface area, and volume of a composite figure be useful in my life? |
| Assessment <i>What will I be expected to know, understand, and be able to do in order to demonstrate my learning?</i> | <p>Formative : Students decompose the shapes displayed on the board/overhead into triangles and rectangles and circles. Discuss how to determine the area of the shape in order to calculate the volume of a prism with that shape for a base.</p> <p>Summative: performance task- packaging problems</p> |
| Skills <i>What skills do I need to have in order to answer the essential questions?</i> | <p>M.7.F.1. Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.</p> <p>M.7.F.2. 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.</p> <p>M.7.F.3. 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.</p> |
| Content <i>What content do I need to know in order to answer the essential questions?</i> | <p>Identify three-dimensional figures</p> <p>Use formulas for calculating area, surface area, and volume</p> |

| | |
|---|---|
| Integration of Learning <i>How does this learning connect to my other areas (subjects) of learning?</i> | Art – design packaging, Science – volume, density measures |
| Tools for Learning <i>Which tools will I use that will assist me in my learning?</i> | Calculator, three dimensional figures, computer graphics |

Which 21st Century Skills are woven into this standard?

___Critical Thinking/Problem Solving

___Collaboration

___Communications

___Creativity/Innovation

What level of rigor will I be using? (A, C)_____

What level of relevance will I be using?_____ (B,D)

CATEGORY: Statistics and Probability. Standard: M.7.G. Use random samplings to draw inferences about a population.

| | |
|--|--|
| <p>Essential Questions <i>What should I be able to answer? What guides my thinking?</i></p> | <p>Why is it important to study a population?</p> <p>How can likely outcomes or conclusions be made from a random sample?</p> <p>How can statistical samplings help me make decisions?</p> |
| <p>Assessment <i>What will I be expected to know, understand, and be able to do in order to demonstrate my learning?</i></p> | <p>Formative; To use surveys to infer information from the data and display in graphs</p> <p>Summative: Performance assessment using survey data.</p> |
| <p>Skills <i>What skills do I need to have in order to answer the essential questions?</i></p> | <p>M.7.G. 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.</p> <p>M.7.G. 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. <i>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.</i></p> |

| | |
|---|---|
| Content <i>What content do I need to know in order to answer the essential questions?</i> | Knowledge of central tendency and use of other graphs and tables. Organize data from a random sample. Arrive at valid conclusions based on the information. |
| Integration of Learning <i>How does this learning connect to my other areas (subjects) of learning?</i> | Consult with Social Studies teacher :Population studies |
| Tools for Learning <i>Which tools will I use that will assist me in my learning?</i> | Random number generator: random digit page; calculator: Excel spreadsheets and graphs |

Which 21st Century Skills are woven into this standard?

___Critical Thinking/Problem Solving

___Collaboration

___Communications

___Creativity/Innovation

What level of rigor will I be using? (A, C)_____

What level of relevance will I be using?_____ (B,D)

CATEGORY: Statistics and Probability. Standard: M.7.H. Draw informal comparative inferences about two populations.

| | |
|--|--|
| <p>Essential Questions <i>What should I be able to answer? What guides my thinking?</i></p> | <p>What inferences and conclusions can I make using statistics and probability to further my understanding of data in the real world?</p> <p>What kind of relationship can be found when comparing two sets of data?</p> |
| <p>Assessment <i>What will I be expected to know, understand, and be able to do in order to demonstrate my learning?</i></p> | <p>Formative: Make a dot plot to compare shoe sizes of boys and girls.</p> <p>Summative: performance assessment – Use measures of central tendency to compare the 5 largest cities of western and eastern Pennsylvania</p> |
| <p>Skills <i>What skills do I need to have in order to answer the essential questions?</i></p> | <p>M.7.H.1. 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. <i>For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.</i></p> <p>M.7.H.2. Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. <i>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.</i></p> |

| | |
|---|--|
| Content <i>What content do I need to know in order to answer the essential questions?</i> | Gather, collect, calculate data. Graph data. Venn Diagram , dot plot Apply operations to a set of values and determine a relationship between the values. Make inferences and draw conclusions based on data. |
| Integration of Learning <i>How does this learning connect to my other areas (subjects) of learning?</i> | Science – draw comparative inferences about wildlife populations Social Studies – compare populations of cities, states, countries |
| Tools for Learning <i>Which tools will I use that will assist me in my learning?</i> | calculators, school, local, state data; graph paper, graphing calculator. |

Which 21st Century Skills are woven into this standard?

___Critical Thinking/Problem Solving

___Collaboration

___Communications

___Creativity/Innovation

What level of rigor will I be using? (A, C)_____

What level of relevance will I be using?_____ (B,D)

CATEGORY: Statistics and Probability. Standard M.7.I. Investigate chance processes and develop, use, and evaluate probability models.

Essential Questions

*What should I be able to answer?
What guides my thinking?*

What is the probability that I can make a correct decision given partial information?
Is anything in nature truly random?

Assessment

What will I be expected to know, understand, and be able to do in order to demonstrate my learning?

Formative: experimenting using dice, spinners, coins, colored chips

Summative : performance task- design and run a simulation, draw conclusions from use of probability equation

Skills

What skills do I need to have in order to answer the essential questions?

- M.7.I.1.** Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around $\frac{1}{2}$ indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
- M.7.I.2.** 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.*
- M.7.I.3.** Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.
- a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. *For example, if a student is selected at random*

from a class, find the probability that Jane will be selected and the probability that a girl will be selected.

- b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. *For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?*

M.7.I.4. Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

- a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.
- b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event.
- c. Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?*

| | |
|---|---|
| Content <i>What content do I need to know in order to answer the essential questions?</i> | Identify dependent and independent events. Use tree diagrams, tables, and simulations. Calculate probability |
| Integration of Learning <i>How does this learning connect to my other areas (subjects) of learning?</i> | Social Studies – election predictions through sampling |
| Tools for Learning <i>Which tools will I use that will assist me in my learning?</i> | Calculator, dice, chips, coins, spinners, interactive boards Data obtained either experimentally or through research |

Which 21st Century Skills are woven into this standard?

___Critical Thinking/Problem Solving

___Collaboration

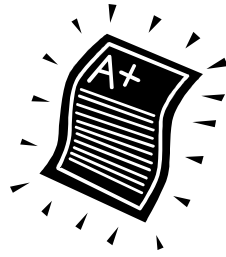
___Communications

___Creativity/Innovation

What level of rigor will I be using? (A, C)_____

What level of relevance will I be using?_____ (B,D)

revised 2/15/2011



Assessment and Grading

Grading and Assessment



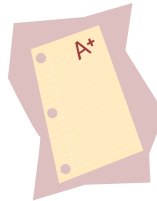
Report Cards

The change in curriculum has prompted a change in our reporting document.

- **Report cards** will not be grade specific.
 - **Kindergarten** students will receive reports aligned to the skills appropriate to that level.
 - Students in **grades 1 – 3** will receive the primary form of the report card.
- The grading system will continue as letter grades.
- **No** numerical equivalents are attached to these grades.
 - The children in grades 4 – 8 will receive the elementary form of the report card
- The grading system will continue as number grades for major content areas: Religion, Math and English Language Arts, Science and Social Studies. The general average is calculated from these grades.
- A number grade is used for other content areas: Art, Music, Physical Education, Technology and World Language.
- **Grading Practices:**
 - The students will receive one grade for ELA and one grade for Math
 - The overall grade for each of these content areas will be an average of the progress shown in all of the “sub-set” categories for that content area.
 - **ELA** -- Care must be taken to ensure that the assessments reflect the entirety of ELA
 - At a minimum 2 assessments must be planned to assess progress in each of the sub-categories.
 - In each “sub-category”:
 - a “+” will indicate that the student meets or exceeds expectations in that area.
 - a “√” will indicate that the student continues to work towards meeting expectations.
 - In **Math**, the students will again receive one overall grade.
 - Progress in sub-categories will be noted with a “+” or a “√” as indicated above.
 - Progress should be able to be documented by at least two different assessments in each area.

Portfolios:

- Portfolio assessment is a “*perfect fit*” with the Core Curriculum State Standards
- Portfolios should be used to gather relevant samples of student work over time
- Students are involved in the selection of artifacts
 - Students do self-reflection of their work
 - Teachers and students periodically discuss the work contained in the portfolio
- **Minimum Requirements for Student Portfolios:**
 - Baseline writing samples – start and end of school year
 - 2 ELA Performance assessments (all stages with rubric attached.)
 - 2 Math Performance assessments
 - Standardized test scores
 - Social Studies, Science, Art, Technology, Music, World Language samples
 - Student Choices with entry slip attached
 - Other items deemed necessary by the local school
 - Writing pieces
 - Science experiments
 - Mathematics problems and solutions
 - Applied Mathematics
 - Book reviews
 - Research projects
 - Physical Fitness Summary
 - Interdisciplinary projects/assignments



Resources

Web site for Common Core Standards:

<http://www.corestandards.org/the-standards/>

- Resources aligned to the Common Core Standards can be found at :
<http://teacherweb.com/PA/AOP/ETCC/apt1.aspx>

You will find a wealth of resources related to curriculum on the following Curriculum Committee web sites.

- Curriculum web site:
<http://www.teacherweb.com/PA/AOP/ElementaryCurriculumandInstruction/h1.aspx> English
- Language Arts web site:
<http://www.teacherweb.com/PA/AOP/ElementaryIntegratedLanguageArts%28ILA%29/ap2.aspx>
- Mathematics web site:
<http://www.teacherweb.com/PA/AOP/ElementaryMathematicsCurriculumCommittee/apt1.aspx>
- Library Media web site:
<http://www.teacherweb.com/PA/AOP/ElementaryLibraryMediaCommittee/h0.stm>
- Early Childhood web site: <http://www.teacherweb.com/PA/AOP/EarlyChildhood/>
- Assessment: <http://www.teacherweb.com/PA/AOP/ElementaryAssessmentCommittee/ap1.aspx>