

Georgia Standards of Excellence

Grade 4

English Language Arts

Reading Literature (RL)

Reading Informational (RI)

Key Ideas and Details

ELAGSE4RL1: Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

ELAGSE4RL2: Determine a theme of a story, drama, or poem from details in the text; summarize the text.

ELAGSE4RL3: Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions).

Craft and Structure

ELAGSE4RL4: Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology (e.g., Herculean).

ELAGSE4RL5: Explain major differences between poems, drama, and prose, and refer to the structural elements of poems (e.g., verse, rhythm, meter) and drama (e.g., casts of characters, settings, descriptions, dialogue, stage directions) when writing or speaking about a text.

ELAGSE4RL6: Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations.

Integration of Knowledge and Ideas

ELAGSE4RL7: Make connections between the text of a story or drama and a visual or oral presentation of the text identifying similarities and differences.

ELAGSE4RL8: (Not applicable to literature)

ELAGSE4RL9: Compare and contrast the treatment of similar themes and topics (e.g., opposition of good and evil) and patterns of events (e.g., the quest) in stories, myths, and traditional literature from different cultures.

Range of Reading and Level of Text Complexity

ELAGSE4RL10: By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

Key Ideas and Details

ELAGSE4RI1: Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

ELAGSE4RI2: Determine the main idea of a text and explain how it is supported by key details; summarize the text.

ELAGSE4RI3: Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

Craft and Structure

ELAGSE4RI4: Determine the meaning of general academic language and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.

ELAGSE4RI5: Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.

ELAGSE4RI6: Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.

Integration of Knowledge and Ideas

ELAGSE4RI7: Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

ELAGSE4RI8: Explain how an author uses reasons and evidence to support particular points in a text.

ELAGSE4RI9: Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.

Range of Reading and Level of Text Complexity

ELAGSE4RI10: By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

Reading Foundational (RF)

Phonics and Word Recognition

ELAGSE4RF3: Know and apply grade-level phonics and word analysis skills in decoding words.

a. Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multi-syllabic words in context and out of context.

Fluency

ELAGSE4RF4: Read with sufficient accuracy and fluency to support comprehension.

- a. Read on-level text with purpose and understanding.
- b. Read on-level prose and poetry orally with accuracy, appropriate rate, and expression on successive readings.
- c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

Writing (W)

Text Types and Purposes

ELAGSE4W1: Write opinion pieces on topics or texts, supporting a point of view with reasons.

- a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer’s purpose.
- b. Provide reasons that are supported by facts and details.
- c. Link opinion and reasons using words and phrases (e.g., for instance, in order to, in addition).
- d. Provide a concluding statement or section related to the opinion presented.

ELAGSE4W2: Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

- a. Introduce a topic clearly and group related information in paragraphs and sections; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.
- b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
- c. Link ideas within categories of information using words and phrases. (e.g., another, for example, also, because).
- d. Use precise language and domain-specific vocabulary to inform about or explain the topic.
- e. Provide a concluding statement or section related to the information or explanation presented.

ELAGSE4W3: Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.

- a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally.
- b. Use dialogue and description to develop experiences and events or show the responses of characters to situations.
- c. Use a variety of transitional words and phrases to manage the sequence of events.
- d. Use concrete words and phrases and sensory details to convey experiences and events precisely.
- e. Provide a conclusion that follows from the narrated experiences or events.

Production and Distribution of Writing

ELAGSE4W4: Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in Standards 1–3 above.)

ELAGSE4W5: With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 4.)

ELAGSE4W6: With some guidance and support from adults, 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 one page in a single sitting.

Research to Build and Present Knowledge

ELAGSE4W7: Conduct short research projects that build knowledge through investigation of different aspects of a topic.

ELAGSE4W8: Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.

ELAGSE4W9: Draw evidence from literary or informational texts to support analysis, reflection, and research.

- a. Apply grade 4 Reading standards to literature (e.g., “Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text [e.g., a character’s thoughts, words, or actions].”).
- b. Apply grade 4 Reading standards to informational texts (e.g., “Explain how an author uses reasons and evidence to support particular points in a text”).

Range of Writing

ELAGSE4W10: 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 (SL)

Comprehension and Collaboration

ELAGSE4SL1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.

- a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.
- b. Follow agreed-upon rules for discussions and carry out assigned roles.
- c. Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.
- d. Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.

ELAGSE4SL2: Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

ELAGSE4SL3: Identify the reasons and evidence a speaker provides to support particular points.

Presentation of Knowledge and Ideas

ELAGSE4SL4: Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

ELAGSE4SL5: Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.

ELAGSE4SL6: Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion); use formal English when appropriate to task and situation.

Language (L)

Conventions of Standard English

ELAGSE4L1: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

- a. Use relative pronouns (who, whose, whom, which, that) and relative adverbs (where, when, why).
- b. Form and use the progressive (e.g., I was walking; I am walking; I will be walking) verb aspects.
- c. Use helping/linking verbs to convey various conditions.
- d. Order adjectives within sentences according to conventional patterns (e.g., a small red bag rather than a red small bag).
- e. Form and use prepositional phrases.
- f. Produce complete sentences, recognizing and correcting inappropriate fragments and run-ons.
- g. Correctly use frequently confused words (e.g., to, too, two; there, their).
- h. Writes legibly in cursive, leaving spaces between letters in a word and between words in a sentence.

ELAGSE4L2: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

- a. Use correct capitalization.
- b. Use commas and quotation marks to mark direct speech and quotations from a text.
- c. Use a comma before a coordinating conjunction in a compound sentence.
- d. Spell grade-appropriate words correctly, consulting references as needed

Knowledge of Language

ELAGSE4L3: Use knowledge of language and its conventions when writing, speaking, reading, or listening.

- a. Choose words and phrases to convey ideas precisely.
- b. Choose punctuation for effect.
- c. Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion).

Vocabulary Acquisition and Use

ELAGSE4L4: Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies.

- a. Use context (e.g., definitions, examples, or restatements in text) as a clue to the meaning of a word or phrase.

b. Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., telegraph, photograph, autograph).

c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases.

ELAGSE4L5: Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

a. Explain the meaning of simple similes and metaphors (e.g., as pretty as a picture) in context.

b. Recognize and explain the meaning of common idioms, adages, and proverbs.

c. Demonstrate understanding of words by relating them to their opposites (antonyms) and to words with similar but not identical meanings (synonyms).

ELAGSE4L6: Acquire and use accurately grade-appropriate general academic and domain-specific vocabulary, including words and phrases that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and words and phrases basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).

Mathematics

In Grade 4, instructional time should focus on three critical areas: (1) developing understanding and fluency with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends; (2) developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions by whole numbers; (3) understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.

Standards for Mathematical Practice

Standards for Mathematical Practice

Mathematical Practices are listed with each grade's mathematical content standards to reflect the need to connect the mathematical practices to mathematical content in instruction.

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).

Students are expected to:

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

Operations and Algebraic Thinking (OA)

Use the four operations with whole numbers to solve problems.

MGSE4.OA.1 Understand that a multiplicative comparison is a situation in which one quantity is multiplied by a specified number to get another quantity.

a. Interpret a multiplication equation as a comparison e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5.

b. Represent verbal statements of multiplicative comparisons as multiplication equations.

MGSE4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison. Use drawings and equations with a symbol or letter for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

MGSE4.OA.3 Solve multistep word problems with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a symbol or letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Gain familiarity with factors and multiples.

MGSE4.OA.4 Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.

Generate and analyze patterns.

MGSE4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. Explain informally why the pattern will continue to develop in this way. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers.

Numbers and Operations in Base Ten (NBT)

Generalize place value understanding for multi-digit whole numbers.

MGSE4.NBT.1 Recognize that in a multi-digit whole number, a digit in any one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.

MGSE4.NBT.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.

MGSE4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place.

Use place value understanding and properties of operations to perform multi-digit arithmetic.

MGSE4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.

MGSE4.NBT.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

MGSE4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and one digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Numbers and Operations - Fractions (NF)

Extend understanding of fraction equivalence and ordering.

MGSE4.NF.1 Explain why two or more fractions are equivalent $a/b = n \times a/n \times b$ ex: $1/4 = 3 \times 1/3 \times 4$ by using visual fraction models. Focus attention on how the number and size of the parts differ even though the fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

MGSE4.NF.2 Compare two fractions with different numerators and different denominators, e.g., by using visual fraction models, by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1/2$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, $<$, and justify the conclusion.

Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

MGSE4.NF.3 Understand a fraction a/b with a numerator >1 as a sum of unit fractions $1/b$.

a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

- b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$; $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$; $2\frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$.
- c. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
- d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.
- MGSE4.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number e.g., by using a visual such as a number line or area model.
- a. Understand a fraction $\frac{a}{b}$ as a multiple of $\frac{1}{b}$. For example, use a visual fraction model to represent $\frac{5}{4}$ as the product $5 \times (\frac{1}{4})$, recording the conclusion by the equation $\frac{5}{4} = 5 \times (\frac{1}{4})$.
- b. Understand a multiple of $\frac{a}{b}$ as a multiple of $\frac{1}{b}$, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (\frac{2}{5})$ as $6 \times (\frac{1}{5})$, recognizing this product as $\frac{6}{5}$. (In general, $n \times (\frac{a}{b}) = (\frac{n \times a}{b})$.)
- c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat $\frac{3}{8}$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?

Understand decimal notation for fractions, and compare decimal fractions.

- MGSE4.NF.5 Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express $\frac{3}{10}$ as $\frac{30}{100}$, and add $\frac{3}{10} + \frac{4}{100} = \frac{34}{100}$.
- MGSE4.NF.6 Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $\frac{62}{100}$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.
- MGSE4.NF.7 Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions by using a visual model.

Measurement and Data (MD)

Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

- MGSE4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec.
- a. Understand the relationship between gallons, cups, quarts, and pints.
- b. Express larger units in terms of smaller units within the same measurement system.
- c. Record measurement equivalents in a two column table.
- MGSE4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.
- MGSE4.MD.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor. Represent and interpret data.
- MGSE4.MD.4 Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions with common denominators by using information presented in line plots. For example, from a line plot, find and interpret the difference in length between the longest and shortest specimens in an insect collection.

Geometric Measurement: understand concepts of angle and measure angles.

- MGSE4.MD.5 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:
- a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a "one-degree angle," and can be used to measure angles.

b. An angle that turns through n one-degree angles is said to have an angle measure of n degrees.

MGSE4.MD.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

MGSE4.MD.7 Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol or letter for the unknown angle measure.

MGSE4.MD.8 Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

Geometry (G)

Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

MGSE4.G.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

MGSE4.G.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles. MGSE4.G.3 Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

In Georgia resources and assessments, trapezoids are defined using the inclusive definition: At least one pair of parallel sides.

Science

Earth and Space Science (E)

S4E1. Obtain, evaluate, and communicate information to compare and contrast the physical attributes of stars and planets.

- Ask questions to compare and contrast technological advances that have changed the amount and type of information on distant objects in the sky.
- Construct an argument on why some stars (including the Earth's sun) appear to be larger or brighter than others. (Clarification statement: Differences are limited to distance and size, not age or stage of evolution.)
- Construct an explanation of the differences between stars and planets.
- Evaluate strengths and limitations of models of our solar system in describing relative size, order, appearance and composition of planets and the sun. (Clarification statement: Composition of planets is limited to rocky vs. gaseous.)

S4E2. Obtain, evaluate, and communicate information to model the effects of the position and motion of the Earth and the moon in relation to the sun as observed from the Earth.

- Develop a model to support an explanation of why the length of day and night change throughout the year.
- Develop a model based on observations to describe the repeating pattern of the phases of the moon (new, crescent, quarter, gibbous, and full).
- Construct an explanation of how the Earth's orbit, with its consistent tilt, affects seasonal changes.

S4E3. Obtain, evaluate, and communicate information to demonstrate the water cycle.

- Plan and carry out investigations to observe the flow of energy in water as it changes states from solid (ice) to liquid (water) to gas (water vapor) and changes from gas to liquid to solid.
- Develop models to illustrate multiple pathways water may take during the water cycle (evaporation, condensation, and precipitation). (Clarification statement: Students should understand that the water cycle does not follow a single pathway.)

S4E4. Obtain, evaluate, and communicate information to predict weather events and infer weather patterns using weather charts/maps and collected weather data.

- Construct an explanation of how weather instruments (thermometer, rain gauge, barometer, wind vane, and anemometer) are used in gathering weather data and making forecasts.
- Interpret data from weather maps, including fronts (warm, cold, and stationary), temperature, pressure, and precipitation to make an informed prediction about tomorrow's weather.
- Ask questions and use observations of cloud types (cirrus, stratus, and cumulus) and data of weather conditions to predict weather events.

d. Construct an explanation based on research to communicate the difference between weather and climate.

Physical Science (P)

S4P1. Obtain, evaluate, and communicate information about the nature of light and how light interacts with objects.

- a. Plan and carry out investigations to observe and record how light interacts with various materials to classify them as opaque, transparent, or translucent.
- b. Plan and carry out investigations to describe the path light travels from a light source to a mirror and how it is reflected by the mirror using different angles.
- c. Plan and carry out an investigation utilizing everyday materials to explore examples of when light is refracted. *(Clarification statement: Everyday materials could include prisms, eyeglasses, and a glass of water.)*

S4P2. Obtain, evaluate, and communicate information about how sound is produced and changed and how sound and/or light can be used to communicate.

- a. Plan and carry out an investigation utilizing everyday objects to produce sound and predict the effects of changing the strength or speed of vibrations.
- b. Design and construct a device to communicate across a distance using light and/or sound.

S4P3. Obtain, evaluate, and communicate information about the relationship between balanced and unbalanced forces.

- a. Plan and carry out an investigation on the effects of balanced and unbalanced forces on an object and communicate the results.
- b. Construct an argument to support the claim that gravitational force affects the motion of an object.
- c. Ask questions to identify and explain the uses of simple machines (lever, pulley, wedge, inclined plane, wheel and axle, and screw) and how forces are changed when simple machines are used to complete tasks. *(Clarification statement: The use of mathematical formulas is not expected.)*

Life Science (L)

S4L1. Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem.

- a. Develop a model to describe the roles of producers, consumers, and decomposers in a community. *(Clarification statement: Students are not expected to identify the different types of consumers – herbivores, carnivores, omnivores and scavengers.)*
- b. Develop simple models to illustrate the flow of energy through a food web/food chain beginning with sunlight and including producers, consumers, and decomposers.
- c. Design a scenario to demonstrate the effect of a change on an ecosystem. *(Clarification statement: Include living and non-living factors in the scenario.)*
- d. Use printed and digital data to develop a model illustrating and describing changes to the flow of energy in an ecosystem when plants or animals become scarce, extinct or overabundant.

Social Studies

United States History

In fourth grade, students continue with year two of a three year study of United States history in which all four strands (history, geography, civics/government, and economics) are integrated. Students begin the year learning about the French and Indian War and end with the Reconstruction period. The geography strand emphasizes the influence of geography on U.S. history during these same time periods. In the civics/government strand, students learn about concepts and rights contained within our founding documents. The economic strand uses material from the history strand to deepen understanding of economic concepts..

Historical Understandings (H)

SS4H1 Explain the causes, events, and results of the American Revolution.

- a. Trace the events that shaped the revolutionary movement in America: French and Indian War, 1765 Stamp Act, the slogan “no taxation without representation,” the activities of the Sons of Liberty, the activities of the Daughters of Liberty, Boston Massacre, and the Boston Tea Party.
- b. Describe the influence of key individuals and groups during the American Revolution: King George III, George Washington, Benjamin Franklin, Thomas Jefferson, Benedict Arnold, Patrick Henry, John Adams, Paul Revere, and Black regiments.

Grade 4 Standards

c. Describe the major events of the American Revolution and explain the factors leading to American victory and British defeat; include the Battles of Lexington and Concord, Saratoga, and Yorktown.

d. Explain the writing of the Declaration of Independence; include who wrote it, how it was written, why it was necessary, and how it was a response to tyranny and the abuse of power.

SS4H2 Analyze the challenges faced by the framers of the Constitution.

a. Identify the major leaders of the Constitutional Convention (James Madison, George Washington, and Benjamin Franklin).

b. Evaluate the major issues debated at the Constitutional Convention: the weaknesses of the Articles of Confederation, the rights of states to govern themselves (federal system), the Great Compromise, and slavery (Three-Fifths Compromise).

SS4H3 Explain westward expansion in America.

a. Describe the causes and events of the War of 1812; include the burning of the Capitol and the White House and the writing of "The Star Spangled Banner."

b. Describe the impact of westward expansion on American Indians; include the Trail of Tears, Battle of Little Bighorn and the forced relocation of American Indians to reservations.

c. Describe territorial expansion with emphasis on the Louisiana Purchase, the Lewis and Clark expedition, and the acquisitions of Texas (the Alamo and independence), Oregon (Oregon Trail), and California (Gold Rush and the development of mining towns).

SS4H4 Examine the main ideas of the abolitionist and suffrage movements.

a. Discuss contributions of and challenges faced by Susan B. Anthony, Frederick Douglass, Elizabeth Cady Stanton, Sojourner Truth, and Harriet Tubman.

SS4H5 Explain the causes, major events, and consequences of the Civil War.

a. Identify Uncle Tom's Cabin and John Brown's raid on Harper's Ferry and explain how each of these events was related to the Civil War.

b. Discuss how the issues of states' rights and slavery increased tensions between the North and South.

c. Identify major battles, campaigns, and events: Fort Sumter, Gettysburg, the Atlanta Campaign, Sherman's March to the Sea, and Appomattox Court House.

d. Describe the roles of Abraham Lincoln, Robert E. Lee, Ulysses S. Grant, Jefferson Davis, Thomas "Stonewall" Jackson, and William T. Sherman.

e. Describe the effects of war on the North and South.

SS4H6 Analyze the effects of Reconstruction on American life.

a. Describe the purpose of the 13th, 14th, and 15th Amendments.

b. Explain the work of the Bureau of Refugees, Freedmen, and Abandoned Lands (Freedmen's Bureau).

c. Explain how slavery was replaced by sharecropping and how freed African Americans or Blacks were prevented from exercising their newly won rights.

d. Describe the effects of Jim Crow laws and practices.

Geographic Understandings (G)

SS4G1 Locate important physical and man-made features in the United States.

a. Locate major physical features of the United States: the Atlantic Coastal Plain, the Great Plains, the Continental Divide, the Gulf of Mexico, the Mississippi River, and the Great Lakes.

b. Locate major man-made features of the United States: New York City, NY; Boston, MA; Philadelphia, PA; Washington, D.C.; Gettysburg, PA; and the Erie Canal.

SS4G2 Describe how physical systems affect human systems.

a. Explain how each force (American and British) attempted to use the physical geography of each battle site (Lexington and Concord, Saratoga, and Yorktown) to its benefit.

b. Describe physical barriers that hindered and physical gateways that benefited territorial expansion from 1801 to 1861.

Government/Civic Understandings (CG)

SS4CG1 Describe the meaning of:

a. Natural rights as found in the Declaration of Independence (the right to life, liberty, and the pursuit of happiness)

Grade 4 Standards

- b. "We the People" from the Preamble to the U.S. Constitution as a reflection of consent of the governed or popular sovereignty
 - c. The federal system of government in the U.S. (federal powers, state powers, and shared powers)
 - d. Representative democracy/republic
- SS4CG2 Explain the importance of freedoms guaranteed by the First Amendment to the U.S. Constitution.
- SS4CG3 Describe the structure of government and the Bill of Rights.
- a. Describe how the three branches of government interact with each other (checks and balances and separation of powers), and how they relate to local, state, and federal government.
 - b. Identify and explain the rights in the Bill of Rights, describe how the Bill of Rights places limits on the powers of government, and explain the reasons for its inclusion in the Constitution in 1791.

Economic Understandings (E)

- SS4E1 Use the basic economic concepts of trade, opportunity cost, specialization, voluntary exchange, productivity, and price incentives to illustrate historical events.
- a. Describe opportunity cost and its relationship to decision-making across time (e.g., decisions to settle in the west).
 - b. Explain how price incentives affect people's behavior and choices: decisions about what crops (e.g., cotton, and tobacco) to grow and products (e.g., textiles) to produce.
 - c. Describe how specialization improves standards of living (e.g., differences in the economies in the North and South).
 - d. Explain how voluntary exchange helps both buyers and sellers (e.g., Gold Rush mining towns).
 - e. Describe how trade promotes economic activity (e.g., trade between the U.S. and Europe).
 - f. Give examples of technological advancements and their impact on business productivity during the development of the United States (e.g., cotton gin, steamboat, steam locomotive, and telegraph).
- SS4E2 Identify the elements of a personal budget (income, expenditures, and saving) and explain why personal spending and saving decisions are important.