Reading Standards for Literature

The following standards offer a focus for instruction each year and help ensure that students gain adequate exposure to a range of texts and tasks. Rigor is also infused through the requirement that students read increasingly complex texts through the grades. *Students advancing through the grades are expected to meet each year's grade-specific standards and retain or further develop skills and understandings mastered in preceding grades.*

Key Ideas and Details

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

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.
5. Analyze how a particular sentence, chapter, scene, or stanza fits into the overall structure of a text and contributes to the development of the theme, setting, or plot.
6. Explain how an author develops the point of view of the narrator or speaker in a text.

Integration of Knowledge and Ideas

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.
8. (Not applicable to literature)
9. Compare and contrast texts in different forms or genres (e.g., stories and poems; historical novels and fantasy stories) in terms of their approaches to similar themes and topics.

Range of Reading and Level of Text Complexity

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 Standards for Informational Text

Key Ideas and Details

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

4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.
5. Analyze how a particular sentence, paragraph, chapter, or section fits into the overall structure of a text and contributes to the development of the ideas.
6. 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

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.

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.

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

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 Standards

The following standards offer a focus for instruction each year to help ensure that students gain adequate mastery of a range of skills and applications. Each year in their writing, students should demonstrate increasing sophistication in all aspects of language use, from vocabulary and syntax to the development and organization of ideas, and they should address increasingly demanding content and sources. *Students advancing through the grades are expected to meet each year's grade-specific standards and retain or further develop skills and understandings mastered in preceding grades.*

Text Types and Purposes

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

2. Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.
   a. Introduce a topic; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.
   b. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.
   c. Use appropriate transitions to clarify the relationships among ideas and concepts.
   d. Use precise language and domain-specific vocabulary to inform about or explain the topic.
   e. Establish and maintain a formal style.
   f. Provide a concluding statement or section that follows from the information or explanation presented.

3. Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.
   a. Engage and orient the reader by establishing a context and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically.
   b. Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters.
   c. Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another.

d. Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events.

e. Provide a conclusion that follows from the narrated experiences or events.

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. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a different approach.

6. Produce and publish grade-appropriate writing using technology, either independently or in collaborating with others.

Research to Build and Present Knowledge

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

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.

9. Draw relevant evidence from grade-appropriate literary or informational texts to support analysis, reflection, and research.

a. Apply grade 6 Reading standards to literature (e.g., "Compare and contrast texts in different forms or genres [e.g., stories and poems; historical novels and fantasy stories] in terms of their approaches to similar themes and topics").

b. Apply grade 6 Reading standards to literary nonfiction (e.g., "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

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 Standards

The following standards offer a focus for instruction each year to help ensure that students gain adequate mastery of a range of skills and applications. *Students advancing through the grades are expected to meet each year's grade- specific standards and retain or further develop skills and understandings mastered in preceding grades*

Comprehension and Collaboration

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.

a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.

b. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.

c. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.

d. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.

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.
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

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.
5. Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.
6. Adapt speech to a variety of contexts, audience, and tasks, demonstrating command of formal English when indicated or appropriate.

Language Standards

The following standards for grades offer a focus for instruction each year to help ensure that students gain adequate mastery of a range of skills and applications. *Students advancing through the grades are expected to meet each year's grade-specific standards and retain or further develop skills and understandings mastered in preceding grades.*

Conventions of Standard English

1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
   a. Ensure that pronouns are in the proper case (subjective, objective, possessive).
   b. Use intensive pronouns (e.g., *myself, ourselves*).
   c. Recognize and correct inappropriate shifts in pronoun number and person.
   d. Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents).
   e. Recognize variations from standard English in their own and others' writing and speaking, and identify and use strategies to improve expression in conventional language.
2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
   a. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements.
   b. Spell correctly.

Knowledge of Language

3. Use knowledge of language and its conventions when writing, speaking, reading, or listening.
   a. Vary sentence patterns for meaning, reader/listener interest, and style.
   b. Maintain consistency in style and tone.

Vocabulary Acquisition and Use

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.
   a. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.
   b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., *audience, auditory, audible*).
   c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.
   d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).

5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
   a. Interpret figures of speech (e.g., personification) in context.
   b. Use the relationship between particular words (e.g., cause/effect, part/whole, item/category) to better understand each of the words.
   c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., *stingy, scrimping, economical, unwasteful, thrifty*).
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.

Mathematics | Grade 6

Grade Level Overview

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

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

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

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

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

Ratios and Proportional Relationships 6.RP

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

1. Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."*

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

3. Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.
    a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.
    b. Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what unit rate were lawns being mowed?*
    c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means $30/100$ times the quantity); solve problems involving finding the whole, given a part and the percent.
    d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

The Number System 6.NS

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

1. Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, create a story context for $(2/3) \div (3/4)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because $3/4$ of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = ad/bc$.) How much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $3/4$-cup servings are in $2/3$ of a cup of yogurt? How wide is a rectangular strip of land with length $3/4$ mi and area $1/2$ square mi?*

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

2. Fluently divide multi-digit numbers using the standard algorithm.
3. Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.
4. Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. *For example, express 36 + 8 as 4 (9 + 2).*

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

5. Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits,

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

positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.

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

   a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., $-(-3) = 3$, and that 0 is its own opposite.

   b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.

   c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.

7. Understand ordering and absolute value of rational numbers.

   a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. *For example, interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right.*

   b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write $-3\,°C > -7\,°C$ to express the fact that $-3\,°C$ is warmer than $-7\,°C$.*

   c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. *For example, for an account balance of -30 dollars, write $|-30| = 30$ to describe the size of the debt in dollars.*

   d. Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.*

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

Expressions and Equations   6.EE

A. Apply and extend previous understandings of arithmetic to algebraic expressions.

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

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

   a. Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation "Subtract y from 5" as $5 - y$.*

   b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression $2(8 + 7)$ as a product of two factors; view $(8 + 7)$ as both a single entity and a sum of two terms.*

   c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas $V = s^3$ and $A = 6\,s^2$ to find the volume and surface area of a cube with sides of length $s = 1/2$.*

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

4. Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.*

B. Reason about and solve one-variable equations and inequalities.

5. Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

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

7. Solve real-world and mathematical problems by writing and solving equations and inequalities of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers. Inequalities will include $<$, $>$, $\leq$, and $\geq$.

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.

C. Represent and analyze quantitative relationships between dependent and independent variables.

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

Geometry   6.G

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

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

2. Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = Bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

3. Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.

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

Statistics and Probability   6.SP

A. Develop understanding of statistical variability.

1. Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. *For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.*

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

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

B. Summarize and describe distributions.

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

5. Summarize numerical data sets in relation to their context, such as by:
   a. Reporting the number of observations.
   b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.
   c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range) as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
   d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

6-8

6-8.SP1. Examine sources in order to:
    A. Distinguish between primary, secondary, and tertiary sources.
    B. Determine the origin, author's point of view, intended audience, and reliability.
    C. Explain the meaning of words, phrases, and content-specific vocabulary.

6-8.SP2. Use a variety of primary and secondary sources to:
    A. Analyze social studies content.
    B. Evaluate claims, counterclaims, and evidence.
    C. Compare and contrast multiple sources and accounts.
    D. Explain how the availability of sources affects historical interpretations.

6-8.SP3. Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, social studies content knowledge, and clear reasoning and explanations to:
    A. Demonstrate an understanding of social studies content.
    B. Compare and contrast content and viewpoints.
    C. Analyze causes and effects.
    D. Evaluate counterclaims.

GRADE 6   The United States and Louisiana: Beginnings Through Ratification

Beginning with the exploration of colonization of North America, this course offers a chronological study of major events, issues, movements, individuals, and groups of people in the United States from a national and a Louisiana perspective. In this course, students will examine British and French exploration and colonization, the development of the British thirteen colonies; French and Spanish Colonial Louisiana, the American Revolution, and the development and ratification of the U.S. Constitution.

- 6.1 Explain ideas, events, and developments in the history of the United States of America from 1580 to 1791 and how they progressed, changed, or remained the same over time.
- 6.2 Analyze connections between ideas, events, and developments in U.S. history within their global context from 1580 to 1791.
- 6.3 Compare and contrast events and developments in U.S. history from 1580 to 1791.
- 6.4 Use geographic representations and historical data to analyze events and developments in U.S. history from 1580 to 1791, including environmental, cultural, economic, and political characteristics and changes.
- 6.5 Use maps to identify absolute location (latitude and longitude) and describe geographic characteristics of places in Louisiana, North America, and the world.

- 6.6 Use a variety of primary and secondary sources to:
    a. Analyze social studies content.
    b. Evaluate claims, counterclaims, and evidence.
    c. Compare and contrast multiple sources and accounts.
    d. Explain how the availability of sources affects historical interpretations.
- 6.7 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, social studies content knowledge, and clear reasoning and explanations to:
    a. Demonstrate an understanding of social studies content.
    b. Compare and contrast content and viewpoints.
    c. Analyze causes and effects.
    d. Evaluate counterclaims.
- 6.8 Analyze European exploration and colonization of North America.
    a. Explain the significance of the land claims made in North America by European powers after 1600, including England, France, the Netherlands, Portugal, Russia, Spain, and Sweden and their effects on Native Americans.
    b. Compare and contrast the motivations, challenges, and achievements related to exploration and settlement of North America by the British, Dutch, French, and Spanish, including the search for wealth, freedom, and a new life.
- 6.9 Analyze the development of the settlements and colonies in the late sixteenth century through the seventeenth century.
    a. Explain the importance of the founding and development of Jamestown, including representative government established through the House of Burgesses, private ownership of land, introduction of slavery, and arrival of women and families.
    b. Explain the importance of the founding and development of the Plymouth settlement, including practice of self-government established by the Mayflower Compact, religious freedom, and contributions of Native Americans, including Chief Massasoit and Squanto, the leadership of William Bradford.
    c. Compare and contrast the New England, Middle, and Southern colonies, including their physical geography, religion, education, economy, and government.
    d. Explain the contributions of key individuals and groups to the foundation of the colonies, including Pilgrims, Puritans, Quakers, John Smith, Roger Williams, Anne Hutchinson, William Penn, Edward Winslow, William Bradford, John Winthrop, John Rolfe, and Pocahontas.
    e. Identify the locations of the colonies and lands inhabited by Native Americans, and explain how location, environment, and resources affected changes and development over time.
    f. Analyze the causes, interactions, and consequences related to triangular trade, including the forced migration of Africans through the transatlantic trade of enslaved people and experiences of the Middle Passage.
    g. Explain the experiences and perspectives of various people groups living in colonial North America, including large landowners, farmers, artisans, women, children, indentured servants, enslaved people, and Native Americans.

h. Analyze cooperation, competition, and conflict among groups in North America from the late 1500s to the mid-1700s, including Dutch, English, French, Spanish, and Native Americans including the 1621 Autumn Harvest Celebration, French and Native American trade of fur, Bacon's Rebellion, and King Philip's (Metacom) War.

- 6.10 Analyze the growth and development of colonial Louisiana.
    a. Explain the significance of events that influenced pre-colonial and colonial Louisiana, including the founding of Natchitoches and New Orleans, the Treaty of Fontainebleau, and the Third Treaty of San Ildefonso.
    b. Describe the factors that influenced migration within and to Louisiana by various groups, including French, Spanish, Africans, Acadians, Germans, Canary Islanders/Islenos, and Haitians, and explain how individuals and groups interacted and contributed to the development of Louisiana.
    c. Describe the characteristics of colonial Louisiana, including physical geography, climate, economic activities, culture and customs, and government, and analyze their importance to the growth and development of Louisiana.
    d. Explain the influence of France and Spain on government in Louisiana, with an emphasis on the Napoleonic Code, the Code Noir, and the contributions of Jean-Baptiste Le Moyne de Bienville, John Law, King Louis XIV, and Alejandro O'Reilly.
    e. Describe the contributions and achievements of Gens de Couleur Libres in colonial Louisiana.
    f. Compare and contrast French and Spanish colonial Louisiana and colonial Louisiana and British colonies.
- 6.11 Analyze the causes, course, and consequences of the American Revolution.
    a. Analyze the historical and religious factors that influenced the development of government in the United States, including those from ancient Greece; the Roman Republic; the Judeo-Christian tradition; English rule of law and the Magna Carta; Enlightenment philosophies; and the Great Awakening.
    b. Explain the causes and effects of the French and Indian War.
    c. Analyze the role and importance of key events and developments leading to the American Revolution, including end of Salutary Neglect by King George III, French and Indian War, Proclamation of 1763, Acts of 1764–1773 (Sugar Act, Stamp Act, Quartering Act, Townshend Acts, Tea Act), Boston Massacre and the death of Crispus Attucks, Boston Tea Party, Coercive (Intolerable) Acts, First Continental Congress, Restraining Acts, the seizure of firearms, and Second Continental Congress.
    d. Explain how key ideas expressed in historical works influenced the American Revolution, including "taxation without representation is tyranny" (James Otis), John Dickinson's *Letters from a Farmer in Pennsylvania*, Patrick Henry's "Give Me Liberty or Give Me Death" speech, Thomas Paine's *Common Sense*, and the Declaration of Independence: "all men are created equal, … endowed by their Creator with certain unalienable rights, … among these are life, liberty, and the pursuit of Happiness," and "the consent of the governed."
    e. Explain efforts to mobilize support for the American Revolution by individuals and groups, including the Minutemen and Committees of Correspondence and Sons of Liberty (Samuel Adams, John Hancock, Paul Revere).
    f. Compare and contrast viewpoints of Loyalists and Patriots, and evaluate their arguments for and against independence from Britain.

    g. Compare and contrast the American colonies and British in the American Revolution, including leadership, military power, recruitment, alliances, population, and resources, and evaluate their strengths and weaknesses.

    h. Explain the significance and outcome of key battles and turning points during the American Revolution, including the Battles of Lexington and Concord (1775), creation of the Continental Army and appointment of George Washington as Commander in Chief (1775), Battles of Trenton and Princeton (1776–1777), Battle of Saratoga (1777), encampment at Valley Forge (1777–1778), Franco-American alliance (1778), Battle of Yorktown (1781), and the Treaty of Paris of 1783.

    i. Explain the contributions of women to the American Revolution, including those of Abigail Adams, Mercy Otis-Warren, Mary Ludwig Hays, Deborah Sampson, Phillis Wheatly, and Betsy Ross.

    j. Explain the role of Spain and Spanish colonial Louisiana during the American Revolution and effects of the conflict on the colony, including the roles of Bernardo de Galvez, Battle of Lake Pontchartrain (1779), and Battle of Baton Rouge (1779).

    k. Explain the role of espionage during the American Revolution, including the actions of spies for the colonies (Nathan Hale, Culper Spy Ring, John Clark, Enoch Crosby, Nancy Hart, and James Armistead Lafayette) and spies for Britain (Benedict Arnold).

- 6.12 Analyze the development of the U.S. political system through the ratification of the U.S. Constitution.
  - a. Explain the purpose and importance of the Articles of Confederation.
  - b. Describe the development of various state Constitutions, and the effects of early abolitionists on the development of state government, including Olaudah Equiano, Benjamin Banneker, and Elizabeth Freeman.
  - c. Explain the ideas and events leading to the ratification of the Constitution of the United States, including inadequacies of the Articles of Confederation and Shays Rebellion.
  - d. Evaluate the major issues debated at the Constitutional Convention, including the key characteristics and features of the Articles of Confederation, the division and sharing of power between the federal and state governments (federal system), the Great Compromise, and slavery (Three-Fifths Compromise).
  - e. Explain how the ideas of leading figures and Founding Fathers contributed to the Constitutional Convention and development of the U.S. government, including John Adams, Benjamin Franklin, Alexander Hamilton, Thomas Jefferson, James Madison, George Mason, William Patterson, Roger Sherman, George Washington, and James Wilson.
  - f. Explain the importance of ideas expressed in the Preamble to the Constitution of the United States, including the purpose and responsibilities of government and the concept of self-government.
  - g. Explain the significance of the Commerce Clause, including its role in establishing a constitutional relationship between Native Americans and the U.S. government.
  - h. Evaluate the arguments of Federalists and Anti-Federalists on the ratification of the Constitution expressed in the Federalist Papers and the writings of the Anti-Federalists.
  - i. Explain how and why the Constitution of the United States was amended to include the Bill of Rights, and analyze the guarantees of civil rights and individual liberties protected in each of the first ten amendments.

j. Analyze the key principles of government established by the Constitution of the United States, including federalism (enumerated, reserved, and concurrent powers), individual rights, judicial review, limited government, popular sovereignty and consent of the governed, rule of law, separation of powers, and a system of checks and balances.

k. Explain the structure and processes of the United States government as outlined in the Constitution of the United States, including the branches of government, how a bill becomes a law at the federal level, and the process for amending the United States Constitution.

l. Explain the structure, powers, and functions of the branches of the United States federal government (legislative, executive, and judicial), and describe the qualifications, roles, and responsibilities of elected and appointed government officials.

MATTER AND ITS INTERACTIONS

Performance Expectation	Develop models to describe the atomic composition of simple molecules and extended structures.
Clarification Statement	Emphasis is on developing models of molecules that vary in complexity. Examples of simple molecules could include carbon dioxide and water. Examples of extended structures could include sodium chloride or diamonds. Examples of molecular-level models could include drawings, 3-D models, or computer representations showing different molecules with different types of atoms.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions and defining problems 2. **Developing and using models:** Modeling in 6–8 builds on K–5 and progresses to developing, using and revising models to describe, test, and predict more abstract phenomena and design systems. • Develop and/or use a model to predict and/or describe phenomena. 3. Planning and carrying out investigations 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations and designing solutions 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**STRUCTURE AND PROPERTIES OF MATTER** Substances are made from different types of atoms, which combine with one another in various ways. Atoms form molecules that range in size from two to thousands of atoms. (MS.PS1.A.a) Solids may be formed from molecules, or they may be extended structures with repeating subunits (e.g., crystals). (MS.PS1A.e)	**SCALE, PROPORTION, AND QUANTITY** Time, space, and energy phenomena can be observed at various scales using models to study systems that are too large or too small.

MOTION AND STABILITY: FORCES AND INTERACTIONS

Performance Expectation	Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.
Clarification Statement	Examples of practical problems could include reducing the effects of impact of two objects such as two cars hitting each other, an object hitting a stationary object, or a meteor hitting a spacecraft.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions and defining problems 2. Developing and using models 3. Planning and carrying out investigations 4. Analyzing and interpreting data 5. Using mathematics and computational thinking **6. Constructing explanations and designing solutions:** Constructing explanations (science) and designing solutions (engineering) in 6–8 builds on K–5 experiences and progresses to include designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories. • Apply scientific ideas or principles to design, construct, and/or test a design of an object, tool, process or system. 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**FORCES AND MOTION** For any pair of interacting objects, the force exerted by the first object on the second object is equal in strength to the force that the second object exerts on the first, but in the opposite direction (Newton's third law). (MS.PS2A.a) **DEVELOPING POSSIBLE SOLUTIONS** A solution needs to be tested,to prove the validity of the design and then modified on the basis of the test results in order to improve it. There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem. Sometimes parts of different solutions can be combined to create a solution that is better than any of its predecessors. Models of all kinds are important for testing solutions (MS.ETS1B.a)	**SYSTEMS AND SYSTEM MODELS** Models can be used to represent systems and their interactions—such as inputs, processes and outputs—and energy, matter, and information flows within systems.

MOTION AND STABILITY: FORCES AND INTERACTIONS

Performance Expectation	Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.
Clarification Statement	Emphasis is on balanced (Newton's First Law) and unbalanced forces in a system, qualitative comparisons of forces, mass and changes in motion (Newton's Second Law) in one dimension to a given frame of reference, or specification of units.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions and defining problems 2. Developing and using models 3. **Planning and carrying out investigations:** Planning and carrying out investigations to answer questions (science) or test solutions (engineering) to problems in 6–8 builds on K–5 experiences and progresses to include investigations that use multiple variables and provide evidence to support explanations or solutions. • Plan an investigation individually and collaboratively, and in the design: identify independent and dependent variables and controls, what tools are needed to do the gathering, how measurements will be recorded, and how many data are needed to support a claim. 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations and designing Solutions 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**FORCES AND MOTION** The motion of an object is determined by the sum of the forces acting on it; if the total force on the object is not zero, its motion will change. The greater the mass of the object, the greater the force needed to achieve the same change in motion. For any given object, a larger force causes a larger change in motion (acceleration) (MS.PS2A.b) All positions of objects and the directions of forces and motions must be described in an arbitrarily chosen reference frame and arbitrarily chosen units of size. In order to share information with other people, these choices must also be shared. (MS.PS2A.c) The motion of an object is dependent upon the reference frame of the observer. The reference frame must be shared when discussing the motion of an object. (MS.PS2A.d)	**STABILITY AND CHANGE** Explanations of stability and change in natural or designed systems can be constructed by examining the changes over time and forces at different scales, including atomic scales.

MOTION AND STABILITY: FORCES AND INTERACTIONS

Performance Expectation	Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.
Clarification Statement	Questions about data might require quantitative answers related to proportional reasoning and algebraic thinking. Examples of devices that use electric and magnetic forces could include electromagnets. Examples of data could include the effect of the number of turns of wire on the strength of an electromagnet, or the effect of increasing the number or strength of magnets on the speed of an electric motor.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. **Asking questions and defining problems:** Asking questions (science) and defining problems (engineering) in grades 6–8 builds from grades K–5 experiences and progresses to specifying relationships between variables, and clarifying arguments and making models. • Ask questions that can be investigated within the scope of the classroom, outdoor environment, and museums and other public facilities with available resources and, when appropriate, frame a hypothesis based on observations and scientific principles. 2. Developing and using models 3. Planning and carrying out investigations 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations and designing solutions 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**TYPES OF INTERACTIONS** Electric and magnetic (electromagnetic) forces can be attractive (opposite charges) or repulsive (like charges), have polar charges (north and south poles) and their sizes depend on the magnitudes of the charges, currents, or magnetic strengths involved and on the distances between the interacting objects. (MS.PS2B.a)	**CAUSE AND EFFECT** Cause and effect relationships may be used to predict phenomena in natural or designed systems.

MOTION AND STABILITY: FORCES AND INTERACTIONS

Performance Expectation	Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.
Clarification Statement	Examples of evidence for arguments could include data generated from simulations or digital tools and charts displaying mass, strength of interaction, distance from the Sun, or orbital periods of objects within the solar system, not necessarily including Newton's Law of Gravitation or Kepler's Laws.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions and defining problems 2. Developing and using models 3. Planning and carrying out investigations 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations and designing solutions **7. Engaging in argument from evidence:** Engaging in argument from evidence in 6–8 builds from K–5 experiences and progresses to constructing a convincing argument that supports or refutes claims for either explanations or solutions about the natural and designed world(s). • Construct, use, and/or present an oral and written argument supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem. 8. Obtaining, evaluating, and communicating information	**TYPES OF INTERACTIONS** Gravitational forces are always attractive. There is a gravitational force between any two masses, but it is very small except when one or both of the objects have large mass (e.g., Earth and the sun). (MS.PS2B.b)	**SYSTEMS AND SYSTEM MODELS** Models can be used to represent systems and their interactions—such as inputs, processes and outputs—and energy, matter, and information flows within systems.

MOTION AND STABILITY: FORCES AND INTERACTIONS

Performance Expectation	Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.
Clarification Statement	Examples of this phenomenon could include the interactions of magnets, electrically-charged strips of tape, or electrically-charged pith balls. Examples of investigations could include first-hand experiences or simulations designed to provide qualitative evidence for the existence of fields.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions and defining problems 2. Developing and using models 3. **Planning and carrying out investigations:** Planning and carrying out investigations to answer questions (science) or test solutions (engineering) to problems in 6–8 builds on K–5 experiences and progresses to include investigations that use multiple variables and provide evidence to support explanations or solutions. • Conduct an investigation and evaluate the experimental design to produce data to serve as the basis for evidence that can meet the goals of the investigation. 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations and designing solutions 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**TYPES OF INTERACTIONS** Forces that act at a distance (electric, magnetic, and gravitational) can be explained by fields that extend through space and can be mapped by their effect on a test object (a charged object, or a ball, respectively). (MS.PS2B.c)	**CAUSE AND EFFECT** Cause and effect relationships may be used to predict phenomena in natural or designed systems.

ENERGY

Performance Expectation	Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.
Clarification Statement	Emphasis is on descriptive relationships between kinetic energy and mass as well as kinetic energy and speed. Examples could include riding a bicycle at different speeds, rolling different masses of rocks downhill, or the impact of a wiffle ball versus a tennis ball.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions and defining problems 2. Developing and using models 3. Planning and carrying out investigations **4. Analyzing and interpreting data:** Analyzing data in 6–8 builds on K–5 experiences and progresses to extending quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis. • Construct, analyze, and/or interpret graphical displays of data and/or large data sets to identify linear and nonlinear relationships. 5. Using mathematics and computational thinking 6. Constructing explanations and designing solutions 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**DEFINITIONS OF ENERGY** Motion energy is properly called kinetic energy; it is proportional to the mass of the moving object and grows with the square of its speed. (MS.PS3A.a)	**SCALE, PROPORTION, AND QUANTITY** Proportional relationships (e.g. speed as the ratio of distance traveled to time taken) among different types of quantities provide information about the magnitude of properties and processes.

ENERGY

Performance Expectation	Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.
Clarification Statement	Emphasis is on relative amounts of potential energy, not on calculations of potential energy. Examples of objects within systems interacting at varying distances could include: the Earth and either a roller coaster cart at varying positions on a hill or objects at varying heights on shelves, changing the direction/orientation of a magnet, or a balloon with static electrical charge being brought closer to a classmate's hair. Examples of models could include representations, diagrams, pictures, or written descriptions of systems.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions and defining problems **2. Developing and using models:** Modeling in 6–8 builds on K–5 experiences and progresses to developing, using and revising models to describe, test, and predict more abstract phenomena and design systems. • Develop a model to describe unobservable mechanisms. 3. Planning and carrying out investigations 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations and designing solutions 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**DEFINITIONS OF ENERGY** An object or system of objects may also contain stored (potential) energy, depending on their relative positions. (MS.PS3A.b) **RELATIONSHIP BETWEEN ENERGY AND FORCES** When two objects interact, each one exerts a force on the other that can cause energy to be transferred to or from the object. (MS.PS3C.a)	**SYSTEMS AND SYSTEM MODELS** Models can be used to represent systems and their interactions—such as inputs, processes and outputs—and energy, matter, and information flows within systems.

WAVES AND THEIR APPLICATIONS IN TECHNOLOGIES FOR INFORMATION TRANSFER

Performance Expectation	Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave and how the frequency and wavelength change the expression of the wave.
Clarification Statement	Emphasis is on describing mechanical waves with both qualitative and quantitative thinking.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions (for science) and defining problems (for engineering) 2. Developing and using models 3. Planning and carrying out investigations 4. Analyzing and interpreting data 5. **Using mathematics and computational thinking:** Mathematical and computational thinking in 6–8 builds on K–5 experiences and progresses to identifying patterns in large data sets and using mathematical concepts to support explanations and arguments. • Use mathematical representations to describe and/or support scientific conclusions and design solutions. 6. Constructing explanations and designing solutions 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**WAVE PROPERTIES** A simple wave has a repeating pattern with a specific wavelength, frequency, and amplitude. (MS.PS4A.a)	**PATTERNS** Graphs, charts, and images can be used to identify patterns in data.

WAVES AND THEIR APPLICATIONS IN TECHNOLOGIES FOR INFORMATION TRANSFER

Performance Expectation	Develop and use a model to describe that waves are refracted, reflected, absorbed, transmitted, or scattered through various materials.
Clarification Statement	Emphasis is on both light and mechanical waves interacting with various objects such as light striking a mirror or a water wave striking a jetty. Examples of models could include drawings, simulations, or written descriptions.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions (for science) and defining problems (for engineering) 2. **Developing and using models:** Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems. • Develop and/or use a model to predict and/or describe phenomena. 3. Planning and carrying out investigations 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations and designing solutions 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**WAVE PROPERTIES** A sound wave needs a medium through which it is transmitted. (MS.PS4A.b) **ELECTROMAGNETIC RADIATION** When light shines on an object, it is reflected, absorbed, transmitted, or scattered through the object, depending on the object's material and the frequency (color) of the light. (MS.PS4B.a) The path that light travels can be traced as straight lines, except at surfaces between different transparent materials (e.g., air and water, air and glass) where the light path bends (Refraction). (MS.PS4B.b) A wave model of light is useful for explaining brightness, color, and the frequency-dependent bending of light at a surface between media. However, because light can travel through a vacuum, it cannot be a mechanical wave, like sound or water waves. (MS.PS4B.c)	**STRUCTURE AND FUNCTION** Structures can be designed to serve particular functions by taking into account properties of different materials, and how materials can be shaped and used.

EARTH'S PLACE IN THE UNIVERSE

Performance Expectation	Develop and use a model of the Earth-sun-moon system to describe the reoccurring patterns of lunar phases, eclipses of the sun and moon, and seasons.
Clarification Statement	Earth's rotation relative to the positions of the moon and sun describes the occurrence of tides; the revolution of Earth around the sun explains the annual cycle of the apparent movement of the constellations in the night sky; the moon's revolution around Earth explains the cycle of spring/neap tides and the occurrence of eclipses; the moon's elliptical orbit mostly explains the occurrence of total and annular eclipses. Examples of models can be physical, graphical, or conceptual.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions and defining problems 2. **Developing and using models:** Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems. • Develop and use a model to describe phenomena 3. Planning and carrying out investigations 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations and designing solutions 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**THE UNIVERSE AND ITS STARS** Patterns of the apparent motion of the sun, the moon, and stars in the sky can be observed, described, predicted, and explained with models. (MS.ESS1A.a) **EARTH AND THE SOLAR SYSTEM** This model of the solar system can explain eclipses of the Sun and the Moon. Earth's spin axis is fixed in direction over the short term but tilted relative to its orbit around the Sun. The seasons are a result of that tilt and are caused by the differential intensity of sunlight on different areas of Earth across the year. (MS.ESS1B.b)	**PATTERNS** Patterns can be used to identify cause and effect relationships.

EARTH'S PLACE IN THE UNIVERSE

Performance Expectation	Use a model to describe the role of gravity in the motions within galaxies and the solar system.
Clarification Statement	Emphasis for the model is on gravity as the force that holds together the solar system and Milky Way galaxy and controls orbital motions within them. Examples of models can be physical (such as the analogy of distance along a football field or computer visualizations of elliptical orbits) or conceptual (such as mathematical proportions relative to the size of familiar objects such as their school or state).

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions and defining problems **2. Developing and using models:** Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems. • Develop and/or use a model to predict and/or describe phenomena. 3. Planning and carrying out investigations 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations and designing solutions 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**THE UNIVERSE AND ITS STARS** Earth and its solar system are part of the Milky Way galaxy, which is one of many galaxies in the universe. (MS.ESS1A.b) **EARTH AND THE SOLAR SYSTEM** The solar system consists of the sun and a collection of objects, including planets, their natural satellite(s) (moons), and asteroids that are held in orbit around the sun by its gravitational pull on them. (MS.ESS1B.a) The solar system appears to have formed from a disk of dust and gas, drawn together by gravity. (MS.ESS1B.c)	**SYSTEMS AND MODELS** Models (e.g., physical, mathematical, computer models) can be used to represent systems and their interactions—such as inputs, processes and outputs—and energy, matter, and information flows within systems.

EARTH'S PLACE IN THE UNIVERSE

Performance Expectation	Analyze and interpret data to determine scale properties of objects in the solar system.
Clarification Statement	Emphasis is on the analysis of data from Earth-based instruments, space-based telescopes, and spacecraft to determine similarities and differences among solar system objects. Examples of scale properties include the sizes of an object's layers (such as crust and atmosphere), atmospheric composition, surface features (such as volcanoes), and orbital radius. Examples of data include statistical information, drawings and photographs, and models.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions and defining problems 2. Developing and using models 3. Planning and carrying out investigations **4. Analyzing and interpreting data:** Analyzing data in 6-8 builds on K-5 experiences and progresses to extending quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis. • Analyze and interpret data to determine similarities and differences in findings. 5. Using mathematics and computational thinking 6. Constructing explanations and designing solutions 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**EARTH AND THE SOLAR SYSTEM** The solar system consists of the sun and a collection of objects, including planets, their natural satellite(s) (moons), comets, and asteroids that are held in orbit around the sun by its gravitational pull on them. (MS.ESS1B.a)	**SCALE, PROPORTION, AND QUANTITY** Time, space, and energy phenomena can be observed at various scales using models to study systems that are too large or too small.

EARTH AND HUMAN ACTIVITY

Performance Expectation	Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.
Clarification Statement	Examples of evidence include grade-appropriate databases on human populations and the rates of consumption of food and natural resources (such as freshwater, mineral, and energy). Examples of impacts can include changes to the appearance, composition, and structure of Earth's systems as well as the rates at which they change. The consequences of increases in human populations and consumption of natural resources are described by science, but science does not make the decisions.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions and defining problems 2. Developing and using models 3. Planning and carrying out investigations 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations and designing solutions **7. Engaging in argument from evidence**: Engaging in argument from evidence in 6-8 builds on K-5 experiences and progresses to constructing a convincing argument that supports or refutes claims for either explanations or solutions about the natural and designed world(s). • Construct, use, and/or present an oral and written argument supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem. 8. Obtaining, evaluating, and communicating information	**HUMAN IMPACTS ON EARTH SYSTEMS** Typically as human populations and per-capita consumption of natural resources increase, so do the negative impacts on Earth unless the activities and technologies involved are engineered otherwise. (MS.ESS3C.b) **BIOGEOLOGY** Living organisms interact with Earth materials resulting in changes of the Earth. (MS.ESS2E.a) **RESOURCE MANAGEMENT FOR LOUISIANA** Responsible management of Louisiana's natural resources promotes economic growth, a healthy environment, and vibrant productive ecosystems. (MS.EVS1B.a)	**CAUSE AND EFFECT** Cause and effect relationships may be used to predict phenomena in natural or designed systems.

FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES

Performance Expectation	Conduct an investigation to provide evidence that living things are made of cells, either one or many different numbers and types.
Clarification Statement	Emphasis is on developing evidence that living things are made of cells, distinguishing between living and nonliving things, and understanding that living things may be made of one or many cells, including specialized cells. Examples could include animal cells (blood, muscle, skin, nerve, bone, or reproductive) or plant cells (root, leaf, or reproductive).

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions and defining problems 2. Developing and using models **3. Planning and carrying out investigations:** Planning and carrying out investigations to answer questions (science) or test solutions (engineering) to problems in 6-8 builds on K-5 experiences and progresses to include investigations that use multiple variables and provide evidence to support explanations or solutions. • Conduct an investigation and/or evaluate and/or revise the experimental design to produce data to serve as the basis for evidence that meet the goals of the investigation. 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations and designing solutions 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**STRUCTURE AND FUNCTION** All living things are made up of cells, which are the smallest living unit. An organism may consist of one single cell (unicellular) or many different numbers and types of cells (multicellular). (MS.LS1A.a)	**SCALE, PROPORTION, AND QUANTITY** Phenomena that can be observed at one scale may not be observable at another scale.

FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES

Performance Expectation	Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.
Clarification Statement	Emphasis is on the cell functioning as a whole system and the primary role of identified parts of the cell, such as the nucleus, chloroplasts, mitochondria, cell membrane, or cell wall.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions and defining problems 2. **Developing and using models:** Modeling in 6-8 builds on K-5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems. • Develop and/or use a model to predict and/or describe phenomena. 3. Planning and carrying out investigations 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations and designing solutions 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**STRUCTURE AND FUNCTION** Within cells, special structures (organelles) are responsible for particular functions. The cell membrane forms the boundary that controls the material(s) that enter and leave the cells in order to maintain homeostasis. (MS.LS1A.b)	**STRUCTURE AND FUNCTION** Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the shapes, composition, and relationships among its parts; therefore, complex natural and designed structures/systems can be analyzed to determine how they function.

ECOSYSTEMS: INTERACTIONS, ENERGY, AND DYNAMICS

Performance Expectation	Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
Clarification Statement	Emphasis is on cause and effect relationships between resources and growth of individual organisms and the numbers of organisms in ecosystems during periods of abundant or scarce resources.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions and defining problems 2. Developing and using models 3. Planning and carrying out investigations 4. **Analyzing and interpreting data:** Analyzing data in 6-8 builds on K-5 experiences and progresses to extending quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis. • Analyze and interpret data to provide evidence for phenomena. 5. Using mathematics and computational thinking 6. Constructing explanations and designing solutions 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**INTERDEPENDENT RELATIONSHIPS IN ECOSYSTEMS** Organisms, and populations of organisms, are dependent on their environmental interactions both with other living things and with nonliving factors. (MS.LS2A.a) In any ecosystem, organisms and populations with similar requirements for food, water, oxygen, or other resources may compete with each other for limited resources, access to which consequently constrains their growth and reproduction. (MS.LS2A.b) Growth of organisms and population increases are limited by access to resources. (MS.LS2A.c)	**CAUSE AND EFFECT** Cause and effect relationships may be used to predict phenomena in natural or designed systems.

ECOSYSTEMS: INTERACTIONS, ENERGY, AND DYNAMICS

Performance Expectation	Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.
Clarification Statement	Emphasis is on (1) predicting consistent patterns of interactions in different ecosystems and (2) relationships among and between biotic and abiotic components of ecosystems. Examples of types of interactions could include competitive, predatory, mutually beneficial, or other symbiotic relationships.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions and defining problems 2. Developing and using models 3. Planning and carrying out investigations 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. **Constructing explanations and designing solutions:** Constructing explanations (science) and designing solutions (engineering) in 6–8 builds on K–5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories. • Construct an explanation that includes qualitative or quantitative relationships between variables that predict(s) and/or describe(s) phenomena. 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**INTERDEPENDENT RELATIONSHIPS IN ECOSYSTEMS** Predatory interactions may reduce the number of organisms or eliminate whole populations of organisms. Mutually beneficial interactions, in contrast, may become so interdependent that each organism requires the other for survival. Although the species involved in these competitive, predatory, and mutually beneficial interactions vary across ecosystems, the patterns of interactions of organisms with their environments, both living and nonliving, are shared. (MS.LS2A.d)	**PATTERNS** Patterns can be used to identify cause and effect relationships.

ECOSYSTEMS: INTERACTIONS, ENERGY, AND DYNAMICS

Performance Expectation	Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.
Clarification Statement	Emphasis is on describing the conservation of matter and flow of energy into and out of various ecosystems, and on defining the boundaries of the system.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions and defining problems **2. Developing and using models:** Modeling in 6-8 builds on K-5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems. • Develop and/or use a model to predict and/or describe phenomena. 3. Planning and carrying out investigations 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations and designing solutions 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**CYCLE OF MATTER AND ENERGY TRANSFER IN ECOSYSTEMS** Food webs are models that demonstrate how matter and energy is transferred between producers, consumers, and decomposers as the three groups interact within an ecosystem. (MS.LS2B.a) Transfers of matter into and out of the physical environment occur at every level. (MS.LS2B.b) Decomposers recycle nutrients from dead plant or animal matter back to the soil in terrestrial environments or to the water in aquatic environments. (MS.LS2B.c) The atoms that make up the organisms in an ecosystem are cycled repeatedly between the living and nonliving parts of the ecosystem. Geochemical cycles include carbon, nitrogen, and the water cycle. (MS.LS2B.d)	**ENERGY AND MATTER** The transfer of energy can be tracked as energy flows through a designed or natural system.