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 several pieces of 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 analyze its development over the course of the text; provide an objective summary of the text.
3. Analyze how particular elements of a story or drama interact (e.g., how setting shapes the characters or plot).

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 rhymes and other repetitions of sounds (e.g., alliteration) on a specific verse or stanza of a poem or section of a story or drama.
5. Analyze how the overall form or structure of a text (e.g., drama, poetry, narrative, short story) contributes to its meaning.
6. Analyze how an author develops and contrasts the points of view of different characters or narrators in a text.

Integration of Knowledge and Ideas

7. Compare and contrast a written story, drama, or poem to its audio, filmed, staged, or multimedia version, analyzing the effects of techniques unique to each medium (e.g., lighting, sound, color, or camera focus and angles in a film).
8. (Not applicable to literature)
9. Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history.

Range of Reading and Level of Text Complexity

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 several pieces of relevant textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
2. Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text.
3. Analyze the interactions between individuals, events, and ideas in a text (e.g., how ideas influence individuals or events, or how individuals influence ideas or events).

Craft and Structure

4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone.
5. Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to the development of the ideas.
6. Determine an author's point of view or purpose in a text and analyze how the author distinguishes his or her position from that of others.

Integration of Knowledge and Ideas

7. Compare and contrast a text to an audio, video, or multimedia version of the text, analyzing each medium's portrayal of the subject (e.g., how the delivery of a speech affects the impact of the words).
8. Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.
9. Analyze how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence or advancing different interpretations of facts.

Range of Reading and Level of Text Complexity

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), acknowledge alternate or opposing claims, and organize the reasons and evidence logically.
   b. Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.
   c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), reasons, and evidence.
   d. Establish and maintain a formal style.
   e. Provide a concluding statement or section that follows from and supports 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 clearly, previewing what is to follow; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.
   b. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.
   c. Use appropriate transitions to create cohesion and 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 and supports 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 point of view 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 capture the action and convey experiences and events.
e. Provide a conclusion that follows from and reflects on 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, focusing on how well purpose and audience have been addressed.
6. Use technology, including the Internet, to produce and publish writing and link to and cite sources as well as to interact and collaborate with others, including linking to and citing sources.

Research to Build and Present Knowledge

7. Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation.
8. Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
9. Draw relevant evidence from grade-appropriate literary or informational texts to support analysis, reflection, and research.
   a. Apply grade 7 Reading standards to literature (e.g., "Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history").
   b. Apply grade 7 Reading standards to literary nonfiction (e.g. "Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims").

Range of Writing

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 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.

a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.
b. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.
c. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.

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

3. Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.

Presentation of Knowledge and Ideas

4. Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.
5. Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.
6. Adapt speech to a variety of contexts, audiences, 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. Explain the function of phrases and clauses in general and their function in specific sentences.
   b. Choose among simple, compound, complex, and compound-complex sentences to signal differing relationships among ideas.
   c. Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.
2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
   a. Use a comma to separate coordinate adjectives (e.g., *It was a fascinating, enjoyable movie* but not *He wore an old[,] green shirt*).
   b. Spell correctly.

Knowledge of Language

3. Use knowledge of language and its conventions when writing, speaking, reading, or listening.
   a. Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.

Vocabulary Acquisition and Use

4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7

reading and content, choosing flexibly from a range of strategies.

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., *belligerent, bellicose, rebel*).
c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.
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., literary, biblical, and mythological allusions) in context.
   b. Use the relationship between particular words (e.g., synonym/antonym, analogy) to better understand each of the words.
   c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., *refined, respectful, polite, diplomatic, condescending*).
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 7

Teachers Companion Documents.zip

Grade Level Overview

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

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

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

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

Ratios and Proportional Relationships 7.RP

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

1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units. *For example, if a person walks ½ mile in each ¼ hour, compute the unit rate as the complex fraction ½/¼ miles per hour, equivalently 2 miles per hour.*
2. Recognize and represent proportional relationships between quantities.
   a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.
   b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
   c. Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn.*
   d. Explain what a point (*x*, *y*) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, *r*) where *r* is the unit rate.

3. Use proportional relationships to solve multi-step ratio and percent problems of simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, and percent error.

The Number System 7.NS

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

1. Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.
   a. Describe situations in which opposite quantities combine to make 0. *For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.*
   b. Understand $p + q$ as the number located a distance $|q|$ from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.
   c. Understand subtraction of rational numbers as adding the additive inverse, $p – q = p + (–q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.
   d. Apply properties of operations as strategies to add and subtract rational numbers.
2. Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.
   a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(–1)(–1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
   b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $–(p/q) = (–p)/q = p/(–q)$. Interpret quotients of rational numbers by describing real-world contexts.
   c. Apply properties of operations as strategies to multiply and divide rational numbers.
   d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.
3. Solve real-world and mathematical problems involving the four operations with rational numbers.[1]

Expressions and Equations 7.EE

A. Use properties of operations to generate equivalent expressions.

1. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients to include multiple grouping symbols (e.g., parentheses, brackets, and braces).
2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, $a + 0.05a = 1.05a$ means that "increase by 5%" is the same as "multiply by 1.05."*

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

3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of

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

answers using mental computation and estimation strategies. *For example: If a woman making $25 an hour gets a 10% raise, she will make an additional $1/10$ of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 $3/4$ inches long in the center of a door that is 27 $1/2$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.*

4. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.
   a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?*
   b. Solve word problems leading to inequalities of the form $px + q > r$, $px + q \geq r$, $px + q < r$ or $px + q \leq r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.*

Geometry 7.G

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

1. Solve problems involving scale drawings of geometric figures, such as computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
2. Draw (freehand, with ruler and protractor, or with technology) geometric shapes with given conditions. (Focus is on triangles from three measures of angles or sides, noticing when the conditions determine one and only one triangle, more than one triangle, or no triangle.)
3. Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.

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

4. Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
5. Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.
6. Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. (Pyramids limited to surface area only.)

Statistics and Probability 7.SP

A. Use random sampling to draw inferences about a population.

1. Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
2. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. *For example, estimate the mean word length in a book by randomly sampling words from the*

GRADE 7 The United States and Louisiana: Early Republic Through Reconstruction

Beginning with the presidency of George Washington, 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 the development of the early republic, the Louisiana Purchase, the War of 1812, westward expansion, social and political reform movements of the nineteenth century, the growth of nationalism and sectionalism, the Civil War, and the Reconstruction period.

- 7.1 Explain ideas, events, and developments in the history of the United States of America from 1791 to 1877 and how they progressed, changed, or remained the same over time.
- 7.2 Analyze connections between ideas, events, and developments in U.S. history within their global context from 1791 to 1877.
- 7.3 Compare and contrast events and developments in U.S. history from 1791 to 1877.
- 7.4 Use geographic representations and historical data to analyze events and developments in U.S. history from 1791 to 1877, including environmental, cultural, economic, and political characteristics and changes.
- 7.5 Use maps to identify absolute location (latitude and longitude) and describe geographic characteristics of places in Louisiana, North America, and the world.
- 7.6 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.
- 7.7 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.
- 7.8 Analyze the influence of key events, ideas, and people on the economic, political, and social development of the United States from 1791–1850s.
    a. Explain the causes and events of the Whiskey Rebellion, including the response from the Washington administration and its relationship to enforcement of the government's right to tax.
    b. Explain the influence of precedents set by the presidency of George Washington, and analyze the advice in and effects of his Farewell Address.
    c. Analyze key events of the presidency of John Adams including the Alien and Sedition Act and the XYZ affair.
    d. Explain the significance of the election of 1800.

e. Explain how the disagreements between Thomas Jefferson and Alexander Hamilton resulted in the emergence of the Federalist and Democratic-Republican political parties, including views on foreign policy, Alien and Sedition Acts, economic policy, National Bank, funding and assumption of the revolutionary debt.
f. Describe the role of the Electoral College in presidential elections, including how it aims to ensure representation of less populated states.
g. Explain how the U.S. government addressed foreign and domestic challenges during the late 1700s to the mid-1800s and how related policies and legislation influenced the development of the United States.
h. Analyze the major events of Thomas Jefferson's presidency, including the Louisiana Purchase, Lewis and Clark expeditions, Dunbar-Hunter Expedition of Ouachita River, Red River Expedition, and Twelfth Amendment.

- 7.9 Analyze the causes, course of, and consequences of the War of 1812.
  a. Explain the events leading to the War of 1812, including Britain's war with Napoleonic France, impressment, and blockades, and analyze the political and economic effects on the United States.
  b. Explain key events, turning points, and outcomes of the War of 1812, including blockades, Battle of Lake Erie (1813), Burning of Washington (1814), Battle of New Orleans (1815), Battles of Baltimore and Lake Champlain (1814), penning of the Star Spangled Banner, and the Treaty of Ghent (1814).
  c. Analyze the interests and motivations of Native American groups aligned with the United States and with Britain during the War of 1812, including Chief Tecumseh.
  d. Explain the importance and effects of the Battle of New Orleans to Louisiana, and describe the roles played by General Andrew Jackson and Jean Lafitte.
  e. Explain the events leading to and surrounding Louisiana statehood, including the Neutral Strip, the West Florida controversy, and the capture of the Spanish Fort at Baton Rouge, as well as key figures including Julien de Lallande Poydras.
- 7.10 Analyze the growth and development of the United States from the early to mid-1800s.
  a. Describe the Era of Good Feelings (1815–1825), including Henry Clay's American System, Treaty of 1818, Adams-Onis Treaty of 1819, and the development of transportation networks.
  b. Analyze the purpose of the Monroe Doctrine (1823), with emphasis on its policies of both isolationism and protection of American interests in the Western Hemisphere, and how it influenced U.S. foreign policy and interactions with other nations.
  c. Analyze the effects of *Marbury v. Madison* (1803), *McCulloch v. Maryland* (1819), *Gibbons v. Ogden* (1824), and *Worcester v. Georgia* (1832).
  d. Analyze the ideas and motivations that contributed to westward expansion, including Manifest Destiny, and its political, social, and economic effects.
  e. Analyze the causes and effects of Indian Removal policies of the early to mid-1800s, including the Indian Removal Act of 1830, Trail of Tears, and Seminole Wars, and explain the role of key figures, including Andrew Jackson, Chief John Ross, and Chief Osceola.
  f. Analyze key events and developments that contributed to westward expansion, including the Oregon Treaty (1846), annexation of Texas (1845), Treaty of Guadalupe Hidalgo (1848), Gadsden Purchase (1853), the Pony Express (1860), Pacific Railway Act (1862), and Homestead Act (1862).

g. Explain the motivation and means of migration West, the experiences of the settlers, and resulting changes in the West, including the Gold Rush (1848–1855), trails (Oregon Trail, Mormon Trail, and Santa Fe Trail), first transcontinental telegraph, and the transcontinental railroad.
h. Describe the causes, course, and consequences of the Mexican-American War, including the Battle of the Alamo, Battle of San Jacinto, annexation of Texas, the Mexican Cession and Zachary Taylor's role in the war and subsequent election to the presidency.
i. Explain the causes and effects of the first Industrial Revolution in the United States, including advancements in technology, increased manufacturing, changing labor conditions, growing transportation systems, and urbanization.
j. Analyze the development of the agrarian economy in the South, including Louisiana, and explain how advancements in technology, such as the cotton gin and multiple-effect evaporator for sugar, contributed to an increase in enslaved labor.
k. Explain how steamboats influenced Louisiana's economic growth and the significance of Captain Henry Miller Shreve in steamboat navigation.
l. Compare and contrast the economies of the North and the South during the early to mid-1800s.
m. Describe push and pull factors for immigration to the United States in the early to mid-1800s, and explain how migration within and to the United States affected rural and urban areas.

- 7.11 Analyze role and importance of social and political reform movements of the nineteenth century.
  a. Analyze the key people, ideas, and events of the women's rights movement and woman's suffrage movement of the early to mid-1800s, including the Seneca Falls Convention, National Women's Rights Conventions, Susan B. Anthony, Elizabeth Cady Stanton, Lucretia Mott, Sojourner Truth, Mary Church Terrell, and Margaret Fuller.
  b. Explain the development of education and prison reform movements, including those led by Horace Mann and Dorothea Lynde Dix.
  c. Explain the effects of abolition efforts by key individuals and groups, including Sojourner Truth, William Lloyd Garrison, and the Quakers.
  d. Analyze the historical works and ideas of influential abolitionists, including Frederick Douglass' speech "The Constitution of the United States: Is It Pro-Slavery or Anti-Slavery?" and Harriet Beecher Stowe's *Uncle Tom's Cabin*.
  e. Describe the purpose, challenges, routes, and successes of the Underground Railroad and the key role played by Harriet Tubman.
  f. Explain restrictions placed on the trade of enslaved people prior to the Civil War, including the Northwest Ordinance of 1787 and the Act Prohibiting Importation of Slaves of 1807.
- 7.12 Explain the ideas, key people, and events related to the growth of sectionalism and rising tension prior to the Civil War.
  a. Analyze major events, legislation, and court decisions from 1800 to 1861 that led to increasing sectionalism, including the Missouri Compromise of 1820, *North Carolina v. Mann* (1830), the Nullification Crisis (1831–1833), the Compromise of 1850, the Fugitive Slave Acts (1793, 1850), the Kansas-Nebraska Act (1854), and the Dred Scott decision (1857).
  b. Describe the reasons for the formation of the Republican Party in 1854 and its founding platform.

c. Compare and contrast various arguments on the issue of slavery and state's rights, including those expressed in the Lincoln-Douglas debates and during the 1860 presidential campaign.
d. Explain the causes of and reactions to rebellions and raids, including the German Coast Uprising, Nat Turner's Rebellion, and John Brown's Raid on Harpers Ferry and subsequent trial.
e. Analyze Lincoln's First Inaugural Address, and explain how the ideas expressed affected the cause and course of the Civil War.

- 7.13 Analyze the causes, course, and consequences of the Civil War.
  a. Explain why the Confederate states seceded from the Union.
  b. Explain Louisiana's decision to secede from the Union and its effects, including the state seizure of federal properties in Louisiana (the United States Arsenal and Barracks at Baton Rouge; United States Branch Mint).
  c. Describe the events leading to, significance of, and reaction to the Battle of Fort Sumter, including Lincoln's call for 75,000 volunteers.
  d. Describe the importance and outcomes of the major military engagements of the Civil War, including Manassas, Shiloh, Capture of New Orleans, Antietam, Gettysburg, Vicksburg, Siege of Port Hudson, Sherman's March to the Sea, and the surrender at Appomattox Court House.
  e. Describe the roles and experiences of soldiers, women, enslaved people, and freed people during the Civil War.
  f. Analyze the role of Louisiana in the Civil War and how the conflict affected Louisiana and its people, including the importance of its ports and the occupation of New Orleans.
  g. Analyze the purpose, significance, and consequences of the Emancipation Proclamation.
  h. Describe the roles and contributions of key individuals in the Civil War, including Jefferson Davis, Robert E. Lee, Thomas Stonewall Jackson, PGT Beauregard, Mary Walker, Clara Barton, Ulysses S. Grant, William Tecumseh Sherman, Robert Smalls, and the Louisiana Tigers.
  i. Analyze Lincoln's Gettysburg Address and Second Inaugural Address, and explain how the ideas expressed affected the course of the war and show how ideas about equality changed over time.
  j. Describe the significance of Lincoln's assassination, and how it affected the nation.
- 7.14 Analyze the major events, key people, and effects of Reconstruction.
  a. Compare and contrast plans for Reconstruction, including Lincoln's Ten Percent Plan, President Johnson's Plan, and the Radical Republican Plan for Reconstruction.
  b. Analyze the development and effects of tenant farming and the sharecropping system in the postwar South.
  c. Explain how federal action affected individual rights and freedoms during the Reconstruction era, including through the Thirteenth Amendment, Freedmen's Bureau, Civil Rights Bill of 1866, Reconstruction Act of 1867, Fourteenth Amendment, Fifteenth Amendment, and analyze the challenges, achievements, and effectiveness of each.
  d. Explain the rise of violence and intimidation of Black Americans by groups, including the Ku Klux Klan, White League and Red Shirts and describe the significance of the Opelousas and Colfax Massacres.
  e. Describe the role and motivations of carpetbaggers and scalawags during Reconstruction.

f. Explain the roles of Black politicians in Southern states during Reconstruction, including Oscar Dunn and P.B.S. Pinchback.
g. Explain how the presidential election of 1876 and the Compromise of 1877 led to the end of Reconstruction, and analyze short-term effects of the collapse of Reconstruction, including the decline of Black Americans in elected offices and loss of enforcement of the Fourteenth and Fifteenth Amendments.
h. Analyze how Black Codes affected the lives of Black Americans, including the restriction rights to own and lease property, conduct business, bear arms, and move freely through public spaces.
i. Analyze how national events and amendments to the U.S. Constitution influenced Louisiana from the 1860s to 1877, including changes to the Louisiana Constitution.

book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.

B. Draw informal comparative inferences about two populations.

3. Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities using quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
4. Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. *For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.*

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

5. Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around ½ indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
6. Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. *For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.*
7. Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.
    a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. *For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.*
    b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. *For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?*
8. Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.
    a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.
    b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space that compose the event.
    c. Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?*

MATTER AND ITS INTERACTIONS

Performance Expectation	Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.
Clarification Statement	Examples of reactions could include burning sugar or steel wool, fat reacting with sodium hydroxide, or mixing zinc with hydrogen chloride. Examples of chemical and physical properties to analyze include density, melting point, boiling point, solubility, flammability, or odor.

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	**STRUCTURE AND PROPERTIES OF MATTER** Each pure substance has characteristic physical and chemical properties (for any bulk quantity under given conditions) under normal conditions that can be used to identify it. (MS.PS1A.b) **CHEMICAL REACTIONS** Substances react chemically in characteristic ways. In a chemical process, the atoms that make up the original substances are regrouped into different molecules, and these new substances have different properties from those of the reactants. (MS.PS1B.a)	**PATTERNS** Macroscopic patterns are related to the nature of microscopic and atomic-level structure.

MATTER AND ITS INTERACTIONS

Performance Expectation	Develop a model that predicts and describes changes in particle motion, temperature, and the state of a pure substance when thermal energy is added or removed.
Clarification Statement	Emphasis is on qualitative molecular-level models of solids, liquids, and gases to show that adding or removing thermal energy increases or decreases kinetic energy of the particles until a change of state occurs. Examples of models could include drawings or diagrams. Examples of particles could include molecules or inert atoms such as the noble gases. Examples of pure substances could include water, carbon dioxide, or helium.

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 PROPERTIES OF MATTER** Gases and liquids are made of molecules or inert atoms (the noble gases) that are moving about relative to each other. (MS.PS1A.c) In a liquid, the molecules are constantly in motion and in contact with others; in a gas, they are widely spaced except when they happen to collide. In a solid, atoms are closely spaced and may vibrate in position but do not change relative locations. (MS.PS1A.d) The changes of state that occur with variations in temperature or pressure can be described and predicted using temperature and pressure models of matter. (MS.PS1A.f) The temperature of a system is proportional to the average internal kinetic energy and potential energy per atom or molecule (whichever is the appropriate building block for the system's material). The details of that relationship depend on the type of atom or molecule and the interactions among the atoms in the material. Temperature is not a direct measure of a system's total thermal energy. The total thermal energy (sometimes called the total internal energy) of a system depends jointly on the temperature, the total number of atoms in the system, and the state of the material. (MS.PS.3A.c) The term "heat" as used in everyday language refers both to thermal energy (the motion of atoms or molecules within a substance) and the transfer of that thermal energy from one object to another. In science, heat is used only for this second meaning; it refers to the energy transferred due to the temperature difference between two objects. (MS.PS3A.e)	**CAUSE AND EFFECT** Cause and effect relationships may be used to predict phenomena in natural or designed systems.

MATTER AND ITS INTERACTIONS

Performance Expectation	Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.
Clarification Statement	Emphasis is on the law of conservation of matter and on physical models or drawings, including digital forms, that represent atoms. The use of atomic masses, balancing symbolic equations, or intermolecular forces is not the focus of this performance expectation.

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	**CHEMICAL REACTIONS** Substances react chemically in characteristic ways. In a chemical process, the atoms that make up the original substances are regrouped into different molecules, and these new substances have different properties from those of the reactants. (MS.PS1B.a) The total number of each type of atom is conserved, and thus the mass does not change. (MS.PS1B.b)	**ENERGY AND MATTER** Matter is conserved because atoms are conserved in physical and chemical processes.

ENERGY

Performance Expectation	Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.
Clarification Statement	Emphasis is on observing change in temperature as opposed to calculating total thermal energy transferred. Examples of experiments could include comparing final water temperatures after different masses of ice melted in the same volume of water with the same initial temperature, the temperature change of samples of different materials with the same mass as they cool or heat in the environment, or the same material with different masses when a specific amount of energy is added.

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 or test solutions 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	**DEFINITIONS OF ENERGY** Temperature is a measure of the average kinetic energy; the relationship between the temperature and the total energy of the system depends on the types, states, and amounts of matter present. (MS.PS3A.d) **CONSERVATION OF ENERGY AND ENERGY TRANSFER** The amount of energy transfer needed to change the temperature of a matter sample by a given amount depends on the nature of the matter, the mass of the sample, and the environment. (MS.PS3B.b) Energy is spontaneously transferred out of hotter regions or objects and into colder ones. (MS.PS3B.c)	**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.

EARTH'S SYSTEMS

Performance Expectation	Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.
Clarification Statement	Emphasis is on the ways water changes its state and location as it moves through the multiple pathways of the hydrologic cycle. Examples of models can be conceptual or physical.

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	**THE ROLES OF WATER IN EARTH'S SURFACE PROCESSES:** Water continually cycles among land, ocean, and atmosphere via transpiration, evaporation, condensation and crystallization, and precipitation, as well as downhill flows on land. (MS.ESS2C.a) Global movements of water and its changes in form are propelled by sunlight and gravity. (MS.ESS2C.c) **LOUISIANA'S NATURAL RESOURCES** Replenishable resources such as groundwater and oxygen are purified by the movement through Earth's cycles. (MS.EVS1A.c)	**ENERGY AND MATTER** Within a natural or designed system, the transfer of energy drives the motion and/or cycling of matter.

EARTH'S SYSTEMS

Performance Expectation	Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.
Clarification Statement	Emphasis is on how air masses flow from regions of high pressure to low pressure, causing weather (defined by temperature, pressure, humidity, precipitation, and wind) at a fixed location to change over time, and how sudden changes in weather can result when different air masses collide. Emphasis is on how weather can be predicted within probabilistic ranges. Examples of data can be provided to students (such as weather maps, diagrams, and visualizations) or obtained through laboratory experiments (such as condensation).

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. • Collect data to produce data to serve as the basis for evidence to answer scientific questions or test design solutions under a range of conditions. 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 ROLES OF WATER IN EARTH'S SURFACE PROCESSES:** The complex patterns of the changes and the movement of water in the atmosphere, determined by winds, landforms, and ocean temperatures and currents, are major determinants of local weather patterns. (MS.ESS2C.b) **WEATHER AND CLIMATE** Weather and climate are influenced by interactions involving sunlight, the ocean, the atmosphere, ice, landforms, and living things. These interactions vary with latitude, altitude, and local and regional geography, all of which can affect oceanic and atmospheric flow patterns. Because these patterns are so complex, weather can only be predicted probabilistically. (MS.ESS2D.a)	**CAUSE AND EFFECT** Cause and effect relationships may be used to predict phenomena in natural or designed systems.

EARTH'S SYSTEMS

Performance Expectation	Develop and use a model to describe how unequal heating and rotation of the Earth causes patterns of atmospheric and oceanic circulation that determine regional climates.
Clarification Statement	Emphasis is on how patterns vary by latitude, altitude, and geographic land distribution. Emphasis of atmospheric circulation is on the sunlight-driven latitudinal banding, the Coriolis effect, and resulting prevailing winds; emphasis of ocean circulation (e.g. el niño/la niña) is on the transfer of heat by the global ocean convection cycle, which is constrained by the Coriolis effect and the outlines of continents. Examples of models can be diagrams, maps and globes, or digital representations.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. Asking questions and defining problems 2. **Developing and using models:** 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 ROLES OF WATER IN EARTH'S SURFACE PROCESSES:** Variations in density due to variations in temperature and salinity drive a global pattern of interconnected ocean currents. (MS.ESS2C.d) **WEATHER AND CLIMATE** Weather and climate are influenced by interactions involving sunlight, the ocean, the atmosphere, ice, landforms, and living things. These interactions vary with latitude, altitude, and local and regional geography, all of which can affect oceanic and atmospheric flow patterns. Because these patterns are so complex, weather can only be predicted probabilistically. (MS.ESS2D.a) The ocean exerts a major influence on weather and climate by absorbing energy from the sun, releasing it over time, and globally redistributing it through ocean currents. (MS.ESS2D.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.

EARTH AND HUMAN ACTIVITY

Performance Expectation	Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.
Clarification Statement	Examples of factors include human activities (such as fossil fuel combustion, cement production, and agricultural activity) and natural processes (such as changes in incoming solar radiation or volcanic activity). Examples of evidence can include tables, graphs, and maps of global and regional temperatures, atmospheric levels of gases such as carbon dioxide and methane, and the rates of human activities. Emphasis is on the major role that human activities play in causing the rise in global temperatures.)

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
1. **Asking questions and defining problems:** Asking questions (science) and defining problems (engineering) in 6-8 builds on K-5 experiences and progresses to specifying relationships between variables, clarifying arguments and making models. • Ask questions to identify and/or clarify evidence and/or the premise(s) of an argument. 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	**GLOBAL CLIMATE CHANGE** Human activities, such as the release of greenhouse gases from burning fossil fuels, are major factors in the current rise in Earth's mean surface temperature. Addressing climate change and reducing human vulnerability to whatever climate changes do occur depend on the understanding of climate science, engineering capabilities, and other kinds of knowledge, such as understanding of human behavior and on applying that knowledge wisely in decisions and activities. (MS.ESS3D.a)	**STABILITY AND CHANGE** Stability might be disturbed either by sudden events or gradual changes that accumulate over time.

FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES

Performance Expectation	Use an argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.
Clarification Statement	Emphasis is on the conceptual understanding that cells form tissues and tissues form organs specialized for particular body functions. Examples could include the interaction of subsystems within a system and the normal functioning of those systems. Systems could include circulatory, excretory, digestive, respiratory, muscular, endocrine, or nervous systems.

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	**STRUCTURE AND FUNCTION** In multicellular organisms, the body is a system of multiple interacting subsystems. These subsystems are groups of cells that work together to form tissues and organs that are specialized for particular body functions in order to maintain homeostasis. (MS.LS1A.c) **INFORMATION PROCESSING** Each sense receptor responds to different inputs (electromagnetic, mechanical, chemical), transmitting them as signals that travel along nerve cells to the brain. The signals are then processed in the brain, resulting in immediate behaviors or memories. (MS.LS1D.a)	**SYSTEMS AND SYSTEM MODELS** Systems may interact with other systems; they may have subsystems and be a part of larger complex systems.

FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES

Performance Expectation	Construct a scientific explanation based on evidence for the role of photosynthesis and cellular respiration in the cycling of matter and flow of energy into and out of organisms.
Clarification Statement	Emphasis is on tracing movement of matter and flow of energy.

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 a scientific explanation based on valid and reliable evidence obtained from sources (including the students' own experiments) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future. 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**ORGANIZATION FOR MATTER AND ENERGY FLOW IN ORGANISMS** Plants, plant-like protists (including algae and phytoplankton), and other microorganisms use the energy from light, to make sugars (food) from carbon dioxide from the atmosphere and water from the environment through the process of photosynthesis, which also releases oxygen. These sugars can be used immediately or stored for growth or later use. (MS.LS1C.a) The chemical reaction by which plants produce complex food molecules (sugars) requires an energy input (i.e., from sunlight) to occur. In this reaction, carbon dioxide and water combine to form carbon-based organic molecules and release oxygen. Cellular respiration in plants and animals involve chemical reactions with oxygen that release stored energy. In these processes, complex molecules containing carbon react with oxygen to produce carbon dioxide and other materials. (MS.PS3D.a) **LOUISIANA'S NATURAL RESOURCES** Renewable resources have the ability to self maintain due to the processes of photosynthesis. (MS.EVS1A.a)	**ENERGY AND MATTER** Within a natural or designed system, the transfer of energy drives the motion and/or cycling of matter.

FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES

Performance Expectation	Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.
Clarification Statement	Emphasis is on describing that molecules are broken apart and put back together and that in this process, energy is released.

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	**ORGANIZATION FOR MATTER AND ENERGY FLOW IN ORGANISMS** Within individual organisms, food (energy) moves through a series of chemical reactions in which it is broken down and rearranged to form new molecules, to support growth, or to release energy through aerobic and anaerobic respiration. (MS.LS1C.b) Cellular respiration in plants and animals involves chemical reactions with oxygen that release stored energy. In these processes, complex molecules containing carbon react with oxygen to produce carbon dioxide and other materials. (MS.LS1C.c)	**ENERGY AND MATTER** Matter is conserved because atoms are conserved in physical and chemical processes.

ECOSYSTEMS: INTERACTIONS, ENERGY, AND DYNAMICS

Performance Expectation	Undertake a design project that assists in maintaining diversity and ecosystem services.
Clarification Statement	Examples of ecosystem services could include water purification, nutrient recycling, habitat conservation or soil erosion mitigation. Examples of design solution constraints could include scientific, economic, or social considerations.

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. • Undertake a design project, engaging in the design cycle, to construct and/or implement a solution that meets specific design criteria and constraints. 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	**ECOSYSTEM DYNAMICS, FUNCTIONING, AND RESILIENCE** Biodiversity describes the variety of species found in Earth's terrestrial and aquatic ecosystems. The completeness or integrity of an ecosystem's biodiversity is often used as a measure of its health. (MS.LS2C.b) **BIODIVERSITY AND HUMANS** Changes in biodiversity can influence humans' resources, such as food, energy, and medicines, as well as ecosystem services on which humans rely. (MS.LS4D.a) **ENGINEERING DESIGN: 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)	**STABILITY AND CHANGE** Small changes in one part of a system might cause large changes in another part.

ECOSYSTEMS: INTERACTIONS, ENERGY, AND DYNAMICS

Performance Expectation	Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.
Clarification Statement	Emphasis is on recognizing patterns in data, making inferences about changes in populations, and on evaluating empirical evidence supporting arguments about changes to ecosystems.

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	**ECOSYSTEM DYNAMICS, FUNCTIONING, AND RESILIENCE** Ecosystems are dynamic in nature; their characteristics can vary over time. Disruptions to any physical or biological component of an ecosystem can lead to shifts in all its populations. (MS.LS2C.a)	**STABILITY AND CHANGE** Small changes in one part of a system might cause large changes in another part.

HEREDITY: INHERITANCE AND VARIATION OF TRAITS

Performance Expectation	Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.
Clarification Statement	Emphasis is on using models such as Punnett squares, diagrams, and simulations to describe the cause and effect relationship of gene transmission from parent(s) to offspring and resulting genetic variation.

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	**GROWTH AND DEVELOPMENT OF ORGANISMS** Organisms reproduce, either sexually or asexually, and transfer their genetic information to their offspring. (MS.LS1B.a) Cells divide through the processes of mitosis and meiosis. (LS.MS.1B.b) **INHERITANCE OF TRAITS** Variations of inherited traits between parent and offspring arise from genetic differences that result from the subset of chromosomes (and therefore genes) inherited. (MS.LS3A.d) In sexually reproducing organisms, each parent contributes to the genes acquired (at random) by the offspring. Individuals have two of each chromosome and hence two alleles of each gene, one acquired from each parent. These versions may be identical or may differ from each other. (MS.LS3B.a)	**CAUSE AND EFFECT** Cause and effect relationships may be used to predict phenomena in natural or designed systems.

BIOLOGICAL EVOLUTION: UNITY AND DIVERSITY

Performance Expectation	Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.
Clarification Statement	Emphasis is on using simple probability statements and proportional reasoning to construct explanations about why some traits are suppressed and other traits become more prevalent for those individuals better at finding food, shelter, or avoiding predators.

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	**NATURAL SELECTION** Natural selection leads to the predominance of certain traits in a population and the suppression of others. (MS.LS4B.a)	**CAUSE AND EFFECT** Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability.

BIOLOGICAL EVOLUTION: UNITY AND DIVERSITY

Performance Expectation	Gather, read, and synthesize information about technologies that have changed the way humans influence the inheritance of desired traits in organisms.
Clarification Statement	Emphasis is on synthesizing information from reliable sources about the influence of humans on genetic outcomes in artificial selection (such as genetic modification, animal husbandry, gene therapy) and on the impacts these technologies have on society as well as the technologies leading to these scientific discoveries.

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 **8. Obtaining, evaluating, and communicating information:** Obtaining, evaluating, and communicating information in 6–8 builds on K–5 experiences and progresses to evaluating the merit and validity of ideas and methods. • Gather, read, and synthesize information from multiple appropriate sources and assess the credibility, accuracy, and possible bias of each publication and methods used, and describe how they are supported or not supported by evidence.	**NATURAL SELECTION** Genetic engineering techniques can manipulate the DNA within various organisms. Technology has changed the way humans influence the inheritance of desired traits in organisms. (e.g., selective breeding, gene modification, gene therapy, or other methods) (MS.LS4B.b)	**CAUSE AND EFFECT** Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability.