

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. Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
2. Recount stories, including fables and folktales from diverse cultures, and determine their central message, lesson, or moral.
3. Describe how characters in a story respond to major events and challenges.

Craft and Structure

4. Describe how words and phrases supply rhythm and meaning in a poem or song; determine the meaning of words and phrases as they are used in text.
5. Describe the overall structure of a story, including describing how the beginning introduces the story and the ending concludes the action.
6. Acknowledge differences in the points of view of characters, including by speaking in a different voice for each character when reading dialogue aloud.

Integration of Knowledge and Ideas

7. Use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot.
8. (Not applicable to literature)
9. Compare and contrast two or more versions of the same story (e.g., Cinderella stories) by different authors or from different cultures.

Range of Reading and Level of Text Complexity

10. By the end of the year, read and comprehend literature, including stories and poetry, in the grades 2–3 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. Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
2. Identify the main topic of a multi-paragraph text as well as the focus of specific paragraphs within the text.
3. Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.

Craft and Structure

4. Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.
5. Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.
6. Identify the main purpose of a text, including what the author wants to answer, explain, or describe.

Integration of Knowledge and Ideas

7. Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify a text.
8. Describe how reasons or evidence support specific points the author makes in a text.

9. Compare and contrast the most important points presented by two texts on the same topic.

Range of Reading and Level of Text Complexity

10. By the end of year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range.

Reading Standards for Foundational Skills

These standards are directed toward fostering students’ understanding and working knowledge of concepts of print, the alphabetic principle, and other basic conventions of the English writing system. These foundational skills are not an end in and of themselves; rather, they are necessary and important components of an effective, comprehensive reading program designed to develop proficient readers with the capacity to comprehend texts across a range of types and disciplines. Instruction should be differentiated: good readers will need much less practice with these concepts than struggling readers will. The point is to teach students what they need to learn and not what they already know— to discern when particular children or activities warrant more or less attention.

Print Concepts

1. Mastered in grade 1.

Phonological Awareness

2. Mastered in grade 1.

Phonics and Word Recognition

3. Know and apply grade-level phonics and word analysis skills in decoding words.
 - a. Distinguish long and short vowels when reading regularly spelled one-syllable words.
 - b. Know spelling-sound correspondences for additional common vowel teams.
 - c. Decode regularly spelled two-syllable words with long vowels.
 - d. Decode words with common prefixes and suffixes.
 - e. Identify words with inconsistent but common spelling-sound correspondences.
 - f. Recognize and read grade-appropriate irregularly spelled words.

Fluency

4. Read with sufficient accuracy and fluency to support comprehension.
 - a. Read on-level text³ with purpose and understanding.
 - b. Read on-level text⁴ orally with accuracy, appropriate rate, and expression on successive readings.
 - c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

³ “On-level text” means grade level text.

⁴ “On-level text” means grade level text.

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 opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a concluding statement or section.
2. Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.
3. Write narratives in which they recount a well-elaborated event or short sequence of events, include details to describe actions, thoughts, and feelings, use temporal words to signal event order, and provide a sense of closure.

Production and Distribution of Writing

4. Begins in grade 3.
5. With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing.
6. With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.

Research to Build and Present Knowledge

7. Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).
8. Recall information from experiences or gather information from provided sources to answer a question.
9. Begins in grade 4

Range of Writing

10. Begins in grade 3.

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. Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
 - a. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
 - b. Build on others' talk in conversations by linking their comments to the remarks of others.
 - c. Ask for clarification and further explanation as needed about the topics and texts under discussion.

2. Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
3. Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.

Presentation of Knowledge and Ideas

4. Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.
5. Create audio recordings of stories or poems with the guidance and support from adults and/or peers; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings.
6. Produce complete sentences when appropriate to task, audience, and situation in order to provide requested detail or clarification.

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. Use collective nouns (e.g., group).
 - b. Form and use frequently occurring irregular plural nouns (e.g., feet, children, teeth, mice, fish).
 - c. Use reflexive pronouns (e.g., myself, ourselves) and indefinite pronouns (e.g., anyone, everything).
 - d. Form and use the past tense of frequently occurring irregular verbs (e.g., sat, hid, told).
 - e. Use adjectives and adverbs, and choose between them depending on what is to be modified.
 - f. Produce, expand, and rearrange complete simple and compound sentences (e.g., The boy watched the movie; The little boy watched the movie; The action movie was watched by the little boy).
2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
 - a. Capitalize holidays, product names, and geographic names.
 - b. Use commas in greetings and closings of letters.
 - c. Use an apostrophe to form contractions and frequently occurring possessives.
 - d. Generalize learned spelling patterns when writing words (e.g., cage → badge; boy → boil).
 - e. Consult reference materials, including beginning dictionaries, as needed to check and correct spellings.

Knowledge of Language

3. Use knowledge of language and its conventions when writing, speaking, reading, or listening.
 - a. Compare formal and informal uses of English.

Vocabulary Acquisition and Use

4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 2 reading and content, choosing flexibly from an array of strategies.
 - a. Use sentence-level context as a clue to the meaning of a word or phrase.
 - b. Determine the meaning of the new word formed when a known prefix is added to a known word (e.g.,

- happy/unhappy, tell/retell)
- c. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., addition, additional).
 - d. Use knowledge of the meaning of individual words to predict the meaning of compound words (e.g., birdhouse, lighthouse, housefly; bookshelf, notebook, bookmark).
 - e. Use glossaries and beginning dictionaries, both print and digital, to determine or clarify the meaning of words and phrases.
5. Demonstrate understanding of word relationships and nuances in word meanings.
- a. Identify real-life connections between words and their use (e.g., describe foods that are spicy or juicy).
 - b. Distinguish shades of meaning among closely related verbs (e.g., toss, throw, hurl) and closely related adjectives (e.g., thin, slender, skinny, scrawny).
6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe (e.g., When other kids are happy that makes me happy).

Mathematics | Grade 2

[Teachers Companion Documents.zip](#)

Grade Level Overview

(1) Students extend their understanding of the base-ten system. This includes ideas of counting in fives, tens, and multiples of hundreds, tens, and ones, as well as number relationships involving these units, including comparing. Students understand multi-digit numbers (up to 1000) written in base-ten notation, recognizing that the digits in each place represent amounts of thousands, hundreds, tens, or ones (e.g., 853 is 8 hundreds + 5 tens + 3 ones).

(2) Students use their understanding of addition to develop fluency with addition and subtraction within 100. They solve problems within 1000 by applying their understanding of models for addition and subtraction, and they develop, discuss, and use efficient, accurate, and generalizable methods to compute sums and differences of whole numbers in base-ten notation, using their understanding of place value and the properties of operations. They select and accurately apply methods that are appropriate for the context and the numbers involved to mentally calculate sums and differences for numbers with only tens or only hundreds.

(3) Students recognize the need for standard units of measure (centimeter and inch) and they use rulers and other measurement tools with the understanding that linear measure involves an iteration of units. They recognize that the smaller the unit, the more iterations they need to cover a given length.

(4) Students describe and analyze shapes by examining their sides and angles. Students investigate, describe, and reason about decomposing and combining shapes to make other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades.

Operations and Algebraic Thinking

2.OA

A. Represent and solve problems involving addition and subtraction.

1. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.¹

B. Add and subtract within 20.

2. Fluently add and subtract within 20 using mental strategies.² By the end of Grade 2, know from memory all sums of two one-digit numbers.

C. Work with equal groups of objects to gain foundations for multiplication.

3. Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.
4. Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

¹ See Glossary, Table 1.

² See standard 1.OA.6 for a list of mental strategies.

Number and Operations in Base Ten

2.NBT

A. Understand place value.

1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:
 - a. 100 can be thought of as a bundle of ten tens—called a “hundred.”
 - b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).
2. Count within 1000; skip-count by 5s, 10s, and 100s.
3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
4. Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.

B. Use place value understanding and properties of operations to add and subtract.

5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
6. Add up to four two-digit numbers using strategies based on place value and properties of operations.
7. Add and subtract within 1000 using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; justify the reasoning used with a written explanation. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
8. Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.
9. Explain why addition and subtraction strategies work, using place value and the properties of operations.³

Measurement and Data

2.MD

A. Measure and estimate lengths in standard units.

1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
2. Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.
3. Estimate lengths using units of inches, feet, centimeters, and meters.
4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

B. Relate addition and subtraction to length.

5. Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.
6. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.

³ Explanations may be supported by drawings or objects.

C. Work with time and money.

7. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.
8. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately. *Example: If you have 2 dimes and 3 pennies, how many cents do you have?*

D. Represent and interpret data.

9. Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.
10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems⁴ using information presented in a bar graph.

Geometry

2.G

A. Reason with shapes and their attributes.

1. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.⁵ Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
2. Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.
3. Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words *halves*, *thirds*, *half of*, *a third of*, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.

⁴ See Glossary, Table 1.

⁵ Sizes are compared directly or visually, not compared by measuring.

GRADE 2 Life in Our Great Country: The United States of America

The goal in grade 2 is to introduce students to major historical events, figures, and symbols related to the principles and founding of American democracy. Grade 2 students will learn to value differences among people and exemplify a respect for the rights and opinions of others. Students will also develop an appreciation of shared values, principles, and beliefs that promote stability for our country’s government and its citizens while building knowledge about our founding documents, system of government, and individuals who exemplify American values and principles.

HISTORY

- 2.1 Create and use a chronological sequence of events using appropriate vocabulary.
- 2.2 Differentiate between primary and secondary sources. For example:
 - a. Primary sources: letters, diaries, autobiographies, speeches, interviews
 - b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies
- 2.3 Select and use appropriate evidence from primary and secondary sources to support claims.
- 2.4 Construct and express claims that are supported with relevant evidence from primary and secondary sources with clear reasoning.
- 2.5 Compare life in the United States in the past to life today.
- 2.6 Describe the significance of the American Revolution and the founding of the United States.
- 2.7 Identify and describe national historical figures, celebrations, symbols, and places.
 - a. Identify and describe the Founding Fathers, including George Washington, Thomas Jefferson, Benjamin Franklin, Patrick Henry, John Adams, John Hancock, and James Madison.
 - b. Identify and describe historical female figures, including Abigail Adams, Anne Hutchinson, Dolley Madison, Betsy Ross, and Phillis Wheatley.
 - c. Describe the significance of state and nationally designated holidays, including New Year’s Day, the birthday of Martin Luther King, Jr., Inauguration Day, Washington’s Birthday, Mardi Gras, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day.
 - d. Describe the history of American symbols, including the Liberty Bell, United States flag (etiquette, customs pertaining to the display and use of the flag), bald eagle, national anthem, Uncle Sam, Statue of Liberty, The Pledge of Allegiance, and the national motto “In God We Trust.”
 - e. Identify and describe man-made American monuments and landmarks including the Gateway Arch, the Golden Gate Bridge, Jefferson Memorial, Dr. Martin Luther King Jr. Memorial in Washington D.C, Lincoln Memorial, Mount Rushmore, Pearl Harbor Museum, September 11 Memorial and Museum, Statue of Liberty, the Tomb of the Unknown Soldier, U.S. Capitol, Washington Monument, and the White House.
 - f. Identify and describe natural American landmarks, including the Grand Canyon, Mississippi River, Monument Valley, Niagara Falls, Rocky Mountains, Smoky Mountains, and Yellowstone National Park.
- 2.8 Interpret legends, stories, and songs that contributed to the development of the cultural history of the United States, including Native American legends, African American history, tall tales, and stories of folk heroes.

CIVICS

- 2.9 Describe the structure and responsibilities of each of the three branches of the U.S. government (legislative, executive, judicial).
- 2.10 Identify and describe principles of American democracy and relate them to the founding of the nation.
 - a. Identify reasons for the settlement of the thirteen colonies and the founding of the United States, including the search for freedom and a new life.
 - b. Identify and describe basic principles of the Declaration of Independence and the Constitution of the United States, including equality under the law and fair treatment for all.
- 2.11 Explain the purpose of rules and laws in the United States.
- 2.12 Define governmental systems, including democracy and monarchy.
- 2.13 Describe civic virtues including voting, running for office, serving on committees, and volunteering.
- 2.14 Describe how hard work, good habits, consistent attendance in school, and planning for the future can help you achieve your goals, including attending college, learning a trade, and having a successful career.
- 2.15 Compare local, state, and national elected officials and explain their roles and responsibilities, including the president, governor, mayor, and representatives.

ECONOMICS

- 2.16 Describe the United States in economic terms, including free enterprise, private property, producers and consumers, profit and loss, costs and benefits, and imports and exports.
 - a. Describe how people are both producers and consumers.
 - b. Explain why free enterprise and private property are important concepts and how they are beneficial to individuals and to the United States.
 - c. Identify examples of an economic cost or benefit of a decision or event.
- 2.17 Explain why and how people specialize in the production of goods and services.
- 2.18 Explain how scarcity of resources and opportunity costs require people to make choices to satisfy wants and needs.
- 2.19 Identify how people use natural (renewable and non-renewable), human, and capital resources to provide goods and services.

GEOGRAPHY

- 2.20 Create and use maps and models with a key, scale, and compass with intermediate directions.
- 2.21 Describe geographic features and physical characteristics of places in the United States and the world, including mountains, hills, plains, deserts, coasts, islands, peninsulas, lakes, oceans, and rivers.
- 2.22 Identify and locate the four hemispheres, equator, and prime meridian.
- 2.23 Describe the relative location of the United States.
- 2.24 Compare and contrast basic land use and economic activities in urban, suburban, and rural environments.

- 2.25 Identify natural disasters such as blizzards, earthquakes, tornadoes, hurricanes, and floods and explain their effects on people and the environment.
- 2.26 Explain how and why people, goods, and ideas move from place to place.
- 2.27 Describe how and why people from various cultures immigrate to the United States.

MATTER AND ITS INTERACTIONS

<p>Performance Expectation</p>	<p>Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.</p>
<p>Clarification Statement</p>	<p>Observations could include color, texture, hardness, or flexibility. Patterns could include the similar properties that different materials share.</p>

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<ol style="list-style-type: none"> 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 K-2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. <ul style="list-style-type: none"> • Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question. 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 	<p>STRUCTURE AND PROPERTIES OF MATTER Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties. (LE.PS1A.c)</p>	<p>PATTERNS Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.</p>

MATTER AND ITS INTERACTIONS

<p>Performance Expectation</p>	<p>Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.</p>
<p>Clarification Statement</p>	<p>Examples of properties could include, strength, flexibility, hardness, texture, or absorbency.</p>

<p>Science & Engineering Practices</p>	<p>Disciplinary Core Ideas</p>	<p>Crosscutting Concepts</p>
<ol style="list-style-type: none"> 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 K-2 builds on prior experiences and progresses to collecting, recording, and sharing observations. <ul style="list-style-type: none"> • Analyze data from tests of an object or tool to determine if it works as intended. 5. Using mathematics and computational thinking 6. Constructing explanations and designing solutions 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information 	<p>STRUCTURE AND PROPERTIES OF MATTER Different properties are suited to different purposes. (LE.PS1A.a)</p>	<p>CAUSE AND EFFECT Simple tests can be designed to gather evidence to support or refute student ideas about causes.</p>

MATTER AND ITS INTERACTIONS

Performance Expectation	Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.
Clarification Statement	Examples of pieces could include blocks, building bricks, or other assorted small objects. Provide students with the same number of objects to create a different object.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<ol style="list-style-type: none"> 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 K-2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. <ul style="list-style-type: none"> • Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information 	<p>STRUCTURE AND PROPERTIES OF MATTER Different properties are suited to different purposes. (LE.PS1A.a)</p> <p>A great variety of objects can be built up from a small set of pieces. (LE.PS1A.b)</p>	<p>ENERGY AND MATTER Objects may break into smaller pieces, be put together into larger pieces, or change shapes.</p>

MATTER AND ITS INTERACTIONS

Performance Expectation	Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.
Clarification Statement	Demonstrations of reversible changes could include materials such as water, butter or crayons at different temperatures. Demonstrations of irreversible changes could include cooking an egg, freezing a plant leaf, or heating paper.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<ol style="list-style-type: none"> 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 K-2 builds on prior experiences and progresses to comparing ideas and representations about the natural and designed world(s). <ul style="list-style-type: none"> • Construct an argument with evidence to support a claim. 8. Obtaining, evaluating, and communicating information 	<p>CHEMICAL REACTIONS Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not. (LE.PS1B.a)</p>	<p>CAUSE AND EFFECT Events have causes that generate observable patterns.</p>

ECOSYSTEMS: INTERACTIONS, ENERGY, AND DYNAMICS

Performance Expectation	Plan and conduct an investigation to determine if plants need sunlight and water to grow.
Clarification Statement	Emphasis is on testing one variable at a time during investigations.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<ol style="list-style-type: none"> 1. Asking questions and defining problems 2. Developing and using models 3. Planning and carrying out investigations to answer questions (science) or test solutions (engineering) to problems in K-2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. <ul style="list-style-type: none"> • Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question. 4. Analyzing and interpreting data 5. Using mathematics and computational thinking 6. Constructing explanations and designing a solution 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information 	<p>INTERDEPENDENT RELATIONSHIPS IN ECOSYSTEMS Plants depend on water and light to grow. (LE.LS2A.a)</p>	<p>CAUSE AND EFFECT Events have causes that generate observable patterns.</p>

ECOSYSTEMS: INTERACTIONS, ENERGY, AND DYNAMICS

Performance Expectation	Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.
Clarification Statement	Students could use the model to describe: (1) How the structure of the model gives rise to its function. (2) Structure-function relationships in the natural world that allow some animals to disperse seeds or pollinate plants.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<ol style="list-style-type: none"> Asking questions and defining problems Developing and using models: Modeling in K-2 builds on prior experiences and progresses to include using and developing models (e.g., diagram, drawing, physical replica, diorama, dramatization, storyboard) that represent concrete events or design solutions. <ul style="list-style-type: none"> Develop a simple model based on evidence to represent a proposed object or tool. Planning and carrying out investigations Analyzing and interpreting data Using mathematics and computational thinking Constructing explanations and designing solutions Engaging in argument from evidence Obtaining, evaluating, and communicating information 	<p>INTERDEPENDENT RELATIONSHIPS IN ECOSYSTEMS Plants may depend on animals for pollination or to move their seeds around. (LE.LS2A.b)</p>	<p>STRUCTURE AND FUNCTION The shape and stability of structures of natural and designed objects are related to their function(s).</p>

BIOLOGICAL EVOLUTION: UNITY AND DIVERSITY

<p>Performance Expectation</p>	<p>Make observations of plants and animals to compare the diversity of life in different habitats.</p>
<p>Clarification Statement</p>	<p>Emphasis is on the diversity of living things in each of a variety of different habitats. Students could explore different habitats in the community (e.g., school, aquariums, and neighborhoods).</p>

<p>Science & Engineering Practices</p>	<p>Disciplinary Core Ideas</p>	<p>Crosscutting Concepts</p>
<ol style="list-style-type: none"> 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 K-2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. <ul style="list-style-type: none"> • Make observations and/or measurements to collect data that can be used to make comparisons. 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 	<p>BIODIVERSITY AND HUMANS There are many kinds of living things in any area, and they exist in different places on land, in water, and in air. (LE.LS4D.a)</p>	<p>PATTERNS Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.</p>

EARTH'S PLACE IN THE UNIVERSE

Performance Expectation	Use information from several sources to provide evidence that Earth events can occur quickly or slowly.
Clarification Statement	Examples of events and timescales could include volcanic explosions and earthquakes, which happen quickly, and erosion of rocks, which occurs slowly.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<ol style="list-style-type: none"> 1. Asking questions and defining problems 2. Developing and using models 3. Planning and carrying out investigations 4. 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 K-2 builds on prior experiences and uses observations and texts to communicate new information. <ul style="list-style-type: none"> • Obtain information using various texts, text features (e.g., headings, tables of contents, glossaries, electronic menus, icons), and other media that will be useful in answering a scientific question and/or supporting a scientific claim. 	<p>THE HISTORY OF PLANET EARTH Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe. (LE.ESS1C.a)</p> <p>DEFINING AND DELIMITING ENGINEERING PROBLEMS Asking questions, making observations, and gathering information are helpful in thinking about problems. (ETS.LE.1A.b)</p>	<p>STABILITY AND CHANGE Things may change slowly or rapidly.</p>

EARTH'S SYSTEMS

Performance Expectation	Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.
Clarification Statement	Examples of solutions could include different designs of dikes and windbreaks to hold back wind and water, and different designs for using shrubs, grass, and trees to hold back the land.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<ol style="list-style-type: none"> 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 K-2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. <ul style="list-style-type: none"> • Generate and/or compare multiple solutions to a problem. 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information 	<p>EARTH MATERIALS AND SYSTEMS Wind and water can change the shape of the land. (LE.ESS2A.a)</p> <p>OPTIMIZING THE DESIGN SOLUTION Because there is always more than one possible solution to a problem, it is useful to compare and test designs. (LE.ETS1C.a)</p>	<p>STABILITY AND CHANGE Things may change slowly or rapidly.</p>

EARTH'S SYSTEMS

Performance Expectation	Develop a model to represent the shapes and kinds of land and bodies of water in an area.
Clarification Statement	Models do not have to be to scale.

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<ol style="list-style-type: none"> 1. Asking questions and defining problems 2. Developing and using models: Modeling in K-2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, storyboard) that represent concrete events or design solutions. <ul style="list-style-type: none"> • Develop and/or use a model to represent amounts, relationships, relative scales (bigger, smaller), and/or patterns in the natural and designed world(s). 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 	<p>PLATE TECTONICS AND LARGE-SCALE SYSTEM INTERACTIONS Maps show where things are located. One can map the shapes and kinds of land and water in any area. (LE.ESS2B.a)</p> <p>DEVELOPING POSSIBLE SOLUTIONS Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for solutions to a problem. (ETS.LE.1B.a)</p>	<p>PATTERNS Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.</p>

EARTH'S SYSTEMS

<p>Performance Expectation</p>	<p>Obtain and communicate information to identify where water is found on Earth and that it can be solid or liquid.</p>
<p>Clarification Statement</p>	<p>Students use reliable sources to identify the patterns of where water is found and its natural form (solid or liquid). Examples of how water can be found on Earth as water or ice could include a frozen pond, a liquid pond, a frozen lake, or a liquid lake.</p>

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<ol style="list-style-type: none"> 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 K-2 builds on prior experiences and uses observations and texts to communicate new information. <ul style="list-style-type: none"> • Obtain information using various texts, text features (e.g., headings, tables of contents, glossaries, electronic menus, icons), and other media that will be useful in answering a scientific question and/or supporting a scientific claim. 	<p>THE ROLES OF WATER IN EARTH'S SURFACE PROCESSES Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form. (LE.ESS2C.a)</p>	<p>PATTERNS Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.</p>