Discovery Education Science Techbook for Texas Grade 1

Discovery Education Science Techbook for Texas Grade 1 Executive Summary

Section 1. Science-Related Texas Essential Knowledge and Skills (TEKS) and English Language Proficiency Standards (ELPS) Alignment

Grade	TEKS Student %	TEKS Teacher %	ELPS Student %	ELPS Teacher %
Grade K	100%	100%	100%	100%
Grade 1	100%	100%	100%	100%
Grade 2	In Progress	In Progress	100%	100%

Section 2. Instructional Anchor

- The materials are designed to strategically and systematically integrate scientific and engineering practices, recurring themes and concepts, and grade-level content as outlined in the TEKS.
- The materials anchor the learning in phenomena and problems as the key lever for driving learning and student mastery of disciplinary knowledge and skills.

Section 3. Knowledge Coherence

- The materials are designed to build knowledge systematically, coherently, and accurately.
- The materials provide educative components to support teachers' content and coherence knowledge.

Section 4. Productive Struggle

- The materials provide opportunities for students to engage in productive struggle through sensemaking that involves reading, writing, thinking, and acting as scientists and engineers.

Section 5. Evidence-Based Reasoning and Communicating

- The materials promote students' use of evidence to develop, communicate, and evaluate explanations and solutions.
- The materials provide teacher guidance to support student reasoning and communication skills.

Section 6. Progress Monitoring

- The materials include a variety of TEKS-aligned and developmentally appropriate assessment tools.

Discovery Education Science Techbook for Texas
Grade 1

- The materials include guidance that explains how to analyze and respond to data from assessment tools.
- The assessments are clear and easy to understand.

Section 7. Supports for All Learners

- The materials provide guidance on fostering connections between home and school.
- The materials include listening, reading, writing, and speaking supports to help Emergent Bilinguals meet grade-level science content expectations.
- The materials include a variety of research-based instructional methods that appeal to a variety of learning interests and needs.
- The materials include guidance, scaffolds, supports, and extensions that maximize student learning potential.

Section 8. Implementation Supports

- The materials include year-long plans with practice and review opportunities that support instruction.
- The materials include classroom implementation support for teachers and administrators.
- The materials provide implementation guidance to meet variability in program design and scheduling.

Section 9. Design Features

- The visual design of materials is clear and easy to understand.
- The materials are intentionally designed to engage and support student learning with the integration of digital technology.
- The digital technology or online components are developmentally and grade-level appropriate and provide support for learning.

Section 10. Additional Information

- The publisher submitted the technology, price, professional learning, and additional language supports.

Discovery Education Science Techbook for Texas
Grade 1

Indicator 2.1

Materials are designed to strategically and systematically integrate scientific and engineering practices, recurring themes and concepts, and grade-level content as outlined in the TEKS.

1	Materials provide multiple opportunities for students to develop, practice, and demonstrate mastery of grade-level appropriate scientific and engineering practices as outlined in the TEKS.	M
2	Materials provide multiple opportunities to make connections between and within overarching concepts using recurring themes.	M
3	Materials strategically and systematically develop students' content knowledge and skills as appropriate for the concept and grade level as outlined in the TEKS.	M
4	Materials include sufficient opportunities, as outlined in the TEKS, for students to ask questions and plan and conduct classroom, laboratory, and field investigations and to engage in problem-solving to make connections across disciplines and develop an understanding of science concepts.	M

Meets | Score 4/4

The materials meet the criteria for this indicator. Materials are designed to strategically and systematically integrate scientific and engineering practices, recurring themes and concepts, and grade-level content as outlined in the TEKS.

Materials provide multiple opportunities for students to develop, practice, and demonstrate mastery of grade-level appropriate scientific and engineering practices as outlined in the TEKS. Materials provide multiple opportunities to make connections between and within overarching concepts using the recurring themes. Materials strategically and systematically develop students' content knowledge and skills as appropriate for the concept and grade level as outlined in the TEKS. Materials include sufficient opportunities, as outlined in the TEKS, for students to ask questions and plan and conduct classroom, laboratory, and field investigations and to engage in problem-solving to make connections across disciplines and develop an understanding of science concepts.

Evidence includes but is not limited to:

Materials provide multiple opportunities for students to develop, practice, and demonstrate mastery of grade level appropriate scientific and engineering practices as outlined in the TEKS.

- The materials provide multiple opportunities to develop and practice grade-level appropriate scientific and engineering practices, as outlined by the TEKS. The materials cover several TEKS within each core concept developed through the 5E Framework: Engage, Explore, Explain, Elaborate, and Evaluate. Each concept is introduced through an Engage lesson which connects it to real-world phenomena and specific science themes. Each concept includes multiple Explore lessons with hands-on activities, videos, literacy connections, and interactive activities, providing students opportunities to develop grade-level appropriate scientific and engineering practices. Each hands-on lesson includes a Phenomenon Check-In to help students connect their investigation to the real-world phenomenon presented at the beginning of the unit concept.

- For example, in Unit 4, Concept 1, Comparing Animals, students explore what structures help animals survive. They first create different types of beaks and practice picking up bird food using different scenarios, such as with rocks included or different sizes of food. Next, students make a claim. In the next lesson, students group animals using pictures and notice their structures. They start by grouping animals in whichever way they want and continue to refine the grouping based on the animal's habitats and external structures. In Lesson 3, students engage in an interactive activity to determine which external structures animals use to move and get food. In Lesson 4, students watch a video and explain how the external structures of different animals help them meet basic survival needs. In Lesson 8, students identify and explain how people help animals meet their needs.
- The materials provide multiple opportunities for students to show mastery of grade-level appropriate scientific and engineering practices. For example, in Unit 3, Concept 1, Living Things, Lesson 9, students answer, "What are some examples of living and nonliving things in your neighborhood that you can observe using your senses?" "How are living and nonliving things different?" "What are the basic needs of living things?" To respond to the questions, students may record their answers using drawings or words; perform their answers through songs, poems, or plays; or find the answers written in the classroom or through objects that represent the answer.

Materials provide multiple opportunities to make connections between and within overarching concepts using recurring themes.

- The materials identify overarching concepts using recurring themes and show how they connect within the materials. In the K-5 Program Guide, the materials identify seven recurring themes that appear throughout the program: patterns, cause and effect, scale, proportion or quantity, systems, energy and matter, structure and function, and stability and change. The materials provide multiple opportunities to use recurring themes in making connections between and within overarching concepts. Materials utilize the recurring theme of patterns. For example, when students are working to understand core scientific concepts about the seasons, they engage in practices such as asking questions, conducting investigations, and developing models, while also using recurring science themes such as patterns and systems. In Unit 2, Concept 3, Lesson 2, students explore the patterns in nature that relate to the weather and describe how seasons have characteristics that repeat in them.
- In Unit 2, Concept 1, Lesson 5, Exploring Soil, students identify cause-and-effect relationships by describing how water moves soil and rock particles from one place to another.

Materials strategically and systematically develop students' content knowledge and skills as appropriate for the concept and grade level as outlined in the TEKS.

- The materials strategically develop students' content knowledge and skills appropriate for the concept and grade level as outlined in the TEKS. Grade-level content knowledge and skills are taught using SEPs and recurring themes. For example, materials for grades K-1 integrate SEPs through classroom and outdoor investigations for about 80% of instructional time to support instruction in the science content standards. For example, in Unit 2, Concept 1, Investigating Soil, which lasts a total of 180 minutes, the time allotted to the specific phases of Engage, Explore and Explain takes a total of 140 minutes (78% of the total time), complying with what TEA states for grades K-1.

Discovery Education Science Techbook for Texas
Grade 1

- The materials are systematically designed to develop and build student skills and content knowledge using phenomena appropriate to the grade level as outlined in the TEKS. For example, Unit 1—Objects, Motion, and Heat—is divided into three concepts. The first one, classifying objects by their properties, is more concrete. The second concept introduces the movement of objects through pushes and pulls. Finally, the third concept is more abstract as it introduces temperature and how it affects objects.

Materials include sufficient opportunities, as outlined in the TEKS, for students to ask questions and plan and conduct classroom, laboratory, and field investigations and to engage in problem solving to make connections across disciplines and develop an understanding of science concepts.

- The materials include opportunities for students to ask questions and plan and conduct investigations. For example, in Unit 2, Soil, Water, and Weather, students describe the appearance of soil and investigate how water moves soil and rock from one place to another. In the opening lesson, the teacher asks students to share any questions about types of soil and how water moves soil. The teacher is prompted to write the questions on chart paper, the board, or where they can be easily referenced throughout the unit to see if they are answered. The lesson continues and allows students to revisit these questions and answer them using the science ideas they have learned and the evidence they have gathered throughout the concept.
- The materials include sufficient opportunities for students to engage in problem-solving to make connections across disciplines and develop an understanding of science concepts. For example, students ask questions and explain phenomena using appropriate tools and models. Like in Unit 1, Concept 3, Lesson 2, Heating and Cooling, students explore how adding or removing temperature from an object can affect it. Students start by sharing what they know about glow sticks and how they glow. The teacher encourages students to think with others and asks students to share what they would like to know about glow sticks and how they are related to heat with the class. Students work in a group to investigate what happens when they place glow sticks in warm and cold water making predictions about whether the glow stick will glow brighter in the warm or cold water or the same in both. After experimenting, students discuss questions like, “Were there any changes to the brightness of the glow sticks that you could see?” or “Do you think the change in the brightness of the glow stick could be reversed?” Students discuss their answers and conclude.
- The materials provide repeated opportunities for students to use grade-level appropriate scientific and engineering practices across various contexts throughout the course. For example, in Unit 1, Concept 2, Push and Pull, students engage in multiple Explore activities in which they describe how pushes and pulls can start and stop an object’s motion, how pushes and pulls can change the speed or direction of an object’s motion, and how the strength of force needed to move an object depends on the object’s size. Throughout the concept, students consider the cause-and-effect relationships between the strengths of forces and the motion of objects.

Discovery Education Science Techbook for Texas
Grade 1

Indicator 2.2

Materials anchor the learning in phenomena and problems as the key lever for driving learning and student mastery of disciplinary knowledge and skills.

1	Materials embed phenomena and problems across lessons to support students in constructing, building, and developing knowledge through authentic application and performance of scientific and engineering practices, recurring themes and concepts, and grade-level content as outlined in the TEKS.	M
2	Materials intentionally leverage students' prior knowledge and experiences related to phenomena and engineering problems.	M
3	Materials clearly outline for the teacher the scientific concepts and goals behind each phenomenon and engineering problem.	M

Meets | Score 4/4

The materials meet the criteria for this indicator. Materials anchor the learning in phenomena and problems as the key lever for driving learning and student mastery of disciplinary knowledge and skills.

Materials embed phenomena and problems across lessons to support students in constructing, building, and developing knowledge through authentic application and performance of scientific and engineering practices, recurring themes and concepts, and grade-level content as outlined in the TEKS. Materials intentionally leverage students' prior knowledge and experiences related to phenomena and engineering problems. Materials clearly outline for the teacher the scientific concepts and goals behind each phenomenon and engineering problem.

Evidence includes but is not limited to:

Materials embed phenomena and problems across lessons to support students in constructing, building, and developing knowledge through authentic application and performance of scientific and engineering practices, recurring themes and concepts, and grade level content as outlined in the TEKS.

- The materials use phenomena as a central anchor that drives student learning across grade-level content in each discipline (earth/space, life, physical science). The Engage lesson introduces real-world phenomena within each unit concept and asks students to make connections and claims about them. The Explore lessons include a check-in to help students connect their investigations to phenomena. During the Explain stage, students synthesize and reflect on how their thinking about real-world phenomena has changed. In the Program Guide, the publisher explains, "In grades K-2, students are not expected to create their own explanation, but to discuss with the class which explanation they can support with the evidence they collected in Explore."
- For example, in Unit 2, Soil, Water and Weather, Concept 1, Lesson 1, students investigate and observe what happens as rocks move down a river in a simulation and proceed to make a claim to explain how students can describe soil. Next, through different Explore lessons, students investigate different types of soils. They do hands-on activities, interactive activities, watch a video, read a text to investigate, and describe different types of soil, their properties, and their components. They also read a text about how water moves soil and rock particles. In Lesson 7,

students construct and present their scientific explanations about how they can describe soil following the CER protocol.

- The materials embed thought-provoking phenomena and engineering problems that require nuanced and appropriate grade-level explanations. Materials provide opportunities for students to develop, evaluate, and revise their thinking as they figure out phenomena. For example, in Unit 1, Concept 3, Heat, students learn how heat changes things. They explain changes in materials caused by heating and predict how something will change due to heat. The teacher asks students, "What happens when things get hot? Do all objects react in the same way when they are hot?" Students explain changes in materials with the addition or removal of heat, predict how heat affects material, and investigate how heat affects a glow stick.

Materials intentionally leverage students' prior knowledge and experiences related to phenomena and engineering problems.

- The materials provide opportunities to leverage students' prior knowledge and experiences related to phenomena and engineering problems. For example, in Unit 1, Concept 3, Lesson 1, How Does Heat Change Things?, the educator notes include a section on making connections, which states, "Elicit students' prior knowledge and experience with the real-world phenomenon by asking students for an example of an object that changes when it gets hot or cold. Examples could include how a chocolate bar might change if left outside or water turning to ice in the freezer." The teacher asks, "What do you already know about heat?" In the Unit Resources, the background knowledge resource provides information on heat. It states, "Before starting this concept, students should understand the difference between hot and cold." This section tells teachers of experiences students probably had with heat, including watching ice cream or ice melting and rubbing their hands together to create warmth.
- The materials allow different entry points to learning phenomena and solving problems. For example, in Unit 3, Sky and Weather, Concept 2, Wind and Weather, students experience the phenomena through various means: images (Lesson 1), hands-on activities (Lessons 2 and 6), video (Lesson 3), interactives (Lesson 4), and reading (Lesson 5).
- The materials guide teachers and students to address potential areas of misunderstanding. In Unit 1, Concept 1, Lesson 2, Discovery Centers, the educator notes include a misconceptions section to help teachers guide students who believe that an object can only have one property or attribute. It states, "Support students by choosing a few objects from the activity and prompting them to identify several of the objects' properties and attributes."

Materials clearly outline for the teacher the scientific concepts and goals behind each phenomenon and engineering problem.

- Under Unit Resources, materials include a document titled Background Knowledge. This section provides student and teacher background knowledge on each core concept covered in the unit. For example, for Unit 2, Soil, Water and Weather, Concept 1, Investigating soil, the teacher's background explains that "Soil is made of rocks, decaying plants and animals (organic matter), and minerals, mixed with water and air." It provides information about the components of soil, layers of soil, and different types of soil. As for student background, the document mentions that "before starting this concept, students should have experience seeing and touching soil. They should understand that most plants grow in soil. They might have the misconception that the soil is alive, not just that there are some living things in it. They should be able to make

observations based on different properties, such as color, texture, and weight. Students should understand that people can dig in the soil and use water to mix, move, or separate items in soil."

- The materials clearly outline student learning goals behind each phenomenon. For example, in Unit 3, Concept 1, Lesson 1, the objective states, "Students will: Recognize how living and nonliving things compare and make a claim to describe how living and nonliving things compare." Additionally, in the unit resources, the "Unit Planner" summarizes the unit goals (involving multiple core concepts) and a summary of the real-world phenomenon for each core concept, followed by the concept objectives for all lessons.

Discovery Education Science Techbook for Texas
Grade 1

Indicator 3.1

Materials are designed to build knowledge systematically, coherently, and accurately.

1	Materials are vertically aligned and designed for students to build and connect their knowledge and skills within and across units and grade levels.	M
2	Materials are intentionally sequenced to scaffold learning in a way that allows for increasingly deeper conceptual understanding.	M
3	Materials clearly and accurately present grade-level-specific core concepts, recurring themes and concepts, and science and engineering practices.	M
4	Mastery requirements of the materials are within the boundaries of the main concepts of the grade level.	M

Meets | Score 6/6

The materials meet the criteria for this indicator. Materials are designed to build knowledge systematically, coherently, and accurately.

Materials are vertically aligned and designed for students to build and connect their knowledge and skills within and across units and grade levels. Materials are intentionally sequenced to scaffold learning in a way that allows for increasingly deeper conceptual understanding. Materials clearly and accurately present grade-level-specific core concepts, recurring themes and concepts, and science and engineering practices. Mastery requirements of the materials are within the boundaries of the main concepts of the grade level.

Evidence includes but is not limited to:

Materials are vertically aligned and designed for students to build and connect their knowledge and skills within and across units and grade levels.

- The materials present content that builds in complexity within and across units and grade levels. The materials include a K–5 Program Navigation Guide and a Vertical Alignment Guide which show how content builds complexity across units and grade levels. For example, the Vertical Alignment document found on the homepage shows the main four units of study of all grade levels as Matter and its Properties; Force, Motion, and Energy; Earth and Space Science; and Organisms and Environment; as well as the specific topics included in each. For example, the Organisms and Environment unit in Kinder covers the concept of Plants and Animals, focusing on the study of plants' needs and growth and animals' needs, while in Grade 1, materials extend knowledge of this concept in Units 3 and 4 covering living and non-living things; habitats; and animals needs, structures, and growth.
- The materials connect new learning goals to previous and future learning within and across grade levels. For example, in the Study of Matter and Its Properties, Kindergarten begins with the classifying of objects. First grade moves on to the physical properties of objects, heating and cooling, and the study of a system and its parts. The second-grade curriculum focuses on changing the physical properties of objects and the properties of solids and liquids.

Discovery Education Science Techbook for Texas
Grade 1

Materials are intentionally sequenced to scaffold learning in a way that allows for increasingly deeper conceptual understanding.

- The materials include guiding documents to explain a progression of concrete and then representational before abstract reasoning when presenting concepts that allow for increasingly deeper conceptual understanding. The Program Guide states, “Concepts within each unit are structured with lessons that follow the 5E Framework: Engage, Explore, Explain, Elaborate, and Evaluate. Units, concepts, and lessons are designed to pique student interest and scaffold acquisition of specific scientific ideas as students learn about the world in which they live.”
- Concepts within a unit also reflect a progression from concrete to abstract reasoning. For example, in Unit 1; Objects, Motion, and Heat; students start with the concrete concept of classifying objects by their properties. The second concept is more abstract, exploring the movement of objects through pushes and pulls. Finally, the third concept introduces temperature and how it affects things. Additionally, the progression of concrete before abstract reasoning is present within each unit concept. For example, in Unit 1, Concept 1, Classifying Objects, students describe and sort objects by their properties in Lesson 2. By Lesson 9, Choosing the Right Materials, students are identifying if materials are a system and synthesizing what materials might be suitable for specific tasks.
- Materials ensure students experience phenomena before utilizing models as a tool for reasoning. For example, in Unit 1, Concept 1, Lesson 1, How Can We Describe Soil?, students describe the appearance of soil as part of the real-world phenomenon lesson. In Lesson 2, All About Soil, students use their senses to describe soil samples.
- The materials sequence instruction in a way that activates or builds prior knowledge before explicit teaching occurs that allows for increasingly deeper conceptual understanding. For example, in Unit 2, Concept 2, Lesson 6, Describing Water, before explicitly learning about the water, its properties, and where it is found on Earth, students build on prior knowledge by observing a picture of a waterpark and sharing what they think the lesson will be about. After discussing their answers, students make connections by responding to questions like “Where have you seen water today?” and “How have you played in water?” Materials also utilize visual aids and hands-on learning experiences as scaffolds to build an understanding of abstract concepts. For example, in Unit 1, Concept 1, Lesson 4, It’s a Property, there is a section on slide 5 that directs the teacher to create a graphic organizer about properties before the students watch the video.

Materials clearly and accurately present grade level specific core concepts, recurring themes and concepts, and science and engineering practices.

- The materials clearly present grade-specific core concepts, recurring themes and concepts, and science and engineering practices. For example, materials use the 5E (Engage, Explore, Explain, Elaborate, Evaluate) instructional model for sequencing science instruction. During the Engage phase, materials pose a driving question, present a real-world phenomenon, and have students make an early claim which they will adjust as the concept is developed. During the Explore phase, students engage in multiple activities including hands-on investigations and centers, videos, interactive practices, and text analysis. During the Explain phase, students construct explanations based on the evidence of the phenomena. In the following Elaborate phase, materials connect the concept to the real world, using a text focused on STEM careers. During

the final Evaluate phase, materials assess knowledge acquired and provide choices for students to present their understanding.

- For example, in Unit 2, Concept 2, Earth's Water, during the Engage lesson, students activate prior knowledge by observing pictures and discussing where they can find water and how they use it in daily life. During the Explore phase, students conduct investigations through videos, texts, and hands-on experiences like comparing freshwater and saltwater. In the Explain phase, students describe how the Earth's water compares based on its physical properties. In the Elaborate phase, students make connections to the real world by explaining why scientists study water and the importance of keeping it clean. Finally, in the Evaluate phase, students demonstrate their knowledge by responding to questions like "How is the water in puddles, rivers, lakes, ponds, streams, and oceans alike and different?" and "How can we conserve water?"
- The materials accurately present core concepts, recurring themes and concepts, and science and engineering practices (SEPs). Across lessons, units, and grade levels, materials are free from scientific inaccuracies. Materials present scientific content that is current and reflects the most accurate and widely accepted explanations. For example, the Unit Resources section contains background information with facts that they need to know for a better understanding of the concepts so that they are prepared to answer any questions with accuracy.

Mastery requirements of the materials are within the boundaries of the main concepts of the grade level.

- The materials include specific learning targets for each grade level. For example, materials provide unit objectives for each unit and student learning objectives for each lesson. Every unit contains a Unit Planner that provides an overview of the concepts and the grade-level standards, The Unit Planner also provides the overall goal for the unit and the connections between concepts. Each lesson provides the overall objectives and grade-level learning outcomes for the lessons. Each lesson also provides "I can" statements for clarity of objectives in student-friendly language. For example, in Unit 1, Concept 1, the teacher learning objectives state, "By the end of this concept, students will observe and use their senses to gather data about the properties of objects, distinguish between objects that are and are not systems, sort and classify objects, obtain information from media about using properties to sort objects, apply knowledge of properties to explain how to sort and classify objects, obtain information about properties for classifying materials, compare objects in the classroom by their physical properties, make a claim about ways to describe objects, explain how the properties of materials make them good for a specific task, and construct a scientific explanation that best explains how we can classify objects."
- The materials define the boundaries of the main concepts that students must master for the grade level or course. For example, in Unit 2; Soil, Water and Weather; Concept 2, Lesson 5, Waters of the Earth, the materials explain that "During the interactive, students will encounter the terms estuary, groundwater, and wetland. It is not necessary for students to understand these terms at this point. It is still beneficial for students to read the information provided for these three sources, however."

Discovery Education Science Techbook for Texas
Grade 1

Indicator 3.2

Materials provide educative components to support teachers' content and knowledge coherence.

1	Materials support teachers in understanding the horizontal and vertical alignment guiding the development of grade-level content, recurring themes and concepts, and scientific and engineering practices.	M
2	Materials contain explanations and examples of science concepts, including grade-level misconceptions to support the teacher's subject knowledge and recognition of barriers to student conceptual development as outlined in the TEKS.	M
3	Materials explain the intent and purpose of the instructional design of the program.	M

Meets | Score 6/6

The materials meet the criteria for this indicator. Materials provide educative components to support teachers' content and knowledge coherence.

Materials support teachers in understanding the horizontal and vertical alignment guiding the development of grade-level content, recurring themes and concepts, and scientific and engineering practices. Materials contain explanations and examples of science concepts, including grade-level misconceptions to support the teacher's subject knowledge and recognition of barriers to student conceptual development as outlined in the TEKS. Materials explain the intent and purpose of the instructional design of the program.

Evidence includes but is not limited to:

Materials support teachers in understanding the horizontal and vertical alignment guiding the development of grade level content, recurring themes and concepts, and scientific and engineering practices.

- Materials include guiding documents that support teachers in understanding how new learning connects to previous and future learning across grade levels, such as the K–5 Program Navigation and Vertical Alignment Guide. These documents provide a broad overview of how the learning connects throughout the grades. For example, in the Vertical Alignment Guide, under the core concept of Matter and Its Properties, Kindergarten lists: Magnets and Properties of Objects; Grade 1 lists: Classifying Objects; and Grade 2 lists: Material Properties.
- The supporting document "K–12 Scientific and Engineering Practices and Recurring Themes and Concepts Vertical Alignment" presents a comprehensive table that showcases which specific skills and standards students should have mastered in previous grades and how learning will progress in the subsequent grades. This document includes tabs categorized by SEPs and recurring themes and concepts (RTCs), biology, Earth and space, and chemistry.
- For example, in the SEPs and RTCs tab, Kindergarten standard K.1.A (ask questions and define problems based on observations or information from text, phenomena, models, or investigations) is shown as covered in Units 1 through 4. In the rest of the grade levels and in the

Biology course, the correlating standard is covered in all units as well. In the Earth and space tab, teachers and administrators can see how a topic is covered through the grade levels. For example, students first learn about seasons in Kindergarten in Unit 3, Concept 2, Wind and Weather, in which they observe and describe changes over seasons. In Grade 1, Unit 2, Concept 3, Patterns in Nature, students are expected to describe and predict the patterns of seasons of the year such as order of occurrence and changes in nature. Then, in Grade 4, students encounter seasons again in Unit 3, Concept 1, Moon Phases and Seasons, in which students collect and analyze data to identify sequences and predict patterns of change in seasons such as changes in temperature and length of daylight.

- Materials include guiding documents that explain how content and concepts increase in depth and complexity across lessons and units within the grade level. For example, the Unit Planner found in Unit Resources includes a unit summary with a description of what students will learn through the different lessons. For Unit 1; Objects, Motion, and Heat; the document states, “In this unit, students will learn about the properties of objects, how objects are affected by motion, and how objects are affected by heating or cooling. During the Classifying Objects concept, students will learn how to classify and describe objects based on their physical properties. They will use their senses to gather information about objects’ temperature, weight, size, shape, color, and mixture. For the Push and Pull concept, students will explore how objects move. They will be able to describe how pushes, pulls, force and the shape of objects can affect motion. During the Heat concept, students will investigate how objects change when they are heated and cooled. They will be able to describe how temperature and heat are related and understand that some changes are reversible while others are not.”

Materials contain explanations and examples of science concepts, including grade level misconceptions to support the teacher’s subject knowledge and recognition of barriers to student conceptual development as outlined in the TEKS.

- Materials include information for teachers about common grade-level misconceptions that are barriers to students’ conceptual development. For example, in Unit 3, Living Things and Habitats, materials specifically describe possible misconceptions and how to address them. The educator notes state, “Students may have a misconception between needs and wants. Help students work through that although they may want electricity, they do not need it for survival. This can be done by showing students different cultures present and historical that do not require electricity but are able to thrive.” In Unit 4, Animal Needs and Growth, students observe and describe major stages in the life cycles and compare ways that different young animals resemble their parents. The misconceptions section states, “Students may believe that female offspring resemble their mother and males resemble their father. Clarify that offspring can resemble either parent. They may look very similar to one parent or have a blend of similarities from both parents.”
- Each unit contains a document called Background Knowledge under Unit Resources which provides information for teachers and students. For example, in Unit 3, Concept 1, Living Things, the teacher background explains that “Oxygen is a component of air that animals require. Oxygen is used in cellular respiration to obtain energy from a food source such as glucose. Carbon dioxide is a component of air that plants require. It is combined with water to produce the food that plants need. All organisms are also adapted to a certain temperature range that they need to survive. Plants also require light and minerals. One of the main differences

between plants and animals is that plants can make their own food. Plants produce food in the form of glucose through the process of photosynthesis."

Materials explain the intent and purpose of the instructional design of the program.

- Materials provide a purpose or rationale for the instructional design of the program. Materials explain why materials are designed the way they are. The K–5 Program Guide states, "The program is organized into standards-aligned cohesive units that can be arranged in various sequences to meet your district's needs. Each unit includes concepts that are strategically bundled, ensuring students will uncover all core scientific content. Concepts within each unit are structured with lessons that follow the 5E Framework: Engage, Explore, Explain, Elaborate, and Evaluate. Units, concepts, and lessons are designed to pique student interest and scaffold acquisition of specific scientific ideas as students learn about the world in which they live."
- The K–5 Program Guide also explains that each concept is "...organized around the research-backed, phenomenon-based storyline learning model." The phenomenon-based learning model encourages students to collaborate and investigate to explain the phenomena. Materials add, "Units, concepts, and lessons are designed to pique student interest and scaffold acquisition of specific scientific ideas as students learn about the world in which they live. Each concept contains a series of 5E lessons broken into learning activities that follow a logical progression and are designed to build student understanding of the scientific concepts."

Discovery Education Science Techbook for Texas
Grade 1

Indicator 4.1

Materials provide opportunities for students to engage in productive struggle through sensemaking that involves reading, writing, thinking, and acting as scientists and engineers.

1	Materials consistently support students' meaningful sensemaking through reading, writing, thinking, and acting as scientists and engineers.	M
2	Materials provide multiple opportunities for students to engage with grade-level appropriate scientific texts to gather evidence and develop an understanding of concepts.	M
3	Materials provide multiple opportunities for students to engage in various written and graphic modes of communication to support students in developing and displaying an understanding of scientific concepts.	M
4	Materials support students to act as scientists and engineers who can learn from engaging in phenomena and engineering design processes, make sense of concepts, and productively struggle.	M

Meets | Score 4/4

The materials meet the criteria for this indicator. Materials provide opportunities for students to engage in productive struggle through sensemaking that involves reading, writing, thinking, and acting as scientists and engineers.

Materials consistently support students' meaningful sensemaking through reading, writing, thinking, and acting as scientists and engineers. Materials provide multiple opportunities for students to engage with grade-level appropriate scientific texts to gather evidence and develop an understanding of concepts. Materials provide multiple opportunities for students to engage in various written and graphic modes of communication to support students in developing and displaying an understanding of scientific concepts. Materials support students to act as scientists and engineers who can learn from engaging in phenomena and engineering design processes, make sense of concepts, and productively struggle.

Evidence includes but is not limited to:

Materials consistently support students' meaningful sensemaking through reading, writing, thinking, and acting as scientists and engineers.

- Materials provide a definition of sensemaking and identify specific sensemaking behaviors of students. In the K–5 Program Guide, the materials identify Student Sensemaking as a foundational aspect of using Real-World Phenomena to support student learning. According to the materials, "When phenomena are carefully selected to be relevant to students, the phenomena spark students' curiosity and provide a reason for them to engage in the learning as they make sense of how and why the phenomena occur. Students build their understanding of science ideas through the process of developing and revising explanations."
- Materials consistently provide learning activities that support students' meaningful sensemaking through reading, writing, thinking, and acting as scientists and engineers. For example, for Unit 1, Concept 3, students think and act as scientists throughout the different lessons. Students observe popsicles melting and talk about it, read a passage about the effects of heating and

cooling on objects, watch a video about instances of heat in everyday life, and then act as scientists and engineers when they experiment with glow sticks in water with different temperatures to check the intensity of the glow. To evaluate their learning, students write or draw conclusions based on evidence they obtained throughout the unit.

Materials provide multiple opportunities for students to engage with grade level appropriate scientific texts to gather evidence and develop an understanding of concepts.

- Opportunities for students to engage with scientific texts include activities, such as pre-reading and vocabulary, to help them develop an understanding of concepts. For example, the lessons include activities before, during, and after reading. In Unit 1, Concept 1, Lesson 5, students use the SOS strategy Read My Mind in which the teacher prepares cards with keywords students became familiar with from reading. Students use the words on the cards to prompt a reflection on what they heard from the reading. In Unit 2, Concept 1, Lesson 6, Soil is Important, students draw a quick model of how they believe soil and rock could travel from the top of a mountain to an ocean shore before reading a text. Students also predict if this travel would happen over a short or long time. During reading, the teacher reads the text aloud as students follow along, stopping to discuss the images and other key ideas and details. Students then underline the sentences that describe how water moves rocks and soil as they follow along. The teacher introduces the term topsoil to students.
- Materials include the vocabulary at the bottom of the lesson with audio and a picture. Also, under Unit Resources, the materials provide printable flashcards of the vocabulary studied throughout the whole unit with pictures and words on one side and definitions in English and Spanish on the other side. For example, in Unit 3, Concept 1, Living Things, the words air, basic needs, environment, living, nonliving, produce, space, and young are featured vocabulary words.
- Materials provide multiple opportunities for students to engage with scientific texts to gather evidence and develop an understanding of concepts. For example, in Unit 4, Animal Needs and Growth, students use grade-level texts to learn how animals use external structures to move and identify the external structures of different animals and compare how those structures help different animals move.
- Additionally, in every unit there is at least one interactive lab that integrates scientific text with scientific investigations. For example, in Unit 2, Concept 2, Lesson 3, Waters of the Earth, students work in a virtual lab exploring the different bodies of water on Earth. The interactive activity includes scientific text that introduces students to the concepts they need to know before starting their virtual lab. As students drag the names of different bodies of water to the right spot on a model, there is a pop-up with a definition. For example, for the word ocean, the pop-up says, “Oceans are large bodies of saltwater. They surround the continents. All the oceans are connected to each other. The ocean’s floor has mountains, plains, and plateaus.” At the end of the lesson, students complete a two-column graphic organizer (T-chart) identifying bodies of water and where they are found on Earth and discuss their learning.

Discovery Education Science Techbook for Texas
Grade 1

Materials provide multiple opportunities for students to engage in various written and graphic modes of communication to support students in developing and displaying an understanding of scientific concepts.

- Materials provide opportunities for students to communicate thinking on scientific concepts in written and graphic modes. For example, in Unit 2, Concept 1, Lesson 4, students draw a picture of what the word sand means to them. In Unit 3, Concept 1, Lesson 5, students write one key idea from the unit on five sticky notes. Additionally, in every concept, the Evaluate lesson asks students to summarize their learning by answering three questions in different ways. For example, in Unit 3, Concept 1, Lesson 9, Living Things, students answer the questions “What are some examples of living and nonliving things in your neighborhood that you can observe using your senses?” “How are living and nonliving things different?” and “What are the basic needs of living things?” To respond to the questions, students may record their answers; perform their answers through songs, poems, or plays; or find the answers written in the classroom or through objects in the classroom that represent the answer.
- During every hands-on investigation and every virtual lab, students fill out a graphic organizer to log in their observations and reach conclusions. For example, in Unit 3, Concept 1, Lesson 3, Needs of Living Things, students fill out a pair of two-column graphic organizers where they record one example of a living thing that lives in each specific habitat.

Materials support students to act as scientists and engineers who can learn from engaging in phenomena and engineering design processes, make sense of concepts, and productively struggle.

- Materials provide authentic student engagement and perseverance of concepts through productive struggle while acting as scientists and engineers. For example, in Unit 3, Concept 3, Lesson 3, Designing a Vegetable Garden, students design a vegetable garden for their neighborhood. Students work together to make a list of things a vegetable garden needs. Students draw what their garden will look like, as they think about what seeds they will plant, what they will use to cover the seeds, what they will use to water the garden, and how they will keep the soil in place. After they finish the project, students answer the question: “How did you use soil, water, and rocks to create an effective garden to grow food for your neighborhood?”
- Materials support students as “practitioners” while they are figuring out (sensemaking) and productively struggling. Materials prioritize students making evidence-based claims to construct explanations of how and why the phenomena or problem occurs. For example, in every Explain lesson for each concept, students make a claim and support it with evidence. Students then present their scientific explanations in a format that works best for the classroom (e.g., oral presentations, writing, or drawing). In Unit 1, Concept 3, Heat, during the Explore lessons, students explain changes in materials with the addition or removal of heat and predict how heat affects the material. Students work in groups to investigate what happens when they place glow sticks in warm and cold water. In the Explain lesson, students use evidence and reasoning to support a claim about how heat changes things and identify examples of heat-changing materials.
- The materials create transfer opportunities for students to take what they have learned and use it flexibly in new situations. For example, in Unit 3, Concept 3, Lesson 3, Designing a Vegetable Garden, after students have learned in previous lessons about what plants need to grow, they build a garden on the school grounds, using this opportunity also as a field investigation.

Discovery Education Science Techbook for Texas
Grade 1

Indicator 5.1

Materials promote students' use of evidence to develop, communicate, and evaluate explanations and solutions.

1	Materials prompt students to use evidence to support their hypotheses and claims.	M
2	Materials include embedded opportunities to develop and utilize scientific vocabulary in context.	M
3	Materials integrate argumentation and discourse throughout to support students' development of content knowledge and skills as appropriate for the concept and grade level.	M
4	Materials provide opportunities for students to construct and present developmentally appropriate written and verbal arguments that justify explanations to phenomena and/or solutions to problems using evidence acquired from learning experiences.	M

Meets | Score 4/4

The materials meet the criteria for this indicator. Materials promote students' use of evidence to develop, communicate, and evaluate explanations and solutions.

Materials prompt students to use evidence to support their hypotheses and claims. Materials include embedded opportunities to develop and utilize scientific vocabulary in context. Materials integrate argumentation and discourse throughout to support students' development of content knowledge and skills as appropriate for the concept and grade level. Materials provide opportunities for students to construct and present developmentally appropriate written and verbal arguments that justify explanations to phenomena and/or solutions to problems using evidence acquired from learning experiences.

Evidence includes but is not limited to:

Materials prompt students to use evidence to support their hypotheses and claims.

- Materials provide opportunities for students to develop how to use evidence to support their hypotheses and claims. For example, in Unit 1, Concept 3, Lesson 3, Temperature, students record data in a table as they see different examples of objects at different temperatures. The teacher monitors the students during the exploration to ensure that they are on the right track. Later on in the lesson, the students respond to questions based on the evidence they collected: "At what temperature does water freeze (or turn into ice)?" and "At what temperature does water boil?" In Lesson 7, the teacher guides students to use the evidence that they have collected throughout the concept to support their claims. The teacher is given the option to scaffold this step by developing the claim together as a class.
- Materials specifically prompt students to use evidence when supporting their hypothesis and claims. For example, in every Explain lesson students make a claim. After setting the purpose of the lessons, the teacher presents a guiding question. Next, in a section labeled "What Is the Evidence?," students select which claim they think is best and support the claim with evidence gathered from previous lessons. The educator notes state, "Have students select which claim they think is best, and ask them to support the claim with evidence they gathered from previous

lessons. Have students write or draw their evidence in the space provided in the student materials." Students may provide verbal or written responses when sharing with their partners. Then, in a section labeled "Give a Reason," students turn and talk to a partner about their evidence, explaining how and why the evidence supports the claim they chose.

Materials include embedded opportunities to develop and utilize scientific vocabulary in context.

- Materials include opportunities to develop and use vocabulary after having a concrete or firsthand experience to which they can contextualize new terms. For example, in Unit 4, Concept, Lesson 1, What Structures Help Animals Survive? students learn the structure and survival of the word. First, the teacher introduces these words and discusses them briefly. Then, students see them in a slideshow introducing the Real-World Phenomenon activity. They can click on the words to access the glossary. Students engage in an investigation testing different types of bird beaks. Then, reflecting on the real-world phenomenon, students answer, "What structures help animals meet their needs for survival?" To close the lesson, the teacher guides a vocabulary check-in and prompts students to continue using the terms. In the following lesson, students identify the structures of different animals and group animals based on their external structures. Throughout the lessons in this concept, Comparing Animals, students identify external structures different animals use to move, get food, and help them meet basic survival needs, using the vocabulary introduced in Lesson 1.
- Materials present scientific vocabulary using multiple representations. For example, key vocabulary is presented in the Vocabulary tab (Next to the lessons tab), at the end of a lesson, and in the glossary is linked to multiple representations. Each word has a definition and a sentence using the word in context. A picture, a real-life video, and an animation are also provided. The glossary also has an immersive reader feature that allows the students to hear all the provided text read aloud to them.

Materials integrate argumentation and discourse throughout to support students' development of content knowledge and skills as appropriate for the concept and grade level.

- Materials provide opportunities for students to develop how to engage in the practice of argumentation and discourse. In every concept, students begin the Engage lesson by interacting with a real-world phenomenon and making a claim based on a question. After students record their answers, they share their ideas with a small group. The expectation is for students to gather evidence to help explain the real-world phenomenon continuously. Materials state, "It is acceptable for the claim to be incorrect at this point. Resist the urge to correct student responses at this initial lesson stage." Students revisit their claim and revise it throughout the Explore lessons and the Explain lesson. For example, in Unit 3, Concept 1, Lesson 7, How Do Living and Nonliving Things Compare?, the teacher shows students the video from the real-world phenomenon found in the Engage lesson and explains to the students that now that they have learned about how living and nonliving things can be classified, they will work together to explain how living and nonliving things compare. Next, students make a claim based on the question, "How do living and nonliving things compare?" Students work with partners to share evidence from the lessons that supports their claim. Students may provide verbal or written responses. At the end of the lesson, students put together a presentation combining all they have learned about this concept. They may present it orally, in writing, or with drawings.

- Materials provide opportunities for students to develop how to engage in the practice of scientific discourse. Materials use various teaching strategies, including think-pair-share, clarifying students' ideas, student-to-student discussions, and encouraging student-to-student discussion. For example, in Unit 4, Concept 1, Lesson 2, Animal Groups, after students have conducted a hands-on investigation and collected evidence, they share their findings in small groups. The teacher guides student scientific discourse and informally assesses by utilizing phrases such as, "So you are saying that…" or "I think I heard you say…"
- Materials integrate argumentation and discourse within stages of the learning cycle. In every concept, students begin the Engage lesson by interacting with a real-world phenomenon and making a claim based on a question. After completing the lessons in a concept, students are guided to reflect on how their initial understanding of the concept topic and the real-world phenomenon may have changed. For example, in Unit 4, Concept 1, Comparing Animals, students begin the unit by making predictions about the structures animals have that help them survive. Throughout the concept, students collect data through hands-on activities, interactives, videos, and scientific text. The materials guide the teacher to facilitate a brief class discussion for groups to describe their understanding of the investigations, share what they figured out with one another, and ask any further questions that they may have. In the Explain lesson, students revisit their initial claims. The teacher says, "We investigated animal structures. Think about what you now know that you did not know before about animal structures. Ask students to share what they have learned about comparing animals in small groups." Students use the evidence collected to revise their initial claims and present their scientific explanations in the best format for the classroom (for example, oral presentations, writing, or drawing). They are asked to include reasons why they chose the claim and to explain how and why the evidence supports their claim.

Materials provide opportunities for students to construct and present developmentally appropriate written and verbal arguments that justify explanations of phenomena and/or solutions to problems using evidence acquired from learning experiences.

- Materials provide instruction for how to construct and present a verbal or written argument. For example, in the Explain lesson, the materials offer three possible answers to a question, and students need to select the claim they think is best based on the data they collected throughout the previous lessons. The teacher invites students to share what they have explored about the Supporting Science Theme in the concept. Materials instruct the teacher to accept all ideas and help students to collaboratively connect their learning across all disciplines. After they have chosen their claim, students write or draw their evidence. Students also support their claim with reasons (how and why) the evidence supports the claim they have chosen. At the end of the lesson, students put together a presentation combining all they have learned about this concept. They may present it orally, in writing, or in drawings. The teacher may allow students to choose how they wish to communicate their scientific explanations.
- Materials provide opportunities for students to justify explanations of phenomena and solutions to problems using written and verbal arguments. For example, in Unit 3, Concept 1, Lesson 7, What Can You Observe About the Sky?, when students make a claim in response to the question "How do living and nonliving things compare?" they write or draw their evidence in the space provided in the student materials. Then, in the slide called "What is the Evidence?" the materials state, "With your partner, share the evidence from the lessons that support your claim." In the following slide called "Give a Reason," the materials direct students to turn and talk with a

partner and “discuss the reasons (how or why) the evidence supports the claim.” Afterward, students construct and present their scientific explanations in the best format for them (e.g., oral presentations, writing, or drawing).

Discovery Education Science Techbook for Texas
Grade 1

Indicator 5.2

Materials provide teacher guidance to support student reasoning and communication skills.

1	Materials provide teacher guidance on anticipating student responses and the use of questioning to deepen student thinking.	M
2	Materials include teacher guidance on how to scaffold and support students' development and use of scientific vocabulary in context.	M
3	Materials provide teacher guidance on preparing for student discourse and supporting students in using evidence to construct written and verbal claims.	M
4	Materials support and guide teachers in facilitating the sharing of students' thinking and finding solutions.	M

Meets | Score 4/4

The materials meet the criteria for this indicator. Materials provide teacher guidance to support student reasoning and communication skills.

Materials provide teacher guidance on anticipating student responses and the use of questioning to deepen student thinking. Materials include teacher guidance on how to scaffold and support students' development and use of scientific vocabulary in context. Materials provide teacher guidance on preparing for student discourse and supporting students in using evidence to construct written and verbal claims. Materials support and guide teachers in facilitating the sharing of students' thinking and finding solutions.

Evidence includes but is not limited to:

Materials provide teacher guidance on anticipating student responses and the use of questioning to deepen student thinking.

- Materials provide teachers with possible student responses to questions and tasks. For example, in Unit 2, Concept 1, Lesson 2, Rock Classification, students make predictions. To support them, the teacher asks, "Do plants grow better in some places than others?" Materials provide the sample response "Yes, plants grow better in forests or woods than in deserts or mountains." Next, the teacher asks "What senses will we use to observe the color of the sand?" "What about observing its texture?" The sample response provided is "We will use sight (eyes) to observe the color and touch (hands) to observe the texture." In the case of responses to tasks, instead of providing textual sample responses, the materials indicate what the student answers should include. For example, in the same lesson, the teacher instructs the students to observe each type of soil and record their observations. Some possible student recordings are provided. For potting soil, the example says, "Color: Sample response: Drawing should include a dark brown color. Texture: Sample response: Drawing may include dry and crumbly texture. Size: Sample response: Drawings may include different sizes of particles in the soil. It may be difficult to see the particles' size."

- Materials provide teacher responses to possible students' responses, including how to build on students' thinking. Throughout the Engage lessons, materials provide questions to help build students' thinking. The teacher first asks students to turn and talk to a partner to share what they noticed and wondered about the real-world phenomenon. Then, the materials prompt the teacher to encourage students to think with others by asking: "Would anyone like to add to the idea that [student name] is building?" Throughout different lessons, the teacher also helps students deepen their thinking by clarifying their responses to a question. For example, after asking a question the teacher listens to responses and clarifies using the prompts: "So you are saying that …" and "I think I heard you say …" In Unit 2, Concept 1, Lesson 2, Rock Classification, while students are working on describing the different types of soil, the materials instruct the teacher to circulate the classroom to be sure that students are using the data-collection tool appropriately and to ask the following probing questions to assess and scaffold student thinking "How can you describe the texture of the soil?" and "How can you describe the color of the soil?"

Materials include teacher guidance on how to scaffold and support students' development and use of scientific vocabulary in context.

- Materials provide embedded supports for the teacher in how to introduce and scaffold students' development of scientific vocabulary. Materials provide teachers with Unit Resources which include an overview of the vocabulary students should be able to name and/or identify. For example in Unit 4, Animal Needs and Growth, the scientific vocabulary for the first concept, Comparin Animals, includes *animal*, *basic needs*, *external*, *structure*, and *survival*. The second concept, Animal Life Cycles, includes the vocabulary terms *animal*, *life cycle*, *mammal*, *parent*, *plant*, *resemble*, *stage*, and *young*. The Unit Planner also provides Key Vocabulary Strategies and Academic Vocabulary Strategies.
- Materials also provide detailed supports for the teacher in how to introduce and scaffold students' development of scientific vocabulary within the lessons. For example, in Unit 2, Concept 1, Lesson 1, How Can We Describe Soil?, before going over the Hands-on lesson, the teacher introduces the key vocabulary word "soil". To do this, the teacher starts by asking students to think about a time when they have seen or touched the sand, such as at a beach. Students think about the color and texture of the sand and describe this experience to a partner. As students discuss, the teacher circulates among the pairs and listens for examples to share with the class. The teacher scaffolds the students' thinking by asking "Is all sand the same? Is the color of all sand the same? Is some sand rockier or smoother than other sand?" and "What do you think makes the sand different from place to place?" Student responses will vary. The teacher allows 30-45 seconds for students to think about their answers and then has them discuss their answers with a partner. The teacher then introduces the word "soil" by connecting it with the previous activity: "The soil in a garden and sand at the beach look very different. However, sand is a type of soil. All soil is made in the same way—by the breaking down of rocks." Materials then suggest creating a class anchor chart or word wall with an image for each vocabulary word.
- Materials provide guidance for the teacher on how to support students' use of scientific vocabulary in context. For example, in Unit 2, Concept 1, Lesson 6, Soil is Important, before reading a text, students draw a quick model of how they believe soil and rock could travel from the top of a mountain to an ocean shore. Students also predict if this travel would happen over a short time or a long time. During reading, the teacher reads the text aloud as students follow

along, stopping to discuss the images and other key ideas and details. Students then underline the sentences that describe how water moves rocks and soil as they follow along. The teacher introduces the term *topsoil* to students and points out the picture of the layers of soil to students. Then the teacher says, "Soil has different layers. Topsoil is the layer that is right below the plants". Throughout the lessons, after students have built a conceptual understanding of key vocabulary, a section titled Vocabulary Check-In reminds the teacher to prompt students to continue using the key terms as they engage with the content.

Materials provide teacher guidance on preparing for student discourse and supporting students in using evidence to construct written and verbal claims.

- Materials provide teacher questions for supporting student discourse and the use of evidence in constructing written and verbal claims. For example, in Unit 3, Concept 1, Lesson 4, Inspecting Your Spot, materials provide teachers with simple questions to ask during a whole class discussion such as "How do living and nonliving things compare?" During the investigation, students draw or write what they see and a place where they can find each material. Materials recommend encouraging students to use both words and drawings when creating a claim. Materials also prompt the teacher to encourage students to share their ideas in small groups while asking each other questions for clarification. In Unit 4, Concept 1, Lesson 1, What Structures Help Animals Survive?, after students investigate different bird beaks, the materials provide questions for the teacher to help students use evidence to construct claims: "When there are no rocks, which type of beak picks up more food?" "When there are rocks mixed in with the food, which type of beak is better at getting the food?"
- Materials provide guidance that teachers can use to provide feedback to students while engaging in discourse. All the Evaluate lessons of each concept include three questions that students answer in any format they choose. Materials provide suggested answers and specify what information the answers must include, so the teacher can assess the accuracy of the answer and how to provide feedback. For example, in Unit 3, Concept 2, Lesson 10, Habitats, the first question is "How do living things depend on other living and nonliving things for survival?" Materials indicate that answers should mention living things depend on one another for food. Answers should also mention that living things depend on nonliving things for water, air, and shelter. Additionally, during small group discussions, materials prompt the teacher to rotate around the room to informally assess student understanding, using the phrases "So you are saying that …" and "I think I heard you say …"
- Materials provide teacher guidance on supporting students in using evidence to support scientific claims. For example, in Unit 2, Concept 1, Investigating Soil, the teacher guide suggests organizing student-generated questions on a Student Question Board to set the stage for the investigations they will engage in throughout the concept. Later in the concept, students can revisit these questions and answer them using the science ideas they have learned and the evidence they have gathered throughout the concept.

Materials support and guide teachers in facilitating the sharing of students' thinking and finding solutions.

- Materials provide teacher support and guidance to engage students' thinking in various modes of communication throughout the year. In every concept, different lessons consistently include various modes of communication. For example, in every Explain lesson students first write or

draw evidence in response to a claim. Then, they share the evidence with a partner. Next, students turn and talk with a partner and discuss the reasons (how or why) the evidence supports the claim. Afterward, students construct and present their scientific explanations in the format that works best for them (e.g., oral presentations, writing, or drawing). In the Evaluate lesson of the learning cycle, students can share their learning by recording it, performing it, or finding it. The teacher guide gives examples of what each of these modes could look like. For example, in Unit 1, Concept 2, Pushes and Pulls, students answer the question "How do pushes and pulls change the speed or direction of objects in motion?" Materials suggest students can write the answer, students can draw a diagram that shows how pushes and pulls change the speed or direction of objects in motion, students can demonstrate how an object moves faster and farther if a push is stronger, or slower and not as far if a push is lighter, students can demonstrate how pushing or pulling an object in the opposite direction of which it is currently moving will change the direction of the object, or students can look for objects in the classroom or outside that are in motion and have been pushed or pulled to change the speed or direction of the object.

- Materials provide teacher support for facilitating the sharing of students' finding solutions. Materials include feedback tips and examples teachers can use to support students throughout the learning cycle. Within the Explore phase of each module, materials provide feedback strategies teachers can use to help students share their learning. For instance, in Unit 3, Living Things and Habitats, students investigate practical needs for living things. When students share their models, materials direct the teacher to ask probing questions, including "What did you learn about the basic needs of a living thing?" Materials also state that teachers can encourage student-to-student interaction after each student shares their ideas in small groups while asking each other questions for clarification of their drawings.

Discovery Education Science Techbook for Texas
Grade 1

Indicator 6.1

Materials include a variety of TEKS-aligned and developmentally appropriate assessment tools.

1	Materials include a range of diagnostic, formative, and summative assessments to assess student learning in a variety of formats.	M
2	Materials assess all student expectations over the breadth of the course and indicate which student expectations are being assessed in each assessment.	M
3	Materials include assessments that integrate scientific concepts and science and engineering practices with recurring themes and concepts.	M
4	Materials include assessments that require students to apply knowledge and skills to novel contexts.	M

Meets | Score 2/2

The materials meet the criteria for this indicator. Materials include a variety of TEKS-aligned and developmentally appropriate assessment tools.

Materials include a range of diagnostic, formative, and summative assessments to assess student learning in a variety of formats. Materials assess all student expectations over the breadth of the course and indicate which student expectations are being assessed in each assessment. Materials include assessments that integrate scientific concepts and science and engineering practices with recurring themes and concepts. Materials include assessments that require students to apply knowledge and skills to novel contexts.

Evidence includes but is not limited to:

Materials include a range of diagnostic, formative, and summative assessments to assess student learning in a variety of formats.

- Materials include informal diagnostic assessments. In the Engage lesson of every unit, materials include assessments that allow teachers to know what skills from previous grades students have mastered. For example, in Unit 1, Concept 1, Lesson 1, How Can We Describe Objects?, the materials instruct the teacher to “elicit students’ prior knowledge and experiences with the real-world phenomenon” by asking them what they know about how different types of soil can be used to make mud. Examples could include sand, dirt, or mixing water and soil to make mud. Then, the teacher asks students, “What do you already know about mud?” Students may provide verbal or written responses.
- Materials include formative assessments in a variety of formats to measure student learning and determine the next steps for instruction. Informal formative assessments are frequent and varied across the entire science program. Phenomenon-Check ins and class discussions are included throughout the lessons. For example, in Unit 2, Concept 1, Lesson, 2, All About Soil, the Phenomenon Check-In shows students an image to remind them of their connection to the phenomenon. The teacher poses the question, "How can we describe soil?" The educator notes state, “Next, encourage students to share their ideas in small groups while asking each other

questions for clarification." When students are responding to the phenomenon check-in or engaged in Explore lessons, materials prompt the teacher to circulate around the classroom to informally assess student understanding. Targeted discussion questions are in the teacher support materials to help check student thinking during each lesson.

- To formally assess understanding of a lesson, materials include a section titled "What did you figure out?" at the end of the Explore lessons, following a hands-on activity, interactive activities, videos, and literacy connections. In this section, students engage in digital or print assessments directly tied to the standards of the lesson to demonstrate their understanding of the standard. The data from this online assessment is fed into an online report that the teacher can access to drive her instruction. For instance, in Unit 1, Concept 3, Lesson 5, Heat Changes Things, after students have watched a video about things changed by heat, the teacher asks, "What other things can heat change? What are some foods that have a reversible change after they are heated?" In the "What did you figure out?" slide, students answer, "How did the marshmallow change when it was heated in the fire?" choosing from three answer choices: "A: The marshmallow got puffy and sticky. B: The marshmallow changed color. C: The marshmallow stayed the same. Students should select A and B."
- Materials include summative assessments in a variety of formats. In the Explain lesson of the framework, students use what they have learned throughout the Engage and Explore lessons to construct and present a scientific claim using evidence and reasoning. In the Evaluate lesson, students show what they learned throughout the concept and respond to the questions provided in a format of their choice, whether in writing, in oral form, or through performance. For example, in Unit 1, Concept 3, Lesson 9, Heat, students answer the following questions: "What is an example of something that is changed by heating? What is an example of something that is changed by cooling? Are changes caused by heating or cooling reversible?" Suggested ideas for how students can complete the assessment are provided to teachers, along with targeted guidance for evaluating student responses.
- It should be noted that the K–2 materials offer the Assessment Builder online resource; however, the tool generates the message "No Results" when grade K standards or concepts are selected.

Materials assess all student expectations over the breadth of the course and indicate which student expectations are being assessed in each assessment.

- Materials formally and informally assess all student expectations by grade level as outlined in the TEKS. In the Science Techbook for Texas, there is a button labeled TEKS on the top right corner that outlines the alignment of all the grade-level TEKS and in which each concept is covered. For example, standard 1.11 C, "Describe ways to conserve water such as turning off the faucet when brushing teeth and protect natural sources of water such as keeping trash out of bodies of water," is taught and assessed in Concept 2.2 Earth's Water. Materials provide a direct link to the concept and lessons based on this standard within this TEKS resource.
- Materials indicate which student expectations are being taught and assessed. In the Table of Contents, materials identify every TEKS covered in each lesson. Also, under Unit Resources, there is a link to "Standards Alignment" that shows a chart indicating which Student Expectations are covered in each concept.
- Materials indicate which student expectations are assessed. Materials provide the TEKS correlation for each assessment item and the answer keys for every assessment. For example, the Evaluate session of every concept within a unit provides a question for teachers to ask that

is tied to the concept objectives. This assessment also provides the TEKS correlated with each concept and possible answers for the students. For example, in Unit 1, Concept 1, the Teacher's Guide shows that the Evaluate lesson assesses TEKS 1.6A.

Materials include assessments that integrate scientific concepts and science and engineering practices with recurring themes and concepts.

- Materials include assessments that require students to integrate knowledge and science and engineering practices with recurrent themes appropriate to the student expectation being assessed. For example, in Unit 1, Concept 3, Heat, materials include a performance assessment in which students predict how heat affects material, and investigate how heat affects a glow stick. Students act as scientists by predicting, investigating, and recording information. Students work in pairs to document findings.
- In Unit 2, Concept 3, Patterns in Nature, students describe, compare, and predict the patterns of seasons of the year, such as order and changes in nature; describe observable characteristics of weather, including temperature, cloud cover, wind, and precipitation; and explain the impact of characteristics of weather on daily choices. Materials have students reflect on the recurring theme of patterns through the different lessons. Students use the evidence they have collected throughout the unit concept and choose a modality they would like to use to answer assessment questions.
- In Unit 3, Concept 3, Life and Earth Materials, students design a vegetable garden using earth materials. This activity allows students to establish connections by utilizing their prior knowledge and real-world experiences regarding why earth materials are important.

Materials include assessments that require students to apply knowledge and skills to novel contexts.

- In the materials, students apply knowledge and skills to novel contexts within assessments. For example, in Unit 2, Concept 3, Patterns in Nature, after students have learned about patterns in the weather and how people use the weather forecast to choose the appropriate clothing to wear, students apply their learning to matching each weather forecast provided to the clothing that is right for that weather. In Lesson 7 of the unit, students share what they have explored about Patterns in Nature during a Science Theme Check-In.
- Materials include assessments that require students to apply knowledge and skills to problems presented in real-world contexts. For example, in Unit 3, Concept 3, Life and Earth Materials, students identify Earth's natural resources; explore the animals and plants that use them; and describe ways people use rocks, soil, and water in their daily lives. Students grow plants in a garden and identify the combinations of soil, light, and water humans use to grow the best plant. Students also explain how humans design and grow a vegetable garden for a neighborhood in a city and explore how natural resources are used to create building materials.
- Materials include informal assessments that require students to apply knowledge and skills to a new problem. In Unit 1, Concept 3, Lesson 2, Heating and Cooling, students test how hot water and cold water affect glow sticks. Students make note of their findings in a data collection tool. The teacher guide prompts the teacher to ask the questions, "Were there any changes to the brightness of the glow sticks that you could see?" and "Do you think the change in the brightness of the glow stick could be reversed?" to assess student thinking. The lesson concludes with a What Did You Figure Out? section in which the teacher facilitates a brief class

discussion for pairs to describe their understandings from the investigation, share what they figured out with one another, and ask any further questions they may have.

Discovery Education Science Techbook for Texas
Grade 1

Indicator 6.2

Materials include guidance that explains how to analyze and respond to data from assessment tools.

1	Materials include information and/or resources that provide guidance for evaluating student responses.	M
2	Materials support teachers' analysis of assessment data with guidance and direction to respond to individual students' needs, in all areas of science, based on measures of student progress appropriate for the developmental level.	M
3	Assessment tools yield relevant information for teachers to use when planning instruction, intervention, and extension.	M
4	Materials provide a variety of resources and teacher guidance on how to leverage different activities to respond to student data.	M

Meets | Score 2/2

The materials meet the criteria for this indicator. Materials include guidance that explains how to analyze and respond to data from assessment tools.

Materials include information and/or resources that provide guidance for evaluating student responses. Materials support teachers' analysis of assessment data with guidance and direction to respond to individual students' needs, in all areas of science, based on measures of student progress appropriate for the developmental level. Assessment tools yield relevant information for teachers to use when planning instruction, intervention, and extension. Materials provide a variety of resources and teacher guidance on how to leverage different activities to respond to student data.

Evidence includes but is not limited to:

Materials include information and/or resources that provide guidance for evaluating student responses.

- Materials include information that guides teachers in evaluating student responses. Throughout the lessons, materials provide sample responses to guide the teacher in evaluating responses and providing feedback. For example, in Unit 2, Concept 1, Lesson 2, All About Soil, the teacher asks, "Do plants grow better in some places than others?" The materials provide the sample response: "Yes, plants grow better in forests or woods than in deserts or mountains." Then, the teacher asks, "What senses will we use to observe the color of the sand? What about observing its texture?" The sample response provided is, "We will use sight (eyes) to observe the color and touch (hands) to observe the texture." In the case of responses to tasks, instead of providing textual sample responses, the materials indicate what the student answers should include. For example, when students record their observations on potting soil, some possible student recordings are provided: "Color: … Drawing should include a dark brown color. Texture: … Drawing may include dry and crumbly texture. Size: … Drawings may include different sizes of particles in the soil. It may be difficult to see the particles' size." Materials also provide sample responses for open-ended assessments, including how students can respond to the Evaluate lesson. Every Evaluate lesson poses three questions related to the concept. These performance

assessments allow students to record, perform, or find the answers in the environment. Suggested ideas for how students can complete the assessment are provided to teachers, along with targeted guidance for evaluating student responses.

- Materials guide teachers to look for specific components when evaluating student responses. For example, materials provide a set of questions to assess student levels of understanding before, during, and after the completion of a lesson. Some examples from a lesson on how objects move include:
    - Ask students how they might make an object start or stop moving. Ask students how an object's shape might affect the way it moves. [Before]
    - How do you make the object move? What happens when you push the object? What happens when you pull the object? How will the object move? How can you change the motion of the object? [During]
    - Show students a simple three (3) images of a cylinder, sphere, and cube. Ask Which object rolls when you push it. Choose all the right answers. [After]
- The materials include resources that support teachers in evaluating student responses, including answer keys for assessments, automatically graded assessments, and automatic feedback in online assessments. In every final section of a lesson, called What did you figure out?, the materials provide the answer key to the question or task provided, and if the task is assigned digitally, the program collects the data from all responses in one report. The online assessments give students up to three attempts to answer. For each unsuccessful attempt at an assessment, students are given scaffolded feedback to help them reach the correct answer. All of the attempts and answer selections made by the students are recorded and visible to the teacher. For instance, in Unit 1, Concept 3, Lesson 5, Heat Changes Things, the What did you figure out? question states, "How did the marshmallow change when heated in the fire?" The materials specify that students should select answers A and B.

Materials support teachers' analysis of assessment data with guidance and direction to respond to individual students' needs, in all areas of science, based on measures of student progress appropriate for the developmental level.

- The Lesson Data Reflection Techbook for Texas guides teachers on how to reflect and interpret data from formative assessments in grades K-8. This document gives reflection options, such as focusing on specific questions/skills or specific students. Furthermore, it guides teachers on the next steps such as groupings and how to locate resources that could be used to help students achieve mastery.

Assessment tools yield relevant information for teachers to use when planning instruction, intervention, and extension.

- Materials provide the Lesson Data Reflection Guidance Book and a scoring rubric for What Did You Learn assessments, yielding relevant information for teachers to use when planning instruction, intervention, and extension.
- The information gathered from the assessment tools, which consist of one-question formative assessments at the end of a lesson, can be used by teachers when planning differentiated instruction. The formative assessment report provides a color-coded list of students, based on

their performance, and can be used to group students according to assessment results. Also, using this data, teachers can go into the lesson and assign or reassign lessons or content.

Materials provide a variety of resources and teacher guidance on how to leverage different activities to respond to student data.

- Student resources include flashcards to review vocabulary; a bank of SOS strategies (Spotlight on Strategies) with different strategies to teach and review concepts; online skills practice activities for students to use at home; and an assessment builder for the teacher to create their assessments with the concepts or standards they want to assess.
- The Lesson Data Reflection Techbook for Texas provides guidance for responding to student data, including directions on accessing tools and content to support reteaching, remediation, and extension. In the section of the document, Tools to Support Student Learning, teachers are given guidance on how to locate resources based on content or lessons.

Discovery Education Science Techbook for Texas
Grade 1

Indicator 6.3

Assessments are clear and easy to understand.

1	Assessments contain items that are scientifically accurate, avoid bias, and are free from errors.	M
2	Assessment tools use clear pictures and graphics that are developmentally appropriate.	M
3	Materials provide guidance to ensure consistent and accurate administration of assessment tools.	M
4	Materials include guidance to offer accommodations for assessment tools that allow students to demonstrate mastery of knowledge and skills aligned to learning goals.	M

Meets| Score 2/2

The materials meet the criteria for this indicator. Assessments are clear and easy to understand.

Assessments contain items that are scientifically accurate, avoid bias, and are free from errors. Assessment tools use clear pictures and graphics that are developmentally appropriate. Materials provide guidance to ensure consistent and accurate administration of assessment tools. Materials include guidance to offer accommodations for assessment tools that allow students to demonstrate mastery of knowledge and skills aligned to learning goals.

Evidence includes but is not limited to:

Assessments contain items that are scientifically accurate, avoid bias, and are free from errors.

- Assessments contain items for the grade level that are scientifically accurate. For example, in Unit 1, Concept 1, Lesson 10, Classifying Objects, which corresponds to the Evaluate component of the Concept, the materials use the scientific term *physical properties,* as opposed to *characteristics* or *attributes*, when asking the question “What physical properties help us sort objects?” In Unit 4, Concept 1, Lesson 8, Comparing Animals, the formative assessment uses the words external structures rather than objects when students are asked, "How do animals use external structures to survive?"
- The materials contain assessments that align with objectives. For example, in Unit 2, Concept 1, Lesson 2, All About Soil, the objective states, “By the end of the lesson, students will be able to…describe the particle size, texture, and color of soil samples…” At the end of the investigative lesson, the formative assessment question relates back to this objective when it asks, “How are types of soils different? Choose two.” It also includes a picture of different soils to serve as a visual reminder of the differences in soil.
- Assessments contain items for the grade level or course that avoid bias. Formative and summative assessments include items that present content and examples fairly and impartially with no impact on student performance based on such factors as a student’s home language, place of origin, gender, or race and ethnicity. For example, in Unit 2, Earth Materials, assessments provide images of various diverse water locations, such as oceans.

- Assessments contain items for the grade level or course that are free from errors. While reviewing all the questions from the different assessments provided, no errors such as miscalculations, mislabeling units of measurement, or incorrect terminology were found.

Assessment tools use clear pictures and graphics that are developmentally appropriate.

- The assessments use clear pictures and graphics. For example, in Unit 2, Concept 1, Lesson 5, Exploring Soil, after students have investigated soil, the formative assessment "What did you figure out?" provides the question "Water is rushing down. What do you think will happen to the soil?" The question includes a photograph of a waterfall over a short cliff that illustrates what the question is asking.
- The assessments use developmentally appropriate pictures and graphics. For example, in Unit 4, Concept 1, Lesson 3, Structures of Animals, the interactive presentation uses computer-generated graphics to make it clear to students which structures the animals, like a chameleon or a flamingo, are using for survival. In the formative assessment at the end of the lesson, after students are familiar with the concept, they use real-life photographs that students must choose to identify what structures the animals are using to live. In Unit 4, Concept 2, Lesson 4, the formative assessment on matching adult animals to their offspring contains six developmentally appropriate pictures where three adult animals (dog, chicken, and pig) correspond to three young animals (puppy, chick, and piglet).

Materials provide guidance to ensure consistent and accurate administration of assessment tools.

- The materials guide teachers to consistently and accurately administer assessment tools. There is a formative assessment at the end of every lesson titled "What did you figure out?" and one Evaluate lesson at the end of every concept, which allows the teacher to consistently administer assessment tools.
- Each concept assessment provides three questions the students can answer in multiple formats (written response, oral response, performance task). The materials clearly outline what the answers must include. For example, in Unit 2, Concept 1, Lesson 9, Investigating Soil, one of the questions is "How is sandy soil different from clay soil?" The materials provide the following guidance about the answer: "Answers should mention that sandy soil and clay soil may have different shapes, textures, colors, and particle sizes. Sandy soil can be light tan, is coarse, has jagged edges, and is made up of tiny bits of rock. Clay soil can be dark tan, gray, or reddish; is smooth; has soft edges; is made up of very small bits of rock; and is sticky. Sandy soil is a good option when water needs to drain. Clay soil is helpful when water should be held." Additionally, specific guidance for the teacher on how to score the three questions included in each assessment and how to reflect on student data after the assessment has been scored can be found in the Scoring Guidance for What Did You Learn resource.
- Additionally, assessments have a section called Setting the Purpose. In this section, the text states, "There are several opportunities for assessment throughout the program. Begin by having students share the key ideas they have learned throughout the concept. Their responses will vary but should reflect an understanding of light. Have students work through the questions individually or in groups. Students may choose the modality they would like to use to show what they learned, or the teacher may want to encourage them to use each modality once. Make notes as students plan and share what they have learned."

- The scoring rubric for the Concept Assessment found in the Evaluate lessons K-2 provides specific guidance for the teacher on how to score the three questions in each assessment and how to reflect on student data after the assessment has been scored.

Materials include guidance to offer accommodations for assessment tools that allow students to demonstrate mastery of knowledge and skills aligned to learning goals.

- The materials offer accommodations for assessment tools so that students of all abilities can demonstrate mastery of learning goals. For example, every concept assessment provides three questions that the students must answer in any format they want (in writing, orally, with a performance, or finding the answers in the environment), allowing them to demonstrate mastery of learning goals in a way that best adapts to their abilities. Students can also choose to work in groups or individually to complete the task.
- The materials offer accommodations for assessment tools so that students of all abilities can demonstrate mastery of learning goals. For example, in the case of the formative assessments that appear at the end of every lesson under the title “What did you figure out?” the materials give students three attempts to get the answer correct, and every time a student chooses the wrong answer, the materials provide a hint or a suggestion that allows the students to think over their answer and how they can correct their mistake to be successful.
- Materials offer accommodations for assessment tools so all students can demonstrate mastery of learning goals. For example, the formative assessments throughout the program have reduced questioning to one objective-based question. The digital platform of the assessments allows for multiple attempts of the question, with embedded scaffolds.

Discovery Education Science Techbook for Texas Grade 1

Indicator 7.1

Materials include guidance, scaffolds, supports, and extensions that maximize student learning potential.

1	Materials provide recommended targeted instruction and activities to scaffold learning for students who have not yet achieved grade-level mastery.	M
2	Materials provide enrichment activities for all levels of learners.	M
3	Materials provide scaffolds and guidance for just-in-time learning acceleration for all students.	M

Meets | Score 2/2

The materials meet the criteria for this indicator. Materials include guidance, scaffolds, supports, and extensions that maximize student learning potential.

Materials provide recommended targeted instruction and activities to scaffold learning for students who have yet to achieve grade-level mastery. Materials provide enrichment activities for all levels of learners. Materials provide scaffolds and guidance for just-in-time learning acceleration for all students.

Evidence includes but is not limited to:

Materials provide recommended targeted instruction and activities to scaffold learning for students who have not yet achieved grade level mastery.

- Materials include teacher guidance for scaffolding and differentiation for students who have yet to achieve mastery. For example, in Unit 2, Concept 2, Lesson 3, Where Water is Found, materials provide suggestions for differentiation for approaching learners: “Students may have difficulty telling the difference between a lake and a pond. Revisit the pictures from the lesson, and point out that while both are bodies of water, the main difference is that ponds are smaller. Explicitly point out the difference in size between pond and lake in the images accompanying the lesson.”
- Materials include SOS (Spotlight on Strategies) strategies to help scaffold learning. For example, in Unit 2, Concept 3, Lesson 3, Describing Weather, materials include the Three Truths, One Lie SOS Strategy. In this strategy, students use three truthful statements and one false statement to analyze content to identify inaccuracies and provide evidence to support thinking.
- Materials ensure teachers can target instruction to develop precursor skills necessary to access grade-level content. For example, before instruction, students activate their prior knowledge and set purposes for reading or watching. During instruction, they stop and make connections, monitor their understanding, and generate questions for sensemaking. After reading, students communicate, respond to, and reflect on scientific ideas.
- Materials provide additional features to support students in successful science learning, including videos with closed captions and transcripts that provide additional language support for students. According to the publisher, “...closed captions are a powerful tool for students to fully understand key concepts, especially when dealing with technical subjects. Closed captions

support students with word knowledge, information retention, content recall, nuanced language, and syntax."

- Materials ensure that teachers can target instruction for students who have not yet achieved mastery by using the "My Studio" feature, located within the global navigation on the teacher dashboard. This feature allows teachers to create individualized lessons to reteach skills with various multimodal options such as videos, virtual field trips, images, audio, and text (including an immersive reader-to-read text aloud for struggling readers).
- Materials include teacher guidance for scaffolding instruction using sentence frames to check for understanding. For example, in Unit 3, Concept 1, Lesson 5, Living and Nonliving Things, the teacher guide says, "Ask students to orally fill in the blanks. Living things make offspring. Plants make _____, and animals make _____. Living things grow. Seeds become _____. Babies become _____. Living things have basic needs. Plants need _____, _____, and _____. Animals need _____, _____, _____, and _____."

Materials provide enrichment activities for all levels of learners.

- Materials provide enrichment activities for all levels of learners that account for learner variability. The K–5 Program Guide states, "The program features a wide variety of content types, including images, video, audio, text, interactives, and hands-on activities. These multimedia resources provide multiple representations of the content and allow teachers to easily provide targeted content and instruction to whole groups or individual students." For example, in Unit 1, Concept 1, Lesson 5, Classifying Objects by Properties, the materials provide differentiation suggestions for advanced learners: "Have students describe other objects with sink or float, temperature, and heavy or light properties to a partner using complete sentences." Additionally, materials provide enrichment activities through the Elaborate section of each concept. STEM careers lessons allow students to further explore areas of interest beyond the classroom and consider career pathways related to core scientific ideas.
- The My Studio feature within the global navigation on the teacher dashboard embeds suggestions for engaging enrichment activities such as virtual field trips. For example, "From the Ground Up: The Science of Soil Virtual Field Trip" is an enrichment option to partner with Unit 2, Earth Materials.

Materials provide scaffolds and guidance for just in time learning acceleration for all students.

- The lessons include recommendations for just-in-time scaffolds to develop productive perseverance of learning in the moment. For example, in Unit 2, Concept 1, Lesson 3, the script says, "Remind students to record data in a table as they explore the interactive. Monitor students during the exploration to ensure they are on the right track." In Unit 4, Concept 2, Lesson 4, the notes state, "Offer students options so they feel confident as they match the young animals to their parents."
- Materials include questions for the teacher to scaffold student learning while conducting investigations. For example, in Unit 1, Objects, Motion, and Heat, Concept 1, Classifying Objects, Lesson 3, Let's Classify Objects, the materials recommend teachers to ask the following questions to scaffold student understanding as they circulate: "Was your prediction correct or incorrect?" and "Was there one property that more objects had than others?" The materials provide possible answers students might give: "My prediction was correct/incorrect." or "Most objects were smooth."

Discovery Education Science Techbook for Texas
Grade 1

- Lessons provide support and resources for students ready to accelerate their learning. For example, in Unit 1, Lesson 5, Concept 1, Classifying Objects by Properties, the materials provide suggestions for advanced learners: “Have students describe other objects with sink or float, temperature, and heavy or light properties to a partner using complete sentences.” In Unit 1, Concept 2, Lesson 2, How Objects Move, the educator notes state, “Support advanced learners by challenging them to identify pushes and pulls that can happen with other parts of their bodies. For example, students might kick an object, blow on an object, or elbow an object. Have them discuss the similarities and differences in the object’s motion based on using different body parts. Remind students of classroom safety.”

Discovery Education Science Techbook for Texas
Grade 1

Indicator 7.2

Materials include a variety of research-based instructional methods that appeal to a variety of learning interests and needs.

1	Materials include a variety of developmentally appropriate instructional approaches to engage students in the mastery of the content.	M
2	Materials consistently support flexible grouping (e.g., whole group, small group, partners, one-on-one).	M
3	Materials consistently support multiple types of practices (e.g., modeled, guided, collaborative, independent) and provide guidance and structures to achieve effective implementation.	M
4	Materials represent a diversity of communities in the images and information about people and places.	M

Meets | Score 2/2

The materials meet the criteria for this indicator. Materials include a variety of research-based instructional methods that appeal to various learning interests and needs.

Materials include a variety of developmentally appropriate instructional approaches to engage students in the mastery of the content. Materials consistently support flexible grouping (e.g., whole group, small group, partners, one-on-one). Materials consistently support multiple types of practices (e.g., modeled, guided, collaborative, independent) and provide guidance and structures to achieve effective implementation. Materials represent a diversity of communities in the images and information about people and places.

Evidence includes but is not limited to:

Materials include a variety of developmentally appropriate instructional approaches to engage students in the mastery of the content.

- Materials engage students in content through a variety of developmentally appropriate strategies. For example, materials include lessons tied to real-world phenomena through images, videos, and experiences. In Unit 2, Concept 3, Lesson 1, How Do the Sun and Moon Compare?, students first create a data chart about their clothing and reflect on why they wear those clothes and what weather would have them dress differently. The teacher sets the purpose for learning and leaves time for students to ask questions. Then, students watch a Real-World Phenomenon video that shows weather changes. Materials include video clips and interactive labs to introduce or reinforce specific science concepts. For example, in Unit 2, Concept 2, Lesson 5, Waters of the Earth, students engage in an interactive virtual activity to explore how bodies of water are connected.
- Materials also include authentic tasks in which students use tools to measure and collect data. For example, in Unit 4, Concept 1, Lesson 2, Animal Groups, students use a graphic organizer to

record how they sorted group animals based on where they live and on their external structures.

- Under Unit Resources, materials provide "Key Vocabulary Strategies" to introduce vocabulary in a game-like format, developmentally appropriate for Grade 1. For example, in Unit 1, Concept 1, Classifying Objects, the strategy suggested is "Guess the Word," in which the teacher organizes the class into small teams (as many as the vocabulary words) and assigns a word to each group without revealing it to the rest of the class. The teacher provides the teams with a list of interview questions about their word and has them prepare the answers. Then, acting as the interviewer, the teacher asks the questions to the corresponding team. For example, the group assigned to the word weight answers questions such as "Is it a word that describes? Is it a word that shows action?" After a team has responded to all the questions, the rest of the class guesses their word.
- Materials also use developmentally appropriate "Spotlight on Strategies" (SOS strategies) to engage students in the mastery of the content. A comprehensive list of all the SOS strategies used throughout the program is in the Educator Supports section (accessible through the menu icon) under the "Instructional Strategies" tab. The list includes strategies for reading, watching videos, developing vocabulary, supporting English Language Learners, summarizing information, comparing and contrasting, and different activities for cooperative learning. For example, in Unit 2, Concept 3, Lesson 3, Describing Weather, the materials include the Three Truths, One Lie SOS Strategy. In this strategy, students use three truthful statements and one false statement to analyze content, identify inaccuracies, and provide evidence to support thinking. Students defend their thinking with text-based evidence that provides a specific purpose for viewing the media.
- Materials include opportunities for students to engage in collaborative learning activities. For example, students complete most hands-on activities with a partner or a small group. In Unit 2, Concept 2, Lesson 2, Properties of Water, guidance for the teacher is to divide students into pairs or small groups to investigate the properties of water.

Materials consistently support flexible grouping (e.g., whole group, small group, partners, one on one).

- Materials support a variety of instructional groupings (e.g., whole group, small group, one-on-one). For example, during hands-on investigations, the teacher introduces the lesson, outlines the objectives, and gives instructions to the whole class. Then, students work in groups to conduct the investigation, but they record their observations individually. At the end of the lesson, there is always a "Turn and Talk" activity conducted in pairs. For example, in Unit 2, Concept 1, Lesson 2, All about Soil, the teacher starts the lesson whole group by stating the objectives of the hands-on activity. As students make predictions about their investigation, materials allow them to work in small groups or pairs to discuss their predictions. As the students begin to investigate soil types, the teacher materials state, "Organize students into small groups of three to four students." The lesson concludes with students independently reflecting on what they have learned.
- Materials offer turn and talk partner groupings throughout the Explore lessons within each unit and concept. For example, in Unit 1, Concept 1, Lesson 4, All About Objects, students Turn and Talk after viewing a video. In Lesson 5 of the same unit, there is another opportunity for students to Turn and Talk after reading a text. In Lesson 6, after watching a video, students Turn and Talk.

- Materials provide teacher guidance on using specific grouping structures based on student needs. For example, in Unit 4, Concept 2, Lesson 1, How Can We Describe Animal Life Cycles?, students work in pairs to discuss their predictions of the meaning of life cycles. Materials then recommend that the teacher create a class anchor chart with an image for each word. In Lesson 10, Animal Life Cycles, during the Evaluate phase of the unit, students may "work through the questions individually or in groups."
- Materials suggest grouping students organically when evaluating content so that there's a variety of voices within each small group. For example, in Unit 4, Concept 2, Lesson 10, Animal Life Cycles, during the Evaluate lesson, students can work individually or in groups and choose the modality they would like to use to show what they learned.
- Additionally, materials support flexible grouping through the use of online tools. The K–5 Program Guide explains how teachers can assign instructional resources to individual students, groups, or an entire class using the "Assign" feature on the Science Techbook website or their preferred Learning Management System (LMS). According to the Program Guide, teachers can tailor instruction and meet the needs of all students by assigning content, strategies, or supports based on specific learning or developmental needs.

Materials consistently support multiple types of practices (e.g., modeled, guided, collaborative, independent) and provide guidance and structures to achieve effective implementation.

- Materials provide multiple types of practices throughout the lessons, including modeled, guided, collaborative, and independent practices. For example, during hands-on investigations, the teacher introduces the lesson, outlines the objectives, and gives instructions to the whole class. Then, students investigate groups, but they record their observations individually. After they have finished their investigation, students share their findings with a partner through a "Turn and Talk" activity. To wrap up the lesson, during the "Phenomenon Check-in" stage, the teacher summarizes the concepts to the whole class through a video or slideshow. In Unit 1, Concept 1, Lesson 1, How Can We Describe Objects? the teacher guides students through the phenomena activity in which students answer a question independently. Then, students engage in an investigation in small groups. The lesson concludes with students turning and talking in pairs. The students work in small groups again in Lesson 2 during the hands-on activity. In Lesson 10, students work independently to show what they have learned throughout the unit concept.
- Materials recommend frequent and varied learning assessments to ensure that multiple types of practices lead to student mastery. Explore lessons with hands-on activities, including a "What Did You Figure Out?" section in which students have multiple opportunities to show understanding. First, they select the answer to a question in digital or print form, usually by clicking or circling on a picture. Next, the class reviews the questions students generated in the previous lesson to see if they were answered. Then, the teacher facilitates a brief class discussion for groups to describe their understanding of the investigation, share what they figured out with one another, and ask any further questions that they may have. Finally, students answer an open-ended question in verbal or written form.
- Additionally, at the end of every hands-on lesson, materials include Phenomenon Check-Ins, in which they repeat the driving question from Engage to prompt students to think about how their observations and findings help them better understand real-world phenomena. The Explain lesson of each concept provides a different assessment of learning using the claim, evidence, and reasoning framework for students to construct and present their scientific explanations through their choice of oral presentations, writing, or drawing. Every concept also

includes a final Evaluate lesson in which students answer three assessment questions, choosing to record, perform, or find the answers in the room.

Materials represent a diversity of communities in the images and information about people and places.

- Materials represent a diversity of communities using images that are respectful and inclusive. For example, the children shown in student and teacher material guides portray a variety of genders and races from various abilities. In the cover picture of each lesson, when they display students working on a scientific investigation, they show kids from diverse genders, races, and ethnicities.
- Materials represent a diversity of communities using information that is respectful and inclusive. For example, when you access a lesson, some robots introduce themselves at the bottom of the page using names representing different ages, genders, and ethnicities. These characters change every time you access a page but are always the same. They are Victor, Disco, Zoe, Eduardo, Abuelo, Mei, and Keiki.
- Materials represent diverse communities using images and information that are respectful and inclusive. The materials positively portray a diverse group of scientists, engineers, and people in the community. For example, in the Evaluate lesson, a STEM career is highlighted at the end of every unit. The adults portrayed are of various genders, ethnicities, and races. In Unit 2, Concept 2, Lesson 9, Clean Water, the materials depict a scientist as male or female and of different ethnicities.

Discovery Education Science Techbook for Texas Grade 1

Indicator 7.3

Materials include listening, speaking, reading, and writing supports to assist emergent bilingual students in meeting grade-level science content expectations.

1	Materials include guidance for linguistic accommodations (communicated, sequenced, and scaffolded) commensurate with various levels of English language proficiency as defined by the ELPS.	M
2	Materials encourage strategic use of students' first language as a means to linguistic, affective, cognitive, and academic development in English.	M

Meets | Score 2/2

The materials meet the criteria for this indicator. Materials include listening, speaking, reading, and writing supports to assist emergent bilingual students in meeting grade-level science content expectations.

Materials include guidance for linguistic accommodations (communicated, sequenced, and scaffolded) commensurate with various levels of English language proficiency as defined by the ELPS. Materials encourage strategic use of students' first language as a means to linguistic, affective, cognitive, and academic development in English.

Evidence includes but is not limited to:

Materials include guidance for linguistic accommodations (communicated, sequenced, and scaffolded) commensurate with various levels of English language proficiency as defined by the ELPS.

- Materials provide specific guidance for linguistic accommodations commensurate with various levels of English language proficiency. The teacher manual embeds scaffolds for emergent bilingual (EB) students into lessons, such as visuals, realia, gestures, sentence stems, graphic organizers, anchor charts, and manipulatives. Throughout the curriculum, lessons guide English Language Proficiency Support for Beginning, Intermediate, Advanced, and Advanced High English Language Learners. In Unit 2, Concept 1, Lesson 4, Soil, materials provide suggestions for English Language learners based on their proficiency.
- For Beginner level EB students, materials state, "Prompt students to draw and label a picture of one of the types of soil from the video." For Intermediate level EB students, the materials state, "Provide students images of silt, sand, and clay, and ask them to identify the soil type using listed words." For Advanced level EB students, the script states, "Write/project the properties size, shape, texture, and color on the board. Ask students to pick an object in the room and describe it using each of the four properties." For Advanced High-level EB students, suggestions are the same as the Advanced group but with two objects. In Unit 4, Concept 1, Lesson 4, Observing Animal Characteristics, the English Language Proficiency Support for the Beginning level is "Make a T-chart on the board labeled Animal and Structure. Write the word cat and the word claws in the correct columns. Act out how a cat uses its claws to help it survive. Explain that you will be adding to the class chart the animals and structures from the video. Play, pause, and record student oral responses as each animal is described in sections 0:25 to 0:59. The first

time through, just list the animal. The second time through, list the structure. Use generic names, such as fish, bird, insect." For Intermediate students, the guidance says, "Make a T-chart on the board labeled Animal and Structure. Write the word cat, and ask students to describe what part of a cat helps it climb trees and catch food. Add claws to the chart. Play the video, pausing to record students' oral responses for each animal. Accept student language (for example, insect/teeth as opposed to termite/mandible)." For the Advanced level, materials include sentence starters such as "Birds use their beaks to . . ." "Moles use their claws to . . ." and "Beavers use their sharp teeth to . . ." For the Advanced High level, materials suggest students work with a partner to name another animal and one of the structures.

- Materials include a differentiation section that demonstrates ELPS connection by reinforcing the language of the ELPS. Under the Unit Resources tab, each unit consists of a document called "Standards Alignment" that shows the TEKS alignment of the concepts and the ELPS (English Language Proficiency Standards) alignment, marking which concepts explicitly develop these standards. For example, Unit 2, Investigating Soil, develops ELPS 3.F, which consists of asking and giving information, and 4.F, which is the use of visual and contextual support to read content area text; enhance understanding; and develop vocabulary, grasp of language structures and background knowledge. In Unit 2, Concept 1, Lesson 5, Exploring Soil, students describe soil properties and how water moves soil and rock particles from one place to another. The class reads a text, with multiple supports used during reading to support student understanding. After reading, students share their thoughts. Materials guide emergent bilingual students in understanding how water moves and breaks apart rocks at multiple levels of complexity. Materials include scaffolded activities such as acting out, sequencing, drawing, and discussing with peers.
- Materials include scaffolds for emergent bilingual students, such as visuals, realia, sentence stems, and graphic organizers. The curriculum contains examples of these scaffolds throughout. For example, in Unit 2, Concept 1, Investigating Soil, materials provide visuals and vocabulary terms in Lesson 1. When the slides reference sandy soil, materials depict a picture of a beach. In Lesson 2, materials provide students with a data table to organize their evidence. In Lesson 5, the guidance allows the teacher to act out or demonstrate the action of a rock moving down a river.

Materials encourage strategic use of students' first language as a means to linguistic, affective, cognitive, and academic development in English.

- Materials include textbooks or audio/video clips that explain concepts in languages other than English. For example, materials include links to translate the student's first language. Across the materials, an immersive reader within the vocabulary pop-up feature offers reading support in 122 languages. In "present to class" mode, an emergent reader tool option will translate the presentation into multiple languages. Materials also include video clips that explain concepts in languages other than English. All videos included in the materials can be closed captioned in numerous languages.
- Materials encourage strategic use of students' first language as a means to linguistic, affective, cognitive, and academic development in English. For example, in every unit, under Unit Resources, there is a tab labeled "Flashcards" where the teacher can find printable flashcards of the vocabulary studied throughout the unit with pictures and words on one side and definitions in English and Spanish on the other. Some of the terms included are cognates. For example, in Unit 1, Objects, Motion, and Heat, student materials provide flashcards and a glossary including

words such as *system/sistema* and *texture/textura*. Additionally, in every concept with an interactive activity, students can choose whether to do the interactive activity in English or Spanish to meet their needs best to complete the activity independently. In the Spanish version, the instructions, the information, the buttons, and the immersive reader are all in Spanish.

Discovery Education Science Techbook for Texas
Grade 1

Indicator 7.4

Materials guide fostering connections between home and school.

1	Materials provide information to be shared with students and caregivers about the design of the program.	M
2	Materials provide information to be shared with caregivers for how they can help reinforce student learning and development.	M
3	Materials include information to guide teacher communications with caregivers.	M

Meets | Score 2/2

The materials partially meet the criteria for this indicator. Materials partially guide fostering connections between home and school.

Materials provide information to be shared with students and caregivers about the design of the program. Materials provide information to be shared with caregivers for how they can help reinforce student learning and development. Materials include information to guide teacher communications with caregivers.

Evidence includes but is not limited to:

Materials provide information to be shared with students and caregivers about the design of the program.

- Materials provide information to share with students and caregivers about the design of the program. For example, under the tab labeled “Course Materials,” there is a document called “Caregiver Course Overview” that provides unit information about key ideas (“I can” statements), key vocabulary, unit phenomenon, and home connection activities. Within the course materials is a parent/guardian letter that provides information about the program and explains some of the program's most relevant features, including real-world observations, videos, labs, digital tools, and game-like activities. The letter also details how to access online course materials.
- Materials provide an overview of science and engineering practices in easy-to-read language. For example, the Parent/Guardian Letter states, “The new standards expect students to act and think like scientists and engineers—and this brand-new curriculum will nurture this behavior. Science Techbook for Texas encourages students to continue to ask questions about the world around them and solve real-world problems.”
- Materials also provide information to students and caregivers about the program's design through the K–5 Program Guide, which can be found in both the Teacher and the Student versions of the Techbook. In this document, the materials provide information about the program, such as course organization, the research-based foundations of the program, alignment to TEKS, and components of the program.

Discovery Education Science Techbook for Texas
Grade 1

Materials provide information to be shared with caregivers for how they can help reinforce student learning and development.

- Materials provide resources and strategies for caregivers to help reinforce student learning and development. In the Caregiver Course overview, there are extension activities included for each unit. A section called Home Connections lists various activities to do with learners, including Phenomenon in the Home, Conversation Starters, Vocabulary Practice, and a Scavenger Hunt. For example, in Unit 2; Soil, Water, and Weather; materials suggest caregivers experiment in their backyards or a park nearby, conducting experiments on how water moves and forms soil. Materials state, “With a container of water and a spoon or small shovel, find some soil or small pebbles, and experiment on how water can move and change particles and soil.” Caregivers can also start a conversation during a meal by asking, “What trees or plants do you notice where we live?” “What is the soil like in those areas?”
- The Caregiver Course overview for every unit includes a link to vocabulary practice. Parents can use this tool to create games like crossword puzzles, cryptograms, word searches, and other activities to reinforce vocabulary with their children.
- Materials provide a “Parent / Guardian Letter,” encouraging guardians to use it with the students. The letter states, “In this Student Edition, you will find QR codes that take you and your student to corresponding online lessons of Science Techbook for Texas… We encourage you to support your student in using Science Techbook for Texas.”

Materials include information to guide teacher communications with caregivers.

- Materials include a letter for parents and guardians with the Caregiver Overview Course component. This letter includes the following information to guide teacher communication with caregivers under the “Communicating with Caregivers'' heading: *“Invite caregivers to share feedback or questions about the curriculum. At key points in the instructional cycle, reach out to caregivers to communicate student progress updates, using available data from Science Techbook reports, check in on at-home activities, and set up conferences, as needed. At the beginning of the year, communicate with caregivers to indicate how they can access their student’s assignments, progress, and grades to help monitor student progress throughout their science journey of curiosity.*
- Teacher guidance within the Caregiver Overview Course also includes information to guide teachers in communicating progress updates in the Caregiver Overview Course. Materials advise teachers as follows: *Consider capturing a screenshot of the student’s assignment dashboard and sending it out to caregivers on a monthly basis to keep them updated on their progress. The lesson and concept summative reports can be used for face-to-face, or virtual conferences with parents to display student proficiency toward the desired learning goals. Sample student responses for items, particularly constructed response items, can be viewed and shared with parents from the lesson and summative report. When conducting parent conferences, encourage them to engage their child in monitoring their own learning.*

Discovery Education Science Techbook for Texas
Grade 1

Indicator 8.1

Materials include year-long plans with practice and review opportunities that support instruction.

1	Materials are accompanied by a TEKS-aligned scope and sequence outlining the order in which knowledge and skills are taught and built in the course materials.	M
2	Materials provide clear teacher guidance for facilitating student-made connections across core concepts, scientific and engineering practices, and recurring themes and concepts.	M
3	Materials provide review and practice of knowledge and skills spiraled throughout the year to support mastery and retention.	M

Meets | Score 2/2

The materials meet the criteria for this indicator. Materials include year-long plans with practice and review opportunities that support instruction.

The materials are accompanied by a TEKS-aligned scope and sequence outlining the order in which knowledge and skills are taught and built in the course materials. Materials provide clear teacher guidance for facilitating student-made connections across core concepts, scientific and engineering practices, and recurring themes and concepts. Materials provide review and practice of knowledge and skills spiraled throughout the year to support mastery and retention.

Evidence includes but is not limited to:

Materials are accompanied by a TEKS aligned scope and sequence outlining the order in which knowledge and skills are taught and built in the course materials.

- Materials include a cohesive scope and sequence that show how the scientific knowledge and skills TEKS are addressed over the entire year. In the home screen for the Science Techbook for Texas, there is access to a Vertical Alignment Guide, showing the vertical alignment of the Core Concepts taught in the program throughout the school years.
- The Table of Contents in the grade 1 Science Techbook shows the units and Core Concepts in sequential order. Each Core Concept shows the TEKS that the lessons cover. This document shows the number of lessons and minutes needed per lesson. Careful pacing, including days and minutes, is provided in the Unit Structure and Pacing document found within Unit Resources. Additionally, at the beginning of each lesson, the specific targeted standards are listed with a concise skill description.

Materials provide clear teacher guidance for facilitating student made connections across core concepts, scientific and engineering practices, and recurring themes and concepts.

- The materials provide teacher clarity in understanding how activities and experiences connect concepts and SEPs. Each concept within a unit explicitly presents a Science Theme in the Engage lesson, with a prompt for the teacher to consider during all the lessons. For example, Unit 1, Concept 3, Lesson 1, “How Does Heat Change Things?” includes a *S*upporting Science Themes slide with educator notes that prompt the teacher to help students think about energy and matter. It states, “As students work through the concept, encourage them to notice the

following: We can predict how heating and cooling can change the properties of materials. Heat is used every day as a form of energy, such as when we cook food. Sometimes heat energy can cause changes in the properties of materials that can be reversed, but other changes cannot be reversed." It adds, "Once students learn more about heat, they can engage in a similar process to identify forms of energy and properties of matter."

- Materials provide teachers with a section called Educator Notes in each unit. This section provides the objective, questions for teachers to ask, potential answers from students, and connections between scientific and engineering practices with a Real-World Phenomenon section. For example, in Unit 1, Concept 3, Lesson 7, the slide titled "Supporting Science Theme Check-In" invites students to reflect on the Supporting Science Theme for this concept. Educator notes state, "Accept all ideas and help students to collaboratively connect their learning across all disciplines."

Materials provide review and practice of knowledge and skills spiraled throughout the year to support mastery and retention.

- The materials include intentional practice and spiraling of previously taught knowledge and skills from earlier lessons/grade levels and the current lesson's science knowledge and skills**.** The Science Techbook includes a section called TEKS alignment. Each TEKS has a list showing which unit covers that standard. For example, standard 1.1 E is covered in Concept 1.1 Classifying Objects and Concept 1.3 Heat.
- The practice opportunities build on previously taught science knowledge and skills. Every unit includes a lesson on each of the 5E model components for each core concept, providing intentional practice of the newly learned science knowledge and skills. All units offer multiple Explore lessons, and one or more of the Explore lessons consistently include a hands-on activity, a video, and an interactive practice. The Explain lesson in each core concept follows a Claim, Evidence, and Reasoning format. The Evaluate lesson constantly asks students, "What Did You Learn?" and prompts them to answer questions with the knowledge and skills gained throughout the concept exploration.
- In Unit 1, Concept 1, Lesson 5, students investigate and classify materials from the classroom after exploring the properties of objects in discovery centers, working in a hands-on activity to sort and classify a group of objects, and watching a video about using properties to sort objects. Before introducing the investigation, the teacher asks students to identify the properties of different objects in the classroom as a review.

Discovery Education Science Techbook for Texas
Grade 1

Indicator 8.2

Materials include classroom implementation support for teachers and administrators.

1	Materials provide teacher guidance and recommendations for use of all materials, including text, embedded technology, enrichment activities, research-based instructional strategies, and scaffolds to support and enhance student learning.	M
2	Materials include standards correlations, including cross-content standards, that explain the standards within the context of the grade level.	M
3	Materials include a comprehensive list of all equipment and supplies needed to support instructional activities.	M
4	Materials include guidance for safety practices, including the grade-appropriate use of safety equipment during investigations.	M

Meets | Score 2/2

The materials meet the criteria for this indicator. Materials include classroom implementation support for teachers and administrators.

The materials provide teacher guidance and recommendations for use of all materials, including text, embedded technology, enrichment activities, research-based instructional strategies, and scaffolds to support and enhance student learning. Materials include standards correlations, including cross-content standards, that explain the standards within the context of the grade level. Materials include a comprehensive list of all equipment and supplies needed to support instructional activities. Materials include guidance for safety practices, including the grade-appropriate use of safety equipment during investigations.

Evidence includes but is not limited to:

Materials provide teacher guidance and recommendations for use of all materials, including text, embedded technology, enrichment activities, research based instructional strategies, and scaffolds to support and enhance student learning.

- The materials include overview documents to support teachers in understanding how to use all materials and resources as intended. The materials provide a *Quick Start Guide for Grades K-5* to support teachers in using the materials. This guide includes a list of materials, recommendations for storage, and tips to prepare for instruction. Additionally, the K-5 Program Guide provides an overview of each program section. It highlights the main features in the print and digital Teacher's Edition, including how to access digital tools, pacing guides, differentiation strategies, assessments, and slideshows. The program guide also elaborates on the course content and instructional strategies, including SEPs, Recurring Themes and Concepts, Core Scientific Topics, Research-based SOSs, and Real-World Phenomena. Other sections in the guide address student discourse, equity and diversity, flexible learning, literacy, differentiation, and STEM certification. For example, the program suggests using Elaborate section lessons on STEM careers as enrichment activities to accelerate and extend learning.
- The organization of the materials facilitates ease of implementation and use. The materials are available in digital format and print as an optional purchase. The print and digital versions of the

Teacher Edition have a table of contents and a pacing guide at the beginning of each unit. In the online Science Techbook, each unit includes a Unit Resources tab that contains Unit Structure and Pacing, Unit Planner, Background Knowledge, Hands-On Lessons: Preparation and Materials, Standards Alignment, and Flashcards.

- The Educator Notes include instructional strategies, tips, and detailed instructions at the lesson level. There is an explanation or note for each slide included in the lessons. For some hands-on activities, teacher videos are also provided for teacher support. For example, in Unit 1, Concept 3, Lesson 2, Heating and Cooling, the Educator Notes include a video that shows all the materials needed for the hands-on activity and how they are organized. It also allows a teacher to go through the preparation of the materials and demonstrate each step of the activity for both the teacher and students. The video also provides questions to ask before, during, and after the activity. The slides and educator notes offer additional support to present and guide the lesson.

Materials include standards correlations, including cross content standards, that explain the standards within the context of the grade level.

- The materials include science standards correlations for units and core concepts within the grade level or course context in teacher guidance documents and online resources. Each grade level has a TEKS and ELPS alignment link with a dropdown menu showing cross-content standards. For example, this section shows standard 1.1.A is related to Concepts 2.3 Patterns in Nature, 1.2 Push and Pull, 3.3 Life and Earth Materials, and 1.1 Classifying Objects. Clicking on these concepts provides access to all the lessons related to that concept. Additionally, the Unit Resources include a Standards Alignment Table, which provides a table showing the grade level standards and how they are covered within the concepts of the specific unit. The student objectives contain the particular standards for each lesson, which are presented at the beginning and linked to the TEKS alignment.
- The materials include cross-content standards for ELA within the teacher's lesson guide. Across grade levels, materials embed cross-content correlation to ELA. Each unit concept contains at least one literacy lesson, labeled as the Reading Together section within the lesson. Each literacy lesson has different reading strategies. For example, in Unit 3, Concept 1, Lesson 5, Living and Nonliving Things, there is an explicit partner Turn and Talk activity after reading.

Materials include a comprehensive list of all equipment and supplies needed to support instructional activities.

- The materials include a document with a comprehensive list of all equipment and supplies needed to support students, teachers, and administrators during investigations in accordance with and in addition to the grade level. Under Unit Resources, each unit includes a document titled "Hands-On Lessons: Preparation and Materials." For example, in Unit 1, Concept 1, Lesson 3, Let's Classify Objects, the document states, "Advance Prep: Prepare a tray with a minimum of six objects for each group. The objects should be various shapes, textures, and numbers of parts. You may wish to put all objects in a large bin and allow groups to choose their objects. Many of these objects were also used in Lesson 2, and students may be familiar with their properties, which will help them complete Part 1 of the investigation. Students can also bring objects from home. Consider providing ice water for a difference in temperature; otherwise, students will group all items into one category for temperature in Part 1." Additionally, the Content Kits

include a Hands-On Content Kits List, which details all materials needed for the grade-level course.

- Grades K-2 materials include equipment and supplies that support instructional activities for the grade level. For example, for grades K-2, materials include Science notebooks, clay, magnets, flashlights, craft sticks, metric rulers, scissors, pictures, plastic tongs, blocks, balls, string, wax paper, thermometers, rain gauges, different types of soil, and models.

Materials include guidance for safety practices, including the grade appropriate use of safety equipment during investigations.

- The materials provide teacher and student guidance for safety practices and grade-appropriate use of safety equipment during investigations in accordance with Texas Education Agency Science Safety Standards. The materials consistently include a section titled Safety within the Explore lessons' slides and educator notes with guidelines for safety during the hands-on activities. For example, in Unit 1, Concept 3, Lesson 2, Heating and Cooling, the Educator Notes state, "Remind students to follow all lab safety guidelines," "Remind students not to open the glow sticks," and "Help students clean up any spills immediately."

Discovery Education Science Techbook for Texas
Grade 1

Indicator 8.3

Materials provide implementation guidance to meet variability in program design and scheduling.

1	Materials support scheduling considerations and include guidance and recommendations on required time for lessons and activities.	M
2	Materials guide strategic implementation without disrupting the sequence of content that must be taught in a specific order following a developmental progression.	M
3	Materials designated for the course are flexible and can be completed in one school year.	M

Meets | Score 2/2

The materials meet the criteria for this indicator. Materials provide implementation guidance to meet variability in program design and scheduling.

Materials support scheduling considerations and include guidance and recommendations on required time for lessons and activities. Materials guide strategic implementation without disrupting the sequence of content that must be taught in a specific order following a developmental progression. Materials designated for the course are flexible and can be completed in one school year.

Evidence includes but is not limited to:

Materials support scheduling considerations and include guidance and recommendations on required time for lessons and activities.

- The materials include support for specific scheduling considerations, with guidance for covering required science content for the grade level/course within various schedules. Under Unit Resources, the Unit Structure and Pacing charts provide teachers with pacing information for each concept, including the number of days per lesson and the minutes required for each lesson. An alternative Express Pathway is provided for scheduling considerations. For example, for Unit 1, Concept 1, Classifying Objects, while the comprehensive pathway suggests 14 days to cover ten lessons and a digital assessment, the express path means teaching five lessons in seven days.
- The materials include guidance and recommendations on required time for lessons and activities with options for various scheduling considerations. On average, each core concept within a unit lasts 9–14 days or 180–280 minutes. The concepts are covered in 4–7 days or 80–140 minutes in the express pathway. All lessons are built within 20-minute segments, with most hands-on exploring lessons designed to require 40 to 60 minutes and be taught in multiple days.
- The lesson plan pacing summary details each part of the lesson by minute and day. For example, in Unit 2, Concept 1, Lesson 2, All About Soil, there is a recommended timeframe of 40 minutes to complete the lesson. Five minutes are dedicated to the Intro and Objectives, 23 minutes to the Hands-On Activity, seven minutes to “What Did You Figure Out?”, and five minutes to Phenomenon Check-In.

Discovery Education Science Techbook for Texas
Grade 1

Materials guide strategic implementation without disrupting the sequence of content that must be taught in a specific order following a developmental progression.

- Materials provide guidance for strategic implementation that ensures the sequence of content is taught in an order consistent with the developmental progression of science. For example, the materials include a suggested sequence of units that considers the interconnections between the development of conceptual understanding and scientific and engineering practices. The Grade 1 Science Techbook has a vertical alignment document showing how students build knowledge and skills within and across units and grade levels.
- Materials purposely group modules with similar recurring themes and ideas, making it easier for students to connect scientific knowledge. For example, in Unit 1, the three core concepts include objects, motion, and heat.
- The materials delineate the order of units to ensure students learn about precursor concepts first. In grade 1, the materials have students identify living things in Unit 3 before investigating animal needs and their life cycle in Unit 4.

Materials designated for the course are flexible and can be completed in one school year.

- The materials include units, lessons, and activities for a full year of instruction. The table of contents shows all concepts covered throughout the year and the total minutes for each. According to the publisher, “All lessons included in each course do not exceed 160 days of instruction to meet the required course standards.” The materials do not include a year-long pacing showing the required weeks.
- The scope and sequence indicate a majority of the lessons support the development of the TEKS, SEPs, and recurring themes and ideas among all areas of the grade level. The units can be reasonably implemented within the time constraints of a school year, and the activities and routines within each lesson can reasonably be completed within the time suggested, with all lessons designed in 20-minute blocks per day.
- The materials provide guidance for adjusting to local time and scheduling constraints. For example, the Unit Structure and Pacing document notes how many days each lesson should take. The Unit Structure and Pacing Guide offers two pathways for adjusting to local time and scheduling constraints: Comprehensive Concept Pathway and Express Concept Pathway.
- For example, the materials provide detailed suggestions for implementing the materials with school years of varying length, varying lengths of time for science instruction, options for the entire class and small group intervention times, and online schools. For example, the express pathway suggests using the read-aloud lessons during the ELA block. Using the videos and Read Together section as station activities further offers saving time. The 5E model is explicitly listed in the pacing charts to indicate which lessons are Extensions (Elaborate) and can be used for acceleration or omitted under time constraints. In the K-5 Program Guide, the publisher includes a section on Flexibility which explains “teachers can assign instructional resources to individual students, groups of students, or an entire class using the Assign feature or their preferred Learning Management System (LMS),” providing options for the entire class and small group intervention time.

Discovery Education Science Techbook for Texas
Grade 1

Indicator 9.1

The visual design of materials is clear and easy to understand.

1	Materials include an appropriate amount of white space and a design that supports and does not distract from student learning.	Yes
2	Materials embed age-appropriate pictures and graphics that support student learning and engagement without being visually distracting.	Yes
3	Materials include digital components that are free of technical errors.	Yes

Not Scored

The visual design of materials is clear and easy to understand.

Materials include an appropriate amount of white space and a design that supports and does not distract from student learning. Materials embed age-appropriate pictures and graphics that support student learning and engagement without being visually distracting. Materials include digital components that are free of technical errors.

Evidence includes but is not limited to:

Materials include an appropriate amount of white space and a design that supports and does not distract from student learning.

- Digital materials include an appropriate amount of white space and an overall design that does not distract from student learning. Margins, edges, and empty spaces around the content are consistent throughout digital materials. Materials use a limited number of fonts. Most student pages include 1–3 sentences at most, combined with a colorful and engaging picture.
- Materials enhance student learning without being distracting or chaotic. For example, in every lesson, there is a slideshow that uses most of the space on the screen. The space around it is sufficiently white to not distract students, and the only information found in this white space, using discrete typography, is the student objective for the lesson and the links to the glossary and the results of the test that students can click to refer to them. Students can amplify the slideshow to fit the screen size. Every slide has a very clean organization, occupying half of it with a picture to illustrate the text, and the corresponding text on the other half, leaving enough white space around the text and margins to not overwhelm the student's view.
- Student materials are appropriately designed to support student learning. For example, each unit is identified with a cover picture, and the number of the unit and its title are easily identifiable by students next to each cover picture. Once a student clicks on a unit, they can see all the lessons either in grid or list form, each one easily identifiable with a picture, number of the lesson, title, and objective. The content is organized in a logical progression. Tools students can use to annotate text (such as highlight, strikethrough, etc.) and pointers while reading digital text. Ancillary student materials, such as glossaries and tools, are easy to find and/or access inside each lesson. When text is read aloud by the computer, each word is highlighted as it is read.

Discovery Education Science Techbook for Texas
Grade 1

Materials embed age appropriate pictures and graphics that support student learning and engagement without being visually distracting.

- Materials embed age-appropriate pictures and graphics that support student learning and engagement without being visually distracting. For example, on the slideshow of every lesson, the slides show photographs that illustrate the text. In slides that contain graphic organizers, they show an example of the graphic organizer and how it can be filled out. In the case of some slides that only contain a question or an instruction, there is a little character that livens up the design of the slide but is small enough as not to be distracting.
- Another place where we can find age-appropriate pictures and graphics that support student learning and engagement without being visually distracting is in the interactive activities found in Explore lessons. These are interactive game-like activities that include computer-generated images that are greatly attractive to students and engage them in solving the activities. For example, in Unit 3, Concept 1, Lesson 3, Needs of Living Things, the interactive lessons include a side-by-side comparison of a photograph of a fox in a hole and a diagram of a fox den, allowing students to engage with both forms of visual media. The instructions and comments on each image are very clearly defined by placing them inside a white frame so that students can easily locate them, featuring a text-to-speech function that allows students to hear the comments as they read them.

Materials include digital components that are free of technical errors.

- The materials include digital components that are free of technical errors, including the following types of errors:
    - Spelling, grammar, and punctuation errors.
    - Inaccurate content materials or information.
    - Wrong answers or explanations.
- The materials provide digital elements that are complete and without technical errors. For example, in Unit 4, Concept 2, Lesson 2, Life Cycles of Animals, lesson vocabulary is noted in a stand-out color and hyperlinked to a glossary for students and teachers.

Discovery Education Science Techbook for Texas
Grade 1

Indicator 9.2

Materials are intentionally designed to engage and support student learning with the integration of digital technology.

1	Materials integrate digital technology and tools that support student learning and engagement.	Yes
2	Materials integrate digital technology in ways that support student engagement with science and engineering practices, recurring themes and concepts, and grade-level content.	Yes
3	Materials integrate digital technology that provides opportunities for teachers and/or students to collaborate.	Yes
4	Materials integrate digital technology that is compatible with a variety of learning management systems.	Yes

Not Scored

Materials are intentionally designed to engage and support student learning with the integration of digital technology.

Materials integrate digital technology and tools that support student learning and engagement. Materials integrate digital technology in ways that support student engagement with science and engineering practices, recurring themes and concepts, and grade-level content. Materials integrate digital technology that provides opportunities for teachers and/or students to collaborate. Materials integrate digital technology that is compatible with a variety of learning management systems.

Evidence includes but is not limited to:

Materials integrate digital technology and tools that support student learning and engagement.

- Materials integrate digital technology and tools that support student learning and engagement. The program is based on a digital platform that includes all the lessons in a slideshow format along with videos, interactive game-like activities, assessments, flashcards, glossaries, and texts, all embedded into the slideshows. Lessons can also be assigned to individual student devices.
- In every lesson, student digital components include embedded tools, such as a digital whiteboard, in which students can draw and take notes; use a text-to-speech (immersive reader) feature for the lesson slideshow; access a glossary that contains images, videos, and text for every word including the immersive reader option; and take the digital assessments at the end of every lesson. For example, in Unit 2, Concept 1, Lesson 3, Types of Soil, the interactive activity consists of students playing a matching game to identify three types of soil. Within the student edition of this interactive lesson, materials also provide more images to support the interactive.

Discovery Education Science Techbook for Texas
Grade 1

Materials integrate digital technology in ways that support student engagement with science and engineering practices, recurring themes and concepts, and grade level content.

- Materials integrate digital technology in ways that support student engagement with science and engineering practices. Materials include videos and interactive activities. For example, in Unit 3, Concept 1, Lesson 3, Needs of Living Things, students can explore different habitats through a game-like Interactive activity that allows them to identify what makes a certain habitat good for some organisms. In Unit 3, Concept 3, Lesson 5, Building Blocks of Buildings, materials include a short video clip showing how people use rocks, soil, and water to create building materials and modeling identifying the Earth materials that were used to build the home in which they live.
- Materials provide interactive simulations and models for students to explore science and engineering practices in a virtual environment. For instance, in Unit 1, Concept 3, Lesson 3, Temperature, students experiment with different objects adding or removing temperature. The virtual simulation shows a thermometer that identifies the current temperature of the object, and students can visualize the effects, such as butter melting and water freezing.

Materials integrate digital technology that provides opportunities for teachers and/or students to collaborate.

- Materials integrate digital technology that provides opportunities for teachers and/or students to collaborate. For example, in the Student Techbook, the menu includes a feature called Studio, which allows student-to-student collaboration using a digital whiteboard. Students can use and share the whiteboard with others in their classroom or school. Students also have access to open other whiteboards that have been shared with them. The studio feature also provides an opportunity for students to have class discussion topics via written responses. Peers can review one another's responses and give feedback. Students can open a chat to communicate with the teacher as well if the teacher turns this feature on.

Materials integrate digital technology that is compatible with a variety of learning management systems.

- Digital materials are accessible and compatible with multiple operating systems and devices. Since materials are web-based, students and teachers can access them through any device that is connected to the internet. At the bottom of the main page, there is a link to "Check Requirements" that provides the following information: "Discovery Education works on desktop and laptop computers with a wide range of browsers. We recommend you use the most recent version of the following browsers to ensure the best experience. Google Chrome, Mozilla Firefox, Safari, Microsoft Edge. While we don't support specific devices by name, we ensure that our products work with devices using the most recent version of the following Operating Systems: ChromeOS, Android, and iOS."
- Materials integrate digital technology that is compatible with a variety of learning management systems. In their Program Guide, materials specify that "Science Techbook is compatible with a variety of learning management systems" and recommends visiting their website to see the latest LMS integrations. On their website, discoveryeducation.com, information states it is compatible with Brightspace, Canvas, Classlink, Clever, Google, Google Classroom, Infinite Campus, Microsoft Teams, MCEdCloud, Microsoft 365, SAML, and Schoology.

Discovery Education Science Techbook for Texas
Grade 1

Indicator 9.3

Digital technology and online components are developmentally and grade-level appropriate and provide support for learning.

1	Digital technology and online components are developmentally appropriate for the grade level and align with the scope and approach to science knowledge and skills progression.	Yes
2	Materials provide teacher guidance for the use of embedded technology to support and enhance student learning.	Yes
3	Materials are available to parents and caregivers to support student engagement with digital technology and online components.	Yes

Not Scored

Digital technology and online components are developmentally and grade-level appropriate and provide support for learning.

Digital technology and online components are developmentally appropriate for the grade level and align with the scope and approach to science knowledge and skills progression. Materials provide teacher guidance for the use of embedded technology to support and enhance student learning. Materials are available to parents and caregivers to support student engagement with digital technology and online components.

Evidence includes but is not limited to:

Digital technology and online components are developmentally appropriate for the grade level and align with the scope and approach to science knowledge and skills progression.

- Materials provide a rationale for the age-appropriateness of digital and online components. On the DE website, discoveryeducation.com, on the tab labeled “Curriculum,” under “Science,” materials describe how they developed their digital technology and online components in a way that makes them developmentally appropriate for the grade level: “The phenomena and content used in Science Techbook is provided through our dynamic K–12 learning platform. Vetted by curriculum experts and differentiated by grade level, it mirrors students' interests and helps them make relevant, lasting connections between science, the classroom, and their everyday lives.”
- The Program Guide explains how different digital components are developmentally appropriate for the grade level. For example, "… (Science Techbook) provides highly engaging, standards-based content guaranteed to motivate students to delve deeper into science… These include hands-on activities and labs, virtual labs, interactives, videos, animations, images, audio, online models, informational text, and more." It adds, "QR codes within teacher and student materials provide easy access to embedded technology and a seamless instructional experience between the digital and print program."
- Digital technology and online components are aligned with the grade-level scope and approach to science knowledge and skills progression. For example, in the Table of Contents, the materials specify the grade-level TEKS covered in each unit and include links to each lesson that targets

the given TEKS. Additionally, every grade level provides a Course Overview section with related TEKS and ELPS for online and digital components within the Teacher's Guide.

Materials provide teacher guidance for the use of embedded technology to support and enhance student learning.

- Materials provide teacher guidance for using embedded technology to support and enhance student learning. Materials include a video showing how the digital Techbook is structured and how to access all its features. On the main page of the Teacher Techbook, there is another video that shows all the features of the program. Each unit in the Teacher's Edition begins with the concept structure and pacing. Within every lesson, materials offer clear instructions on how to use the embedded technology. For example, in multiple video lessons, the teacher's guide provides a "Pause and Play" strategy to support students in reflecting on the video content. Also, the program guide has a section called Immersive Reader, which instructs the teacher to use this feature to support struggling readers, English learners, or any student needing more accessible content.
- Materials provide specific teacher guidance for embedding the technology within lessons and assessments. Throughout the Teacher Editions, QR codes and short links directly connect to digital resources to deepen learning through rich media and assessment opportunities.

Materials are available to parents and caregivers to support student engagement with digital technology and online components.

- Materials include resources for parents and caregivers on supporting student engagement with digital technology and online components. For example, under Course Materials, there is a letter for parents or guardians providing information on how to access materials. It explains how to access the digital platform by scanning the QR codes on the students' books and logging in with their student username and password. Also under Course Materials, the Caregiver Course Overview provides ideas to support students' learning at home, including the Discovery Education website that can be used for additional practice. For example, materials suggest using the website https://puzzlemaker.discoveryeducation.com/ to have access to different games to practice the vocabulary learned.
- Additional resources for families available on the publisher's website address the program access and usability. For example, the Discovery Education Guide for Families describes the product in detail, including how to access it and use tools to organize content. Similarly, the Discovery Education Family Resources includes tools to support navigation of the software; provides additional resources available, including videos, text, audiobooks, and a stress reduction program; and instructions for students to conduct research in DE.