EduSmart Science Grade 2

EduSmart Science Grade 2 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	100%	100%	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.
- 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.

EduSmart Science Grade 2

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 second grade Scientific and Engineering Practices (SEPs) learning category includes multiple opportunities for students to practice, develop, and demonstrate mastery of grade-level-appropriate SEPs, as outlined in the TEKS. For example, the reader, Marie Daly includes the concepts from TEKS 2.4(B). In this reader, students meet the female chemist, Marie Daly, and learn about her contributions to science. At the end of this reader, students can demonstrate their mastery of this TEKS through a grade-level-appropriate assessment by answering questions such as, "What are some ways that Marie Daly helped people?"
- Interactivities provide opportunities for students to practice grade-level-appropriate SEPs. For example, the interactivity for TEKS 2.6(B)(C), Introduction to Mixtures, provides students the opportunity to select and combine materials to build a bridge. This interactivity addresses TEKS

2.6(C) when students demonstrate that small units such as building blocks can be combined or reassembled to form new objects for different purposes and explain the materials chosen based on their physical properties. The interactivity aligns with scientific and engineering practice TEKS 2.2(D)- evaluate a design or object using criteria to determine if it works as intended.

- The materials provide multiple opportunities for students to practice grade-level-appropriate SEPs. During the lesson, Describing and Classifying Matter, students use their senses to determine the many ways to describe and classify matter based on its physical properties. They write a hypothesis for the question they will be investigating and follow the steps of the procedure to complete the investigation. The students answer the question: "When given a set of materials, how could you describe and classify the material?"
- The materials provide opportunities to develop grade-level-appropriate SEPs. For example, during Describing and Classifying Matter, students follow the procedure to learn the concept. The materials state, "1. Reach into box number 1 and feel the material inside. Make sure to turn it over and feel all the sides of the material. DO NOT REMOVE FROM THE BOX! 2. Record what the material feels like on the table for Box 1 under the Feels Like column. 3. Repeat steps 1–2 for the remaining boxes. 4. Starting with Box number 1 again, pull the material out of the box. 5. Record the name of the material under the Material column for Box 1. 6. Record what the material looks like on the table for Box 1 under the Looks Like column."

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

- The interactivities provide opportunities for students to make connections using recurring themes. The interactivity for TEKS 2.6(A), Physical Properties of Matter, requires students to predict what changes will occur to an object when it is placed into an oven and then placed into a freezer. This supports the recurring themes and concepts of TEKS 2.5(B), in which students must investigate and predict cause-and-effect relationships. In addition, through the hands-on activity Push: Force, students will investigate and predict cause-and-effect relationships in Science [TEKS 2.5(B)] to compare what happens to different objects when pushed with the same force and when they collide.
- Recurring themes are used to make connections between concepts. For example, the Scope and Sequence Document notes that when teaching content on Force, Motion, and Energy, teachers integrate recurring theme TEKS 2.5G (describe factors or conditions that cause change or stay the same). Teachers also integrate TEKS 2.5G when teaching the concept of Earth and Space. In addition, the level reader, 2.5B After the Rain, integrates recurring theme 2.5B (identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems) with a real-world scenario: the effects of rain.

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 group TEKS according to reporting category and standards. These reporting categories are broken down into smaller units that allow for a more specific and in-depth comprehension of the TEKS. For example, within the reporting category for Matter and Energy, content is broken down into units for TEKS 2.6(A) Physical Properties of Matter, 2.6(B) Changes in Matter, and 2.6(C) Selecting the Right Material. This specific design of content allows students

to build their content knowledge at appropriate pacing while allowing for an in-depth learning opportunity for each TEKS.

- Materials strategically and systematically develop students' content knowledge and skills as appropriate for the concept and the grade level as outlined in the TEKS. Each core content standard has an Instructional Module. For example, in the Instructional Module for TEKS 2.9(B), Viewing Objects in the Sky, students learn that telescopes help us see objects in the sky that are not otherwise visible to us, and they magnify objects that can be seen with our eyes. This addresses the core concept as outlined in TEKS 2.9(B). The Instructional Module is designed to be the focused component of a lesson cycle and prepares students with the necessary content knowledge for them to put into independent practice later. For example, content within the Instructional Module for TEKS 2.9(B) prepares students for the hands-on activity, 'Do you see what I see?' in which students must work together to learn how tools can be used to help make observations in everyday life. Students practice using tools such as a hand lens and binoculars. They compare what they can observe with those tools to what they are able to observe with their unaided eye.
- Materials systematically develop students' content knowledge as explained in the Scope and Sequence document listed under the Scientific and Engineering Practices category. The Scope and Sequence document divides the instructional year into three types of units: SEP units, RTC units, and Reporting Category units that integrate the three dimensions of science.
- Content knowledge is systematically organized for students, as evidenced by the Anchoring Phenomena and Instruction Module resources in the Instruction icon for each concept unit. For example, in the Matter and its Properties Category, 2.6A Physical Properties of Matter concept unit, the Instruction Icon provides two student resources: an Anchoring Phenomenon in the form of a picture (in this case, macaroons decorated to show different textures) and an Instruction Module in the form of an interactive video for students to review physical properties of solids, liquids, and gasses.
- The materials develop students' content knowledge and skills appropriate for the concept and grade level, as outlined in the TEKS. During the lesson "Weather Match-Up!," students investigate different types of severe weather events, such as a hurricane, tornado, or flood, and explain that some events are more likely than others in a given region. The second grade TEKS covered include 2.1A, 2.1E, 2.1F, 2.2B, 2.3A, 2.5A, 2.5D, 2.5E, 2.5G. The materials state, "Students have explored the weather around them in previous units and grade levels. Now students will have to put their background knowledge to the test and use their reasoning skills to investigate severe weather in other places!"
- The materials support teachers in developing students' content concepts and skills by providing resources and cues at varying points in lessons and units throughout the grade level. During the lesson "Weather Match-Up!," the teacher is provided with the instruction for the activity. The materials state, "1. Start whole group by reading the "Who Am I?" Weather Cards. This will gauge students' background knowledge of severe weather. 2. Explain to students that today, they are going to investigate the weather like a meteorologist! 3. Hand out one card to each student. Adjust based on class size, some students can get two or some students can work in pairs. These cards will have the name, picture, description, effect, and location of different types of severe weather. 4. Let students find their weather matches. 5. When all matches have been found, have groups of students report their findings."

EduSmart Science Grade 2

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.

- 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 curriculum is designed around inquiry-based learning, which encourages students to ask questions, plan and conduct investigations, and engage in problem-solving to develop a deeper understanding of science concepts. Lessons provide opportunities for students to design and carry out investigations in the classroom, laboratory, and field.
- Each concept unit anchors learning using phenomena. This can be in the form of a picture or a quick video clip. The Anchoring Phenomena activity prompts students to come up with their own questions related to phenomena presented to them which can be used for future investigations. For example, in the Anchoring Phenomena for TEKS 2.9(B), Space Tools, students are presented with a video of the moon's surface as seen from space. Students are expected to ask their own questions regarding the video, but the teacher guidance prompts provide scaffolds for student questioning. This Anchoring Phenomena activity supports TEKS 2.9(B). Additionally, in the Matter and Its Properties category, concept unit 2.6C, Selecting the Right Material, the Anchoring Phenomenon is a video clip of a bridge made out of bricks with a river running under it. The teacher can guide students to ask their own questions by prompting them to talk about what they see/notice and ask questions about what they wonder. Questions that students may come up with include: Why is the bridge made out of bricks and not other materials? Who built the bridge? Why does the bridge have arches? Will a bridge work if, instead of arches, it has triangles?
- The materials include hands-on activities for every standard in every grade level, which provide opportunities for students to work together to plan and conduct investigations and solve problems. A hands-on activity icon provides a link to an investigation or an engineering design challenge.
- Group projects and discussions allow students to share ideas and learn from one another. For example, in the hands-on activity for TEKS 2.8(A), Seeing Sound, students work collaboratively to conduct a classroom investigation to determine how sound is made. Students must observe and record their findings as well as discuss their observations and why they believe these phenomena happened. They also must complete a Venn diagram comparing how volume affected the materials. This activity supports TEKS 2.8(A)(B)(C), 2.1(A), 2.1(E), and 1.5(B).

EduSmart Science Grade 2

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.

- Materials embed phenomena and problems across lessons to support student learning. The Instructional Modules are available for each core content standard and support students' content knowledge by presenting information directly aligned with grade-level TEKS. For example, in the Instructional Module for TEKS 2.10(A), Erosion, students learn that wind and water can change the shape of the land by moving soil or sand. Additionally, within the Instructional Module for TEKS 2.10(A), students observe the phenomena that wind and water can change the shape of the land. Through embedded strategic questioning within the Instructional Modules, students are able to construct and develop their knowledge of grade-level content TEKS.
- Materials use phenomena to drive student learning and mastery of science content and concepts. Each concept unit has an icon called Instruction. Each Instruction icon has a link to Anchoring Phenomenon, where students will view a picture that encourages them to notice, think, and ask questions as they engage in new content. Anchoring phenomena are designed to help engage students with real-world challenges and situations. For example, in the category Matter and its Properties, concept Unit 2.6A Physical Properties of Matter, the anchoring

phenomena links to a picture of macaroons decorated with different textures. This anchor allows students to notice the properties of the macaroons and ask questions that are aligned with the TEKS student expectation.

- Materials support students' ability to construct, build, and develop knowledge through the authentic application of scientific and engineering practices at multiple entry points. One entry point is the landing page of the LMS; it provides a Scientific and Engineering Practices Icon that links to Hands-On Activities, which includes four 2.1 – 2.4 Scientific and Engineering activities: A Balancing Act, Science and Innovation – Medical Devices, Science and Innovation – New Technology, and How Scientists and Engineers Make Discoveries. Another entry point is by Category, Concept Unit, Hands-on Activity, and Engineering Design Challenge. These design challenges are available for each reporting category. For example, under the category Force and Motion, concept Unit 2.7A/B Collisions and Changes in Motion, the Hands-on Activities icon links to a descriptive investigation named Push: Force, where students record data on observations on what happens to objects as they collide with each other. Additionally, in the engineering design challenge for TEKS 2.6(C), Transformers in the Kitchen, students must use what they know about basic materials to rearrange those materials and build different things. This engineering design challenge supports scientific and engineering design TEKS 2.1(A), 2.1(B), 2.1(E), and 2.1(G).
- The materials provide opportunities for second-grade students to develop, evaluate, and revise their thinking as they engage in phenomena and define/solve problems. During the lesson, Constructing a Table Using Physical Properties of Matter, the students "construct a table that is at least 6 inches tall and 12 inches long that will hold a cup of 20 pennies." The students use what they know about the physical properties of matter to write a hypothesis for the question they will be investigating. Then, they follow the steps of the procedure to complete the investigation. The students answer the question, "What small materials can you combine in order to construct a table that will hold a cup that contains 20 pennies?"

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

- The engineering design challenge for TEKS 2.6(C), Transformers in the Kitchen, requires that students use what they know about basic materials to rearrange given materials and build different things with them. This activity leverages students' prior knowledge of the phenomena of force, motion, and energy taught in first grade – TEKS 1.6(C), in which students learned that a whole object is a system made of organized parts, such as a toy that can be taken apart and put back together.
- Students in second grade should have prior knowledge of classifying objects by observable physical properties TEKS 1.6(A). Students build on their prior knowledge through the hands-on activity for TEKS 2.6(A), Describe and Classify Matter, in which they build on their prior knowledge through engineering problems. Students analyze data by identifying significant features and patterns TEKS 2.2(B), develop explanations and propose solutions supported by data and models TEKS 2.3(A), communicate explanations and solutions individually and collaboratively in a variety of settings and formats [TEKS 2.3(B)], and listen actively to others' explanations to identify important evidence and engage respectfully in scientific discussion [TEKS 2.3(C)].
- Materials intentionally leverage students' experiences related to phenomena. For example, in the Earth and Space Category, 2.9A The Sun and the Moon, the scientific but kid-friendly

anchoring phenomenon is a short clip of the sun throughout the day with clouds moving as the day goes by.

- Materials intentionally leverage students' prior knowledge and experiences related to engineering challenges. Challenges build on information and experiences relevant to students in second grade. For example, the engineering design challenge: 2.6C Transformers in Real Life! under the Engineering category, builds on the experiences of students working with building blocks and toys that come apart as they design a robot with recycled materials.
- The materials leverage students' prior knowledge through phenomena and/or solving problems for second-grade students. During the lesson, Sound You Can See, the teacher mentions, "Energy is everywhere and can be observed in everyday life. Sound is a type of energy. This energy can travel through the air and reach your ears so that you can hear the sound. In this investigation, you will explore sound energy and see what this energy can do." The directions state, "Using the provided materials, you will observe and then demonstrate and explain how sound is made. Using what you know about sound energy, write a hypothesis for the question you will be investigating."

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

- Materials clearly outline for the teacher the scientific concepts and goals behind each phenomenon and engineering problem. The teacher document for Engineering Designs provides the appropriate information to support the concepts and goals for each of the engineering designs. For example, the Engineering Design for TEKS 2.6(C), Transformers in the Kitchen, provides teachers with the appropriate core concept standard TEKS 2.6(C) – demonstrate that small units such as building blocks can be combined or reassembled to form new objects for different purposes and explain the materials chosen based on their physical properties. The teacher document provides step-by-step instructions on how students will complete the design challenge and the success criteria for gauging student mastery of the goals.
- The hands-on activity for TEKS 2.10(B), How's the Weather?, asks students to measure, record, and graph weather information, including temperature and precipitation. The teacher guide for this activity outlines the scientific concept by explicitly stating the core concept for 2.10(B) – measure, record, and graph weather information, including temperature and precipitation. The teacher document provides the goal through the lesson objective that students should master by the end of the activity. For TEKS 2.10(B), the teacher is guided to understand that students should be able to create a chart with labels and insert data from their daily observations.
- Each concept unit's phenomena includes a goal statement. For example, in the category, Organisms and Environments, 2.12A Basic Needs of Living Things, Instruction Icon, Anchoring Phenomena 2.12A Rainforest, the goal statement reads: "Anchoring phenomena are designed to help engage students with real-world challenges and situations." Additional materials that clearly outline for the teacher the scientific concepts and goals behind each phenomenon include an Anchoring Phenomenon – Rainforest Teacher Version document. This document is also found in the introductory icon as a link to documents that can be printed by the teacher.
- Materials clearly outline the scientific concepts and goals behind each engineering problem for the teacher. For example, the Engineering Design Challenge: 2.8A/B/C Can You Hear Me Now? found in the Engineering Design category states the scientific goals in the Introduction section: "In this engineering design challenge, students will explore how sound travels through different materials and build a device that can be used to communicate by sound over a distance. Sound can be formed when objects vibrate (move back and forth). The energy from these vibrations

can travel through water, air, and solid objects. We hear sound when these vibrations travel through the air to our ears."

- The materials identify student learning goal(s) behind each phenomenon or engineering problem. The goal of the second-grade lesson, Animal Structures Sort, is to record and compare how the structures and behaviors of animals help them find and take in food, water, and air.
- The second-grade materials outline for the teacher the scientific concepts and goals behind each phenomenon and engineering problem. The lesson, Animal Structures Sort, states, "Animals can be broadly classified into different categories based on how they take in food, water, and air." Some ways to sort animals' structures based on these functions: mouth structures, respiratory structures, and drinking structures. The TEKS included for this lesson are as follows: 2.1A, 2.1F, 2.2B, 2.3B, 2.3C, 2.5A, and 2.5.F. The teacher materials state, "1. Make copies and cut out the headings and images on pages 2 and 3. 2. Ask students to place the corresponding animals into the correct group. 3. Then ask students to make their own chart (can use words) to place in their interactive notebooks."

EduSmart Science Grade 2

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 the 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.

- Materials are vertically designed for students to build and connect their knowledge and skills within and across units and grade levels. For example, TEKS 2.6A, Solid, Liquid, and Gas, will create and build foundational knowledge for students to progress to the next Instructional Module for TEKS 2.6A that covers Classifying Matter.
- Teachers can use the vertical alignment document to see the learning and knowledge from previous grade levels that have prepared students for learning current grade-level content. For example, in TEKS 2.12C, Seed Dispersal, students learn that some plants depend on other living things, wind, or water to pollinate them and spread their leaves. This builds upon and connects students' prior knowledge from TEKS 1.12B/C, in which students learn that the environment is composed of relationships between living organisms and nonliving components.
- The materials connect new learning goals to previous and future learning across grade levels. The vertical alignment document is provided to show how students build and connect their learning across grade levels. For example, the vertical alignment document shows that in first grade, students will explain and predict changes in materials caused by heating and cooling (1.6B). Then in second grade, students are expected to conduct a descriptive investigation to explain how physical properties can be changed through cutting, folding, sanding, melting, or freezing processes (2.6B). In third grade, students connect to and build on the knowledge from

previous grade levels when they predict, observe, and record changes in the state of matter caused by heating or cooling in a variety of substances (3.6C).

- The materials support teachers in understanding how learning connects across learning categories. For example, the scope and sequence document for second grade includes suggested SEPs connections that are present across lessons. The SEPs include 2.1A (ask questions based on observation), 2.1E (observation and measurements as evidence), 2.1F (record and organize data), 2.2B (analyze for features and patterns), 2.3A (develop explanation supported by data and models), and 2.3C (listen actively, engage respectfully). Suggested RTC connections across lessons include 2.5A (identify and use patterns), 2.5B (predict cause and effect relationships), 2.5C (measure and describe properties in size/amount), and 2.5G (describe factors or conditions that cause change or stay the same).
- Additionally, the materials further help students to build and connect their knowledge and skills related to all grade-level content by allowing them to apply the RTCs and SEPs from one concept to the next. In this way, materials present and address the SEPs and RTCs in such a way that supports students building and connecting knowledge and skills within and across units throughout the year.

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

- Lessons are designed to scaffold learning in a way that allows for increasingly deeper conceptual understanding. The lessons begin with the anchoring phenomenon, a real-world scenario that students relate to. This allows them to anchor their learning in something that is familiar to them. The instructional module then guides the teacher and the students through learning via visual literacy and real-world examples. For example, in lesson 2.7A/B, Flat like Tire, students use the video to activate their prior knowledge about other things that can become flat like a tire.
- The lesson cycle is set up for the gradual release of students to scaffold support for student mastery. After the anchoring phenomena, students can then work on several different activities. For example in TEKS 2.10A, Moving Earth, Students must work collaboratively to observe and investigate how wind and water affect Earth's surface. Without the knowledge gained from the direct-teach through the Instructional Modules, students would lack the necessary foundational knowledge to put their learning into practice. The independent mastery opportunities are designed to come at the end of the lesson cycle so that students can apply their conceptual understanding to their content mastery.
- The materials ensure students experience a phenomenon or problem before utilizing models as a tool for reasoning. Materials give students opportunities to use models to depict relationships and form explanations. Teachers can view Concept Units in two ways: by Resource Type or by 5E Model. When viewing by the 5E model, materials are sequenced to scaffold learning from anchoring learning in phenomena (Engage), to exploring by using EDP challenges of investigations (Explore), solidifying concepts through an Instructional Module (Explain), understanding concepts through an interactive glossary (Elaborate), and checking for understanding in the form of a quiz (Evaluate). In second grade's Matter and Its Properties Concept Unit, 2.6A, Physical Properties of Matter, students engage in the lesson by anchoring their learning using a picture. In 2.6A, Physical Properties of Matter, students notice the textures of different macaroons and ask their own questions. Then, students explore Investigation 2.6A, Describing and Classifying Matter, by using their senses to determine the many ways to describe and classify matter. Students explain the properties of solids, liquids, and gasses as they view

and interact with Instruction Module 2.6A/B, Solid, Liquid, and Gas. Students elaborate their understanding of what is matter, through reader 2.6A, Physical Properties of Matter, and finally, the evaluation is in the form of an online 5-question quiz.

- The materials sequence instruction in a way that activates or builds prior knowledge, and allows for increasingly deeper conceptual understanding. The materials include a progression of concrete and then representational before abstract reasoning when presenting concepts. For example, in lesson 2.6A, Describing and classifying matter, students engage in inquiry learning through observation and data collection to determine the many ways to describe and classify matter based on its physical properties. After the students complete the activity, they answer the following questions based on the results: “Based on your observations, what are some similarities and differences you noticed between the materials in each of the boxes? Using our table of data, classify the matter from the mystery boxes and explain the attributes of each group.” They also share their findings from the table with the group and see how their groupings were similar and different.

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

- Materials incorporate all grade-level scientific and engineering practices as outlined in the TEKS. For example, in the lesson TEKS 2.6A, Matter and its Properties, Describe and Classify Matter, students use their senses to determine the many ways to describe and classify matter based on its physical properties. The grade-level appropriate scientific and engineering practices that are supported by this activity are TEKS 2.1A, 2.1B, 2.1E, and 2.1F. This activity also presents the core concept TEKS 2.6A. Recurring themes and concepts of TEKS are also accurately presented in the activity and support TEKS 2.5F. The activity for TEKS 2.8C, Can You Hear Me Now?, clearly presents the grade-level TEKS 2.8C: design and build a device using tools and materials that use sound to solve the problem of communicating over a distance. This engineering design challenge also clearly aligns with the recurring themes and concepts of TEKS 2.5A and 2.5E. Additionally, the science and engineering practice TEKS presented are 2.1A, 2.1B, 2.1E, 2.1G, 2.2D, 2.3A, and 2.3C.
- Mastery requirements of the materials are within the boundaries of the main concepts of the grade level. One example is investigation 2.8A, Sound You Can See. This descriptive investigation lists the core content for TEKS 2.8A: Demonstrate and explain that sound is made by vibrating matter and that vibrations can be used by a variety of means, including sound. It integrates the SEPs 2.1B – 2.1F, and 2.2B. In this activity, students observe, demonstrate, and explain how sound is made. For example, when the teacher turns on a speaker, a laser pointed at a mirror will show waves. Students collect data on their note-taker and provide explanations as to how sound moves.
- The materials clearly provide instruction in grade-specific core concepts, recurring themes and concepts, and SEPs. For example, in the lesson, Strength of a Force, students explore the force of a push or a pull. The materials guide teachers to say, ”You have already learned that when objects push on each other, they may change shape or collide.” During the investigation, students observe what happens to an object’s motion when they change the strength of a push or a pull. They explore the force of a push and a pull. Then, using what they know about force and motion, they write a hypothesis for the question they are investigating. The questions they answer include, “How does the strength of a push or pull change an object’s motion? Is there a pattern to the movements? What happened to the objects when a stronger force was applied? Did this pattern happen at all stations? How did the strength of the push or pull change the

object's motion?" The SEPs included in this lesson are 2.1B (plan descriptive investigations), 2.1C (safe practices), 2.1D (use tools), 2.1E (observation and measurements as evidence), 2.1F (record and organize data), 2.2B (analyze for features and patterns), 2.3A (develop explanation supported by data and models), and 2.3B (communicate explanations individually or collaboratively). Connected RTCs include 2.5A (identify and use patterns), 2.5B (predict cause and effect relationships), and 2.5G (describe factors or conditions that cause change or stay the same).

- The Implementation Strategies document provides a short overview of material components that help deepen students' understanding of concepts. The teacher can use videos to implement direct instruction, use whole group instruction and games for student engagement and exploration of deep concepts, hands-on labs, investigations, application practice, and research. Students practice planning and conducting simple descriptive scientific investigations using engineering practices to design solutions to deepen the concept. For example, the section for Science and Engineering practices provides information on the purpose and importance of scientific inquiry and engineering design. This section also presents instructional modules, interactivities, and activities that address science and engineering practices and that deepen students' understanding of concepts. Materials provide the following description of learning components: "Instructional modules can be used to introduce scientific and engineering practices or to refer to skills. Interactivites- The gamified activity can be used to review SEPs and RTCs. Activities- These hands-on activities are designed to facilitate students' knowledge and experiences with science and engineering practices. Lab Safety Rules- This poster can be printed out and displayed for students as a reminder of lab safety practices." Suggested SEPs are located on the EduSmart scope and sequence within the context of the content.

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

- The materials define the boundaries of content that students must master for the grade level. For example, the materials include quizzes that assess student mastery of the core concepts of the grade level. Each quiz includes questions and the TEKS each question is assessing. For example, the quiz for TEKS 2.7A/B assesses a student's mastery of Collisions and Changes in Motion. Including the TEKS within the assessment ensures that student mastery is being assessed within the boundaries of the main concepts of the grade level.
- Each Concept Unit concludes with a quiz that aligns with the TEKS and content of the unit. For example, the 2.12A, Physical Characteristics of Environments Concept Unit, includes a 5-question quiz. The quiz questions fall within the boundaries of the SEs in second grade. Examples of the questions are: "Which of the following plants would survive BEST in a desert?" "What physical characteristics of the environment help a polar bear in a snowy environment?" "An environment with little rainfall might have…," "Which physical characteristic of an environment would most likely cause a lot of animals and plants to be in that environment?" and "Look at a picture of an environment below. What are the physical characteristics of this environment?"
- The materials define the boundaries of content that students must master for the grade level. For example, Engineering Design Challenges (EDCs) are available for each reporting category and its corresponding TEKS. The mastery requirements for this material are included within the teacher guide through the success rubrics. These rubrics outline students' mastery category as either advanced, proficient, developing, or beginning through their design and presentation. For example, in the EDC Transformers in the Kitchen, students must act as engineers working on the

problem of using a limited number of materials to build three different objects that serve different uses. Students must use what they know about basic materials to rearrange those materials and build different things. This EDC addresses the core concept TEKS 2.6C (demonstrating that small units such as building blocks can be combined or reassembled to form new objects for different purposes and explain the materials chosen based on their physical properties).

- Materials include specific learning targets for grade-level concepts. The materials provide a scope and sequence document that outlines when learning targets are introduced, developed, and mastered. The materials also include a vertical alignment document that specifies the TEKS for each objective.

EduSmart Science Grade 2

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.

- The materials include guiding documents that support teachers in understanding how new learning connects to previous and future learning across grade levels. The vertical alignment document provides teachers with the knowledge of the core concepts, scientific and engineering practice, and recurring themes and concepts of TEKS that are taught in the previous, current, and future grades. This allows teachers to build on students' previous knowledge while preparing them for current and future content. One example of the vertical alignment document providing teacher clarity is TEKS 2.11A, (distinguish between natural and manmade resources). The vertical alignment document allows teachers to see that in the kindergarten TEKS, K.11A, students had to observe examples of practical uses for rocks, soil, and water. The first grade TEKS, 1.11A, then required that students identify and describe how plants, animals, and humans use rocks, soil, and water. Using the vertical alignment document, teachers obtain clarity on current concepts by addressing previous concepts learned and connecting current concepts to future concepts.
- Unit Teacher Guides provide background information, prerequisite knowledge, essential questions, and common misconceptions. For example, the Teacher Guide for 2.6A provides information about what students should already know prior to beginning the lesson. Materials

state, “In Kindergarten, students were expected to identify and record observable physical properties of objects, including shape, color, texture, and material, and generate ways to classify objects. In Grade 1, students were expected to classify objects by observable physical properties, including, shape, color, and texture, and attributes such as larger and smaller and heavier and lighter.”

- The instructional materials include guiding documents that support teachers in understanding how new learning connects to previous and future learning across grade levels. The vertical alignment document explains how student learning in kindergarten (Physical Properties) connects to and extends learning in subsequent grade levels as student expectations change from grade one to grade two. For example, the materials for K.6A state that students will identify and record observable physical properties of objects, including shape, color, texture, and material, and generate ways to classify objects. The document states that in first grade, students will classify objects by observable physical properties, including, shape, color, and texture, and attributes such as larger and smaller and heavier and lighter (1.6A), and in second grade, students will classify matter by observable physical properties, including texture, flexibility, and relative temperature, and identify whether a material is a solid or liquid (2.6A).
- The materials support teachers in understanding how learning connects across learning categories. For example, the scope and sequence document for second grade includes suggested SEPs connections that are present across lessons. The SEPs include 2.1A (ask questions based on observation), 2.1E (observation and measurements as evidence), 2.1F (record and organize data), 2.2B (analyze for features and patterns), 2.3A (develop explanation supported by data and models), and 2.3C (listen actively, engage respectfully). Suggested RTC connections across lessons include 2.5A (identify and use patterns), 2.5B (predict cause and effect relationships), 2.5C (measure and describe properties in size/amount), and 2.5G (describe factors or conditions that cause change or stay the same).

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.

- The Teacher Guide, found in the teacher resources section, contains explanations and examples of science concepts including common grade-level misconceptions to support teacher's subject knowledge and recognition of barriers to student conceptual development as outlined in the TEKS. The Unit Teacher Guide states the TEKS and provides the teacher with background information on the standard as well as the prerequisite knowledge students should have. The teacher guide also states the common misconceptions that students may have for teachers to anticipate. For example, the Unit Teacher Guide for the lesson, TEKS 2.6C, Selecting the Right Materials, explains that students may have the misconception that if something like wooden building blocks are painted different colors, they have changed their physical properties. Even though a wooden block may change colors due to being painted, the block is still made of wood.
- The materials identify the common grade-level misconceptions students may have about science concepts. By previewing the Instructional Module, teachers are able to anticipate misconceptions their students may have. All Instructional Modules are embedded with strategic pausing points where discussion questions are presented. These questioning opportunities also allow the teacher to identify the barriers their students may have prior to direct instruction. For example, the Instructional Module for TEKS 2.9A, The Sun and the Moon, pauses to ask the question, “How does the moon glow?” By previewing the Instructional Module, teachers can

anticipate the possible misconception that the moon gives out light on its own rather than reflecting light from the sun.

- The materials include background information for teachers that provides explanations and examples of science concepts. For example, in the lesson, Do You See What I See, the teacher is provided with the following background information: "Tools can extend our senses, allowing us to obtain more information than we would be able to on our own. Magnifiers extend our sight by making objects look bigger. Magnifiers reveal aspects of nature that are too small to see with just your eyes. You can examine skin, coins, flower structures, and insects to see that all objects have small parts that make up the whole system."

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

- The materials provide a rationale for the instructional design of the program. Materials provide an explanation for why the materials are designed as they are. The Implementation Strategies Early Elementary (K-2) Guide highlights key features of the instructional design. It states, "Each grade band is designed to align with student ability and content level. Unit Teacher Guides are found in the teacher resources for each of the TEKS. These guides were written to help teachers facilitate learning in their classrooms and provide them with the essential knowledge to teach the concepts."
- The Implementation Strategies document, which is found in the teacher resource section for every standard, provides teachers with the intent and purpose of the instructional design of the program. The implementation strategy document states that the anchoring phenomenon is designed to help students with real-world challenges and situations. This activity also allows students to generate questions about the phenomenon to captivate their curiosity and activate prior knowledge. The explanation for the intent and purpose of the Instructional Modules is that this content serves as direct instruction and that each video has multiple breaks to facilitate student discussions. For example, in the Anchoring Phenomenon for 2.11A, Who Made It? students must distinguish between natural and manmade resources.
- The vertical alignment document provides information about the intent and purpose of the instructional design. The document states, "progression of the content and skills across K-5 and 6-Biology provide a cohesive overview of the science curriculum vertically from one grade level to the next, ensuring a seamless and logical progression of learning." The purpose of the vertical alignment is to "provide teachers with an understanding of how the TEKS build upon each other and what the student should have learned in previous grade levels and what they will be expected to learn in the next grade levels." This allows teachers to plan lessons and discuss best practices. The vertical alignment document is designed to allow teachers to see the progression of standards and content across grade levels and covers grades kindergarten through fifth. "This can be used as a reference or planning document when creating intervention or remediation groups."

EduSmart Science Grade 2

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.

- The materials include Hands-on Activities that support students' meaningful sensemaking through acting as scientists and engineers. These activities allow students to actively participate in science and engineering practices by performing hands-on experiments in their classrooms or outside. For example, in the Hands-on Activity for TEKS 2.9B, Do You See What I See, students use materials to observe and compare how objects appear when using and not using tools. Students act as scientists by forming a hypothesis to determine how tools help them observe objects in their everyday life.
- The engineering design challenges support students' meaningful sense-making through thinking and acting as scientists and engineers. During these challenges, students think and act as scientists and engineers to solve problems. For example, in TEKS 2.8A/B/C, Can You Hear Me Now, students work as engineers for a hypothetical phone company. They design the best cup and string telephone for people who are at least two meters away from each other. Students act

as scientists to create a hypothesis about how sound travels through a tight string and then analyze their designs.

- In Unit 2.7A/B, Collisions and Changes in Motion, students think like scientists as they ask their own questions after looking at a picture of students playing volleyball. During the Explore activity, students act as scientists as they investigate what happens to different objects when pushed with the same force and when they collide. Additionally, students can read "Pushes and Pulls," a reader that includes a quiz with open-ended question types allowing students opportunities to interact with the text for sensemaking.
- In Unit 2.8A/B/C, Sound, students act as scientists by sharing what they notice and asking questions about a video of salt vibrating on a sound plate. During the Engineering Design Challenge, 2.8C, Can You Hear Me Now? students act as scientists and engineers when they build a device using tools and materials that use sound to solve the problem of communicating over a distance.
- The materials provide learning activities that support students' meaningful sensemaking through thinking and acting as scientists and engineers. For example, in the Engineering Design Challenge, Can You Hear Me Now? students design and build a device using tools and materials that use sound to solve the problem of communicating over a distance. In this challenge, students "explore how sound travels through different materials and build a device that can be used to communicate by sound over a distance. Sound can be formed when objects vibrate (move back and forth). The energy from these vibrations can travel through water, air, and solid objects. We hear sound when these vibrations travel through the air to our ears." The materials state, "...each group explains their design and tells others why they think their material(s) will work best."

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 with grade-level appropriate scientific texts to gather evidence and develop an understanding of the topic. The materials include leveled readers for each of the TEKS for the grade levels. These leveled readers have options for students who are below, at, or above grade level and include a five-question probe. For example, in the reader for TEKS 2.13A, Plant Parts, students read about the parts of the plant including stem, leaves, roots, flowers, fruits, and seeds. Through the text and images, students develop an understanding of the different parts of a plant as well as their functions. Students then gather evidence from the text to answer questions related to plant parts.
- The materials include research projects where students gather information and complete a presentation. For example, in TEKS 2.4B, How Scientists and Engineers Make Discoveries, students explore what a scientist and engineer are and make connections between examples of science and engineering in their own lives. After viewing a brief video on Alexander Graham Bell, students create an illustrated story about making or discovering something new. Students can also read "Alexander Graham Bell," to gather information and evidence to support how discoveries can be made.
- Materials include grade-level texts to support a greater understanding of concepts. The Organisms and Environment category, Unit 2.12A, Physical Characteristics of Environments, includes multiple opportunities for students to engage in grade-level appropriate science texts. For example, the Elaborate phase includes five readers named "Trip to the Midwest," "Life on the Farm," "The World's Tiniest Frog," "Living on Earth," and "Coping with Seasonal Change." It also includes a virtual Glossary activity where students read and practice content vocabulary.

- Unit 2.12C, Seed Dispersal, includes opportunities for students to engage in grade-level appropriate science texts. For example, the Elaborate phase includes a reader named “The Perfect Day for a Hike,” and a virtual Glossary interactive activity where students read and practice content vocabulary.
- The Vocabulary & Literacy section provides students with grade-level appropriate texts for gathering evidence and developing an understanding of concepts. In Unit 2.11A/B, Natural Resources, the reader, “Rocks,” defines rocks, their types, and how they are formed. At the end of the text, the teacher prompts students to gather evidence from the text with questions such as, “What is magma?” “What do we call magma that has reached the surface of the Earth?” and “When volcanic rocks cool down very fast, what forms?” Students can also use the interactive Glossary tool to guide them to a definition of science concepts including conserve, luster, natural resource, recycle, man-made resource, and physical property.

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 engage in various written and graphic modes of communication to support students in developing, displaying, and understanding scientific concepts. For example, in TEKS 2.10B, How's the Weather? students collect data on the weather for several days. The students draw a symbol to depict the cloud coverage for each day. They also record the actual measurement of the rainfall and the temperature. The students are developing an understanding of data collection and the ability to describe the weather using both symbols and measurements.
- The engineering design challenges provide students with multiple opportunities to engage in various written and graphic modes of communication. For example, in TEKS 2.8C, Can You Hear Me Now, students act as engineers to build three different objects using a limited number of materials. Through this challenge, students complete a data collection table and write an explanation of what they think would happen if their phone was made from empty soup cans instead of cups.
- The materials include opportunities for students to engage in graphic and written modes of communication. For example, in Concept Unit 2.9B, Explore activity 2.9B, Do you See What I See? students create a Venn diagram with information that compares how objects look with and without a visual tool such as a hands lens or binoculars. Additionally, in Concept Unit 2.9A, Explore activity 2.9A, The Power of the Sun, students write to answer two reflection questions: “What are 2 helpful things the sun gives to Earth?” and “Does the moon make its own light? If not, where does the light come from?”
- The materials provide opportunities for students to communicate thinking on scientific concepts in written and graphic modes. The lesson, Push: Force, states, “In the instructional module, you learned how objects can push and pull on each other and how they may change shape when they touch or collide. In this activity, you will compare what happens to different objects when pushed with the same force and when they collide.” The students use the provided materials to explore the force of a push then, using what they know about force and motion, they write a hypothesis for the investigation. They complete an investigation where they push different objects and record the effect of the push in a table. Then they cause two objects to collide and record the effect of the collision. They answer questions like, “What happened to the objects when pushed by one finger? 5. What caused this effect? 6. What happened to the objects when

they collided? 7. What caused this effect? 8. How do objects push on each other?" and record their results in a graph.

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 include Hands-on Activities to support students in acting as scientists and engineers who can learn from engaging in phenomena and engineering design processes, making sense of concepts and productively struggling. For example, in TEKS 2.6C, Transformers in Real Life, students work as an engineering team to use recycled materials to create a new toy robot. The students work together as a team to make sense of the concept of small units being reassembled and productively struggle to make their three new objects. There are no hints or examples of projects given to the students, so they are able to proactively wonder and create on their own. This allows the student to actively engage with inquiry about the concept.
- Real-world examples of science and engineering problems are relevant and interesting to students. This helps students see the practical applications of what they are learning and how it relates to their own lives, making them more engaged and invested in the learning process. For example, TEKS 2.13C, A Creche of Penguins, shows a brief video of a group of penguins. There are no explanations or hints for the students, so they proactively wonder what the phenomena are and anything they may notice. This allows the student to actively engage with an inquiry about the concept.
- Materials support students to act as scientists and engineers who can learn from engaging in phenomena-based activities. All lessons begin with a phenomenon-based video or a picture during the Explore section. The Activity section links to an investigation or an engineering design challenge which gives students opportunities to make sense of concepts through hands-on design processes. For example, in Investigation Activity 2.8B, Sound Off, students match sound cards with whether they are soft or loud. Then they analyze why some sounds are soft and some are loud. At the end of the investigation, students create musical instruments with everyday materials found around the home or classroom and explain the sound level that comes from them.

EduSmart Science Grade 2

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 prompt students to use evidence to support their hypotheses and claims. For example, in TEKS 2.8A, Seeing Sounds, students form a hypothesis about how sound is made. The students demonstrate how sound is made and record their observations. Then they respond to reflection questions that prompt them to analyze their data in order to answer them.
- Materials prompt students to support their hypotheses and claims. The Engineering Design Challenges prompt students to use evidence to support their claims. The Engineering Design Challenge guides students through working together to solve a problem. They collect data and discuss options together to find the best possible solution. For example, TEKS 2.8C, Can You Hear Me Now? requires students to record data after designing and using different types of cup and string phones. They use the data to determine which material is the best to make a string and cup phone.
- Materials prompt students to use evidence to support their hypotheses and claims. For example, in Activity 2.8A, Seeing Sound, students use a variety of materials to demonstrate how sound is made. The materials pose the following question for the students, "How is sound made?" Then, they write their hypothesis for the question. Students support their hypothesis by

collecting data as they record observations of a teacher demonstration. The teacher points a laser at a mirror while a speaker is on and students answer the following questions: “What happened when the laser was pointed at the mirror? What happened to the laser when the speaker was turned on? Why do you think this happened?” Students work in groups to test and record what happens to demonstrate how sound is made using a metal pan and metal spoon. They take turns with each person banging lightly and hard. After the investigations, students complete a Venn Diagram to compare and contrast how volume affected materials. The materials prompt students to “Have a short discussion if there are different answers within your group. Listen actively to others’ explanations and engage respectfully in scientific discussion.”

- The materials provide opportunities for students to develop how to use evidence to support their hypotheses and claims. During the lesson, Strength of a Force, in Unit 2.6C, Selecting the Right Material, students investigate and observe what happens to an object’s motion when they change the strength of a push or a pull. Students predict how the strength of a push or pull changes an object’s motion. They record their hypotheses, then after the experiments, students answer the following analysis questions: “Why should straws not be shared? What happened to the objects when force was gently applied? Did this pattern happen at all stations? What happened to the objects when a stronger force was applied? Did this pattern happen at all stations? How did the strength of the push or pull change the objects' motion?”

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

- Materials include embedded opportunities to develop and utilize scientific vocabulary in context. The leveled readers align to a specific science TEKS. For example, the reader for 2.12A, Coping with Seasonal Change, provides students the opportunity to use scientific vocabulary as it relates to the different seasons and how some animals like squirrels and whales survive the changes in seasons. At the end of the reader, students can take a quiz that includes the vocabulary words.
- Glossaries include embedded opportunities for students to develop and utilize scientific vocabulary in context. For example, the glossary for 2.6C, Selecting the Right Material, gives students the opportunity to develop their understanding of scientific vocabulary around properties of matter, such as *combination, mixture,* and *physical property,* while they construct a table that will hold a cup of 20 pennies. Students use only materials given by the teacher to construct their tables. They explain/present their tables to classmates. If needed, students can select a word from the glossary and are presented with an image as well as a definition that can be read aloud.
- Materials include embedded opportunities to develop and utilize scientific vocabulary in context. For example, the glossary in Unit 2.10A, Erosion, provides students the opportunity to use the vocabulary words *erosion, gravity, stream*, and *slope* in context. There is a visual for each vocabulary word in the form of a picture along with a definition and a read-aloud option. Within this same unit, Activity 2.10A, Moving Earth, provides prompts for student discussions that embed target vocabulary as they investigate how wind and water affect the Earth’s surface. For example, the Analyze Data section has students write down their observations using these guiding questions: “What happened when the water flowed down the riverbed?” “Why do you think this happened?” “What happened when the wind blew the sand?” “Why do you think this happened?” “How does your investigation compare to your group members?” and “Describe how the wind and water moved the sand.” Additionally, the Instruction Module in 2.10A, Erosion, is a video with sound and pictures that use scientific vocabulary in context. Examples of vocabulary include *wind, water, land, soil,* and *sand*.

EduSmart Science Grade 2

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

- The Engineering Design Challenges integrate argumentation and discourse to support students' development of content knowledge and skills as appropriate for the concept and grade level. The Engineering Design Challenges are intentionally designed to allow students to discuss and work together in groups. By working together to solve a problem in groups, students are practicing argumentation by discussing their ideas and solutions. For example, for Activity 2.6C, Transformers in Real Life, students create a new toy robot using old, recycled materials. The robot should have a head, body, arms, legs, and face. Students will present their toy robot designs to other design teams and explain their reasoning for their designs. They also will need to explain the different parts of the robot and how it works.
- Anchoring phenomena integrate discourse to support students' development of content knowledge. The anchoring phenomenon is intentionally designed to have no text or audio so that there is no front-loading of information and allows the students to discuss what they are seeing freely. The teacher version of the anchoring phenomenon provides the teacher with questions that they can ask their students to facilitate discourse. For example, the anchoring phenomenon for 2.13A, Plant Parts, is a video of someone pulling carrots from the ground. The teacher shows this in the classroom and students discuss what they see, notice, and wonder about the image. The teacher version provides questions such as, "Why do plants have different parts? What do plants need? What happens if you do not water a plant?" This allows the students to discuss their thoughts with one another.
- Materials integrate argumentation and discourse to support students' development of content knowledge and skills as appropriate for the concept and grade level. For example, Anchoring Phenomenon 2.6B, Is there A Change? includes a picture of someone shaping clay into a cup. The materials suggest that students should ask their own questions, but the following prompts can be used to get a conversation started: "What do you notice? What is the substance of the video? (Note: there is no video attached, It's a picture) What tool is being used? What is being changed about the substance? What questions do you have?" Additionally, the Anchoring Phenomenon, 2.6C, Selecting the Right Material, includes a picture of a bridge made with stones at the park. Students ask their own questions, but the teacher can use the following prompts to get a conversation started. "What do you notice? Why is the bridge made of bricks? What are the physical properties of the brick? Could something else be used to make a bridge? What questions do you have?"

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.

- Engineering Design Challenge provides opportunities for students to construct and present developmentally appropriate written and verbal arguments that justify explanations of phenomena and solutions to problems using evidence acquired from learning experiences. The Engineering Design Challenge for TEKS 2.8C, Can You Hear Me Now? asks students to design the best cup and string telephone for people who are at least two meters away. Students have to analyze their design and provide justification for whether some materials make better phones. This allows students to engage in developmentally appropriate verbal argumentation as it relates to the TEKS.

- Hands-on Activities provide opportunities for students to construct and present written and verbal arguments that justify explanations of phenomena. For example, 2.11A/B, Taking Care of Earth's Resources, allows students to choose one of two questions to research and find a way to solve a problem. The questions are, "Trash Island: How could reducing, reusing, and recycling help this problem?" and "Drought: How could conserving water help this problem?" Students use the Problem and Solution student page to show their work.
- Materials provide opportunities for students to construct and present verbal arguments that justify solutions to problems using evidence acquired from learning experiences. For example, in the Engineering Design Challenge, 2.6C, Transformers in Real Life, students act as Toy Robot engineers as they create a robot using recycled items such as boxes, bottle caps, aluminum foil, cereal boxes, and other materials such as building blocks. After the project is complete, students present their toy robot designs to other design teams and explain the different parts of the robot, how it works, and their reasoning for their designs. Additionally, the students in each group explain if their design met the success criteria and what they would do differently if it did not meet the criteria. Each group responds to the following questions: "Did their model tool have advantages? What were they? Did their model tool have limitations? What were they?"

EduSmart Science Grade 2

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.

- The Unit Teacher Guide provides the teacher with common misconceptions that students may have about the content. This allows teachers to anticipate student responses and address them effectively. It also provides the teacher with essential questions and possible example answers to them so that the teacher can guide the students toward conceptual understanding. For example, the Unit Teacher Guide for TEKS 2.6, Matter and its Properties, Changes in Matter, provides background information that "students should understand that many changes to objects do not result in changes to physical properties." The Unit Teacher Guide also states the common misconception that students "may think that the difference between states of matter is based on mass (solids are heavier than liquids or gasses). They may also think that heat and cold are different and that they are substances rather than energy."
- Additionally, the Unit Teacher Guide, 2.12A, Physical Characteristics of Environments, includes this in the Common Misconceptions section: "Students may think that plants do not have environmental needs." There are two essential questions with their corresponding explanations. The first one is, "What are some of the physical characteristics of environments? Amount of rainfall, amount of light, type of water." The second one is, "How do physical characteristics

such as rainfall support plants and animals within an ecosystem? More rainfall means more plant life, which in turn, supports more animal life."

- Materials provide teacher guidance on the use of questioning to deepen student thinking. The Anchoring Phenomenon is designed to engage students. For example, the Anchoring Phenomenon, 2.6B, Is There a Change? engages students in how to conduct a descriptive investigation to explain how physical properties can be changed through processes such as cutting, folding, sanding, melting, or freezing. The phenomenon includes a picture of someone shaping clay into a cup. The teacher document for this phenomenon provides background information for the teacher to share with students as well as background information to support the teacher in deepening students' thinking. The teacher is given the following suggestion: "Students should ask their own questions, but you can use the prompts below to get a conversation started." The prompts included are: "What do you notice? What is the substance of the video? (Note: there is no video attached, It's a picture) What tool is being used? What is being changed about the substance? What questions do you have?"

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

- Materials include embedded opportunities for the teacher to scaffold students' development of scientific vocabulary. For example, in TEKS 2.10, Earth and Space, Weather, the Teacher Document provides background information that states, "Measuring temperature and precipitation requires students to use tools including student thermometers and a rain gauge." Students are reminded that "even simple student thermometers measure temperature in both degrees Celsius and degrees Fahrenheit." The vocabulary words *condensation, evaporation, water cycle, precipitation*, and *water* can be practiced using the reader, 2.10B, "Types of Weather," as well as suggested Station Activities from the Implementation Guide. One of these activities states, "Students can create an interactive word wall to demonstrate words from the unit. OR Have students create visual flashcards for the vocabulary with pictures and definitions."
- The Scope and Sequence document provides teachers with new unit vocabulary and vocabulary from prior content. This allows the teacher to scaffold vocabulary based on student needs. The vocabulary listed within the Scope and Sequence document allows the teacher to support student development of vocabulary in context. For example, in the Scope and Sequence document, under TEKS 2.6, Changes in Matter, words listed under the category, "New grade level words," include *states of matter* and *water vapor.* Words listed under the category, "Words with Prior Knowledge," include *melting, physical property,* and *freezing*. Teachers are provided with Vocabulary Essential Questions to prompt the use of vocabulary in context through conversation. These questions include, "What changes happen when something like paper is cut or folded?" and "What changes happen when something is melted or frozen?"
- Materials provide some teacher guidance on supporting students' development and use of scientific vocabulary in context. Instead of scaffolds, ideas on how to practice vocabulary are included. The Implementation Guide, K-2, includes Suggested Station Activities for Small Groups or Partners. This section guides the teacher to use the words in the Glossary at the end of each unit in three different ways; the first one is, "Vocabulary practice using Glossary to practice all vocabulary associated with a unit" (Note: The document does not guide the teacher on how to conduct the practice). The second one is, "Students can create an interactive word wall to demonstrate words from the unit." The last suggestion is, "Have students create visual flashcards for the vocabulary with pictures and definitions." An example of vocabulary words included in a glossary where teachers can implement the three suggested strategies can be

found in the Force, Motion, and Energy Category, Unit 2.8A/B/C, Sound, Glossary. The words are *communicated, sound energy, whisper*, and *vibration*.

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

- The Anchoring Phenomenon provides teacher guidance on preparing for student discourse. By previewing the teacher document ahead of time, teachers can prepare themselves to scaffold student questioning and discourse. For example, in the Anchoring Phenomenon for 2.7B, Volleyball Players, students see people playing a game of volleyball. By previewing the teacher document ahead of time, teachers can access background information that guides teachers not to explain the game of volleyball or other similar games, or provide answers for any of the questions students ask. This guidance creates an opportunity for students to develop their own discourse through questioning. Teachers are given prompts to start verbal claims/conversations if needed: “What do they have to do to reach the ball? What will they do when they touch the ball? What happens to the direction the ball was moving?”
- The Engineering Design Challenges (EDC) include background information to prepare teachers for supporting students in using evidence to construct verbal claims. For example, the teacher document for the EDC for TEKS 2.6C, Transformers in Real Life!, provides teachers with analysis questions that students should be able to answer once their design is complete: “What will be the best combination of recycled objects to make the robot fun? How did we choose the items that would work the best together? How does our drawing show the new functions of the robot?” The teacher document also includes a rubric and guides teachers to have students use the rubric to determine if their design met the success criteria.
- Evidence of materials that provide teacher guidance on preparing for student discourse is found in the Scope and Sequence document that is organized by Reporting Category. Each Reporting Category includes an Essential Questions column with two to five questions. These questions guide teachers as they prepare for student discourse. The Reporting Category, 2.9, Earth and Space, Essential Questions Column reads: “What pattern does the Sun follow? What patterns are formed by the Moon? What can we see with a telescope? Why do we use telescopes?”
- Materials provide teacher guidance on preparing for supporting students in using evidence to construct written and verbal claims. Activity 2.8A, Seeing Sound, is an investigation where students use materials such as a speaker, rubberband, parchment paper, metal pans, spoons, index cards, paint, mirror, laser pointer, and rice to demonstrate how sound is made. The teacher is guided to ask students, “How is the sound made?” Then, students are expected to write a hypothesis and record observations as the teacher points a laser at the mirror while the speaker is on, what happens to the tape when music plays on the speaker, and what happens to the volume of the noise created by banging a pan lightly, hard, lightly but further from a pan, and hard but further from the pan.

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

- Unit Teacher Guide supports and guides teachers in facilitating the sharing of students' thinking and finding solutions. By providing common misconceptions, the Unit Teacher Guide also allows the teacher to help dispel the misconceptions that students may share. For example, the Unit

Teacher Guide for 2.12A, Physical Characteristics of Environments, provides the possible student misconception that plants do not have environmental needs. By addressing this shared misconception, teachers can support students in learning that living organisms have basic needs that must be met through interactions within their environment. Essential Questions that students should be able to answer independently are, “What are some of the physical characteristics of environments?” and “How do physical characteristics such as rainfall support plants and animals within an ecosystem?”

- The EDC includes information to support and guide teachers in facilitating students' finding solutions. The EDC for 2.8A/B/C, Can You Hear Me Now? includes a performance task that guides the teacher in supporting students through their design process: to design the best cup and string telephone for people who are at least three meters away from each other. The materials include additional analysis questions so the teacher can facilitate students' thinking and finding solutions: “Which telephone design worked best? Why did some cups work better than others? Why did some ‘wire’ materials (string, yarn, ribbon) work better than others? What is the function of the structures used in your telephone (Cup, string, paper clips)?”
- The materials support and guide teachers in facilitating the sharing of students’ thinking. The Anchoring Phenomenon at the beginning of each unit is a picture or a short video that engages students in what they are about to learn. The print feature of the Anchoring Phenomena guides teachers in facilitating the sharing of students’ thinking. For example, in Anchoring Phenomenon Picture K.6A, Shape, Color and Texture, the background section guides the teacher as follows: “When fielding questions, do not explain physical properties of matter or provide answers for any of the questions. The Anchoring Phenomenon should be used as a learning foundation to create a shared experience in the material. Teachers can refer back to the phenomenon periodically to revisit and reinforce core concepts and ideas throughout the unit, connecting new information and skills to previously learned material to strengthen understanding and promote long-term retention.”

EduSmart Science Grade 2

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 diagnostic, formative, and summative assessments that include formal and informal opportunities to assess student learning in a variety of formats. Materials assess student expectations and indicate which student expectations are assessed. 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.

- The materials include a variety of formative and summative assessments to gauge student learning. EduSmart materials allow for diagnostic assessments for students in 2nd grade that are appropriate for the grade. For example, quizzes can be used as a diagnostic assessment when assigned as a pre-assessment and then again as a post-assessment. By reassigning the quiz and giving it a unique name, teachers can compare both sets of data and use that data as a form of diagnostic assessment.
- Quizzes are developmentally appropriate and standards-based and provide an opportunity to summatively assess student learning. Teachers can use quizzes to formally assess student learning at the end of a unit or use them as a progress monitor during the unit. For example, in 2.10C, Severe Weather, students are given a five-question quiz that assesses their knowledge about types of weather. Additionally, EduSmart Quiz 2.6A, Physical Properties, includes four questions, all in multiple-choice format. The quizzes provide teachers with data on students' learning.
- Hands-on activities can be used to informally assess student learning and mastery of content. The hands-on activity for 2.9B, "Do you see what I see?" allows teachers to informally assess students by asking them, "Using the provided materials, you will observe and compare how objects appear when using and not using tools. Using what you know about science tools, write

a hypothesis for the question you will be investigating. Then, carefully follow the steps of the procedure to complete the investigation."

- Formative assessments are present at the end of each reader. For example, the Reader, "Beehive Systems," 2.5D, System and System Models, assesses the students through a quiz after the reading. Some of the questions include, "Who are the main characters? A beehive is an example of a…. What inference can you make about Jonah? A beehive has parts like a…, a place to store pollen, and a place for the queen. Name another system we see in nature."
- The materials suggest using student portfolios which could be a summative assessment to assess student growth in scientific knowledge and skills over time. The Teacher Communication Letter provides overview information about Student Portfolios, stating that they can include "work samples from the Engineering Design Challenges, data sheets from hands-on activities, or student answers from the five-question probe at the end of the readers."

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

- The materials assess all student expectations and indicate which student expectations are assessed. The Assessment Reports document states, "By identifying which standards have been successfully grasped and which require further attention, teachers can tailor their instructional strategies, design targeted interventions, and adjust lesson plans to align with student needs." This assessment report allows teachers to see which student expectations have been assessed through the EduSmart materials, not just specifically through quizzes. The quizzes assess content that directly aligns with a grade-level TEKS. For example, the quiz for 2.11A/B, Natural Resources, displays the TEKS that is being assessed under each question. The available quizzes assess the following Student Expectations (SEs): 2.6A, 2.10C, 2.9A, 2.11A/B, 2.12B, 2.13D, 2.12C, 2.13C, 2.9B, 2.10A, 2.6C, 2.13A, 2.13B, 2.10B, 2.8A/B, C, 2.6B, 2.6C, 2.7A/B, and 2.12A.
- The interactivities also assess all student expectations for grade-level TEKS. For example, the interactivity for 2.6C, Building a System, assesses students through a virtual experiment in which "the students use various materials with different physical properties to create a combination that serves a particular function. They test the properties of the various materials provided to select the right material."
- The materials indicate which student expectations are assessed. The Unit Teacher Guide for TEKS 2.11, Earth and Space, states, "The student knows that earth materials and products made from these materials are important to everyday life. The student is expected to: A) distinguish between natural and manmade resources. B) describe how human impact can be limited by making choices to conserve and properly dispose of materials such as reducing the use of, reusing, or recycling paper, plastic, and metal." Students are assessed with an EduSmart quiz which includes the following questions: "Which of these is a natural resource? Which picture shows one way to make resources last longer? Which of the following is NOT a natural resource? Why should we practice reduce, reuse, and recycle? Metals used to make spoons, knives, and forks is found in…."

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

- The materials include quizzes that assess Science and Engineering Practices (SEPs), Recurring Themes and Concepts (RTCs), and scientific concepts. Although SEPs and RTCs may be assessed on quizzes, this is not consistently identified. For example, the quiz for 2.11A/B, Natural

Resources, integrates the recurring theme and concepts TEKS 2.5AB, but this is not explicitly stated.

- The Engineering Design Challenges assess scientific concepts, SEPs, and RTCs. Two of the Engineering Design Challenges available in the materials include Engineering Design Challenge 2.8A/B/C, Can you Hear Me Now? (where students create a phone using cups), and 2.6C, Transformers in Real Life (where students use old recycled materials from home to create a robot). In both of these challenges, students are asked to work as a team and design solutions to real-life problems. This provides the learner an opportunity to integrate the learning content, SEPs, and RTCs. Each Engineering Design Challenge includes a teacher document and rubric to determine student proficiency. For example, the Engineering Design Challenge for 2.8A/B/C, Can You Hear Me Now? assesses the TEKS 2.8A/B/C, "Design and build a device using tools and materials that use sound to solve the problem of communicating over a distance." This challenge also integrates the science and engineering concepts and recurring themes and concepts TEKS 2.1A, 2.1B, 2.1C, 2.1D, 2.1E, 2.1E, 2.1G, 2.2A, 2.2C, 2.2D, 2.3A, 2.3B, 2.4A, 2.5B, 2.5C, 2.5D, 2.5E, and 2.5F.
- The materials include formative assessments that integrate scientific knowledge, SEPs, and RTCs. For example, in the lesson, Constructing a Table Using Physical Properties of Matter, in unit 2.6C, Selecting the Right Material, students use various materials to design and build a table. The students use materials chosen based on their physical properties and work in groups of 2-4 to collaborate and build a table using the materials provided. The teams make a sketch of the table design and then decide on the best plan before building a table. The students answer the question, "What small materials can you combine in order to construct a table that will hold a cup that contains 20 pennies?" When the table is complete, the teacher will place a cup with 20 pennies onto the table to test the strength of the table. Based on the observations, the students determine the materials that were best suited for constructing the table and why. The students listen actively to others' design explanations to identify important evidence and engage respectfully in scientific discussion. Students also answer the following questions: "Which student/group constructed the strongest table? What materials did they use that aided in the strength of the table? What factors caused a table to fail?" This activity aligns with SEP TEKS 2.1-2.3 and RTC TEKS 2.5D and 2.5F.

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

- The Readers include assessments that require students to apply knowledge and skills to novel contexts. The Readers are designed to connect a standard to the real world and end with a five-question quiz that requires the student to apply their knowledge to a novel context. For example, the Reader for 2.13B, "Do Animals Have Pockets?" explains what marsupials are. The Reader concludes with a five-question quiz that requires the student to apply their knowledge of animals, pockets, and marsupials.
- The Interactivities require students to apply their knowledge and skills to novel contexts. They connect the content to real-world examples where the students can make connections from what they are learning in the classroom to novel contexts. For example, the Interactivity for TEKS 2.6C, Building a System, requires students to use their knowledge that small parts can be combined to form new objects. Students apply this knowledge to create a bridge out of spaghetti and other materials.
- The materials provide Engineering Design Challenges, which allow students to apply knowledge and skills to novel contexts. Teachers can use the provided Assessment Rubric to assess the challenges as formative assessments. The Engineering Design Challenge, Shelter from the Storm,

invites students to "design and create a shelter that can withstand severe weather conditions such as strong winds and heavy rain." Assessment is supported by the success criteria of the design, which includes stability, waterproofing, safety, and limited materials.

- The materials include assessments that require students to apply knowledge and skills to a new phenomenon or problem. During the lesson, Sound You Can See, in Unit 2.8A/B/C, Sound, the students observe, demonstrate, and explain how sound is made. The students use what they know about sound energy to write a hypothesis for the question they will be investigating and to answer the question, "How is sound made?" Using the materials provided, each group demonstrates how sound is made; the students record their observations in the table and explain their findings. Additionally, students use a Venn Diagram to compare and contrast how the volume affected the materials.

EduSmart Science Grade 2

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 provide support for teacher 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.

- The materials provide guidance for the teacher in evaluating student responses that is appropriate for the grade level. The materials include information to guide teachers in evaluating student responses in a teacher guidance document included with each Anchoring Phenomenon. The guidance document also provides background information on the topic to assist teachers in evaluating student discussion and responses. For example, the document for Volleyball Players (2.7A/B) advises the teacher as follows: "Let students continue to ask questions and then come back and refer to this video when discussing how the strength of a push or pull changes an object's motion. This is something that can be easily demonstrated in the classroom by pushing/pulling a chair, door, pencil, book, etc."
- The materials provide a guidance document for each grade 2 Engineering Design Challenge guide as a resource for evaluating students. For example, the Can You Hear Me Now? (2.8A/B/C) guidance document includes a performance task and guidance for design discussion, analysis, and group discussion.
- Each grade 2 Engineering Design Challenge also includes an assessment for the teacher to use when evaluating teams' responses as advanced, proficient, developing, or beginning. For example, the rubric for the Can You Hear Me Now? Challenge (2.8A/B/C) evaluates construction, communicating results, and experimental design. The rubric for the Food Chain Frenzy Challenge

(2.12B) evaluates construction, communicating results, and flow of energy. Additionally, the Transformers in Real Life Challenge (2.6C) includes the following questions to evaluate student thinking about the design: "Design Analysis Ask questions: What will be the best combination of recycled objects to make the robot fun? How did we choose the items that would work the best together? How does our drawing show the new functions of the robot?"

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 video titled "How to With EduSmart: Reports" provides an overview of how to access student data and reports. The materials also reference customizable assessment reports detailing questions missed, student answers, minutes of taking the test, and progress-tracking tools that enable teachers to identify areas where students may be struggling and provide targeted support. It should be noted that teacher guidance for utilizing these reports to respond to individual students' needs, in all areas of science, based on measures of student progress appropriate for the developmental level is present. Teachers can utilize the reports to determine how to intervene or accelerate based on student needs for specific concepts.
- The implementation strategies guide provides guidance and direction to teachers on how to effectively use their resources to support individual student needs. For example, the guide states, "differentiated instruction enables teachers to respond to individual student needs in all areas of science, based on measures of student progress."
- The "My Groups" section of the website contains Assignment Reports, Quiz Reports, and StaarSmart Reports. The data included in these reports are presented in ways teachers can easily analyze and interpret. For example, in the Student Quiz section, teachers find reports on student performance on any quiz. These reports show the student's name, how many quizzes they were assigned/completed, their average score, and the median score. Teachers can also click on individual student names to observe their score on their first attempt of the quiz, the last attempt, and their growth from first to last.
- The materials provide resources for teachers to assess learning, such as the rubrics in the four engineering design challenges and four essential questions per unit with a quiz for each unit.
- The EduSmart data report (a PDF available off the platform for reviewers) provides an overview of available data analysis systems, including progress monitoring, activity reports, and assessment data reports. The document states that it "...supports analysis of a student's performance, progress, and strengths and weaknesses on every TEKS." The document also states that "this data provides an expedited way to reteach students as a group, going over the answers that were distractors or they can address students individually for more one-on-one support."

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

- The assessment tools embedded in instruction, challenges, and activities yield information that teachers can use when planning instruction, intervention, and extension. Quiz responses, interactivities, and quick reteach and test features can help teachers respond to individual student needs and ensure that all students are making progress toward their academic goals.

- The EduSmart Data Reporting document states, "EduSmart also provides progress monitoring tools that enable teachers to track student progress over time. This can include tracking student performance on specific skills or concepts, as well as tracking overall growth and development. By monitoring student progress, teachers can identify areas where students may be falling behind and provide targeted support to help them catch up." The materials include teacher guidance that provides instructions on how to access these reports.
- Materials include a computer-generated report that groups students and generates group reports, student reports, progress monitoring reports, and item analysis reports. Students can be placed in groups based on their content proficiency. The Student Report references reports on student performance on any assessment. The Progress Monitoring Report references reports on students' performance on different standards in an assessment. The Item Analysis Report references reports on group performance on different standards in an assessment. The Quiz Reports and Student Quiz reference group and student performance on any quiz. The Quiz Progress Monitoring references reports on student performance on different standards in the quizzes.
- The data included in the computer-generated reports is presented in ways teachers can easily analyze and interpret. For example, in the Student Quiz section, teachers find reports on student performance on any quiz. These reports show the student's name, how many quizzes they were assigned/completed, their average score, and the median score. Teachers can also click on individual student names to observe their score on their first attempt of the quiz, the last attempt, and their growth from first to last. Additionally, The Quiz Progress Monitoring report shows student performance on different standards in the quizzes. Results are separated into Performance Bands labeled Masters, Meets, Approaches, or Did Not Meet Grade Level. Each Performance Band is labeled with a percentage. For example, Masters Grade Level is 85%-100%.

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

- The Implementation Strategies Guide provides teachers with guidance on how to use the resources to support student learning and respond to individual student needs based on data. The guide includes differentiated instruction strategies, small group instruction strategies, and targeted interventions that can be used to meet the needs of all students. For example, "Accelerated Learners: Glossary- The glossary can be used for a range of activities. Students can use the reader to create their own glossary in their notebook, create cards for a word wall or find examples of the vocabulary word in the classroom or at home."
- The Implementation Strategies Guide offers teacher guidance on providing additional support to students. The document includes the following guidance in the "Additional Support: Instruction Modules" section: "The instructional modules can be utilized as an intervention component. Teachers can assign these to small groups or pull a small group and have them watch the instructional module. The teacher can ask questions and allow students to discuss their own questions and learning. This allows teachers to address any misconceptions in a small group setting, where students may feel more comfortable sharing their thoughts."
- The Implementation Strategies Guide suggests strategies for Station Activities for small groups or partners. Teachers can use data from the diagnostic assessments to plan small-group instruction to address gaps in learning. The materials state, "Station 1: Vocabulary practice using Glossary to practice all vocabulary associated with a unit. Students can create an interactive word wall to demonstrate words from the unit. The students create visual flashcards for the

vocabulary with pictures and definitions. Station 2: Interactivities Station 3: Reader Workshop with 5 questions formative probe Station 4: Maker Space to create a 3D model of concept Station 5: Small Group Intervention with teacher."

- The Implementation Strategies Document provides suggestions on how to use Instruction Modules, Quizzes, and Leveled Readers for students with different needs. The Instruction Modules "can be used whole group or assigned virtually for small group or individuals." The presentation feature on the quizzes "allow the teacher to discuss the questions of the whole group for review or re-teach." The Leveled Readers feature an above-grade reading level allowing accelerated learners to "read at a level that is appropriate for them." It should be noted that materials include resources intended for intervention or enrichment along with those for general instruction, rather than designating additional resources for closing learning gaps.

EduSmart Science Grade 2

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.

- The quizzes contain items that are scientifically accurate, avoid bias, and are free from errors. Quizzes provide teachers with scientifically correct questions that address the standard that is being assessed. For example, in the quiz for 2.13C, Animals Living in Groups, students are presented with five questions pertaining to the types of animals that live in groups and why they do so. The questions are based on students' content knowledge and provide straightforward questions that avoid bias and are free from errors. Sample questions and suggested answers include "What is one way in which being part of a group helps meerkats? (To travel long distances. To communicate with each other. To defend themselves from predators.) How does living in groups help wolves?(In hunting, In relaxing, In gathering information.)"
- The quizzes contain items that are scientifically accurate, avoid bias, and are free from errors. Quizzes provide teachers with scientifically correct questions that address the standard that is being assessed. For example, in the quiz for 2.12C, Seed Dispersal, students are presented with five questions pertaining to the types of animals that spread seeds and how they spread them. The questions are based on students' content knowledge and provide straightforward questions that avoid bias and are free from errors. Example Questions include, "Which of these does NOT describe how animals and birds spread seeds? (Birds drop seeds when they fly around, Seeds spread through animal droppings, Animals communicate with plants.) An insect or animal that carries pollen from one flowering plant to another flowering plant is called a….(Predator, Pollinator, Dispersal) What do flowers have that attract insects? (Sunlight, Sweet smell, Fruits) Which of these animals are pollinators? (Elephants, Dogs, Bees)."

EduSmart Science Grade 2

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

- Quizzes feature pictures that are large enough to be seen clearly. The images are also developmentally and course-appropriate. For example, the quiz for 2.9A, The Sun and the Moon, provides visual answer choices for students for question 1 of the quiz. Question 1 states, "What shines brightly during the day?" The answers include pictures of the sun and the moon. These images are clear, easy to recognize, and appropriate for the course. Additionally, in the quiz for 2.12A, Physical Characteristics of Environments, question #1 states, "Which of the following plants would survive BEST in a desert?" The answers include pictures of tall trees, cacti plants, and plants with big leaves.
- The Readers include high-interest images that are clear and appropriate for the course and grade level. For example, the Reader for 2.9A, "Sunny Conversations," includes bright-colored photographs that are low in complexity and allow students to make sense of a faucet with running water, a child's hand, a solar system, and a plant growing in a field.
- The assessments use developmentally appropriate pictures and graphics. For example, the Reader "Lizard Changes" contains clear pictures of various changes that lizards go through. The Reader states, "Organisms can change depending on factors and conditions around them." The images include the lizard on the beach, between a rock, in the rain, and on leaves. These images help answer the assessment questions. The assessment questions include, "The change in the lizards was so big that they eventually became a new species, but they are still…. "

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

- The materials provide guidance to ensure consistent and accurate administration of assessment tools. The Implementation Strategies Early Elementary (K-2) document provides the following guidance: "Teachers have the autonomy to determine the use of the quizzes and the mode they are assigned. The quizzes can be printed, shown in the present mode, or assigned online." This autonomy allows for individual school districts to determine and implement their own assessment norms to ensure consistent administration across their district and campuses.
- The Implementation Strategies Guide provides information on administering student quizzes and Readers and gives examples of how to use their activities as formal and informal assessments and how to use each activity along with suggestions and time lengths. The document states, "These quizzes can be used as a formal assessment, small group activity, or whole group activity. Can be assigned virtually, conducted whole group, or printed. Presentation features allow the teacher to discuss the questions of the whole group for review or re-teach."
- Additionally, the Implementation Strategies Guide also mentions that the quizzes are STAAR-formatted, and the multiple-choice questions can be assigned virtually. There are also presentation features that allow the teacher to discuss the questions of the whole group for review or re-teach, and five-question multiple-choice quizzes are provided for the students. The materials include an expected time of 10 minutes for the whole group or 15-20 minutes for individuals.
- Materials provide a rubric for the Engineering and Design Challenges that helps the teacher ensure consistent and accurate administration of the challenge to students and how to grade each challenge.

EduSmart Science Grade 2

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

- Materials include guidance to offer accommodations for assessment tools that allow students to demonstrate mastery of knowledge and skills aligned to learning goals. The only accommodation for assessment tools is the text-to-speech option in all quizzes. This feature can be utilized by students at the guidance of teachers to meet accommodation needs allowing all students to demonstrate mastery of knowledge and skills aligned with learning goals. For example, in the quiz for 2.8A/B/C, Effect of Energy on Matter, all 5 questions have text-to-speech accessibility. Additionally, the quiz for 2.6C, Selecting the Right Material, includes a text-to-speech feature on the web-based assessment platform, allowing students to hover over the text using a speech symbol cursor and converting it into a digital text read aloud.
- The Implementation Strategies Early Elementary (K-2) document states, "The quizzes feature text-to-speech accommodation when assigned online. For each question, there is a speaker icon at the top left below the question number. Students may press this icon for text-to-speech of the question and there is a speaker icon for the answer choices. For each of the questions, the correlating standard is listed below the question number for teacher reference."

EduSmart Science Grade 2

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 not yet achieved 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 provide recommended targeted instruction and activities to scaffold learning for students who have yet to achieve grade-level mastery. For example, in the lesson TEKS 2.10A, "Erosion," students investigate how wind and water affect the earth's surface. Differentiation for the lesson involves students working in small groups to examine questions about the soil. The Implementation Strategies suggest having students discuss the phenomenon in small groups or pairs before facilitating a whole-group discussion to support ELL students and students requiring extra processing time or student talk.
- Each video has multiple breaks in the Instruction Modules to facilitate student discussion. The quizzes include features that allow the teacher to discuss the questions of the whole group for review or re-teach. The Interactivities are spiraling activities for early finishers, test reviews, and additional practice for retention and mastery. There are opportunities for Review, Reteach, and Spiraling Skills for Mastery and Retention. The Activities section states, "The hands-on activities can also be used for students who need additional support. Teachers can use them in a small group setting and allow students to discuss the activity while reinforcing the concepts being addressed." Additionally, the Glossary provides simple, straightforward definitions with visual examples and text-to-speech accommodation.
- At the beginning of each unit, the materials provide recommended targeted instruction and activities for students who have yet to achieve mastery in different areas. The Teacher Unit Guide includes a Common Misconceptions section that provides teachers with information on what students may struggle with so the teachers can plan for misconceptions. One example is the Earth and Space Category, Lesson 2.9A, The Sun and the Moon, where the Unit Teacher

Guide lists this common misconception: "...students may not understand that seasons are repeating patterns. They may also think the Earth is closer to the Sun in the summer because it is hotter. This is not true, but it is not appropriate to explain why at this grade level."

- The Implementation Strategies document provides a section called "Differentiation," which lists suggestions for additional support for struggling learners. For example, the Earth and Space Category, Concept Unit 2.9A, The Sun and the Moon, includes differentiation strategies for students who need additional support. One strategy is the use of built-in text-to-speech accommodations for all written components. The document states that "There is a speaker icon on all components that feature text-to-speech that students can use. This provides support for students who may need reading support."
- The materials include Instruction Module Companions (IMC) for use as digital or printed interactive journal components. Standards continually spiral in recurring themes and concepts, science and engineering practices, and content throughout the year on each IMC. Students can complete the IMC as an end-of-year review for maximum retention or as a review before an assessment.

Materials provide enrichment activities for all levels of learners.

- The materials state that "...EduSmart's hands-on activities can be used as extension activities for accelerated learners. The teacher may choose an activity that will be used for extension from the LMS." The Hands-on Activities provide enrichment opportunities for all levels of learners. For example, in TEKS 2.13D, "Fish Behaviors," students describe, plan, and implement an investigation to show a fish's different features and how it can live in water. The teacher materials also include an enrichment extension. In the extension, students learn more about marine biologists and then research other marine animals. They can then compare and contrast their new chart with the chart from the fish investigation.
- The materials include Engineering Design Challenges that "reinforce and extend students' understanding of key concepts and foster essential skills like teamwork, creativity, and communication." For example, students create toy robots in the engineering design challenge, 2.6C, Transformers in Real Life. After creating their robot using old, recycled materials, each group explains their design, whether it meets the success criteria, what they would change if needed, and any advantages or limitations of their model.
- The materials provide enrichment activities for all levels of learners to account for learner variability. For example, in the extension for the lesson, "How's the Weather? - Field Study," students learn more about meteorologists from books or websites approved by a teacher (or family member), then write a weather report to present to classmates (or a family member).

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

- Materials provide opportunities for students to accelerate their learning independently. The lessons have text-to-speech embedded for all activities for all students. The leveled readers include embedded text-to-speech that allows students to adjust the speed and tone of the reading. Students also have the option to change the colors to grayscale, add color overlays, and change the font size. For example, in TEKS 2.6A, "Matter: Many Shapes," students can change the colors to grayscale, color overlays, and font size.
- The lessons provide support and resources for students ready to accelerate their learning. For example, the materials contain challenging activities and assignments that extend beyond the regular curriculum and stimulate critical thinking, problem-solving, and creativity. For example,

the lesson, "Do You See What I See," suggests that as an extension to accelerate learning, students "use the Venn Diagram to compare and contrast how visible the words were when using tools versus your unaided eye."

- The materials contain Instruction Modules to guide the teacher on using the resources effectively and where to find activities for all students. In Unit 2.10A, Erosion- TEKS 2.10, students learn that wind and water can change the shape of the land by moving soil or sand. The Hands-on activity encourages and prompts students to investigate how wind and water affect the Earth's surface. Teachers facilitate learning by asking questions such as, "How do wind and water affect Earth's surface?" The teacher asks students to analyze their data by asking, " Why do you think this happens? Describe how the wind and water moved sand."

EduSmart Science Grade 2

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 a variety of 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 include developmentally appropriate instructional approaches to engage students in content mastery. The Implementation Strategies Guide suggests ideas for student engagement, including station activities, vocabulary activities, and leveled readers. For example, in 2.12A, the reader, "The World's Tiniest Frog," explains the basic needs of survival using the tiniest frog.
- Materials provide developmentally appropriate, project-based learning opportunities through Hands-on Activities. The Hands-on Activities provide a variety of activities for students to practice and apply content learned until mastery. Teachers use guided instruction to work on content with children individually, in small or large groups. Students actively engage in the process of exploring, discovering, and constructing knowledge through hands-on learning opportunities. For example, in TEKS 2.4A, Science and Innovation-New Technology, students create a model of a device or technology around their house or classroom and develop ideas of how to improve it.
- Additionally, in Unit 2.8A/B/C, Sound, the activity "Sound Off," the material contains an introduction for students to the concept through a game of match-the-cards. They then analyze the information to see if the sound is soft or loud. The students also create music or sound tools

to explain the sound that comes from their materials. The teacher asks questions at the end of the lesson, such as "Why do some sounds like fire and tornado alarms need to be loud? Why do some sounds sound like whispers versus needing to be loud? What is your interpretation of volume?"

- To engage students in the mastery of content, every lesson within the 5E model of instructional units includes a glossary. The glossary activity provides students with developmentally appropriate, high-quality visuals for key content vocabulary. A visual and formal definition pops up when the student selects a vocabulary word. There is a speaker icon next to the vocabulary word that allows text-to-speech. This function will give students visual and auditory support as they work on mastering scientific vocabulary development. For example, in the category Organisms and Environments, Unit 2.13B, Structures and Behaviors of Animals Glossary, students clarify their own definitions of *claws*, *hibernate*, *wings* and *migrate* through observation, exploration, and inference opportunities within the digital, interactive glossary.
- Instruction Modules provide developmentally appropriate engagement in the mastery of the content. The Instruction Modules are digital, self-paced videos with features students control, such as a closed captioning option, an annotated feature, a repeat button, questions with wait time, and answers to questions that include multiple visuals. For example, in the Instruction module for Organisms and Environments Category, Unit 2.13D, Life Cycles of Butterflies and Frogs, students use the repeat button to replay information as needed to observe, read, and watch the life cycles of a frog video. Students use the closed caption feature to read and follow along with the video to recognize that the young ones do not resemble adult frogs. Using the "wait time" feature, students can also take their time when responding to questions.
- The materials engage students in the mastery of the content through various developmentally appropriate instructional approaches. During the lesson, "Seeing Sound," students engage in hands-on inquiry activities to engage with content. The students learn that sound is a type of energy that travels through the air and reaches their ears so that they can hear the sound. The students explore sound energy by taking turns banging on a metal pan with a metal spoon to see what sound energy does to rice placed on the pan. After the exploration, the students analyze their data. Students answer questions and use a Venn Diagram to compare and contrast how the volume affected the materials. They can sort by louder volume and quieter volume.

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

- The Implementation Strategies guide supports flexible grouping. The guide provides the teacher with different grouping options. The guide also includes suggested station activities for small groups or partners. For example, in the leveled reader 2.9A, "Sunny Conversations," students use text-to-speech accommodation to listen to the fluent reading of the text independently. Teachers can pair students to practice partner reading with a classmate.
- Additionally, the teacher can use the 2.13B, Structures and Behaviors of Animals, Quiz in "present" mode. The teacher can pull a small group or individual student who needs more support and discuss the question-and-answer choices. This activity allows the teacher to reinforce concepts and test-taking strategies.
- Materials consistently support flexible grouping (e.g., whole group, small group, partners, one-on-one). For example, in the Earth and Space Category, Unit 2.11A/B, Natural Resources, the Implementation Strategies document lists recommendations on how materials can support flexible grouping. Examples include the following:

  - The materials suggest teachers "have students discuss the phenomenon in small groups or pairs before facilitating whole group discussion to support ELL students as well as students requiring extra processing time or student talk."
  - The Instruction modules "can be used whole group or assigned virtually for small groups or individuals." For example, in category Earth and Space, Unit 2.11A/B, Natural Resources, the Instructional Module 2.11A/B can be used whole group or assigned for small groups or individuals to reinforce concepts such as identifying and distinguishing between natural and manmade resources.
  - Quizzes "can be used as a formal assessment, small group activity, or a whole group activity."
  - The interactivities "can be used as a review activity before an assessment, as a formal assessment, or as a small group activity. [They] can be assigned individually or whole group as well.
  - Lastly, teachers can use the readers in small groups, allowing students to practice reading while reinforcing the addressed science skills.
- The Hands-on Activities provide opportunities for flexible grouping. Teachers use guided instruction to work on content with children individually, in small or large groups. For example, in Unit 2.6B, Changes in Matter, the Activity "Physical Changes to Matter?" involves students working individually to analyze changes that will take place when they cut, fold, or bend paper or other items. Students draw a picture of the item and the physical transformation that the item went through. The teacher guides the reflection questions, including "What is a physical property? What happens when matter has a physical change, if a solid turns into a liquid, what might cause the physical change?"
- The materials support a variety of instructional groupings (e.g., whole group, small group, one-on-one). The "Sound You Can See" lesson involves exploring sound energy and what it can do. Students work in small groups to demonstrate how sound is produced. Each person takes a turn banging on the metal pan with the metal spoon. Students record their observations in the table and explain their findings. The students compare their completed Venn diagram with their lab partners and briefly discuss it. The students listen actively to others' explanations and engage respectfully in scientific discussion.

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

- Materials support multiple types of practices (e.g., guided, independent, group-work) and provide guidance and structures to achieve effective implementation. For example, in the interactivity 2.11AB, "Get Resourceful!" students identify and classify resources as natural and manmade resources. The teacher can have students complete this activity in groups, partners, or individually.
- The lesson design allows for a gradual release of responsibility structure. Lesson units start with an anchoring phenomenon. The anchoring phenomenon has a teacher version that guides the teacher in facilitating student-centered discussion. Next, the authors designed the Instruction Module as the direct-teach or whole-group component. Lastly, teachers can assign the word explorer, readers, simulations, and hands-on activities to students to complete collaboratively or independently, following the gradual release model of instruction. For example, in Unit 2.11A/B, Natural Resources, students start with the anchoring phenomenon video and direct teach/whole group questions to discuss the differences between natural and manmade resources. Students then complete an interactivity in which they distinguish between natural

and manmade resources. The teachers can have the students complete this activity independently or in groups.

- Materials that support multiple collaborative practices include Engineering Design Challenges and or Investigations. For example, in the Matter and Its Properties Category, Unit 2.6C, Physical Properties of Matter, Investigation Activity "Constructing a Table," students work in groups of 2-4 to build a 6-inch tall table using class materials to hold a cup containing 20 pennies.
- Under the Explore component of the 5E Model, there are activities in which the teacher guides the activity content to achieve effective implementation. In Unit 2.7A/B, Collisions and Changes in Motions, Activity "Strength of a Force," the teacher demonstrates safe lab practices and guides the activity by explaining the steps to complete the activity and guiding students' understanding of what happens when an object is in motion and what happens when the strength of a push or pull changes.
- The materials provide multiple types of practices (e.g., modeled, guided, collaborative, independent). During the lesson, "How's the Weather?- Field Study," the students collaborate in measuring, recording, and graphing weather information, including temperature and precipitation. The teacher takes the students outside to "Turn and talk with a classmate about the importance of staying safe outside while conducting science investigations." Then, on a sticky note, students write a safety rule they think is important. Then, "Students collaborate to devise a list of safety rules, then devise a plan for observing and documenting the weather."

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

- Unit readers represent a diversity of communities. For example, the leveled reader 2.1 to 2.4, "Mario Molina," showcases a famous scientist born in Mexico. Additionally, Interactivities represent different genders, cultures, and communities throughout the program. For example, in the Interactivity video 2.13D, "Costume Mayhem!" the characters are male and female, culturally diverse, short and tall, and have glasses and no glasses.
- The Reader provides a representation of diversity within the images of their texts. In Unit 2.6C, Selecting the Right Material, the text "The Class Project" by Ashlee Skelton shows a picture of a teacher with a diverse group of students.
- The materials represent a diversity of communities using images and information that are respectful and inclusive. The reader, "The Smith's Beach Trip" by Jennifer Roach, includes photos of a family of color.

EduSmart Science Grade 2

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.

- The ELPS Strategies document includes guidance for linguistic accommodations (communicated, sequenced, and scaffolded) commensurate with various levels of English language proficiency as defined by the ELPS. This document lists five components of Edusmart (Anchoring Phenomena, Instruction Modules, Hands-on Activities, Readers) and lists strategies and techniques teachers can use to scaffold instruction. In Unit 2.13, Animals Living in Groups, the teacher guides linguistic accommodations based on ELPS and grade level in the lesson "Animals Living in Groups." The teacher uses visuals and linguistic supports, partner reading, text-to-speech, paired reading, and Read aloud to model pronunciation and use of English Language Structures. Additionally, the ELPS guidance document offers suggestions for accommodating English Language Learners using the Anchoring Phenomenon, such as"Model pronunciation of social and academic vocabulary and allow wait time for response or reading."
- The ELPS Strategies Guide helps teachers provide effective instruction to emergent bilingual students and assists teachers in implementing the ELPS. This document lists five components of Edusmart (Anchoring Phenomena, Instruction Modules, Hands-on Activities, Readers) and lists strategies and techniques for scaffolding instruction. For example, accommodations for beginner language learners include the following: "allow the use of some language peer native language support, provide wait time, use gestures and movement, and provide clarification in their native language assistance from peers."
- The ELPS Strategies Guide helps teachers provide effective instruction to emergent bilingual students and assists teachers in implementing the ELPS. The materials include linguistic

accommodations commensurate with various levels of English language proficiency as defined by the ELPS. The program provides a document, EduSmart's ELPS Strategies K-2 The ELPS, designed to help teachers effectively instruct English Language Learners. The materials also provide students with sentence stems and single words for conversation. The sentence stems provided include those for beginner students, such as, "I wonder why…happened? What caused…to happen? What would happen if…?"

- The Implementation Strategies guidance document also offers guidance for linguistic accommodations. This document lists ELPS Skills (the TEKS calls these Language Domains) Speaking, Listening, Writing, and Reading. Each Language Domain includes a suggested activity for students to practice the domain.

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

- The Anchoring Phenomenon encourages strategic use of the student's first language. The Anchoring Phenomenon is a video that does not contain text or audio. The materials encourage teachers to let students discuss or ask questions in their native language and scaffold to English. Allowing students to engage in the activity in their first language will enable students to participate in science with a lower affective filter.
- The ELPS Strategies K-2 encourages using students' first language for beginner students in listening and writing. Listening strategies state, "Allow use of language peer native language support and provide clarification in their native language including assistance from peers." Writing strategies state, "Allow use of native language and drawing to express concepts."

EduSmart Science Grade 2

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 meet the criteria for this indicator. Materials 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.

- The materials provide a Caregiver Letter that explains the program's design, how teachers use it in the classroom, and how caregivers can use it at home to reinforce student learning. For example, the Caregiver Letter states that "the program is designed to provide a wide range of tools to help your student track their progress, such as an interactive dashboard that displays their scores and allows them to re-try any tricky assignments and together you can go over any question they did not understand if you choose to do so. This will help them understand their strengths and weaknesses and provide an idea of which topics they should focus on."
- The Caregiver Letter includes information about accessing different pieces of the materials to support their student. It states, "Your child can also access additional support materials, such as vocabulary practice, online digital labs, and interactive games, to help them further explore the content. Additionally, there are helpful tips and tricks to help them maximize their learning potential."

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

- The materials provide information to be shared with caregivers for how they can help reinforce student learning and development at home. The Caregiver Letter includes, "To get started, your student will need access to a computer with an internet connection. Once they have logged in to EduSmart through their school digital login, they will find a comprehensive library of activities, videos, quizzes, and games to support their learning. Your child can work through the learning content at their own pace or at the direction of their teacher through assignments in their

dashboard, allowing them to practice and review content as needed. Your child can also access additional support materials, such as vocabulary practice, online digital labs, and interactive games, to help them further explore the content." There are also helpful tips and tricks to help maximize their student's learning potential.

- The Caregiver Letter offers possible conversation starters that reinforce what the student has learned at school while involving the caregiver in their learning. Examples of possible conversation starters include, "What was your favorite thing that you learned in science today? How is… related to…? How would you describe…? How would you compare…and…? What was something new that you learned today? Was there anything you learned that confused you? Can you explain…to me? What was something you learned that surprised you? I don't understand…. Can you explain it to me?"
- The Hands-On Activities feature an at-home connection to help caregivers reinforce what the student has learned at school. For example, the Hands-On Activity for 2.4A, "Science and Innovation Medical Devices," has students ask their parents or caregivers about the medicines they took as a child, such as foul-tasting liquids, or medical devices, such as braces with headgear. The materials suggest having students compare their modern version of these objects with the version that parents, grandparents, or caregivers experienced.

Materials include information to guide teacher communications with caregivers.

- Materials include information to guide teacher communications with caregivers. The Teacher Communication Guide offers ways for teachers to communicate with caregivers. This document contains specific examples teachers can use to communicate with caregivers regarding their students' progress. The Guide lists suggested methods to help guide teacher communications with caregivers. The document includes four suggestions: download student reports from your dashboard to send home to caregivers, provide parents with access to their child's platform, keep student portfolios to showcase student work throughout the school year, and write classroom newsletters to keep caregivers informed about what is happening in the classroom.
- The materials include Progress Reports as an avenue for teachers to communicate with caregivers. The materials state, "Teachers can download student reports from the dashboard to send home to caregivers. This information will provide them with the student's academic progress and allow them to view which areas their students are progressing in or which areas they are still developing. "
- Parent Access is another avenue for teachers to communicate with caregivers. The materials state, "Providing parents with access to their child's platform is another great way to reinforce learning at home. Instruct parents that reviewing the Instructional Modules can help them understand concepts that are being taught as well as build communication between the caregiver and child about the learning that occurs. Caregivers can also use the Readers to engage in reading aloud to their child at home."
- The materials include Student Portfolios, a method teachers can use to communicate with caregivers. The materials state, "Student portfolios can be used to showcase student work throughout the school year. These portfolios can include work samples from the Engineering Design Challenges, data sheets from hands-on activities, or student answers from the 5-question probe at the end of the readers. These portfolios can be used to guide conversations with caregivers and also to provide specific examples of the student's areas of strength and areas for improvement."
- Additionally, the materials include Progress Reports as an avenue for teachers to communicate with caregivers. The materials state, "Teachers can download student reports from the

dashboard to send home to caregivers. This information will provide them with the academic progress of the student and allow them to view which areas their students are progressing in or which areas they are still developing."

EduSmart Science Grade 2

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 into 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.

Materials are accompanied by a TEKS-aligned Scope and Sequence outlining the order in which knowledge and skills are taught and built into 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.

- The materials include a TEKS-aligned Scope and Sequence that outlines the order in which the science TEKS can be taught over the course of the school year. It also shows when skills are revisited over the course of the entire year. The Scope and Sequence list the TEKS, possible activities, reporting categories, unit vocabulary, and essential questions.
- In the Scope and Sequence document, there is a strategic order and connection between the TEKS addressing scientific and engineering practices (SEPs), recurring themes and concepts (RTCs), and other reporting categories. For example, the lesson, Animal Structures Sort, covers the following TEKS: 2.1A, 2.1F, 2.2B, 2.3B, 2.3C, 2.5A, 2.5., and 2.13B.

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

- The Anchoring Phenomenon provides teachers with necessary background information as well as question prompts to help students make connections. For example, the Anchoring Phenomenon for TEKS 2.8(C), String Phones, provides teachers with the background information that students' voices vibrated the air inside of the cup, which in turn made the bottom of the cup vibrate. Additionally, information is provided that sound travels through the air but it travels even better through solids such as the cup and string, and this allows you to hear sounds (like a whisper) that might be too far away to hear through the air.

- The implementation of the Anchoring Phenomenon states that students should discuss the phenomenon in small groups or pairs before whole-group discussions. The suggested implementation for the Instructional Modules provides guidance that each Instructional Module has multiple breaks to facilitate student discussion.
- The instructional module Weather and Seasonal Change is an example of materials that provide guidance for facilitating student-made connections across the core concepts.
- The materials provide teacher guidance in the activity "Engineering Design Challenge: Can You Hear Me Now?" Students design and build a device using tools and materials that use sound to solve the problem of communicating over a distance. The students use the design challenge to explore how sound travels through different materials. This standard requires teachers to provide background information on sound, communication, tools, and materials. Students learn how sound is produced and travels through waves and how it can carry information for communication. They explore various tools and materials that can be used to create devices, such as string telephones or tin can phones, which utilize sound to enable communication over a distance. Teachers help guide students through problem-solving and design-thinking processes while fostering collaboration and presentation skills. The materials provide the following teacher guidance and instruction: "Explanation to share with students: Your voice vibrates the air inside of the cup, which in turn makes the bottom of the cup vibrate. The vibrations travel along the string and then into the bottom of your partner's cup, which makes the air inside of his or her cup vibrate and become a sound that can travel to your ear. Sound travels through the air, but it travels even better through solids such as the cup and string, and this allows you to hear sounds (like a whisper) that might be too far away to hear through the air."
- The Implementation Strategies document incorporates references to recurring themes and scientific engineering practices (SEPs). The information listed is detailed and specific for each lesson and grade level.

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

- Leveled Readers provide opportunities for students to practice knowledge and skills spiraled from previously learned content. For example, the reader for TEKS 2.6(B), Changes, allows students to apply previously learned knowledge from TEKS 2.6(A) (physical properties of matter). This practice of knowledge allows students to connect what they previously learned about the physical properties of matter to new knowledge about reversible and irreversible changes in matter.
- The Moving Earth lesson that covers TEKS 2.10(A), gives students the opportunity to use provided materials while observing and then investigating how wind and water affect the Earth's surface. This activity is used to spiral and review TEKS 2.7(B) Collisions and Changes in Motion. Students plan and conduct a descriptive investigation to demonstrate how the strength of a push and pull changes an object's motion.
- The Implementation Strategies references Interactivities which can be assigned as a spiraling activity for early finishers. For example, in the category, Matter and its Properties (TEKS 2.6A – Physical Properties of Matter), the Implementation Strategies document provides a Review, Reteach, and Spiraling Skills section with information on using Interactivities, Instruction Module Companions, and the Glossary to review and spiral skills.
- The materials provide some review and practice of knowledge and skills spiraled throughout the year to support mastery and retention. The Scope and Sequence documents are provided for each grade level. Within these documents, teachers can anticipate when standards will be

taught as well as what Scientific and Engineering Practice (SEP) TEKS and Recurring Themes and Concepts (RTC) TEKS will be addressed in each unit. This document allows teachers to view when these standards will be spiraled and addressed again. For example, the materials explore the force of a push and a pull during the lesson “Strength of a Force.” The students use what they know about force and motion and write a hypothesis for the question they will be investigating. The students follow the steps of the procedure to complete the investigation.

EduSmart Science Grade 2

Indicator 8.2

Materials include classroom implementation support for teachers and administrators.

1	Materials provide teacher guidance and recommendations for the 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.

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

- The Implementation Strategies Guide provides teacher guidance and recommendations for the use of all materials, including text, embedded technology, enrichment activities, research-based instructional strategies, and scaffolds to support and enhance student learning. It gives the teachers ideas to provide enrichment and scaffolding support as well as station activities.
- Materials use the 5E model of teaching, which guides teachers through the learning cycle for students: engagement, exploration, explanation, elaboration, and evaluation. Teachers can toggle to the 5E model by using the 5E icon in the top right corner of the content screen. Materials allow teachers to sequence their activities and lessons to scaffold and support student learning.
- The Content Library references direct instruction videos and online quizzes with embedded text-to-speech and language support. Teacher recommendations for using materials are included; for example, some activities say, “great for small-group instruction, small group, word walls, virtual instruction…”

- The materials include enrichment activities with guidance for teachers. These include hands-on activities, inquiry-based projects, and vocabulary building. For example, In 2.12(A) Physical Characteristics of Environments, Guess Who? Living in Environments, the students play Guess Who. The materials include Guess Who Cards (a set for each group) and Guess Who Options (a set for each group). The Safety measures state, “Be sure to keep your hands and other materials away from your mouth and face. Keep your work area clean and organized.” The Reflection questions state, “1. How do the characteristics of an environment affect which organisms can live there? 2. What types of living things live in the tundra environment? 3. What types of living things live in the rainforest environment? 4. What types of living things live in the desert environment?” The extension activity includes researching other living things that live in these environments. Students can also create a presentation or poster to share with the class. Additionally, they can play “Game on!” and make their own Guess Who game with other living things from these environments. Guess Who cards are provided.
- Materials provide teacher guidance on initiating an inquiry lesson. For example, in the Oak Tree Life Cycle, students investigate the following: have you ever wondered how trees grow? One way is when acorns are buried by squirrels. In this investigation, the students learn about the oak tree life cycle. The students explore how trees depend on other living things. “What do you think will happen if an acorn falls from a tree? Where will it go? How will it change?” The materials include a Materials Sequencing chart, pencil, and colors. The students complete research using websites, books, pictures, and colors (optional).

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

- Instructional Modules include lists of Standards and TEKS, and lessons provide cross-standard learning. For example, in the Instructional Module for TEKS 2.10(C), Severe Weather, students learn about different types of severe weather events such as a hurricane, tornados, or floods. Students also learn that some events are more likely than others in a given region.
- Materials include cross-content standards that explain the standards within the context of the grade level. Leveled readers that explain the scientific content include embedded English Language Arts and Reading Standards (ELAR). Students engage in reading about science and at the end take a five-question probe that asks both scientific questions and ELAR questions about the text. For example, for TEKS 2.6(A), the student explains how scientists use their senses to observe the physical properties of matter and use tools to measure them. They then take a five-question, developmentally appropriate probe that addresses science and ELAR standards. Teacher information on each reader includes the TEKS for both science and ELAR for correlation.
- The materials include science standards correlations for lessons and activities, and each unit includes an overview where the TEKS are aligned to each lesson. For example, the Teacher’s Guide Grade 2: Collisions and Changes in Motion lists TEKS 2.7: Force, Motion, and Energy. The student knows that forces cause changes in motion and position in everyday life. The student is expected to: A) explain how objects push on each other and may change shape when they touch or collide. B) plan and conduct a descriptive investigation to demonstrate how the strength of a push and pull changes an object’s motion.

EduSmart Science Grade 2

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

- Materials include a comprehensive list of all equipment and supplies needed to support instructional activities. Teacher guidance in the teacher's version of the hands-on activity lists all of the materials needed to complete the activity/lab with the students. For example, Do You See What I See 2.9(B), includes teacher guidance with instructions and the materials list to complete the activity. The Do You See What I See investigation and the Engineering Design Challenge: Can You Hear Me Now? includes a list of materials needed per small group. Additionally, the Supply List for Hands-on Activities document includes the consumables and non-consumable materials needed to support instructional activities across grade-level lessons.
- The materials include a list of all equipment and supplies required to support lab investigations. For example, the Engineering Design Challenge: Can You Hear Me Now? requires the following materials: various sizes of paper, plastic, and foam cups, a nail to poke a hole in the bottom of each cup (can be done by the teacher), string, yarn, ribbon, scissors to cut string or yarn (teacher can pre-cut string and yarn into 3-meter lengths), small paper clips, and a meter stick.

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

- Materials include guidance for safety practices including the grade-appropriate use of safety equipment during investigations. For example, the Instructional Modules (IM) for Scientific and Engineering Practices for standards 2.1 to 2.4, Safety and Scientific Processes, guides students through learning how to successfully conduct safe and appropriate science investigations using scientific processes.
- The Hands-on Activities section for each of the TEKS includes a lab safety poster. The poster can be used to provide guidance for safety practices. Some of the requirements include the following: Always wear safety goggles in the lab, do not touch anything without permission, always wear closed-toe shoes in the lab, no sandals, no food or drink in the lab, never use lab equipment without a teacher in the room, wash your hands before and after using the lab, never touch electric outlets, and listen to the teacher's instructions.
- Activities throughout provide a brief description of safety practices. For example, in category 2.12(A) Physical Characteristics of Environments under Safety, instructions state: "Make sure to keep your hands and other materials away from your mouth and face. Keep your work area clean and organized."

EduSmart Science Grade 2

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 the 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 Scope and Sequence suggests timelines and the number of days by reporting category, unit, and standard. These timelines allow teachers to cover the required Texas Essential Knowledge and Skills (TEKS) in a reasonable time frame yet remain flexible to provide on-time instruction to learners who need additional time to reach mastery on a topic or who have mastered a topic quickly and are ready to progress to the next sequential lesson.
- There is an expected time per component guideline included within the Implementation Strategies Document (ISD) and the Content Library Descriptions. The ISD supports scheduling considerations of components and activities.
- Materials support scheduling considerations. For example, ISD provides a short overview of using EduSmart resources and where to find activities for differentiation and alignment with the ELPS. For example, in 2.6(A) Physical Properties of Matter, under Instruction Modules, materials include direct instruction videos that average 8–12 minutes in length. These can be used for whole-group instruction or assigned virtually for small groups or individuals. Each video has multiple breaks to facilitate student discussion – whole class, Think-Pair-Share, or note-taking. When assigned virtually, the student must interact with the video after each break to continue it to reduce student inattention. The expected time for this activity is 10–15 minutes.
- The materials include guidance and recommendations on the required time for lessons. For example, the second-grade Scope and Sequence includes The Reporting Category, Earth and Space and the suggested length of days for the unit, Weather and the Water Cycle is 8–10 days.

EduSmart Science Grade 2

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

- The Scope and Sequence suggests timelines by reporting category, unit, and standard. For example, these timelines allow teachers to cover the required TEKS in a reasonable time frame yet remain flexible to provide on-time instruction to learners who need additional time to reach mastery on a topic or who have mastered a topic quickly and are ready to progress to the next sequential lesson.
- Teacher resource guides include strategic implementation instructions that provide teachers with suggested use for each component. The teacher implementation strategies documents give specific guidance on how the components can be used within the lesson cycle, as well as ideas for usage as intervention, remediation, or accelerated learning tools. For example, within the ISD, the Instructional Modules are directed to be used as the instruct-teach component. Additionally, the student quiz is suggested to be used as an extension of the Instructional Module to gauge student mastery. The progression of the activities and content within the ISD reflects a progression from direct instruction, guided learning, collaborative learning, independent mastery, and then possible station activities for enrichment or intervention. The sequence of the suggested content allows for appropriate developmental progression through the TEKS and content that must be taught within one school year. The documents also include details on component use for differentiation with multiple sub-populations of students, including special education, English language learners, dyslexia, ADHD, gifted and talented, and other necessary accommodations. These tools allow users to craft meaningful lesson plans within a flexible curriculum design to meet the needs of their learners.
- The Scope and Sequence guides the implementation of content following a developmental progression. The Learning Management System (LMS) landing page provides teachers with units on the three dimensions of science, which are called Learning Categories. Teachers can use the content of each Learning Category as they are or as a menu of resources to fit locally developed scope and sequences without disrupting the sequence of the content. For example, In the Learning Category, Matter and its Properties, Unit 2.6A Physical Properties of Matter, strategic implementation include a menu for teacher-facing resources and student-facing resources sequenced by an instructional module anchored in phenomena, an Interactivity, a hands-on investigation, access to a glossary and a reader, and an assessment.
- The Content Library is designed to allow for flexibility of content; however, the content library has a 5E filter that does guide the implementation of content following a developmental progression. The “5E Model” tab in each unit organizes the materials in a strategic sequence moving in the following order: Engage, Explore, Explain, Elaborate, Evaluate. The material also considers connections between the development of conceptual understanding, skill development, and Scientific and Engineering Practices (SEPs). Teachers can utilize the 5E model (Engage, Explore, Explain, Elaborate, Evaluate) for each standard. The 5E Model filter provides a specific order to teach a Student Expectation. The Engage phase includes an anchoring phenomenon. The Explore phase includes interactivities, simulations, engineering design challenges, and hands-on activities. The Explain phase includes instruction modules, companions, and student reviews. The Elaborate phase includes word explorers, journal entries, and readers. The Evaluate phase includes a quiz.
- The Scope and Sequence provides educators with an understanding of the content and the best order in which to cover topics to help students build understanding. For example, in 2.7(A)(B) Collisions and Changes in Motion, the guidance information states, “The student is expected to: explain how objects push on each other and may change shape when they touch or collide. Plan

and conduct a descriptive investigation to demonstrate how the strength of a push and pull changes an object's motion."

- The materials include guidance on the implementation that ensures the sequence of content is taught in order. For example, the materials include a guide that offers options for adjusting the time spent on particular units without disrupting the sequence of content. In the Scope and Sequence, the Reporting category is "Force, Motion, and Energy." The units begin with Collisions and Changes in Motion, then Sound. Each lists the suggested days, essential questions, TEKS, and possible activities.

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

- The Scope and Sequence suggests timelines by reporting category, unit, and standard. For example, these timelines allow teachers to cover the required TEKS in a reasonable time frame yet remain flexible to provide on-time instruction to learners who need additional time to reach mastery on a topic or who have mastered a topic quickly and are ready to progress to the next sequential lesson.
- The materials are designed to be flexible for teacher use and implementation. Teachers can choose which activities they wish to implement for grade-level content. This flexibility provides teachers with the autonomy to make their teaching their own while still offering support and scaffolds for students learning. For example, in the Anchoring Phenomenon, What Can Be Made With Bricks? TEKS 2.6C, teachers use different materials to prompt discussion. Teachers can intervene if needed to help with discussions.
- The Scope and Sequence provides a suggested pacing guide that allows materials to be covered within one school year. An example of how materials are flexible and can be completed in one school year is the organization of each unit of study. For example, the Changes in Matter unit of study is organized by materials that can be used for instruction, online activities, hands-on activities, vocabulary, literacy, and assessments. Teachers have the flexibility to choose among the different resources included for each.
- The materials provide lessons within Reporting Learning Categories that incorporate specific TEKS taught throughout the school year. Also, the Scope and Sequence provides flexibility to arrange and complete activities in a specific time frame. For example, in lesson 2.6(C) Selecting the Right Material – 2.6C, students demonstrate that small units, such as building blocks, can be combined or reassembled to form new objects for different purposes and explain the materials chosen based on their physical properties. The suggested SEPs connections include – 2.1A (ask questions based on observation); 2.1B (plan descriptive investigations); 2.1C (safe practices); 2.1F (record and organize data); 2.1G (develop and use models to solve the problem); 2.2A (identify advantages and limitations of models); 2.2B (analyze for features and patterns); 2.2C (math to compare objects); 2.2D (evaluate design); 2.3B (communicate explanations individually or collaboratively). The suggested RTCs connections include – 2.5D (examine parts or whole of systems model), 2.5F (describe the relationship of structure and function), and 2.5G (describe factors or conditions that cause change or stay the same).

EduSmart Science Grade 2

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.	No

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.

- The materials create a balance between providing enough information and allowing space for students to absorb and process the information being presented. By including an appropriate amount of white space, content can be broken up making it easier for students to read and understand. For example, Interactivity 2.9A, "Model-making," has an appropriate amount of white space, colored graphics, and a well-designed layout that makes it easier for students to focus on and learn from the content. Additionally, Glossary 2.9A, The Sun and the Moon, has an appropriate amount of white space and color and a well-designed layout that makes it easier for students to focus on and learn from the content.
- On page 2 of Investigation Activity 2.6C, "Construct a Table," students have to "make a list of the materials needed and provide explanations as to why [they] chose them based on physical properties."
- The materials include an appropriate amount of white space and a design that supports and does not distract from student learning. In Unit 2.13A, Structures of Plants, the Reader "Plant Parts" provides an adequate amount of white space around the text, the content is easy to read and it isn't distracting with overwhelming images. There is consistency in the number of sentences on each page and there is a read-out-loud option on the text that is highlighted in blue for easy tracking. Additionally, in Unit 2.10A, Earth and Space, the color in the Reader, "After the Rain," is used intentionally and consistently to guide the user through the content.
- The materials include an appropriate amount of white space and an overall design that does not distract from student learning. The lesson, "Moving Earth," 2.10A Erosion, includes white space around the text that makes the content easy to read and comprehend. Also, the margins, edges, and empty spaces around the content are consistent throughout digital materials. Most of the

digital materials are available to download as PDFs. There is also equal line height in body text, and adequate spacing between paragraphs as the materials change into a different section.

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

- The materials use pictures and graphics to enhance student learning and engagement without being visually distracting. Pictures and graphics support the content and engage students without overwhelming them. For younger students, simple and colorful images are used while realistic photographs and diagrams are utilized for older students. For example, Interactivity 2.9A, "Model-making," has age-appropriate pictures and graphics that make it easier for students to focus on and learn from the content. Additionally, Glossary 2.9A, The Sun and the Moon, has age-appropriate pictures and graphics that make it easier for students to focus on and learn from the content.
- The materials include age-appropriate pictures and graphics that support student learning and engagement. For example, in Unit 2.5F Structure and Function, the Reader, "Lily's Adventure," uses photos and pictures with simple labels to help students see important features. The materials show and explain the structure of ants, giraffes, and ducks. The materials embed age-appropriate pictures and graphics that support student learning and engagement without being visually distracting.
- The materials include age-appropriate pictures and graphics that support student learning and engagement through digital materials, such as the Reader "Light from the Sun and Moon," a digital text in which students can follow along with age-sensing images and a clear understanding of the content. The text contains age and real-life pictures and graphics for the student's learning flow.
- There is a lack of consistency in fonts. The font style for the letter 'a' is used inconsistently between Interactivities and investigations. For example, Interactivity 2.6A, "Physical Properties of Matter," uses a different font for the letter 'a' throughout, and a different font type in Investigation 2.6A, "Properties of Matter."

Materials include digital components that are free of technical errors.

- Materials include digital components free of technical errors, including spelling, grammar, and punctuation errors and wrong answers to problems.
    - For example, Reader 2.12A, "Coping with Seasonal Change," and Quiz 2.10C, Severe Weather, are free of spelling, grammar, and punctuation errors and free of wrong answers to problems.
    - The Reader "Rocks" provides a digital text that uses correct use of upper case and lower case, commas, punctuation rules, correct spelling, and text alignment.
    - In Unit 2.13D, Life Cycles of Butterflies and Frogs, the lesson "Investigating Animal Life Cycles," is free of spelling, grammar, and punctuation errors. It is free of inaccurate content materials or information. The materials are free of wrong answer sheets to problems.

EduSmart Science Grade 2

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 the 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 the 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 into the educational design to support student learning and engagement. The interactivity components are purposefully designed and align with the learning objectives as outlined in the TEKS. For example, the interactivity for 2.6A, "Physical Properties of Matter," and the interactive glossary for 2.6A, Physical Properties of Matter, are easy to use and navigate while not distracting from the content or target learning objective.
- Materials integrate digital technology and tools for students to engage and expand their knowledge. For example, the Instructional Module for 2.6A, Physical Properties of Matter, includes an interactive video lesson to help students demonstrate and explain that matter has physical properties and to determine how it is described, classified, and used.
- The materials integrate digital technology and tools that support student learning and engagement. Student digital components include embedded tools such as text-to-speech, a Glossary, annotations, Readers, and Anchoring Phenomenon videos. For example, the Glossary for 1.11B/C, Water Conservation, includes text-to-speech as the students click on the words *conserve*, *natural resources*, and *water,* and the words are read and defined out loud for them.

EduSmart Science Grade 2

Materials integrate digital technology in ways that support student engagement with the 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 and help students apply the material they are learning. For example, the interactivity for 2.6C, "Building a System," allows students to digitally combine different materials to perform certain functions. Additionally, Interactivity 2.1 to 2.4, "Tools Scientists Use," allows students to use a drag-and-drop feature to identify tools that are used by types of scientists, and the digitally interactive Glossary for 2.13C, Animals Living in Groups, provides opportunities for students to learn the meaning of new scientific words. In these digital activities, students are able to access concepts in new ways which can develop a deeper understanding of the material and its real-world applications as well as allow students to make connections to recurring themes and concepts.
- The materials integrate digital technology in ways that support student engagement with science and engineering practices, recurring themes and concepts, and grade-level content. The materials provide opportunities for students to obtain, evaluate, and communicate information using digital tools. The Instruction Module for 2.6A, Solid, Liquid, and Gas, is interactive. There are questions asked throughout the video and students use the provided marking tools to circle the correct answer. For example, the lesson asks the students, "How do you think water is different from wood?" The lesson also includes an interactive whiteboard activity.

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

- Materials integrate digital technology that provides opportunities for teachers to collaborate with one another. Through the use of a digital platform, teachers are able to collaborate with other teachers regardless of their physical location. For example, in the Workspace area through the use of live lessons, teachers can collaborate with one another in real-time. Additionally, the Workspace area has a shared assignment tab. There is no evidence of Teacher Guidance on how to access or use this feature. There is no evidence of opportunities for students to collaborate digitally.
- Through the use of their digital platform, EduSmart features a lesson-sharing option that allows teachers to collaborate with one another on designing lessons. To get to this feature, the teacher will click on the Workspace link located at the top of the platform. Then click on the Assignments Tab. Once a teacher selects assignments for their class, the teacher can share them by clicking on the Share with Teachers icon located to the right of the assignment. Teachers can share through the EduSmart platform or they can copy assignment URLs.
- The materials integrate digital technology that provides opportunities for teachers to collaborate. The section labeled "Workspace" includes sections to upload live lessons, create assignments, share live lessons, and share assignments. There is no evidence of Teacher Guidance on how to use this feature to collaborate with other teachers. There is no evidence of opportunities for students to collaborate digitally.

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

- EduSmart's digital technology is compatible with a variety of learning management systems. The assignment URL can also be copied to assign to students through a different platform. Additionally, the student assignments can be shared to Google Classroom and LMSs like

Blackboard, Canva, and Schoology. When a teacher clicks on the Workspace link, Assignments Tab, and then the Assign Icon on the right, three options for sharing with students are available: Assign on EduSmart Platform, Copy Assignment URL, and Share to Google Classroom. LMSs like Canva, Blackboard, and Schoology could use the URLs.

EduSmart Science Grade 2

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.

- The digital technology materials and online components align with the scope and approach to science knowledge and skills progression as outlined in the TEKS. For example, in 2.11A/B, "Get Resourceful!" and in 2.13A, "Animal and Plant Adaptations," the content focuses on the scientific method and inquiry skills that are supported with online components like the Interactivities that provide students the opportunity to collect and analyze data or conduct virtual experiments.
- Digital technology and online components align with the scope and approach to science knowledge and skills progression. In the Scope and Sequence Document, the column "Possible Activities" lists all the digital and online activities per concept unit.
- Digital technology and online components are developmentally appropriate for the grade level. The Readers include a read-aloud feature that allows students to modulate their reading experience. For example, Reader 2.13D, "Life Cycles of Butterflies," includes a read-aloud feature that allows students to slow down or speed up the rate of speech.

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

- The Implementation Strategies document provides teacher guidance on the use of embedded technology to support and enhance student learning. Each technology component includes

guidance for the teacher on how that specific component can be presented and used in their instruction to support and enhance student learning. For example, the document states, "Quizzes feature text-to-speech accommodation when assigned online. For each question, there is a speaker icon at the top left below the question number. Students may press this icon to have the question read to them and there is a speaker icon for the answer choices. For each of the questions, the correlating standard is listed below the question number for teacher reference. " The implementation document also provides information about the interactive glossary feature of the materials. The guide states, "When the student selects a vocabulary word, a visual and the formal definition pops up. There is a speaker icon next to the vocabulary word that allows text-to-speech. This allows students to have a visual to support their scientific vocabulary development."

- The Implementation Strategies document provides teacher guidance on the use of embedded technology to support and enhance student learning. For example, the document states, "The reader features text-to-speech accommodations for students located at the top right corner of the screen. The students can also adjust the text size, color of the images, and color overlays by using the accommodation toolbar on the top right. At the end of these readers, there is a 5-question probe addressing scientific concepts and ELAR standards. The readers can be assigned individually, in small groups, or whole groups. Students can partner read in a station or listen to the reading online."
- The Implementation Strategies document provides teacher guidance on the use of embedded technology to support and enhance student learning. For example, the guidance for teachers on the use of interactivities includes, "The interactivity can be used as a review activity before an assessment, as a formal assessment, or as a small group activity. It can be assigned individually or whole group as well." The Home tab on the top of the platform includes a video named "Teaching with Live Lessons," which guides teachers on how to create playlists that can be used during asynchronous learning.

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

- The materials are accessible regardless of physical location. This allows students to access materials at home and provides parents and caregivers the opportunity to access the content to support student engagement. For example, the Caregiver Letter states, "To get started, your student will need access to a computer with an internet connection. Once they have logged in to EduSmart through their school digital login, they will find a comprehensive library of activities, videos, quizzes, and games to support their learning. Your child can work through the learning content at their own pace or at the direction of their teacher through assignments in their dashboard, allowing them to practice and review content as needed." The Caregiver Letter also states, "We would love to invite you to be part of this learning process. Students can access their EduSmart dashboard from home by going to https://lms.edusmart.com/ and using their usernames and passwords to log in. Your students' login information is below. Username: _____ Password: _____."
- Materials are available to parents and caregivers through EduSmart's online learning platform. This design allows parents and caregivers the opportunity to access the content to support student engagement at home. A letter to parents/caregivers is found in the Help link on the top of the Home page of the platform. The letter guides parents on how to access student materials and possible questions that parents can ask to reinforce the content that students are learning.

Sample questions include, "How would you compare…and…? What was something new that you learned today?"