

# EduSmart Science Grade 4

## EduSmart Science Grade 4 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 3	100%	100%	100%	100%
Grade 4	100%	100%	100%	100%
Grade 5	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.

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- 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 some 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.

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## 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.

- Materials provide teachers with multiple hands-on activities for students to develop, practice, and master grade-level SEPs. For example, in the activity Collecting, Recording, and Analyzing Information Using Tools, students “collect, record, and analyze information using various tools and work cooperatively to solve problems using critical thinking and logical reasoning.”
- The Engineering Design Challenge gives students a performance task aligned with the TEKS they are exploring. Students have the opportunity, through discussion or redesign, to improve their design or conclusion based on what was discovered during the design challenge.

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

- A scope and sequence document includes a TEKS column for each student expectation. It includes a list of suggested Recurring Themes and Concepts (RTC) connections under each student expectation. The outline shows what the recurring theme is and which TEKS it correlates with.
- Within the grade 4 materials, a Recurring Themes and Concepts (RTC) learning category provides opportunities for connections between and within overarching concepts and recurring themes. The instruction module in the RTC category highlights the specific vocabulary and overarching concepts. Teachers implement the suggested RTC connections found in the TEKS column of the Scope and Sequence. For each unit, teachers utilize the suggested RTC connections to plan for using materials that provide students with multiple opportunities to make connections between and within overarching concepts using recurring themes.
- For the reporting category Recurring Themes and Concepts, outlined in the Scope and Sequence, materials provide teachers with an instruction module and reader for each of the recurring themes. Using these activities, teachers introduce students to overarching concepts that they make connections to throughout the year.

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

- The Teacher Implementation Guide gives educators materials strategically and systematically developed for students. The Implementation Guide gives directions on how to use the modules for students to ensure a systematic approach for educators.
- The scope and sequence document organizes the TEKS by reporting category and standard. Each reporting category is broken down into units which, if followed, allow teachers to systematically develop students' knowledge and skills as outlined in the TEKS. For example, the grade 4 reporting category Matter and Energy is organized into units that systematically develop from TEKS 4.6A to 4.6C.
- The Teacher's Guide provides educators with an overview document highlighting the TEKS, background information, prerequisite knowledge needed, common misconceptions, and essential questions for educators. This helps to support the systematically and strategically developed content knowledge.
- Materials provide teachers with an instructional module, instructional module companion, and student review for each standard. These materials allow teachers to strategically introduce and systematically develop content knowledge as outlined in the TEKS.
- A Content Library Descriptions and Possible Implementation Strategies Grades 3–5 document includes "Differentiation" and "Review, Reteach, and Spiraling Skills for Mastery and Retention" to strategically and systematically develop students' content knowledge and skills.

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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 an opportunity for students to participate in an Engineering Design Challenge for each TEKS. Across the materials, these challenges provide opportunities for students to ask questions, plan, and engage in problem-solving while making connections across disciplines.
- For example, the module for 4.7A, Forces of an Object, allows students to participate in Engineering Design Challenge: A Soft Landing, where they “make a parachute that will allow an object to fall to the ground slowly,” utilizing the specific materials given.
- Hands-on Activities for each Student Expectation provide multiple opportunities for students to ask questions and plan and conduct classroom, laboratory, and field investigations and engage in problem-solving and develop an understanding of science concepts. Materials provide teachers with at least one hands-on activity for every standard. For example, in the grade 4 activity Measuring the Temperature of Pure Water and Salt Water, students “determine if adding salt to water affects the time it takes to make the water boil.”

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## 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 provide teachers with instruction modules, interactivities, and hands-on activities that embed anchoring phenomena in introducing concepts to support students in constructing, building, and developing knowledge through authentic application and performance of SEPs, RTCs, and grade-level content as outlined in the TEKS. For example, in the grade 4 activity for standard 4.7(A), "Engineering Design Challenge: A Soft Landing," students design and conduct an investigation on the force of gravity, which was introduced as the anchoring phenomenon. Additionally, the grade 4 Engineering and Design modules give students access to the "Engineering Design Challenge: Earthworms to the Rescue!" Students "design a plan and build an earthworm recycling bin for classroom or home use." The Engineering Design Challenge gives students success criteria they can utilize to build and reevaluate.
- Each instructional module embeds phenomena and problems to support students in developing and constructing knowledge. The modules present real-world scenarios that allow students to solve problems through the authentic application of SEPs, RTCs, and content knowledge.

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Materials provide an Instructional Module Companion to help teachers guide students through the rooted phenomena. For example, the instructional Module Companion for Resources Stored in Rocks, the correlating document for the Instructional Module for 4.11(C), has students use a graphic organizer to describe each stage of oil and natural gas formation and extraction.

- The Anchoring Phenomenon comes in a video format for the instruction module. This highlights the connection for students and gives them a firm anchor and visual for the content knowledge. Teacher materials for the videos include guiding questions to ask students while observing the phenomenon. For example, the “Gravity” video engages students in observing a boy tossing a soccer ball into the air and the force of gravity causing the ball to fall back down.

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

- Materials provide teachers with the Vertical Alignment K–5 document, which gives them information about the expectation for mastery of each standard. This supports teachers in activating students’ prior knowledge and experiences related to phenomena and engineering problems.
- Materials allow for different entry points to learning related to phenomena and engineering problems. The modules provide instructional videos for students that give them a solid understanding of grade-level content. For example, grade 4 materials make a video titled “Forces on an Object” with an instructional component titled “What Can Force Do?” accessible to students.
- Materials include Engineering and Design Challenges intended to be used as capstone activities for intentionally leveraging students’ prior learning and allowing students to collaborate in designing solutions to authentic, real-world problems. Additionally, these activities reinforce and extend key concepts and promote teamwork, creativity, and communication. Through the Engineering and Design Challenges, students actively participate in the engineering design process and scientific practices.
- Each unit includes a unit Teacher Guide with a section titled “Knowledge.” Here, teachers will gain insight into their prior knowledge of the anchoring phenomena and engineering problems. For example, the Grade 4 Unit Teacher Guide for “Recognizing Patterns of Change” states, “Prior to this year, students identified events with repeating patterns, including seasons of the year, and day and night. They are able to describe and illustrate objects in the sky, such as clouds, the Moon, and stars, including the Sun. Students have observed and recorded changes in the appearance of objects in the sky, including clouds, the Moon, and stars, and the movement in the sky of the Sun during the day and of the Moon during the month. They have also constructed models that demonstrate the relationship of the Sun, Earth, and Moon.”

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

- The materials clearly outline the scientific concepts and learning goals behind each engineering problem presented to students. For example, teacher guidance for the grade 4 “Engineering Design Challenge: Earthworms to the Rescue!” includes the following goal for the teacher within the performance task, located within the Success Criteria component: “Each group will explain their design and tell others why they think their material(s) will work best with other design teams. Their goals are to inform and persuade the audience that their design solution is the best solution to the problem presented in the challenge. Remind them to engage respectfully in

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scientific argumentation using scientific explanations and evidence. They will also demonstrate their model product for feedback so they can redesign and improve their model.”

- The hands-on activity modules also provide teachers with information on the goal behind each investigation. For example, the module “Harnessing the Wind” has a teacher version highlighting and outlining the learning that should occur during the investigation.



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## 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

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

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

Evidence includes but is not limited to:

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

- The K–5 Vertical Alignment Document outlines how knowledge and skills are built and connected within and across grade levels. The vertical alignment document shows how the TEKS are taught systematically throughout the grade levels. Teachers are given the TEKS taught to their students prior to entering their grade and the expected standards for mastery beyond their grade level. Each TEKS is then clustered into units of study that align and are showcased. Utilizing this document teachers will ensure students build and connect knowledge across grade levels.
- Grade 4 materials contain a unit teacher guide titled “Transfer of Energy” in which background information, prerequisite knowledge, and common misconceptions are summarized. This allows the teacher to facilitate connections between grade levels. Unit Teacher Guides include a Prerequisite Knowledge section that describes what students learned prior to the current unit. The teacher guide highlights the vertical alignment of student knowledge. Materials give teachers a description of the background knowledge and the text states where students should be going with their thinking and what knowledge students will begin developing for the future. This also highlights prerequisite skills that students need to have in order to be successful in this unit. These items give an educator the full spectrum of vertical understanding.

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- The Scope and Sequence explicitly state knowledge and skills within and across units of study. The Scope and Sequence notes the specific TEKS that is being addressed which includes the knowledge and skills required for mastery. For example, for TEKS 4.7(A), the knowledge and skills state that "The student knows the nature of forces and the patterns of their interactions." Additionally, the specific breakout within the Scope and Sequence states "plan and conduct descriptive investigations to explore the patterns of forces such as gravity, friction, or magnetism in contact or at a distance of an object."
- Teachers will utilize the anchoring phenomena for each standard to launch learning in a way that activates or builds on prior knowledge before explicit teaching occurs. For example, the anchoring phenomena activity for 4.12A, "Feed Me" shows students an example of photosynthesis and provides teachers with prompting questions to activate prior knowledge. This is then intentionally sequenced into the instructional module for 4.12A where students, "Understand that plants are called producers because they can make their own food through photosynthesis, using sunlight, water, and carbon dioxide. They learn how this process results in the cycling of matter in the form of carbon dioxide and oxygen."
- Teachers will guide students to complete the instructional module companion in conjunction with the correlating instructional module. Materials state that, "The IM Companion utilizes student activities to scaffold the video-formatted concepts covered in the Instruction Module. These student activities include a note-taking guide, a graphic organizer, and a journal prompt."
- The implementation strategies provide educators with content that intentionally sequences learning for each unit. The content allows for deeper understanding with specific learning components, such as the digital lab simulations and student journaling. Grade 4 students begin density exploration through an instructional module where the density of different materials is introduced and represented. Learning through the instructional module is scaffolded with a student note-taking guide sheet.

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

- The Scope and Sequence document guides teachers with a clear and concise road map that accurately presents grade-level-specific core concepts, recurring themes and concepts, and science and engineering practices. Following this document, teachers will ensure that their students are being instructed on each of the required standards through the course of the school year. The Scope and Sequence document accurately presents grade-level-specific concepts in both recurring themes along with science and engineering practices. The Scope and Sequence clearly highlights the concepts independently as an introduction; however, each unit has possible connections for educators to help facilitate understanding.
- Following the 5E implementation structure (Engage, Explore, Explain, Elaborate, Evaluate) teachers will ensure their students are clearly and accurately presented with grade-level-specific core concepts, recurring themes and concepts, and science and engineering practices. During the Engage phase of instruction, students are introduced to the anchoring phenomena which activate prior knowledge. They then move on to the Explore phase where they take part in hands-on activities and computer simulations to investigate the phenomena introduced prior. For example, in the student investigation "Comparing Mixtures and Solutions" students ask questions to decide how materials dissolve in one another. Students gather and extend their knowledge through data collection, analysis, and exploration. The Explain phase then provides concrete instruction on the concepts introduced in the first two phases. During the Elaborate phase, students are provided with activities that build and deepen their knowledge of core

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concepts. For example, the student journal activity “Weather or Climate” requires students to analyze scientific data to draw conclusions. The questioning scenario is based on naturally occurring grade-level-appropriate phenomena. Lastly, the Evaluate phase provides teachers with a quiz to evaluate student mastery.

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

- Teachers can utilize the vertical alignment document which clearly defines the boundaries of content that students must master for each grade level. For example, in Grade 3 standard 3.2D students are expected to, “Evaluate a design or object using criteria.” For Grade 4 standard 4.2D students are expected to, “Evaluate a design or object using criteria to determine if it works as intended.” Lastly, in Grade 5 standard 5.2D students must, “Evaluate experimental and engineering designs.”
- Teachers are provided with a unit guide for each standard. In this guide, teachers will find a specific learning target for each unit. For example in the Grade 4 unit guide for 4.7A students are expected to, “plan and conduct descriptive investigations to explore the patterns of forces such as gravity, friction, or magnetism in contact or at a distance on an object.”
- Grade 4 EduSmart quizzes are available for each core content standard in print and online format to allow practice for mastery of the materials. The materials provide a module quiz for teachers to use to establish mastery of content for students. The Assessment module provides educators with a PDF quiz that supports TEKS mastery. For example, Engineering Design Challenge “A Soft Landing” assesses student mastery with a performance task, design model and analysis, and a mastery rubric.

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## 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 science 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 science 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 science and engineering practices.

- The Scope and Sequence provide teachers with a horizontal and vertical alignment of the grade-level TEKS with the embedded connection of the recurring themes and science and engineering practices. The embedded connections are placed within each unit of study. This highlights clear connections for educators to use. The curriculum builds coherently across lessons and units increasing in complexity throughout the year. The Scope and Sequence document includes unit TEKS, essential questions, and possible activities which support teachers in understanding the alignment of grade-level content.
- The K–5 Vertical Alignment Document supports teachers in understanding how new learning connects to previous and future knowledge. Utilizing this document will allow teachers to ensure they are building on student knowledge and setting them up to successfully master future content.
- The Unit Teacher Guide provides educators with background knowledge of the TEKS showcasing the vertical alignment of content knowledge and specific understanding for students. The Unit Teacher Guide provides a background knowledge section, a prerequisite skill section, and an essential questions section that supports recurring themes and SEPs. For example, the Unit Teacher Guide “Recognizing Patterns of Change” supports teachers in understanding the vertical

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alignment of the content through a summary of background information, prerequisite knowledge, and common misconceptions. Essential questions support teachers in understanding grade-level content and recurring themes and concepts.

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 Anchoring Phenomenon teacher version highlights background knowledge that the teacher can preview before the lesson. The material provides a “More Information Section” that further supports the explanation through examples of the science concepts being learned by students.
- A Unit Teacher Guide for each student's expectation provides background information, prerequisite knowledge, essential questions, and common misconceptions for each concept. Teachers can locate background knowledge for each standard which includes overviews of the scientific content learned and the overall goal of the standard to support teacher content knowledge. For example the Grade 4 Unit Teacher Guide for standard 4.6C states, “This unit teaches students that no matter what type of mixture is formed, the total mass of the mixture is the sum of the mass of the materials in the mixture. The amount of matter is conserved in all mixtures, including solutions, even if some of the material seems to vanish (dissolving).” Teachers can locate common misconceptions for each standard in the correlating Unit Teacher Guide. This information provides teachers with common grade-level misconceptions that are barriers to students' conceptual development. For example the Grade 4 Unit Teacher Guide for standard 4.6C states, “Students may struggle with understanding that matter is conserved even in solutions because the particles of the materials that are dissolved are no longer visible. Allowing students to measure the mass of the materials before and after they are mixed and comparing them can help to dispel this misconception.”

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

- The Grades 3–5 Content Library Descriptions and Possible Implementation Strategies document explain the intent and purpose of the instructional design, offering multiple pathways for lesson implementation. Furthermore, this guide gives detailed descriptions of the intended goal of each material. The document explains the purpose of and how to implement Anchoring Phenomenon, Instruction Modules, Instruction Module Companions, Student Reviews, Quizzes, Interactivities, Simulations, Work Explorers, Activities, Journal Prompts, and Readers.
- The Grade 4 Scope and Sequence document explains the instructional design of the program by including possible activities, vocabulary, and essential questions for each unit of study. The Scope and Sequence Document provides teachers with the instructional design of the program. It gives teachers a framework for the sequence of standards that are intended to be taught to maximize student development. However, this document does not provide teachers with a specific purpose or rationale for the organization of the materials or explain the main intent or goals of the program as a whole. The Scope and Sequence provide teachers with the instructional design of the program and how TEKS are integrated into the unit modules. The materials provide a strong framework for teachers to support the intent and purpose.
- The Content Library Descriptions and Possible Implementation Strategies Grades 3–5 provide teachers with a “short overview of how to use EduSmart resources as well as where to find activities for differentiation and alignment to the ELPS.” However, this document does not

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provide teachers with a specific purpose or rationale for the organization of materials or explain the main intent or goals of the program as a whole.

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## 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.

- Grade 4 materials consistently support students' meaningful sensemaking through readers that accompany each standard. The leveled readers allow students to think, write and discuss the content they are learning. This is evident in the Organisms and Environments module; specifically TEKS 4.12B Food Webs where students can read the article "Aquatic Foods" and write about what clues can help differentiate between phytoplankton and zooplankton. Each reader is accompanied by a five-question probe for students to explain their knowledge of the text in both multiple-choice and written format.
- The engineering design challenge supports students' meaningful sensemaking of the content through acting as a scientist and engineers. The materials in the Engineering Design module provide students and teachers with the design challenge "A Soft Landing." Students use what they have learned about gravity and forces to develop a parachute that safely delivers an astronaut back to Earth.

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- Materials consistently support students' meaningful sensemaking through writing because each student's expectation includes an Instruction Module Companion with a journal prompt that integrates writing with science.

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

- The instructional modules and the instructional module companion allow students to engage with the grade-level texts and content. Students use the companion to follow the video module to help further their understanding of the concepts being taught. The student review videos provide visuals, text, and interactive components to develop student understanding.
- For each standard, students are provided with a WordExplorer to help them develop their understanding of the topic. The WordExplorer is a “list of the scientific terms used in the Instruction Module, along with their definitions. The combined use of text, audio, and visual descriptions help students understand and retain the words and their meanings.” Teachers can assign the WordExplorer as they see fit to support or extend student development.
- The leveled readers allow students to engage in grade-level appropriate texts. This supports their learning and gathers evidence in a real-world setting that will help them fully understand the concepts being learned. In the reader "Eddie the Eagle," students write conclusions about forces after reading about TEK 4.7A.

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 students with a journal activity for each standard where students communicate their understanding of the topic through writing. The journal materials state that “After viewing the Instruction Modules, students apply their knowledge and understanding to respond to open-ended, higher order thinking questions.” The journal activity for each standard supports students in developing and displaying an understanding of scientific concepts. For example, in the "Measuring Physical Properties," journal, students analyze an investigation to write conclusions about density and compare and contrast physical properties.
- Materials provide students with an IM Companion for each Instructional Module in which they will be able to communicate their thinking in a graphic mode. Materials state that “the IM Companion utilizes student activities to scaffold the video-formatted concepts covered in the Instruction Module. These student activities include a note-taking guide, a graphic organizer, and a journal prompt.” The IM Companion supports 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.

- For each standard students will work to complete multiple hands-on activities. These activities are, “inquiry-based hands-on labs, investigations, application, practice, and research, and include background information and step-by-step directions.” These are student-led activities where students will engage in productive struggle with their classmates while acting as scientists and engineers. For example, the materials contain a student field investigation, allowing



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students to act as scientists engaging in phenomena while making sense of concepts through productive struggle. In "How Do a Plant's Structures Help it Survive?" students collect field samples representing the structures of plants that help them survive.

- Students participate in two engineering and design challenges during the school year. These challenges serve as a “capstone activity that effectively leverages students’ prior knowledge and provides an opportunity for students to collaborate in designing solutions to authentic real-world problems” as stated in the implementation strategies. Each challenge supports students as practitioners as they productively struggle together to design complex solutions. Students design a possible solution to a problem directly related to the content they are learning.

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## 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.**

- The hands-on activity provides students the opportunity to conduct an investigation or experiment that requires an observation to take place. Students are then prompted to use their evidence to support their hypotheses or claim from the beginning of the activity. For example, in the Grade 4 activity 4.6A "Measuring the Temperature of Pure Water and Saltwater," students measure the amount of time it takes for pure water and saltwater to reach 100 degrees Celsius and record the results. They then use the evidence gathered to answer the following question, "Based on your observations, what can you infer about the time it takes to heat pure water and salt water?"
- Students use data from simulations to support their CER (Claim, Evidence, Reasoning) statements and are provided with guiding prompts that develop students' ability to use evidence to support their thinking. For example, in the Grade 4 simulation for standard 4.7A "Temperature's Effect on Magnetic Force," students will complete a claim, evidence, and reasoning table that accompanies the simulation. For each field of the table, students are prompted on how to organize their CER statement.

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- The student journal gives students an opportunity to support their hypothesis or claim by providing open-ended questioning. The student then applies their knowledge and skills of the content to support their thoughts with evidence.

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

- Materials include an Instructional Module Companion, containing embedded opportunities to develop and utilize scientific vocabulary in context. The IM Companion for each standard includes fill-in-the-blank, graphic organizers, and visual representations of vocabulary providing students with multiple representations of key scientific terms. The student activities include a note-taking guide, a graphic organizer, and a journal prompt.
- Materials include a student review interactivity with embedded opportunities to develop and utilize scientific vocabulary in context. Students assess and review their understanding of the science concepts and ideas presented in the Instruction Module through interactive video clips and a review of scientific vocabulary with feedback.
- EduSmart materials provide students with a WordExplorer for each standard. The WordExplorer “is a list of the scientific terms used in the Instruction Modules, along with their definitions. The combined use of text, audio, and visual descriptions help students understand and retain the words and their meanings.” Vocabulary is given in context and allows students to interact with it digitally. Students are given words based on the unit of study that they are currently learning about. WordExplorers provide multi-part (visual literacy, textual facts, and cloze activity) vocabulary practice toward mastery of all vocabulary related to a topic.

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

- The Instructional Modules for each standard have embedded discussion questions with pauses and time for the teacher to facilitate a classroom discussion. These IM discussions allow students to develop how to take part in productive argumentation and discourse within the learning cycle.
- Students participate in two engineering and design challenges throughout the instructional cycle. The challenges provide students with the opportunity to work in groups and complete a task that could have multiple solutions. While participating in this activity, students are prompted to discuss and productively argue with their team for a desired outcome. This discourse will be student-led and build off the skills developed through teacher-facilitated discourse. For example, in the 4.12B Engineering Design Challenge, “Earthworms to the Rescue!”, students work as a team to design a plan and build an earthworm recycling bin for classroom or home use.
- Anchoring Phenomenon provides students with an open-ended question about a phenomenon that happens in the natural world. Students then can argue through discourse and develop their understanding of the content through discussion and critical thinking.

## EduSmart Science Grade 4

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

- For each Simulation activity students participate in, they will complete an accompanying CER (Claim, Evidence, Reasoning) statement. This allows students to develop their ability to construct a coherent written argument. Following the CER model, students will justify their argument utilizing evidence gathered during the simulation.
- The Engineering and Design Challenge students participate in provides multiple opportunities to construct and present developmentally appropriate verbal arguments. The arguments will justify explanations of the findings or results of their design challenge. Materials also provide teachers with criteria for assessing student ability to present their arguments coherently. In 4.12 B, Earthworms to the Rescue, students inform and persuade a student audience that their design is conducive to effective composting.
- Anchoring Phenomenon allows students to look at a phenomenon that happens in the natural world and discuss with their class or partners their justification or explanation for their thinking. Students use the content knowledge they have acquired and their experiences throughout the unit to help them with their thinking and verbal or written arguments.
- Journal Prompts allow students to develop written communication skills as they reflect on their learning, connect scientific principles to real-life scenarios, and demonstrate their grasp of scientific ideas. In 4.13A, How do a Plant's Structures Help it Survive? - Field Study, students make a chart to organize and share information with others. They must include the plant they observed, descriptions of its structures, and how those structures help the plant survive in its environment.

# EduSmart Science Grade 4

## Indicator 5.2

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

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

### Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- Materials provide a Unit Teacher Guide which provides guidance on anticipating student responses and the use of questioning to deepen student thinking. Teachers are provided with a Unit Teacher Guide for each standard taught. Within this guide, teachers will find common misconceptions that students may have. This allows teachers to anticipate student responses. Furthermore, teachers will find essential questions with exemplary responses in each unit guide. These questions are the basis for understanding each standard and allow teachers to build their students' knowledge.
- The teacher document for hands-on activity, 4.11 C, A Rock Just Isn't A Rock, includes analysis and reflection questions with sample answers allowing the teacher to use questioning to deepen thinking.
- Some activities provide teachers with extension questions and exemplary responses to deepen student thinking. For example, in the Grade 4 activity "4.9(A) (B) Predicting Moon Patterns" teachers are provided with one extension question and an exemplary response to deepen student thinking through questioning.

## EduSmart Science Grade 4

- The teacher versions of the Instruction Module Companions include possible student responses to questions. Teachers can utilize the questions provided. Most of the activities have anticipated student responses to help deepen their understanding and critical thinking skills.

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

- EduSmart's Implementation Guide provides teachers with suggestions on how to scaffold and support students' development and use of scientific vocabulary in context. Teachers are also guided through various scientific vocabulary within the context of the unit of study and guidance on materials that can help support vocabulary development. The guide provides opportunities for activities, instruction, and station ideas.
- The Scope and Sequence provide teachers with support on how to scaffold and support students' vocabulary development within the unit of study. New grade-level words and words students have learned and can activate with prior knowledge are highlighted for teacher guidance.
- WordExplorers are scaffolded, multi-part vocabulary practice towards mastery of all vocabulary related to a topic. For each standard taught, students will complete a WordExplorer. Each WordExplorer is a "Multi-part vocabulary practice for low-risk, high-engagement practice towards mastery of all vocabulary related to a topic. Excellent support for multiple sub-populations such as EL students, 504, and special education," as defined in the Implementation Strategies document. Part 1 includes visual literacy, part 2 includes textual facts, and part 3 includes a cloze activity. Teachers may assign the WordExplorer as they see fit to scaffold and support students' development and use of scientific vocabulary within context.
- Materials provide students with an Instructional Module Companion for each IM within each standard. The IM Companion is a three-part activity with a vocabulary fill-in-the-blank, graphic organizer, and journal prompt. The IM companion allows for the development and use of scientific vocabulary within context. Instruction Module Companions can be scaffolded. For example, teachers can remove the word bank for fill-in-the-blank notes to challenge accelerated learners. Teachers can also add a word bank or graphic organizer to journal prompts for students needing extra support.

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

- The teacher versions of the engineering design challenges include teacher guidance on preparing for student discourse and supporting students in using evidence to construct written and verbal claims. For example, the 4.7A Engineering Design Challenge – A Soft Landing includes a rubric teachers can use to assess students' use of evidence to explain which material worked best to make the parachute
- The Anchoring Phenomenon Teacher Document guides teachers on the content and helps them prepare for students' discourse. In the anchoring phenomenon for 4.11 AB, Environmental Impact, teachers may use the teacher document ahead of time to access guiding questions that encourage student discourse through scientific questioning.
- Teachers are provided with a unit guide for each standard taught. This document provides teachers with guidance on preparing for student discourse by providing background information, common misconceptions, and essential questions for each standard.

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- Students will complete at least one simulation for each standard taught. During these simulations, students gather and analyze data for use in Claim, Evidence, and Reasoning statements. Following the CER guide accompanying this activity supports teachers in helping students use evidence to construct verbal and written claims.

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

- The Unit Teacher Guide supports and guides teachers in facilitating the sharing of students' thinking and finding solutions. The common misconceptions in the Unit Teacher Guide allow teachers to anticipate the needs and thinking of students.
- Materials include a teacher guide supporting each anchoring phenomenon. The teacher guide provides scaffolded questions and background information, facilitating the sharing of student thinking. The anchoring phenomenon activities are designed with no prior explanations to allow students to develop their own scientific claims and explanations.
- The Implementation Strategies Grades 3–5 document provides teachers with support and guidance to engage students thinking in various modes of communication throughout the year. This guide provides teachers with information on various activities to use in class, such as hands-on activities, journal prompts, readers, and engineering and design challenges. Each of these activities provides students with a diverse set of opportunities to express their thinking.
- Students will take part in two engineering and design challenges throughout the year in which they will “work together to design solutions, models, or presentations to address the problem listed in the engineering design challenge.” These design challenges provide teachers with a rubric for assessing students' ability to find solutions and express their findings.
- Materials provide teacher support and guidance to engage students' thinking in various modes of communication throughout the year. For example, EduSmart's ELPS Strategies 3–5 document includes strategies teachers can use to help students listen, speak, read, and write in science.

# EduSmart Science Grade 4

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

Evidence includes but is not limited to:

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

- Materials provide teachers with an interactivity for each standard taught. Interactivities include a variety of assessment formats modeled after the STAAR. For example, interactivities include drag and drop, text entry, hot spot, and multi-select. Materials state, “The interactivity can be used as a review activity before an assessment, as a formal assessment, or as a small group activity.” In the fourth grade Interactivity, Weather Vs. Climate, there are formal and informal ways to assess student learning in various formats. Students sort examples of weather or climate based on long-term and short-term conditions and are provided with immediate feedback. The teacher may use this to make informed decisions on instruction.
- EduSmart 3-5 materials provide teachers with a quiz to be administered for each standard taught through the course of the school year. Materials state that, “These quizzes are formatted like the STAAR and feature a range of questions on the depth of knowledge. These quizzes can be used as a formal assessment, small group activity, or whole group activity.” The provided quizzes are the primary option for measuring student learning and identifying learning gains. Additionally, the quizzes and assessments within EduSmart can be used as a form of diagnostic assessment.” Teachers are able to assign a quiz or assessment more than one time by giving the assessment a unique name each time. By assigning a quiz or assessment multiple times, teachers are able to collect and compare data between the administrations. For example,



## EduSmart Science Grade 4

teachers can assign the EduSmart quiz for TEKS 4.6(B) at the beginning of the unit and title it as Pre-Assessment. At the completion of the unit, teachers can assign the EduSmart Quiz for TEKS 4.6(B) and title it Post-Assessment. Teachers will be able to view and compare data collected from both assessments.

- The student review module allows students to assess the TEKS learned during that unit of study. This is an interactive video module that students can do independently as assigned by the teacher.
- The EduSmart Quiz gives educators the option of a paper assessment or digital formative assessment that reviews the content learned during the instructional module. This provides students and teachers a chance to assess what was learned.
- Anchoring Phenomenon Activities allow students to discuss the phenomenon in small groups or pairs. Teachers can also use Instruction Module Companions, Student Reviews, Interactivities, Simulations, WordExplorers, Hands-on Activities, Journal Prompts, and Readers to assess student learning in various formats.
- Materials include summative assessments with formal and informal opportunities to assess student learning in various formats. There is an EduSmart Quiz at the end of each unit. Teachers can also use engineering design challenges to assess student learning summatively.

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

- Student reviews assess all components of grade-level TEKS, displaying a brief phrasing of the TEK above the activity. Quizzes clearly display the aligned grade-level TEKS in the overview and indicate what TEKS is targeted with each question. For example, question 1 for Observable Physical Properties, displays the TEK 4.6 (A) beneath the first question.
- EduSmart materials provide teachers with a Scope and Sequence that outlines which student expectations will be assessed. For example, TEKS 4.8, “The student knows that energy is everywhere and can be observed in cycles, patterns, and systems,” is broken into “Transfer of Energy” and “Thermal and Electrical Energy,” both of which include a quiz associated with the standard.
- The Interactivity module allows students to interact with the specific student expectation and assesses their understanding of the content. Students interact with labs and other digital mediums that assess their understanding of specific content knowledge.
- The EduSmart Quiz assesses the student expectations indicated for the specific module being learned. Students are assessed digitally or using paper on the specific expectation being learned.

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

- Materials provide multiple hands-on activities for each standard taught. These activities integrate scientific concepts and engineering practices with recurring themes and concepts. Materials state that, “For each of the activities, there is a teacher version that provides the instructions, TEKS, SEPS and RTCS, safety reminders and suggested implementation.”
- The Engineering Design Challenges includes a rubric that assesses engineering practices and recurring themes and concepts. The rubric also highlights specific TEKS driven by content that can be assessed as well. Students will complete two Engineering and Design Challenges during the school year. For example, 4.7A A Soft Landing requires students to work as engineers who

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use what they know about forces and gravity to make sure their parachutes can deliver astronauts safely.

- EduSmart Quizzes in each instructional model integrate scientific concepts alongside engineering practices and recurring themes and concepts. This cannot be found in all instructional modules; however, some can be found throughout the LMS system. Materials also contain a Safety and Scientific Processes Quiz. Recurring themes and concepts are included in the quizzes for 4.5 A through 4.5 G.
- Hands-on activities integrate scientific concepts and science and engineering practices with recurring themes and concepts. For example, 4.9AB, Recognizing Patterns in Changes, requires students to trace and measure the length of a shadow at four different times during the day to look for patterns and make a prediction.

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

- Interactivities require students to apply knowledge and skills in novel contexts. The interactivity for 4.6(B), Mix Your Cake and Eat It Too! requires students to tie their knowledge of changes in matter to the real-life novel example of baking a cake.
- Materials provide students with an engineering and design challenge to be completed twice a year. These challenges serve as a capstone activity and require students to apply knowledge and skills to novel contexts. Materials specify that each engineering and design challenge “effectively leverages students’ prior knowledge and provides an opportunity for students to collaborate in designing solutions to authentic real-world problems.”
- Students will complete multiple hands-on activities for each standard taught. Materials state that hands-on activities “are inquiry-based hands-on labs, investigations, application, practice, and research, and include background information and step-by-step directions.” Each activity requires students to apply knowledge and skills to novel contexts. For example, the extension activity in 4.10B Eroding Models asks students to find out more about geologists on the internet or in the library.
- EduSmart materials include assessments that require students to apply their knowledge and skills to novel contexts using the Reader portion of their modules. Students read the content in a real-world concept and answer questions regarding the context of the content they have learned.
- The student journal found in the modules assesses students using open-ended questions. The questions require students to understand and apply their knowledge of the content to a novel context. Students write or create answers that specifically address the content learned. For example, 4.7A Journal – Forces on an Object, asks students to describe two instances where friction is useful, and explain how it can be increased.

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## Indicator 6.2

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

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

### Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- EduSmart's Claim-Evidence-Reasoning Activity, Teacher Version, provides sample responses to assist teachers in evaluating students' lab responses. For example, the teacher version of 4.9AB Journal - Recognizing Patterns in Changes includes a possible solution for each journal prompt.
- EduSmart materials provide teachers with teacher versions of all activities and assessments. Teachers will use these documents to find guidance for evaluating student responses. These documents include ideal responses and possible misconceptions.
- The Engineering Design Challenges provide educators with information and guidance for evaluating student responses to their design. The rubric provided specifically states what should be addressed and what educators should be looking for when evaluating student responses. For example, the teacher version of 4.1B Engineering Design Challenge - Food Webs includes a rubric teachers can use to evaluate how successful students were at designing and building an earthworm recycling bin.
- The Anchoring Phenomenon in the modules helps support and guide educators on how students should be responding to questions. Teachers are given question prompts and background information to guide the understanding needed throughout the module.

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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.

- EduSmart's online teacher platform allows teachers to pull and analyze multiple types of reports for quizzes and assignments. The platform includes customizable assessment reports summarizing questions missed, student answers, time on task, and other progress monitoring tools to enable teachers to structure individualized support. Quiz Reports allow teachers to find reports on group performance or student performance on any quiz. Teachers can also find reports on student performance on different standards in the quizzes. Assignment Reports allow teachers to find at a glance reports on student performance on any assignment. Teachers can search for this information by assignment, group, or individual student. Teachers can use this information to respond to individual student's needs in all areas of science.
- EduSmart materials provide teachers with StaarSmart Reports. These reports allow teachers to analyze the needs of students across all standards. These reports allow teachers to plan for reteaching and acceleration as they see fit for the student's individual needs.
- The Implementation Strategies Guide Grades 3-5 supports teachers in analyzing and guiding responses to student needs. Specifics given on small group and reteach opportunities are provided as guidance to move students forward in the content understanding.

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

- EduSmart's online teacher platform provides educators with multiple forms of student reports for assignments, quizzes, and standards. These reports allow teachers to strategically plan for reteaching, intervention, and extension. The information provided in the reports allows teachers to plan differentiated instruction based on student needs. The progress monitoring for quiz reports allows teachers to understand how well they are mastering content by TEKS. The other various reports break down performance for assignments and STAAR-related reports to guide teachers.
- The Implementation Strategies Grades 3-5 document provides teachers with an outline of information on all course materials. This information includes recommendations for materials to be used for differentiation, reteach, and extension based on the needs of students. Furthermore, it provides teachers with recommendations for organizing station activities for differentiated instruction.
- Teachers can use the information they collect from Assignment Reports, Quiz Reports, and Assessment Reports, along with the Implementation Strategies Grades 3-5 document, to differentiate instruction for students. For example, accelerated students could complete science investigation activities with a Claim-Evidence-Reasoning component, while students who need additional support could complete Student Reviews.
- Teachers can use the information they collect from Assignment Reports, Quiz Reports, and Assessment Reports, along with the Implementation Strategies Grades 3-5 document, to plan for small group instruction. During this small group instruction, accelerated students could create an interactive word wall, while students who need additional support could receive intervention from the teacher.

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

- EduSmart's platform allows teachers to view detailed assignment reports identifying individual performance and incorrect answer choices, so that teachers may provide targeted support.
- EduSmart's implementation strategies guide offers teachers guidance on using the resources to support learning and respond to student needs based on data. The document suggests additional support in the form of readers, student review, science investigation activities, instruction module companions, quizzes, Word Explorer, and activities. This information includes recommendations for materials to be used for differentiation, reteach, and extension based on the needs of students.
- EduSmart's ELPS Strategies 3-5 document provides teachers with information on leveraging Anchoring Phenomenon Activities, Instructional Model and Instructional Module Companion Activities, Readers, and Hands-on Activities to respond to student data.

# EduSmart Science Grade 4

## 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.

- EduSmart's student review may be used as scientifically accurate, error and bias-free assessment material. For example, the student review, Renewable Resources, contains accurate, biased, and error-free images and questions pertaining to natural resources that may be replaced naturally.
- EduSmart's quizzes are scientifically accurate, error and bias-free assessment material. For example, the student assessment, Learning for the Past Quiz, contains accurate, biased, and error-free questions about continental drift, types of fossils, and fossil interpretation. The student assessment, 4.6A Observable Physical Properties, is scientifically accurate, avoids bias, and is free from errors.
- EduSmart materials provide teachers and students with two engineering and design challenges for each grade level. Design challenges are intended for students to work together to solve real-world phenomena. All design challenges are rooted in scientifically accurate information. For example, 4.7A Engineering Design Challenge - A Soft Landing is scientifically accurate, avoids bias, and is free from errors.
- The resource provides educators the opportunity to assign student interactivity. This assesses students digitally through their interaction with the content. The assessment contains items that are scientifically accurate, avoid bias, and are free from errors.

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

- EduSmart's assessment tools use clear pictures and graphics that are developmentally appropriate. For example, the quiz for TEKS 4.8(B)(C), Thermal and Electrical Energy, features clear images of household items that are conductors.
- EduSmart's assessment tools, such as the student reviews, use clear pictures and graphics that are developmentally appropriate and suited for the course. In the fourth grade review, 4.8 (B)(C) Electrical Circuits, the graphics clearly and simply illustrate and explain how circuits operate.
- EduSmart quizzes use clear pictures and graphics that are developmentally appropriate. For example in the grade 4 quiz for standard 4.10C, "Weather or Climate" there is a clear graph of average rainfall temperatures in Houston, Texas that is developmentally appropriate. The quiz for 4.8A, Transfer of Energy, uses clear pictures and graphics that are developmentally appropriate
- The resource provides educators the opportunity to assign the students digital interactivity. This assesses students digitally through their interaction with the content in the interactivity section of each module. Students are given labs and other content-specific images that support their learning and assess what they retain.
- WordExplorers use clear pictures and graphics that are developmentally appropriate. For example, 4.7A - WordExplorer - Forces on an Object uses clear pictures and graphics that are developmentally appropriate.

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

- Materials provide guidance to ensure consistent and accurate administration of assessment tools. Reference to guidance on assessments is limited to the Implementation Strategies Guide which provides information on guidance in administering student quizzes and readers. For example, "These quizzes can be used as a formal assessment, small group activity, or whole group activity," and "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. " There is no teacher guidance to ensure consistent and accurate administration of other assessment tools.
- The Implementation Guide 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 guidance on assessment administration. The Implementation Strategies Grades 3-5 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."

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

- EduSmart Student Reviews feature text-to-speech options in all assessments. At the guidance of teachers, students may utilize this tool to demonstrate mastery of knowledge and skills aligned with learning goals.

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- EduSmart Materials provides teachers with an Implementation Strategies guide. This guide includes guidance to offer accommodations for assessment tools that allow students to demonstrate mastery of knowledge and skills. For example, the guide refers to text-to-speech accommodations for the administration of quizzes.
- EduSmart Materials provides teachers with an ELPS Strategies guide. This document includes guidance to scaffolded accommodations for assessment tools that allow English language learners to demonstrate mastery of knowledge and skill aligned with their learning goals. This can be found in the content library implementation strategies. EduSmart Quizzes have embedded accommodations for text-to-speech and language support.
- Interactivities provide students with immediate feedback and allow students to replay the interactivities as many times as desired to reach mastery.
- WordExplorers present students with correct answers in the form of 'lifelines' after two incorrect responses to prevent misunderstandings and support independent practice.
- EduSmart materials provide teachers with an ELPS Strategies document. This document provides teachers with consistent and accurate guidance for the administration of assessment tools for English Language Learners.



# EduSmart Science Grade 4

## 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.

- The Implementation Guide Grades 3-5 provides teachers with information about differentiation and specific activities to support learners who have not yet achieved mastery. These activities include “Readers, Student Review, Science Investigation Activities, Instruction Module Companions, Quizzes, Word Explorer, Activities.” It also includes a Suggested Station Activities section, which provides suggestions for stations to be set up during instructional time. Guidance examples include suggestions such as station 5 is a small group intervention with the teacher, and station 6 is a review or spiral station with previous standards.
- Using the “My Groups” tab at the top of the EduSmart dashboard, teachers can create targeted groups to serve students during small group instruction better. These groups could be students needing additional support or acceleration.
- The student interactivities give students support and scaffolded learning based on how they are interacting with the curriculum. Students who struggle to answer correctly will be supported through graphics and explanations before moving on through the interactive learning module.

Materials provide enrichment activities for all levels of learners.

- The Implementation Strategies 3-5 document provides teachers with information about differentiation and specific activities to accelerate learners of all levels in the form of readers, science investigation activities, interactive notebooks, instructional companions, student reviews, science investigation activities, quizzes, and Word Explorer. The Implementation Guide Grades 3-5 supports teachers in understanding what specific materials can be used to enrich students.

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- Materials provide students with multiple hands-on activities some of these activities are accompanied by extension activities. For example, in the Grade 4 activity for standard 4.8 (A) "Creating Waves in Science." The materials provide a possible extension activity of having students research famous physicists. These extension activities serve as enrichment opportunities for all levels of learners. The hands-on activity in the modules allows teachers to extend learning for students to have a real-world understanding of concepts. This helps them to further anchor their learning and discuss it with their peers.

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

- Teachers are provided with a Student Review that may be implemented as a just-in-time scaffold to develop productive learning perseverance. Materials state that the student review, "is a condensed version of the instruction module, that highlights the most important concepts for review. The student reviews also feature integrated questions throughout the video review that students must answer before they can continue with the video. Students are given immediate feedback and are able to repeat this activity as needed for mastery or for review."
- The IM companion that accompanies each Instructional Model provides students with the opportunity to regulate their own learning. The IM Companion "utilizes student activities to scaffold the video-formatted concepts covered in the Instruction Module. These student activities include a note-taking guide, a graphic organizer, and a journal prompt." Teachers can adjust these companions to accelerate learners who have shown mastery as well.
- The Anchoring Phenomenon provides teachers with a way to support students through questioning and activating background knowledge. Materials include questions teachers can ask students to support their learning. For example, each anchoring phenomenon comes with a Teacher Version document that includes question prompts teachers can use to support students' thinking.
- The leveled reader can be assigned to support students based on their current reading level. Teachers can assign the reader either approaching grade-level text or grade-level text. This supports the just-in-time needs of the reader.

# EduSmart Science Grade 4

## 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.

- The Implementation Strategies guide provides teachers with information and recommendations for a variety of developmentally appropriate instructional approaches. These approaches range from direct instruction, vocabulary activities, student reviews, Word Explorer, interactive simulations, and hands-on inquiry-based activities. Each of these approaches is designed to engage students in the mastery of the content.
- Students engage with the content through developmentally appropriate anchoring phenomena. For example, in the fourth-grade phenomenon, "Moving Metals," students engage in the standard by observing iron filings' interaction with magnets.
- The EduSmart content library presents students with a variety of developmentally appropriate instructional approaches. For example, students will receive direct instruction for each standard through the instructional module. These instructional modules rely heavily on visual learning and visual literacy through animation to support students who are auditory and visual learners. Students are also presented with hands-on activities ideal for engaging tactile learners.

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

- EduSmart Materials allow teachers to follow the 5E instructional model (Engage, Explore, Explain, Elaborate, Evaluate). By following this model through the instructional cycle for each standard, teachers have the opportunity to instruct, assign activities, and review in a variety of groupings. Each material is flexible and designed to adapt to whole class, small group, partner, or one-on-one instruction.
- The implementation guide provides teachers with guidance on utilizing specific grouping structures based on student needs. Teachers will locate this in the “Suggested Station Activities for small groups or partners” subsection located in the implementation guide. This section outlines stations with specific activities and time durations for targeted small group or partner instruction. The material suggests different learning techniques that the teacher can choose from when planning their lesson. Whole group discussions, small group investigations, and engineering challenges, as well as one-on-one work for students, can be assigned to them virtually.
- The LMS system allows teachers to select how the various content will be assigned to students. Teachers can select the assigned feature and select how the content will be delivered; such as whole class or teacher-created subgroups and even 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.

- The Implementation Guide Grades 3-5 supports multiple types of practices that students can participate in. For each standard, students are provided with an instructional module designed for modeled and guided instruction. The material gives teachers multiple options for modeled practice, guided, collaborative, or independent work that students use to support mastery of the content. An example is the Anchoring Phenomenon can be implemented in a whole group with whole group discussions and guiding questions. The hands-on activities can be done with partners or teams. The Anchoring Phenomenon serves as a starting point for learning and understanding the science concept that will be taught. Each phenomenon comes with a Teacher Version document that includes question prompts teachers can use to support students' thinking.
- EduSmart materials are designed for teachers to implement instruction following the 5E model with the gradual release of student responsibility. The instructional cycle opens with the anchoring phenomena with questions provided for whole group discussion. Then, teachers and students will move into the instructional model designed for direct teaching or whole-group instruction. Teachers will then implement various materials such as simulations, Word Explorers, readers, interactivities, and hands-on activities. Each component is flexible and may be utilized for multiple types of practices.

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

- The unit Interactivities provided in the materials represent a diversity of communities in the images and information about people and places. In a grade 4 Interactivity, students classify descriptors of weather or climate in a diverse collection of places and locations.
- EduSmart materials represent a diversity of communities in the images and information about people and places. For each standard taught, students will complete an instructional module.

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Throughout the instructional cycle, students will be presented with various characters that represent a diversity of race, gender, and ethnicity.

- EduSmart materials represent a diversity of communities in the images and information about people and places. For example, each standard is accompanied by multiple readers. The readers present students with various diverse communities in the images embedded in the text. For example, Reader 4.12(C) - Ancient Plants tells a story about Rosa, a girl who travels from her home in Florida to visit her grandmother in Wyoming. They go fossil hunting there.

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## 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

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 3-5 document include 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 listening, speaking, reading, and writing strategies teachers can use to accommodate emergent bilingual students. 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." Additionally, the ELPS Strategies 3-5 document includes a specific portion that addresses strategies and techniques specific to hands-on activities, such as the following: "Edit the student documents to provide additional support through simplifying language or instructions."
- EduSmart 3-5 materials suggest linguistic accommodations in Teacher Versions of Activities. For example, teacher guidance for activity 4.8A Creating Waves in Science suggests selectively assigning a container that has already been labeled with centimeters to English Language Learners.

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

- The ELPS Strategies 3-5 document encourages the use of peer support in the native language as an accommodation for beginner level emergent bilingual students. Specifically, the document

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states that teachers should allow the use of students' first language during the Anchoring Phenomenon activity, Instructional Module, and Instructional Module Companion activity. The document also suggests that teachers allow the use of native language and drawing to express concepts when writing.

- 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.

# EduSmart Science Grade 4

## Indicator 7.4

Materials provide guidance on 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

Materials meet the criteria for this indicator. Materials provide guidance on fostering connections between home and school.

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

Evidence includes but is not limited to:

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

- Materials include a letter to caregivers explaining the design of the program and ways to reinforce student learning at home. The letter contains an open-ended portion where teachers can provide the current standard and access instructions for EduSmart materials. General information about EduSmart program design, access requirements, and use of materials in class is provided. The document also contains possible conversation starters to facilitate scientific conversations at home. This may be sent home multiple times a year to update caregivers on standards currently being taught.

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

- Teachers are provided a Letter to Caregivers that helps highlight possible conversation starters in the form of sentence stems. Teachers can send a Caregiver letter home multiple times a year with updated standards being taught in class. Within this letter, there are various conversation starters caregivers may use to reinforce student learning and development.
- Information on how caregivers can reinforce learning at home is provided through the at-home connection in the hands-on activity. For TEKS 4.4 A, Science and Innovation: Disposable Plastics, conversation starters for caregivers are provided. In addition, students are encouraged to “Look around your home for ways that you and your family use plastic products. Talk to an adult about what you learned about plastic products and ways that you can replace them with other products!”



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- The materials provide at-home practice activities for caregivers to help reinforce student learning and development. The Teacher Communication Letter in the help section states, “Providing parents with access to their child's platform is another great way to reinforce learning at home.” The materials mention that allowing parents to review the Instructional Modules can help them understand the concepts included in the materials. They can also build communication between the caregiver and child about the learning that occurs. The caregivers can use the Readers to engage in reading aloud to their child at home.

Materials include information to guide teacher communications with caregivers.

- EduSmart materials provide a Teachers Communication with Caregivers Guide. This guide provides multiple examples of tools for teachers to use in communication with caregivers. These examples include progress reports, parent access, student portfolios, and classroom newsletters.
- EduSmart materials allow teachers to send home progress reports throughout the school year. These reports can be downloaded in the teacher dashboard and provide caregivers with the academic progress of their students. Teachers will provide caregivers with progress reports to help guide their communication throughout the year.

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## 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.

- Materials include a TEKS-aligned Scope and Sequence document that outlines the order in which knowledge and skills are taught and revisited. It provides a suggested number of days, essential questions, vocabulary, and possible activities for teaching each concept.
- The Scope and Sequence outline how the knowledge and skills can be taught and built upon to allow for the gradual release of responsibility for students. It also integrates the SEPs and recurring themes and includes essential questions for each unit.
- In the Scope and Sequence document, materials show a strategic order and connections across the TEKS addressing scientific and engineering practices (SEPs), recurring themes and concepts (RTC), and other reporting categories. It includes a TEKS column, which lists suggested Science and Engineering Practices (SEPs) and suggested Recurring Themes and Concepts (RTCs) listed under each student expectation. For example, in the grade 4 unit “Observing Physical Properties,” teachers should utilize 4.1A “Ask questions based on observations” as a SEP connection

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

- Materials provide a Teacher Resources section with instructions for facilitating hands-on activities, vocabulary, and assessment within each reporting category.

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- The Activities section of the Content Library includes an overview document referencing inquiry-based hands-on labs, investigations, application practice, and research activities. These activities provide teacher guidance for reviewing, reteaching, and spiraling skills for mastery and retention of material.
- The “Content Library Descriptions and Possible Implementation Strategies, Grades 3–5” suggests teachers utilize the provided virtual lab simulations that incorporate recurring themes and concepts with science and engineering practices such as asking questions, analyzing and interpreting data, and designing solutions.
- Located in the Teacher Resources – Engineering and Design Challenges are detailed teacher guides for science and engineering challenges, accompanied by suggestions to support student-made connections and recurring themes and practices.
- The Implementation Strategies describe the K–12 Anchoring Phenomenon, quizzes, instruction modules, glossary activities, and readers. Further, materials reference the recurring themes and SEPs.

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

- The vertical alignment document allows teachers to see what standards spiral from previous grade levels. The Scope and Sequence documents are provided for each grade level. Within these documents, teachers can anticipate when standards will be taught and what SEP TEKS and RTC TEKS will be addressed in each unit. This document allows teachers to view when these standards will be spiraled and addressed again.
- Materials provide a Teacher Resources section with instructions for facilitating hands-on activities, vocabulary, and assessment within each reporting category.
- The “Content Library Descriptions and Possible Implementation Strategies Grades 3–5” includes a section titled “Review, Reteach, and Spiraling Skills for Mastery and Retention.” This section provides teachers with spiraled materials for small group or teacher-led reteaching or review. It includes activities and journal prompts to support learners with review, practice, mastery, and retention. These tools are presented as resources for “early finishers, test review, and additional practice for retention and mastery.” Additionally, teachers can utilize the “Word Explorer” to “review vocabulary through interactive word walls or have students create flashcards using prior standards word explorer.”
- The Activities section of the Content Library includes an overview document referencing inquiry-based hands-on labs, investigations, application practice, and research activities. These activities provide teacher guidance for reviewing, reteaching, and spiraling skills for mastery and retention of material.
- Materials include leveled readers that provide opportunities for students to review and practice knowledge and skills spiraled from previously learned content. For example, the reader Cause and Effect with the Moon supports students in reviewing and applying previously learned content about Earth, Sun, and Moon rotations.

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## 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 Grades 3–5 Implementation Guide provides teachers guidance for the use of all materials. The “Content Library Descriptions and Possible Implementation Strategies Grades 3–5” outlines recommendations for using all materials. Teachers are provided with recommendations for using instructional modules, instructional module companions, strategies for the Anchoring Phenomenon, interactivities, Student Review, Quiz, Word Explorer, simulations, readings, and differentiation. Also included is a section titled “Differentiation.” In this section, teachers are provided with differentiation tools to enhance student learning. For example, for student acceleration, the following materials are suggested: “Readers, Science Investigation Activities with CER, Instruction Module Companion, Student Review, and Interactive Notebooking with Instruction Module Companion.”
- Unit Teacher Guides provide background information, prerequisite knowledge, essential questions, and common misconceptions. The grade 4 materials provide implementation

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strategies through which guidance is provided to teachers for the use of text, embedded technology, enrichment activities, research-based instructional strategies, and scaffolds. Each module of study has embedded technology for student and teacher use.

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

- The Content Library provides educators with a Teacher’s Guide to the unit, which highlights the TEKS and provides background information and necessary prerequisite knowledge. Materials also provide teachers with journal prompts that include standards correlations, including cross-content standards. For example, the journals for 4.12(C) require students to use writing and reasoning skills while employing ELA skills.
- EduSmart features leveled readers that explain the scientific content embedded with English Language Arts standards as well. After students engage in reading about science in high-interest reading passages, they complete a comprehension check that asks both scientific questions and English Language Arts questions about the text.

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

- The “Grade 4 Texas Master List” provides teachers with a comprehensive list of all materials needed to support hands-on activities. These lists are divided into consumable and non-consumable materials so teachers can plan for future materials replacements. Engineering Design Challenges list the equipment and supplies needed for each challenge as well.
- Each grade 4 activity is provided with a teacher-facing guide. This guide provides teachers with a list of materials required for the successful implementation of the activity. The supply list is embedded within the investigation instructions guide.

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

- Grade 4 teachers can utilize the instructional model for scientific and engineering practices for standards 4.1 - 4.4 titled “Lab Safety” This activity guides students through learning how to conduct safe science experiments successfully. The instruction module also includes a video for safety and scientific processes to guide the safe use of equipment. Materials include a list of safety equipment, such as heat-resistant gloves and safety goggles, in the “EduSmart Texas: Grade 4 Supply List for Hands-on Activities” document.
- In the grade 4 reporting category 4.1 -- 4.4, Scientific and Engineering Practices, teachers can utilize the interactivity “Lab it Up,” which states that “In this SEP, students learn to demonstrate safe practices and the use of safety equipment during classroom and field investigations.”
- Grade 4 teachers will be able to review and display the provided lab safety poster located in the hands-on activity section for each of the TEKS. This poster allows teachers to display useful safety information such as proper safety attire, handling of materials, and classroom expectations.
- The teacher guide for the student investigation notes the safety practices needed for grade-appropriate use of safety equipment and precautions to be taken.

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## Indicator 8.3

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

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

### Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- In the grade 4 Scope and Sequence, materials support scheduling and include guidance and recommended time for lessons. The Scope and Sequence provides overall times for unit and lesson implementation over the board spectrum. The Scope and Sequence suggests timelines by reporting category, unit, and standard. Teachers will locate this information in the “suggested days” column of their Scope and Sequence document. The suggested days are listed in a range for teacher flexibility. Teachers are also given time requirements for each component and activity. For example, each instruction module has an expected time of 15–20 minutes.
- A “Content Library Descriptions and Possible Implementation Strategies Grades 3–5” document includes sections titled Anchoring Phenomenon, Instruction Modules, Instructional Model Companion, Student Review, Quiz, Interactives, Simulations, Word Explorer, Activities, Journal Prompt, and Readers. Each section includes expected times to complete the section.

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

- The “Content Library Descriptions and Possible Implementation Strategies for Grades 3–5” document supports the teacher in implementing materials strategically without disrupting the sequence of content that must be taught in a specific order. It includes implementation strategies for the Anchoring Phenomenon, Instruction Modules, Instruction Module Companion, Student Review, Quiz, Interactives, Simulations, Word Explorer, Activities, Journal Prompt,

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Readers, ELPS, Differentiation, Suggested Station Activities for small groups or partners, and Review, Reteach, and Spiraling Skills for Mastery and Retention.

- The grade 4 scope and sequence guides content implementation without disrupting the sequence of content that must be taught in a specific order. The Scope and Sequence document guides teachers in strategically implementing TEKS that build sequentially throughout the year following a developmental progression. For example, the reporting category “Matter and Energy” begins with standard 4.6A and builds strategically to 4.6C.
- 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.

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

- The grade 4 Scope and Sequence outlines a suggested timeline for all units, allowing the completion of the curriculum in one school year. It guides teachers in the required time for lessons and activities with suggested timelines by reporting category, unit, and standard. Teachers will locate this information in the “suggested days” column of their Scope and Sequence document.
- The “Content Library Descriptions and Implementation Strategies Grades 3–5” document provides teachers with multiple modes of instruction and activities. Teachers can utilize these tools as they see fit for instruction, supports, scaffolds, and differentiation. Using these tools in tandem with the Scope and Sequence provides teachers with flexibility while still ensuring the content is completed in one school year.
- The materials allow flexibility for teacher use and implementation. The Implementation Strategies library offers flexible suggestions to differentiate within the classroom's needs while completing the course material within one school year. 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 student learning.

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## Indicator 9.1

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

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

## Not Scored

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

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

Evidence includes but is not limited to:

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

- EduSmart materials are visually balanced. There is sufficient information provided while allowing space for students to process the content. There is a sense of coherence and balance while navigating the materials. Materials possess a well-designed layout, with an appropriate amount of white space, allowing for student focus and learning of concepts. For example, 4.11AB Reader - Resources has a clear title, is divided into easily readable paragraphs, and includes clear pictures.
- EduSmart's online platform provides an appropriate amount of white space. The background of the interface is white with simple single-colored icons for each standard that do not distract from student learning. All online and print activities have a simplistic and appropriate amount of white that does not distract from student learning. The digital videos are focused, and students have direction for what they should be looking at without distraction.
- Anchoring Phenomenon gives students one area of focus that is appropriate and does not distract from the student's learning.

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

- EduSmart materials embed age-appropriate pictures and graphics that support learning and engagement without visual distractions. For example, the interactivity The Water Cycle Model contains engaging and age-appropriate graphics of the components of the water cycle.



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- The images and graphics EduSmart utilizes serve a clear purpose to support and enhance student sense-making of grade-level content. For example, in the Instruction Module, 4.6(A), the graphics provide a clear purpose in explaining magnetic properties.
- The instructional modules have embedded age-appropriate pictures and graphics that support the students' learning and engagement without being visually distracting. Each module is animated with rich designs that support students' engagement and understanding.
- The Student Review has embedded age-appropriate pictures and graphics that support student learning and engagement without being visually distracting. The animated modules support not only the learning but are interactive for students.
- The 4.8BC WordExplorer "Electrical Circuits" provides a visual example of electrical insulators that are engaging.
- The 4.13B Reader "A Horse of Course" includes pictures of early horses that are engaging.

Materials include digital components that are free of technical errors.

- The EduSmart digital components, such as the Word Explorer, are error-free.
- The EduSmart digital components, such as the Interactivities, are free of technical errors. For example, 4.10A Interactivity - The Water Cycle Model is free of technical errors.
- Materials include digital Instruction Modules for each standard taught that are free of technical errors. For example, 4.9AB Simulation - Shadows and Seasons is free of technical errors.
- The Instructional Module is a digital component free of technical errors for each TEKS module.

# EduSmart Science Grade 4

## 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 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.**

- EduSmart's Instruction Modules integrate digital technology to support student learning and engagement without being distracting or chaotic. Students are provided with a completely digital learning experience with the content. There are interactive components that provide integrated digital technology and tools that support student learning and engagement. For example, the Instructional Module, 4.6(A), Magnetic Properties, is designed with engaging digital technology depicting the behavior of magnets and the properties of certain metals like iron, which is aligned with the learning objective.
- EduSmart's Interactivities are designed to engage and support student learning with the integration of digital technology with age-appropriate, interesting graphics with instant student feedback. Interactivities are interactive online activities that allow students to either review, supplement or extend their learning. There are supportive tools embedded and provide high engagement practices for students
- EduSmart's content library offers a digital platform that may be accessed online. This platform contains a variety of digital technology and tools that support student learning.

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

- The Recurring Themes and Concepts module and the Scientific and Engineering Practices modules provide grade-level content that integrates technology in the Instruction Module. These modules provide digital instruction on the content for the grade-level study. For example, in the Instruction Module, 4.5(A), Patterns, the digital technology supports student engagement of recurring themes and concepts in nature with grade-level content.
- The Student Review module integrates technology to support student engagement with the science and engineering practices and recurring themes modules. The review gives students a digital, hands-on opportunity to interact with the content they have learned.
- EduSmart materials provide students with a simulation activity for each standard taught. Simulations integrate digital technology in ways that support student engagement with science and engineering practices, recurring themes and concepts, and grade-level content.
- The Implementation Strategies Guide for grades 3-5 provides teachers with detailed information about each activity, which may be administered digitally. Each digital activity supports student engagement with science and engineering practices, recurring themes and concepts, and grade-level content.
- Simulations integrate digital technology in ways that support student engagement with science and engineering practices, recurring themes and concepts, and grade-level content. For example, 4.7A Simulation - Temperature's Effect on Magnetic Force requires students to conduct an experiment to investigate how temperature affects the force of a magnet.

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

- EduSmart's Live Lessons integrate digital technology that provides opportunities for teachers to collaborate.
- The Anchoring Phenomenon can be assigned digitally and gives students the opportunity to collaborate with their peers. Teachers can have students complete Anchoring Phenomenon Activities in small groups or pairs before facilitating whole group discussions. Students may collaborate in groups to write scientific claims after watching the digital anchoring phenomenon.
- EduSmart materials provide teachers and students with an Instructional Module for each standard taught. IMs can be administered as interactive lessons that allow for student and teacher collaboration. Teachers can assign Instruction Modules virtually for small groups or individuals. IMs have various questions with built-in pause time for students and teachers to discuss or collaborate during implementation.
- EduSmart materials provide students with virtual simulations for each standard taught. These simulations are designed to be completed both individually or as a group. If administered as a group, it allows students to collaborate with each other as they work through the digital simulation.

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

- Materials can integrate digital components into a variety of learning management systems. For example, EduSmart materials could be assigned to students through Google Classroom. The student journal can be shared and printed for students on the Google Word platform. This can

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then become a shared document if peer groups or the teacher decides this is best for students. Edusmart is also compatible with Clever and Canvas.

- EduSmart materials are compatible with both Mac and PC computers.
- Educators have the opportunity to download components into different formats. The module Readers can be downloaded into PDF formats in order to print for students.

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## 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.

- EduSmart's Simulations provide students the opportunity to collect and analyze data or conduct virtual experiments. These activities are developmentally appropriate for the course and align with the scope and approach to science knowledge and skills progressions.
- EduSmart's Interactivities provide students the opportunity to collect and analyze data or conduct virtual experiments. These activities are developmentally appropriate for the course and align with the scope and approach to science knowledge and skills progressions.
- All EduSmart materials in the content library are digital and online components that are developmentally appropriate for the grade level and align with the scope and approach to science knowledge and skills progression.
- The Scope and Sequence within the content library are digital, developmentally appropriate, and align with the approach to knowledge and skills progression.

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

- The Implementation Strategies Guide Grades 3-5 provides educators with guidance for the use of the content library or LMS system. This support helps educators to enhance student learning and interaction with the digital content throughout the content library. Guidance is also

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provided for the use of the embedded technology in the Word Explorer and Student Review to support and enhance student learning.

- The ELPS Strategies 3-5 give educators guidance in using the different digital components in the content library. Teachers can utilize this to enhance student learning throughout the content library components.
- The ELPS Strategies document provides teachers with guidance for the use of embedded technology to support and enhance student learning, specifically for English language learners.

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

- EduSmart's digital library is accessible both in school and at home. Families may use the student login information to support student engagement with the online materials in the home setting. Because EduSmart's platform is compatible with Google Classroom and Canvas, it is accessible regardless of physical location. Students and caregivers may access the content at home to support student engagement.
- The Letter to Caregivers is a tool that teachers can send out with the student's username and login. This provides educators with the opportunity to support their student's engagement with the LMS system and content library. 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.
- Teachers can use a second letter to caregivers to communicate what students are currently learning about in science. The letter also explains that on the EduSmart dashboard, they can see the content their student is currently learning and how they have performed on previous assignments and activities. There are also possible conversation starters for parents and caregivers to use to talk to their children about what they are currently learning.