# EduSmart Science Grade 8

## EduSmart Science Grade 8 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 6 | 100% | 100% | 100% | 100% |
| Grade 7 | 100% | 100% | 100% | 100% |
| Grade 8 | 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 some teacher guidance to support student reasoning and communication skills.

### Section 6. Progress Monitoring

- The materials include some variety of TEKS-aligned and developmentally appropriate assessment tools.
- The materials include guidance that explains how to analyze and respond to data from assessment tools.

- The assessments are clear and easy to understand.

## Section 7. Supports for All Learners

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

## Section 8. Implementation Supports

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

## Section 9. Design Features

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

## Section 10. Additional Information

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

# EduSmart Science Grade 8

## 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, plan and conduct classroom, laboratory, and field investigations, 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 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, plan and conduct classroom, laboratory, and field investigations, 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.

- Grade 8 materials use Anchoring Phenomena to connect content standards to engineering practices and "engage students with real-world challenges and situations." Grade 8 materials include opportunities for students to collect and analyze data and develop and test hypotheses. In activity 8.6D, students record data and observations of different types of solutions found in the body and are asked to create a graph to show the experimental results. The scientific and engineering practices (SEPs) can be found throughout the units, such as in 8.6C, "Properties of Water," in which students engage in an Engineering Design Challenge. In the 8.11A unit on Greenhouse Gases, students conduct an inquiry investigation on the topic. Within materials, each unit 5E Engage activity is centered around an anchoring phenomenon.

- Materials provide multiple opportunities for students to demonstrate mastery of grade-level appropriate SEPs as outlined in the TEKS. Within each reporting category, students practice SEPs through Interactivities (online), Science Investigations (virtual simulations), and other hands-on investigations. Students demonstrate their SEPs through hands-on activities, engineering design challenges, and online simulations. For example, in the grade 8 unit "Force and Acceleration," students conduct a virtual experiment to determine how the force applied to and the mass of an object can affect the object's movement and acceleration.
- Materials provide a section on its website called "Scientific and Engineering Practices (SEPs)" that teachers can click on and explore activities that implement SEPs. For example, in grade 8, there are activities specifically covering SEPs. These include: Investigation Activities "Splat!" and "Flow of Lava;" Instructional Modules "Experimental Investigations," "Descriptive Investigations," "Recording and Analyzing Data," and "Safety;" Hands-on Activities "Move it! Move it! – Molecules in Motion," "Lab Safety Symbols," "Science Safety Scenarios," "The Impact of Social Media on Teens," "Science and Innovation: Women in STEM," "Galileo Galilei," "The Large Hadron Collider," and "The Question of Sunscreen;" Word Explorer "Scientific Investigation and Reasoning;" Journal Activity "Safe Practices and Safety Equipment," Readers "The Grand Canyon: A Window to Earth's History," "Beyond Visible – The New Photovoltaic Technologies," "What Goes Up," and "Theories and Laws," and a quiz, "Safety and Scientific Investigation." Materials provide a section on its website called "Engineering Design" that teachers can click on and explore activities that implement engineering practices with grade-level content. For example, in grade 8, there are Engineering Design Challenges for 8.6C – "Keepers of the Green Goal" and 8.12C, "Preserve Biodiversity in the East Texas Piney Woods."

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

- Grade 8 Scope and Sequence provides the suggested recurring themes and concepts (RTC) connections. Grade 8 Scope and Sequence provides suggested RTC connections aligned to the grade-level content standards. Furthermore, materials use recurring themes throughout, such as patterns being used in the reader activity in lesson 8.6B, "The Periodic Table," in which students are asked to identify patterns in the arrangement. The materials use anchoring phenomena as a means of incorporating cause and effect through questioning, such as in 8.6C, "Adhesion and Cohesion."
- The materials identify overarching concepts using recurring themes and clearly show teachers how they connect within the materials. For example, the grade 8 Scope and Sequence includes suggested RTCs to be included in each unit of study. The materials include opportunities for students to learn about and understand the RTCs at the start of the year. Materials provide a short Instructional Module for each of the RTCs to help students understand how scientists use them to understand the world.
- Materials provide many hands-on and interactive activities that contain RTCs. For example, there is a simulation activity in grade 8 for standard 8.7(A)(B) – Force and Acceleration called "Splat!" The goal of the activity is for students to understand a cause-and-effect relationship by changing the masses of three different paintballs and measuring which paintballs hit the target and which do not in order to understand how mass affects the rate of acceleration.

# EduSmart Science Grade 8

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

- Grade 8 materials are designed to develop and build student skills and content knowledge using anchoring phenomena that are appropriate to the grade level as outlined in the TEKS. Grade 8 materials contain a Scope and Sequence that list SEPs, RTCs, and the development of conceptual understanding. The updated implementation guide now "offers instructional materials specifically tailored to scientific and engineering practices" that can be integrated during instructional modules, interactivities, hands-on activities, and in-lab rules. The materials provided 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.
- Materials use recurring themes throughout, such as patterns being used in the reader activity for unit lesson 8.6B, "The Periodic Table," in which students are asked to model the rate of dissolution, and activity 7.6E, in which students make connections with size, scale, and properties. The materials use the reader as another opportunity to incorporate the recurring themes, as in the same 7.6E unit where students connect the topic with the cause-and-effect recurring theme. Additionally, in the Scope and Sequence document, various recurring themes are connected to the units throughout the grade level. The materials provide opportunities for students to learn about and understand the RTCs at the start of the year. Materials provide a short Instructional Module for each of the RTCs to help students understand how scientists use them to understand the world.
- The materials provide a section on its website called "Recurring Themes and Concepts (RTCs)." This category has each RTC standard listed with activities found within each of these standards.

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

- The materials include opportunities for students to ask questions. For example, each unit has an Anchoring Phenomenon, and students are encouraged to generate their own questions about the phenomenon. The materials provide sufficient opportunities for students to plan and conduct investigations and engage in problem-solving to develop an understanding of science concepts. Within EduSmart's self-scoring rubric, they claim to have four Engineering Design Challenges per grade level –one for each reporting category (Row 7, Column F). The updated materials now include a total of four Engineering Design Challenges for each grade level.
- Materials provide multiple hands-on investigations in grade 8 materials that allow students to plan and conduct classroom, laboratory, and field investigations that make connections across disciplines and develop an understanding of science concepts. For example, in the hands-on activity "Layering the Unknown" in grade 6 unit "Relative Density," aligned to standard 6.6D, students are "challenged to layer four 'mystery liquids.' The students are "responsible for planning this descriptive investigation" and "must outline their procedure before collecting observational data."

# EduSmart Science Grade 8

## 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.

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| 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.

- Grade 8 materials provide anchoring phenomena for each of the standards, both embedded across lessons within a unit and across overarching concepts. Materials use these anchoring phenomena as the engagement activity for the units, and students are able to ask questions. The anchoring phenomenon provides discussion points within the other aspects of lessons. This evidence can be seen in the anchoring phenomenon for TEKS 8.6(C) Cohesion, Adhesion. The image illustrates the rounded shape of raindrops created by cohesive forces in the molecules. This phenomenon is addressed in the Instruction Module for TEKS 8.6(C), Properties of Water, in which students understand the formation of water droplets due to cohesion, adhesion, and surface tension with examples. This phenomenon is also explicitly addressed in the hands-on activity for TEKS 8.6(C), How Does Temperature Affect the Surface Tension of Water, in which students determine a method to see if temperature affects how well water molecules are attracted to each other.
- Materials provide embedded phenomena and problems across lessons that help support student knowledge. Each lesson for each standard has an "Anchoring Phenomena" piece that allows students to be introduced to the problem, ask questions and become engaged in the

scientific process. For example, in the grade 8 unit, Uses of Electromagnetic Waves, the teacher presents a video to students and asks, “How can we see inside?” The activity also allows students to pose questions and gives the teacher guidance as well as question prompts as needed to engage students in a discussion about the phenomenon of electromagnetic waves

- Materials provide materials that use problem-solving through scientific and engineering practices with their Engineering Design Challenges. For example, in grade 8, there are two Engineering Design Challenges: “Keepers of the Green Goal!” and “Preserve Biodiversity in the East Texas Pineywoods.” Both of these activities provide students with a real-world problem, and students have specific guidelines on how to work for a solution to the problem using scientific and engineering practices. As part of the Engineering Design Challenge, “Keepers of the Green Goal!,” students will have the opportunity to present their product design to other design teams for feedback. Design teams take their feedback to revise their design, if necessary or if the research supports the need for changes. There is one Engineering Design Challenge per reporting category with a total of four per grade level.

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

- Grade 8 materials provide an anchoring phenomenon for each standard to elicit student background knowledge and experiences. Phenomena are explicitly brought in during other activities and components provided. Evidence to support this can be found in the anchoring phenomenon for TEKS 8.7(A)(B), Newton’s Three Laws. The video shows a roller coaster doing a loop. Several forces are acting on the roller coaster, including centripetal force, inertia, and gravity. This phenomenon is explicitly addressed in the Instruction Module for TEKS 8.7(A)(B), Bumper Cars and Newton’s Laws, in which students connect their knowledge from the anchoring phenomenon to how Newton’s three laws of motion act within systems such as in-vehicle restraints, bumper cars, Earth’s tectonic activities, and rocket launches. Additionally, students apply this phenomenon to the Interactivity for TEKS 8.7(A)(B), Motor Speedway Rally, in which students apply different amounts of force on different masses. They observe the motion of the object and calculate acceleration in each case. They recognize the relationship between force, mass, and acceleration.
- The grade 8 Unit Teacher Guide provides the common misconceptions students may have from previous grade levels along with possible explanations why students may have little background knowledge about a concept. In the Teacher’s Guide for each unit, information is given about what prior knowledge the students have experienced either in prior grades or units related to the content being studied. For example, each unit teacher guide provides potential misconceptions for teachers to be ready to address throughout instruction and learning experiences. Provided for each unit, the Teacher Guide includes a “Prerequisite Knowledge” and “Common Misconceptions.” These sections provide teachers with an idea of what knowledge and skills students should have from previous grade levels as well as what concepts they might struggle with in the unit. The enhanced teacher's guide for grade 8 includes deep explanations of prior knowledge needed by students.
- Materials provide an alignment document that provides a side-by-side comparison of the core concept standards and gives a comparison of grade-level expectations and language of the scientific and engineering practices (SEPs) and recurring themes and concepts (RTC) standards. This alignment document gives teachers a visual of what prior knowledge students get from previous grade levels. For example, 7th- and 8th-grade teachers see the current and previous years’ content standards which allow them to see what knowledge and skills they should have

mastered in the previous grade level. The Scope and Sequence provide suggested SEP standards as well as suggested RTC standards for each unit. The Scope and Sequence document provides educators with an understanding of the content and the best order in which to cover topics to help students build understanding.

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

- Materials provide an anchoring phenomena activity for each content standard. The standard is listed within the activity, which allows teachers to see the language behind the phenomena and the activity for students. It also provides guidance on how to convey the concept to students and make connections. The grade 8 Teacher's Guide provides teachers with information about the phenomenon by providing an overarching question for the phenomenon along with guiding questions for students to consider. Materials clearly outline for the teacher the scientific concepts and goals behind each phenomenon. Evidence to support this can be found in the teacher document for the Engineering Design Challenge for TEKS 8.12(C), Preserve Biodiversity in the East Texas Piney Woods. The teacher document provides the RTC and the SEP TEKS that align with the activity. The teacher document provides step-by-step instructions on how students will complete the design challenge as well as the success criteria for gauging student mastery of the goals. Another example of evidence to support this can be found in the hands-on activity for TEKS 8.4(A), The Impact of Social Media on Teens. The teacher guide for this activity outlines the scientific concept by stating the core concept 8.4(A). The teacher guide also provides background information on the phenomena of social media and current research on the impact social media has on teens. The teacher document provides the objective and goal that students should master by the end of the activity. For The Impact of Social Media on Teens, the teacher is guided to understand that students will be able to use current research to perform a cost-benefit analysis of the positive and negative impacts to determine if the overall effect is more beneficial or detrimental.
- The materials provide both teacher and student background information if needed. For example, with the 8.12A anchoring phenomenon, the teacher is advised that background information can be given to students about what deforestation is; however, the unit will primarily focus on how human activity impacts the food web within an environment but does not deal with deforestation. The anchoring phenomenon for 8.12(A) aligns with the grade-level content as outlined by the TEKS. The standard for TEKS 8.12(A) states that "The student understands stability and change in populations and ecosystems. The student is expected to: A) explain how disruptions such as population changes, natural disasters, and human intervention impact the transfer of energy in food webs in ecosystems."The anchoring phenomenon states, "Deforestation is done to get wood for construction, manufacturing, fuel, or to create a space for agriculture and grazing. The earth loses about 10 million hectares of forest each year to deforestation. Because of deforestation, animals and other organisms lose their habitat, there is an increased risk of predation, and less food available in the food web."
- Materials provide opportunities for students to engage in scientific and engineering practices with Engineering Design Challenges. Grade 8 materials provide a limited number of standards-aligned Engineering Design Challenges as an additional hands-on activity option. Each of these types of activities includes a goal for the student that is aligned with the phenomena and engineering problem. The materials provide a "teacher edition" for each Engineering Design Challenge. The teacher edition includes specific TEKS, SEPs, and RTCs addressed in the challenge, directions to get students started, and a scoring rubric for assessing students on their science

skills and content. For example, in grade 8 Engineering Design Challenge: Keepers of the Green Goal!, students apply their knowledge of the properties of water to choose the best sprinkler system for their school's soccer field. The goal is to "design a new sprinkler system for your school's soccer field that will keep it in good condition for practice throughout the year."

# EduSmart Science Grade 8

## Indicator 3.1

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

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

## Meets | Score 6/6

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

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

Evidence includes but is not limited to:

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

- Grade 8 materials provide a Vertical Alignment document in the teacher resources to show the connection between new learning goals to previous and future learning across grades 6, 7, 8, and Biology. The Vertical Alignment document also demonstrates how the content builds in complexity across grade levels using the TEKS.
- Grade 8 materials provide a Unit Teacher Guide that contains background information and prerequisite knowledge. In 8.7AB, Force and Acceleration, Unit Teacher Guide (Prerequisite Knowledge) states that, "Students have studied net forces as they relate to balanced and unbalanced forces. They have studied Newton's First Law." In an additional example, 8.9AB, students learn that the sun is a star. Within that unit, students learn about the life cycle of a star.
- Materials are vertically aligned. EduSmart provides a Grade 6 through Biology Vertical Alignment document to show materials are organized using the 5E model of instruction, which naturally lends to content being presented in a way that builds on the complexity within the unit. EduSmart provides materials that build and connect knowledge across the units. For example, The Unit Teacher Guide within each unit provides prerequisite knowledge that students have previously learned about the given standard. In grade 8, with regards to the standard 8.11B – "use scientific evidence to describe how human activities, including the release of greenhouse

gases, deforestation, and urbanization can influence climate," the Unit Teacher Guide explains that climate change is a new topic introduced in grade 8, but students should have a basic understanding of the components of climate change from previous grade levels.

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

- Grade 8 materials provide students with scaffolded learning through demonstrations/visuals in the anchoring phenomenon, followed by the use of visuals they can relate to in the Instructional Modules. When using the instructional module companion, the students can follow along with the module, take notes, and have a graphic organizer and writing prompt/journal activity to "ensure student content mastery." For example, in grade 8, in the unit "Amplitude, Wavelength, and Frequency," students experience lessons that connect and scaffold content knowledge, starting with an anchoring phenomenon activity that introduces the phenomenon of the unit, then progressing toward direct teach opportunities with the Instructional Module that allows students to learn the characteristics of amplitude, frequency, and wavelength in transverse waves, including the electromagnetic spectrum.
- In the Unit Teacher Guide for each module, a series of essential questions are given to guide students' learning. These questions are sequenced to build upon the learning for students throughout the unit. In 8.6E, Chemical Reactions and Equations, students are asked to first identify the reactants and products in a chemical reaction. As they learn about the law of conservation of mass, they are asked to determine how the masses of the reactants and the masses of the products relate to the conservation of mass. Students use the law of conservation of mass and connect its importance to environmental or industrial processes.
- Materials are intentionally sequenced to scaffold learning in a way that allows for increasingly deeper conceptual understanding. For example, in the grade 8 unit Climate and Weather, students explore the types of weather associated with high/low pressure and warm/cold fronts; students assess their knowledge and understanding by completing the Student Review; and finally, students elaborate on their learning by reading about and discussing the possible causes of the "Little Ice Age" that lasted from the 14th – 19th century.

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

- Grade 8 Scope and Sequence provides suggested RTCs and SEPs to align to each unit and identifies suggestions of which specific practice and theme to embed within each unit. The Scope and Sequence at each grade level presents all grade-level core concepts, recurring themes and concepts, and the science and engineering practices.
- EduSmart provides materials that are aligned with the content standards, and their material is organized by category and further broken down into units of the grade-level standards. Note that the recurring themes and concepts and science and engineering standards are not incorporated into the unit activities; they have their own separate categories.
- 5E (Engage, Explore, Explain, Elaborate, Evaluate) model section for sequencing science instruction for each category standard and unit. Materials clearly and accurately present core concepts and science and engineering practices as evidenced by a hands-on lab investigation.

# EduSmart Science Grade 8

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

- Grade 8 materials include a Scope and Sequence of how long each unit should take. Materials provide a Scope and Sequence at each grade level to create boundaries of the main concepts of the grade level by suggesting a time frame to complete each unit. For example, in 8.13B, Heredity and Genes, the Teacher Guide provides prerequisite knowledge stating, "Students should have a basic understanding of cell theory and the difference between plant and animal cells, …"
- EduSmart provides a Unit Teacher Guide that gives the content that students must master within the Background Information and Prerequisite Knowledge sections of the document. For example, in grade 8, for standard 8.13C, “describe how variations of traits within a population lead to structural, behavioral, and physiological adaptations that influence the likelihood of survival and reproductive success of a species over generations,” the Prerequisite Knowledge section provides what students should have learned from previous grades.
- Materials provide Essential Questions as part of the Scope and Sequence to help guide instruction in each unit. These create clear boundaries for the main concepts.
- EduSmart Quizzes found in assessments are available for every core category standard. The quizzes assess student mastery of the core concepts within the course through multiple-choice questions.

# EduSmart Science Grade 8

## Indicator 3.2

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

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

## Meets | Score 6/6

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

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

Evidence includes but is not limited to:

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

- Grade 8 materials provide a Vertical Alignment document that shows how grades 6–8 and Biology standards are aligned. Materials also provide an Implementation Strategies document. Materials include a Unit Teacher Guide that provides prerequisite knowledge of what students have learned prior to that grade level. Materials also provide a Scope and Sequence at each grade level to support teachers in understanding the horizontal alignment across the grade-level content, recurring themes and concepts, and science and engineering practices. The vertical alignment document for teachers to see prior and future grade-level standards.
- Materials provide clear and easy-to-follow guidance and support for teachers within the content unit documents. The activities are aligned with content standards and grade-level content. EduSmart provides a Unit Teacher Guide for each unit.
- 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 connection is placed within each unit of study, thus highlighting 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 also includes

unit TEKS, essential questions, and possible activities that support teachers in understanding the alignment of grade-level content.

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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.

- Grade 8 materials provide a Unit Teacher Guide in every grade level that includes background knowledge, prerequisite knowledge, misconceptions, a list of Essential Questions and their answers, and examples of science concepts. This includes providing prerequisite knowledge of what students have learned prior to that grade level. The document includes a section on common student misconceptions that may become barriers to concept development. Materials do not include support for teachers to develop their own understanding of more advanced grade-level concepts.
- The 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, including overviews of the scientific content learned and the overall goal of the standard to support teacher content knowledge. For example, the Grade 8 Unit Teacher Guide for standard 8.6A gives clear and accurate scientific definitions of six key concepts covered in this lesson. They include Elements, Compounds, Pure Substances, Mixture, Homogeneous mixture, and Heterogeneous mixture.
- 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 8 Unit Teacher Guide for standard 8.6A provides common misconceptions, including but not limited to, “1) Most students still do not fully understand the particle nature of matter; research has shown that most teens do not have a fully conceptualized grasp of particle theory and therefore may be unable to define elements and compounds in particle terms. 2) Many students will think that a compound is a type of mixture because it has more than one element present.”

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

- EduSmart provides an Implementation Strategies guide that explains the intent of the various activities. EduSmart provides a Unit Teacher Guide for each unit, the various components of the units, and the purposes for each component. It gives an expected timeframe for each as well as the intended outcome for students and guidance for teachers in using that specific component of the unit but does not provide a framework that explains the goals of the program. Materials are designed in the 5E lesson format that provides an evidence-based design framework for instruction.
- Materials provide a Letter to Caregivers to introduce families to the EduSmart science curriculum. The letter describes EduSmart’s instructional design as “to provide an engaging, interactive way for your children to explore science topics and develop a deeper understanding of scientific concepts.” The letter continues to describe how families can support learning about science from home and the additional support materials that can be found in EduSmart to help students be successful, like “vocabulary practice, online digital labs, and interactive games.”

# EduSmart Science Grade 8

## 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.

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|---|---|---|
| 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. Furthermore, 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 8 materials provide meaningful sense-making activities. According to the grade 8 Implementation Guide, the materials provide WordExplorer activities to practice vocabulary, journal prompts that integrate writing, and readers that provide "high-quality, high-interest leveled readers that connect the TEKS to a real-world scenario or problem."
- Materials provide opportunities for students to read and write throughout the modules. Through leveled readers and journal writing, students can engage in sensemaking to make connections with the content. EduSmart also provides students the opportunity, through the use of phenomena and hands-on activities, to explore activities to ask questions as well as answer questions as they engage in the content.
- Many EduSmart units provide a Journal Prompt activity "to foster critical thinking skills and the ability to express ideas clearly." Journal Prompts provide a "range of depth knowledge and

require students to delve deeper into scientific concepts and provide explanations that showcase their understanding." Educators are encouraged to use the Journal Prompt as exit tickets, quick writes, or short-constructed responses to check on student understanding of the scientific concepts. Furthermore, many EduSmart units provide an activity called Readers, which provides “a real world-scenario or problem.” The Reader is available in at least two Lexile levels to allow for easy differentiation for students. The Reader provides engaging content to help students gather evidence and develop an understanding of scientific concepts. Each Reader also includes a five-question comprehension check which includes three multiple-choice, one text entry, and one short-constructed response question.

- Materials provide materials that allow and support students to make sense of their learning. One of the ways that materials provide this opportunity is through its Engineering and Design Challenges. For example, grade 8 students have four different opportunities to design solutions to real-life problems. EduSmart also provides activities that allow students to make sense of their learning of phenomena and concepts. For example, in grade 8, standard 8.6C, there is a hands-on activity called "How Does Temperature Affect the Surface Tension of Water?" where students have to come up with their own procedural steps with provided materials to test water at three different temperatures and collect data on the effect of temperature on surface tension.

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

- Grade 8 materials provide "high-quality, high-interest leveled readers that connect the TEKS to a real world-scenario or problem." Grade 7 materials provide word explorer activities to practice vocabulary, journal prompts that integrate writing, and graphic organizers in the Instructional Module Companions.
- Materials provide opportunities for students to use grade-level-appropriate texts through the use of leveled readers. For example, module 8.12C, Diversity of Life, has two different readers for both students approaching grade level and those that are at grade level. Questions to assess learning accompany the texts. In the instructional module, materials provide an accompanying Instructional module companion that allows students to gather evidence to scaffold their learning of the concepts as they review the information in the instructional module.
- Many EduSmart units provide a digital vocabulary activity called WordExplorer, which includes “multi-part vocabulary practice … towards mastery of all vocabulary related to a topic.” Students engage with the vocabulary words by identifying images that relate to the words, reading textual facts and choosing the correct statements, and filling in the blanks with the correct word to complete the statement. Many EduSmart units also provide a Reader activity, which is available at multiple reading levels. The Reader provides engaging content to help students gather evidence and develop an understanding of scientific concepts. Each Reader also includes a five-question comprehension check which includes three multiple-choice, one text entry, and one short-constructed response question.
- Materials provide approaching and grade-level-appropriate texts that engage students to help them gather evidence and develop an understanding of concepts. For example, in the grade 8 reporting category Force, Motion, and Energy, there are texts present for students to read. Furthermore, materials provide both approaching and grade-level-appropriate texts that help students understand the scientific phenomena they are learning within the instructional units. It was stated that the readers have "multiple Lexile levels'' that "allow for easy differentiation at approaching, on-level, or above grade-level comprehension."

- Materials provide opportunities within reporting categories for vocabulary using WordExplorers. For example, in the grade 8 reporting category Matter and Energy, 8.6A and 8.6E have a WordExplorer activity to engage with vocabulary.

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.

- Grade 8 Instructional Module and Instructional Module Companion provide students an opportunity to take notes while watching a lesson, use a graphic organizer to make connections and end with a journal prompt to explain their thinking/understanding about a concept. Grade 6 materials provide opportunities for students to communicate thinking through conducting hands-on investigations and discussions about the anchoring phenomenon.
- EduSmart does provide various communication modes to support students' understanding of scientific concepts. For example, 8.12C – Diversity of Life has two journal options in which students will respond to open-ended questions related to the instructional module components. Within the 8.12C – Diversity of Life module in the explore section, students will interact with the content and will sort organisms into the correct biome.
- EduSmart 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. For example, in the 8.6E Chemical Reactions and the Law of Conservation of Mass Part 2 activity, students demonstrate their understanding of the law of conservation of mass by filling in data tables to represent the number of total atoms of each element in both the reactants and in the products of a chemical equation. Additionally, students will use the data tables and balanced chemical equation to explain how it supports the law of conservation of mass.
- Materials provide multiple opportunities for students to engage in various written modes of communication to support students in developing and displaying an understanding of scientific concepts. They provide many Journal opportunities for students to respond to after an instructional module. For example, in grade 8, students have the opportunity to journal two different ways about the periodic table after viewing an instructional module. Furthermore, materials provide multiple opportunities for students to engage in various written and graphic modes of communication to support their developing understanding of concepts in science. For example, hands-on activities have several questions students answer in an open-ended format that helps them understand the hands-on activity they perform over concepts they are learning within instructional units.
- Materials provide multiple opportunities for students to engage in graphic modes of communication to support their understanding of concepts they are learning in science. Each reporting category contains an Engineering and Design Challenge that allows students to design, create, or come up with a solution to real-life problems that connect to the concepts they learn within the instructional units. This allows students to write, draw, model, create prototypes, and other various modes of displaying their knowledge of scientific phenomena.

# EduSmart Science Grade 8

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.

- Grade 8 activities provide opportunities for students to construct explanations of how and why the phenomena or problem occurs. Grade 8 Engineering and Design Challenges “leverage students' prior knowledge and provide an opportunity for students to collaborate in designing solutions to authentic real-world problems."
- Materials support students to act as scientists and engineers who can learn from engaging in engineering design processes to make sense of science concepts and productively struggle. Each grade level includes four engineering design challenges, along with at least 15 hands-on activities that provide authentic student engagement to productively struggle and build science knowledge about the world around them.
- Materials also support students to act as scientists and engineers who can learn from engaging in phenomena-based instruction. EduSmart uses real-world phenomena to begin each unit and engage students in the learning process. The phenomena are referred back to during the Instruction Modules so students can review their previous ideas and make adjustments based on their new knowledge.

# EduSmart Science Grade 8

## 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. Furthermore, 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.

- Grade 8 materials include a Claim, Evidence, and Reasoning activity for students to complete when conducting simulations. During the simulation, the students collect data and evidence to support their claims. There are two simulation activities for the course: 8.7AB in Force and Motion and 8.13C in Organisms and Environment. Grade 8 materials include hands-on activities for each of the components/TEKS. These activities require students to use the evidence/data they gather to support their hypothesis.
- In the Explore activity section of the 5E lesson, materials prompt students to use evidence to support their hypothesis. For example, in 8.6E, students perform a chemical reactions experimental investigation in which they write a question about the reaction between the two substances that can be answered by doing an experimental investigation. Then, they use their knowledge of chemical reactions to write a possible hypothesis to the question. In 8.6E Common Chemical Reactions Elaborate Reader, students are asked to explain the relationship between chemical reactions and increased speed. They must use text evidence to support their answer.
- Materials prompt students to use evidence to support their hypotheses and claims. For example, in the 8.10ABC Reader "The Little Ice Age," students read about a period of 500 years called the Little Ice Age, where there was global cooling. At the end of the reader, students

answer a question about how volcanic eruptions could have contributed to climate change and are prompted to “use evidence from the text to support your answer." Materials also prompt students to use evidence to support their hypotheses and claims. For example, in 8.11C IM Companion, a journal prompt asks students to explain how carbon enters each of Earth’s spheres. Students are instructed to include five pieces of information in their explanation.

- Materials provide hands-on activities that allow students to support their claims with evidence and reasoning. For example, in the grade 8 activity, "How Does Temperature Affect the Surface Tension of Water?"The students must determine a method to see if temperature affects how well water molecules are attracted to each other by testing three different temperatures and comparing data to see the effect of temperature on surface tension. There is a CER Frame present within the activity, with the guiding question: "Does the surface tension of water vary with temperature?" Furthermore, materials provide simulations that allow students to support their claims with evidence and reasoning. For example, in the grade 8 simulation, "Colors and Heat Absorption,” where students investigate to determine how the change in coat color is an adaptation that aids in survival. There is a CER worksheet the students must complete that asks, "How is the ability to change fur color as the temperature changes from season to season beneficial to the survival of the Addax antelope?"
- Materials provide Journal activities that allow students to support their claims or answers to questions with evidence and reasoning. For example, in a grade 8 journal activity for Biodiversity, the students are given two pictures of feet of different organisms and are asked to identify "Which type of environment do you think each is best adapted to? Explain your answer."

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

- Teachers can preview the vocabulary using a WordExplorer, and then have students read through a Reader activity and provide context to the vocabulary terms they are learning for the concept. For example, in grade 8, there is a reader over hurricanes that allows students to learn the vocabulary word "storm surge" in context.
- The Instructional Module Companion (IMC), such as 8.12B, includes a notetaking guide that has word banks for students to use the vocabulary in content, as well as a graphic organizer to re-emphasize the content, in this case describing the steps in the two types of ecological successions. According to the Implementation Guide, the WordExplorer activities use scientific terms from the IM. This is a flash-card-type activity that uses text, audio, and visual descriptions to help students understand and retain the words and their meaning. Materials contain a WordExplorer activity. The words in 8.12B WordExplorer content of ecological succession include the words: cell wall, chloroplast, cytoplasm, eukaryotic cell, mitochondria, and nucleus.
- Materials include embedded opportunities to develop and utilize scientific vocabulary in context. Each unit includes a note-taking guide as part of the IM Companion, which allows students to practice identifying science vocabulary in the context of the scientific content. Following the fill in the blank note-taking guide, students complete a graphic organizer, which allows them additional practice with the unit-specific vocabulary. Furthermore, units include an activity called WordExplorer, which is a “multi-part vocabulary practice for low-risk, high engagement practice towards mastery of all vocabulary related to a topic.” Students will develop their science vocabulary by 1) matching images to the vocab words, 2) reading facts about the words and matching all that apply, and 3) dragging and dropping the appropriate word to complete the statement. Materials provide at least one WordExplorer activity in each reporting category.

- Materials provide opportunities for students to develop and utilize scientific vocabulary in context. Their WordExplorer activities allow students to "practice for low-risk, high-engagement practice towards mastery of all vocabulary related to a topic." Part one of the activity allows students to choose all the correct images related to a word. Part two of the activity allows students to read textual facts and choose correct statements that relate to the vocabulary word. Part three utilizes a close activity "where students drag and drop appropriate words to complete a statement that represents the correct application of the vocabulary." .
- Materials provide instruction that has embedded opportunities that allow students to develop and utilize scientific vocabulary in context with their Instructional Modules and Instructional Module Companions. Students fill in notes that utilize vocabulary in context to the lesson and topic being taught within the Instructional Module. They also must fill in a graphic organizer that provides visual learning of the concept or topic that utilizes scientific vocabulary. Students also have the opportunity to practice using vocabulary terms by answering a journal prompt that summarizes their understanding of concepts. Teachers use the Scope and Sequence document to ensure they are explicit with the vocabulary terms used within this activity.
-

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

- Materials include opportunities for argumentation and discourse, such as that prompted in the Anchoring Phenomena activities. The teachers are instructed to allow students to discuss and only guide the conversation by prompting questions when they are stuck. When using the IM and a question is asked, the video pauses to allow for discussion (whole group, small group, or partners).
- Hands-on activities have sections called "Initial Argument" and "Argumentation Session" that have students develop their initial argument and then allow all groups to share their arguments through discourse. Students must listen to other groups and critique others' arguments. Additionally, materials provide instruction that integrates argumentation and discourse to support students' development of content knowledge with their Engineering and Design Challenges. When students engage in Engineering and Design Challenges, they design various prototypes, models, presentations, etc. in order to solve a real-world problem or situation. They frequently obtain feedback along the way and, in the final presentation, must present their completed task through a process of argument and discourse.
- Materials integrate opportunities for students to engage in argumentation and discourse. For example, in the 8.6C Surface Tension of Water activity, students engage in argumentation through the use of CER. There is a guiding question of the investigation: "Does the surface tension of water vary with temperature? Students write a CER and then engage in argumentation as they rotate to listen and critique the CERs of others. In 8.6C EDC Keepers of the Green Goal, students will present their irrigation plan to other design teams for feedback. Students must be prepared to engage in respectful argumentation with other students as they explain and receive critiques of their design.
- Materials integrate argumentation and discourses throughout to support students' development of content knowledge and skills. For example, each unit starts with an Anchoring Phenomena to encourage discourse among the class as they try to make sense of the science concepts they are viewing in the video or image. In 8.13C Adaptations, students see an image of a skunk and discuss how the animal is able to protect itself. For example, part of the Engineering Design Challenge process is for groups to share their design with the class, defend their design

choices when needed, and receive feedback on those design choices. This process allows students to practice defending their design choices with science concepts and implement the feedback to make adjustments/improvements to their overall design prior to grading.

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.

- Materials provide opportunities for students to construct arguments. For example, in the 8.6C Surface Tension of Water activity, students engage in argumentation using CER. There is a guiding question of the investigation: "Does the surface tension of water vary with temperature? Students write a CER and then engage in argumentation as they rotate to listen and critique the CERs of others. In 8.6C EDC Keepers of the Green Goal, students will present their irrigation plan to other design teams for feedback. Students must be prepared to engage in respectful argumentation with other students as they explain and receive critiques of their design. They must be able to defend their design with evidence from their research.
- For example, in the 8.13C simulation “Colors and Heat Absorption," students conduct an experiment to determine how much heat is absorbed by different colors. As a conclusion, students use their data to explain how the color change in an addax antelope’s fur aids in its survival. Students have access to a Claim, Evidence, and Reasoning graphic organizer to help them with the writing process. Materials also provide opportunities for students to construct and present developmentally appropriate written and/or verbal arguments that justify explanations to solutions to problems using evidence from learning experiences. For example, part of the Engineering Design Challenge process is for groups to share their design with the class, receive feedback on the design, defend their design choices when needed, and make possible adjustments/improvements prior to their final submission.
- Materials provide instruction that gives students opportunities to construct and present written and verbal arguments that allow them to justify explanations of phenomena and solutions to problems using evidence from what they learned about the concept or topic. Hands-on activities have CER frameworks that allow students to make a claim to a guiding question and present evidence and reasoning for their claim based on the hands-on experience and knowledge obtained about the phenomena or topic. Furthermore, materials provide instruction that gives students opportunities to construct and present written and verbal arguments that allow them to justify explanations of phenomena and solutions to problems using evidence from what they learned about the concept or topic. The Engineering and Design Challenges allow students to design a solution to a real-world problem based on the experience and knowledge obtained about the phenomena or topic. The challenges allow students to experience the engineering and design process, which includes research, imagining solutions, planning, creating, testing, improving based on feedback, and communicating their results to peers.

# EduSmart Science Grade 8

## Indicator 5.2

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

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|---|---|---|
| 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. | PM |
| 3 | Materials provide teacher guidance on preparing for student discourse and supporting students in using evidence to construct written and verbal claims. | PM |
| 4 | Materials support and guide teachers in facilitating the sharing of students' thinking and finding solutions. | M |

## Partial Meets | Score 2/4

The materials partially meet the criteria for this indicator. Materials provide some 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 some teacher guidance on how to scaffold and support students' development and use of scientific vocabulary in context. Materials provide some teacher guidance on preparing for student discourse and supporting students in using evidence to construct written and verbal claims. Materials support and guide teachers in facilitating the sharing of students' thinking and finding solutions.

Evidence includes but is not limited to:

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

- The EduSmart materials provide teacher guides for each guidance unit teacher, which include, misconceptions and essential questions with teacher examples. The materials also provide an anchoring phenomenon activity that gives teachers background information to explain the phenomenon and sample question prompts to help scaffold student questioning.
- The Materials provide teacher guidance on anticipating student responses and the use of questioning to deepen student thinking. Each unit has a Unit Teacher Guide, which provides common misconceptions to help prepare teachers for possible wrong answers. Each Unit Teacher Guide also includes four or five essential questions to be used throughout the unit to help the teacher gauge students' depth of knowledge of the content. Materials also provide teacher guidance on anticipating students' responses by providing possible student responses in the teacher edition of materials activities.
- The Unit Teacher Guide has a Common Misconceptions section. For example, in 8th grade, for standard 8.6C, the Teacher Unit Guide states: "1) Adhesion and cohesion are the same thing. This is the most common misconception; while they are both attractive forces, adhesion refers to attractive forces between the molecules of different substances, while cohesion is the attractive forces between molecules of one substance."

# EduSmart Science Grade 8

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

- The materials do not provide guidance on how to scaffold and support students' development of vocabulary. The scope provides a list of words but no support for developing use in context.
- The materials lack teacher guidance on how to scaffold and support students' development and use of scientific vocabulary in context. EduSmart provides a Scope and Sequence that identifies new grade-level words. These words appear in some activities throughout the specified unit. For example, the unit for Properties of Water, TEKS 8.6(C), identifies the new to grade level words as cohesion, surface tension, adhesion, and capillary action. Additionally, the unit teacher guide provides more background information for the teacher regarding these specific scientific vocabulary words. This guidance provides teachers with the background knowledge in regards to these scientific words, but not how to scaffold and support students in using them in context.
- Materials provide a Scope and Sequence that lists vocabulary terms by unit into "new grade level words'' and "words with prior knowledge," but does not provide guidance on how to scaffold or support students' development and use of scientific vocabulary in context as materials cited in their rubric. Additional support can be found in the ELPS Strategies Guide. For example, within the ELPS Strategy Guides suggested that teachers pre-teach vocabulary, provide word banks or keyword lists, and include sentence stems and starters.
- The WordExplorer is cited in the Implementation Guide as the main activity to use for vocabulary practice. EduSmsart has provided a WordExplorer activity for each unit of study.

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

- In each of the 4 (for the entire course) Engineering Design Challenges, there are discussion questions and analysis questions; however, the materials do not provide materials to support students to use evidence to support claims. EduSmart simulation activities include documents that enable students to use Claim, Evidence, and Reasoning to construct a written response.
- EduSmart provides short modules for the start of the year to introduce Science and Engineering Practices and Recurring Themes and Concepts. One of the SEP modules includes an activity titled "Making Informed Decisions: The Question of Sunscreen" and provides guidance for students to evaluate their own claims with a variety of appropriate sources to evaluate the credibility, accuracy, cost-effectiveness, and methods used to determine their question's answer.
- Each unit guide provides common misconceptions and essential questions to reference and help guide student discourse. Materials lack teacher guidance and support for instructing students in using evidence to construct written and verbal claims, even though the simulations and engineering design challenges require students to use evidence to support their ideas.
- Materials provide Anchoring Phenomenon activities that guide teachers in preparing for student discourse. However, these activities do not support using evidence to construct a written or verbal claim as materials cited in their rubric. EduSmart provides short modules for the start of the year to introduce Science and Engineering Practices, and one of the SEP modules is titled "Analyzing Data from Descriptive Investigations." While the skill is taught at the beginning of the year, EduSmart materials do not emphasize or remind teachers or students to spiral these skills throughout all units.
- Materials provide Engineering and Design Challenges that have a teacher version that gives some guidance on preparing student discourse and using evidence to construct written or verbal

claims. For example, in an 8th-grade teacher version of an Engineering and Design Challenge, there is a discussion session that states, "After you have watched all of the presentations, allow each group to offer feedback and recommendations to other teams for how to improve their exhibits. Each group will discuss modifications together and make necessary adjustments before the final exhibit." This gives the teacher an idea of what students should be doing but doesn't necessarily provide support and guidance for the teacher to help students prepare for student discourse or use evidence to construct a written or verbal claim.

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

- Materials provide support and guide teachers in facilitating student thinking by providing in the discussion question section of the engineering design challenges a section on design analysis in which there are suggested questions that the teacher can ask the students. Additionally, materials provide a unit teacher's guide in each section on common student misconceptions. This document can be used before the unit to guide teachers as they progress through the unit. Materials support and guide teachers in facilitating the sharing of students' thinking and finding solutions to grade-level Engineering Design Challenges.
- Materials support and guide teachers in facilitating students' thinking and finding solutions. Anchoring Phenomenon activities give teachers guidance on how to get students to think about the phenomenon they are viewing and guide the teacher to allow students to ask their own questions, share their thinking, and not just answer questions posed by the teacher. The teacher version of this activity does give question prompts for teachers if students are having difficulty understanding or forming their thinking after viewing the graphic, photo, or video in the activity.
- Additionally, Materials provide Engineering and Design Challenges that support and guide teachers in facilitating students' thinking and finding solutions. The Engineering Design Challenges include teacher versions that provide background information, a design analysis section that has probing questions for students, and product discussion that allows students to share their thinking with others, get feedback, and explain and receive critiques of their design.

# EduSmart Science Grade 8

## 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. | PM |
| 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 |

## Partial Meets | Score 1/2

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

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

Evidence includes but is not limited to:

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

- The materials provide Interactives that assess student knowledge via games or activities. The teacher can use them to assess the content they may need extra help with. The materials also provide quizzes that are formatted similarly to STAAR and are developmentally appropriate based on the standard(s).
- The Interactives are formatted in a variety of ways that engage students and test their knowledge of concepts in a gamified format. Students can receive immediate feedback on their responses. Materials provide a formative assessment 5-question quiz that is formatted in STAAR-like questions for each unit. The quiz can be used to assess student learning of concepts
- Materials include informal and formative assessments in a variety of formats to assess student learning and determine the next steps. For example, Journal Prompts can be used as an informal “exit ticket” or more formal written journal entry to assess and gauge student learning. Each TEK includes at least one journal prompt that can be found at the end of the Instructional Module Companion (IMC). In 8th grade, the curriculum includes an additional 17 separate journal prompts that can be used. Materials also include formative assessments in a variety of formats to assess student learning and determine the next steps. The 8th-grade curriculum includes 9 (out of 20) science content-specific Reader activities that could be used as a formative

assessment. At the end of each Reader, students answer five questions: three STAAR-like multiple choice, one text entry, and a short constructed response. The materials include a summative assessment in the form of a STAAR Practice Test. EduSmart provides two practice tests, each a "full length simulation of the STAAR Science Test and contains STAAR formatted items with a range of DOK Levels."

- The Interactives provided by EduSmart include a formative assessment that provides an informal opportunity to assess student learning. The Interactives allow students to engage with "STAAR-like item types such as drag and drop, text-entry, hot spot, and multi-select. The Interactivity is a gamified version of the standard that allows students to engage with content related to a real-world scenario. Students receive immediate feedback on their progress and can attempt the interactivity multiple times. The interactivity can be used as a review activity before an assessment, as a formal assessment, or as a small group activity. It can be assigned individually or whole group as well."
- EduSmart provides review opportunities for students, which provides students an informal opportunity to assess their learning. "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 can repeat this activity as needed for mastery or review."

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

- EduSmart combines TEKS in some units. As a result, not all of the TEKS are assessed. For example, TEKS 8.7AB Quiz includes eight questions to assess 8.9A but two questions to assess 8.7B. The TEKS 8.9AB Quiz only assesses 8.9A.
- Materials assess some, but not all, student expectations. In the digital quiz, student expectations (TEKS) are identified for each question. However, the same indicators are not available in the print version or for reference in the teacher answer key.
- EduSmart materials are organized by individual TEKS, with a few at each grade level that are combined, like 8.10ABC. Due to the organization of the digital curriculum, each activity is TEK-specific, and the Engineering Design Challenges identify SEPs and RTCs that they incorporate as well.
- EduSmart provides quizzes that assess some, not all, student expectations and indicates which student expectations are being assessed for each question in the digital quiz for the teacher to view.

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

- The Engineering Design Challenges explicitly label the Science and Engineering Practices (SEPs) with the Recurring Themes and Concepts (RTCs) in the activities. These materials include activities that integrate SEPs with the RTCs.
- EduSmart's readers include assessments that require students to apply knowledge and skills to novel contexts by connecting the standard to a real-world scenario and using a 5-question assessment that requires students to apply their knowledge to a novel context. An example is the 8.6E reader, in which students apply their knowledge of chemical reactions to airplanes and jet engines. Additionally, EduSmart incorporates one example of each of the themes. For

example, the reader contains assessment questions specifically designed to focus on that theme for that specific content.

- Materials include activities that integrate scientific concepts and (SEPs) Science and Engineering Practices with RTCs. For example, the materials state, "... the science investigation activities are virtual lab simulations that incorporate recurring themes and concepts with science and engineering practices." Materials include assessments that integrate the science concepts and science and engineering practices with recurring themes and concepts. Each grade level includes four Engineering Design Challenges that require students to apply science content with engineering practices and recurring themes and concepts. The corresponding SEPs and RTCs can be located in the Teacher Edition of the Engineering Design Challenge. Materials also include assessments that integrate the science concepts and science and engineering practices with recurring themes and concepts. Each grade level includes four Engineering Design Challenges that require students to apply science content with engineering practices and recurring themes and concepts. The corresponding SEPs and RTCs can be located in the Teacher Edition of the Engineering Design Challenge.
- EduSmart provides Engineering and Design Challenges that include scientific concepts and science and engineering practices with recurring themes and concepts. These challenges provide a rubric to be used to assess their product that assesses these standards. For example, in the rubric for an 8th-grade Engineering and Design Challenge called "Keepers of the Green Goal," the rubric includes criteria for Design (standards 7.1G, 8.3A), presentation of sprinkler system (8.1A, 8.1B, 8.3A, 8.3B, 8.4C), and use of water properties in sprinkler selection (8.5B, 8.5F). This type of activity is the only type of assessment that has the SEPs and RTCs clearly labeled. Furthermore, EduSmart provides Journal activities that give open-ended questions and opportunities for students to explain their reasoning. Within these journal prompts, the science and engineering practices and recurring themes and concepts are embedded. For example, in an 8th-grade journal prompt on force and acceleration, the student is shown a graphic of an ice skater moving around a skating rink at a constant speed of 3m/s. The student must explain their reasoning if they think the skater is accelerating. The student must use the model to deduce if the skater is accelerating (standard 8.1G). Students had to explain their reasoning supported by the model/graphic and consistent with scientific ideals, principals, and theories (standard 8.3A). They also have to communicate their explanation individually in various settings and formats (8.3B).

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

- EduSmart's readers include assessments that require students to apply knowledge and skills to novel contexts by connecting the standard to a real-world scenario and using a 5-question assessment that requires the student to apply their knowledge to a novel context. An example is the 8.6E reader, in which students apply their knowledge of chemical reactions to airplanes and jet engines. The Interactives in EduSmart embed assessments that contain a variety of assessment types, including drag and drop and multi-select, as students apply their content knowledge in a gamified platform to review science content
- Materials include formative assessments that require students to apply knowledge and skills to novel contexts. The readers are "high quality, high interest leveled readers that connect the TEKS to a real-world scenario or problem." At the end of each Reader activity, students answer five questions to assess their understanding and application of the information. In the 8.9C reader "How Did Our Solar System Form?", students answer a short, constructed response to explain how the solar system formed according to scientists.

- Materials also include assessments that require students to apply knowledge and skills to novel contexts. “Journal prompts serve as an avenue for students to reflect on their learning, connect scientific principles to real-life scenarios, and demonstrate their grasp of scientific ideas.” In 8.7AB Journal 1 - Force and Acceleration, students review an example of an ice skater moving around a skating rink and explain whether or not the skater is accelerating.
- The EduSmart readers include questions that require students to apply the knowledge and skills they learned from the reader and the classroom to the novel context of the information in the reader. For example, the 8th-grade reader "Inertia" has five questions on a worksheet related to the text they read about the forces acting on a space shuttle. The questions are not straight from the reading itself but rather from a novel context in which students must apply what they learned to answer the question. EduSmart also provides Journal activities that prompt students to answer and explain their conclusions to questions requiring them to apply knowledge and skills to novel contexts. For example, in 8th grade, there is a journal prompt about catastrophic events and ecosystems. The students had to apply their knowledge of hurricanes to compare the impacts of the two events in an estuary ecosystem.

# EduSmart Science Grade 8

## 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. Lastly, materials provide a variety of resources and teacher guidance on how to leverage different activities to respond to student data.

Evidence includes but is not limited to:

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

- The materials provide sample responses for Claim Evidence Reasoning (CER) simulations to help when evaluating student responses to the lab. Materials provide a Teacher Edition for simulations and hands-on activities. This provides possible answers to the questions students complete throughout the activity.
- EduSmart provides a unit teacher guide that gives background information for the teacher, including prerequisite knowledge of students, misconceptions, essential questions, and sample answers for the essential questions. The teacher can use the Unit Teacher Guide to guide them in evaluating student responses. EduSmart provides an Instructional Module (IM) and an Instructional Module Companion (IMC). The teacher can use the teacher version of the Instructional Module Companion as a guide when evaluating student responses on the Instructional Module Companion.
- Materials include resources that provide guidance for evaluating student responses. Each of the simulations and hands-on activities comes with a teacher edition, which provides possible answers to the questions students complete throughout the activity. Materials include information that provides guidance for evaluating student responses. Each unit includes a teacher's guide, which includes essential questions students should be able to answer at the end of the unit. The teacher's guide also provides answers to the questions (and common

misconceptions) to help teachers provide guidance and evaluate student responses to the essential questions. Materials include resources that provide guidance for evaluating student responses. For example, each of the Engineering Design Challenges comes with a scoring rubric to assess students' work.

- EduSmart provides teacher versions of Engineering and Design challenges that provide a rubric for guidance on evaluating student products. The teacher version also gives guidance on discussion, design analysis, and product discussion. EduSmart also provides teacher guidance on essential questions found for each unit within the Scope and Sequence in the Unit Teacher Guide. The Unit Teacher Guide provides exemplars to help teachers evaluate student responses to the essential questions for the unit of study.

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 provides an implementation strategies document that guides teachers on how to effectively use their resources to support individual student needs. EduSmart provides reports that teachers can use to analyze assessment data from students. They can monitor the progress of individual students on their quizzes and various assignments within EduSmart. Teachers can use this information to guide and direct students as they progress throughout each unit.
- Materials provide teacher guidance and direction to respond to individual needs by providing the Implementation Strategies Guide to help teachers effectively use the resources available throughout the EduSmart curriculum. Once teachers review student progress in the activity reports, they will be able to customize the work each student is required to complete as they continue to develop their content knowledge based on the suggestions in the Implementation Strategies Guide.
- EduSmart provides an Implementation Strategies Guide. The guide gives support for teachers by providing differentiation strategies, groupings, assignment applications, and explanations of how to use each of their activities with students either individually, virtually, or as small groups or whole groups. It also provides a small paragraph on how to support students who are accelerated learners or learners who require additional support. Furthermore, EduSmart provides a variety of customizable reports that support teachers' analysis of assessment data so teachers can know how students are performing on assignments, quizzes, specific items, and progress monitoring. This allows the teacher to see which students need assistance and enables the teacher to respond to each student's needs based on measures of student progress.

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

- The materials provide detailed assessment reporting, progress monitoring, and quick reteach features to meet individual student needs.
- EduSmart's assessment tools yield relevant information for teachers to use when planning instruction, intervention, and extension. This assessment tool can provide detailed information on student performance, including questions missed, the number of minutes used, and student answer choices. EduSmarts assessment monitoring tools can also track student performance on specific skills or concepts, as well as track student overall growth. This will allow teachers to

monitor individual student progress throughout the unit and, over time, plan appropriate instruction to meet their needs.

- EduSmart assessment tools yield relevant information for teachers to use when planning instruction, intervention, and extension. Teachers have access to reports to be able to see student performance on assignments and quizzes and also a quick glance to see how many of the assigned activities have been completed by each student. EduSmart assessment tools provide reports detailing questions missed, students' answers, explanations for the correct answer, and the amount of time spent on the activity.
- EduSmart provides assessment tools that provide data to teachers that give relevant information for them to use to plan instruction, intervention, and extension for students. Teachers can pull a variety of reports that yield this information in the View Reports section of the My Groups on their website.

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

- The Implementation Strategies document provides guidance on how to use the resources to support students and respond to individual student needs. The platform allows teachers to assign work that is differentiated and based on a student's need (struggling or excelling).
- EduSmart provides a variety of resources and teacher guidance on how to leverage different activities to respond to student data using the Implementation Strategies Guide. The Implementation Strategies Guide provides teachers with guidance on how to use various resources to support student learning and respond to individual student needs based on data.
- EduSmarts assessment monitoring tools can track student performance on specific skills or concepts, as well as track student overall growth. This will allow teachers to monitor individual student progress throughout the unit and, over time, plan appropriate instruction using the resources provided within EduSmart to target students' needs based on data.
- Materials provide a variety of resources for teachers to use in responding to student performance data. Each grade level has access to an Implementation Strategies Guide, which describes each of the activities available in the EduSmart digital platform and how they can be used to help students work towards mastery of science concepts. Additionally, materials provide teacher guidance on how to respond to student data. Teachers can access individual or class data to determine student understanding of a specific question, idea, or concept. Teachers can use the data to create small groups and assign additional reteach or extension based on individual student progress in the content.
- EduSmart provides an Implementation Strategies Guide that provides guidance for teachers on how to leverage different activities to respond to student needs. For example, the guide for the Anchoring Phenomenon activity states, "Have students discuss the phenomenon in small groups or pairs before facilitating whole group discussion to support ELL students as well as students requiring extra processing time or student talk." EduSmart also provides the ability for teachers to create groups to assign students to so they may leverage different activities and respond to student data. Teachers can assign different resources to students based on their needs and group students according to these needs as well. In this manner, teachers can use the student data and create intervention, extension, and extra help opportunities for students.

# EduSmart Science Grade 8

## Indicator 6.3

Assessments are clear and easy to understand.

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

## Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- The EduSmart materials provide quizzes that address the TEKS in a scientifically correct manner. The questions cover the full range of the Depth of Knowledge (DOK), avoid bias, are free from errors, and are straightforward.
- They also provide reviews that can be used as informal assessments or checks for understanding. These contain 3-5content content-related questions that are straightforward, scientifically accurate, and free from errors.
- EduSmart's assessments contain items that are scientifically accurate, avoid bias, and are free from errors. The 8.6B Periodic Table quiz is a good example. The questions cover the full range of the Depth of Knowledge and provide straightforward questions that avoid bias, and some are free from errors. EduSmart provides assessment questions to accompany the readers. Those assessment questions are scientifically accurate, avoid bias, and are free from errors. An example is the 8.6E Chemical Reactions Reader contains five assessment questions to accompany the reading and measure mastery.
- EduSmart assessments contain items that are scientifically accurate, avoid bias, and are free from errors. For example, the 8.9AB The Universe Quiz includes ten questions, all of which assess 8.9A, which are straightforward to avoid bias, assess varying levels of understanding, and are free from errors. EduSmart assessments contain items that are scientifically accurate, avoid bias, and are free from error.

# EduSmart Science Grade 8

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

- The material uses clear pictures and graphics. For example, the 8.13B Heredity and Genes Quiz includes clear pictures to supplement question 2, which asks students where genetic information is stored in mice. The materials also provide student reviews that use clear pictures and graphics that are developmentally appropriate and appropriate for the course. For example, in 8.13B Heredity and Genes, the student review guides the students through a summary of the instructional module, hitting all the key points. The graphics and pictures used are developmentally appropriate and clear for 8th-grade students to use and understand the concepts.
- EduSmart's quizzes feature pictures that are large enough to be able to be seen clearly. The images are also developmentally and course-appropriate. For example, the 8.6E- Chemical Reactions and Equations quiz contains pictures that are clear and appropriate. Furthermore, EduSmart's student reviews use clear pictures and graphics that are developmentally appropriate and appropriate for the course. For example, in 8.10ABC *Climate and Weather,* the student review guides the students through a summary of the instructional module, hitting all the key points. The graphics and pictures used are developmentally appropriate and clear for 6th-grade students to use and understand the concepts.
- Another example is in 8.9AB The Universe Quiz, which includes two different clear graphics for HR diagrams that are easy for students to read and pull information from to answer the questions. Material assessment tools also use pictures and graphics that are developmentally appropriate for the grade level. For example, the 8.7AB Force and Acceleration Quiz includes two images that are used to enhance and supplement the questions students are asked to answer.
- The EduSmart quizzes have pictures that are easy to read and that relate to the question. EduSmart also provides assessment tools that use clear pictures and graphics that are developmentally appropriate. For example, their interactivities provide interactive graphics and pictures that allow students to assess their understanding of the concept.

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

- The materials provide the implementation strategies guide that guides teachers through the process of administering student quizzes. The materials provide the implementation strategies guide that helps teachers through the process of administering student reviews
- EduSmart's materials provide guidance to ensure consistent and accurate administration of assessment tools. EduSmart's implementation strategies guide provides teachers with guidance on administering student quizzes. EduSmart's materials provide guidance to ensure consistent and accurate administration of assessment tools. EduSmart's implementation strategies guide provides teachers with guidance on administering student reviews. For example, the Implementation Strategies document provides details on which activities can be used as formal or informal assessment tools throughout the course of a unit. Materials also provide guidance in the EduSmart quiz answer keys. The answer key not only provides the correct answer but an explanation for why it is the correct answer based on the content taught in the Instructional Modules and other supporting activities.
- EduSmart provides materials that provide guidance to ensure consistent and accurate administration of assessment tools, which includes motions of how to use each activity along with suggestions and time lengths.

- The Engineering and Design Challenge has a rubric that helps the teacher ensure consistent and accurate administration of the challenge to students and how to grade each challenge. Teacher Versions for certain activities allow for consistent grading and accurate administration of assessment tools and activities.

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

- The materials provide text-to-speech options for all assessments as well as language support accommodations to allow all students to demonstrate mastery of the content. The materials provide text-to-speech options in all reader activities as well as language support as accommodations to allow all students to demonstrate mastery of the content.
- Each grade band of EduSmart has a correlating ELPS document that contains suggested accommodations for students to demonstrate mastery of knowledge and skills based on their English proficiency. For example, a suggested accommodation for teachers to utilize for students at the intermediate proficiency is to provide sentence stems with simple structures and tenses, and for the advanced high proficiency is to provide opportunities for extended discussions with students. EduSmart materials include guidance to offer accommodations for assessment tools that allow students to demonstrate mastery of knowledge and skills aligned with learning goals. EduSmart quizzes feature text-to-speech options in all assessments as well as language support as accommodations to allow all students to demonstrate mastery of the content.
- EduSmart provides materials that include guidance to offer accommodations for assessment tools that allow students to demonstrate mastery of knowledge and skills. In each of their digital versions of quizzes, EduSmart provides text-to-speech for students who need it to assist them with answering questions to demonstrate mastery of knowledge and skills. EduSmart also provides materials that include guidance to offer accommodations for assessment tools that allow students to demonstrate mastery of knowledge and skills with their Implementation Guide. This guide provides suggestions for teachers to accommodate students in their activities to allow them to demonstrate mastery of knowledge and skills for each science concept. Additionally, EduSmart provides materials that include guidance to offer accommodations for assessment tools that allow students to demonstrate mastery of knowledge and skills with their ELPS Implementation Guide. This guide provides suggestions for teachers to accommodate Emergent Bilingual students for their activities to allow them to demonstrate mastery of knowledge and skills at various language levels for each science concept.

# EduSmart Science Grade 8

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

Materials provide recommended targeted instruction and activities to scaffold learning for students who have 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 grade 8 Implementation Guide provides teacher guidance for differentiation using stations, ELPS strategies, and accelerated support. The Grade 8 materials review, reteach, and spiral skills in the form of student reviews, interactivities, instructional module companions, and Word Explorer activities.
- EduSmart materials provide multiple opportunities for targeted instruction as they work towards mastery of the content. For example, if a student answers a question incorrectly within the Interactivity, the graphics and verbal explanations help support the student's better understanding of the content. Students are allowed multiple attempts to improve their scores.
- EduSmart materials primarily recommend scaffolded instruction through the use of small group stations to allow the teacher time to work one-on-one or within one of the groups to support students who have not yet reached mastery.
- EduSmart materials provide sentence stems through the ELPS Strategies document, which is accessible to all teachers and can be used for all students.
- EduSmart provides recommendations for targeted instruction within their Implementation Guide to help teachers scaffold learning for students who have not yet achieved mastery. For example, the Implementation Guide for the Instructional Module recommends:
    - a) Accelerated Learners remove the word bank for a more student-led experience.
    - b) Prefill the word or a portion of the word to support students as they take notes.
    - c) Number each sentence to help maintain organization.
    - d) Remove every other sentence to increase white space to give additional processing time as needed.

- EduSmart provides leveled readers to help students who have not yet reached mastery in the subject or are below reading level. Additionally, within these readers, students have the option to use text-to-speech accessibility.

## Materials provide enrichment activities for all levels of learners.

- EduSmart materials provide enrichment activities for all levels of learning. The Implementation Strategies guide offers suggestions on student station activities that can be used as enrichment or reinforcement for all students. Furthermore, EduSmart materials provide enrichment activities for all levels of learners. For example, in the 8.8B Electromagnetic Research Activity, students conduct research to explore how electromagnetic waves are used in different technologies and medical procedures. The activity includes an extension for students to explore how astronomers use electromagnetic waves to study the universe.
- EduSmart provides opportunities for enrichment for levels of learners. Hands-on activities have an extension section that allows students to expand their knowledge of the scientific concept being studied. For example, in 8th grade, the hands-on activity called "Electromagnetic Research" has an extension section that reads: "Astronomers are one group of scientists that use electromagnetic waves to do their work. They study the universe using different telescopes that look for waves across the electromagnetic spectrum to study specific objects. You can find out more about these scientists on the internet or in the library. Explore a scientist who founded one of these technologies that utilizes the electromagnetic spectrum. Some key scientists include Heinrich Hertz, Charles Kuen Kao, and Percy Spencer."
- EduSmart provides an Implementation Guide that suggests stations. Within one of the stations is a Makerspace option that would provide extension opportunities for all learners. Additionally, the Implementation Guide has suggestions and explanations of each activity and a differentiated instruction section that makes suggestions for how to engage students.

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

- Grade 8 materials provide a scope and sequence and unit resource guide to help teachers prepare lessons. EduSmart allows teachers the ability to individualize instruction by assigning certain components or playlists to students based on their level of mastery. EduSmart provides an Implementation Guide for engaging in accelerated learning. The Implementation Guide that has this section states, "Below is suggested differentiation for accelerated learners and learners who require additional support." EduSmart also provides guidance for teachers to help them scaffold students within the lesson.
- The implementation strategies document provides information to teachers for recommended activities to scaffold learning throughout the unit. The unit teacher's guide provides a list of scaffolded essential questions that the teacher can use as a guide for student understanding of concepts.
- The grade level Scope and Sequence, in conjunction with the Unit Resource Guides and Implementation Strategies documents, allow the teacher to plan ahead for just-in-time learning acceleration for all students. Educators can use the unit’s anchoring phenomena to engage students’ prior knowledge and determine their level of understanding before determining the instruction flow for the unit and the educational materials that will be most impactful for the class. Furthermore, EduSmart’s LMS allows educators to create a custom playlist of activities to individualize a student’s learning experience. Educators can assign online learning activities for

additional practice, reinforcement, or enrichment depending upon the needs of the students. Activities can be completed individually or in small groups based on their educational needs.

# EduSmart Science Grade 8

## 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.

- Grade 8 materials include authentic tasks where students collect data, use multimodal texts, interactivities, concept maps, and hands-on activities that allow students to engage in the mastery of content. Grade 8 materials also include Instructional Modules that include structured videos designed to support the instruction of specific scientific concepts and topics. “Each video has multiple breaks to facilitate student discussion – Whole class, Think-Pair-Share, or note-taking.”
- Grade 8 materials provide an instructional strategies document that helps guide the teacher with suggestions to engage students in the mastery of the content. Grade 8 unit module materials contain a variety of activities to engage students in mastery of the content, such as simulations, interactives, and hands-on lab experiences.
- EduSmart materials include a variety of developmentally appropriate instructional approaches to engage students in the mastery of the content. Examples within EduSmart include, but are not limited to, video clips to introduce or reinforce science concepts, authentic hands-on activities, education game-based simulations for learning, connections to real-world situations, and opportunities for design and problem-solving.

# EduSmart Science Grade 8

- EduSmart provides a variety of developmentally appropriate instructional approaches to engage students in mastery of science concepts and content. These activities include authentic tasks. For example, in 8th grade, students can do Engineering and Design Challenges connected to real-life problems and situations that students must present a solution to, using the engineering and design process and skills. Furthermore, EduSmart provides a variety of developmentally appropriate instructional approaches that engage students in the scientific process. For example, EduSmart provides multimodal texts, lessons with video clips, opportunities for inquiry-based learning with their hands-on activities, gamified instructional simulations and interactivities, and anchoring phenomena activities that allow students to engage in the scientific and engineering process.

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

- The Implementation Guide provides teachers with suggestions for using hands-on activities individually, in small groups, or in partners. It is also suggested that student reviews be used in small groups for a teacher-led reteach. The Implementation Guide also provides teachers with suggestions for using readers as a whole group, small group, or individually.
- The Implementation Guide supports flexible groupings by suggesting opportunities where student groups can be changed. EduSmart also provides flexible grouping opportunities throughout each unit. These opportunities could include the anchoring phenomena, the Instructional module, and the hands-on activities.
- EduSmart materials support flexible grouping. The Implementation Strategies Guide provides the educator with guidance on grouping options for each of the main components of the EduSmart curriculum. For example, the Implementation Strategies Guide recommends that the Student Review is “great for small group intervention setting for teacher-led reteach or review.” Additionally, EduSmart LMS allows the teacher to group students and assign work based on their individual learning needs. Teachers can easily move students from one group to another as students develop their scientific understanding throughout the unit.
- EduSmart provides an Implementation Strategies document that gives guidance on different flexible groupings. For example, the Implementation Strategies document states how to use groupings within each of their activities. EduSmart provides materials that lend themselves to grouping opportunities. For example, according to the Implementation Guide, the Anchoring Phenomenon activities allow the teacher to “Have students discuss the phenomenon in small groups or pairs before facilitating whole group discussion to support ELL students as well as students requiring extra processing time or student talk.” The Implementation Guide also suggests that Instructional Modules “can be used with the whole group or assigned virtually for small groups or individuals” and “each video has multiple breaks to facilitate student discussion – Whole class, Think-Pair-Share or note-taking.”

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

- EduSmart materials provide multiple types of practice (e.g., note-taking, hands-on activities, engineering design challenges, online simulations) that appeal to a variety of learning interests and needs. Educators will need to simultaneously use the Teacher Unit Guide, grade level Scope and Sequence, and Implementations Strategies Guide to ensure the successful implementation of a variety of research-based instructional strategies.

# EduSmart Science Grade 8

- EduSmart provides an Implementation Strategies Guide that, when used with the grade level Scope and Sequence, provides the guidance and structure needed to achieve effective implementation.
- EduSmart provides a teacher version of all hands-on activities, as well as rubrics for providing feedback to students. For example, the teacher versions of TEKS 8.6C How Does Temperature Affect Surface Temperature of Water states that the objective for the lesson is through the guiding question, "Does the surface tension of water vary with temperature?" Additionally, the teacher version provides analysis questions and prompts the teacher: "As you monitor their work, be sure to remind them that they need to repeat trials."
- EduSmart provides four Engineering Design Challenges for each grade level. All Engineering Design Challenges are written for students to work collaboratively. Students are also encouraged in all Engineering Design Challenges to engage in respectful argumentation to support their presentations.

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

- EduSmart materials provide diversity as seen in the anchoring phenomena images and graphics representing a diverse group of people and places. SEP and RTC readers depict images and graphics that represent a diverse group of people and places.
- EduSmart materials provide diversity throughout the images it uses within its product. EduSmart also provides diversity in the chosen activities that appeal to a diverse group of students and their interests.
- EduSmart's Anchoring Phenomena represents a diversity of communities in the images and information about people and places. EduSmart's Readers represent a diversity of communities in the images and information about people and places.
- EduSmart provides materials that represent diverse communities and use images and information that are respectful and inclusive. For example, their instructional modules provide videos that represent diverse groups of people and include male and female representations, and they represent diverse backgrounds, including different races, ethnicities, and nationalities. Furthermore, EduSmart provides materials that represent diverse communities and uses graphics and information that are respectful and inclusive. For example, the readers and anchoring phenomena activities provide videos, graphics, and examples that are inclusive of various genders, groups, ethnicities, and nationalities.

# EduSmart Science Grade 8

## Indicator 7.3

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

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

## Meets | Score 2/2

The materials meet the criteria for this indicator. Materials include listening, speaking, reading, and writing support 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 materials include an ELPS Strategies Guide that describes how to implement the ELPS (Beginner, Intermediate, Advanced, and Advanced High) using EduSmart for the following components: 1- Anchoring phenomenon accommodations for listening and speaking include graphic organizers, conversation stems, think,pair, share, and word banks; 2- Instructional Module and Companion accommodations for listening, speaking, reading, and writing include pre-teaching vocabulary, conversation stems, think, pair, share, use native tongue, provide linguistic support with editable IMC, and peer collaboration on graphic organizers and journal prompts; 3- Readers accommodations for reading and writing include text-to-speech, pre-teaching vocabulary, conversation stems, think, pair, share, and assign reader based on reading level; 4- Hands-On Activities and Lab accommodations for listening, speaking, reading, and writing, include pre-teaching vocabulary, conversation stems, think, pair, share, teacher demonstrating the steps, simplify language, peer support and interaction as seen in my previous piece of evidence.
- The materials suggest linguistic accommodations throughout the lesson.In the unit teacher's guide, materials list which skills are highlighted in which activities. For example, Speaking – Anchoring Phenomenon, Instructional Module, activities, and CER. Listening – Instructional Module, Science Investigation Activities, Student Review, Interactivities, activities. Writing – Instruction Module Companion, Journal prompts, Science Investigation, activities with CER or lab data form, activities, Readers. Reading – Instruction Modules, Instruction Module

Companions, Readers, activities, Word Explorer. Furthermore, materials suggest the use of graphic organizers to classify information, order steps in a process, or scaffold written tasks.

- ELPS Strategies Guides provides sentence stems for EB students on four levels: beginner, intermediate, advanced, and advanced high. Sentence stems are provided for various components of speaking and writing in science: generating questions, conducting experiments, and analyzing results from experiments. EduSmart materials also provide an ELPS Strategies Guide to provide guidance for linguistic accommodations for students with various levels of English language proficiency. The ELPS Strategies Guide provides activity-specific guidance on how to support EB students while they listen, speak, read, and write.
- EduSmart provides an ELPS Implementation Guide that includes guidance for linguistic accommodations for their materials for each level of English language proficiency as defined by the ELPS. For example, for Hands-On Activities and Labs, "EduSmart's activities are inquiry-based hands-on labs, investigations, application practice, and research. These activities focus on listening, speaking, reading, and writing." They have a chart that goes through each level of ELPs for each skill: Listening, Speaking, Reading, and Writing. They also provide techniques overall that could apply to students who are emergent bilingual: "The following are some strategies and techniques that can be used with hands-on activities:
    - Pre-teach vocabulary
    - Edit the student documents to provide additional support through simplifying language or instructions
    - Provide sentence stems for reflections
    - Teacher demonstrates the steps for the activity
    - Provide word banks or glossaries
    - Provide verbal and visual instructions
    - Allow the student to use native language
    - Peer support and interaction

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

- TAccording to the ELPS Strategies guide, it encourages teachers to allow students to use native language. Additionally, according to the ELPS Strategies guide, it is encouraged to allow students to follow along to the instructional module with closed captioning.
- In the ELPS strategies document for each unit, EduSmart includes suggestions for teachers about when it is appropriate to use native language supports. During the anchoring phenomena, readers, hands-on activities and IM/IM Companion EduSmart suggests allowing the student to use their native language.
- Materials encourage strategic use of students' first language as a means to support their development of English and meet grade-level science content expectations. The ELPS Strategies Guide makes this recommendation for all activities with EB students at the "beginners" level.
- EduSmart provides encouragement of first language usage for students within their ELPS Implementation Guide. For example, "The following are some strategies and techniques that can be used with the instructional module and instructional module companion: Allow the student to use native language." EduSmart also provides encouragement of first language usage for students within their ELPS Implementation Guide. The teachers would need to use this guide in conjunction with each of the activities provided in order to successfully implement the use of the students' native language.

# EduSmart Science Grade 8

## 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

The 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.

- EduSmart features a caregiver letter that explains the design of EduSmart, how it is used in the classroom, and how it can be used at home to reinforce a student's learning.
- The letter to caregivers also provides information about the design of the program. The letter says, “The curriculum is designed to provide an engaging, interactive way for your children to explore science topics and develop a deeper understanding of science concepts.”
- The letter to caregivers also explains the design of the program. It states, “EduSmart is designed to provide a wide range of tools to help your student track their progress, such as an interactive dashboard that displays their scores and allows them to re-try any tricky assignments and together you can go over any question they did not understand if you choose to do so. This will help them understand their strengths and weaknesses and provide an idea of which topics they should focus on.”
- EduSmart also provides a Teacher Communication Guide that can be used to help guide teachers in ways they can effectively communicate with caregivers. It provides a list of suggested methods to communicate with caregivers.
- The Teacher Communication Guide states, “... communication with parents and caregivers is essential to developing student success and mastery of science content.” It also provides four suggested methods for teachers to communicate at home: progress reports, parent access, student portfolios, and a classroom newsletter.

# EduSmart Science Grade 8

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

- EduSmart materials include a letter to caregivers that provides information on how they can help reinforce student learning and development from home. The letter provides space for student information for logging into the EduSmart dashboard at home to share what they are currently learning and how they performed on previous assignments and activities. Students are encouraged to "... share what they have learned from class as it increases their memory!"
- The letter also provides possible conversation starters to help caregivers engage their children in conversation about what they are currently learning in science. The conversation starters help reinforce what the student has learned at school while also involving the caregiver in their learning.
- The EduSmart Caregiver letter gives information about their program and what students will experience on the platform. Some of EduSmart's hands-on activities provide a Home Connection section. In a 6th-grade activity, the home connection states: "Discuss your research and findings with your caregivers at home. Ask if there are any personal impacts that Marie Curie's work may have had on your household, such as a relative being treated for cancer with radiation or memories of the nuclear arms race or cold war. Be ready to share your personal impact stories with the class." This statement is directed at the student to share with the people in their household and doesn't necessarily help caregivers reinforce students' learning and development in the program.
- EduSmart materials also include a "Teacher Communication Guide" that recommends regular progress reports to send home to caregivers. "The information will provide them with the academic progress of the student and allow them to view which areas their students are progressing in or which areas they are still developing. The materials also encourage "parent access" to reinforce learning at home by allowing the parents to learn alongside their children. Parents should be encouraged to review the Instructional Modules to understand the science content and have conversations with their students at home about what they are learning in the classroom. Parents are also encouraged to access the Readers to "... engage in reading aloud to their child at home."

## Materials include information to guide teacher communications with caregivers.

- The platform provides a way for teachers to share a student's report with caregivers (printed or digitally using a screenshot). Materials also provide a Teacher Communication Guide to help effectively communicate with caregivers. The "Teacher Communication Guide" states, "Communication with parents and caregivers is essential to developing student success and mastery of science content." The Teacher Communication Guide also provides four suggested methods for teachers to communicate at home: progress reports, parent access, student portfolios, and a classroom newsletter. "By using these potential methods of communication, teachers can help build relationships with families as well as provide opportunities to work together to support the student's academic development through using EduSmart's content and learning platform." The EduSmart provides a Teacher Communication Guide also suggests a variety of methods to help guide teacher communications with caregivers.
- EduSmart provides a way for teachers to print a student report from their dashboard to send home to caregivers or to use as a reference in communication with caregivers. Furthermore, EduSmart provides a communication document that can be used to help guide teachers in ways

they can effectively communicate with caregivers. It provides a list of suggested methods to communicate with caregivers.

# EduSmart Science Grade 8

## Indicator 8.1

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

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

## Meets | Score 2/2

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

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 comprehensive, TEKS-aligned Scope and Sequence located on the Teacher Resources tab. This document outlines the order in which knowledge and skills are taught and built in the course materials for Grade 8. The Scope and Sequence include the reporting category for the TEKS, the unit, suggested days, essential questions, new grade-level words, words with prior knowledge, suggested Scientific and Engineering Practices (SEPs), and Recurring Themes and Concepts (RTCs) connections, and possible activities aligned with each standard.
- The material includes a Vertical Alignment Tool that identifies each grade level TEKS, including grade 8. The tool located on the teacher resources tab links the concepts progressively across grade 6 through Biology. This tool clearly shows how science content will be spiraled and built upon over the course of the year and through Biology. The Vertical Alignment Tool also includes SEPs and RTCs.
- Materials include a 5E filter that allows teachers to use a 5E model set up to outline the order in which knowledge and skills are taught for a particular standard.

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

- The Scope and Sequence provides suggested Scientific and Engineering Practice (SEP) and Recurring Theme and Concepts (RTC) TEKS for each unit of study. Since RTCs are not meant to

be taught in isolation, referencing them in the Scope and Sequence provides teachers the opportunity to identify where these concepts are taught at other times in the year. Grade 8 materials include SEPs and RTC connections in the Scope and Sequence located in the Teacher Resources for each standard. For example, in Unit 8.12(C), Diversity of Life, the teacher edition for the Engineering Design Challenge clearly identifies the SEPs and RTCs associated with the project.

- Teachers can access the Implementation Strategies document located under the teacher resources tab for guidance. The materials provide clear teacher guidance on implementation. For example, the guide includes strategies for "anchoring phenomena," instructional modules, and readers. The Scope and Sequence provides suggested SEPs and RTCsTEKS for each unit of study. Since RTCs are not meant to be taught in isolation, referencing them in the Scope and Sequence provides teachers the opportunity to identify where these concepts are taught at other times in the year. The material includes teacher guidance for RTCs across all grade levels. Teachers can reference a recurring concept and view teacher resources, instructions, hands-on activities, and vocabulary and literacy.
- Materials provide a Unit Guide for teachers that provides guidance for facilitating connections across core concepts and includes the standard, the background information for the teacher, prerequisite knowledge the students would need to have common misconceptions, and essential questions. The Scope and Sequence document provides guidance for the teacher to facilitate student-made connections for the SEPs TEKS as well as RTCsTEKS.

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

- The Teacher Implementation Guide Secondary describes interactivities as formative assessments that are "... gamified for high student engagement." The Implementation Strategies document provides clear descriptions of the activities to ensure students have opportunities to review and practice knowledge and skills spiraled throughout the year to support mastery and retention.
- Materials include online activities where students will assess and review their own understanding. Results from the students online activities can provide teachers with mastery and retention data as support throughout the year. Grade 8 materials for online activities for a unit on Human Impact on Climate 8.11(B) include review activities on topics such as human impact on climate and understanding the concepts from the instruction module.
- Materials provide students with multiple opportunities to build on their science knowledge and skills. For example, in the grade 8 unit, Elements, Compounds, and Mixtures, students create models to represent elements, compounds, and mixtures. Therefore, EduSmart does provide opportunities for students to review and practice with content-specific TEKS. For example, in grade 8, there is a 5E lesson on the Carbon Cycle that has a Student Review activity as well as a Quiz. However, this lesson is missing an elaborate portion of the lesson, which is an opportunity for students to practice applying knowledge for the lesson. EduSmart's simulations require students to apply their knowledge and skills to novel contexts. The simulations connect the content to real-world examples where the students can make connections from what they are learning in the classroom to novel contexts. For example, in the Simulation for TEKS 8.13(C), students recognize that the addax antelope changes color in response to the seasons. Students investigate to determine how the change in coat color is an adaptation that aids the addax's survival. They record their observations and arrive at a conclusion. They are able to spiral back

to previous knowledge learned from TEKS 8.12(C) and 8.13(B) regarding variation and biodiversity in an ecosystem as well as heredity and genes.

# EduSmart Science Grade 8

## Indicator 8.2

Materials include classroom implementation support for teachers and administrators.

| | | |
|---|---|---|
| 1 | Materials provide teacher guidance and recommendations for use of all materials, including text, embedded technology, enrichment activities, research-based instructional strategies, and scaffolds to support and enhance student learning. | M |
| 2 | Materials include standards correlations, including cross-content standards, that explain the standards within the context of the grade level. | PM |
| 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 |

## Partial Meets | Score 1/2

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

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

Evidence includes but is not limited to:

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

- The materials have a PDF file with the Implementation Strategies to support teachers in understanding how to use all materials and resources as intended across the grade 8 standards. The materials include an Implementation Strategies document found under Teacher Resources. The document includes recommendations on instructional and research-based activities for grade 8.
- The materials for grade 8 include a Unit Teacher Guide, which provides a list of questions, it also provides activities such as embedded technology and text. The Unit Teacher Guide for teachers gives guidance on each part of the lesson and includes the standard the lesson is addressing, background information the teacher needs to be aware of, prior knowledge students should have on the concept, common misconceptions students might have about the concept, and essential questions the teachers should pose to students at some point during the lesson along with answers and explanations to those questions.
- Materials include an overview document, Implementation Strategies, to support teachers in understanding how to use all of the activities available. For example, the Teacher

Implementation Strategies document briefly describes each activity's purpose, description, facilitation recommendations, and expected timeline.

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

- The grade 8 materials include science standards correlations in the Unit Teacher Guide for each standard that includes the TEKS, background information, prerequisite knowledge, common misconceptions, and essential questions but does not explicitly refer to the cross-content TEKS.
- The materials provide activities called Readers that are correlated to each standard and listed under specific standards on their website. These readers also address Reading and Language Arts (RLA) standards, making them cross-content activities. Materials readers include the ELAR TEKS addressed within the reader. The materials do not provide cross-content standards for math or social studies.
- The materials include science standards correlations. Every unit has a Unit Guide for a standard that lists the TEKS and provides background information, prerequisite knowledge, common misconceptions, and essential questions for the teacher to ask during the lesson. Materials organize lessons according to standards; however, not all activities had evidence of how the TEK was addressed within the context of the grade level. For example, in a student anchoring phenomenon activity called "Why doesn't the roller coaster fall off of the tracks?" found under 8.7(A)(B), the activity has a teacher version that addresses the standard and gives "background information" and "more information" sections to the teacher that explains the standards within the context of the grade level.
- The materials' journal prompts provide standards correlation and cross-content standards within the context of the grade level. They also include standard correlations. For every instructional module and instructional module companion guide, the TEKS that are addressed in the Instructional Modules and Instructional Module Companion are listed. For example, in the Instructional Module for TEKS 8.6(D), Acids and Bases, students compare and contrast the properties of acids and bases, including pH relative to water. The Instructional Module and the Instructional Module Companion are driven by the TEKS.

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

- For each grade 8 standard, the materials include a Grade-Level Material List that indicates all items needed for the multiple activities within each unit or over the course of the year.
- For each grade 8 standard, the materials include a hands-on activity document with the specific items needed for that standard. Within the hands-on activities section of the unit, there is a supply list for the grade level that includes both the consumable and non-consumable items needed for that grade level. Materials listed in the Student Investigation lab are included on the hands-on supply list for the grade level.
- Grade 8 materials include a comprehensive list of all equipment and supplies needed for activities within the grade level. The document is broken down into consumable and non-consumable materials. Additionally, materials are listed in the Student Investigation labs.

# EduSmart Science Grade 8

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

- Within the scientific and engineering practices (SEPs) category for grade 8, there is an Introduction Module in which students learn to be aware of the safe practices and safety equipment that they may need to use during lab and field investigations. There is also a hands-on activity in which students review safety scenario cards and present the safety procedures required to the class.
- Materials include guidance for safety practices, including grade-appropriate use of safety equipment during investigations. Student lab sheets include the following instructions for safety: “Safety should be a top priority in any science activity. If you have questions regarding safety precautions, please ask your teacher for clarification. If there are accidents, notify your teacher right away,” along with activity-specific guidance, such as wearing safety goggles, when needed.

# EduSmart Science Grade 8

## Indicator 8.3

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

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

## Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- The grade 8 Implementation Strategies PDF file lists the expected time for each of the following sections: Anchoring Phenomenon and Instruction Modules. There is a recommended amount of time for each lesson component in the implementation strategies for each unit. For example, the anchoring phenomena for Unit 8.6(B), Periodic Table Teacher Resources, takes 2–5 minutes, and the implementation module takes 20–30 minutes.
- The materials include support scheduling considerations for entire instructional units on the grade-level Scope and Sequence. For example, in grade 8, the Scope and Sequence recommends 9–10 days to cover Heredity and Genes, which will include an Anchoring Phenomenon, Instructional Modules, IM Companions, Student Reviews, Interactivities, Word Explorer, Journals, and an EduSmart Quiz.
- The materials provide teachers with an Implementation Strategies Guide that provides the required time for each portion of the activities listed for the lesson. For example, in the grades 6–8 Implementation Strategies document, Anchoring Phenomenon has an expected time of 2–5 minutes," while an Instructional Module has "direct instruction videos that average 8–12 minutes in length" and an "expected time of 20–30 minutes."

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

- The Grade 8 materials purposefully group standards within a reporting category: combining standards, such as 8.9(A)(B), into units or providing units based on various aspects of a single standard. Materials feature a Scope and Sequence pacing guide that sequences the units to

ensure the content is taught in an order consistent with the developmental progression of science.

- The materials give implementation strategies to show what order to follow in the development of the lesson through the 5E lesson model structure. The progression of the activities and content within the implementation strategies document reflects a progression from direct instruction, guided learning, collaborative learning, independent mastery, and then station activities for enrichment or intervention. The sequence of the suggested content allows for appropriate developmental progression through the TEKS and content that is required to be taught within one school year.
- Materials provide a Scope and Sequence of the standards. The Scope and Sequence document follows the TEKS as outlined by the Texas Education Agency. By suggesting the number of days to be spent on each unit, it provides flexibility in the implementation of content while still ensuring that all grade-level content can be completed over the course of the year.

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

- The grade 8 materials include sufficient lessons and activities to support a full academic year of learning, along with review, reteaching, and spiraling activities for mastery and retention. According to the Implementation Strategies document, grade 8 station activities and student reviews are designed to provide condensed versions of the instruction module. For example, the Teacher Implementation Strategies document provides recommendations for using the materials as learning stations, which may allow additional classroom time for reinforcement and enrichment as needed.
- The materials have connected the scientific and engineering practices (SEPs) and the recurring themes to multiple content TEKS to ensure that they are covered multiple times throughout the year. This is evident in the Scope and Sequence of the units since each has a recurring theme and/or a SEP associated with it. For example, in the grade 8 Scope and Sequence, the Unit titled Elements, Compounds, and Mixtures is suggested to take 7–9 days and lists possible activities such as Anchoring Phenomenon, Instructional Modules, and a Reader. This allows teachers to see a time frame for the unit but still have the flexibility for the amount of time spent on the unit as well as the activities they can use.
- The materials provide a 5E lesson option for the teacher to see which activities fit within a 5E lesson model. This allows the teacher to see which activities are best for each part of the cycle and flexibility when planning using a 5E instructional model coupled with the Implementation Strategies guide for the amount of time each lesson's activity takes. For example, in grade 8 under 8.7(A)(B), the 5E model option lists multiple activities for the teacher to choose for their Explore, Explain, and Elaborate sections of the 5E lesson model. Under the Explore sections, the teacher can see a choice of interactivity, simulation, or hands-on activity. Under the Explain section, teachers can choose an Instructional Module, the Instructional Module Companion, or a Student Review activity. Finally, under the Elaborate section, teachers can see a choice of Word Explorer or Journal activity.

# EduSmart Science Grade 8

## 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 mostly clear and easy to understand.

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

Evidence includes but is not limited to:

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

- The layout of the materials is done in a way that includes an appropriate amount of white space and colorful images/graphics that help students focus on what is essential and allow the user to follow along easily. The colors and fonts used ensure the content is easy to read and follow.
- The materials include appropriate white space and a design supporting student learning. One example is the graphic organizer for the 8.13B Heredity and Genes Activity. The graphic organizer is appropriate for students to understand, and there is ample white space on the page. For 8.13B for journal 1 on Heredity and Genes, there is ample white space for students to record their responses to the journal question.
- The materials include an appropriate amount of white space, and the overall design does not distract from student learning. For example, the 8.7AB Splat Simulation student worksheet has a clear, prominent title with appropriate subheadings, an observation table to aid in student organization, and a graphic organizer for students to write their Claim, Evidence, and reasoning statement. Additionally, the digital platform color palette is used consistently throughout the entire middle level with bolder colors (orange) to draw attention to links for navigation.
- The quizzes are formatted with ample white space and appropriately sized images to answer the questions within the materials. Additionally, readers have enough space and pictures for reference, making them visually easy for students to read.

# EduSmart Science Grade 8

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

- Materials include graphics and other images that are grade-level appropriate and serve a clear purpose to support the content being taught. The Instructional Modules used in the platform provide short video-style lessons with age-appropriate graphics and scenarios. The built-in pause portions of the IM allow students and teachers time to absorb the information and replay if needed to ensure understanding of the content being discussed.
- Materials use age-appropriate pictures and graphics to support student learning. An example is included in the anchoring phenomenon picture for 8.13B of a student who is smiling; the background of the picture is blurred so as not to distract from the image of the student. In the reader for 8.12C Diversity of Life, there are enough pictures embedded within the reading to provide students with visuals that support their understanding of the concepts of diversity throughout the reading.
- The materials include age-appropriate pictures and graphics that support student learning and engagement. For example, each Word Explorer activity includes a section where students choose all correct images related to the vocabulary word. In 8.13A Plant vs. Animal Cells Word Explorer, students click on one of the eleven vocabulary words and select images they believe to match the word's meaning. For the "nucleus," students will select the two images that have a central point with other material around it. These images emphasize the nucleus being the "center" of the cell. The materials embed age-appropriate pictures and graphics that support learning and engagement without being visually distracting. For example, in 8.7AB Splat!, students "use" an air pump to apply varying amounts of force and observe the effect on a constant mass in an online simulation. The graphics and images in the online simulation are easy to read and understand to support and engage students learning in the virtual model.
- Materials embed age-appropriate pictures and graphics that support student learning and engagement. Their readers have pictures for reference that assist student comprehension and give examples for students that provide context while they are reading. Materials also embed age-appropriate pictures and graphics that support learning and engagement with their Instruction Modules. Their modules provide concrete examples through graphics and videos that engage students and provide context to the science they are learning.

## Materials include digital components that are free of technical errors.

- Materials are free of errors.
- Materials are free of technical errors.
- Materials are free of spelling, grammar, and punctuation errors

# EduSmart Science Grade 8

## Indicator 9.2

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

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

## Not Scored

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

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

Evidence includes but is not limited to:

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

- Materials provide instructional modules, interactivities, and other digital technology that align with the learning objectives as outlined in the TEKS. The materials allow digital technology and tools to be used in whole group settings by being projected on the screen or on individual devices to allow students to work at their own pace.
- Materials include Instructional Modules, Interactivities, and other digital technology components that are purposefully designed and align with the learning objectives as outlined in the TEKS. EduSmart's digital platform is easy to use, navigate, and engage In a way that does not distract from the learning objective that students must show mastery.
- Materials include Instructional Modules, Interactivities, and other digital technology components that are purposefully designed and align with the learning objectives as outlined in the TEKS.
- EduSmart's digital platform allows for easy navigation, which supports students in a way that does not distract from the learning objective and supports students who must show mastery.For example, the digital curriculum includes technology and tools to enhance student learning through features, such as gamified activities, virtual simulations, and engaging reading selections. For example, digital technology and tools can be used in whole group settings by being projected on the screen or on individual devices to allow students to work at their own pace.

- The Implementation Strategies document makes suggestions for whole group, small group, or individual work for each of the digital learning tools available in the materials. For example, they have a variety of interactive materials, including their reviews, interactivities, and simulations, that are engaging and support student learning. Materials provide integrated digital technology and tools that support student learning and engagement. For example, digital versions of articles that contain novel content applied to science concepts that students can read and interact with questions on their computers. Students have options when reading to change the font size, contrast, and zoom in to make the reader easier to understand, see, and read.

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 materials provide activities and other digital technology that allow students to collect, manipulate, and analyze data as outlined in the science and engineering practices TEKS. For example, materials include digital technology materials to help students better understand and apply the material they are learning. Students can collect, manipulate, and analyze data as outlined in the science and engineering practices TEKS. EduSmart carefully designs digital technology to be purposeful, relevant, and aligned with learning objectives as outlined in the TEKS. The use of digital technology allows students to make connections to recurring themes and concepts through real-world applications.
- Materials integrate digital technology in ways that support student engagement with the science and engineering practices and grade-level content. The materials provide opportunities for students to engage in online simulations and virtual lab experiments to practice the science and engineering practices of conducting investigations, collecting and organizing data, and communicating their findings like scientists. Materials also integrate digital technology in ways that support student engagement with recurring themes and concepts. According to the EduSmart Implementation Strategies document, students are exposed to the recurring themes and concepts, along with grade-level content, in the science investigation activities, instruction module companions, readers, and anchoring phenomenon. Suggested recurring themes and concepts for each unit are included in the grade-level scope and sequence.
- Materials include specific science and engineering and recurring themes and concepts sections on their website that provide online investigation activities, hands-on activities, and instructional modules that are engaging and address these standards. Within grade-level content, they have the same activities that create the same engagement and digital technology integration.
- The Implementation Strategies Guide states: “EduSmart offers instructional materials specifically tailored to science and engineering practices. These activities are found in the title titled ‘Scientific and Engineering Practices.’ To assist teachers with the integration of the SEPS into the context of the content being taught, suggested SEPS are listed on the scope and sequence for each content standard.” The guide also suggests, “Instructional modules can be used to introduce scientific and engineering practices or to refer to skills.”
- The Interactives are gamified activities that are used to review SEPs and RTCs. The activities are hands-on activities designed to facilitate student’s knowledge and experiences with the science and engineering practices.”

# EduSmart Science Grade 8

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

- EduSmart's digital content can be linked to various Learning Management Systems, which allows for easy collaboration between students to teachers and students to students. For example, students receive feedback on their assessment from the Learning Management System.
- EduSmart allows teachers to share live lessons with other teachers through the EduSmart platform workspace. EduSmart allows teachers to create live lessons and share them with students.
- EduSmart allows teachers to assign students to sub-groups to allow for more individualized instruction, and students can work collaboratively in those groups by downloading the content into other learning management systems, like Google Drive.

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

- EduSmart's digital technology is compatible with a variety of learning management systems and technology devices. Digital technology is accessible on computers, laptops, and tablets. The digital technology is available to be shared through a variety of platforms, including both the EduSmart platform and Google Classroom.
- Materials integrate digital technology that is compatible with a variety of learning management systems. EduSmart allows “one-click” assigning of activities to Google Classroom, the EduSmart LMS, or the ability to copy URLs to paste into another LMS.
- For example, teachers can assign assignments and activities to Google Classroom through the learning management system itself, or there are links to activities that can be copy pasted. EduSmart does note when copy-pasting the assignment URL: “Your students can access the assignment via this URL. To access this URL, students will need to be logged in to EduSmart or be prepared to enter valid login credentials.”

# EduSmart Science Grade 8

## 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

The materials contain digital technology and online components that 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 designs digital technology and online components to align with the scope and approach to science knowledge and skills progression as outlined in the TEKS. Simulations and interactives provide students an opportunity to build their scientific inquiry skills through well-defined skill progression. EduSmart's digital technology and online components also support grade-level learning objectives of the materials as outlined in the TEKS and are grade-level appropriate. For example, simulations and interactives provide students the opportunity to build their scientific inquiry skills through well-defined skill progression. Interactivities and Simulations provide some level of guidance to help students gather relevant information, but also enough freedom for students to explore some of their ideas. These activities provide students opportunities to conduct virtual experiments, gather and collect data, and communicate their findings like a real scientist.

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

- The materials provide an Implementation Strategies document that guides teachers on the use of embedded technology to support and enhance student learning. This information can guide the teacher on how EduSmart components can be used in their instruction. The Implementation Strategies document identifies where some of the activities can be completed digitally or on

paper. For example, portfolios can be either electronic or paper to keep track of student work, especially as they work through engineering design challenges. For example, the materials indicate that the Instructional Module Companions "... can be used for digital or printed interactive journal components."

- Materials include an Implementation Strategies Guide for teachers to use for guidance for the use of embedded technology to support and enhance student learning. For example, the guide states that the instructional modules: "Can be used whole group or assigned virtually for small groups or individuals." and "When assigned virtually, the student must interact with the video after each break to continue the video to reduce student inattention."
- Additionally, materials provide an Implementation Strategies Guide for teachers to use for guidance for the use of embedded technology to support and enhance student learning. For example, the guide states that the science investigation activities "... are 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." It also says, "Data can be collected and analyzed in traditional lab format or Claim, Evidence, Reasoning format." Furthermore, Materials provide an Implementation Strategies Guide for teachers that provides guidance for using embedded technology to support and enhance student learning. For example, the guide states that for quizzes, "Teachers have the autonomy to determine the use of the quizzes and the mode they are assigned. The quizzes can be printed, shown in present mode, or assigned online."

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

- Materials include a caregiver letter available to parents and caregivers to support student engagement with their digital platform and online components. The communication letter gives guidance on how to support parents and caregivers with student engagement with EduSmart's digital platform and online components. It introduces guardians to the digital curriculum, and it can be used to support learning from home. The Teacher Communication Guide suggests ways for teachers to help provide support to parents and caregivers to support student engagement with digital technology and online components.
- EduSmart's learning platform is accessible regardless of physical location to allow students to access materials at home. Parents and caregivers have the opportunity to access the content with their child to support student engagement. Materials are available to parents and caregivers to support student engagement by using the learning platform to track their progress and provide support when needed on identified concepts.