Accelerate Learning STEMscopes Science TX Grade 5

Accelerate Learning STEMscopes Science TX Grade 5 Executive Summary

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

Grade	TEKS Student %	TEKS Teacher %	ELPS Student %	ELPS Teacher %
Grade 3	100%	100%	100%	100%
Grade 4	100%	100%	100%	100%
Grade 5	100%	100%	100%	100%

Section 2. Instructional Anchor

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

Section 3. Knowledge Coherence

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

Section 4. Productive Struggle

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

Section 5. Evidence-Based Reasoning and Communicating

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

Section 6. Progress Monitoring

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

Accelerate Learning STEMscopes Science TX Grade 5

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

Section 9. Design Features

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

Accelerate Learning STEMscopes Science TX Grade 5

Indicator 2.1

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

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

Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- The materials provide multiple opportunities to develop and practice grade-level appropriate scientific and engineering practices, as outlined in the TEKS. For example, in the Explore "Home Sweet Home" lesson, students design and create circuits. The lesson states, "Introduce the design challenge and the criteria to the students. Tell students that they are going to design and construct 3 complete circuits that transform electrical energy into motion, light, sound, and thermal energy for a home. There are no wires available. Each circuit must use a different conductor. The student's design should be clearly drawn with all parts labeled."
- The materials prompt students to engage in hands-on activities that provide students with opportunities to practice and demonstrate SEPs. In the "Uses of Energy Elaborate Engineering

Connection" scope, students create a solar air heater. The lesson description states, "Students will focus on the first five steps of the Engineering Design Process (defining the problem, brainstorming, planning, building, and testing) to create solar air heaters that warm up a bedroom during winter."

- The materials provide multiple opportunities to show mastery of grade-level appropriate scientific and engineering practices. For example, materials include opportunities for students to ask questions that can be answered using evidence from investigations or gathered by others. In the Elaborate Science Connection scope, students listen actively to explanations to identify relevant evidence and respectfully engage in a scientific discussion about Palo Duro Canyon. The "Engineering Connection" scope requires students to define the problem, brainstorm, and design solutions to prevent sand from piling up on a beach during storms. In another scope, students analyze a table of observations to compare the fruit salad and sweet tea mixtures. In the Explore Activity, "Is it a Solution?", students create a data table from their observations and write a scientific explanation that explains how matter was conserved in the solution created.
- The materials outline how the students use scientific and engineering practices to investigate grade-level appropriate content concepts with opportunities to repeat the practices throughout the year. For example, each grade level scope has a Matrix that lists the SEPS and the scope activities that connect to each SEPS. In the Changing Earth's Landforms Explore scope, students complete stations to model how wind, water, and ice change Earth's surface resulting in the formation of new landforms.

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

- The materials identify overarching concepts using recurring themes and show how they connect within the materials. The scope and sequence includes specific information about when recurring themes are introduced and when they are spiraled back into the program. For example, in grade 5 Virtual Explore: Weather, the students identify and investigate cause-and-effect relationships to explain scientific phenomena between weather and the water cycle. In Explore: The Water Cycle at Work, students identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems and examine and model the parts of the water cycle and their interdependence in the function of the system. Throughout this scope, students collect data, identify patterns, and investigate the cause-and-effect relationship between weather and the water cycle.
- For example, the students examine the themes of patterns and cause and effect in the resources scope. Students discuss ideas they have to help stop the pollution of rivers and the effect trash and humans influence the environment.

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

- The materials support teachers in developing student content concepts and skills by giving them resources and cues at varying points in lessons and units throughout the grade level. For example, the materials contain a Teacher Background, Standards Planning, and lesson notes that explain, describe, and make connections between the SEPs and the development of conceptual understanding. For example, the grade 5 Day-to-Day Weather Engineering Connection activity provides suggestions and guidance for teachers to facilitate student

learning. The section "If students are stuck, use the following guiding questions" provides questions such as "What type of material would be good to trap the dew that could fit into a backpack?"

- Materials use the 5E+IA model in every scope. For example, the "Weather and the Water Cycle" scope starts with students watching a video of an evaporating water puddle. A thinking/talking activity guides teachers and students in a discussion of observations. In the Explore section, students investigate where on Earth the water cycle is taking place. In the Explain section, students are reconnected to the phenomena with the Interactive Science Notebook. It provides reflection opportunities for students from the content they learned from completing the Explores and reading the STEMscopedia. The Elaborate tab offers students several opportunities to apply what they have learned in the Science Connection, Engineering Connection, Science Today, and Virtual Experience activities.

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

- The materials include opportunities for students to ask questions and plan and conduct investigations. Each scope contains an Engineering Connection activity in the elaborate tab that allows students to ask questions and plan and conduct investigations. For example, students design land reclamation plans that restore the land and ecosystem around an abandoned coal mine. Students are guided to ask questions like "What sorts of things have scientists done to reclaim land near real mines?" and "How can you reduce erosion?"
- The materials include opportunities for students to engage in problem-solving to make connections across disciplines and develop an understanding of science concepts. Materials include these opportunities with the Engineering Connection section of each scope. For example, in the Conservation and Recycling scope, the Engineering Connection challenges students to design a new play yard to address flooding and shade with environmentally friendly shaded areas and native plants and trees. Students engage in problem-solving to develop an understanding of science concepts within other areas of the scopes.

Accelerate Learning STEMscopes Science TX Grade 5

Indicator 2.2

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

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

Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- The materials use phenomena as a central anchor that drives student learning across grade-level content in each discipline (earth/space, life, physical science). Materials drive knowledge-building for students. Students examine phenomena using science and engineering practices through the lens of recurring themes and develop content knowledge as they work to construct explanations of the phenomena and/or solve engineering problems. Materials include an initial phenomenon in the first tab of every scope. The teacher shares phenomena through pre-assessment questions. Then, the students participate in investigations in which they collect data and apply their learning to find the correct answers or solutions.
- For example, in the circuits Science Connection, students work in small groups to answer a driving question, brainstorm, research, plan, and rehearse a public service announcement. The lesson description states, "Students will create public service announcements (PSAs) to educate people about how circuits transform electrical energy into other forms of energy that are useful in their daily lives." Another lesson description states, "Students will create skits depicting energy transformations in an amusement park."

Accelerate Learning STEMscopes Science TX Grade 5

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

- The materials provide opportunities to leverage students' prior knowledge and experiences related to phenomena and engineering problems, ensuring that connections are made to previous science TEKS while allowing students to communicate their experiences outside of school. For example, each scope has an Accessing Prior Knowledge section which states, "This element is designed to uncover student misconceptions and provides a measurement of student learning to act as a baseline." Students use their current knowledge of weather and the water cycle to listen to prompts about weather and the water cycle and communicate how much they agree or disagree.
- For example, in the Properties of Mixtures and Solutions scope, materials include an Engage activity called Choose Your Side. In the activity, the teacher displays a vocabulary term first, in this case, either the word Mixture or Solution, then an image for the term. Students must decide if the image is a good example of the term and walk to a sign to indicate their decision. The activity happens before evaluating the scope phenomena.
- The materials guide the teachers and students to address potential areas of misunderstanding adequately. Teachers ask probing questions. For example, a misconception the student may have about this phenomenon, such as "Prompt 3-A visible cloud is not water vapor: Students tend to think that clouds are made of water vapor. Actually, clouds are made of tiny water droplets and/or ice crystals that form after water vapor cools and condenses back into liquid (and then freezes to ice if it is cold enough). These drops fall to the ground when they become large enough."

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

- Materials provide clear teacher guidance for facilitating student-made connections across core concepts and scientific and engineering practices in each scope included in the Scope Overviews, phenomenon descriptions and Engineering Connection's description.
- For example, the Behavioral Traits scope overview explains how the students will make connections as they engage in activities throughout the scope.
- For example, the Changing Earth's Landforms scope phenomenon description states,"Students will watch a video of a sand dune changing over time. Teachers can use a Gallery Discussion questioning strategy for engagement. The goal of this phenomenon and questioning strategy is to engage students and to have them begin to develop their understanding of how landforms on the Earth change over time because of a variety of environmental conditions."
- For example, Properties of Matter scope Engineering Connection's description explains that "Students will focus on the first five steps of the Engineering Design Process (defining the problem, brainstorming, planning, building, and testing). Students will use their understanding of properties of matter to design and build doghouse prototypes that will keep a litter of puppies warm in the winter."

Accelerate Learning STEMscopes Science TX Grade 5

Indicator 3.1

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

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 systematically, coherently, and accurately build knowledge.

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

Evidence includes but is not limited to:

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

- The materials connect new learning to previous and future learning within and across grade levels. For example, in the Teacher's Guide, materials include a vertical alignment of the Science TEKs section, which includes a Flashback and a Fast-Forward that address what is being taught within each unit and explain how it connects to previous and future learning goals.
- Materials are vertically aligned. For example, in the grade 5 Earth's Rotation Scope, students demonstrate that Earth rotates on its axis once every 24 hours and explain how that causes the day/night cycle and the appearance of the Sun moving across the sky, resulting in changes in shadow positions and shapes. The Flashback connects to lessons previously taught in grade 4 when students would collect and analyze data to identify sequences and predict patterns of change in seasons, such as temperature changes and daylight length.
- For example, in the Structures and Functions of Organisms Scope, students analyze the structures and functions of different species to identify how organisms survive in the same environment. The Fast-Foward connects grade 5 students to identifying and comparing the basic characteristics of organisms, including prokaryotic and eukaryotic, unicellular and multicellular, and autotrophic and heterotrophic.
- The materials present content that builds complexity within and across units and grade levels. The Scope description includes information that addresses what is being taught within each unit

and explains how it connects to previous learning goals under Spiral Opportunity. For example, in the Circuits Scope, students build on prior knowledge of how electrical energy travels in a closed path that can produce light and thermal energy. The Spiral Opportunity states, "Rather than only focusing on electrical energy transformations in circuits, in the Uses of Energy scope, students learn how several different kinds of energy can be transformed in a system." Students will apply knowledge by focusing on the last two steps of the Engineering Design Process to evaluate a design for a tripwire alarm and redesign it if needed to set off an alarm while keeping within the problem's constraints.

- Materials are vertically aligned and build knowledge across grade levels. For example, in grade 2, students learn to classify matter by physical properties. Grade 3 students build on that knowledge by identifying how physical properties change, such as their states of matter. In grade 4, students observe different properties of matter and if those properties are conserved when combined with other substances to make mixtures. In grade 5, students learn about physical properties, such as substances' states of matter and solubility in water. In the Properties of Mixtures and Solutions Scope, students explore how some liquids and solids dissolve in water while others do not, and how some substances maintain their physical properties when mixed together while others do not.

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

- The materials include a progression of concrete, representational, then abstract reasoning when presenting concepts that allow for an increasingly deeper conceptual understanding. The materials use the 5E +IA model and are structured to build student knowledge and skills as students experience a phenomenon before utilizing models as a tool for reasoning. Students experience or observe a phenomenon and access prior knowledge in the Engage section. Then, they get hands-on experience in the Explore section before learning the why in the Explain section. In Elaborate, they apply what they have learned in various situations.
- For example, Our Solar System Engage section begins with a Scope Phenomenon video of the Sun and the planets. In the Explore section, students construct and explain a model of the orbits of the Sun, Earth, and the Moon and a model of the order of the planets from the Sun. In Life Cycles, students watch a video showing the phenomenon of a daffodil's life cycle. Teachers use a Thinking Cap questioning strategy to facilitate understanding of the life cycle of a plant. A student hand-out includes questions related to the phenomenon, such as, "What does a daffodil flower start out as?"
- The materials sequence instruction in a way that activates or builds prior knowledge before explicit teaching occurs, allowing for increasingly deeper conceptual understanding. For example, the material's Lesson Planning Example suggests completing the Accessing Prior Knowledge Activity before beginning Scope Phenomena. For example, in the grade 5 Earth's Rotation, students write a scientific explanation explaining why someone with a tree in their yard would notice that the tree's shadow looks different at 7:00 a.m. compared to 1:00 p.m. Students use the knowledge gained from modeling the rotation of the Earth with a beach ball and a flashlight to show what causes the day and night cycle. Then, the students determine how the Sun's apparent movement across the sky affects the shape and position of shadows. Students evaluate a backyard design that will shade a swing set throughout the day and redesign it to fit within the constraints of the problem using what they know about the Earth's rotation and the apparent motion of the sun across the sky.

- For example, in grade 5, Interactions in Ecosystems, students listen to prompts about ecosystems and communicate agreement or disagreement with the statements by forming a sliding scale across the classroom. They take a multiple-choice pre-assessment. Both are reviewed and discussed before moving on to observing and identifying the biotic and abiotic factors in a schoolyard ecosystem.
- Materials ensure students experience a phenomenon or problem before utilizing models as a tool for reasoning. Materials give students opportunities to use models to depict relationships and form explanations. In the grade 5 scope for Uses of Energy, after observing how a lava lamp model's electrical energy is transformed into heat energy, students work in groups to investigate and describe the energy transformation in everyday objects, such as computers, light bulbs, and pencil sharpeners.
- Materials utilize visual aids and hands-on learning experiences as scaffolds to build an understanding of abstract concepts. After viewing a video of a snowboarder in Equal and Unequal Forces, students work in groups to design an experimental investigation that tests the effects of forces. The lesson states, "In this activity, students will design an experimental investigation that tests the effects of forces, such as magnetism, gravity, and friction, on an object. Students will complete their investigations and communicate the results with the class."

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

- The materials present grade-specific core concepts, recurring themes and concepts, and science and engineering practices. For example, materials use the 5E instructional model for sequencing science instruction. The Lesson Planning Example suggests completing the Accessing Prior Knowledge Activity before beginning Scope Phenomena. The scopes then progress to Explore, where students engage in the content through hands-on activities. In Explain, students get more content information and opportunities to explain their thinking.
- For example, in Earth's Rotation, students play Always, Sometimes, Never to determine whether statements or claims are sometimes true, always true, or never true. Teachers then show the Scope Phenomenon video, and students discuss the questions on the student handout. Students model the rotation of Earth to show what causes the day and night cycle, and then they determine how the Sun's apparent movement across the sky affects the shape and position of shadows. Students write a scientific explanation that explains why someone with a tree in their yard would notice that the tree's shadow looks different at 7:00 AM compared to 1:00 PM. Students create newscasts depicting how Earth's rotation affects shadows throughout the day in the Science connection section or evaluate a backyard design that will shade a swing set throughout the day and redesign it if needed to fit within the constraints of the problem using what they know about the earth's rotation and the apparent motion of the sun across the sky in the Engineering Connection section.
- For example, in Environmental Changes, students identify two truths and a lie by reading statements about changes to ecosystems. Students role-play in a game to investigate how certain environmental changes in the ecosystem affect the cycling of matter and flow of energy in a food web and how human activities can be beneficial or harmful to an ecosystem. Students write informative speeches about the flooding in Yellowstone National Park and how the flooding has changed the ecosystem of the park. Finally, the materials assess students' knowledge gained about environmental change.
- The materials accurately present core concepts, recurring themes and concepts, and SEPs. Materials present current scientific content that reflects the most current and widely accepted

explanations. For example, the Life Science Units present widely acceptable and accurate information about ecosystems. Students explore connections and applications of how marine life interacts with living and nonliving things in their environment by reading and annotating an authentic, real-world article from The Associated Press (AP), creating a response log, and answering reflection questions that assess comprehension.

- For example, grade 5 Circuits Teacher Background materials define electricity and visually represent a simple circuit. Students design and create three complete circuits that transform electrical energy into motion, light, sound, and thermal energy for a new home.

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

- The materials include specific learning targets for each grade level. For example, The Grade 5 materials for the Properties of Matter scope has an Explore lab for TEKS 5.6A, which states, "compare and contrast matter based on measurable, testable, or observable physical properties, including mass, magnetism, relative density (sinking and floating using water as a reference point), physical state (solid, liquid, gas), volume, solubility in water, and the ability to conduct or insulate thermal energy and electric energy." There is another lab for TEKS 5.6D, which states "illustrate how matter is made up of particles that are too small to be seen such as air in a balloon." The scope assessment under the Evaluate tab contains questions representing these concepts.
- Materials have specific statements that clearly state the level of competency for any given TEK within each scope. For example, in grade 5 Equal and Unequal Forces Scope, the materials list the learning objectives: "I can explain why equal forces do not cause an object to move, I can explain why unequal forces cause an object to move, I can explain how a force will cause a transfer of energy, and I can design an investigation that will test the effect of force acting on an object." The materials include a Progress Monitoring and Reflection log. Students will track their data on TEKS mastery following the same three checkpoints in each scope.

Accelerate Learning STEMscopes Science TX Grade 5

Indicator 3.2

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

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

Meets | Score 6/6

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

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

Evidence includes but is not limited to:

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

- The standards planning tab for each scope includes a Vertical Alignment of Science TEKs section with a Flashback to previous grade-level standards and a Fast-Forward to the next grade level's standards. There are cards under the Resources Tab and Instructional Supports for the SEPs for each grade level. Materials state that "Science is more than just knowing a specific set of knowledge. It is a set of processes that are used to determine, extend, and refine that knowledge to always better reflect the world around us...SEPs are standards that help students emulate behaviors that scientists engage in as they investigate and build models and theories about the natural world." The materials contain the following explanation about the RTCs: "Science has recurring themes that can be found throughout the content. These recurring themes provide an opportunity to make connections between concepts taught throughout the year." RTCs "help bridge disciplinary boundaries."
- Materials contain a Vertical Alignment of Science TEKS section in Changing Earth's Landforms with a Flashback to Grade 4 model and describe slow changes to Earth's surface caused by weathering, erosion, and deposition from water, wind, and ice and a Flash-Forward to Grade 6 describe how metamorphic, igneous, and sedimentary rocks form and change through geologic processes in the rock cycle. This section also includes connections to the College and Career

Readiness Standards, such as I.A.2. Use creativity and insight to recognize and describe patterns in natural phenomena.

- The materials include guiding documents that explain how content and concepts increase in depth and complexity across lessons and units within the grade level. Under the Resources tab and the Planning with Stemscopes tab, there is a section titled Grade Level Standards. The drop-down menu has a document titled "Texas Standards Snapshot" that contains a grid for all three of these sets of TEKS by grade level.

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

- The materials contain explanations and examples of science concepts. For example, the material includes a vertical alignment document that gives a broad overview to explain how energy and food chain concepts build from lower grades to higher grades.
- The materials provide a Teacher Background Tab that contains information on each concept for teachers who may need to build their subject knowledge. For example, the grade 5 Interactions in Ecosystem Scope addresses 5.12A TEKs. The Teacher's Background information includes facts on biotic and abiotic components in an ecosystem and the interdependence of plants and animals in ecosystems.
- The materials identify common grade-level misconceptions students may have about science concepts. For example, in Changing Earth's Landforms, students investigate and explain that landforms can change by weathering, erosion, and deposition. The Teacher Background page explains that "young mountains are tall with steep slopes. They have sharp, jagged peaks. Over time, due to wind, their slopes become less sharp. Their peaks become rounded and smooth".
- All units provide teachers with a Pre-Assessment and Accessing Prior Knowledge tab, which includes an Identifying Misconceptions section. Materials identify possible student thinking and the intention and context of a given word or concept. For example, in the Environmental Changes scope, the materials provide a chart explanation for the word Impact that shows possible student thinking as "to crash into something." Then, it provides the scope's intention as "how something is changed." Finally, the word is used in context with the sentence, "What is the impact of the phase of the moon on tides?"

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

- The materials provide a purpose or rationale for the program's instructional design. Materials highlight critical features of the instructional design. For example, materials provide a rationale for using the 5E Instructional Model plus Intervention and Acceleration for learning. The materials include STEMscopes Pedagogy, which states, "The 5E Instructional Model and the additional Intervention and Acceleration (+IA) within the resources provide teachers, additional opportunities to identify and close the gaps in student content knowledge that lead to achievement gains, as well as provide enrichment activities for other content areas linked to science content. Resources and strategies to meet the ELPS and RtI are integrated throughout all phases of the 5E model." The materials sequence lessons to incorporate student-centered, hands-on investigations to challenge current understanding and provide opportunities for the construction of students' knowledge.
- The materials provide a framework explaining the primary intent or goals of the program. Materials offer a Teacher's Guide that describes the program's instructional approaches and

references the research-based strategies present in each unit. Each unit has a section for specific supports in the Unit Overview. For example, the materials include a STEMscopes Pedagogy page that explains "the goal of STEMscopes to provide an inquiry-based curriculum, which incorporates the research-based, constructivist phases of the BSCS 5E Instructional Model (Bybee et al., 2006), the Key Findings from the National Research Council's report How People Learn (2000), the Texas Essential Knowledge and Skills (TEKS) (TEA, 2021), and an additional level of support for English Language Proficiency Standards (ELPS) (TEA, 2017)."

Accelerate Learning STEMscopes Science TX Grade 5

Indicator 4.1

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

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

Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- Materials provide multiple opportunities within each scope for students' meaningful sensemaking. Students read the Stemscopedia to understand the content and its application in *Science Today* articles. The Explore labs support students acting like scientists by completing and recording investigations. The Engineering Connection activities support students learning the Engineering Design Process and acting as engineers.
- For example, in Earth's Rotation Scope, students read a grade-appropriate complex text about how Earth's rotation every 24 hours causes the day–night cycle and the apparent movement of the Sun across the sky along with completing the before, during, and after reading strategies designed so students ask, answer, and revise their questions. Students continue meaningful sensemaking during the Engineering Connection and Science Connection, where they apply their learning to evaluate a backyard design that will shade a swing set throughout the day and create newscasts depicting how Earth's rotation affects shadows throughout the day.

- For example, in the Behavior of Light Scope, students watch a video of a spoon placed in water. The teacher makes an anchor chart for each student observation. Students work in groups to agree or disagree with the observations made by their peers.

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

- The materials provide opportunities for students to engage in purposeful and targeted activities with grade-level appropriate scientific texts to gather evidence and develop an understanding of concepts. For example, every scope includes a Stemscopedia that explains the content TEKS for that unit. These documents include built-in questions to guide student thinking and help make connections. The scopes also include a Reading Science activity under the Elaborate tab that includes a story about a concept presented in the scope. For example, the Properties of Matter Scope includes a story about a red balloon. The story includes questions to help guide student thinking. For example, the text asks students to identify what type of matter fills the balloon and, “Why is it important to understand how the air fills up a balloon?” The scopes also have a *Science Today* article. These articles are real-world examples of science from around the world. They include Response Logs for student use during reading and questions to guide student thinking after reading.
- The opportunities for students to engage with scientific texts include activities, such as pre-reading and vocabulary, to help them develop an understanding of concepts. All grade levels and units provide guidance documents that instruct students to review and complete a before-reading activity that includes a preview of the text and images and an after-reading activity that includes discussions and summarizing. For example, in the Circuits Scope, students read about how electrical energy completes circuits, is transformed into other types of energy, and the requirements for a functioning electric circuit. Before reading the Stemscopedia, students review the vocabulary terms listed and write a short predicted meaning of each term in the second column. After reading the Stemscopedia, students fill in the third column with an updated definition for each term, and in the fourth column, they note the clues from the text that helped them understand each term’s meaning.
- The materials provide multiple opportunities for students to engage with scientific texts to gather evidence and develop an understanding of concepts. For example, in the Reading Science portion of Patterns in Space Scope, students use the visualize-draw-explain partner-read strategy and then answer questions to assess their understanding. In the Virtual Experience, "students will explore connections and applications of the patterns of change in the appearance of the Moon by reading and annotating an authentic, real-world article provided by The Associated Press, creating a response log, and answering reflection questions that assess comprehension.”
- For example, the Watercycle Scope includes a section titled “Science Today.” Students explore connections and applications of how warmer ocean water can affect the amount of precipitation by reading and annotating an authentic, real-world article, creating a response log, and answering reflection questions that assess comprehension.

Accelerate Learning STEMscopes Science TX Grade 5

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.

- The materials provide opportunities for students to communicate thinking on scientific concepts in written and graphic modes. For example, in the Explain section, the Interactive Science Notebook (ISN) section provides reflection opportunities for students to process the content they learned by doing the Explores and reading the STEMscopedia. This section explains the Input and Output strategy, giving prompts and techniques that facilitate communicative thinking. For example, in the Explore: Effects on Earth's Rotation ISN activity, students complete an Earth's Rotation cause and effect data table.
- For example, in the Properties of Matter Scope, students draw a picture of an example of matter and the particles that make it up from a zoomed-in perspective to summarize the activity. Students list the essential ideas from their learning and then write a summary paragraph that contains them. In the Hands-on Explore: Observe, Test, and Measure ISN page, students create graffiti art for the term physical property by converting each letter into a unique drawing. The Hands-on Explore: Particles of Matter ISN page has students create a facts summary with ten words or less.

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.

- The materials provide authentic student engagement and perseverance of concepts through productive struggle while acting as scientists and engineers.
- The materials provide opportunities for students to engage in a phenomena and engineering design process in the Engineering Connection activity. For example, in Earth's Rotation, students engage in the phenomena of day and night. A student handout includes the problem, criteria, and constraints to evaluate a backyard design that will shade a swing set throughout the day and redesign it if needed to fit the problem’s constraints.
- For example, Environmental Changes lists options for students to create a recycling art project, make a movie connection, or create a website on the topic. Students complete a self-assessment and answer reflection questions after completing the activity from the choice board.
- The materials support students as “practitioners” while they are figuring out (sensemaking) and productively struggling. For example, in the Elaborate Engineering Connection of Properties of Matter Scope, students brainstorm, design, and test a prototype doghouse. Step 4 says, "Build your design, and test it. Does it meet all the criteria and constraints? Does it solve the problem? Use the space below to list what problems you need to fix in your design." Teacher guidance questions such as "What types of materials are insulators?" and "Do some colors absorb more heat than others?"
- For example, in Behavior of Light, a scenario states, “Penelope loved to take her canoe out on a lake near her home when the weather was sunny. One day, as she was peacefully rowing her boat, she looked down into the calm water along the side of the canoe and admired the way the sunlight shining on the lake made the water look shiny. She noticed some other interesting things as well, and she decided to record her observations when she got home.” Students construct and support an argument explaining which light behavior is described.
- The materials create transfer opportunities for students to take what they have learned and use it flexibly in new situations. Students take what they learn in the Explore and Explain tabs and

apply the knowledge in the elaborate Engineering Connection and Science Connection. For example, in Behavior of Light, students are guided through observing how light reflects and refracts. The lesson states, “Students will complete a guided inquiry using virtual 3-D renderings of properties of light such as reflection and refraction.” After completing the guided practice, students explore the 3-D renderings independently, “noting observations and any outstanding questions.” After the guided inquiry, students answer questions about light in different scenarios, such as how eyeglasses work and why some mirrors give funny reflections.

Accelerate Learning STEMscopes Science TX Grade 5

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 of phenomena and/or solutions to problems using evidence acquired from learning experiences.	M

Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- The materials provide opportunities for students to develop how to use evidence to support their hypotheses and claims. For example, in Changing Earth's Landforms, the materials have an embedded CER directly connected to the Explore activity. The materials provide a handout for students and teacher guidance. The handout includes a scenario and data that connect to the explore activity and a rubric for writing a scientific explanation to guide the students. The materials guide struggling students, stating, "For the claim section, students should each write a single sentence highlighting how wind changes Earth's landforms. For the evidence section, students should cite data or observations that can be pulled directly from the scenario and external data. For the reasoning section, students should make connections between the scenario and the scientific knowledge they have gained about how changes to Earth's surface by wind result in the formation of landforms like sand dunes throughout the scope activities."
- The materials specifically prompt students to use evidence when supporting their hypotheses and claims. For example, in the Properties of Matter CER activity, students complete a table of properties before and after mixing with water from the lab. Students write a scientific explanation that describes how the solution they created conserves matter. There are clearly defined sections for students to write their Claim, Evidence, and Reasoning.

- For example, in the Uses of Energy STEMscopedia, students read a text about electrical energy in complete circuits that transform into other types of energy and the requirements for a functioning electric circuit. Students note clues from the text that help them understand the meaning of designated vocabulary.

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

- The materials include opportunities to develop and use vocabulary after having a concrete or firsthand experience to which they can contextualize new terms. Each scope is constructed so students are introduced to vocabulary as they explore the concept and begin using the new vocabulary in the explain section. For example, in Weather and the Water Cycle, students are introduced to vocabulary as they work in groups. They review the water cycle by creating a model on the right side of their ISN using the vocabulary words provided. Students practice the vocabulary in the explain ISN activity, acting out their vocabulary terms or definitions in a game of charades.
- For example, in the Electric Currents Stemscopedia, students will build circuits that transform energy and identify the requirements for a functioning electrical circuit. Students then show what they learned about how electrical energy can transform into motion, light, sound, or thermal energy by creating a sample test problem. The lesson directs teachers to encourage using introduced content vocabulary in their Interactive Science Notebook.
- The materials present scientific vocabulary using multiple representations. For example, in the Day-to-Day Weather Scope, the materials provide three vocabulary-specific activities to engage students. In the first activity, students click buttons to scroll through the picture vocabulary and review the definitions. The second activity includes an interactive word wall, and students can interact with the vocabulary terms on a class bulletin board to comprehend and recall their meaning. In the third activity, students play Vocabulary Relay, where the students race to find the correct vocabulary definitions.
- The materials embed application questions about vocabulary within the components of the elaborate tab. For example, in the Physical Properties of Materials Science Connection activity, students create a commercial that includes "The description of the two physical properties selected, How your toy incorporates those properties, and why those properties make your toy fun and interesting." In addition, a virtual experience allows students to explore the content using vocabulary words and includes application questions. The small group Intervention activity lesson includes act-it-out cards for students to practice guessing vocabulary words.
- The materials provide opportunities for students to apply scientific vocabulary within context. Explore activities introduce content vocabulary in the context of the associated hands-on activity. As students perform the hands-on activities and complete the handouts, they begin to use the vocabulary in context before being formally exposed to definitions in the Explain section of each scope. For example, in Properties of Matter, an ISN page asks students to "create graffiti art for the new term physical property from today's activity."
- For example, each scope contains a Stemscopedia that includes vocabulary words in bold print with the definitions used in context to support the development of the terms. For Properties of Matter, the Stemscopedia has an application question for the vocabulary word relative density that asks, "A piece of wood will float in water, but a piece of gold will sink. How would you compare and contrast these two types of matter using relative density?"

Accelerate Learning STEMscopes Science TX Grade 5

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

- The materials provide opportunities for students to develop how to practice argumentation and discourse. For example, the Accessing Prior Knowledge Agree or Disagree activity introduces students to construct an argument using a handout. Students evaluate whether they agree or disagree with statements on the handout, then explain their reasoning behind their decision.
- In Properties of Matter, the accessing prior knowledge activity is called Always, Sometimes, or Never. In this activity, students hear a statement and hold up cards, giving their options for whether it is always true, sometimes true, or never true. They justify responses to their elbow partner. Then, the teacher calls on some to explain the reasoning to the group.
- The materials integrate argumentation and discourse within stages of the learning cycle. For example, In Changing Earth's Landforms, students design solutions to prevent sand from piling up on a beach during storms. Students can share and critique in the next steps section using the blank template and rubric.
- In the Uses of Energy Scope, students compare the motion of a bicycle with the flow of energy in a circuit. The teacher creates anchor charts with the questions from the student handout, and students work in groups to respond. Students rotate to charts and respond to other group responses using the sentence stems of "Agree" or "We disagree because…."
- Students design and create three complete circuits that transform electrical energy into motion, light, sound, and thermal energy for a new home. Students may not use wires, and each circuit must use a different conductor. Students work in groups to brainstorm and design a solution for the challenge. The teacher is directed to monitor student building and testing processes by asking questions and redirecting thinking. Students present their results. Materials suggest the teacher asks, "What materials were the best for replacing the wire? Were you successful in designing three complete circuits? If not, what problems did you have? What improvements would you make to your circuits?" In Landforms Engineering Connection, students design solutions that prevent sand from piling up on a beach during storms. Students' next steps section can share and critique using the blank template and rubric.

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

- The materials provide instruction for how to construct and present a verbal or written argument to problems using evidence acquired from learning experiences. For example, in Earth's Rotation Scope, students model the rotation of Earth to show what causes the day and night cycle. Then, they will determine how the Sun's apparent movement across the sky affects the shape and position of shadows. Students use the data collected in the investigation to support the claim in their scientific explanation that explains why someone with a tree in their yard would notice that the tree's shadow looks different at 7:00 in the morning compared to 1:00 in the afternoon.
- For example, in Properties of Mixtures and Solutions, the Engage phenomenon is a photo of a glass of soda. The teacher's instructions say to give students time to think before they discuss their answers with a partner. Then, they write down their responses to the questions. For example, "Is a soda a mixture or solution? What would happen if you removed the bubbles from the soda?"

- The materials provide criteria for developmentally appropriate arguments to explain a phenomenon or defend a solution to problems using evidence acquired from learning experiences. For example, in Properties of Mixtures and Solutions, there is an embedded CER after the Explore lab "Is it a Solution?" Students complete a table of properties before and after mixing with water from the lab and write a scientific explanation that describes how the solution they created conserved the matter. There are clearly defined sections for students to write their Claim, Evidence, and Reasoning.
- For example, in Behavior of Light, students explore how different materials can reflect, refract, or absorb light. Students collect data from their observations of how light interacts with different materials, such as foil, construction paper, and plastic wrap. Students answer the prompt in CER format, “Write a scientific explanation that describes how light behaves when it hits foil.”

Accelerate Learning STEMscopes Science TX Grade 5

Indicator 5.2

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

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

Meets | Score 4/4

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

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

Evidence includes but is not limited to:

Materials guide the teacher in anticipating student responses and using questioning to deepen student thinking.

- The materials provide teachers with possible student responses to questions and tasks.
    - For example, throughout all units in the Explore Activity, materials provide a list of questions with possible student responses to gauge current student knowledge and identify any potential misconceptions.
    - For example, Interactions in Ecosystems materials list open-ended questions such as, "What are some interactions between different living things in the schoolyard ecosystem?" with the possible response that a bird building a nest in a tree, an isopod living under a rock, or a butterfly getting nectar from a flower. Materials follow with the question, "What are some interactions between living and nonliving things in the schoolyard ecosystem?" Possible student responses could include a tree taking in carbon dioxide or a bird drinking water from a puddle.
    - For example, The Earth's Rotation Scope Assessment has a short constructed response section where students observe a picture provided on the assessment and "explain how the tree's shadow changes as the Sun appears to move across the sky, describing the pattern of the shadow's position and shape caused by the Sun's path." The teacher answer key states that answers may vary, and a possible student response could be,

"When the Sun is directly overhead, the shadow is small and short. As the Sun moves across the sky, the shadow becomes larger and longer at a different angle. The shadow is always on the opposite side of the tree from where the Sun is. When the Sun is high in the sky, the shadows are small, and when the Sun is low in the sky, the shadow is larger. Accept other reasonable answers."

  - For example, in a unit on testing the effects of forces, materials list questions such as, “What is a force that can cause an object to move, stop, or change directions? What is an example of that force acting on an object?” The possible response states, “Answers may vary. Possible student responses could include the following: Gravity is a force that can cause a ball to roll down a hill. Magnetism causes a paperclip to move to a magnet. Friction causes a car that is sliding across ice to eventually stop.”

- The materials provide general support for teachers to deepen student thinking through questioning.
  - For example, materials provide a section in The Teacher's Guide that gives general guidelines on deepening student thinking during a class discussion, such as Instructional Supports that include Scientific and Engineering Practices resource cards that help teachers incorporate the SEPs in the classroom. The materials contain a Learning Support Section, including activities paired with content to engage advanced learners' strategies, including a *5 Question Quiz*, Partner and Ponder, and Unanswered Questions. The materials include Literacy Resources, including reading, activities, and vocabulary strategies. These activities encourage teachers to engage students in partner, group, and class discussions.
  - For example, Scopes include Think-Pair-Share activities to have students build on their thinking using peer responses. Materials state that discussions need to be grounded in facts, and teachers ensure student responses on handouts for Claim-Evidence-Reasoning activities are based on text or investigation evidence.

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

- The materials provide embedded support for the teacher in introducing and scaffolding students’ development of scientific vocabulary. Materials provide teachers with a standards planning page that previews the vocabulary used in the unit. Materials state that "the terms below and their definitions can be found in Picture Vocabulary and are embedded in context throughout the scope.
  - For example, the Circuit Scope identifies *flow, electricity, closed circuit, motion, light energy, thermal energy, sound energy, circuit, conductor,* and *energy* as vocabulary words. Materials provide picture vocabulary slides with a definition for each term. Teachers encourage students to practice using these terms in context during subsequent scope activities.
  - For example, the Properties of Matter Explain activity introduces students to vocabulary and then instructs teachers to encourage students "to use these terms in their ISNs and in their responses to questions."
- The materials guide the teacher on how to support students' use of scientific vocabulary in context.
  - For example, the Explain picture vocabulary section alerts teachers of opportunities for students to use scientific vocabulary in context. This section guides the teacher to the Vocabulary in Context section of the Explore and instructs teachers to "encourage

students to practice using these terms in context during subsequent scope activities" and use the terms in their ISNs and their responses to questions.
    - For example, in the Structures and Functions of Organism Unit, teachers introduce the vocabulary words *structure, function, species, organism, survive,* and *environment*. Materials direct the teacher to encourage students to use these terms in their ISNs and responses to questions.
    - For example, students complete a data table with three structures and their functions for each animal or plant in an environment of their choosing.
    - For example, before beginning the unit, the Circuits Scope common misconceptions section identifies the vocabulary words such as *flow*, *electricity*, *closed circuit*, *thermal energy*, *conductor*, and *energy*. Materials provide a chart for vocabulary words that identifies the word, possible student thinking, intention, and the word in context.
    - For example, the materials alert teachers that students may have a preconceived meaning for the word “conductor” but are instructed on how to lead students to electricity-related definitions.

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

- The materials provide teacher support to prepare for student discourse.
    - For example, materials include teacher preparation by setting up and reinforcing a class culture in which students listen to and evaluate whether they agree with one another’s ideas. Materials include steps for establishing norms for class discussions. In Grade 5, students work in groups to sort picture cards into types of energy. The lesson states, “As a class, debrief students using this questioning strategy: Parking Lot.”
    - For example, students create a commercial in the Properties of Matter scope. The teacher's instructions for the activity say, "Remind students that, while other students are presenting, they should be good audience members and perform active listening and polite applause, and they should ask appropriate questions after the speeches if time permits." The teacher can use the included self-assessment and rubric to provide feedback.
- The materials provide teacher questions for supporting student discourse and using evidence in constructing written and verbal claims.
    - For example, in the Circuit scope, students construct and support an argument that explains which circuit would not be able to make the light bulb(s) light up. The materials direct the teacher to say, “Electricity must have a complete circuit to be able to flow and make things like lights, TVs, or refrigerators work. Circuits require certain materials and conditions to allow electrical energy to flow through. Based on the data given, which circuit would not work correctly?”

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

- The materials provide teacher support and guidance to engage students’ thinking in various modes of communication throughout the year.
    - For example, Materials provide feedback tips and examples teachers can use to support students throughout the learning cycle. Each scope Elaborate Engineering Connection has guiding questions teachers use when students get stuck.

    - For example, Changing Earth's Landforms provides guiding questions for teachers, such as what students need "to consider regarding the beach's ecosystem when you design your solution. Animals and plants both live within and around the dunes, so you will want to destroy as little of their habitats as possible. Sand dunes can also protect an area from erosion, so removing or changing all of the sand could have a negative effect." The materials also provide questions about other areas that may need to keep sand from piling up.
- The materials provide teacher support for facilitating the sharing of students' finding solutions. Materials provide feedback tips and examples teachers can use to support students throughout the learning cycle. Materials provide an answer key or sample response for verbal and written questions and rubrics for scoring.
    - For example, Materials provides an "Engineering Connection" flowchart defining all the steps in the engineering design process and a rubric that identifies the quality of the redesigned solution, critique, creativity and innovation, and adaptability and resilience.

Accelerate Learning STEMscopes Science TX Grade 5

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- Materials include diagnostic assessments for measuring student learning and identifying learning gains in various formats. For example, each grade level consists of a multiple-choice diagnostic Beginning-of-Year (BOY) assessment and an End-of-Year (EOY) assessment available under the Resources Tab. The materials state, "Beginning-of-Year and End-of-Year assessments are designed to measure learning based on the standards addressed in that grade level and modeled after the state assessment for that grade level/band."
- Materials include formative assessments in a variety of formats to measure student learning and determine the next steps for instruction. For example, in the Properties of Matter Scope, the first lab suggests a High Five strategy, the second recommends a Poll, 0, 1, 2, 3 strategy, and the virtual lab proposes using Red Light, Yellow Light, and Green Light to debrief students. Each Evaluate tab has a Claims-Evidence-Reasoning included, which requires a written response and using information learned to support a claim. The Accelerate tab includes a choice menu of nine project-based activities that can be used in a portfolio. Materials include multiple opportunities for class discussion and peer-to-peer discussion using provided prompts.
- Scopes include a short, multiple-choice diagnostic pre-assessment and a mid-unit Pulse Check "designed to uncover student misconceptions and provide a measurement of student learning

to act as a baseline. It should not be taken for a grade." For example, in grade 5, at the beginning of the Circuits Scope, the students are being assessed their current knowledge by choosing an image of a working flashlight and discussing it with peers in a “Four Corners” format. Students use a Progress Monitoring and Reflection Log to rank their understanding before being introduced to the content. During the Evaluate section of the scope, the materials direct the teachers to review the pre-assessment questions and clarify any misconceptions students still have.

- Materials include summative assessments in a variety of formats. The materials provide a Scope Assessment at the end of every unit after students complete the activities in the Engage, Explore, Explain, and Elaborate sections that include multiple choice questions. For example, the Scope Assessment for Properties of Matter question types includes six multiple-choice, one multi-select, one drag-and-drop, one hot spot, and ends with a constructed response. The constructed response asks students to explain how they determine the properties of a metal paper clip concerning mass, relative density, and magnetism and then asks them to compare it to a plastic paper clip. Materials also contain a Progress Monitoring chart that students and teachers can use to track their progress on assessments through the scope.
- For example, in grade 5, Earth's Rotation Scope has a unit Claim-Evidence-Reasoning, where "students will construct and support an argument that describes how Earth’s rotation causes the patterns shown in the data." This activity includes a rubric and answer key.
- Materials include a variety of informal assessments that give teachers feedback on student learning at the moment so that they can modify instructional approaches. For example, the STEMscopedia located in the Explain section has several opportunities to informally assess students' learning through embedded strategies with questions for teachers to ask students after completing each Explore lab, including the virtual lab.
- For example, in Explore: Fossil Fuel Formation: Illustrating Steps, students illustrate and write the steps to show the procedure in sequence for creating a fossil fuel—formation model. For the Output, students create a haiku that summarizes how fossil fuels are formed over many years in sedimentary rock from the Explore activity. The materials describe the ISN activities as "reflection opportunities for students to process the content they learned by doing the Explores and reading the STEMscopedia.

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

- The materials assess all student expectations by grade level, as outlined in the TEKS. Materials assess all student expectations, and answer keys clearly label the relevant expectations for each assessment item and are dual-coded. For example, each scope includes a tab called Standards Planning. This tab has a standards matrix that shows each standard in the scope (including RTCs and SEPs) and lists all the scope components that use the standard.
- The materials include detailed TEKS-based lesson plans that outline how the materials can be used to teach specific concepts and skills, address specific students' expectations, and provide guidance on assessing student learning. The materials indicate which student expectations are assessed. Materials provide the TEKS correlation for each assessment item and the answer keys for every assessment.

Accelerate Learning STEMscopes Science TX Grade 5

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

- The materials include assessments that require students to integrate scientific knowledge and science and engineering practices with recurrent themes appropriate to the student expectation being assessed. For example, in the Structures and Functions of Organisms scope, students use the Engineering Design Process to design prosthetic feet for an injured duck found at a neighborhood duck pond. This exercise involves the first five steps of the Engineering Design Process (defining the problem, brainstorming, planning, building, and testing). The teacher evaluates each student's performance of the engineering design challenge by using the Engineering Design Process Student Rubric.
- For example, materials have a Science Connection and Engineering Connection within each scope. In the Uses of Energy Scope, students create solar air heaters that warm up a bedroom during winter. Students are provided a scenario of their bedroom being colder than others in the house, and they must create an air heater. Students plan, build, and test their investigations. The teacher evaluates each student's performance using the Engineering Design Process Student Rubric.

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

- Materials include assessments that require students to apply knowledge and skills to novel contexts. For example, in grade 5 Weather and Water Cycle Scope CER, students analyze a scenario, weather map, and weather data table to construct and support an argument that shows their understanding of how the ocean affects the weather and water cycle.
- For example, in Structures and Functions of Organisms Explore, students observe and describe how various organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem. Students apply their knowledge and skills to evaluate a biodome design and redesign it, if needed, within the constraints of the project, which includes all biotic and abiotic parts of an ecosystem interacting in a closed bottle.

Accelerate Learning STEMscopes Science TX Grade 5

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 student's 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 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 guide evaluating student responses. Materials support teachers' analysis of assessment data with guidance and direction to respond to individual student's needs in all areas of science based on measures of student progress appropriate for the developmental level. Assessment tools yield relevant information for teachers when planning instruction, intervention, and extension. Materials provide resources and teacher guidance on leveraging different activities to respond to student data.

Evidence includes but is not limited to:

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

- Materials include information that guides teachers in evaluating student responses. For example, answer keys for formal summative scope assessments, the Pulse Check and Scope Assessment, include the correct answer and explanations for incorrect answers. In addition, each scope has a resource for Progress Monitoring and Reflection under the Engage tab, where students rate their understanding of the content broken down into I can statements. For example, in the Interactions in Ecosystems Unit, students' progress monitoring includes, "I can describe how living things depend on each other for survival in an ecosystem. I can describe how nonliving things help organisms survive in ecosystems." The materials prompt the teacher to have students gauge their understanding throughout the unit and to address misconceptions during specific times in the lesson.
- The Engineering Connection activity in each scope contains a checklist of criteria and constraints, as well as a rubric for scoring, and the CER for each scope includes an answer key with sample student responses and a rubric for scoring. For example, grade 5 materials include a lesson assessment on Behavioral Traits in which students create newscasts depicting how a bear broke into a neighborhood of homes in search of food. Students follow a checklist of goals they

must achieve, and the teacher follows a rubric and scoring guide for evaluating student performance.

- The student Interactive Science Notebook pages that accompany each Explore lab and the pages that accompany every Stemscopedia in each scope include an answer key that contains a sample student response. The Science Connection Elaborate activity for each scope has a self-evaluation and a rubric for scoring. The remaining Elaborate activities (Science Today, Reading Science, and Virtual Experience) contain an answer key with a sample student response.
- Materials include resources that guide teachers in evaluating student responses. For example, materials provide several rubrics teachers can use to evaluate whether students are confident, somewhat confident, or not confident in each component of the learning objectives. When students are required to use science or SEP reasoning, the materials include specialized rubrics aligned to the given task. For example, The Progress Monitoring and Reflection Rubric is included in all units and are student-driven responses that teachers can use to evaluate students' understanding of the topic before, during, and after the lesson.
- The materials include a Science Connection section and an Engineering Connection section, including specialized rubrics for the given assessments. For example, grade 5 Scope Assessment: Earth's Rotation has a rubric with a 0 to 10 scale. To earn 10 points, the rubric states, "The student's response correctly identified the change in the shadow's position and shape and explained how the Sun's path causes changes in shadows." A student earns 0 points if "the student's response incorrectly identified the change in the shadow's position and shape and explained how the Sun's path causes changes in shadows. OR The student's response is blank, irrelevant, or too brief to evaluate." For example, the Equal and Unequal Forces scope assessment asks students to design an experiment that demonstrates how force applied to a ball on a ramp affects how far the ball will roll down a ramp. The materials provide a "Constructed Response Rubric" with scores and descriptions and a sample student response.

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

- The materials provide guidance documents and resources to support teachers' analysis of assessment data.For example, the material guides the teachers to click each standard on the reports page and see the activities in the scope associated with that standard and choose the appropriate activity to support students that may need intervention. "Teachers reference the differentiation pathways available in Resources to decide on what activities would be appropriate. Additionally, the materials include a grading system and data collection tool for use with assessments.
- The materials give teachers an answer key/rubric and guidance on what information to gather and how to use the information. For example, the grade 5 Scope Assessment: Uses of Energy provides an answer key and rubric and teacher guidance states "As an optional part of the Evaluate, you may go over each question of the Scope Assessment with students to clarify any misconceptions that remain." Additionally, the "Gradebook view shows student performance on an assignment or assessment. This allows a teacher to see student performance by assignment or by question."
- Materials provide rubrics and guidance to analyze data and respond to students' needs on CER tasks. For example, the grade 5 Uses of Energy CER provides a rubric, and the teacher guidance states, "The students' performances on this CER formative assessment affect what they will do next. Students who need more support can work with the teacher in small groups

using the elements in the Intervention section before moving to the Scope Assessment. Other students should work on Elaborate or Acceleration elements."

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

- The information gathered from the assessment tools helps teachers when planning core science instruction. Tools included in the materials to help teachers plan instruction, intervention, and extension include a Differentiated Pathways graphic that is "designed to support students based on performance level and identified need to intervention;" a Tiered Intervention Strategies page that "shows the suggested pathway to help support all students in the science classroom;" and a student data sheet to track "informal observations based on student learning during the various lessons and activities."
- The information gathered from the assessment tools helps teachers plan differentiated instruction. For example, the Claim-Evidence-Reasoning evaluation guidance for teachers states, "The students' performances on this CER formative assessment affect what they will do next. Students who need more support can work with the teacher in small groups using the elements in the Intervention section before moving to the Scope Assessment. Other students should work on Elaborate or Acceleration elements."
- Materials include data-management tools that allow teachers to organize student data to differentiate science instruction and easily group students according to assessment results. For example, the student data sheet has several suggestions for teacher use, including "During lesson discussions, use the datasheet to note students who are struggling with certain key concepts. During Explore activities, use the datasheet when asking the guiding questions to note student understanding. After Evaluate activities, the Data Sheet can also be used to mark students' levels of mastery for each Key Concept as novice, gaining proficiency, or expert." The datasheet teacher guidance includes descriptions of novice, gaining proficiency, and expert. The mastery is decided by the "Level of Mastery Key: Novice (N): A novice science student has a basic awareness of some scientific concepts, but requires significant guidance to understand and apply them. Gaining proficiency (G): A student gaining proficiency in science demonstrates increased understanding and ability to engage with scientific principles independently, and starts making connections between different concepts. Expert (E): An expert science student has fully grasped the curriculum, can articulate key principles, solve problems independently, make complex connections, and displays curiosity beyond the standard material."

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

- Materials provide student resources for teachers to use in responding to performance data. For example, the only resources and guidance the materials provide are in the Resources tab. It includes a Planning with Stemscopes tab with a drop-down for Differentiation Pathways graphics that specify which activities in the program to assign students when they have difficulty within the scope. This includes a list of suggested activities to assign to all students that fall into three performance levels, Approaches, Meets, and Masters.
- Each scope contains a small-group intervention activity. Each activity breaks down into a guided practice section and an active practice section. There is also an included Concept Attainment quiz to administer afterward. For example, in grade 5 Formation of Sedimentary Rock and Fossil

Fuels Small-Group Intervention Guided Practice, students review how sedimentary rock and fossil fuels are formed through a small-group activity led by the classroom teacher. Then in the Active Practice, students play the Beat the Clock game to practice scope concepts and vocabulary before completing the concept attainment quiz.

- The materials offer teacher guidance for responding to student data. For example, each scope Pre-Assessment and Accessing Prior Knowledge assessments includes assessment guidance for teachers. In grade 5 Earth's Rotation, the teacher guidance states, "It is not recommended to take grades from either part of this activity. Teachers should use students' answers to drive their classroom instruction. Identify individual students that need focused support through Explores with Differentiation Tiered Support Activities at the bottom of each explore page. Students needing extra support can also be assigned Picture Vocabulary and Small Group Intervention elements to build their understanding of the content. Students who show mastery at the Pre Assessment and Accessing Prior Knowledge activities can be given STEAM Choice Boards as an acceleration to keep them engaged with the content as the class completes the lesson cycle."
- For example, in the above-mentioned game, Tier 1 guides teachers to "Provide the student with more time to understand how the game is played by having the student begin the activity as the timekeeper." Tier 2 guides teachers "Provide the student with six to nine matching definition and term cards. Have the student follow the same procedures for the game. The number of matching cards used in a round is adjusted depending on the student's success." Tier 3 guides teachers "Prior to the time clock starting, allow a classmate to read aloud the cards being used in the round. The student then participates in the game following the same procedures as their classmates."

Accelerate Learning STEMscopes Science TX Grade 5

Indicator 6.3

Assessments are clear and easy to understand.

1	Assessments contain scientifically accurate items, avoid bias, and are error-free.	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 with learning goals.	M

Meet | Score 2/2

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

Assessments contain scientifically accurate items, avoid bias, and are error-freeAssessment 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 with learning goals.

Evidence includes but is not limited to:

Assessments contain scientifically accurate items, avoid bias, and are error-free.

- Assessments contain items for the grade level that are scientifically accurate. Formative and summative evaluations include assessment items that align with taught objectives and present grade-level content and concepts, science and engineering practices, and recurring themes and concepts in a scientifically accurate way. For example, a summative assessment at the end of the Circuits scope uses scientifically accurate terminology in an assessment item that asks students to explain how to use a battery, wires, light bulb, and buzzer to complete an electric circuit and describe the energy transformations. Additionally, the Earth's Rotation Scope Assessment items accurately describe the effects of the Earth's movement as it pertains to day, night, and shadows.
- Assessments contain items for the grade level or course that avoid bias. Formative and summative evaluations include assessment items that present content and examples fairly and impartially. The test will not impact student performance based on factors such as a student’s home language, place of origin, gender, or race and ethnicity. For example, the summative assessment for the Equal and Unequal Forces scope includes a graphic of children playing a game of tug-of-war that includes both boys and girls. Additionally, the Life Sciences Assessment scope items frequently do not identify specific genders in the scenarios, instead stating, "scientist found or discovered" or "Students in a science class are investigating…”
- Materials include a variety of geographic locations. For example, grade 5 Weather and the Water Cycle scope assessment items include other states such as New Mexico.
- Throughout the materials, assessments contain error-free items for the grade level and course.

Accelerate Learning STEMscopes Science TX Grade 5

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

- Assessment tools use clear pictures and graphics. For example, the grade 5 Interactions In Ecosystems Scope Assessment includes animated photos of animals and environments showing details to support student ability to understand the questions. The Properties of Matter Pre-Assessment includes two pictures with clear images. The first is a line drawing of 4 graduated cylinders with differing amounts of liquids with the question, "Which two graduated cylinders contain the greatest volume of the liquid?" The second is a tank with a floating fishing bobber, gummy bear, and a golf ball on the bottom with the prompt "Which of the following statements are true?" The Behavior of Light Assessment includes a diagram of light behaviors from a flashlight to a mirror and a wall that is clear and easy to understand.
- Assessments contain pictures and graphics that are developmentally appropriate. For example, in the Weather and the Water Cycle scope, The Water Cycle and Weather CER has a weather map and data table of weather from three cities in Texas that is developmentally appropriate for grade 5 students. The Equal and Unequal Forces assessment includes arrows to label the movement of children playing tug-of-war, which is a relatable activity for fifth graders.

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

- Materials provide guidance for teachers to consistently and accurately administer assessment tools. For example, the instructions for the Grade 5 Pre-Assessment in the scope Properties of Matter says, "Tell the students they have a specific amount of time to complete the Pre-Assessment. After time has elapsed, collect the Pre-Assessment from each student. Mark on each Pre-Assessment whether the student chose the correct answer." The materials do not state how much time should be allotted for the assessment.
- For the Pulse Check, under the Explain tab, instructions say, "If not assigning digitally, plan on projecting the questions and have a way for students to answer. Select a strategy to elicit responses from all students in your class. Sample strategies can include the following options: Color cards, Hand signals, and Whiteboards." The instructions for the Scope Assessment, under the Evaluate tab, mirror those for the Pre-Assessment.
- The materials guide the accurate administration of assessment tools. For each scope, there is a CER assessment with a teacher script. The script gives step-by-step directions for how to administer the assessment. For example, in the fifth-grade Behavioral Traits Scope, the CER Activity section materials direct teachers to read the scenario aloud about Orcas finding food for survival. Teachers instruct students to write a scientific explanation that explains a learned behavioral trait of orcas that increases their chances of survival. Teacher guidance for students who struggle to begin includes reminders of how to create a CER based on the scenario. Materials state that based on assessment performance, students who need more support can work with the teacher in small groups using the elements in the Intervention section before moving to the Scope Assessment, and other students should work on Elaborate or Acceleration elements.
- The materials include information that supports the teacher's understanding of assessment tools, such as answer keys and general guidelines for scoring. Materials provide the following guidance: "Mark on each handout whether the student chose the correct answer. As an optional part of the Evaluate, you may go over each question of the Scope Assessment with students to clarify any misconceptions that remain."

- The Sun and the Weather and the Water Cycle Scope Assessment teacher section states, "Give each student a copy of the Scope Assessment. Inform the students that they have a certain amount of time to complete the Scope Assessment."

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

- Materials offer tips for tiered strategies for written response questions. For example, on the Earth's Rotation Assessment, materials suggest that teachers provide students with a copy of the test with a smaller array of answer choices. Instead of selecting the correct answer from four options, the students can choose from three possible solutions. Such accommodations allow students receiving Tier 3 interventions to demonstrate mastery of knowledge and skills aligned to learning goals.
- Materials offer multiple-choice tiered strategies for accommodating scope assessments according to three tiers of support. For example, teacher guidance for Tier 3 supports the grade 5 Behavior of Light Scope Assessment strategies, which states, "Use only one type of visual in a single assessment (i.e., just bar graphs, not line graphs and pie charts). Prior to the day of the test, inform the student of the specific type of visual that will be on the test so that they can prepare for its use." Teacher guidance for Tier 2 accommodations on the same assessment states, "Prior to the day of the test, review with the student how to interpret the types of visuals that may be used on the assessment."

Accelerate Learning STEMscopes Science TX Grade 5

Indicator 7.1

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

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- The materials include teacher guidance for scaffolding instruction and differentiating activities for students who have not yet achieved mastery. Teacher guidance materials include a Tiered Intervention Strategies page that identifies two "suggested pathways to help support all students in the science classroom" displayed in graphic organizers. These pathways connect the Tier levels to the material components that support the students at their level. For example, materials suggest using the Explain Interactive Notebook for Tier I, the Explain Picture Vocabulary for Tier II, and Intervention Guided Practice for Tier III.
- For example, in the Properties of Matter scope, for the Accessing Prior Knowledge Activity "Always Sometimes Never," the Tier 1 strategy says, "Provide additional modeling and guided practice (even if this strategy has previously been used)." The Tier 2 strategy says, "Pair the student with a partner in Tier 1 or someone who is not receiving support; the partner may prompt the student to hold up a card in response to the statement." The Tier 3 strategy says, "Provide the student with Always, Sometimes, Never Picture Cards.
- Materials provide additional resources for targeted instruction and differentiation to support students who have not yet achieved mastery. The materials provide an Intervention tab as part of the 5EJ+IA model. This section includes a Small group intervention activity that includes tiered intervention strategies. For example, in the Properties of Matter Scope, the small group activity includes steps for guided practice of classifying items by the properties of matter, followed by a concentration activity matching picture cards with definition cards. The Intervention tab also includes a concept attainment quiz that checks student mastery after completing the practice and activity.

- Materials ensure teachers can target instruction to develop precursor skills necessary to access grade-level content. For example, all units have a Pre-Assessment and Accessing Prior Knowledge section for teachers to build background knowledge and pre-teach skills when beginning a new scope. For example, in Structure and Function of Organisms, students will read different student responses to a posed question on the structures of different animal tails, decide whether they agree or disagree with the student, and explain their reasoning. They will then be assessed on their current knowledge of the content covered by this scope through a multiple-choice pre-assessment.
- Materials include an Intervention tab with small group lesson instructions that include Key Concepts and Tiered Intervention Strategies. For example, in Earth's Rotation, students review Earth's rotation through a small-group activity led by the classroom teacher, who uses a globe and a flashlight to model day and night. Then, in the Active Practice, students play the Headbands game to practice scope concepts and vocabulary.

Materials provide enrichment activities for all levels of learners.

- The materials provide enrichment activities that account for learner variability. For example, each scope has a choice board under the Acceleration Tab that provides students with many different approaches to creatively connect what they are learning to the world around them. Students choose from nine extension activities, such as creating a movie advertisement or picture book, then complete a self-assessment and reflection questions.
- For example, materials provide advanced strategy guidance for the Stemscopedia Explain activity. For example, the advanced strategy in the grade 5 Properties of Matter scope says, "Students create a brain teaser or puzzle using the Picture Vocabulary terms from this scope. They then partner up and exchange puzzles to solve."
- For example, each unit includes a Reading Science section. The passages are provided in two Lexiles-one on grade level and the other below grade level. The materials include instructions to support all levels of readers. For example, to support beginner students, teachers are instructed to assign reading passages to be acted out ahead of time to allow students time to prepare for their portion of the passage; advanced students should be able to act out any passage as it is read aloud.

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

- The lessons include recommendations for just-in-time scaffolds to develop productive learning perseverance. Materials include resources for teachers to create a content plan to deliver content at the moment of need. Teacher resource materials provide five Differentiation Pathways graphic organizers that suggest pathways for learners based on where they are, approaches, meets, and master levels of content knowledge and skills. For example, the master (90%-100%) pathway is designed for students who have a strong understanding of the current content and can apply science content to extend their learning. These students follow the pathway of Elaborate: Science Today, Elaborate: Technology Connection, and Acceleration: STEAM Choice Board to extend their learning.
- For example, each scope contains a section in the Engage tab entitled, "Progress Monitoring and Reflection." The description states, "Students will rank their understanding of the scope's fundamental ideas prior to any formal introduction to the topic. Then, they will be asked to reassess their understanding at other checkpoints throughout the scope. Students will also track

their data on TEKS mastery following the same checkpoints and create bar graphs to visualize the data better."

- The materials include Learner Supports that give teachers the Advanced Strategies page to engage advanced learners. Strategies are named, with a provided description and the appropriate grade for the strategy.
- The Advanced Strategies page has a collection of activities that, when paired with content, can be a tool to engage advanced learners. For example, in the activity Puzzle It Out, students create a brain teaser or puzzle using the Picture Vocabulary terms from this scope. They then partner up and exchange puzzles to solve creatively
- Materials include a variety of student activities based on the achievement of the student's grade-level mastery of scientific knowledge and skills, such as the Acceleration Tab that contains STEAM Choice Board and an option for a higher level reading passages in the Elaborate section of all units. For example, in Structures and Functions of Organisms, some of the choices on the choice board include students creating a model of an organism's structure that helps it survive in a forest and explaining its function or writing and performing a puppet show about the structures and functions baleen whales and dolphins have for survival in the ocean environment.

Accelerate Learning STEMscopes Science TX Grade 5

Indicator 7.2

Materials include a variety of research-based instructional methods that appeal to various 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 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

Meet | 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 practices (e.g., modeled, guided, collaborative, independent) and provide guidance and structures to achieve effective implementation. Materials represent a diversity of communities in the images and information about people and places.

Evidence includes but is not limited to:

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

- Materials engage students in mastery of the content through various developmentally appropriate instructional approaches. For example, all lessons include video clips or images to introduce and reinforce specific science concepts, as seen in the Scope Phenomenon in each scope. Materials include multiple opportunities for students to engage in collaborative or cooperative learning activities before, during, and after learning a concept. Materials include virtual educational experiences for all units where students complete guided inquiries using simulations. Students note observations and clarify questions.
- For example, the materials support student discourse with authentic opportunities to engage in structured conversations at the partner, small group, and whole group levels throughout the 5E lessons. For example, the hands-on exploration and engineering connection presents student-led investigations, questioning, and discussions. In Science Today, students explore real-world connections and applications of science content through interactions provided by the Associated Press. In the Virtual Experience, students interact with content using a self-guided interactive.
- For example, the Properties of Matter scope has two inquiry-based labs for students to complete in person and one virtual lab. In the Science Connection, students create a

commercial. The Reading Science contains an article for students to evaluate that is available on level and below level and includes a game-based virtual experience. A guided exercise for teachers to use with small groups is under the Intervention tab. The Accelerate tab has a STEAM choice board that gives nine different options to meet student abilities and interests, such as creating a presentation, making a model, creating a graphic organizer, reading an article, creating a piece of art, or a teaching video.

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

- The materials support a variety of instructional groupings (e.g., whole group, small group, partners, one-on-one). For example, in Behavior of Light, students independently answer questions from the teacher about light. Students then work in groups to rotate through stations to observe light. Students independently provide their level of understanding of facts of light provided orally by the teacher.
- For example, the Changing Earth's Landforms Explore activity teacher preparation notes state, "Divide students into groups of equal numbers." The Science Connection activity suggests allowing students to work in small cooperative groups. In contrast, the Engage activity suggests students work in pairs and whole groups during an agree or disagree activity. The Intervention has students work independently.
- For example, in Conservation and Recycling, students work independently in the Accessing Prior Knowledge activity. In the Explore labs, students work in pairs and then share with the rest of the class. The Elaborate activities include small group work with presentations and discussions for the whole class. The Reading Science activity suggests having students work independently or with partners.
- The materials guide teachers on when to use specific grouping structures based on the needs of students. For example, materials suggest a Tier 3 strategy to allow a partner to read the scenario sentences to the student. The partner may remind the student to circle either agree or disagree and then prompt the student to note an explanation.
- The materials provide a graphic representation of intensity support across tiers one, two, and three. The materials state the percentages of the student population within each tier, along with the identified components for student understanding.

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

- The materials provide multiple types of practices (e.g., modeled, guided, collaborative independent). For example, students engage in collaborative learning structures, such as roundtable reviews, while learning a new concept. Students engage in guided practice during the engage scope phenomenon and intervention guided practice, and students engage in independent practice during the STEMscopedia reading activity.
- For example, the Explore activity in Properties of Mixtures and Solutions begins with a guided class discussion with provided questions and answers. Next, the teacher facilitates as student groups create ten mixtures. Finally, the teacher leads the class to debrief the lesson using the Think-Pair-Share strategy. Students independently use one of the solutions they created to complete a CER activity. There are teacher intervention steps for each step of the CER.
- In Circuits, students view a video of holiday lights turning on and work in pairs to answer questions in a handout about force using sage on the stage strategy, where students take turns asking and answering questions.

- The materials provide teacher guidance and structures for effectively implementing multiple types of practices. For example, each activity explains how students will work and how the activity will be structured, including grouping, talk structures, and routines. Activities vary in type of practice throughout the scope and year-long resource, giving students opportunities to engage in guided practice, collaboration, and independent work.
- For example, materials state a clear purpose and learning goals for group and independent practice activities in units and lessons. Scopes provide “I Can” statements for the lessons. Materials recommend frequent and varied learning assessments to ensure that multiple types of practices lead to student mastery. The Progress Monitoring and Reflection Description states, “Students will rank their understanding of the scope’s fundamental ideas before any formal introduction to the topic. Then, they will reassess their understanding at other checkpoints throughout the scope. Students will also track their data on TEKS mastery following the same checkpoints, and they will create bar graphs to better visualize the data.”

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

- Materials represent diverse communities using images and information that are respectful and inclusive. Information in teacher guidance documents, student materials, scientific text, and assessments positively portrays diverse scientists and engineers representing genders, races, and ethnicities. Real-world examples and connections throughout the materials represent diverse communities and places, including rural, urban, and suburban communities, cities, and states across the U.S. and worldwide. Depictions of places are respectful and inclusive, emphasizing community strengths, resources, and unique characteristics. The videos portray diverse student races and settings.
- For example, the Formation of Sedimentary Rock and Fossil Fuels STEMscopedia has an image of a thin white female Petroleum Engineer, and Science Today has a Hispanic male walking in Argentina.
- For example, in the Conservation and Recycling scope, the STEMscopedia describes a Conservation Scientist with a picture of a white male. The Science Today article tells of the Portland, Oregon, government refusing to remove four dams to save endangered salmon. The Reading Science article features Miss. Simpson's class conservation poster contest mentions John, Amir, and Addison.

Accelerate Learning STEMscopes Science TX Grade 5

Indicator 7.3

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

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- Materials include linguistic accommodations commensurate with various levels of English language proficiency as defined by the ELPS. For example, scopes embed scaffolds for emergent bilingual (EB) students into all sections: Engage, Explore, Explain, Elaborate, and Evaluate. It includes suggestions for concrete experiences and explicit modeling as linguistic accommodations when delivering direct instruction.
- For example, English Language Supports are in each section of the Formation of Sedimentary Rock and Fossil Fuels scope. In the Explain section, teachers provide students with visual definitions of words that help them find the commonality in the root word. In the Reading Science section, teachers assign reading passages for students to act out ahead of time to allow them time to prepare for their portion of the passage.
- For example, the Resources tab and Learner Supports tab have a drop-down list of graphic organizers based on teaching strategies for use with English learners. Examples include B-M-E Fiction Chart, Claim and Evidence Map, and Main Topic and Contributing Factors Graphic Organizer.
- For example, in the Fossil Fuel Formation scope, the materials include a section that demonstrates ELPS connections by referencing the language of the ELPS and how the lesson supports any given ELPS. The materials guide linguistic accommodations (communicated, sequenced, and scaffolded) commensurate with various levels of English language proficiency as defined by the ELPS. The materials suggest that "teachers working with students in this group will provide students a question to ponder and sentence stems to share."

- Materials include teacher guidance for communication with EB students to create comprehensible input with various levels of English language proficiency (i.e., begin, intermediate, and advanced/advanced high.
- For example, most activities in the scope have a section at the bottom of the teacher page with English Language Support Strategies. The applicable ELPS is listed, followed by a proficiency level tabbed chart. For example, teachers assign Mix and Match in the Matter scope to allow beginning students to interact with classmates using formal and informal English. The teacher encourages student interactions to informally assess understanding of new content. For the intermediate, the teacher assigns Mix and Match to allow students to interact with classmates using formal and informal English. For the Advanced/Advanced High teachers, assign Mix and Match to allow students to interact with classmates using formal and informal English during the Explore part of the activity to provide students an opportunity to process new learning.
- For example, the English Language Support Strategies also suggest using graphic organizers to classify information, order steps in a process, or scaffold written tasks such as BME Fiction Chart, Claim and Evidence map, and flowcharts.

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

- Materials somewhat encourage strategic use of students' first language as a means to linguistic, affective, cognitive, and academic development in English. For example, in Properties of Matter, the beginner English Language Support Strategies for the STEMscopedia say, "Allow students at the beginning level to question and respond in their native language. Then, repeat the activity by translating their conversation into English. Proofread the English translation, and give students feedback on how to improve upon formal and informal English or expert and novice English." The Intermediate strategy also suggests students write their questions and responses in their native language and translate them into English before completing the activity. Teachers are to listen to the students speak and provide feedback on improving the formal or expert side of the conversation. The Advanced/Advanced High strategy suggests students write out their formal or informal questions and responses or expert and novice questions and responses in English before completing the activity. Teachers then give feedback to the students on terms to make the text more formal or expert.
- For example, activities in the scope have a section at the bottom of the teacher page with English Language Support Strategies. The applicable ELPS is listed, followed by a proficiency level tabbed chart. The materials provide English Language Support Strategies in the resources tab. "The strategies are grouped by Learning, Listening, Speaking, Reading and Writing." Strategies that support using a students' first language include "Allow students at a beginning level to question and respond in their native language. Then, repeat the activity by translating their conversation into English. Proofread the English translation, and give students feedback on how to improve upon formal and informal English or expert and novice English."

Accelerate Learning STEMscopes Science TX Grade 5

Indicator 7.4

Materials guide fostering connections between home and school.

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

Meets | Score 2/2

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

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

- Materials provide information to share with students and caregivers about the program's design. For example, the materials include a one-page letter to parents explaining the material's instructional philosophy and lesson model. The letter explains that the instructional philosophy "Centers on students learning science through hands-on exploration and inquiry. Each lesson includes a series of investigations and activities to bring science to life for our students so they can 'learn by doing' and fully engage in the scientific process." It explains the 5E+IA model, and the letter states, "Each one of the components of the lesson cycle features specific resources to not only support our students' understanding of scientific concepts but also that of our teachers."

Materials provide information to be shared with caregivers to help reinforce student learning and development.

- For example, the parent letter includes a paragraph explaining how students can log in to the program at home to find resources, including a Glossary and a reference resource called STEMscopedia. "Each of these STEMscopedia reading passages incorporates hands-on activities. Additionally, rather than a traditional textbook, your student may come home with various assignments, like reading passages, vocabulary exercises, and at-home hands-on lessons."
- For example, each scope has a Science Outside the Classroom section to print or access online from home or school. This section includes a letter for parents with the TEKS covered, background knowledge, terms to know, hands-on activity, and questions to ask students.
- For example, the Formation of Sedimentary Rock and Fossil Fuels scope includes a Background Knowledge section with three paragraphs explaining sedimentary rock formation and fossil fuels. The Terms to Know section defines terms and explains, "We will do many explorations in

class to help students learn these concepts from firsthand experiences. Encourage students to share these experiences with you and to teach you what they have learned." The activity involved walking around the home and identifying materials that run on or are made from fossil fuels. Students research online for things made from fossil fuels and then discuss three questions with their students about slow changes to the land.

- For example, the Properties of Matter Scope begins with a list of the TEKS covered, followed by a Background Knowledge section that includes information such as "Matter is what makes up all physical things around us and can be measured, tested, and observed by its physical properties." Next, there is a list of Terms to Know with definitions. The last page of the letter contains an activity to help students learn more about the physical properties of matter by completing the “I Spy Physical Properties” game with items from around the house. The clues should all be physical properties of the object. There are simple follow-up questions for caregivers with possible responses, such as "Is all matter visible?" The answer provided says "No. Air is matter, but it is made of particles too small to see."

Materials include information to guide teacher communications with caregivers.

- Materials include information for parents in the form of the initial parent letter under the Resources tab and the Science Outside the Classroom parent letter explaining the scope and activity for home. The materials state, “This one-page parent letter, available for download by clicking on the book icon in the upper right corner, briefly describes the curriculum philosophy along with some of its features and can be modified for distribution to parents and guardians of STEMscopes students.” For example, in Equal and Unequal Forces, the materials provide Science Outside the Classroom, which includes background knowledge, terms to know, questions to discuss with students, and an activity using push and pull to reinforce the science concepts at home.
- The materials include information to guide teacher communication with caregivers. The resources include a Help Introduce Parents to STEMscopes page. This page instructs teachers that the resources have a one-page parent letter available for download that briefly describes the curriculum philosophy and some of the scope’s features. It also states that teachers can modify the one-pager for distribution to parents and guardians of STEMscopes students. Materials provide clear teacher guidance for inviting ongoing partnerships and sharing of progress updates with parents and caregivers. For example, teacher guidance suggests the “Progress Monitoring sheet is a useful communication tool to use with a student’s caregiver about the successes and/or needs of the student with specific learning goals. This sheet can be referenced when discussing student progress, areas of concern, or needs for differentiation throughout the instructional period of this scope.”

Accelerate Learning STEMscopes Science TX Grade 5

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.	PM

Partial Meets | Score 1/2

The materials partially meet the criteria for this indicator. Materials include year-long plans with some 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 in the course materials. Materials provide clear teacher guidance for facilitating student-made connections across core concepts, scientific and engineering practices, and recurring themes and concepts. Materials provide some review and practice of knowledge and skills spiraled throughout the year to support mastery and retention.

Evidence includes but is not limited to:

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

- The materials include a year-long programmatic scope and sequence that show how science knowledge and skills are addressed for the year. The scope and sequence includes the science objectives aligned to grade-level TEKS and suggested pacing instructional days for each scope.
- Materials also list in each scope overview, and there is a correlation document that includes all other remaining TEKS. The Standards Planning tab on each scope includes a Scope Matrix that lists and a Scope Overview that explains how the scientific and engineering practices and recurring themes and concepts are supported in the scope.

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

- The materials provide teacher clarity in understanding how activities and experiences connect concepts, SEPs, and RTCs applicable to each scope, or unit, for all grade 5 scopes. For example, the Explore Activities tab has a Making Connections section that lists the exact TEKS, SEPS, and RTC that are used in the scope. This section has a blurb describing the students' experience as they make connections using the resource. For example, in the Grade 5 Properties of Matter Scope, the resource states, "After students complete the activities, ask students how this activity relates to the Scope Phenomenon (found in the Engage section) of an inflated balloon. Encourage students to ask questions and communicate what they observed about the physical

properties of mass, magnetism, relative density, magnetism, physical state, solubility, volume, and the ability to conduct or insulate energy"

- For example, materials contain two student handbooks: one about the scientific method and another about the engineering process. It also has a set of scientific and engineering practices resource cards to help teachers incorporate the SEPs in the classroom. The program also includes cards for Grade 4 for the science and engineering practices and cards for Grades 3-5 for the recurring themes that have discussion prompts and provide guidance for teachers to help students make connections.
- For example, the Grade 5 Properties of Matter Scope, the Observe, Test, and Measure Properties of Matter Explore lab lists the SEPs and RTCs. It includes questions for teachers to use with students to help them make connections to core concepts.

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

- The materials include some intentional practice and spiraling of previously taught knowledge and skills from earlier lessons/grade levels and the current lesson's science knowledge and skills. The practice opportunities somewhat build on previously taught science knowledge and skills. Scopes include a spiral opportunity section but do not include direct information on how to implement the spiral and no specific activities for spiraling. For example, in grade 5, the home page Spiral Opportunity section states, "During the Properties of Matter scope, students learn about physical properties, such as substances' states of matter and solubility in water. In the Properties of Mixtures and Solutions scope, students explore how some liquids and solids dissolve in water while others do not, and how some substances maintain their physical properties when mixed together while others do not." to make a connection to the scope taught before this scope.
- Materials include teacher information on how to utilize specific components of other scopes as a review within a scope. For example, in the Conservation and Recycling scope, materials state, "You can utilize the STEMscopedia from the Formation of Sedimentary Rock and Fossil Fuels scope before starting the Hands on Explore: Reducing Environmental Impact to support understanding of how fossil fuels are formed over a long period of time and therefore, must be conserved," and, "You can utilize the Virtual Experience from the Properties of Matter scope before starting the Hands on Explore: Is It a Solution? to support mastery of determining whether a substance is soluble in water." Materials also cite the Reading Science from the Uses of Energy scope before starting the Hands-on Explore: Go With the Flow to support mastery of how different kinds of energy can be transformed in a system.
- Scopes also include sections for pre-assessments, a Pulse Check (check for understanding), and a Scope Assessment for standards practice within each scope for Grade 5. However, there is no spiral practice for the core concepts within other scopes, and the scopes stand alone.
- Materials include the intentional practice of the current lesson's science knowledge and skills. Each scope follows the 5E lesson plans, which include several opportunities for students to practice their knowledge and skills in the Explain, Elaborate, and Evaluate sections. There is also a STEAM Choice Board in the Acceleration tab.

Accelerate Learning STEMscopes Science TX Grade 5

Indicator 8.2

Materials include classroom implementation support for teachers and administrators.

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- The materials include overview documents to support teachers in understanding how to use all materials and resources as intended. Materials provide an introductory video that describes the curriculum components of lessons that include phenomena, scientific processes, and recurring themes to ease the search through the materials.
- Materials include a Resources Tab on the learning platform that offers teacher resources, including videos, Planning with STEMscopes (which provides a Lesson Planning Guide), and Instructional support. For example, the Instructional Supports tab provides resource cards to guide teachers on implementing the SEPS and RTCs that explain "what the student is doing" and Teaching Notes to support implementing TEKS.
- Each scope includes Teacher Background Instructional support and guidance, virtual experiences, instructional strategies on intervention, and differentiation that include a teaching strategy. For example, the material includes Enrichment activities for Grade 5 with a STEAM Choice Board with nine activities, a self-assessment, and reflection questions to help students connect what they are learning with real-world experiences. Materials direct teachers to

"Review the options on the Choice Board, and decide how many activities to ask students to complete. You can instruct students to complete one activity per row, to complete all activities, or to play tic-tac-toe and complete a row, column, or diagonal line." One example the choice board offers for the Properties of Matter scope includes creating a Top 10 List and making a model.

- The materials are organized to facilitate ease of implementation and use. For example, the materials have tools to support navigating the resources including a Suggested Scope Calendar that includes daily planning, Intervention, and Acceleration. Each scope is formatted the same and has the same pathways. Materials also include a Digital Texas Navigation Guide with a visual representation of the location of the Scopes. Materials include a graphic organizer that describes the lesson cycle and has dropdowns that include tips for 5E + IA Instructional Model, Teacher Preparation, Planning Instruction, and Differentiation Pathways.

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

- The materials include science standards correlations for lessons units, lessons, or activities within the context of the grade level or course in teacher guidance documents and online resources. For example, Grade 5 materials include a Standards Correlation document and a Standards Snapshot table that indicates where each content SEPs, RTCs, and TEKs are within the program. There is also a side-by-side document that compares the new TEKS with the 2017 TEKS.
- Grade 5 materials also contain a Teacher Background tab for each scope that explains the content TEKS in detail. There are visuals and text included. Components of each scope also include TEKS information. For example, in the Picture Vocabulary activity within each scope, there is a Standards button that lists all the Texas TEKS covered in this lesson. This Standards button is in multiple lessons inside each scope.
- Materials include a Scope Matrix which designates where individual TEKS are applied within scope activities. The content TEKS are also broken down into I Can Statements for student use and into verbs and nouns under the Standards and Vocabulary Unwrapped section. Additionally, there are applicable cross-content TEKS.
- The materials include cross-content standards for ELA, Math, and Social Studies in sidebar supports within the teacher's guide to lessons. Materials include cross-content standards for ELA, Math, and Engineering in sidebar support within the Standards Planning tab within each scope. For example, in the Grade 5 Equal and Unequal Forces Scope included on the Standards planning page, there are Math, Reading Language Arts, English Language Proficiency Standards, College and Career Readiness Standards connections to the lessons in this scope. The ELA TEKS are also connected to the Reading Science lesson under the Elaborate Tab of each scope. Math Moments included in some Explore activities are connections to the Math TEKS
- Materials embed cross-content correlations through tips, reminders, and examples for reinforcing reading and writing, calculations, and problem-solving skills as students apply them to science learning.

Accelerate Learning STEMscopes Science TX Grade 5

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

- Materials include a Science Materials List for grade band K-5 on the Resources tab of the learning platform. Materials list materials needed to complete the activities including consumable and reusable supplies by grade levels and scopes.
- In the Scope Kit List tab, there is a Science Materials List for each grade level that includes detailed information including the scope name and section where the materials are required and quantity suggested. Within each scope, materials include a list of needed supplies and equipment for each portion of the scope.For example, on the Properties of Matter Scope, the Explore: Properties of Matter Stations activity includes a Materials section broken down into Activity Files, Reusable Materials, and Consumable Materials.

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

- The materials provide teacher guidance for safety practices and grade-appropriate use of safety equipment during investigations, in accordance with Texas Education Agency Science Safety Standards. For example, in the Grade 5 Resource tab, the Lab Safety section includes grade-appropriate Safety Posters and Safety Equipments Posters teachers can post in the classroom and reference during lessons. Posters include safety instructions such as, “Read all instructions carefully and understand the purpose of the investigation before you begin the investigation.” and, “Read all instructions carefully and understand the purpose of the investigation before you begin the investigation.”
- Materials provide teacher guidance for safety practices within each scope. For example, in the Grade 5 Physical Properties of Materials Scope, in the Explore: Properties of Matter Stations activity there is a prompt to "Ask students to identify and demonstrate any possible safety precautions they should take at each station.
- The materials provide student guidance for safety practices and grade-appropriate use of safety equipment during investigations, in accordance with Texas Education Agency Science Safety Standards. The Grade 5 Resource tab includes a Laboratory Safety Contract to explain lab safety rules for students. Materials provide student information about safety practices within each scope, usually provided through teacher direction. For example, the Grade 5 lesson Go With the Flow Explore Activity cautions teachers to warn students on the proper way to connect batteries because wire can get very hot. In the Grade 5 Physical Properties of Matter scope, in the Explore: Observe, Test, and Measure Properties of Matter activity there is a note in the Preparation section to "Hold the glass beaker with two hands when moving it,” and “Do not touch the wires to anything other than the objects being tested..."

Accelerate Learning STEMscopes Science TX Grade 5

Indicator 8.3

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

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- The materials include support for specific scheduling considerations, with guidance for covering required science content for the grade level/course within a variety of schedules. Materials include a Suggested Scope Order and Pacing Guide for the entire year. Materials state that "suggested Pacing is currently based on the time needed to cover the majority of Stemscopes elements in each scope," and include the estimated amount of days it will take to complete activities. For example, the grade 5 Equal and Unequal Forces Suggested Scope Calendar allows two days for the Elaborate activities.
  Grade 5 materials include a Getting Started with Stemscopes planning section with a graphic explaining the 5E + Intervention and Acceleration model. The planning instruction drop-down menu breaks down each of the E's. In addition, there is a sample lesson planning guide for a typical eight-day scope.
- Materials include guidance and recommendations on required time for lessons and activities with options for various scheduling considerations. Each scope homepage has a suggested scope calendar that includes the number of days and the statement. Materials state that the schedule assumes a 45-minute science period each day.

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

- Materials provide guidance for strategic implementation that ensures the sequence of content is taught in an order consistent with the developmental progression of science. Materials include a suggested sequence of units that considers the interconnections between the

development of conceptual understanding and scientific and engineering practices. For example, the resource materials contain a Differentiation Pathways graphic illustrating how teachers can strategically implement the activities within the scopes. Activities on the suggested calendar are marked with one asterisk for low-complexity elements, such as Reading Science and Connect Science Video, and two asterisks for high-complexity elements, such as Science Connection and Engineering Connection. The asterisks allow teachers to tailor instruction.

- Each scope follows the 5E model: Engage, Explore, Explain, Elaborate, and Evaluate. Grade 5 materials contain multiple activities within each of the 5Es, as well as the Intervention and Acceleration tabs. Teachers have the flexibility to determine what their students need based on the built-in tools and assessments like the Progress Monitoring and Reflection Activity and Pre-Assessment on the Engage tab, the Pulse Check under the Explain tab, and both the Claims-Evidence-Reasoning and Scope Assessments under the Evaluation tab. The teacher uses the tools to determine whether to use the small group intervention and concept attainment quiz under the Intervention tab or give students the choice to extend their learning with the STEAM Choice Board on the Acceleration tab.

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

- The materials include units, lessons, and activities for a full year of instruction. All grade-level scopes can be reasonably implemented within the time constraints of a school year, and the activities and routines within each lesson can reasonably be completed within the length of time suggested. Grade 5 includes 15 scopes with a suggested time frame of 111 instructional days.
- Materials provide guidance for adjusting to local time and scheduling constraints. For example, each scope has multiple lessons to choose from with various times to complete them. Teachers can plan for their classes by choosing the activities the students complete based on school years of varying lengths and varying lengths of class times.
- Materials provide teacher guidance on adjusting to extend or condense units and lessons within the Lesson Planning Guide. The Lesson Planning Guide states, "Use the Lesson Plan Template along with the Suggested Scope Calendar on the home page of each scope to plan your lessons before providing instruction to your students."

Accelerate Learning STEMscopes Science TX Grade 5

Indicator 9.1

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

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

Not Scored

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

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

Evidence includes but is not limited to:

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

- The digital materials include appropriate white space and an overall design that does not distract from student learning. For example, student materials have an appropriate design to support student learning. Student-facing materials include a clear assignment type and concept heading. Titles and headings are prominent and clear; sections have marked subheadings in a clear, relevant hierarchy. The content is organized logically, with each scope organized the same throughout the year.
- For example, below-level reading science text incorporates less text and more white space than the on-level text. Student handouts include graphics and charts that have easy-to-read labels. Materials provide identified areas under questions that ask for written responses or drawings from students. Materials use similar spacing between sections, equal line height in body text, and slightly larger spacing between paragraphs within reading materials within Reading Connection.
- For example, the grade 5 Changing Earth's Landforms Reading Science Student handout appropriately uses white space around the text, making content easy to read and comprehend. The Reading Science handout uses two fonts: one for the heading and another for the passage.
- The Virtual Explore section in Properties of Matter displays images of iron nails and water. Students select one and proceed through several pages that each have a brief paragraph at the top and a corresponding graphic image beneath it. The Information and Reset buttons are above the text. White space dominates the remaining area. The STEMscopedia, designed as a newsletter, has two columns of text interspersed with full-color photographs and diagrams. It

includes highlighted vocabulary words with definitions on yellow sticky note graphics and thinking questions on spiral notebook graphics.

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

- The materials embed age-appropriate pictures and graphics that support student learning and engagement without being visually distracting. For example, the materials include an age-appropriate picture of a hoodoo in the Changing Earth's Landforms Reading Science student handout. The image is put in the paragraph unobtrusively and is the right size for the page.
- The Changing Earth's Landforms STEMscopedia has a visual of a mountain and ocean experiencing weather, erosion, and deposition in color. It is not distracting and aids students in understanding how landforms are formed. Seven colored images of landforms are within the STEMscopedia.
- Resources include vocabulary cards that clearly and accurately clarify and illustrate the new terms the students are learning. The materials use focused photos, arrows, and labels to highlight important features. The vocabulary word appears at the top and center of the slide, followed by a large, clear image of the word in the middle and a bolded, brief definition at the bottom of the image. For example, the Force and Motion scope includes magnified images that demonstrate reflection with images of hot air balloons reflected in a lake. A graphic shows the direction of the reflected image.
- For example, Problem-Solving Steps in Pictures includes graphics with a simple image and a succinct one-sentence description that depicts a clear transition from one stage to the next.
- Materials include a graphic of blood at an enlarged rate in STEMscopedia's section on Properties of Mixtures. The next page shows an image of a magnet separating iron filings from sand. Further along in the scope, another graphic shows the three states of matter for water, with inset images depicting the molecular structure of each.
- Materials include 3D Virtual Experiences using school-aged children and simple zoomed-in manipulation activities, such as pushing a ball into a hole.

Materials include digital components that are free of technical errors.

- The materials include digital components free of technical errors. Materials are free of spelling, grammar, and punctuation errors. Student-facing documents and answer sheets are free of technical errors. Teacher resource sections are free of technical errors.

Accelerate Learning STEMscopes Science TX Grade 5

Indicator 9.2

Materials are intentionally designed to engage and support student learning by integrating digital technology.

1	Materials integrate digital technology and tools that support student learning and engagement.	Yes
2	Materials integrate digital technology to support student engagement with science and engineering practices, recurring themes and concepts, and grade-level content.	Yes
3	Materials integrate digital technology that provides opportunities for teachers and/or students to collaborate.	No
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 by integrating digital technology.

Materials integrate digital technology and tools that support student learning and engagement. Materials integrate digital technology in ways that support student engagement with science and engineering practices, recurring themes and concepts, and grade-level content. Materials do not 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.

- The materials integrate digital technology and tools that support student learning and engagement. For example, materials are fully digital, with all components available online as web pages or PDF digital downloads. Each scope contains a virtual Explore lab and a Virtual Experience as an Elaborate activity. Assessments are available online. Materials have interactive, online assignments.
- Materials provide some guidance for integrating digital technology in multiple settings. For example, the Teacher's Instructions for the Virtual Explore in the Grade 5 scope Properties of Matter say, "Ideally, students should access the simulation on a device. The activity can be done in groups or individually. If devices are not available, you can project the simulation for students to complete as a class." There are instructions for explaining the simulation using a Poll 0, 1, 2, and 3 strategy.
- For example, grade 5 Changing Earth’s Landforms Scope contains a Virtual Explore: Quick Changes to Land in the Explore tab. The Teacher Notes explain materials require "no alterations for students to complete in either a synchronous or asynchronous virtual environment."

Accelerate Learning STEMscopes Science TX Grade 5

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

- The materials integrate digital technology in ways that support student engagement with science and engineering practices, recurring themes and concepts, and grade-level content.
    - For example, materials provide interactive simulations and models for students to explore scientific and engineering practices in a virtual environment.
    - For example, the Acceleration Steam Choice Board for the grade 5 Structures and Functions of Organisms Scope provides options such as creating a website, a word cloud, or a digital presentation.
    - For example, each scope contains a Virtual Experience activity that allows students to interact with the content of the scope. In the Grade 5 scope Properties of Matter, digital technology presents students with three mystery boxes. Students click on a box and then select a physical property button from the top to read about it pertaining to the object in the mystery box.
    - For example, students engage with a digital notebook when enrolled in a STEMscopes 3-5 class. The digital notebook can be customized by the teacher for students and contains resources to support learning and engagement.

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

- The program does not integrate digital technology that provides opportunities for teachers and/or students to collaborate, though it does integrate digital technology to support student engagement,
- Digital technology included in the materials lacks such components as discussion boards, video conferencing, and cyber spaces that would encourage collaboration.
- The program documents lack guidance and resources to provide opportunities for teachers and/or students to collaborate using digital technology.
- Digital learning games included in the program are not designed to be completed by interacting or collaborating with others.

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

- Digital materials are accessible and compatible with multiple operating systems and devices. The materials are accessible on iPads, iPhones, iPods, tablets, and mobile devices. Material requirements state that the program is compatible with the “Latest Google Chrome, IE 11, Latest Microsoft Edge, Latest Safari.” For example, the STEMscopes website explains, "A web-capable device (tablets, phones, computers) require no additional software, apps, or updates to be able to fully use STEMscopes." The website explains that STEMscopes provides single-sign-on ability via Clever, MS SAML, Google SSO, LTI SSO, ClassLink, and Schoology. We support integration with client LMS systems through IMS Global’s Thin Common Cartridge (ThinCC) protocol.

Accelerate Learning STEMscopes Science TX Grade 5

Indicator 9.3

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

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

Not Scored

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

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

Evidence includes but is not limited to:

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

- Digital technology and online components are developmentally appropriate for the grade level. The simulations and interactive activities components are developmentally appropriate. For example, the grade 5 Weather and the Water Cycle Explore activity includes developmentally appropriate graphics such as easy-to-follow maps and images of age-appropriate weather instruments. In the grade 5 Uses of Energy virtual explore activity, students explore how a battery transforms energy from one form to another using a simple virtual simulation to learn about how batteries work.
- Materials provide information that identifies how digital and online components align with grade-level science knowledge and skills. The materials include several pages of relevant information under the Resources tab. For example, materials provide a section called Suggested Scope Order and a Grade Level Standards section on the Planning with Stemscopes tab that includes a Texas Standards Snapshot document that lists all the TEKS and where the TEKS are included in each scope. The Planning with Stemscopes tab also has Grade Level I Can Statements with the following explanation "Student-friendly learning objectives help lay the foundation for a great lesson. Helping students understand what they should learn that day provides a basis to really gauge learning." Materials have a teacher's guide for each scope that includes the content TEKS, SEPS, and RTCs for the scope and a Scope Matrix that lists each TEKS and tells where to find them. The Matrix also includes the ELPS and their location.

Accelerate Learning STEMscopes Science TX Grade 5

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

- Materials provide teacher guidance for the use of embedded technology to support and enhance student learning
    - For example, in the Grade 5 scope, Properties of Matter, when viewing the Virtual Experience, the teacher guide says, "Verify that the 3-D renderings load and function on each internet-enabled device that students will use to access the experience." It also directs teachers to demonstrate how to access the 3-D renderings and monitor students as they use them.
    - Teacher guidance for the use of embedded technology with learning center activities includes a Preparation section with instructions for getting students logged into the website and navigating to the Technology Center for the Scope. It also includes an Activity section with instructions for guiding students to use the embedded technology to enhance student learning.
    - The materials provide a guidance video for the Scope lesson format.

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

- The materials provide parent letters for each Scope to support student engagement with the digital platform at home. This letter explains the program, its benefits, and its usage within the classroom. The parent letters state, "Your student will receive login credentials to access the program, which features some always-available resources that can be browsed at home, including a Glossary and a reference resource called STEMscopedia. Each of these STEMscopedia reading passages incorporates hands-on activities Additionally, rather than a traditional textbook, your student may come home with a variety of assignments, like reading passages, vocabulary exercises, and at-home hands-on lessons."