

# McGraw Hill Texas Science Grade 5

## McGraw Hill Texas Science 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.
- The materials include guidance that explains how to analyze and respond to data from assessment tools.

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- The assessments are clear and easy to understand.

## Section 7. Supports for All Learners

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

## Section 8. Implementation Supports

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

## Section 9. Design Features

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

## Section 10. Additional Information

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

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## Indicator 2.1

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

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

### Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- Grade 5 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. For example, in Chapter 5, Lesson 5.1, the “Energy Transformed” section, students use information and data collected through reading, investigating, and asking questions to make conclusions about energy transformation in a computer based on TEKS 5.8A.
- In Chapter 6, Lesson 6.2, grade 5 materials include the Build Your Skills segment within the student eBook. In this section, students develop, practice, and demonstrate mastery of science and engineering practices associated with grade 5 TEKS 5.1B, 5.1G, and 5.5B. Students develop a model of the forces used in a system like a bicycle after considering the planning and conducting of an investigation to test the safety and reliability of forces in a system.

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- Grade 5 materials provide multiple opportunities to develop grade-level appropriate scientific and engineering practices, as outlined in the TEKS. The materials systematically prompt students in the Explore section to engage in hands-on activities that provide students with opportunities to practice and demonstrate scientific and engineering practices. For example, in Chapter 2, the materials prompt students to engage in a Hands-On Investigation that provides students with opportunities to practice and demonstrate scientific and engineering practices. Students investigate different metals and classify them as magnetic or nonmagnetic.
- Grade 5 materials provide multiple opportunities for students to show mastery of grade-level appropriate scientific and engineering practices. The materials systematically provide opportunities for students to show mastery both in the Elaborate and Evaluate sections of the student eBook. In Lesson 11.2, students complete a Hands-On Investigation where they practice and show mastery of scientific and engineering principles. Students make predictions and analyze pictures, looking for data that supports their ideas. Students record and interpret data. Students reflect on their investigation and how they utilized scientific and engineering principles to guide them.
- The materials provide multiple opportunities to practice grade-level appropriate scientific and engineering practices as outlined in the TEKS. For example, materials include opportunities for students to answer questions using evidence from investigations or gathered by others. In the Student Edition, after completing an investigation on matter, students answer questions such as “What patterns did you notice in the objects that reacted to the magnet?” “How can you compare and contrast the objects based on the results of the investigation?” “How is matter compared and contrasted using magnetism?”

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

- Grade 5 materials provide multiple opportunities to make connections between and within overarching concepts using recurring themes. For example, in Chapter 5, Lesson 5.1 Hands-On Investigation (Explore activity) and the “Energy Changes Form” feature (Explain article), students make connections between the observations of various forms of energy in the classroom investigation and the overarching concepts of energy conversion. These concepts are later reinforced in Chapter 6 with the discussion of energy conversions involving force and motion. The materials systematically introduce the recurring themes in the Engage section of the Teacher's eBook.
- Grade 5 materials include the STEM Connection, providing opportunities to make connections between and within overarching concepts using recurring themes. For example, in Chapter 6, Lesson 6.1 in the STEM Connection section, students are introduced to an architect/professional hockey goalie who utilizes her knowledge of equal and unequal forces to successfully tend a hockey goal and design structures connecting to the overarching concepts and recurring themes featured. Grade 5 materials utilize “Cause and Effect” as a recurring theme in several lessons.
- Throughout these lessons, students will use the Cause and Effect graphic organizer to begin identifying and investigating cause-and-effect relationships and using these relationships to explain scientific phenomena or analyze problems. One example of this graphic organizer is in Lesson 11.2, used to help students identify and investigate stability and change as they relate to instinctual and learned behavioral traits and the chances of an organism’s survival. The goal of this theme is for students to identify cause-and-effect relationships as a method to investigate and explain what they observe.

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

- Grade 5 materials include the 5E model to strategically and systematically develop students' conceptual knowledge and skills as outlined in grade 5 TEKS. For example, in Chapter 12, students use their prior grade 4 knowledge of food webs to build a deeper understanding of how ecosystem changes can affect food webs. In the Chapter Launch, students reflect on and discuss their prior knowledge of food webs and relate it to the "Big Question."
- Grade 5 materials strategically and systematically develop students' content knowledge and skills as appropriate for the concept and grade level as outlined in the TEKS. Grade 5 content knowledge and skills are taught using Science and Engineering Practices and recurring themes so students can build and connect knowledge and apply it to new contexts. The materials prompt students to plan and conduct investigations across the year, as well as provide guidance for teachers. For example, grade 5 materials include a Hands-On Investigation in Explore, where students make a model stream to investigate how moving water carries sediment. This activity builds on previous grade 4 learning about modeling and describing slow changes to Earth's surface by erosion and deposition from water. The Program Overview is vertically aligned to allow students to build knowledge throughout the grade level and year after year. In Chapter 5, the TEKS at a Glance highlights the strategic and systematic placement of each grade 5 TEKS associated with Energy Transformation throughout the chapter to promote student concept knowledge and skill development.
- 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, materials contain a Scope and Sequence that is vertically aligned, allows students to build knowledge throughout the grade level, and provides for teacher understanding of grade-level content above and below the grade they are teaching. The Instructional Model uses the 5E model and provides a routine for students to engage with phenomena, gather evidence, connect with science content authentically, and show understanding. The Daily Lesson Plan provides structure to each day's instruction.

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.

- Grade 5 materials include sufficient opportunities, as outlined in the TEKS, for students to ask questions and plan and conduct labs and investigations to engage in problem-solving and make connections across disciplines and develop an understanding of science concepts. Students have many opportunities in each chapter to engage in problem-solving and make connections across disciplines and develop an understanding of science concepts in the STEAM Stations that connect the chapter phenomena to related science, math, technology, art, and engineering explorations. For example, in Chapter 5: Energy Transformation, students have access to STEAM Stations providing opportunities such as "Surging Solutions," "Draw It as a Diagram" art, and "Super Solutions" engineering activities. In the Math: "Surging Solutions STEAM Station," students solve a multi-step problem involving a phone battery (Math TEKS 5.5A, Science TEKS 5.3B).
- Grade 5 materials provide hands-on investigations throughout each chapter to include opportunities for students to ask questions and conduct investigations, engaging them in

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problem-solving to make connections across disciplines and develop an understanding of science concepts. For example, in Chapter 6, Lesson 2, students explore the “Hands-On Investigation: Balloon Rocket” using materials such as safety goggles, string, a straw, tape, a balloon, a marker, and a meterstick to make a hypothesis, design and conduct an investigation, communicate findings, and make a claim about ways to test the effect of force on objects (TEKS 5.7B). The materials provide the teacher with possible student questions, found in Chapter 7, Lesson 2, in the “Make Your (River) Bed” Hands-On Investigation. Some examples of student questions are “How does moving water change the land?” and “What questions did you have when you observed the photo of the shape of the river along the Texas Gulf Coast?”

- The grade 5 materials include sufficient opportunities for students to plan and conduct investigations and ask questions. The Hands-On Investigations in each lesson provide teachers with three options to facilitate the investigation: Structured Inquiry, Guided, or Open. The materials give step-by-step instructions for Structured Inquiry. The materials give a teacher-facilitated question for students to explore for Guided Inquiry. For Open Inquiry, students write their own questions and create their own investigations.
- The materials include sufficient opportunities to engage in problem-solving to make connections across disciplines. For example, the materials include the Claim, Evidence, and Reasoning process throughout the days of the lesson for students to build on. For example, in grade 5, Lesson 3.1, students make their claim on day 1. On day 2, students search for evidence to support their claims. On day 3, students reason whether their claim is valid or not.

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## Indicator 2.2

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

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

### Meets | Score 4/4

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

Materials embed phenomena and problems across lessons to support students in constructing, building, and developing knowledge through authentic application and performance of scientific and engineering practices, recurring themes and concepts, and grade-level content as outlined in the TEKS. Materials intentionally leverage students' prior knowledge and experiences related to phenomena and engineering practices. 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. Students develop content knowledge as they work to construct explanations of the phenomena and/or solve engineering problems. For example, grade 5 materials embed phenomena across lessons within a matter unit. Students first examine how matter is measured using mass, volume, and relative density. In the next investigation, students explore how matter is compared and contrasted using magnetism. Then students investigate how you can compare and contrast conductors and insulators. In the final investigation, students compare and contrast matter based on solubility and physical state. In the following chapter, students perform a series of investigations to understand how some mixtures maintain the physical properties of their original substances and how matter changes when making solutions.
- Each chapter has a “Big idea” question, and each lesson has an “Essential Question.” Lesson 1 asks, “How do different organisms survive in the same environment?” Chapter 11 focuses on “How do sea turtle hatchlings know where to go, and how do they get there?”

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- 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 each chapter and connects concepts throughout each chapter's lesson. Students return to the chapter's phenomenon to develop content knowledge as they work to construct explanations and/or solve engineering problems. For example, in Chapter 7, the connecting question across all lessons is, "What made the Rio Grande Basin so grand?"

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

- The materials elicit and leverage students' background knowledge and experience to adequately address potential areas of misunderstanding. Each Chapter Overview contains a summary of Common Misconceptions to help teachers gauge where some students may have inaccurate or inadequate prior knowledge. This section also prepares teachers to provide accurate explanations of scientific content and concepts, as well as respond to students who may have gaps or misconceptions in their prior knowledge. The Chapter Overview also informs teachers of the necessary prerequisite content and skills students will need to be successful in the chapter.
- The grade 5 student eBook provides opportunities to leverage students' prior knowledge and experience related to the phenomena of various topics in the Chapter Preview section. Grade 5 phenomena videos are found in the Chapter Preview section. Students watch a video or view an image, then answer questions regarding their background knowledge. Grade 5 student eBook provides opportunities to address potential misconceptions in the "Paige Keeley Science Probes" section. For example, a conversation between children references a misunderstanding of fish and sea turtle structures.
- 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, a grade 5 matter unit leverages students' experiences with the phenomenon of mixtures in their drinks. Students make observations of mixtures in their lunch (salad, corn, and veggies in rice), comparing the physical properties of each substance. They connect observations of other pictures at home with other beverages and recipes. Students explain their own thinking and who they agree with. The materials give teachers guidance on how to address the misconceptions before teaching the rest of the lesson.
- The materials allow different entry points to the learning phenomena and/or solving problems. Students experience the phenomena through various means, such as teacher demonstrations, hands-on experiences, videos, text, data, and images. For example, grade 5 materials include shared experiences with a relevant phenomenon, such as watching a video of various types of matter at a state fair or the teacher demonstrating how to make a mixture of sand and water.

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

- Materials clearly outline for the teacher the scientific concepts and goals behind each phenomenon and engineering problem. Teacher materials provide "TEKS at a Glance" for each chapter, as well as a Lesson Overview for each lesson. These two sections describe the scope and sequence inside each chapter and lesson and support teachers with the content background

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and TEKS alignment. Grade 5 materials include the Chapter Resource Snapshot to outline for the teacher the scientific concepts and goals behind the phenomena and engineering problems investigated throughout the chapters. For example, Lesson 12.1 presents students with the question, “How do living and nonliving things interact in an ecosystem?” The materials clearly outline the goal: “Students observe and describe how various organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem.”

- The materials clearly outline student learning goals behind each phenomenon or engineering problem. Each lesson contains a Hands-On Investigation that clearly outlines its purpose, summary, and expected outcome of the activity. For example, the Hands-On Investigation in Chapter 8, Lesson 2 clearly outlines the following lesson goal: “Students will explore the processes that led to the formation of fossil fuels.”
- The materials clearly outline the student learning goal(s) behind each phenomenon or engineering problem. For example, in grade 5, a lesson on mixtures tasks students with explaining what happens to the properties of substances when they are mixed together. Materials clearly outline the following lesson goals: “Students observe the properties of sand and water before and after mixing them together.”

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## Indicator 3.1

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

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

### Meets | Score 6/6

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

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

Evidence includes but is not limited to:

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

- Grade 5 materials are vertically aligned and designed for students to build and connect knowledge and skills with and across units and grade levels, as evidenced in the provided “Scope and Sequence” section of the Program Overview teacher ancillary resource. The materials connect new learning to previous and future learning within and across grade levels. For example, the content and skills progression is outlined for teacher support for Grades 3–5.
- Grade 5 materials include the “TEKS Progression” visual guide in the Chapter Overview that displays the vertical alignment and intentional design of content and skills to build and connect student knowledge and skills within and across units. In Chapter 5, Overview TEKS Progression, the outline presents the progression of student content building of understanding the topic of energy transformation within and across Grades 4–6.
- The materials present content in a way that builds in complexity within and across units and grade levels. At the beginning of Chapter 8, the Chapter Overview outlines student knowledge and skills learned in the previous grade levels, broken down into grade-level TEKS, and summarizes the progression from grades 3 through 7. Materials state that lessons within the chapter will build in complexity, from teaching students requisite knowledge and skills to engaging them in designing investigations.

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- In the Teacher eBook, the Chapter Launch page reminds teachers to refer to the “TEKS Refresh” guide if students need support on background knowledge and offers resources for reteaching. This item was not available for review. The materials also include “LearnSmart” review assignments for students to complete. This resource is an adaptive reading tool with scaffolded question prompts and built-in remediation resources. This item was not available for review.

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

- Grade 5 materials are intentionally sequenced to scaffold learning in a way that allows for increasingly deeper conceptual understanding, as seen in the Chapter Resource Snapshot of each chapter. For example, in Chapter 5, Resource Snapshot, Lesson 1 begins with observation of an investigation video, progressing to student investigation followed by students applying newly attained knowledge in skills within the “Claim, Evidence, and Reasoning” exercise and “Lesson Review.” Materials use a concrete representational abstract approach to using mathematical calculations as a tool for identifying patterns and relationships by starting with a phenomenon. For example, in Chapter 7, a math “STEAM Steam” requires students first to plot the height of coastal sand dunes using data from a preceding activity so that they can answer the question “Why can the height of sand dunes vary so much?”
- Grade 5 materials include a scaffolded progression of targeted vocabulary to promote student acquisition of conceptual understanding. Each chapter includes the Science Language and Content Acquisition page highlighting the scaffolding of content vocabulary from prior knowledge through each lesson and the relationship of those terms to the applicable scientific and engineering practices and themes. For example, in Lesson 11.1, students answer an engaging Essential Question to activate prior knowledge, and then create an investigation to explore the Essential Question. On Days 2–4, students read and discuss infographics, articles, and other materials to learn about the material. Then, students assess their understanding of the content on Day 5.
- The materials include interactive notebook activities to assist students in documenting their findings during investigations. These materials may also support vocabulary development or give writing prompts to develop students’ argumentative and evidence-based writing.
- The materials sequence instruction in a way that activates or builds prior knowledge before explicit teaching occurs, allowing for increasingly deeper conceptual understanding. The materials utilize a 5E model: engage, explore, explain, elaborate, and evaluate. Every lesson starts engaging students by watching a video presenting a concrete phenomenon. Then, students explore the phenomenon or concepts with hands-on investigations. After that, the teacher explains the concept or phenomenon. Afterward, the students build their skills by elaborating and writing about what they have learned. Finally, the students are evaluated on all parts of the lesson. For example, materials ensure students experience a phenomenon or problem before utilizing models as a tool for reasoning.
- Materials allow students to use models to depict relationships and form explanations. In grade 5, students experience the phenomenon of creating solutions through hands-on investigations. Students create a chart of their findings during the experiment and use the data they record to make claims about the properties of matter. They also begin to make models of the distribution of particles when the matter is in its various sets and use those models to make claims about the matter.

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

- Grade 5 materials clearly present grade-specific core concepts, recurring themes and concepts, and science and engineering practices. The materials provide teachers with a clear and concise “Correlations: Grade 5” document that leads students to learn via science instruction. The materials also include resources for differentiating lessons for a variety of learners. The materials include student-driven conceptual learning strategies, concrete mathematical applications, and hands-on practice. The Chapter 6 Opener page displays grade-level appropriate TEKS clearly and accurately, addressing the indicator criteria. The materials provide a “TEKS Correlation” document that clearly outlines the core content that students will be learning.
- The materials accurately present core concepts, recurring themes and concepts, and science and engineering practices (SEPs). Across lessons, units, and grade levels, materials are free from scientific inaccuracies. Materials present scientific content that is current and reflects the most widely accepted explanations. For example, grade 5 student materials present accurate information about solutions for conservation, including how it will have a harmful impact on the environment if resources are not conserved and protected.
- The grade 5 materials provide a “Plan Your Lesson” spread at the beginning of each lesson. This page outlines TEKS for the lesson, along with recurring themes and SEPs. The page provides a breakdown of the 5E instructional model. Each day is broken into the daily lesson cycle: “GET READY,” “TEACH,” and “ASSESS.” Each section is then broken down into each step of the lesson.

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

- Grade 5 materials include a variety of formative and summative assessments to evaluate student mastery of requirements within the boundaries of the main concepts of the grade level. For example, in the Chapter 6 Resource Snapshot, mastery requirements are outlined by a variety of assessments on the right-hand side of the table, which are aligned to the TEKS 5.7A and 5.7B on the left-hand side.
- Grade 5 materials include Essential Questions at the beginning of each lesson, forming boundaries of the main concepts of the course aligned with grade-level TEKS. In Essential Question Check-ins, students demonstrate mastery requirements outlined by the TEKS. At the beginning of every chapter, the Chapter Overview provides chapter objectives for each chapter and student learning objectives for each lesson. The materials clearly define the boundaries of content that students must master for the grade level. At the end of each lesson, the Evaluate section provides a formative assessment for students to demonstrate growth and mastery of that lesson’s TEKS. Also, at the end of each chapter, the Chapter Wrap-Up offers a summative assessment for students to demonstrate their growth and mastery of all the concepts developed. The materials provide a Quick Check at the end of every day to assess what students are learning and where misconceptions may be. The materials provide teachers with a guide of questions to ask and how to reinforce learning.
- The materials include specific learning targets for each grade level. For example, materials include a Chapter Overview that outlines the TEKS, chapter objective, and common student misconceptions for each lesson within the chapter. The Chapter Launch page in the Teacher

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eBook includes a section titled “Introduce the Big Idea” that directs the teacher to write the Big Idea statement on the board.

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## Indicator 3.2

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

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

### Meets | Score 6/6

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

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

Evidence includes but is not limited to:

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

- Grade 5 materials include a Full Scope and Sequence document to 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. For example, in the Scope and Sequence document, teachers' attention is brought to the topics of Electricity and Light (Chapter 4), Energy Transformations (Chapter 5), and Force and Motion (Chapter 6) while this same document references similar topics in Grades K-5 supporting teachers' awareness of content and skill progression. The Teacher eBook has a TEKS at a Glance chart, which lists the TEKS relevant to that particular chapter. In addition, the Pacing Guide incorporates the TEKS, showing the order in which knowledge and skills are taught and built into the course materials. This Pacing Guide is a TEKS-aligned scope and sequence that contains the TEKS taught within each chapter and a year-long plan that is easily accessible within the course for Fifth Grade.
- The materials include guiding documents that support teachers in understanding how new learning connects to previous and future learning across grade levels. The materials contain a "Chapter Overview" at the beginning of every chapter that showcases which skills and standards students should have mastered in previous grades and how learning will progress in the

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subsequent grades. The "Program Overview" provides a broad overview for the teacher that explains how science concepts build over time from kindergarten through grade 5. Materials state that students in the early grades begin looking at everyday weather and seasons. In early elementary grades, students start looking for patterns in observable weather. Then, in later elementary grades, students begin to grasp that weather has a relationship with Earth's relative position in its orbit around the Sun, which helps them to develop more sophisticated causal explanations of the phenomena observed in early grades. In the "Chapter 6 Chapter Overview", the "TEKS Progression" for the fifth grade Force and Motion topic outlines the connection for content, recurring themes, and scientific and engineering practices for grades 3, 4, 5, and 6.

- The materials include guiding documents that support teachers in understanding how new learning connects to previous and future learning across grade levels. For example, the materials include the "TEKS Progression" page in each Chapter overview that details the progression of TEKS from previous and future learning. The materials provide a Scope and Sequence to explain how concepts increase in depth and complexity across lessons and units within the grade level. The Scope and Sequence show that the material gets deeper into the content as they progress in grade levels. The materials include a "TEKS at Glance" page at the start of each chapter that notes horizontal TEKS alignment and which is addressed in each lesson.

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

- Grade 5 materials contain explanations and examples of science concepts, including grade-level misconceptions, to support teachers' subject knowledge and recognition of barriers to student conceptual development as outlined in the TEKS. For example, in Chapter 6, Chapter Overview, the material explains a common misconception among students involving Lesson 2: Effects of Force, including students' misconception that all systems are complex as opposed to systems simply referring to a series of parts that work together as a whole relating to TEKS 5.7B.
- Grade 5 materials contain a "Teacher Explanation" excerpt within the "Page Keeley Science Probes" pages. In Chapter 6, Lesson 1, the Teacher Explanation offers a content reference for teachers supporting subject knowledge and recognizing barriers to student conceptual development as outlined in TEKS 5.7A. This resource also provides rationales for student answer outcomes, including areas where particular student responses can suggest a specific lack of reasoning.
- The materials include a "Lesson Overview" with a "Science Background" section at the beginning of each lesson. This section prepares teachers to provide accurate explanations of scientific content and concepts, as well as support for teachers to develop their own understanding of more advanced, grade-level concepts. For example, in a grade 5 matter unit, students design simple experimental investigations that test the effect of force on objects in a system. Materials provide background information to teachers about the matter, including the difference between mass, volume, and relative density, and ways to measure or calculate each.
- 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 include a "Chapter Overview" with a summary of "Common Misconceptions" to help teachers gauge where some students may have inaccurate or inadequate prior knowledge. This section also prepares teachers to provide accurate explanations of scientific content and concepts, as well as respond to students who may have gaps or misconceptions in their prior knowledge.

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

- Grade 5 materials include the “Supporting All Learners” document explaining the intent and purpose of the instructional design of the program. The concepts of Universal Design for Learning, Texas Science Instructional Model, Multi-Tiered System of Supports, Supporting Students Experiencing Difficulty with Literacy in Science and Engineering, including Strategies for Students with Special Instructional Needs, Library Media Centers and Information Literacy Skills, and Talk About It: Student Discourse are featured within the Supporting All Learners document.
- Grade 5 materials contain “Chapter 1: Onward We Go”. This targeted introduction chapter exposes teachers and students to the intent and purpose of the instructional design of the program. For example, instructional activities to master TEKS, including content knowledge, recurring themes, and scientific and engineering practices, are introduced, and opportunities to practice are provided.
- The materials provide a purpose or rationale for the program's instructional design. Materials give an explanation for why materials are designed using the "Universal Design for Learning. The materials highlight that this framework gives individuals with different abilities, backgrounds, and motivations equal opportunities to learn. The materials provide a framework explaining the main intent or goals of the program. Materials provide a "Program Overview" that thoroughly describes the program's instructional approaches and references the research-based strategies present in each unit. The "Program Overview" describes that the goal is to "empower students to ask questions, pose hypotheses, conduct hands-on investigations, and communicate their findings on paper and in person." The materials provide a rationale for using the 5E model for learning, the Universal Design of Learning, along with the other components such as MTSS and Literacy connections. The materials explain that they focus on a Student-Centered approach to guide students into a deeper level of learning. The materials provide a rationale for using the Universal Design for Learning (UDL) framework for curriculum development, stating that it “gives individuals with different abilities, backgrounds, and motivations equal opportunities to learn...By incorporating many aspects of UDL, the Texas Science curriculum accommodates diverse learners and maintains high expectations for all learners [www.udlcenter.org](http://www.udlcenter.org).”

# McGraw Hill Texas Science 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

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 developing students and display an understanding of scientific concepts. Materials support students to act as scientists and engineers who can learn from engaging in phenomena, the engineering design process, make sense of concepts, and productively struggle.

Evidence includes but is not limited to:

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

- Grade 5 materials consistently support students' meaningful sensemaking through reading, writing, thinking, and acting as scientists and engineers. For example, in Chapter 5, the materials include the STEM Connection feature, which prompts students to read and think about a crane mechanic's work from a scientific approach, followed by using a student-created opinion writing graphic organizer of pertinent information to develop claims to a writing prompt of choice.
- Grade 5 materials include an activity in Chapter 5 called Energy Transformed. In this activity, students read and analyze an infographic presenting information about how energy is transformed in a computer, followed by the students completing statements about the transformation process based on their scientific knowledge, providing students an opportunity for meaningful sensemaking through reading, writing, thinking, and acting as scientists and engineers.

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- Materials consistently support students' meaningful sensemaking through reading, writing, thinking, and acting as scientists and engineers. Each lesson contains a "Explain" section that promotes students thinking and acting like scientists and engineers. Also, each lesson contains an "Elaborate" section that supports students to express sensemaking while thinking and writing as scientists and engineers.
- Teacher materials include the routine "Claim, Evidence, Reasoning" in every lesson to combine reading, writing, thinking, and acting like scientists and engineers. For example, in Chapter 10, Lesson 2, students investigate why the Sun and shadows appear differently during the day. Then they use the guided "Claim, Evidence, Reasoning" graphic organizer to write about their thinking as scientists and engineers.
- The materials provide a definition of sensemaking and identify specific sensemaking behaviors of students. For example, in Chapter 1, students learn about Ellison Onizuka and how they will act as scientists and engineers by reading, writing, and thinking.
- The materials consistently provide learning activities that support students' meaningful sensemaking. For example, grade 5 materials provide teachers with the opportunity to read about a topic, think through and investigate like a scientist, and then write in different modes (graphic organizers, assessments, paragraphs, CER) to show their understanding.
- The materials provide a definition of sensemaking and identify specific sensemaking behaviors of students.
- In Chapter 1, materials introduce students to the scientific practices, themes, and routines they will use throughout the curriculum for meaningful sensemaking. This is done through reading, writing, thinking, and acting as scientists and engineers. Each Lesson includes a Page Keeley Science Probe to support reading and thinking like scientists or engineers. The Hands-On Investigations engage all students in acting and thinking like scientists or engineers. Writing as scientists and engineers are supported in the Claim, Evidence Reasoning routine and Write About it segments of the lessons.
- The materials include additional sidebars to support scientific and engineering practices. In Chapter 3, after investigating the physical properties of combining solutions under a microscope, a sidebar called "Guided and Open Inquiry" provides teachers with questions to support both types of inquiry. In the Guided Inquiry section, the materials direct the teacher to ask, "What will happen to the salt and water when combined?" In the Open Inquiry section, the materials direct teachers to ask, "What questions did you have when you observed the photo of solutions?" Students can record their questions in their science notebooks.

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

- Grade 5 materials provide multiple opportunities for students to engage with grade-level appropriate scientific texts to gather evidence and develop an understanding of concepts, including the "Claim, Evidence, and Reasoning" prompts throughout each chapter's "Explain" feature. For example, in Chapter 4, students are asked to consider how an electrical circuit can be repaired, followed by reading the provided article to collect evidence to support their claim and denote the evidence by using annotation tools and partner sharing.
- Grade 5 materials include the "Observe Your World" section within the "Elaborate" activity to provide students with an opportunity to engage with a grade-level appropriate scientific text to gather evidence and develop an understanding of concepts. Following the reading of the "Totally Cool Tesla Coil" article, students are expected to showcase the evidence collected by answering a writing prompt explaining how they think the Tesla Coil could be used today.

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- The materials provide multiple opportunities for students to engage in purposeful and targeted activities with grade-level appropriate scientific texts. Each lesson provides a "Explain" section that contains scientific texts written at grade-level appropriateness for students to use to gather evidence and develop an understanding of concepts. The materials contain consistent opportunities for students to engage with scientific texts. These opportunities include vocabulary activities to help students develop an understanding of concepts. Each lesson supports pre-reading with an "Interactive Word Wall" activity at the beginning of the "Explain" section. Included are vocabulary support with the Interactive Word Wall sidebars and in-text support, as well as a Lexile level for each, Explain the passage in the "Plan Your Lesson" section under "Text Complexity". Each chapter also provides a "Hook Them With Books" section with texts available for book clubs and other uses.
- 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. During the "Elaborate" phase of the lesson, the student edition includes a "Stem Connection" text. These texts feature a diverse group of real scientists, engineers, and STEM professionals.

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

- Grade 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, including the "Word Lab" student resource designed for student practice of vocabulary words. Through these interactive word wall opportunities, students are encouraged to continuously update a vocabulary graphic organizer to display an understanding of scientific terms and concepts developed throughout the lessons.
- Grade 5 materials include "Create Your Foldables," which provides students with opportunities to utilize various written and graphic modes of communication to support students in developing and displaying an understanding of scientific concepts. For example, in Chapter 4, students create a three-tab vertical foldable display to explain how electrical energy travels through a complete circuit and can be changed to motion, light, sound, and thermal energy under the top tab. In the middle tab, students describe what is required for an electrical circuit to function. Under the bottom tab, students explain how light travels in a straight line and can be reflected, refracted, or absorbed when it strikes an object.
- 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 include the routine "See, Scan, Analyze" that promotes students' visual literacy practice to develop an understanding of scientific concepts. The routine is first introduced in Chapter 1 and then revisited in every "Explain" section that contains pictures as visual literacy to support students' understanding of scientific concepts. The materials provide opportunities for students to communicate thinking on scientific concepts in written and graphic modes. Each lesson contains a "Check for Understanding" in the "Explain" section that allows students to display their understanding of scientific concepts in writing or using a graphic organizer.
- Materials provide opportunities for students to communicate thinking on scientific concepts in written and graphic modes. For example, Grade 5 students explore organisms and communities with a simulation. Students observe changes and record data in their journals. Students then answer open-ended questions to show their understanding.

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- Materials allow students to write to display their understanding in the “Elaborate” and “Evaluate” sections of each lesson. In Elaborate, students analyze data and write a response. In Evaluate, students answer multiple-choice and open-ended questions to show their understanding.
- In Chapter 2, as students learn about relative density, a “Read the Photo” activity shows a Galileo Glass Thermometer. Students are tasked to contrast the densities of the balls and determine which bulb color has the greatest and least relative density. Students discuss claims with a partner and write claims in their science notebook using the following sentence frame, “My claim is valid because \_\_\_\_\_.” They can then practice vocabulary words in the word lab online or update their graphic organizer with their interactive word wall.

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

- Grade 5 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 using the “Hands-On Investigation Library.” For example, in Chapter 5, Lesson 2, students investigate what makes a flashlight light phenomenon to learn more about energy and systems. Grade 5 materials include the “Descriptive Investigations” section of Chapter 1, introducing students to the concepts necessary to act as scientists and engineers who can learn from engaging in phenomena and engineering design processes, including criteria, discovery, innovation, prototypes, and other terms. Within this activity, students ask questions, plan and conduct investigations of a given phenomenon, record observations and data, and communicate results and findings to peers, acting as scientists and engineers.
- The materials provide authentic student engagement and perseverance of concepts through productive struggle while acting as scientists and engineers. Every lesson includes an “Engage” section that promotes students’ engagement in phenomena by observing while acting as scientists and engineers. The materials support students as “practitioners” while they are sensemaking and productively struggling. Every other chapter concludes with a “STEM Project” that supports students as scientists and engineers as they use scientific practices and engineering principles to complete the activity. The materials also support teachers in understanding the common setbacks and where students may productively struggle. For example, the STEM Project at the end of Chapter 9 is “Local Environmental Impacts,” where students apply what they learned in this chapter about the impacts of conservation. In Grade 5 materials Lesson 11.1, students use their knowledge of organism structures to take a nature walk and make observations, create art with labels, and create a bar graph to further show their understanding.
- The materials provide authentic student engagement and perseverance of concepts through productive struggle. For example, in the “Explore” section of each lesson, students plan and create an investigation to answer the essential question (when using the open inquiry option). Students also act as scientists when they use the “Claim, Evidence, Reasoning” routine to investigate concepts.
- The materials provide authentic student engagement and perseverance of concepts through productive struggle while acting as scientists and engineers. The “Show What YOU Know” projects for each chapter allow students to showcase how they made sense of the science concepts. For example, after investigating changes to matter in Chapter 2, the Show What YOU Know activity asks students to write a newspaper article, create a comic strip or perform a skit about matter. Questions to answer include: Why is it important to know about changes to

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matter in your everyday life? Does changing matter affect you at different times? What would you tell a family member about particles and why they matter? The rubric for scoring includes the following categories: shows an understanding of scientific knowledge, correct use of vocabulary, makes connections to everyday life, and activity is of high-quality writing, has clear organization, and shows creativity.

- The materials create transfer opportunities for students to take what they have learned and use it flexibly in new situations. STEAM Projects support students as scientists and engineers as they use scientific practices and engineering principles to complete the activity and deepen their knowledge through experiential learning. In Chapter 3, after investigating the properties of mixtures, an engineering station called "Recipe Engineer" directs students to use their knowledge of tools that separate mixtures to design an engineer a way to remove the wrong ingredient from a recipe. The project can be extended by giving students time and materials to build a model of their idea.

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## Indicator 5.1

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

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

### Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- Grade 5 materials include "Claim, Evidence, and Reasoning" activities, prompting students to develop claims to essential questions followed by collecting evidence from the investigations and "Explain" articles to promote scientific reasoning. For Example, in Chapter 4, students are asked if they always need wire to light the light bulb using evidence to support their claims and build reasoning. The materials consistently present this routine in each lesson inside the "Explain" section.
- The materials specifically prompt students to use evidence when supporting their hypotheses and claims. Each lesson contains a "Hands-On Investigation" in the "Explore" section. At the conclusion of the investigation, the activity prompts students to use evidence to explain whether their results support their initial predictions.
- Materials provide opportunities for students to develop how to use evidence to support their hypotheses and claims. For example, in each lesson, the students follow the Claim, Evidence, Reasoning (CER) format to answer the essential question. The student materials encourage students to use the text to find evidence to back up their claims. They are also encouraged to create an investigation to explore their claim and find evidence as well. Students write the reason why their claim is valid and they can also use materials provided sentence

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- The materials specifically prompt students to use evidence when supporting their hypotheses and claims. After completing an investigation to measure the volume, mass, and relative density of liquids in Chapter 2, materials direct teachers to prompt students to use their data table and the graduated cylinder to look for patterns.

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

- Grade 5 materials include embedded opportunities to develop and utilize scientific vocabulary in contexts such as the bolded interactive word wall terms featured throughout the “Explain” articles and other activities. For example, in Chapter 4, the terms battery, complete circuit, electric circuit, and electrical circuit are bolded and used in context within the articles and investigation stations to support student learning of vocabulary in an authentic manner.
- Grade 5 materials include the STEM Connection: “Write About It!” section, offering an embedded opportunity for students to develop and utilize scientific vocabulary in context. For example, in Chapter 4, Lesson 3, students choose a prompt and then utilize vocabulary to develop a claim, provide evidence, and support their answer with scientific reasoning by applying content and skills.
- The materials include opportunities to develop and use vocabulary after having a concrete or firsthand experience to which they can contextualize new terms. The materials list scientific vocabulary at the beginning of the "Explain" section. Then, each word is embedded and highlighted in the text, where the vocabulary word is used in context. Students can then use the context to develop an understanding of each new term. The Chapter 2 digital student edition shows an animation of a spinning ride at the fair. The opening video for the chapter “What’s the matter at a state fair” shows food and games at the state fair. The materials direct the teacher to ask students to think about experiences they’ve had with the physical properties of matter.
- The materials include an online interactive resource, "Word Lab," to help students to master vocabulary. Students explore the word's meaning with definitions, pictures, and examples. Students then participate in "Practice It" activities by choosing from multiple-choice or drop-down menus. There are also digital flashcards available to support students as well.

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

- Grade 5 materials include the “Talk About It” icon throughout chapters to integrate argumentation and discourse to support students' development of content knowledge and skills as appropriate to both concept and grade level. In the Teacher Resource Chapter 1 “Onward We Go”, the materials explain that students will see the Talk About It icon and should take a moment to talk with a partner or small group regarding the content, vocabulary, or skill being discussed. This prompt type is used across the lessons as an opportunity to discuss what is observed, as well as to argue from evidence about the "Essential Question" and phenomenon being investigated. The materials guide the teacher in introducing the prompt, encouraging discussion, supporting with sentence stems, and providing possible answers.
- Materials integrate argumentation and discourse within stages of the learning cycle. For example, each lesson includes a "Science Mindset" prompt inside the "Explore" section. This prompt educates students on the correct etiquette when discussing with a peer, as well as provides sentence frames to support the initial student argumentation. For example, in Chapter 4, Lesson 3, students are prompted to discuss what it means to be independent as it relates to the article about Dr. Esquivel.

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- STEM Projects include opportunities for discourse, as students report their progress and results to teachers and classmates.
- The materials provide opportunities for students to develop how to engage in the practice of argumentation and discourse. Materials introduce students to constructing an argument for their own interpretation of the phenomena they observe. Materials provide instructional support to help students go beyond simply making claims. Students learn the Claim, Evidence, and Reasoning Routine in Chapter 1. This routine is used to practice verbal and written arguments for making claims about their scientific findings.

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

- Grade 5 materials provide opportunities for students to construct and present developmentally appropriate written and/or verbal arguments that justify explanations of phenomena and solutions to problems using evidence acquired from learning experiences within the Claims, Evidence, and Reasoning (CER) activities throughout the chapters. The materials consistently present this routine in each lesson inside the "Explain" section. In Chapter 1, students are introduced to the "Claim, Evidence, Reasoning" framework. Then a specific example in Chapter 4, Lesson 2, students are provided the opportunity to construct and present arguments relating to the question: What different energy transformations did you observe in the electrical circuits you constructed?
- Grade 5 materials feature the "Show What You Know" section, which allows students to construct and present arguments justifying explanations of phenomena or solutions to problems. In Chapter 4, students write a poem, create an infographic, or write and perform a song to showcase their arguments relating to electricity and light. These activities also allow students to construct and present written and verbal arguments to justify explanations. The student checklist and rubric remind students to show their understanding by including science knowledge, and vocabulary words from the chapter, and making connections to their everyday life. Students use this checklist to construct posters, infographics, journal entries, or videos.
- The materials provide students with the opportunity to justify explanations of phenomena in their "Hands-On Investigations". The materials guide students in the investigation and in answering questions with evidence from the investigation to show their understanding of the phenomena.
- The "Guided Claim, Evidence, Reasoning" sections provide a scaffolded experience for students to construct and present developmentally appropriate written arguments to justify explanations. After students read and underline parts of the shared reading text, they use the worksheet with sentence stems to organize their text evidence and write a supported claim.

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## Indicator 5.2

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

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

### Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- Grade 5 materials include "Ask" prompts throughout Chapters and Lessons to provide guidance of questioning to deepen student thinking. For example, in Chapter 6, the Interactive Word Wall feature uses the blue font to prompt teachers to "Ask" questions to help students build authentic connections to scientific terms and build upon current background knowledge and experiences.
- The materials provide questions with possible student responses in every "Evaluate" section. The teacher eBook supports anticipating student responses, including correct, incorrect, and partially correct responses, along with teacher guidance to help identify what the students understand and may not understand by their given responses. For example, in the grade 5 "Changes to Earth's Surface" lesson, materials introduce students to how water changes the Earth's surface. One of the questions provided in the materials helps to assess students at the end of the lesson in the "Evaluate" section is "Which statement best describes how this sea arch formed?", and the students have four possible choices. The teacher materials provided the correct and incorrect choices, as well as an explanation of what students understand and do not understand by their chosen option. Such as, "B. Incorrect. Erosion happens over a long period of time and is the process that creates rock arches." and "C. Correct. When waves reach a

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headland, they curve around it and wash away at the sides of the headland. As the waves continue to erode the side of the headland, an arch forms."

- The materials include support for teachers to deepen student thinking through questioning. The materials provide questions throughout many parts of the lesson. For example, in the Interactive Word Wall sidebar, teachers ask questions from the guide to facilitate discussion and deeper levels of thinking. The materials include questions for the teachers to ask and possible student sample answers in pink text.
- The materials provide teacher responses to possible students' responses, including how to build on students' thinking. For example, in a grade 5 lesson on particles of matter, materials provide questions the teacher can ask and suggestions for how to help build students' thinking. Questions include: "How is the air in the balloons the same as the air around you? How do you know there is matter in the balloon if you cannot see it?" Materials state that students should recognize both are invisible gasses and that the balloons are inflated because they are filled with gas. Materials direct the teacher to have students make sketches of what they think particles of matter look like, then ask if they think the particles of solids, liquids, and gasses look the same.

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

- Grade 5 materials include the "Science Language and Content Acquisition" section within "Chapter Overviews" to provide teacher guidance on how to scaffold and support students' development and use of scientific vocabulary in context. For example, in Chapter 4, the Science Language and Content Acquisition section outlines the targeted vocabulary and strategies, such as using an interactive word wall and word labs to support student development.
- Materials include teacher guidance on how to scaffold and support students' development and use of scientific vocabulary in context. Inside the "Science Language and Content Acquisition" section, the materials provide teachers with a chapter overview that previews for the teacher the vocabulary that will be used in that chapter. Materials state that the teacher will introduce vocabulary words strategically within the learning sequence. Materials also include a vocabulary prioritization section that breaks down each term by level of importance for student understanding during the chapter, such as "Lesson Vocabulary," "Supporting Vocabulary," and "Prior Knowledge [vocabulary]."
- "The materials provide guidance for the teacher on how to support students' use of scientific vocabulary in context. For example, materials provide an "Interactive Word Wall" note to support the lessons in the Teacher's eBook. The note alerts teachers of exclusive opportunities for students to use scientific vocabulary in context. For example, when grade 5 students engage in a hands-on investigation about how the speed of moving water affects how fast sand erodes, materials state in the "Interactive Word Wall" note that students can review and use the terms "demonstrate," "develop" and "identify" when discussing their own model.
- The Grade 5 materials provide guidance for the teacher on how to support students' use of scientific vocabulary in context. For example, the materials guide teachers in each lesson with the "Interactive Word Wall" page and sidebars throughout. Teachers ask provided questions to provide more profound meaning, and the materials also give them cognates, word strategies, and extra information to support students' more profound level of understanding. The materials also provide teachers with stems and questions to encourage students to use the vocabulary in context.

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

- Grade 5 materials provide teacher guidance on preparing for student discourse and supporting students in using evidence to construct written and verbal claims, as seen in the “Engage” activities throughout chapters and lessons, such as the “Essential Questions” and anchor phenomenon prompts. For example, in Chapter 6, Lesson 1, the anchoring phenomenon includes a picture and video of a soap box derby car followed by a “Talk About It” prompt guiding teachers on how to start a class discussion in which students form claims to questions supported by evidence.
- The materials provide teacher support to prepare for student discourse. The materials include teacher preparation by setting up and reinforcing a class culture in which students are listening to and evaluating whether they agree with one another’s ideas. For example, each lesson contains a “Talk About It” activity inside the “Engage” section that instructs the teacher to “As students discuss [...], encourage them to share ideas. Use sentence frames to promote independent thinking and respectful listening.”, which is then followed by the sentence frames mentioned. After completing an investigation to observe the changing physical state of ice as it melts in Chapter 2, materials direct teachers to prompt students to use their observations and measurements as evidence to classify and describe how the physical state and temperature change as the ice cube melts.
- The materials provide teacher questions to support discourse and the use of evidence for constructing written and verbal claims. For example, grade 5 materials provide a “Claim, Evidence, Reasoning” prompt in each lesson. Teachers walk students through the process, and students develop their own claims and support them with evidence. The “Claim, Evidence, Reasoning” activity prompts teachers to ask questions, such as “What do you think?”, “Why do you think that?” and “How does your evidence support your claim?”.
- The materials provide teacher questions for supporting student discourse and using evidence in constructing written and verbal claims. In Chapter 1 of the materials, the Claim, Evidence, Reasoning routine is introduced. It is a three-step routine for students to write a claim about their findings from the Hands-On Investigation. In step one, students make a claim and can use a sentence frame such as “I claim that \_\_\_\_\_.” In step two, students gather evidence for their claim by reading, watching videos, or using their notes from their investigation. A sentence frame is also provided for this step. In step three, students write the reason why their claim is valid, and they can also use a provided sentence stem.

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

- Grade 5 materials include the “Hands-On Investigation” summary, expected outcomes, teacher tips, and investigation framework supporting and guiding teachers in facilitating the sharing of students' thinking and finding solutions. In Chapter 5, materials support and guide teachers in facilitating the sharing of student findings and conclusions throughout an investigation examining energy.
- Grade 5 materials support and guide teachers in facilitating the sharing of students' thinking and finding solutions, as evidenced in the “Notebooking” feature. This feature supports teachers' efforts to promote the recording and sharing of progressive thinking and problem-solving throughout the content delivery.

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- The materials provide teacher support and guidance to engage students' thinking in various modes of communication throughout the year. The materials help teachers facilitate the sharing of students' thinking and finding solutions by using the guided "Claim, Evidence, Reasoning" activities, which provide teachers with the organization and potential student answers for each "Claim, Evidence, Reasoning" activity in the lessons throughout the year.
- 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. For example, at the end of each chapter, the "Chapter Wrap-Up" includes a "Show What You Know" activity that guides teachers in facilitating the sharing of students' thinking and finding solutions. These activities have suggested ways for students to share their thinking, as well as guiding questions that teachers can use to help students complete it.
- The materials provide teacher support and guidance to engage students' thinking in various modes of communication throughout the year. The materials provide a 5E model lesson with various strategies embedded in it. They also provide the Claim, Evidence, Reasoning framework for students to follow. The materials provide projects like the STEAM Stations and STEM Projects. Students have multiple ways to show their thinking and understanding. In Chapter 3, after investigating the properties of mixtures, an engineering station called "Recipe Engineer" directs students to use their knowledge of tools that separate mixtures to design a way to remove the wrong ingredient from a recipe. The project can be extended by giving students time and materials to build a model of their idea.
- The materials provide teacher support and guidance for facilitating the sharing of students' finding solutions. For example, the "Show What You Know" section provides teachers with guidance for facilitating student thinking and finding solutions. For example, after investigating changes to matter in Chapter 2, the Show What YOU Know activity asks students to write a newspaper article, create a comic strip, or perform a skit about matter. Questions to answer include: Why is it important to know about changes to matter in your everyday life? Does changing matter affect you at different times? What would you tell a family member about particles and why they matter? The rubric for scoring includes the following categories: shows an understanding of scientific knowledge, correct use of vocabulary, makes connections to everyday life, and activity is of high-quality writing, has clear organization, and shows creativity.

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## Indicator 6.1

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

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

### Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- Materials include diagnostic assessments for measuring student learning and identifying learning gains in a variety of formats. Each lesson begins with a “Page Keeley Science Probe” that elicits students’ misconceptions. Teachers can use this information to inform their instruction. Students revisit the probe to revise their answers and show their understanding. For example, in Chapter 6, Lesson 1, the Page Keeley Science Probe assesses students’ ideas about force and the transfer of energy.
- Materials include formative and summative assessments in a variety of formats to measure student learning and determine the next steps for instruction. For example, one of the many formative assessments in every lesson is the “Claim, Evidence, Reasoning” activity, in which teachers can evaluate student performance by the sample answers provided with the teacher materials. Also, each lesson ends with a summative assessment in the “Lesson Review”, which includes both open-ended and multiple-choice questions. The teacher eBooks also provides sample answers to every “Lesson Review.” For example, the Chapter 6 Lesson 1 Lesson Review assesses student understanding of equal and unequal forces before continuing on to Lesson 2 materials.

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- Materials include formative assessments for measuring student learning and identifying learning gains in a variety of formats. For example, each lesson contains "Quick Check" and "Check For Understanding" sections to assess students' understanding during the lessons. The materials include various ways of showing their understanding, like a graphic organizer or verbally responding.
- Materials include summative assessments in a variety of formats. For example, each chapter contains an "Evaluate" section, which includes a post-assessment for the lesson. Students answer multiple-choice and open-ended questions to show their understanding of the lesson. Each chapter also includes a "Chapter Wrap-Up," where students show their understanding of all of the lessons for a Chapter.

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

- Grade 5 materials assess all student expectations and indicate which student expectations are assessed as seen in the "Plan Your Lesson" guide. In this section, the materials communicate the expectations for student learning and include the assessment opportunities associated with the content presented in each of the 5 E's (Engage, Explore, Explain, Elaborate, and Evaluate). The expectations outlined in the Plan Your Lesson feature are intentionally aligned with the TEKS and grade-level expectations.
- The materials indicate which student expectations are assessed. Materials provide the TEKS correlation for each assessment item and the answer keys for every assessment. For example, at the end of each chapter, the "Chapter Wrap-Up" includes a summative assessment in which each question is followed by a blue bubble that contains the student expectations assessed. Sometimes, two or three standards are assessed in one assessment question.
- The materials assess all student expectations, as outlined in the TEKS, by the grade level. The K-5 Scope and Sequence is TEKS-aligned and allows students to build background knowledge in a developmentally appropriate way. The Scope and Sequence is meticulously researched with the aid of experts, advisors, and Texas teachers to provide the necessary scope of topics for student success.
- In the "Teacher's Guide," the materials clearly indicate how the materials align with the curriculum for the grade level in a manner easily identifiable by the teachers. The Table of Contents located in the front of the Teacher and Student Edition were researched with the aid of experts and advisors. Every chapter outlines how the knowledge and skills are taught in previous and upcoming grades.

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

- Grade 5 materials include assessments that integrate scientific concepts and science and engineering practices with recurring themes and concepts, as evidenced in the "Evaluate Questions" within "Lesson Review" activities. The Lesson Review assessments evaluate students' application and understanding of scientific concepts, engineering practices, and recurring themes. The materials include assessments that require students to integrate scientific knowledge and science and engineering practices with recurring themes. For example, in the Chapter 3 Lesson 1 Review, question 3 is triple coded and covers the Scientific and engineering practice 5.2D, "evaluate experimental and engineering designs," the recurring theme 5.5B,

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"identify and investigate cause-and-effect relationships..." and the content 5.6B, "demonstrate and explain that some mixtures maintain physical properties..."

- Grade 5 materials include Claims, Evidence, and Reasoning (CER) writing assessment opportunities which integrate scientific concepts and science and engineering practices with recurring themes and concepts. Students apply and communicate scientific concepts, practices, and themes using the CER process throughout the lessons to demonstrate a thorough understanding by the conclusion of a lesson and chapter.
- 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. This assessment is inside each lesson, in the "Explore" section. For example, grade 5 materials include a "Hands-On Investigation," in which students make a model to investigate how moving water carries sediment. Students construct their model and then examine how water carries sediment. Students analyze their observations and make a claim about how water carries sediment.
- 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. In each lesson, the "Elaborate" section contains a "Write About It!" assessment that integrates the scientific knowledge acquired during the lesson with the science and engineering practices. For example, in grade 5, a "Write About It!" activity gives students a choice of a writing prompt about glaciers. The teacher rubric for this assessment evaluates (1) students include information about glaciers according to the chosen prompt, (2) students apply what they learned to describe the effects of glaciers on Earth's surface, (3) students include scientific vocabulary words, and (4) students use the vocabulary words correctly.
- 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. The questions in the EVALUATE phase of the lesson are clearly labeled with the TEKS that are being assessed. Some EVALUATE questions assess more than one TEKS and are labeled as such.
- Students are provided ample opportunity to engage in problem-solving to make connections across disciplines and integrate science concepts in the STEAM Stations. In Chapter 2, an art activity called "Magnetic Art" asks students to design a poster or infographic showing the different types of magnetic materials and magnets. Students can integrate new learning of the properties of magnets.

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

- Grade 5 materials include assessments that require students to apply knowledge and skills to novel contexts, as seen in the "STEM Connection Write About It prompts". These prompts present recently learned scientific concepts, practices, and themes in a new context, allowing students to apply acquired knowledge to a new phenomenon or situation.
- Materials include assessments that require students to apply knowledge and skills to a new phenomenon or problem. The start of every lesson begins with an essential question. In the "Explore" section, students conduct a "Hands-On Investigation" where they apply their knowledge and skills to make a prediction about a particular topic related to this essential question. They then conduct their investigations and, after analyzing the collected data, make claims about this new phenomenon or problem presented by the essential question.
- At the end of every chapter, the "Chapter Wrap-Up" includes a "Show What You Know" activity that requires students to transfer their knowledge and apply their understanding from the

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context presented in the lesson to a new situation. For example, a grade 3 "Show What You Know" activity requires students to produce a podcast, create a dance, or design a photo album for one of the following choices: (1) "How does learning about weather tools help you plan your day?", (2) "Use vocabulary words to explain what you learned about Earth's solar system", and (3) "How would you explain the Sun and Earth's orbit to a first grader?".

- The materials provide assessments that require students to apply knowledge and skills to new phenomena or problems in the STEM projects section. For example, the grade 5 materials include a "Community Garden STEM project" where students solve the problem of creating a watering system for a garden, and apply their new learning to solve the problem.
- Materials include activities that require students to apply knowledge and skills to a new phenomenon or problem. STEAM Projects support students as scientists and engineers as they use scientific practices and engineering principles to complete the activity and deepen their knowledge through experiential learning. In Chapter 3, after investigating the properties of mixtures, an engineering station called "Recipe Engineer" directs students to use their knowledge of tools that separate mixtures to design an engineer's way to remove the wrong ingredient from a recipe. The project can be extended by giving students time and materials to build a model of their idea.

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## Indicator 6.2

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

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

### Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- Grade 5 materials include information and/or resources that provide guidance for evaluating student responses, as seen in the exemplar answers provided for all "Student Edition Lesson Review" and "Chapter Wrap-Up Questions." These sample student answers inform teachers' evaluation of student understanding of content understanding and skill mastery based on the grade-level TEKS.
- Grade 5 materials provide "Show What You Know rubrics" to guide teachers' evaluation of student responses. Rubrics serve as a resource to inform current student understanding of content to inform instruction moving forward or assess mastery of grade-level TEKS expectations.
- Materials include information that guides teachers in evaluating student responses. Materials guide teachers to look for specific components when evaluating student responses. In each lesson, the "Elaborate" section contains a "Write About It!" assessment that includes a teacher rubric. For example, in grade 5 a "Write About It!" activity gives students a choice of a writing prompt about glaciers. The teacher rubric for this assessment evaluates (1) students include information about glaciers according to the chosen prompt, (2) students apply what they learned to describe the effects of glaciers on Earth's surface, (3) students include scientific vocabulary words, and (4) students use the vocabulary words correctly.

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- Materials guide teachers to look for specific components when evaluating student responses. For example, teachers are provided guidance on partial answers in rubrics for STEM projects. Every other chapter of the materials contains a STEM Project at the end of the chapter, as the project embeds multiple TEKS. Each STEM Project contains its own teacher rubric.
- Materials include information that guides teachers in evaluating student responses. The grade 5 materials include sample student responses and follow-up questions in the “Explain, Elaborate, and Evaluate” sections. The “Lesson Review” in the Evaluate section also includes the rationale for the written answers.
- Materials include information that guides teachers in evaluating student responses. The “Hands-On Investigations” includes sample answers for guiding questions and student activity pages in the teacher edition.

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

- Grade 5 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 as evidenced in the “Supporting All Learners” document. This document provides a Multi-Tiered System of Supports (MTSS) framework for teachers to guide their use of student performance data to support all learners in achieving content mastery.
- Grade 5 materials provide “Reinforce and Extend” activities with sample answer rationales to support teachers' analysis of data from student responses to evaluate all student needs and inform instruction moving forward based on student progress, including intervention and acceleration as needed. Teachers can view customized progress reports by skill and by student, as well as by class and grade level, in the "Interactive Performance Reports" section of the platform.
- Materials provide guidance documents and resources to support teachers' analysis of assessment data. The materials provide on-demand professional development videos to show teachers how to examine data to provide a better understanding of student performance.
- Materials include assessment tools yielding data teachers can easily analyze and interpret. Scores are color-coded and can be sorted by the standard. The scores can be shown by class average or by the student. Scores are color-coded to show levels of mastery by skill. For example, 0-59 is red, 60-69 is orange, 70-79 is yellow, 80-89 is light green, and 90-100 is dark green.
- Materials provide guidance documents and resources to support teachers' analysis of assessment data. Materials provide a supplementary guidance document on data-driven instruction in science called “Supporting All Learners” which provides teachers with guidance and direction to respond to student's needs. UDL (Universal Design for Learning) information is included, which details how the program provides flexibility to accommodate individual learning differences.

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

- Grade 5 materials include assessment tools to support teacher understanding of student performance and inform the planning of instruction, intervention, and extension, such as the “Assessment and Reports” module. This tool allows teachers to track student performance based on activities, standards, and progress over lessons and chapters to support teachers' evaluation of student mastery, differentiation, and other supports.
- Grade 5 materials include assessment tools such as the “Page Keeley Science Probes” to support teacher understanding of student performance and inform the planning of instruction, intervention, and extension throughout the chapter. For example, in Chapter 4, Lesson 1, the Page Keeley Science Probe assesses students' ideas about describing light at the onset of the content delivery, followed by ongoing evaluation of student progress culminating in a final check of student understanding at the chapter's conclusion.
- The information gathered from the assessment tools helps teachers when planning differentiated science instruction. The “Standards Performance Report” shows overall and individual student performance data by the standard. On a computer-generated report, students are coded based on their performance. For example, 0-59 is red, 60-69 is orange, 70-79 is yellow, 80-89 is light green, and 90-100 is dark green. In the reports tab, teachers track and analyze data by standard or assessment to understand students' grasp of the concepts. Teachers see overall data and can consider the whole class or small group reteaching or review.
- The materials include “Pretests, Lesson Review assessments, and Chapter Wrap Up” assessments that provide teachers with data and information on what level of review or reteaching is necessary. The materials also provide a “Reinforce” prompt within each lesson where it would be appropriate to review or reteach certain parts of the standard.
- The information gathered from the assessment tools helps teachers plan differentiated instruction. Various differentiation Tips are noted at the Point of Use. “Reinforce” callouts are for targeted instruction and scaffolds for students who may need additional support. “Extend” callouts for students who are ready for acceleration. Fast finisher notes in “Engage” are included. Additional callouts provide support for ESL students.
- The information gathered from the assessment tools helps teachers when planning core science instruction. Teachers and Administrators can use the “Assessment” module to track performance by activities, standards, and progress over time. Teachers can use premade tests or create their own. Information is available on how and when to use the different assessments and ways to generate reports to understand how students are doing on assignments and assessments. Reports can be generated by activity or assessment and for the whole class or for individual students to monitor progress in various ways.

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

- Grade 5 materials include the “Guided Write About It” and “Guided Claim, Evidence, and Reasoning” (CER) activities, serving as resources to support teacher response to student data and understanding. Student performance on these tasks can offer insight to teachers on how to best leverage current student knowledge in achieving mastery of TEKS.
- Grade 5 materials include resources to guide teachers' understanding of leveraging different activities to respond to student data, such as the Text Complexity in Science document. This

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document provides an if, then, and monitoring framework to guide teacher efforts in leveraging current student performance in progress toward TEKS mastery.

- Materials provide a variety of student resources for teachers to use in responding to performance data. Materials provide direct instruction of science concepts, followed by reviews and skills practice activities for students.
- The materials provide a variety of teacher guidance for responding to student data. For example, the materials provide Dr. Fisher's Text Complexity Strategies, which details many strategies to help students comprehend science texts. The document provides If...Then... scenarios for teachers to reference. An electronic data entry system provides data reports on how to group students according to assessment results.
- Materials provide a variety of student resources for teachers to use in responding to performance data. Materials provide direct instruction of science concepts, followed by reviews that include discussions, reading and writing activities, hands-on investigations, and STEAM stations and projects.
- Materials provide a variety of teacher guidance for responding to student data. The Teacher's Edition includes tables that specify which activities in the program to assign students when they have difficulty answering assessment questions. The "Chapter Resource Snapshot" lists the various formative and summative assessments in each lesson, as well as the online differentiation, and supports such as adaptive texts, leveled readers, and vocabulary resources. The "Plan Your Lesson Page" outlines the activities for both teaching and assessment.

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## Indicator 6.3

Assessments are clear and easy to understand.

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

### Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- Grade 3 materials use an example of the message sent and received through the light energy reflecting off of an orange basketball in the Chapter 4 summative assessment. Using a commonly experienced visual phenomenon expands the accurately applied scientific principle in this scenario to all students regardless of their background, language of origin, or other personal considerations that may impact a student's ability to learn.
- Assessments contain items for the grade level that are scientifically accurate. The materials include assessment items that align with grade-level standards and concepts. A summative assessment contains illustrations that accurately show the buoyancy of various objects. Additionally, the Grade 5, Chapter 11 "Wrap Up" accurately uses the words instinctual and learned behaviors.
- Assessments contain items for the grade level or course that avoid bias. Formative and summative assessments include items that present content and examples fairly and impartially with no impact on student performance based on such factors as a student's home language, place of origin, gender, or race and ethnicity. Materials include performance tasks that present individuals of diverse backgrounds as scientists and engineers.
- Assessments contain items for the grade level that avoid bias. The materials contain assessments that present content and examples fairly and impartially without impacting student performance based on factors such as a student's home language, gender, race, or ethnicity. For example, in the 12.3 Lesson Review in the Grade 5 materials, students are introduced to a purple loosestrife plant and are given background knowledge about it before answering the

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assessment question. A summative assessment uses the gender-neutral term student when describing how to complete an investigation.

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

- Grade 5 materials provide assessment tools with clear pictures and graphics developmentally appropriate for the grade level, as seen in “Lesson Reviews” and “Chapter Wrap-ups.” For example, in Chapter 4, Lesson 3, Lesson Review assessment, materials utilize pictures of familiar objects such as leaves and a pencil in a water glass, depicting light refraction as stimuli for questions and to evoke student engagement and application of content.
- Grade 5 materials utilize graphics such as a stop sign to signify to a student in a visual, age-appropriate way that they have reached the end of an assessment. Consistent use of familiar symbols, such as a stop sign, can promote student assessment navigation.
- Assessments contain pictures and graphics that are developmentally appropriate. For example, Grade 5 assessment items include a clear illustration of the water cycle with simple labels for each of its stages so students can explain the role of the Sun in the water cycle. In Chapter 11, “Wrap Up,” in the Grade 5 materials, there is a simple, age-appropriate circuit for students to easily understand.
- The materials contain assessment tools that use clear graphics and pictures. For example, the Chapter 11 Wrap-Up in the Grade 5 materials shows photographs that clearly show different real-life examples of types of energy. A Grade 5 assessment item about how weathering changes the Earth's surface contains a clear diagram that shows a rock arch for students to explain the role of wind and water in its formation.

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

- Grade 5 materials include a “Chapter Resource Snapshot,” providing guidance to ensure consistent and accurate administration of assessment tools. In the Chapter Resource Snapshot, materials provide teachers with a listing of formative and summative assessments associated with each lesson to promote accurate administration of assessment tools.
- Grade 5 materials include Assess headers throughout, including suggested time designations and tips to accurately administer assessment tools. Some Assess tips include scripted prompts to guide administration.
- Materials provide clear guidance for teachers to consistently and accurately administer assessment tools. At the start of each lesson, in the “Plan Your Lesson” section, materials include clear guidance for teachers to efficiently administer the assessment, such as reminders or tips that give suggestions for the time allotted to complete the assessment. In every lesson, the “Evaluate” section of the Teacher’s eBook includes an overview of the assessment, an answer key with an exemplar explanation for each choice, a guide for testing, and the TEKS related to each tested item.
- Materials provide clear guidance and support for teachers to consistently and accurately administer assessment tools. For example, the materials include on-demand professional development videos for all assessment and reporting tools. The videos guide teachers in creating and assigning assessments, as well as how to look at and interpret data.

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

- Grade 5 materials include guidance to offer accommodations for assessment tools that allow students to demonstrate mastery of knowledge and skills aligned to learning goals, such as scaffolding guidance for Claim, Evidence, and Reasoning (CER) Check for Understanding assessment opportunities. materials utilize sentence stems and other guided writing tools suggested throughout, offering accommodations to CER assessments aligned to the TEKS.
- Grade 5 materials include “LearnSmart” tips offering accommodations for students who need more practice with concepts before “Chapter Wrap-Up” assessments. Using the LearnSmart feature, teachers assign reteaching resources to support students in demonstrating mastery of knowledge and skills aligned to learning goals stated within grade-level TEKS.
- Materials offer accommodations for assessment tools so that students of all abilities can demonstrate mastery of learning goals. For example, the materials include the “Supporting All Learners” document, which details how teachers can accommodate students on assessments. For example, video clips use a closed-captioning feature to help all students see and hear scientific vocabulary in context.
- The online student materials offer built-in accommodations for students. For example, the materials provide a text-to-speech feature so students can have the questions read to them. The materials also include captions under their images to detail what is in the photographs and illustrations. In Grade 5 assessment items where students must use vocabulary from a word bank to complete sentences, materials provide visual cues using color-coded text.

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## 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

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.

- Grade 5 materials provide “TEKS Refresh” recommendations to target instruction and scaffold learning for students who have not reached content mastery. For example, in Chapter 6, “Chapter Launch,” the materials recommend beginning the chapter with a pretest to assess understanding and utilize the TEKS Refresh as needed to support students requiring scaffolded learning to be successful.
- Grade 5 materials include the “Reinforce” feature within various activities to provide scaffold learning with targeted instruction supporting students who have not achieved mastery. In Chapter 6, Lesson 1 Explain Day 2 activity, the materials recommend teachers provide students who require additional support with additional questioning and real-world observation opportunities such as asking, “What are some examples of objects around you that experience equal and unequal forces?”
- Materials provide additional resources for targeted instruction and differentiation to support students who have not yet achieved mastery. Materials include a PDF document containing Dr. Fisher's "Text Complexity in Science". This document provides targeted instruction to scaffold learning for students not yet at grade-level mastery. Pages 6-8 of this document include multiple strategies for teachers to choose from when scaffolding and differentiating scientific content for students. On Page 6 of this supporting document, the materials describe the various kinds of support teachers can provide when they know what factors are making a given text complex. For example, if a text has multiple levels of meaning, the teacher can model a think-aloud of how they notice the various levels.

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- The materials provide additional resources for targeted instruction and differentiation for students who have not yet achieved mastery. For example, the materials include scientific texts at different Lexile levels, in the Literacy Essentials online resources.

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

- Grade 5 materials provide enrichment activities for all levels of learners, including ‘STEAM Station Options’ designed to offer differentiated enrichment for all learners and incorporate STEAM activities connected to TEKS. For example, in Chapter 6, “STEAM Station Option,” materials provide 4 optional enrichment materials or flexible options to engage students in discovering the concept of equal and unequal forces.
- The materials provide enrichment activities that account for learner variability. Every lesson includes teacher guidance in the "Extend" section embedded in the "Elaborate" portion of the lesson. This teacher guidance helps when extending activities for those students who have already achieved mastery. For example, in Chapter 2 after reading about mass, volume, and relative density, the materials include probing questions to extend learning, “How can a smaller object have more mass than a larger object?”
- The materials provide the teacher the option of using “Guided” or “Open Inquiry” when students complete the “Hands On Investigation.” This gives an additional option for exploration based on student needs and learner variability.
- The materials provide enrichment activities that account for learner variability. For example, each chapter includes a list of suggested readings called, “Hook Them with Books!” to encourage all students to make connections, learn about the unit concept and standards, and integrate mathematical practice where applicable. The list includes titles in the ‘Leveled Reader Library’ as well as titles of popular trade books.

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

- Grade 5 materials include scaffolds and guidance for just-in-time learning acceleration for all students through “Anytime Investigation Videos.” These videos are available for student use as an early finish option to visually extend various concepts discussed, such as electricity and light.
- Grade 5 materials provide “Extend” recommendations within the lessons to scaffold and accelerate learning for all students. For example, in Chapter 4, Lesson 1, materials guide teachers to challenge students by having them research the two types of current: direct and alternating current, compare and contrast the types, and provide examples of where each type is likely to be found.
- Materials provide scaffolds and guidance for just-in-time learning acceleration for all students in the different "Extend" notes in the “Teacher eBook.” The "Extend" notes can be found in multiple locations across each lesson, such as in the "Engage," "Explore," and "Explain" sections.
- The materials provide recommendations for just-in-time scaffolds to develop productive perseverance in learning at the moment. For example, in the “Engage” section of the lesson, the materials provide teachers with question prompts, sentence stems, and other guidance to support them throughout the lesson. The "STEAM Stations” sections embedded in every lesson include flexible options to provide acceleration activities for all learners, as well as support and resources for students who are ready to accelerate their learning. “Fast finisher” notes in the “Engage” section of the lesson are included, as well as various differentiation tips throughout the teacher edition.

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## Indicator 7.2

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

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

### Meets | Score 2/2

Materials meet the criteria for this indicator. Materials include a variety of research-based instructional methods that appeal to a variety of learning.

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

Evidence includes but is not limited to:

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

- Grade 5 materials include a variety of developmentally appropriate instructional approaches to engage students in the mastery of content, including the Interactive Word Walls. This feature engages students in mastering grade-level appropriate vocabulary, leading to the understanding of concepts and skills when students click on the icon opening the term, definition, and visual representation.
- Materials include a variety of developmentally appropriate instructional approaches to engage students in the mastery of the content. For example, the beginning of each lesson includes a "Page Keeley Science Probe " that engages students with a scenario that they consider and then return to later in the lesson. The Probes can be used as a pre-assessment, or at other points in the lesson as a formative assessment.
- Materials engage students in the mastery of the content through a variety of developmentally appropriate instructional approaches. For example, teacher materials routinely promote the use of the "Claim, Evidence, Reasoning" instructional approach in multiple sections of each lesson to

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engage students in the mastery of the content, as well as the scientific and engineering practices.

- The materials engage students in the mastery of the content through a variety of developmentally appropriate instructional approaches. For example, materials include the 5E instructional model, which takes students through Engage, Explore, Explain, Elaborate, and Evaluate to support them in the mastery of content. The materials also include the Claim, Evidence, Reasoning instructional model to engage students in the mastery of the content.
- Materials engage students in the mastery of the content through a variety of developmentally appropriate instructional approaches. For example, materials include opportunities for students to engage in inquiry-based learning activities through the Hands-On Investigations in each Chapter. These authentic tasks require students to use tools to measure and collect data. Lessons include video clips to introduce and reinforce specific science concepts. Also, lessons present opportunities for student-led investigations, questioning, and discussions related to the student's course level.

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

- Grade 5 materials support flexible grouping options within the “STEAM Station Options” activities throughout all chapters. Materials suggest teachers utilize a range of groupings for these activities, from whole group introductions to small group or partner pairings as well as independent discovery followed by peer collaboration. Materials consistently suggest a variety of groupings, such as whole group, small group, partners, or one-on-one. The teacher materials include a "Materials List" where "Column H: Grouping" suggests the most appropriate student grouping for each activity in the lesson. Also, inside the Teacher eBook, the "Explore" section always includes a suggestion on the way to organize student groupings.
- Materials provide guidance to teachers on when to use specific grouping structures based on the needs of students. The materials provide suggestions for flexible grouping during instruction and small-group or partner “STEAM Stations” to provide ways for teachers to create the best learning environment for their students.
- The materials support a variety of instructional groupings (e.g., whole group, small group, partners, one-on-one). Lessons on core content and concepts are provided to the whole group. Suggestions are provided for small group or one-on-one practice and activities such as the “Hands-On Investigations,” note taking, and reading activities. Grade 5 materials include the “Short on Time?” feature within each chapter, recommending options for approaching the “Hands-On Investigations” with varying group suggestions based on pacing or time allotment without diluting the students' experiences.
- The materials provide guidance to teachers on when to use specific grouping structures based on the needs of students. For example, the materials include lessons that the teacher can use to support concept acquisition for students who need additional one-on-one support. “Reinforce” components are found throughout the Teacher Edition for targeted instruction and act as scaffolds for students who may need a bit of additional support. The “Chapter Resource Snapshot” also includes a sidebar titled, “Program-Wide Differentiation,” which lists other program components for acceleration or reinforcement, such as the “LearnSmart” and the “Science Literacy Essentials” reading tools.

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

- Grade 5 materials include Talk About It features supporting opportunities for teachers to initiate, model, and guide class discussion while promoting independent thinking through collaborative debate. For example, in Chapter 4, Lesson 3, materials guide teachers to start a class discussion by having students consider multiple questions about the concept of how light travels, followed by a presentation of sentence stems as examples of how to think independently and discuss collaboratively.
- The materials provide teacher guidance and structures for effectively implementing practices that require student collaboration. The materials start each lesson with a collaborative, hands-on activity. The teacher edition for this activity includes a note called "Science Mindset" that provides guidance for teachers to help students work both collaboratively and independently.
- Materials include "Hands-On Investigation" activities with flexibility regarding "Open," "Guided," or "Structured Inquiry." The materials provide the teacher options for different structures to achieve effective implementation. Lessons include class discussions with questions and guidance to facilitate. Lessons include opportunities for "Partner Share," "Think-Pair-Share," "Confidence Levels," and various other strategies. Throughout these activities, materials provide examples, possible constraints, and other guidance to support implementation.
- The materials provide multiple types of practices (e.g., modeled, guided, collaborative independent). Lessons include opportunities for students to examine the results of their investigations, and then independently complete a reflection using a Claim, Evidence Reasoning structure.
- Materials include Early in the year, in Chapter 1, "Onward We Go," materials provide guidance to teachers on how to establish classroom routines that will lead to effective small group and independent work. Each lesson focuses on a key component of the program and lesson structure. Lessons include how to complete "Stem Connection" readings and build the interactive word wall, as well as routines for using science tools safely.

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

- Grade 5 materials represent a diversity of communities in the images and information about people and places, as seen in the student introduction to Forces and Motion. In Chapter 6, Introduction, students view images of a playground featuring a diverse makeup of people, followed by asking students to consider the question, "What do forces have to do with a playground?" The materials utilize a playground situation, understanding that most people from varying backgrounds and communities have had a relatable experience.
- Grade 5 materials include a variety of people featured in the "STEM Connection" sections, including a Particle Physicist named Dr. Jessica Esquivel in Chapter 4 and a Crane Mechanic named Ed Carroll in Chapter 5. These articles offer a diverse look at applications for science among a variety of communities and professions.
- Materials represent a diversity of communities in the images and information about people and places. The materials include a "STEM Connection" in each chapter that features a diverse group of scientists, engineers, and STEM professionals from across the globe. Some examples included are: Chapter 2 features the Society of Hispanic Professional Engineers, Chapter 9 features Dr. Burçin Mutlu-Pakdil from Turkey, Chapter 7 features Ginny Catania from Texas, and Chapter 5 features Ed Carroll from Baltimore.

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- The “Page Keeley's Science Probes” resource, video clips, and images all represent a diverse group of scientists and engineers representing genders, races, ethnicities, abilities, religions, and national origins.
- Information in the Teacher Edition represents diverse people and places. A section called “Multiple Perspectives” creates purposeful dialogue opportunities for students to share elements of their home cultures. For example, in Grade 5, Chapter 3, Lesson 2, students are tasked with writing their own recipes to demonstrate the conservation of matter and are encouraged to share a recipe important to their family. They can interview a family member about the ingredients, preparation, and family traditions around the recipe.

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## Indicator 7.3

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

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

### Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- Grade 5 materials provide guidance for linguistic accommodations for various levels of English language proficiency as defined by the ELPS through the "Lesson Differentiation" section at the onset of each lesson. The "Lesson Differentiation" includes "Leveled Support" strategies for various activities within the lesson. For example, during the "Explain" activity, it is suggested to offer helpful descriptive language with scripts and sentence stems to support Emergent Bilingual and English Learner students.
- The materials include linguistic accommodations commensurate with various levels of English language proficiency as defined by the ELPS. The materials include guidance for linguistic accommodations at the beginning of each chapter inside the "Science Language and Content Acquisition" section. In that section, there is a page titled "Emergent Bilingual/English Learner Support" that supports teachers on how to activate students' prior knowledge, what are the transferable and non-transferable skills in the lesson, as well as a list of cognates and false cognates. This section also includes a table called "Targeted Strategies" that identifies the ELPS covered throughout the lessons.
- Materials include teacher guidance for communication with Emergent Bilingual students, with the goal of creating comprehensible input. There are several instances where the materials include additional teacher guidance for linguistic accommodations to help build meaning, support language development, and elicit comprehensible input. For example, each lesson contains an "EB/EL Build Meaning and Support Language Development" in the "Lesson Differentiation" section at the beginning of each lesson. This section provides explicit teacher guidance to provide students with differentiated language support when they use and reuse

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new scientific terms while speaking and writing about the lesson content in the "Elaborate" section of the lesson.

- Materials include linguistic accommodations commensurate with various levels of English language proficiency. For example, Grade 5 materials include an Emergent Bilingual/ English Learner Support page in each chapter, which summarizes the support as aligned to the English language proficiency standards. The page includes how to activate prior knowledge for each level (Beginning, Intermediate, Advanced/Advanced High), and how to transfer skills from the Spanish language along with cognates. Materials also include callout boxes in purple titled "EB/EL Leveled support." The boxes clearly demonstrate ELPS connections by summarizing the content of the ELPS and their specific outline location administrative code. Point-of-use Emergent Bilingual/English Learner tips help create an inclusive environment where all students can engage in science and engineering content while providing guidance on linguistic accommodations.
- Materials include support in lesson differentiation in each lesson with a teacher guide on how to support students throughout at their various levels (Beginning, Intermediate, Advanced/Advanced High). This includes supports such as photo cards, flow charts, graphic organizers, and other strategies that are aligned with the English level proficiency standards.

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

- Grade 5 materials encourage strategic use of students' first language as a means to linguistic, affective, cognitive, and academic development in English including the "Leveled Support" feature in the "Hands-On" Investigations. Materials offer strategies for each language proficiency level student to utilize their first language to synthesize new information throughout each chapter and lesson.
- Materials encourage strategic use of students' first language as a means to linguistic, affective, cognitive, and academic development in English. At the beginning of each chapter, inside the "Science Language and Content Acquisition" section, there is a page titled "Emergent Bilingual/English Learner Support" that contains guidance for "Spanish Language Transfer." This includes support for transferable skills, non-transferable skills, cognates, and false cognates. For example, in Chapter 4, the materials feature cognates such as battery/bateria while also bringing teachers' attention to the false cognates (English: pan- Spanish: sarten) (Spanish: pan- English: bread)
- Materials encourage strategic use of students' first language as a means to linguistic, affective, cognitive, and academic development in English. Inside each "Explain" section of each lesson, there is an "EB/EL Promote Multilingualism" activity that provides guidance for the teacher to support and encourage the use of students' first languages during instruction, as well as develop, support and expand their acquisition of the English language. Some of these sidebars titled "Promote Bilingualism" include tips for teachers about allowing students to express their understanding in their first language and practical suggestions for teachers who do not speak the student's first language. For example, in Grade 5 Chapter 2, this callout box says, "Invite students to share the words for solid, liquid, and gas in their native languages. Students could find photographs and label the states of matter.
- Materials encourage strategic use of students' first language to support development in English. For example, materials provide an "Interactive Word Wall," which details Spanish cognates and related words to support vocabulary development. Materials also include "Lesson

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Differentiation” support in each lesson for teacher guidance to encourage students to use the cognates to strengthen their English proficiency skills.

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## Indicator 7.4

Materials provide guidance on fostering connections between home and school.

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

### Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- Grade 5 materials include Chapter 1: Onward We Go, providing information to students and caregivers about the design of the program, including sections such as “STEM Connections, Science Notebooks, Learning the Routine, Descriptive Investigations, Science Skills, Tools and Safety, Build Your Skill, Engineering Design Process, Models and Visuals, and Data Literacy.”
- The materials provide information to be shared with caregivers about the design of the program. Teacher materials include a "Letter to Home" for each chapter of the materials with information the teacher can share with their students' caregivers. The "Letter to Home" for the first chapter of the materials provides the families with information about the design of the program.
- The materials provide information to be shared with students about the design of the program. Chapter 1 explains the different lesson components and activities included across all chapters and lessons, as well as the reasoning behind the activities themselves. For example, the first "Talk About It" activity explains that this is a partner or small group activity and that "learning from and collaborating with others is important in science."
- The materials provide information about the design of the program in Chapter 1. Students learn what the components are as they are completing activities. Students learn what certain symbols mean. Students also are introduced to the “Claim, Evidence, Reasoning” process and “Hands-On Investigation” processes.
- The materials provide information to share with students and caregivers about the design of the program. For example, the materials include a "Letter to Home," which details the design of the chapter that the students are on. Each letter details the standards being taught and how the adult may support that at home. In Chapter 1, the Letter to Home provides information about

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the design of the program. It begins with, “This program design features a 5E Instructional Model. Each chapter is divided into five sections that provide structure to our daily routine: Engage, Explore, Explain, Elaborate, and Evaluate.” Chapter 5 provides relevant information about the design of Chapter 5 to students and caregivers regarding Energy Transformation.

- In Chapter 1, the materials include information about the program design that is shared with students. Students are introduced to the “Talk About It” icon and the “Notebook” icon learn what to expect each time they see them in the Student Edition. They connect the visual cue of the Talk About It icon to opportunities for student discourse. They connect the visual cue of the Notebook icon to opportunities to record their observations in their Science Notebook.

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

- Grade 5 materials include a reminder for “School-to-Home Resources,” such as the “Letter to Home,” which provides information to be shared with caregivers regarding current content to reinforce student learning and development. For example, in Chapter 6, “Chapter Overview,” materials prompt teachers to distribute the Letter to Home to support caregivers with conversation starters, games, or other ways to engage families in content.
- The Grade 5 materials provide at-home prompts and activities for caregivers to reinforce student learning and development. For example, the materials include the EB/EL “Engage Home to Enrich Instruction” within the lessons to give Emergent Bilingual students reinforcement at home.
- Materials provide resources and strategies for caregivers to help reinforce student learning and development. Each chapter includes a “Letter to Home” with information the teacher can share with their students and caregivers. Each letter includes some conversation starters. For example, in the chapter 2 letter about matter, conversation starters include, “What states of matter can you find at the state fair?” “How is matter compared and contrasted using magnetism?” The first page of each letter details the standards being taught and how the adult may support that at home. The second page of each letter details both sample “Conversation Starters” and a “Family Activity” for caregivers to help reinforce student learning and development. For example, in Chapter 2, families can do an activity to help students discuss the buoyancy of sharks. Families are instructed to fill one water bottle with water and another with vegetable oil. The second bottle represents the sharks because they have large, oily, fatty livers. Students predict which bottle would float in a bowl of water, and then discuss the experiment with the family.

Materials include information to guide teacher communications with caregivers.

- Grade 5 materials include Emergent Bilingual/English Learners teacher prompts to guide teacher communication with caregivers. For example, in Chapter 6, Lesson 1, teachers are encouraged to provide a list of verbs for students to use when talking about forces at home, such as lift, roll, move, and drop, and ask students to create a study card for each word. in the EB/EL “Engage Home to Enrich Instruction” notes. These sidebars include a related activity students can complete at home, such as observations or family interviews, which involve families in the current science topics.
- The materials include teacher guidance for communicating with caregivers. For example, the “Letter to Home” printouts in each chapter are written easily for all caregivers to understand. The letter includes guidance for conversation starters at home.

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- Materials include teacher guidance for communicating with caregivers. The materials include the “STEM Projects with a Home Connection” section that has information to guide teacher communication with caregivers. One letter includes the prompt, “How can you describe what you did today to someone in your life?” In the 5th grade “Toy Derby Car Races STEM Project,” teachers are guided to tell parents that students can investigate how forces are used throughout their homes. Chapter materials include a grading rubric with student reflection for each STEM Project that can be sent home after the completion of the project.

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## Indicator 8.1

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

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

### Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- Grade 5 materials include a “TEKS at Glance” within the Teacher’s eBook that outlines the year-long plans for content instruction. This element provides a visual of TEKS alignment and opportunities for review. Grade 5 materials include a TEKS progression at the start of each chapter guiding teachers in vertical alignment considerations of knowledge throughout the year based on previous and subsequent grade-level TEKS. The objectives are aligned with the grade-level TEKS.
- The grade 5 materials include a Chapter Overview at the beginning of each chapter that details the TEKS covered for each lesson. The materials also include a TEKS Progression that shows the vertical alignment and how standards have been spiraled. The grade 5 materials include an overall scope and sequence that aligns with the TEKS and English Language Proficiency Standards, located online under “Program Resources.”
- The materials include a Full Scope and Sequence that shows the chapter titles in the materials in grades K–5, outlining the order in which knowledge and skills are taught. The “Correlation to TEKS guide” document lists the page numbers in the student and teacher eBooks that correlate to that TEKS.
- Materials include a year-long scope and sequence within the "Pacing Guide." Materials guide teachers with suggested time-frames for units and lessons and their TEKS alignment.
- Materials provide a TEKS correlation document and TEKS-aligned scope and sequence that includes a detailed list of investigations and activities that align to each standard both in teacher and student-facing materials

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

- Grade 5 materials include a Chapter Language and Content Acquisition to offer guidance for facilitating student-made connections across core concepts, scientific and engineering practices, and recurring themes and concepts. For example, the last column of the table brings the teacher’s attention to the specific recurrent themes featured in each lesson. Grade 5 materials provide teacher guidance with an Emergent bilingual support component, facilitating learning for all students.
- The Explore section in every grade 5 lesson provides teacher clarity in understanding how activities and experiences connect concepts with Science and Engineering Practices. Grade 5 materials include the recurring theme of “cause and effect.” The teacher resources provide an anchor chart for student use across all TEKS and concepts. The resources also include a completed cause-and-effect anchor chart for each concept. The grade 5 Teacher eBook includes a chart with a list of “Scientific and Engineering Practices and Themes” at the beginning of each chapter. This list shows the different SEPs that are covered over the course of each chapter.
- Materials include recurring themes and concepts within lessons throughout the chapters. For example, students can explore patterns using a graphic organizer provided in Lessons 3.2, 8.1, and 10.2, among others. Materials guide teachers to facilitate connections of SEP and content with Interactive Word Wall and cognitive verbs. The materials provide guiding questions to provide students with opportunities to make connections. The materials provide teacher clarity in understanding how activities and experiences connect concepts and SEPs. The TEKS at a Glance page at the start of each chapter notes which TEKS are addressed in each lesson. The materials provide teacher guidance to help students make connections between units over the course of the year.

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

- Grade 5 materials include review and practice of knowledge and skills spiraled to support mastery. In Chapter 9, Lesson 1, moving air is described as wind power as an option for conservation of energy. The materials discuss this concept of wind as moving air throughout the year, beginning in Chapters 2, 4, and 5. Grade 5 materials include an Interactive Word Wall feature that spirals content vocabulary and offers suggestions for differentiation, such as cognates for Emergent bilingual students providing frequent review and access to promote the practice of knowledge and skills to support mastery and retention.
- The grade 5 Chapter Overview includes a chart depicting the TEKS Progression across grade levels. This demonstrates opportunities to build on previously taught science knowledge and skills. In grade 5, the “Get Ready” section includes a chart depicting the progression of the TEKS across grade levels. It also contains a Chapter Pretest that demonstrates intentional practice and spiraling of previously taught knowledge and skills from earlier grade levels. The grade 5 Teacher eBook includes a chart with a list of “Prior Knowledge” at the beginning of each chapter. This list intentionally connects previously taught knowledge to the current chapter’s science knowledge and vocabulary.
- The grade 5 materials provide opportunities for teachers to spiral vocabulary and previously taught knowledge and skills through the Interactive Word Wall in each lesson throughout the year. The materials provide teachers with opportunities for extension activities with the STEAM

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Stations. For example, in the stations in Lesson 6.2, students use their knowledge of force to explore ramps, design a blueprint of their future home, and research astronauts and space travel. The practice opportunities build on previously taught science knowledge and skills. In Chapter 6, Lesson 2, students apply previous learning of forces to plan and conduct an investigation to test the effect of force on a balloon.

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## 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.

- Grade 5 materials provide relevant teacher guidance and recommendations for use of all material components within the Product Overview feature. This component specifically supports teachers and administrators by explaining the different sections of the lessons, as well as tips to prepare for instruction. The materials include visual displays of material contents with descriptive captioning describing options for implementation. For example, there are at-a-glance suggestions of how to incorporate Interactive Word Walls, a research-based instructional strategy, with the physical classroom environment as well as digital experience options. The materials also include PDFs of a pacing guide, along with a “Supporting All Learners” document.
- Grade 5 materials include the “Plan Your Lesson” component that offers teacher guidance and recommendations for using all materials within each lesson throughout the year. This component includes recommendations for incorporating texts, enrichment activities, embedded technology, and scaffolds, among other indicator requirements. The materials are organized in a way that facilitates ease of implementation and use.

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- The grade 5 materials include enrichment activities and scaffolds in the sidebars. These include Emergent Bilingual supports, STEAM stations for enrichment, and cognates and graphic organizers in the Interactive Word Walls.
- The materials include overview documents to support teachers in understanding how to use all materials and resources as intended. For example, materials contain links to embedded technology in the Teacher’s eBook as options for teachers to use to support and enhance student learning of science concepts that show concrete alignment to the appropriate TEKS.

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

- Grade 5 materials include a STEAM Stations Options section within the Teacher’s eBook that provides cross-content standards, explaining those standards in the context of the grade level. For example, a Math and Data Literacy activity incorporates Science TEKS 5.1F and Math TEKS 5.9A. Another example includes a CER Poster Challenge aligned with Science TEKS 5.1A and Fine Arts TEKS 5.1A, 5.3C.
- Grade 5 materials include cross-content standards for ELA, Math, Art, and Music. The Teacher Planning Resources include a comprehensive list of all the cross-content standards within the materials, as well as their location both in the Teacher’s eBook and the student eBook. For example, the ELAR standards are embedded within the “Launch with Literature,” “Book Clubs,” “Guided Write About It,” and “Spotlight on Reading” sections within the chapters.
- Grade 5 chapters are organized in lessons. The chapters include a Chapter Overview that showcases how lessons are organized by phenomena and problems. The Teacher’s eBook for each lesson presents a question, a description of the lesson objective, and common misconceptions students might show in their explanations or solutions. The Teacher’s eBook also includes the grade-level standards that correlate with learning within the chapter, the standards from earlier grades that provide a foundation for the unit, and the standards for subsequent grades for which the concepts being learned are foundational for vertical alignment.
- The grade 5 materials include TEKS correlation for each lesson, outlined in the “TEKS at a Glance” section at the beginning of each chapter. This section details what TEKS are covered within each lesson throughout the chapter. The materials also show the teacher the TEKS vertical alignment and prior knowledge the student should have with the “TEKS Progression” section at the beginning of each chapter. This document anchors TEKS connections to the materials’ activities throughout the year and outlines in which investigations these TEKS are utilized.

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

- Grade 5 materials include a “Get Ready” component at the beginning of each 5E section of the lesson. This section lists all equipment and supplies, including texts, videos, graphic organizers, and other supplies, to support all instructional activities.
- Materials include a spreadsheet with a comprehensive list of all equipment and supplies needed to support students, teachers, and administrators during investigations throughout the year in accordance with the grade level. This appendix, “Hands-On Investigation Library,” supports students, teachers, and administrators during investigations by including a list of the equipment and supplies necessary for each investigation. This is located under the “Investigation Support and Projects” section.

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- The materials include a comprehensive list of all materials needed for Hands-On Investigations, including the quantity needed and whether materials are consumable. When the Hands-On Investigation is presented in both the Teacher’s eBook and student eBook, a list of materials needed for the activity is included. Grade 5 materials provide teachers with a Chapter Resource Snapshot in each chapter that details what materials and technology will be needed for each lesson. For example, the Chapter 7 Snapshot details that safety goggles, cups, sand, soil, and bowls, among many other materials, will be needed for the investigations.

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

- Grade 5 materials include a “Tools and Safety Handbook” that provides students and teachers with guidance for safety practices and considerations in a grade-level-appropriate way. This resource is found in the Teacher's eBook. It directs teachers to review all information prior to beginning the investigation. This resource displays grade-appropriate use of safety equipment during investigations. Student materials include a PDF with step-by-step reminders about safety practices and “Dos and Don’ts” with engaging graphics for proper use of safety equipment. The Handbook includes step-by-step instructions and videos that demonstrate how to use the tools to provide a visual reference for students.
- Grade 5 materials include a “Safety Symbols” one-page document featuring pertinent symbols and meanings in a grade-level-appropriate way. For example, a scissor symbol represents a sharp object hazard. This document offers a specific hazard consideration and a precautionary measure for each symbol in grade-level-appropriate language. The top of the page directs learners as follows: “Do not begin any investigation without the proper protection equipment,” and directs learners to wear goggles, wash hands and wear gloves. For example, for the Lesson 4 investigation in Chapter 2, the “Goggles” symbol is provided as a reminder to use safety goggles for eye protection. The “Safety Symbols” PDF reference sheet can be found online under “Investigation Support.”
- Grade 5 materials provide student and teacher guidance for safety practices and grade-appropriate use of safety equipment during investigations, in accordance with Texas Education Agency Science Safety Standards.

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## Indicator 8.3

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

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

### Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- Grade 5 materials include the “Plan Your Lesson” component. This pacing guide includes specific time parameters for each activity supporting scheduling considerations and recommendations for time when planning. The materials provide realistic time frames for activities and routines within each lesson, as well as options for a variety of scheduling considerations, such as “Short on time?” or “Have 15 minutes?” The materials provide scheduling recommendations for each part of the lesson throughout all of the chapters. For example, Chapter 7, Lesson 1, Day 1 allots 45 minutes for the entire lesson: 35 minutes for the teaching portion, which breaks down into smaller chunks of 2–3 minutes, and 10 minutes for assessing.
- Grade 5 materials provide a “Chapter Resource Snapshot” outlining the pacing of content delivery. This feature supports scheduling considerations for each lesson of the chapter, providing day ranges and minutes included within Lesson outlines. The Chapter Resource embeds acceleration and extension options, allowing students to learn at an accelerated pace.
- Grade 5 materials provide “Key Moments” throughout the lessons. If the teacher is short on time, guidance is given on the main parts of the lesson to focus on.

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. Grade 5 materials include a complete Table of Contents to guide the strategic implementation of content

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in an appropriate sequence without disruption. The Table of Contents clearly displays the intended order of content delivery aligned with grade-level TEKS.

- Grade 5 materials provide a “Chapter Launch,” including strategic implementation without disrupting the sequence of content following developmental progression. For example, in Chapter 5, Chapter Launch offers predictable lesson segments such as Get Ready, Teach, and Assess sections to guide strategic implementation and progression of instruction.
- Grade 5 materials provide guidance for strategic implementation that ensures the sequence of content is taught in an order consistent with the developmental progression of science. The Chapter Overview supports teachers in identifying the developmental progression of content and skills across grade levels to ensure that students are supported with instruction organized to optimize their learning. The materials include a TEKS correlation guide that details the implementation of content within a specific order that builds on the standards. Certain chapters are grouped together with similar recurring themes and ideas.
- The “TEKS at a Glance” provides teachers with a brief overview of the sequence of the content in each chapter, including the content TEKS, Scientific and Engineering Practices, and Recurring Themes and Concepts. This resource considers the interconnections between the content standards, the Scientific and Engineering Practices, and the Recurring Themes and Concepts. Materials purposely group lessons together into chapters that have similar recurring themes and ideas, making it easier for students to connect scientific knowledge.

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

- Grade 5 materials provide a Key Moment option within the proposed lesson pacing guides that offers options for adjustment of minutes if needed without impacting content delivery. This feature ensures material content is delivered within the school year.
- Grade 5 materials include a “Pacing Guide” document within the Resources tab to outline the content pacing suggestions as well as noting the total days needed to complete content. This guide also refers to the built-in extension and reduction options for flexibility. The grade 3 materials provide enough lessons and chapters to cover a full school year with 180 days of instruction. For example, the Pacing Guide document says it is a general guide, and the number of days may vary. This guide provides a high-level snapshot of completing the course in one school year, with flexibility given for reteaching, projects, and assessments.
- Grade 5 materials provide guidance for adjusting instructional time due to scheduling constraints. Plan Your Lesson provides teacher guidance on how to make adjustments to extend or condense lessons within the Teacher’s eBook at the beginning of each lesson. In the event that scheduling needs to be shortened due to lack of time, materials provide two flexible options: Short on time? and Have 15 minutes?

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## Indicator 9.1

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

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

## Not Scored

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

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

Evidence includes but is not limited to:

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

- Grade 5 materials include an appropriate amount of white space and a design that supports and does not distract from student learning, as seen in the digital student ebook and supporting resources. The digital materials adhere to the guidelines in the TRR Digital Design Guide. For example, in the Grade 3 Student eBook, there is a clear title, subheadings, underlined vocabulary words, hyperlinked definitions for the vocabulary words, and an interactive infographic. The materials include an appropriate amount of white space, and the design does not distract from student learning. The digital content displays well on multiple devices.
- Grade 5 materials are designed to support student learning free of distraction by formatting materials in a strategic way, utilizing headers and imagery to support content delivery. For example, materials include attention-provoking headers such as "Take Note!" to prompt student participation in note-taking and record-keeping during a video presentation.
- Materials include an appropriate amount of white space and a design that supports and does not distract from student learning. Student materials are appropriately designed to support student learning. Student materials include the following: A clear main subject, topic, or purpose; titles and headings are prominent and clear; sections are marked with subheadings. The content is organized in a logical progression.
- Grade 5 Digital Tools can be used to annotate text (such as highlight, strikethrough, underlining, and boxing text, etc.) and pointers while reading digital text. The materials include read-aloud supports, vocabulary supports, and playable videos. When text is read aloud by the computer, a mark appears next to each sentence as it is read.

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- Teacher guidance materials are appropriately designed with clear, designated places for important information. Teacher’s Guides are designed so that teachers can locate important information easily for planning and implementation.

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

- Grade 5 materials include age-appropriate pictures and graphics throughout the chapters and lessons, supporting student learning and engagement without being visually distracting. For example, in Chapter 4, the materials embed images of light shows, batteries, and other common examples for students to apply their understanding of electricity and light.
- Grade 5 materials embed infographics to extend learning and support engagement during content delivery, as seen in the “Explain” activities and other tasks. For example, in Chapter 4, students utilize an infographic to apply newly acquired knowledge about the flow of electrical energy in a circuit.
- The materials embed age-appropriate pictures and graphics that support student learning and engagement without being visually distracting. For example, the Grade 5 Student eBook provides a clear infographic showing the formation of sedimentary rock. The visuals are clear and do not include any other distractors, so students are able to focus on the content. Another example includes images to represent how water changes Earth's surface. Materials provide multiple close-up photos of how the erosion and deposition caused by water forms deltas.

Materials include digital components that are free of technical errors.

- Grade 5 materials include the Student ebook, which is a digital component enhancing student engagement and access to content. Upon review of the student ebook, its functionality was consistent with expectations and free of technical errors.
- Grade 5 materials include digital components such as the “PDF Hands-On Investigation Library,” “Interactive Word Lab,” and other features to maximize student access and engagement during content delivery. Upon review, these components were free of technical errors and successfully displayed materials and features as intended.
- The student materials include digital components that are free of digital errors. Materials are free of spelling, grammar, and punctuation errors. The materials are free of inaccurate content materials or information. The materials are free of wrong answer sheets to problems. Materials are free of wrong answers to discussion questions, worksheets, and writing prompts.
- The teacher materials include digital components that are free of digital errors. Materials are free of spelling, grammar, and punctuation errors. The materials are free of inaccurate content materials or information. The materials are free of wrong answer sheets to problems.
- The materials state the program was written by expert authors based on the TEKS, reviewed, and proofread by internal teams, then quality assurance and fact-checked by subject matter experts. It has also been reviewed by advisory boards with Texas educators.

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## Indicator 9.2

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

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

## Not Scored

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

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

Evidence includes but is not limited to:

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

- Grade 5 materials include digital components such as “Personalized Learning” tools like the “LearnSmart” reading library and the “WordLab” to build vocabulary. The materials include digital word labs embedded within student ebooks to promote student learning and engagement. Students click on the “Word Lab” icon to directly access interactive features that connect terms found within the “Explain” articles with images and definitions to support student understanding of scientific vocabulary throughout the materials.
- Grade 5 materials include digital options for administering assessments integrating digital technology and tools that support student learning and engagement. For example, Chapter 4, “Wrap-Up” is featured in the “Digital Spotlight,” recommending teachers assign the same Wrap-Up assessment online to promote student engagement, customization, and use of digital grading tools.
- The materials provide a Teacher's Guide, which details all activities and lessons with optional time for pacing purposes. The Teacher's Guide also contains a sidebar, “Digital Spotlight,” which shows teachers what they can assign students through online platforms to further their learning. The Grade 5 materials provide teacher guidance, including suggestions for time and pacing, as well as ways to assist students with making observations, asking questions, collecting data, and participating in discussions.

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- The materials integrate digital technology and tools that support student learning and engagement. For example, Digital technology and tools enhance student learning through such features as “Chapter Launch Videos,” Lesson “Engage” videos, “Anytime Investigation Videos,” and “Recurring Theme and Concept Music Videos.” The student eBook contains embedded tools such as read-aloud, variable font size, built-in dictionary, and highlighting. The embedded technology within materials supports the print and does not replace it.

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

- Materials provide digital tools for students to engage with recurring themes and concepts. For example, grade 5 materials provide both real-life photographs and diagrams to show the progressions of shadows changed by the apparent motion of the Sun. Students analyze the differences observed and discuss the causes and effects of the apparent motion of the Sun and how it affects shadows on Earth.
- The materials provide digital tools for students to engage with recurring themes and concepts. For example, grade 5 materials include a video "Staying Alive" to show how a bird survives. The students watch the video and then answer questions regarding the recurring theme, Structures, and Function, and use a graphic organizer to assist them. An additional example provides a simulation for students to learn how fossil fuels are formed. Students complete the simulation, observe the changes, and record and analyze the data.
- The materials integrate digital technology to support student engagement with science and engineering practices, recurring themes and concepts, and grade-level content. The materials have embedded multimedia digital resources such as interactive eBooks, “Investigation Simulations,” “Virtual Field Trips,” interactive infographics, and videos.

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

- Grade 5 materials include “Engage” videos to introduce a scientific phenomenon featuring scientific principles aligned with the content learning goals as outlined in the TEKS. These videos serve as a digital technology tool, providing opportunities for teachers and/or students to collaborate.
- Grade 5 materials include digital technology such as the provided “Presentation Slides” providing opportunities for teachers and/or students to collaborate regarding visual stimuli and/or guiding questions within presentations. The materials provide an online collaborative platform in which teachers and students can post assignments, and teachers can give immediate feedback to students.
- Materials integrate digital technology that provides opportunities for students to collaborate. The materials provide interactive materials for the students to work collaboratively in pairs or teams. The materials provide "Talk About It" prompts encouraging students to talk to their group or partners. For example, in Lesson 8.2 in the Grade 5 materials, students watch a video, think about the essential question and then are given a "Talk About It" prompt to discuss with their classmates.
- The materials integrate digital technology that provides opportunities for teachers and/or students to collaborate. Materials provide interactive games and quizzes students can complete collaboratively in pairs or teams. The publisher has collaborated with the online quiz site, Kahoot!, to enhance learning with premade activities and topic reviews. Materials will support

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other collaborative tools the district utilizes through an LTI (Learning Tools Interoperability) integration, such as Google.

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

- Grade 5 materials integrate digital technology compatible with a variety of learning management systems (LMS) such as Google, Classlink, Canvas for SSO, and other commonly used educational platforms.
- Student and teacher digital materials are accessible and compatible with multiple operating systems and devices. The materials are accessible online through any device with internet access.
- Materials are accessible and compatible with multiple operating systems and devices. For example, the materials are accessible and compatible with Chromebooks, iPads, Android Tablets, PCs, and Apple Computers. The operating systems needed are Windows 10+, Mac OS X v12+ (Monterey), Chrome OS v104+ (4 GB RAM), iOS 15+, and Android 13+ (Tiramisu). Mobile devices require iOS 15+ or Android 13+ (Tiramisu).
- To use all functions of digital programs effectively, you must use an updated web browser. The materials currently support the following browsers and versions: Google Chrome 104+, Mozilla Firefox 104+, Apple Safari 15+, and Microsoft Edge 104+.
- Digital materials are accessible with or without internet access. Students log in to access materials when they have an internet connection. If there is no internet access, materials can be downloaded beforehand so they are still accessible.

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## Indicator 9.3

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

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

## Not Scored

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

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

Evidence includes but is not limited to:

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

- Grade 5 materials include digital technology and online components developmentally appropriate for the grade level and align with the scope and approach to science knowledge and skills progression as evidenced by the incorporation of basic click icons to access digital components embedded within student materials. The materials provide a rationale for the age-appropriateness of digital and online components. The materials include rationale within the "Program Overview," which details what is included and why.
- Grade 5 materials include online assessment components with age-appropriate navigation guidance to support students when attempting to demonstrate mastery of grade-level content and skills aligned with TEKS.
- The digital technology and online components are developmentally appropriate for the grade level. Materials provide a rationale for the age-appropriateness of digital and online components in the document "Supporting All Learners: Equity and Access in Science."
- The digital technology and online components are aligned with the grade-level scope and approach to science knowledge and skills progression. Materials provide information that identifies how online and digital components align with grade-level science knowledge and skills. The materials provide related TEKS for online and digital components within the Teacher's eBook in the "TEKS at a Glance." The materials provide related TEKS and ELPS for online and digital components within the Teacher's Guide. The materials provide the "Cross Curricular

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Correlations" document, which details the digital technology standards that are aligned with the program.

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

- Grade 5 materials provide teacher guidance for the use of embedded technology support, such as "how to" videos. For example, a Page Keeley Video is featured in a "Digital Spotlight" offering guidance to best implement a particular strategy. Also included in the "Digital Spotlight" sidebars, which guide teachers in assigning or showing online materials. The sidebars continue throughout the lessons with optional resources based on how much time the teacher has.
- The materials support teachers to successfully integrate the technology within the program. Materials include professional development videos, tutorials, and bite-size, on-demand support for teachers to continue to develop their skills and knowledge in using the embedded technology to support and enhance student learning.
- The materials provide specific teacher guidance for embedding the technology within lessons and assessments. Materials include best practices for using embedded technology for differentiating instruction, using technology to promote collaboration, and incorporating multimedia resources into lessons. Materials include a rationale for balancing paper-and-pencil activities for fine motor skills development with technology use.
- The materials provide specific teacher guidance for embedding the technology within lessons and assessments. The "Plan Your Lesson" section guides teacher use of embedded technology to support teaching and learning throughout each chapter. The materials also provide teacher guidance for digital and online assessment tools within each "Evaluate (Day 5)" day. The guidance includes how teachers can review and assess within the digital platform.
- The materials provide specific teacher guidance for embedding the technology within lessons and assessments. The materials provide recommendations for teachers on which days to use technology with students and if there is a time during lessons when the technology would enhance or support student learning. Materials outline recommendations in the "Chapter Resource Snapshot" and the "Lesson Overview Pages."

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

- Materials provide teachers with the Communicating with Caregivers Guide. This resource provides a letter to families that advises them to use McGraw Hill's Digital Technical Support for accessing and engaging with digital content.
- Online materials include a section specifically for families with information about science objectives, conversation starters, and family activities, but it does not contain any links or online resources.
- Materials include resources for parents and caregivers on supporting student engagement through a letter to families for each unit, including a family activity they can choose to complete. Parents can also access digital student resources using their student's credentials.