

Summit K12 Dynamic Science Grade 5

Summit K12 Dynamic 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 somewhat 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 somewhat anchor the learning in phenomena and problems as the key lever for driving learning and student mastery of disciplinary knowledge and skills.

Section 3. Knowledge Coherence

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

Section 4. Productive Struggle

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

Section 5. Evidence-Based Reasoning and Communicating

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

Section 6. Progress Monitoring

- The materials include 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 somewhat clear and easy to understand.

Section 7. Supports for All Learners

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

Section 8. Implementation Supports

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

Section 9. Design Features

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

Partial Meets | Score 2/4

The materials partially meet the criteria for this indicator. Materials are partially 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 limited opportunities, as outlined in the TEKS, for students to ask questions and plan and conduct classroom, laboratory, and field investigations and to engage in problem-solving to make connections across disciplines and develop an understanding of science concepts.

Evidence includes but is not limited to:

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

- The materials provide multiple opportunities to develop grade-level appropriate scientific and engineering practices, as outlined in the TEKS. For example, under each reporting category, some videos are TEKS-based, which develop the understanding of grade-level appropriate scientific practices. The Apply and Extend section includes opportunities for students to design and conduct grade-appropriate experiments, collect and analyze data, and develop and test hypotheses. In the student lab section, students engage in hands-on activities that provide students with opportunities to practice and demonstrate scientific and engineering practices. The Scope and Sequence and Pacing Guide states, "Summit K12 suggests introducing the fundamental concepts and principles of science before the beginning of instruction." The

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materials include a Scientific and Engineering Practices link from the landing page that has support for a lesson describing the SEPs as well as SEPs academic vocabulary introduction.

- For example, in grade 5, materials include opportunities for students to analyze and interpret data in the 5.7B Student Lab: When Rubber Meets the Road. Students practice the scientific and engineering practices as outlined in the TEKS during 5.6B Student Lab located in Category 1. For example, on page 1 of the Teacher lab, a section lists the aligned TEKS that are SEPs. The TEKS list aligns with the work of the lab in the student and teacher lab pages.

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

- The materials provide opportunities for students to use recurring themes in making connections between and within overarching concepts. For example, the Lesson Guide in the teacher's manual contains a section titled Apply/Extend, where opportunities are made to make connections between and within overarching concepts. Apply and extend section (bullet 6) includes opportunities for students to design and conduct grade-appropriate experiments, collect and analyze data, and develop and test hypotheses. For example, students analyze a concept in terms of its components and how these components relate to each other, to the whole, and to the external environment. For example, at the beginning of the 5.9A Lesson Guide, a graphic shows how activities incorporate recurring themes and concepts across lessons.
- For example, grade 5 materials utilize the recurring theme of patterns. Within a 5.9A Lesson Guide on the Earth's rotation, students make observations about the phenomena of the day/night cycle and the appearance of the Sun moving across the sky and changes in shadows.

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

- The materials provide teacher support designed to guide teachers through the development of content concepts and skills. For example, in the Lesson Guide, under the teacher's manual, there is a section titled Apply/Extend, where teachers strategically and systemically develop students' content knowledge and skills. The materials provide support for increasing complexity in student-led inquiry and investigation, including guidance for teachers to revisit topics with students to review previous learning; however, it is limited on revision and thinking on topics. The study guide and apply section includes an integration of Scientific Engineering and Processes through classroom investigations to support instruction in the science content standards. The materials for the grade 5 Pacing Document includes an overview document that explains how the program is structured and gives a rationale for the sequence of units, showing how the program systematically presents content and concepts for students to make connections across units throughout the program.
- For example, in grade 5, Category 4, Teacher Edition, *Lesson Launchpad*, students are guided to look for an object in the classroom and name its physical properties. Students are to describe it, including mass, magnetic, relative density, state of matter, soluble volume, and ability to conduct or insulate thermal and electric energy. An example of systematic design within the materials is how the Lesson Guides shift the discussion from 3.8AB to 4.8A to 5.8A. Each guide strategically develops student understanding as outlined in the TEKS for each grade level.

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

- The materials include limited opportunities for students to ask questions and plan and conduct investigations. While the Lesson Guide includes questions and activities that allow students to ask questions, the materials present experiments that are mostly teacher-led. This includes asking preplanned questions, planning and conducting investigations, and explaining phenomena using appropriate tools and models. For example, in Category 4, TEKS 5.12C, the Student Lab, the guiding questions are provided, "How does overgrazing impact an ecosystem? What activities can humans do to solve this problem?" The lab lists specific materials and includes a specific procedure for students to engage in the laboratory investigation.
- The majority of student labs provide a question, procedure, and lab outline for students to conduct lab investigations, but students rarely plan their own investigation around their own questions.
- The materials include limited opportunities for students to identify problems and use engineering practices to design solutions using appropriate tools and models. Most opportunities for investigations support the development of scientific practices, with fewer opportunities for students to develop engineering practices.
- While materials provide a Phenomenon Inquiry Guide, this document guides student thinking about a phenomenon to create a model. While the guide, in Step 3 of the teacher notes, does indicate teachers should elicit student ideas for investigations, this document does not include any opportunity for students to plan procedures to conduct classroom, laboratory, or field investigations.

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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.	PM
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

Partial Meets | Score 2/4

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

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

Evidence includes but is not limited to:

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

- The materials partially provide opportunities for students to develop, evaluate, and revise their thinking as they engage in phenomena and define/solve problems. For example, in grade 5, materials embed opportunities for students to make scientific investigations; however, phenomena-based activities that allow students to construct, build, and develop their knowledge of the grade-level content is minimal and infrequently anchors instruction.
- The materials provide minimal student support in using and understanding science and engineering practices and recurring themes. For example, in the Teacher Edition for Lesson 5.10A, the lesson states students will engage in TEKS 5.2B, "Analyze data by identifying any significant features, patterns, or sources of error." While students collect data and make a line graph, the teacher guide doesn't direct students to make any observations, identify patterns, or look at significant features. They engage in the activity to make the graph and then move on to the next section of the lesson.
- The materials do not consistently ask the students to make connections or provide opportunities to ask student-led questions. Most experiences are teacher-driven or provide

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step-by-step directions that are not authentic applications of science concepts. For example, in the student lab for the *Earth's Rotation* lesson for 5.9A, the students are following the steps in the procedure with no thought to their own questions. The demonstrate section states, "Using an illustration, Earth's rotation showing the day/night cycle. Include the time it takes to complete a day/night cycle in the illustration." Students do not have the opportunity to make the connections themselves or discover the answer to their own questions as the answer has already been given to them.

- Throughout the lessons, there is minimal evidence of opportunities for students to generate their own questions and provide authentic applications of SEP, RTC, and grade-level content. For example, in the student lab for TEKS 5.10B, students are given the question and follow the prescribed lab procedures. There is no generation of a question by students. They are provided the question at the beginning of the lab. There is no evidence of authentic application of SEP, RTC, or grade-level content in this lab as students are testing observations to place into a pre-created table. The lesson does not ask students to solve a problem, discuss a recurring theme or concept, or extend their thinking to a real-world experience.

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

- The materials provide opportunities to leverage students' background knowledge and experiences related to the phenomena or an engineering problem and adequately address potential areas of misunderstanding. For example, in a grade 3 Engage portion in the Lesson Guide, students are prompted to activate prior knowledge using guiding questions. Materials in the 3.6A Lesson Guide provide a teacher Common Misconceptions guidance section to help teachers gauge where some students may have inaccurate or inadequate prior knowledge.
- The materials provide opportunities for students to leverage knowledge and experiences related to the phenomena or an engineering problem. For example, in the Engage portion of the 5.6A Lesson Guide, students activate prior knowledge by asking the following question: "What physical properties can you use to compare and contrast your pets? (height, color, size, weight...). Then, in groups, students create a graphic, such as a Venn diagram, that compares and contrasts two pets." This connects to students' prior experiences related to the physical properties concept. In another example In the Teacher Edition, Category 1, 5.6B Lesson Guide Engage section, the teacher activates students' prior knowledge by having them describe how they can separate the ingredients in a salad. This intentionally leverages students' experiences related to phenomena due to most students having knowledge of what is in a salad.

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

- The materials identify student learning goals behind each phenomenon or engineering problem. Materials include a Lesson Guide that begins with a section titled *Students will*: where the materials clearly outline for the teacher the scientific concept covered in that lesson and the goals behind each phenomenon and engineering problem. Throughout the Teacher Edition in the Lesson Guide, the Teach and Discuss section describes each specificity within the TEKS and the goals behind each phenomenon and engineering problem.
- Materials outline for the teacher the scientific concepts and goals behind each phenomenon and engineering problem. For example, in the Teach and Discuss section of the 5.6C lesson titled Solutions, content is outlined for the teacher in the bullet points, Mixtures, Solutions, and

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Separating Solutions. Additionally, the section outlines learning goals with guiding questions to check for understanding. Materials clearly outline the lesson goal: "Demonstrate and explain that some mixtures maintain physical properties of their substances, such as iron filings and sand or sand and water."

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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

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

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

Evidence includes but is not limited to:

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

- Materials are vertically aligned and designed for students to build and connect their knowledge and skills within and across units and grade levels. Lesson Guide 5.6D includes an explicit and systematic method that allows students to connect to prior knowledge during the *Engage* section of the Lesson Guide. The directions state, “Activate students’ prior knowledge, experiences, wonderings, and initial explanations about an anchoring phenomenon. Introduce the Phenomenon Sensemaking Guide and leverage student wonderings to collectively develop the Guiding Question for this unit: HOW DO SMALL PARTICLES MAKE UP MATTER?” The anchoring phenomena is an observation of cloud breath, which is a direct connection to prior learning, “4.6A classify and describe matter using observable water), and physical state temperature, mass, (the ability to sink or float in (solid, liquid, gas).” This demonstrates that the materials are designed for students to connect their knowledge across grade levels.
- Materials include a vertical alignment table that supports fostering connections between students’ prior knowledge and skills to current grade-level knowledge and skills. Placing this vertical alignment table within the Lesson Guide and following it with activities that directly provoke prior knowledge and are student-centered exemplify how the materials allow students to build and connect to prior knowledge. There are also grade-level concept connections that

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allow teachers to spiral through prior learning or anticipate future learning. For example, Lesson Guide 5.6D has a section titled Grade Level Concept Connections which states, "Students have an opportunity to extend and enhance their understanding of this concept through: 5.6A compare and contrast matter based on measurable, testable, or observable physical properties, including mass, magnetism, relative density (sinking and floating using water as a reference point), physical state (solid, liquid, gas), volume, solubility in water, and the ability to conduct or insulate thermal energy and electric energy. 5.12C predicts how changes in the ecosystem affect the cycling of matter and flow of energy in a food web." This earmarks the learning for the teacher so that students can make connections across units within the grade level. Providing this information in the Lesson Guide supports the educator in building a coherent story of science with their students.

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

- Materials are intentionally sequenced to scaffold learning in a way that allows for increasingly deeper conceptual understanding. The vertical alignment framework shows how concepts build on one another by being organized by category and vertically aligned concepts. This supports the teacher's understanding of the ways concepts increase in depth over time. The listed lessons demonstrate a coherence of science concepts as well as an allowance for deeper conceptual understanding. For example, the table outlines that the lessons progress from *Mixtures* in 4th grade to *Mixtures Maintain Physical Properties and Solutions* in 5th grade.
- The materials provide a *5th Grade Pacing Document* that includes a *5th Grade Pacing Guide* that intentionally sequences the lessons based on the reporting categories set forth by the TEKS. Teachers are able to access the pacing document to view the vertical alignment of TEKS across grade levels. The materials provide a *Lesson Launch Pad* with lessons in grade 5, along with lessons vertically aligned to that same concept in grade 3 and grade 4. The lessons linked in the *Lesson Launch Pad* are stand-alone lessons that are TEKS-based and vertically aligned. This is one way the materials suggest teachers scaffold learning for students to develop mastery in grade-level knowledge and skills and build understanding.
- Materials include opportunities to deepen conceptual understanding. In Category 1, Lesson 5.6C materials prompt the teacher to activate prior learning in the *Engage* section of the lesson prior to teaching content by demonstrating how salt and water interact. In Category 2, Lesson 5.7B materials prompt the teacher to activate prior learning in the *Engage* section of the lesson prior to teaching content by asking students to name "What can cause a swing to go faster?" and "What helps a skier go down the snowy mountain so quickly?" These activities scaffold learning in a way that allows for deeper conceptual understanding.

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

- Materials clearly and accurately present grade-level-specific core concepts, recurring themes and concepts, and science and engineering practices. In grade 5, Category 3, Lesson 5.9A *Engage*, materials provide an opportunity for teachers to capture students' interest. Teachers ask open-ended questions to activate learning and help gauge students' prior knowledge, such as, "What objects do you know that spin or rotate?" and "What object appears to be moving across the sky during the day?" During the Explore, students conduct the hands-on student lab *As the World Turns* to explore day and night. During the Explain phase, students work together

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to create a graphic that shows cause and effect linking to the recurring themes and concepts. During the final Evaluate phase, materials provide four options to have students show their understanding using the following: Formative Assessment 1, TEKS Video, Vocabulary Review, and Formative Assessment 2.

- Materials include clear and accurate presentations of the RTCs and SEPs. This is noted within each learning activity box in Lesson Guide 5.6D. For example, at the bottom of the box that describes the “Investigative Phenomena: Cloud Breath,” there is a list of connected RTCs and SEPs. These include [SEP 5.1A, 5.1G, 5.2B, 5.3A] [RTC 5.5C, 5.5D] for this particular activity.
- Materials include clear and accurate presentations of the RTCs and SEPs. This is noted within each learning activity box in Lesson Guide 5.6D. For example, at the bottom of the box that describes “Establish Relevance: Balloon Exploration,” there is a list of connected RTCs and SEPs. These include [SEP 5.1A, 5.1G, 5.3A] [RTC 5.5A] for this particular activity.

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

- The materials include a 5th Grade Vertical Alignment, which demonstrates the grade level TEKS and their expected outcomes for student mastery of that specific grade level and evidence of guidance around the boundaries of each TEKS.
- From the landing page, the *Concept Mastery* button links to *Student Learning Resources* for all 4 Categories. Each Category includes 2 Formative Assessments and Vocabulary tasks aligned to each grade level TEKS. For example, in grade 5, Category 3, Lesson 5.10B2, students learn how sedimentary rock and fossil fuels are formed. Materials provide a study guide to address any misconceptions and include a formative assessment to show mastery of content. These are appropriate boundaries for mastery in grade 5 content.

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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.

- In the grade 5 sample provided, the Particles Make Matter lesson offers a Vertical Alignment table, which serves to support teachers in comprehending students' prerequisite knowledge as per the TEKS standards. Additionally, it aids in preparing for future grade-level focus.
- Materials support teachers in understanding the horizontal and vertical alignment of grade-level content, recurring themes and concepts, and scientific and engineering practices. Materials contain a 5th Grade Pacing Document on the grade 5 landing page in which 5th-grade vertical alignment showcases which skills and standards students should have mastered in previous grades and how learning will progress in the subsequent grades. Materials support teachers' understanding of how new learning connects to previous and future learning across grade levels.
- Materials in the grade 5 landing page contain a 5th Grade Pacing Document which includes an outline of how content and concepts increase in complexity across lessons and units. For example, in Reporting Category 1, students are to compare and contrast physical properties prior to understanding that mixtures maintain physical properties. In Reporting Category 2, students are to investigate and explain how equal and unequal forces act on an object causing

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patterns of motion and transfers of energy. The *Check for Understanding* section explains and supports teachers' content knowledge.

- The materials include a TEKS-SEPs-RTCs Crosswalk that shows where each TEKS, SEPs, and RTC is covered in the materials. It uses a color coding system to indicate which TEKS-based lessons include SEPs and/or RTCs. One color illustrates for the teacher that the SEPs/RTCs are embedded in the lab investigation, another color indicators they are embedded within an inquiry or explore activity. This document supports teachers in understanding the horizontal alignment of the TEKS, SEPs, and RTCs within the materials.

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 grade 5 sample provided in the Particles Make Matter lesson offers an *Anchoring Phenomenon* section where students observe the Cloud Breath video of Kate the Chemist demonstrating how to turn air into a cloud. A teacher note is provided to “Not explain the phenomena to the students.” Students rewatch the video and record their observations, wonderings, and initial model of the phenomena.
- A guide for student misconceptions has been addressed. In the Grade 5 sample provided, the Particles of Matter lesson guide offers a Misconceptions section where the teacher considers the misconceptions students may have and addresses these through questioning and targeted learning activities throughout the unit. Examples include: “Particles do not exist if they cannot be seen. Instead, particles are not visible because they are microscopic. Particles have the same properties as the states of matter and can contract, expand, or change shape.”
- The materials contain explanations and examples of science concepts that support the teacher's subject knowledge. The 5th grade 5.6C misconceptions section contains explanations and examples including grade-level misconceptions to support teachers in developing their knowledge of the misconceptions to overcome these barriers.

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

- The materials include Philosophy which outlines the overall reasoning behind the structure they use. The materials name the differentiated support that is embedded in the program design. For example, teacher philosophy provides a rationale for using Claim, Evidence, and Reasoning models for learning. It is student-centered instead of teacher-centered. Resource philosophy claims to allow “students learn science by observing phenomena, asking questions, conducting investigations, and using scientific practices to answer those questions. The best way to learn science is to do science.” For example, the Dynamic Science Overview reasoning guide for teachers provides a framework explaining the main intent or goals of the program. The intent is to advocate for scientific exploration and discovery every day along with an encouragement for new inventions.
- Materials provide a rationale for the instructional design of the program. For example, materials provide a rationale for using the 5E model for learning. The material cites that their instructional model is “designed for students to productively struggle” and “build knowledge through exploration, collaboration, and teacher guidance.”

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Indicator 4.1

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

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

Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- Materials consistently support students' meaningful sensemaking through reading, writing, thinking, and acting as scientists and engineers. The materials include a section titled Science Literacy where teachers are able to access books based on the reporting category. Materials support students' sensemaking through reading, thinking, and acting. For example, grade 5 students utilize an E-Book titled *Matter in a Frozen Land*. The students read a concise book that highlights various aspects of Antarctica. Afterward, they engage in a group discussion where they analyze, infer, and establish connections based on the literature they have just read. Moreover, during these discussions, students have the chance to explore and grasp fundamental concepts regarding the properties of matter.
- Materials provide opportunities for students to engage in meaningful sensemaking through reading, writing, thinking, and acting. Materials provide multiple opportunities for students to engage with grade-level appropriate scientific texts to gather evidence and develop an

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understanding of concepts. For example in grade 5, Category 3, Lesson 5.10C over landforms, students examine how the Earth changes its surface by wind, water, or ice. In the Teach and Discuss portion of the lesson, students model one change to the Earth's surface with clay or soil. In the *Core Vocabulary* portion of the lesson, students play the game, Read My Mind in which students select a vocabulary word and give up to 3 clues while their partner(s) try to guess the word selected. In the Apply/Extend portion of the lesson, students create time-lapse drawings to identify and model the changes caused by the agents of erosion to create landforms.

- Another example in grade 5, Category 4, Lesson 5.13A is over structures and functions of the species. Students analyze the structures and functions of different species to identify how organisms survive in their environments. In the Apply/Extend portion of the lesson, students read the short passage *Discoveries from Plants*. Then, students research how plants have inspired new inventions to solve problems. In the Lab portion of the lesson, students complete the activity called This is for the Birds. Then, they use tweezers, spoons, chopsticks, and chip clips to represent bird beaks to find which bird beak is best adapted for each type of food and reflect on the activity to describe their findings.

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

- Materials provide multiple opportunities for students to engage with grade-level appropriate scientific texts to gather evidence and develop an understanding of concepts. The materials include a section titled Science Literacy where students have access to grade-level appropriate text that allows them to gather evidence of science concepts.
- For example, in grade 5, Category 1, Lesson 5.6C, students read and discuss the grade-level book *Elements, Compounds, and Mixtures* to gather evidence on the similarities and differences between these components. Students ask questions and discuss in a group. In grade 5, Category 3, Lesson 3.8B, students read a short passage about sound energy and how an echo is created in *Science Around You - Hear the Echo?* Students are encouraged to share their responses with the class. The teacher follows the reading with a quick demonstration by creating an echo. Another example is in grade 5, category 4, Lesson 5.13A, where students read the short passage *Science Around You - Plants To The Rescue*. After reading, students research how plants in living organisms are used to solve problems. Students then create a pamphlet, poster, or slides to present to their class.
- Materials provide students with opportunities to explore cross-curricular texts. For example, from the landing page, the Science Literacy link includes Science Cross Curricular Passages. The science passages provide a scientific text with questions about the scientific content. In addition, from the landing page, the Scientific and Engineering Practices includes an *Explore* opportunity on STEM careers. These one-page scientific texts explain multiple different STEM careers using appropriate grade-level readability.
- The materials provide science videos that include grade-level appropriate scientific texts. These videos are engaging and provide students with an alternative way to consume traditional textbook information through an electronic medium.

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

- Materials provide 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. In the grade 5 Differentiated Science Writing sample, students are presented with various writing prompts ranging from Beginner to Advanced High difficulty levels. One of the writing prompts is titled *Matter at The Fair*. In this prompt, students are required to describe the characteristics of different foods. They are provided with photos and graphics to aid their understanding of the prompt and the concept being discussed. To respond to the prompt, students identify and describe the foods they observe in the provided images. To enhance communication, the sample includes an audio player that reads the writing assignment aloud to the student, providing an alternative method of conveying information.
- Materials provide opportunities for students to engage in writing and graphic modes. For example, in grade 5, Category 1, Lesson 4.6A, students work with a partner to make a table to describe and classify items in their classroom. Students define the objects' mass, temperature, magnetism, physical state, and relative density and present their findings to their class. In grade 5, category 2, Lesson 5.8B, students work in partners to draw and fill in a graphic with one vocabulary word in the center. They then describe the word with details/facts/illustrations and present them to their class. For example, in grade 5, Category 4, Lesson 5.13B, students use a graphic organizer to explain the instinctual behavior traits and learn behavioral traits that include a definition, characteristics, examples, and non-examples. Students are encouraged to display the graphics in the classroom and to answer any questions other students might have about their examples. These lessons provide multiple opportunities to support students in developing and displaying an understanding of scientific concepts.
- The materials provide science videos that include grade-level appropriate scientific texts. These videos are engaging and provide students with an alternative way to consume traditional textbook information through an electronic medium.

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

- Materials support students to act as scientists and engineers who can learn from engaging in phenomena and engineering design processes, make sense of concepts, and productively struggle. For instance, in the case of grade 5's Let There Be Light Student Lab, students engage in an investigation aimed at identifying the materials that can create a closed circuit for producing light. They explore the outcomes when different types of materials are utilized. The students engage in selecting materials and developing a plan for testing the types of materials, just as scientists would to make sense of a concept.
- The materials support students acting as scientists. In Lesson 5.6A, students test solubility in water by conducting an investigation. Students design an investigation to test the solubility of five different solutes and record their results and make a conclusion based on the evidence. In Lesson 5.8B, Conductors and Insulators of Thermal Energy, students identify conductors and insulators by designing and conducting an investigation. Students graph their data and compare their findings to their control group. The students engage in productive struggle as they seek to design and test their investigation. The Phenomenon Sensemaking Guide allows students to

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analyze and understand how phenomena occur, why phenomena occur, and opportunities for students to construct explanations of the how and why of the phenomena or problem.

- In grade 5, Category 3, Lesson 5.10B in the Weathering, Erosion, and Deposition Student Lab, students model and describe the changes to the Earth's surface by wind, water, and ice. Students model the erosion of sand. The students use a straw to represent wind erosion, an ice cube to represent ice erosion, and a dripping cup of water to represent water erosion. The Extend portion of the student lab provides an opportunity for students to transfer their learning and apply it to another situation. Students are asked to think about the following: "What would happen if a book 6 cm thicker were added on top of the other book with 3 cm and the tray had a higher incline?", "What would happen if you used a different soil, such as clay or gravel? Do you think water would cause the same erosion?", and "What about using ice cubes instead of liquid water? Do you think this would have a different effect?" This provides students with an opportunity to think like scientists and use previous experience to engage in productive struggle as they explore these questions and develop a deeper understanding of the concept.

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Indicator 5.1

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

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

Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- Materials provide opportunities for students to gather and use evidence to support their hypotheses and claims. For example, in Lesson 5.6D students observe a video of “cloud breath” where a celebrity chemist turns air into a cloud before their eyes. The students are provided a Phenomenon Sensemaking Guide to gather evidence and record it. Later they return to their evidence and use that, along with other evidence collected during the lesson experiences, to develop a claim about how this is possible and how it demonstrates that “small particles make up matter.”
- Materials provide an opportunity to gather evidence to support their hypothesis. Lesson 5.6D provides the opportunity for students to engage in an investigation regarding small particles and create their hypothesis using evidence from observations made and evidence gathered during this investigation. They go through a similar process for the other two parts of the investigation, continually refining their hypotheses and claims as they gather additional evidence.
- Materials prompt students to use evidence as a basis for making claims, hypotheses, and formulating responses. For example, in Category 3, Lesson 5.11A Student Lab includes an open-ended section for students to record their results from their compost bottle and prompts

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students to include evidence to support their hypothesis. The teacher materials also instruct students to share and discuss evidence that may refute their hypothesis or claim.

- Materials consistently prompt students to use evidence to support their hypotheses and claims. Sentence stems are provided throughout the materials and are structures to encourage students to provide evidence to support their claims. For example, in Lesson 5.8C, the sentence stem “I agree with ... because...” demands that students share their evidence and reasoning for their agreement and conversely this stem could be rephrased as “I disagree with . . . because . . .” and still require students use evidences to support their claim during classroom and group discussions.

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

- Materials consistently embed opportunities to develop and utilize scientific vocabulary in context throughout the curriculum in grade 5. The materials include a section titled Vocabulary Mastery where students have access to scientific vocabulary words in context. The materials also embed a variety of representations to facilitate the learning of new vocabulary words. The materials include a Vocabulary section with direct opportunities to practice academic vocabulary. Guidance at the beginning of the section states, "Core Vocabulary should be emphasized and taught in context throughout the lesson." This provides guidance to the teacher to create opportunities for students to develop and utilize scientific vocabulary in context.
- Materials provide opportunities to use scientific vocabulary in context through writing. In grade 5, Category 1, Lesson 5.6C Solutions Study Lab, students are provided with materials that offer opportunities to enhance their vocabulary through writing. This helps students understand new terms by relating them to their concrete or firsthand encounters. In this activity, students write a reflection describing the findings in their lab. Students are encouraged to use a wide range of vocabulary during the writing prompt.
- Materials provide opportunities to use scientific vocabulary in context through hands-on games. In grade 5, Category 2, Lesson 5.8C materials in the Vocabulary section of the lesson, students participate in the Toss Cube activity in which students toss a tie and have to use vocabulary in a specific context determined by the die. In Lesson 5.8B Vocabulary section, students partake in the activity Word Association titled I Say, You Say. The teacher provides one clue, and students respond with the vocabulary word that matches the clue. These hands-on activities allow students to utilize and learn scientific vocabulary in context in a fun and engaging environment.
- Materials provide opportunities for students to use scientific vocabulary in context through videos and sentences. For example, the materials include a video for TEKS 5.12A, in Category 4, that begins with the essential vocabulary needed for the lesson. In this video, there is a section at the bottom of the start where there is a list of vocabulary words that are later explained throughout the video with a voiceover and pictures. This provides context for students learning the new vocabulary words. The materials include a section on Concept Mastery with a vocabulary activity where students are prompted to select a vocabulary word that best fits the sentence in context. The sentence is accompanied by a picture associated with the vocabulary word the concept covered in the TEKS lesson. These activities help to reinforce the learning of scientific vocabulary in context.

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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 partake in discourse, yet minimal opportunities to develop the skill of *how* to engage in the practice of argumentation and discourse. Materials provide some opportunities for discourse and argumentation. In grade 5, Category 1, Lesson 5.6D Student Lab, It's A Small, Small World study, there is a notable lack of clarity in demonstrating the use of argumentation. Materials provide opportunities to engage in discourse. In grade 5, Category 2, Lesson 2.7A materials give students the opportunity to participate in Shoulder Talk where students discuss the questions provided to them with the person beside them. In Lesson 5.7B, materials prompt students to discuss the book Applying Newton's 1st and 2nd Laws of Motion in groups. Materials provide meaningful opportunities for argumentation and discourse.
- Materials include opportunities for argumentation as a way to support students' development of concept knowledge and skills. For example, in Category 3, Lesson Guide 5.10B2 provides an opportunity for students to debate the use of fossil fuels in an activity called Take a Stand. This activity is located in the Apply/Extend section along with another activity where students work in partners or groups to engage with the development of a model.
- Materials provide opportunities for students to participate in discourse. In Category 4, Lesson Guide 5.13B, under the Apply/Extend section, teachers divide the classroom into groups and assign a section from the teacher/discuss section from the teacher guide. The students are then asked to present to the class their section.

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

- Materials provide opportunities for students to construct and present developmentally appropriate written and verbal arguments and include guidance for students to use evidence acquired from their learning experiences. The materials include a Teacher Resource page that includes teacher-facing material about science writing. This document explains the Claim, Evidence, and Reasoning framework for responses to a scientific question, which includes an example of a graphic organizer and rubric. In addition, the implementation guidance states, "This CER framework should be introduced at the beginning of the course, and reinforced by application and review throughout the school year." Students are provided with the CER document consistently throughout the lessons to frame student thinking to justify their explanations with evidence.
- The student materials provide an open-ended space for students to draw conclusions during Student Lab investigations. In grade 5, Category 3, Lesson Student Lab 5.11A: Compose in a Bottle provides directions for students to create a compost bottle. After weeks of observations, students revisit the bottle and draw conclusions. The prompt states, "Write a brief description of your compost bottle after 3 to 6 weeks." Students receive prompts from the teacher to justify or explain their observations.
- Materials provide opportunities for students to construct and present developmentally appropriate written arguments to justify explanations of phenomena. In Category 4, Lesson Lab 5.13B, students use an electronic device to find the answer to a list of questions provided. From their search, the students will then go into each question and write/draw their answers. The

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materials provide opportunities for students to develop persuasive verbal or written argumentation skills while addressing problems and presenting evidence from their learning experiences.

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Indicator 5.2

Indicator 5.2, Grade 5

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

Partial Meets | Score 2/4

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

Materials provide some teacher guidance on anticipating student responses and the use of questioning to deepen student thinking. Materials include little 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 provide support and guidance for teachers in facilitating the sharing of students' thinking and finding solutions.

Evidence includes but is not limited to:

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

- Materials provide some teacher guidance on anticipating student responses and the use of questioning to deepen student thinking. Materials provide some guiding questions in the Engage and Discuss section yet, there is limited evidence of follow-up questions throughout the materials to deepen students' understanding. There is little increase in the depth and complexity of the questions for students.
- Materials provide some teacher questions and potential student responses in the Teach and Discuss portion of the lesson. Materials provide limited teacher responses to possible students' responses and in turn do not explicitly guide the teacher on how to build on students' thinking. In grade 5, Category 2, Lesson 5.7B materials include the question, "What can a force do? (It can change the position and motion of an object.)" and "Design a simple investigation in your science journal to make a system move. The students present to the class. (Make a car move, a balloon rocket, dominoes, etc.)" In Lesson 4.8B, materials provide teacher questions and potential student responses in the Teach and Discuss portion of the lesson, such as, "Describe to a partner the transformation of energy in a fan. (Electrical energy is transformed into

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mechanical energy. The fan cord is connected to an electrical power source and transforms electrical energy into mechanical energy. You can see this when you connect the fan and turn the switch to the on position, and the blades start to move.)" and "Describe which energy transformation is used when you bake a pizza. (Electrical energy to thermal or heat energy)."

- Materials do not include questions with increasing complexity to deepen student thinking beyond the initial prompts. Materials provide some anticipated student responses within the Key to the Study Guide. For example, in Category 3, 5.10B Study Guide Key provides a sample response to the Wrap-Up prompt. The sample response states, "Coal is formed from dead plant matter, and it forms on land. Oil and natural gas are formed from dead marine organisms (plants and animals) and it forms on the ocean floor." Yet there are no follow-up questions to extend the lessons.
- The materials partially provide teacher guidance on anticipating student responses and the use of questioning to deepen student thinking. In Category 4, Lesson Guide 5.12A provides a section titled Engage where teachers are presented with an activity where students are presented with a series of pictures. The materials instruct the teacher to say, "observe and describe the water and the plant" along with possible answers the students may have, such as "The water is liquid, has no color, and is used for drinking. The plant is green, has a stem, and grows." Although the materials include a set of questions and possible answers students can have, there is limited teacher guidance on how these activities or questions deepen student thinking. In Lesson Guide 5.13B, the materials include a section for Check for Understanding. The materials state, "Give time to answer any questions students might have related to the topic" and "Teacher, please allow students an opportunity to demonstrate their understanding of the content and time to ask questions as needed." Below this section are possible topics the teacher can check for understanding; however, there is limited guidance on how these topics or possible questions will deepen student thinking.

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

- The materials include partial guidance on how to scaffold and support students' development and use of scientific vocabulary in context. The materials provide limited embedded support for the teacher in how to scaffold students' development of scientific vocabulary. The materials include the use of an e-poster and a lot of pointing to the pictures. In the grade 5 Study Guide, it provides an essential overview that introduces the core vocabulary used throughout the unit. However, there is no scaffolding in support of student development of vocabulary.
- Materials provide some opportunities for students to use vocabulary in context. Materials do not explicitly name the opportunity or provide explicit guidance on how the teacher can support possible problems. In grade 5, Category 2, Lesson 5.8C materials embed the vocabulary activity, Toss the Cube! designed to scaffold student development of scientific vocabulary. Materials include potential questions the teacher may ask if a specific number is rolled. While this is an opportunity to target students' use of new academic vocabulary materials, do not explicitly name teacher guidance to support expected student responses. In Lesson 5.8B, materials provide an opportunity for students to use vocabulary in context in the I Say, You Say! activity in the Vocabulary section of the lesson. Materials prompt the teacher with short phrases that students must associate with a corresponding vocabulary word.
- Materials include some teacher guidance on how to scaffold and support students' development and use of scientific vocabulary in context. Materials do not state that the teacher will introduce vocabulary words at strategic points within the learning sequence. In Category 4, 5.10B1 e-

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poster incorporates images, labels, and sentences with keywords in bold to define scientific terms. The second poster offers sentence frames and blanks for labels in order to facilitate and build vocabulary knowledge. Although this is a valuable instructional tool, the Lesson Guides do not indicate optimal opportunities to reference this anchor of support throughout instruction. Instead, it is an isolated activity. Lesson Guide 5.10B2 includes a Core Vocabulary section with teacher guidance on supporting students' acquisition and use of vocabulary words. For example, the three Literacy Strategy Options are quick draw, Slam It activity, and graphic creation.

- The materials include partial guidance on how to scaffold and support students' development and use of scientific vocabulary in context. Materials provide suggested activities for the scientific vocabulary words, but there is limited guidance on how to best scaffold and support students' development of the words in the context of the lesson. In Category 4, the Lesson Guide for 5.13B, the materials instruct students to create a word web for the Core Vocabulary words. The students write a vocabulary word in the center and write words that describe or are related to it in their science journal. The word webs include definitions and examples. The teacher calls on students to share a word web with the class. There is limited guidance on how to best scaffold this vocabulary activity for students who might need more guidance. Additionally, this activity is an additional activity the teacher is able to work on, and not something done in the context of the lesson.

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

- The materials provide teacher guidance on preparing for student discourse and supporting students using evidence to construct written and verbal claims. The Teacher's Guide provides information in the section Science Writing about the process and rationale of the Claims, Evidence, and Reasoning framework with examples. This, when combined with the student sensemaking guide and prompts for teachers in the lessons to provide opportunities for students to engage in discussion with their peers using evidence to support their claims.
- Materials provide teacher support for student discourse by providing discussion questions. When these questions are used in conjunction with the student Sensemaking Guide and other questions in the Check for Understanding sections, this provides structures and guidance for preparing students to discuss concepts and content. The student investigation guides teachers to expect students to "write an explanation using evidence collected during their investigation and then share their findings with their peers."
- The materials provide a Teacher Guide for each performance task that provides teacher guidance to support students in using evidence to construct written and verbal claims. These guides provide guidance in Part 2: Writing a Claim for students to support the claim with evidence from the investigation, the Sensemaking Guide, and other learning experiences.
- The materials provide general question stems for supporting student discourse. The materials often state, "To support student discussion, discourse, and argumentation of the concept, some suggested sentence frames might include: I observed the same thing as ... and want to add that I also noticed..., I agree with ... because..., I have a question about..., Can you tell me more about..., I understand your point, and I wonder..."

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

- The materials support and guide teachers in facilitating and sharing the students' thinking. Materials provide several exemplars of student-written responses as well as possible answers to questions in the Check for Understanding sections in the lessons. Materials state that teachers can use the exemplars as a guide to help them facilitate students showing their thinking in a written form.
- The materials provide student pages and teacher guides for engineering challenges, performance tasks, and home connections. The student pages provide structures for students to develop and organize their thinking. The engineering challenge student pages contain specific sections for students to propose solutions and later evaluate and improve their solutions. In the lesson guide for 5.12A the Home Connection section provides a structure for teachers to communicate with students whereby students can share their thinking with someone at home. The teacher instructs students to invite a family member to take a nature walk at home whereby they observe and discuss how living things interact with other living and nonliving things. They even suggest making this discourse a game to see who can find more interactions. This is teacher support for guiding students sharing their thinking, even when they are not in the classroom.
- The materials support and guide teachers in facilitating and sharing the students' thinking and finding solutions. For example, in the teacher guide for lesson 5.6D, students conduct an investigation to explore small particles in a gas. The materials state “to support student discussion, discourse, and argumentation of the concept some suggested sentence frames are.” This is followed by five sentence frames students could use to share their thinking. Also, in Lesson Guide 5.8C, a teacher note provides support for the teacher to guide students in sharing their thinking. The Teach Note in the Establish Relevance section says “The discussion is to continue to build student understanding and connections of how light travels in a straight line and can be reflected, refracted, or absorbed. The discussion will help guide and support students with the descriptive investigations” that come later in the lesson. The materials here provide effective teacher guidance for students to develop and communicate their thinking and solutions.
- The materials provide sentence frames that allow teachers to support students in sharing their thinking. For example, in the lesson for 5.6D, students observe a video of “cloud breath” and develop an initial explanation for this. Students then create a model of their explanation. The next step has students share and compare their models with a partner and use sentence frames to communicate their explanation, such as “The air is visible because. . . , I think this because . . .” These sentence frames guide teachers in supporting students with initiating conversations to share their initial thinking before moving into the lesson focused on how particles of matter are too small to be seen .

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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 as well as the science and engineering practices and 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 access to a *Dynamic Science Assessment Bank* to support the creation of diagnostic assessments to assess learning gains. The Assessment Bank is located within the *Content Mastery* section of the landing page. Educators can create custom assessments for students across different parameters such as the number of questions, item types such as text entry or multiple choice, and dual-coded questions. This customization tool allows educators to predetermine the percent of questions to be dual-coded, with specific TEKS and STAAR 2.0 item types aligned. The materials include a science 5th-grade review section with a STAAR practice test option and concept boosters. Under the concept boosters section, educators can see the list of all the TEKS and lessons covered in the fifth-grade science curriculum by category, along with review materials students can access to review science concepts. Under each lesson, materials include a review assessment, TEKS video, and study guide.
- Materials include examples of formative assessments to assess students. In Grade 5, Category 1, Lesson Guide 5.6A, includes Formative Assessment 1 within the concept mastery section. This assessment includes questionnaires that serve as a guide for assessing the students' understanding of comparing and contrasting physical properties. In Category 2, the Concept Mastery dashboard includes Formative Assessment 1 for the *Equal and Unequal Forces* lesson.

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The formal assessment acts as a diagnostic quiz as its completion unlocks subsequent opportunities for practice such as a TEKS video, Vocabulary practice, and a final summative assessment Formative Assessment 2. In Category 3, Lesson Guide 5.10A lists six different prompts following the teacher directions and a Quick Demo. A variety of response types include discussion and written responses to the prompts. Items 1-6 lend themselves to a discussion format. The Quick Demo provided suggests teachers and students track the weather for five days and create a line and bar graph using the data they gather. After doing the activity as a class, students then create their own line and bar graphs with data from the following five days. Another opportunity for formative assessment is within the Concept Mastery section from the landing page. For example, Category 3, Earth and Space, includes Formative Assessment 1 and Formative Assessment 2 for each TEKS within the category (5.9A, 5.10A, 5.10B1, 5.10B2, 5.10C, 5.11A).

- Materials provide a variety of formats to assess students' learning, including informal assessments. In grade 5, Category 2, Lesson 5.8B, *Electric Circuits*, materials prompt the teacher in the *Engage* section of the lesson with informal assessments to pre-assess students and gauge understanding by engaging students with the following: “1. If possible, show an electric sharpener, a hot plate, or any other electrical object and ask: What allows the electrical object to work? (Electricity moves from the plug into the cord and closes and completes the circuit.) 2. Identify the requirements for the electric sharpener to work. (It needs an electric cord to be connected to a power source, and electricity needs to flow in a complete or closed circuit.) 3. If possible, show a battery and ask: How does this battery help create a flow of electricity in an object? (It stores the energy and completes the circuit.)”

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 consist of TEKS-aligned formative assessments that specifically correspond to the curriculum standards and student expectations. The materials assess all student expectations and indicate which student expectations are assessed for grade 5. For example, materials include an Assessment Bank of questions for each reporting category, different item types, are organized by TEKS, and lesson names. It includes access to all the STAAR 2.0 item types and options to customize the length, TEKS, number of items, % of dual-coded items, and item types. Materials provide a Pacing Document that includes a cohesive scope and sequence that maps out and outlines what will be taught in the third grade and how it will be assessed.
- The materials include TEKS-aligned assessments that align the curriculum standards and student expectations and are designed to measure student understanding and mastery of the concepts and skills taught in the materials. For example, formative assessments within the Concept Mastery section from the landing page are listed by TEKS. For example, Category 3, *Earth and Space*, includes Formative Assessment 1 and Formative Assessment 2 for each TEKS within the category (5.9A, 5.10A, 5.10B1, 5.10B2, 5.10C, 5.11A). Category 4, Lesson 5.12B, *Energy in a Food Web*, includes two formative assessments with different item types, such as multiple choice, drag and drop, and multi-question types. Fifth-grade educators have access to see all the lessons organized by TEKS and the included formative assessments they can toggle on and off.

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

- Materials include assessments that integrate Scientific Concepts and Engineering practices with recurring themes and concepts. In Lesson 5.6D, *Particles Make Matter*, students use a balloon to create a model to illustrate that matter is made up of particles too small to be seen. Students then develop an explanation supported by their model. Students make a claim about the particles inside the balloon and provide evidence to support their claim from the model. Students also use information from the *Sensemaking Guide* and learning experiences to justify their answers.
- Materials include assessments that integrate Scientific Concepts and Engineering Practices with recurring themes and concepts. In Lesson 5.12A, *Ecosystem*, students independently make a claim about how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem and provide evidence to support their claim from the model. Students also use information from the *Sensemaking Guide* and learning experiences to justify their answers.
- Materials include assessments that integrate scientific concepts and engineering practices with recurring themes and concepts. In Lesson 5.8C, *Light Can Reflect, Refract, or Be Absorbed*, students create a model to illustrate how light travels in a straight line until it strikes an object and is reflected, refracted, or absorbed. Students independently make a claim about how light travels in a straight line until it strikes an object and is reflected, refracted, or absorbed and provide evidence to support their claim from the model. Students also use information from the *Sensemaking Guide* and learning experiences to justify their answers.

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

- Materials include assessments that require students to apply knowledge and skills to noble contexts. In grade 5, Category 2, Lesson 5.8C, *Light Can Be Reflected, Refracted, or Absorbed*, students apply knowledge to novel concepts in Formative Assessment 1. The materials include the following questions: "How many reflection and refraction statements are listed on the table?" and "Light behaves differently depending on the object it strikes. Move the answer to the corresponding box." In Lesson 5.8B, *Circuits*, students can apply knowledge to novel concepts in Formative Assessment 1. The materials include the following questions: "In which of the following examples is thermal energy being used?" and "Which object is likely to be a lamp?"
- Materials include opportunities that require students to apply knowledge and skills to a novel context. In Category 3, 5.10C Formative Assessment 1 includes a question that provides images of Earth's landforms. The directions state, "Earth is constantly changing because of different factors like wind, water, and ice. Select two landforms that are caused by flowing water. Select TWO correct answers." This assessment question asks students to apply what they learned about the formation of landforms to new images. Another example of an opportunity for students to apply knowledge and skills to novel context is included in 4.11B Formative Assessment 1. Question 4 presents a scenario where a fourth-grade class has set up a recycling project and collects recyclable items. Through this novel scenario, students are asked, "Which of the following is a positive impact that will stem from this project?" This assessment question allows students to apply knowledge to a new context.
- The materials include assessments that require students to apply knowledge and skills to novel concepts. In Category 5, materials make use of the scientific knowledge needed to understand the concept by providing students with short constructed response practice items where they

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use knowledge and skills learned in the lesson to apply to the new context. In Formative Assessment 2, students are asked, “What would happen to the nests on the trees if humans began to destroy the wooded area to create a road?” By constructing a short response, students make use of the knowledge learned in the lesson and apply their understanding to novel contexts.

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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 student's needs, in all areas of science, based on measures of student progress appropriate for the developmental level. Assessment tools yield relevant information for teachers 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.

- Materials include information and/or resources that provide guidance for evaluating student responses. The Teacher's Guide includes a link to a document for Science Writing/CER. The document shows a scoring rubric for a Short Constructed Response. The Science Writing/CER module also includes a rubric and short constructed responses.
- The materials include rubrics that provide guidance for evaluating student responses. In the Teacher Edition of the lesson for TEKS 5.6D, in the *Performance Task* section, "Students use a balloon to create a model to illustrate that matter is made up of particles too small to be seen." This challenge includes a Teacher Guide and Rubric link to guide the activity but also provides guidance for scoring student products using the provided rubric.
- The materials provide sections within the lesson with guidance for evaluating student responses and checking for student understanding during the lesson. For example, Lesson 5.6D includes a Check for Understanding section in the lesson guide that provides questions for the teachers to ask students to determine progress. Each of these questions provides a sample response; this guidance helps teachers evaluate student responses to the questions, and the nearby Teaching Note asks teachers to "use student responses to identify misconceptions, instructional needs... and to make instructional decisions that meet individual student needs."

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

- The materials provide assessment tools that result in data reports teachers can use to track student progress and respond to individual needs. Teachers can generate reports for Concept Boosters and Vocabulary Boosters. The downloadable reports can be generated for individual students or entire classes. Under reports in Content Mastery, a teacher can see first-attempt, vocabulary, and second-attempt scores by TEKS, individually or by class. Teachers can export the report into a spreadsheet and manipulate the data with colors or groupings.
- Teachers can use the “Teacher Reports Dashboard” to view students’ scores on the Concept Mastery and Vocabulary Mastery activities. The reports are divided by Reporting Category and broken down by each lesson guide and standard. Teachers can download reports for each Reporting Category onto an Excel spreadsheet. The reports show student names and scores on each standard assessed in the Reporting Category. For example, in grade 5, category 2, the *Concept Mastery* dashboard for lesson 5.8A, *Transformation of Energy*, shows the Vocabulary before Formative Assessment 2. The students must earn 80% or higher in their Vocabulary assessment before accessing Formative Assessment 2.
- The materials include a document titled *Differentiation and Acceleration*, where teachers have access to lessons and formative assessments they can toggle on and off to assess students' understanding of the scientific concepts in grade 2 or 3. This vertical access provides teachers with data on how the students may be doing and a resource that may be used in response to student progress.

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

- Materials include tools that yield relevant information for teachers when planning instruction, intervention, and extension. The *Assessment Bank Guide* linked in the Teacher’s Guide indicates that class and student-level reports are automatically created when an assessment is generated from the Assessment Bank. The bank allows teachers to create assessments based on TEKS and by reporting categories. In addition, this tool generates information that teachers can use when planning interventions for on-grade-level and below-grade-level TEKS, where students can be pulled based on their scores.
- Materials include a Concept Mastery management tool that allows teachers to review and organize student data to differentiate science instruction according to assessment results. In grade 5, materials allow teachers to download a *Concept Mastery* student report based on the reporting category from the Teacher Reports Dashboard. For reporting category 2, this report generates student data for the following student expectations: 5.6A, 4.6A, 5.6B, 4.6B, 4.6C, 4.6D, 5.6C, 5.6D. The report also includes three data points for each expectation per student, titling them 1st, VB, and 2nd. In addition, materials allow teachers to download a *Vocabulary Mastery* student report based on the reporting category from the Teacher Reports Dashboard. For reporting category 2, this report generates student data for the following student expectations: 5.6A, 4.6A, 5.6B, 4.6B, 4.6C, 4.6D, 5.6C, 5.6D. The computer-generated report color codes based on their performance and can aid teachers in organizing student data and planning differentiated instruction. These tools and reports can be used by teachers to effectively plan instruction, intervention, and extension activities for all learners.

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

- Materials provide teacher guidance on leveraging different activities to respond to data. In grade 5 category 1, Lesson 5.6D *Particles Make Matter*, materials provide direct instruction of science concepts in the *Investigate and Learn* section. Materials provide potential student misconceptions and a guide on responding by having educators “Consider addressing and correcting these misconceptions using the *Apply and Extend* activity PHET Simulation: States of Matter and Writing in Science: Balloon Animal CER.” Materials provide brief explanations of these activities and provide teacher guidance explaining how resources can be used to support and integrate to address gaps in learning.
- Materials provide teacher guidance on leveraging different activities to respond to data. In Lesson 5.12A, *Ecosystems*, materials provide direct instruction on science concepts in the *Investigate and Learn* section. Materials provide potential student misconceptions and a guide on responding by having educators “Consider using the *Investigate and Learn* Student Investigation: Identify abiotic and biotic relationships to address these misconceptions.” Materials provide brief explanations of these activities and provide teacher guidance explaining how resources can be used to support and integrate to address gaps in learning.
- Materials provide teacher guidance on leveraging different activities when the student data indicates a deficit in understanding vocabulary terms. There are ways to support Emergent Bilingual students by leveraging their first language and building connections to words that are cognates. From the Landing Page, Science Literacy Link, a cognate list can be accessed by the educator, and a digital component is included for students.

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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.	PM
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

Partial Meets | Score 1/2

The materials partially meet the criteria for this indicator. Assessments are partially 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 partial 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.

- Assessments are designed to accurately evaluate students' understanding of grade-level concepts in a scientifically precise manner that are accurate, avoid bias, and are free from errors. Grade 5, Category 1, includes an assessment of over 5.6D *Particles of Matter*. The assessment includes items that provide an accurate depiction of matter as the interactions between boiling points and how matter undergoes changes in states. Another example includes an assessment of 5.6 C *Solutions*. The assessment includes items that provide an accurate depiction of solutions, such as the interactions between honey and water and what type of mixture it creates when combined. These assessments are scientifically accurate.
- Assessments contain items that are scientifically accurate, avoid bias, and are free from errors. In Category 2, *Formative Assessment 1* over 5.8B, *Circuits*, the assessment accurately states that "electricity cannot flow through an incomplete or open circuit." Another example from this assessment accurately describes a "parallel circuit as one with more than one pathway for electricity to flow." Both of these assessment items are scientifically accurate.
- Formative and summative assessments include assessment items that align with taught objectives and present grade-level content and concepts, science and engineering practices, and recurring themes and concepts in a scientifically accurate way. In Category 3, *Formative Assessment 1* over 5.10B1, in the *Content Mastery* section, depicts a real-life image of a rock with sedimentary layers. This stimulus represents sedimentary rock in a precise way and is scientifically accurate. Another example, 5.10B2 in the Lesson Guide *Check for Understanding*,

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states, “What are fossil fuels? Fossil fuels are formed from the remains of ancient plants and animals over millions of years. Oil, coal, and natural gas are examples of fossil fuels.” The definition provided for teachers to evaluate student responses defines the concept in a scientifically accurate manner.

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

- Assessment tools utilize visual aids such as clear pictures and graphics that are developmentally appropriate for grade 5 throughout the curriculum. In Category 1, lesson 5.6D *Study Guide*, assessment items incorporate images that effectively demonstrate particles that are too small to be seen. Another example in the Lesson 5.6C Vocabulary assessment includes assessment items incorporating images that effectively demonstrate sports equipment and its relation as a type of mixture. These visuals in both lessons provide a visual context and enhance the clarity of the assessment process.
- Assessment tools use clear pictures and graphics that are developmentally appropriate. In Category 2, *Formative Assessment 1* over 5.8B, *Circuits*, the materials use a model of a circuit to show the flow of energy within its path. Students are asked to utilize the image to identify which light bulbs will remain lit if a wire is cut. Another example is *Formative Assessment 1* over 5.8C, *Light can Reflect, Refract, or be Absorbed*. This lesson includes six images that illustrate how light behaves differently depending on the object it strikes. Students move the corresponding answer to each image. In both of these lessons, materials include pictures and graphics that are clear and developmentally appropriate.
- Assessments contain clear pictures and graphics. In Category 3, Lesson 5.11A, *Formative Assessment 2* provides graphics and images that are clear for the student. The images are used to support a question about students creating their own compost. The materials use real-life images that are easy to interpret for a grade 5 student. The images in *Vocabulary Assessment 5.10C* depict Earth's landforms and forces with real-life images or computer-generated graphics that are developmentally appropriate for students in grade 5.

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

- The materials provide partial guidance for teachers to consistently and accurately administer assessment tools. The *Dynamic Teacher Resource Guide* includes a document titled *Concept Mastery*, where educators access a guide on how to administer the assessment tool, along with a picture and description of where to find it and how to turn it on. The materials include a step-by-step with arrows and a description guide that shows educators how to start the assessment tool. Even though the materials include general guidance on how to activate the assessment, the materials do not provide specific guidance to ensure consistent and accurate administration of the assessment tools. They lack support for the most effective methods of administering the assessments and do not offer guidance on how to collect consistent and purposeful data. Materials lack guidance about how to score the new item types included in the curriculum. Materials do not consistently include rubrics throughout the curriculum and are only found in the *Science Literacy* section.
- Materials provide partial guidance to ensure consistent and accurate administration of assessment tools. In grade 5, Category 2, teachers can access online asynchronous teacher training courses in the Training tab. These courses provide an overview of the assessment, scoring procedures, answer key, and acronym key if needed. However, the training does not provide information on the most effective methods of administering the assessments or how to

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collect consistent and purposeful data. This could be beneficial for teachers seeking to optimize their assessment practices.

- Materials include partial guidance to administering assessment tools and lack information about when assessments occur during the unit and how they are scored. For example, the grade 5 Scope and Sequence provides an overview of days per unit and breaks down the minutes per activity for each TEKS within a Scheduling Lessons Guide. A time duration for proctoring the Formative Assessments is indicated within the guide, yet it lacks guidance on a timeline of when to give the assessment to students.

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

- The materials offer accommodations for assessment tools so that students of all abilities can demonstrate mastery of learning goals. The materials include a guide for Accommodations, Accessibility, and Designated Supports within the Teacher's Guide. This guide supports educators by providing a list of accessibility features and designated supports, as well as an annotated student interface that shows how students would access these tools. An annotated teacher screen shows how teachers enable designated support for students. A summary details when teachers may use these supports, such as aligning with 504, SPED, and EB state guidelines.
- The materials include both accessibility features and designated supports such as Bilingual Dictionaries, Reading Assistance for Short Constructed, Response Items, Notepad, Highlighter, Calculation Aids - Digital Calculation, Content, and Language Support, and individualized Structured Reminders. In grade 5, Category 1, the formative assessments incorporate a text-to-speech feature within the web-based assessment platform. By utilizing a play symbol cursor, students access a digital text that is read aloud to them, enabling a more accessible and inclusive assessment experience. Materials offer a speech-to-text software feature students use to orally dictate responses on an assessment. Highlighting, bookmarking, note-taking, and zoom tool features are available to help all students plan a response for each question.

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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

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

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

Evidence includes but is not limited to:

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

- The materials include teacher guidance for scaffolding instruction and differentiating activities for students who have not yet achieved mastery throughout the curriculum. In grade 5, Lesson Guide 5.6D, *Particles Make Matter*, in the "Apply/Extend" section, teacher notes provide targeted instruction and tailored support. For example, "Encourage students to use academic vocabulary from the word wall and consider providing a graphic organizer to students who need additional support organizing their ideas before creating the comic strip. Students may read and research over several days depending on the depth and complexity of the research project."
- The materials include teacher guidance for scaffolding instruction and differentiating activities for students who have not yet achieved mastery throughout the curriculum. In Lesson 5.11A, *Ecosystems*, the "Investigate and Learn" section provides teacher's notes guidance, customized assistance, and teacher's instruction geared towards enhancing comprehension and engagement among differentiated groups of students. Teachers create a word wall with students as new academic vocabulary words are introduced throughout the lessons. This wall can be revisited as students engage with their Phenomenon Sensemaking Guide and participate, using student responses to identify misconceptions, instructional needs, and lingering misconceptions and to make instructional decisions that meet individual student needs.
- The materials include teacher guidance for scaffolding instruction and differentiating activities for students who have not yet achieved mastery throughout the curriculum. Teachers have the ability to access the previously covered TEKS in order to scaffold learning for students who have not yet mastered it, yet it is not targeted or specific to the lesson. Materials provide a lesson guide that includes a Concept Mastery table that allows teachers to approach the lessons in a guided manner from one grade level to the next, yet materials scaffolds are on grade level to

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target misconceptions in a clear and specific manner. These resources assist teachers in scaffolding instruction and differentiating activities to ensure all students can progress toward mastery.

Materials provide enrichment activities for all levels of learners.

- Materials provide enrichment activities for all levels of learners. The materials include an Apply/Extend section within each Lesson Guide. Some activities in this section enrich student understanding through exploration beyond the key concept. For example, in grade 5, the "Differentiation and Acceleration" resource provides teachers with an outline of accommodated guidance activities specifically designed for students. This resource allows teachers to easily access and view the activities that cater to the individual needs and abilities of their students.
- Materials provide enrichment activities for all levels of learners by utilizing various learning strategies. In grade 5, Category 2, Lesson 5.8A, the Apply/Extend section, students read a short passage titled "For Sale," which discusses professions that utilize thermal imaging cameras and how they benefit society. Students conduct research on the topic and create a presentation for the class. For example, in grade 5, Category 3, Lesson 5.8C, the Apply/Extend section, students make a landform with clay to model and describe slow changes to the Earth's surface caused by weathering, erosion, or deposition from water, wind, or ice. For example, in grade 5, Category 4, Lesson 5.12B, the Apply/Extend section, students write a paragraph in their journal to explain what happens after an ecosystem is harmed by fire. These activities are accessible and provide enrichment to all learners.

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

- The materials include teacher guidance for scaffolding instruction and differentiating activities for students who have not yet achieved mastery throughout the curriculum. In grade 5, Lesson Guide 5.6D, *Particles Make Matter*, in the "Check for Understanding" section, materials include suggested immediate and specific feedback to help learners identify their strengths and weaknesses. The lesson includes questions with answers, including "What are some examples from your life where water vapor is in the air around you? Student answers will vary but may include ideas about steam, and humidity, or students may make connections to water vapor evaporating in the water cycle before condensing to become fog or clouds.
- The materials include teacher guidance for scaffolding instruction and differentiating activities for students who have not yet achieved mastery throughout the curriculum. In grade 5, Lesson Guide 5.8C, *Light Can Reflect, Refract or be Absorbed*, materials include suggested immediate and specific feedback to help learners identify their strengths and weaknesses. An example in the context of this lesson includes teacher notes with prompts such as "Support student sensemaking with responsive questioning that will help individual students confirm and correct their understanding of how light travels."
- Materials include guidance for scaffolds and just-in-time learning to scaffold learning. For example, in grade 5, Category 2, Lesson 5.8B, the materials provide a series of questions to check for understanding, such as "What are fossils?" and "What information can fossil evidence provide?" Materials provide general discussion questions for all students to use during an activity and prompt teachers to monitor students and ask them questions as the activity progresses. Further guidance is provided or cues to help learners who are stuck and provide questions to ask a student who is struggling with a task.

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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

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

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

Evidence includes but is not limited to:

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

- The materials engage students in the mastery of the content through a variety of developmentally appropriate instructional approaches and provide various opportunities for students to participate in inquiry-based learning activities. The materials lesson guide commences with an *Engage* activity to support the introduction of each TEKS throughout the curriculum.
- The materials include a variety of developmentally appropriate instructional approaches. Category 1, Grade 5, *Matter and Energy lesson guide*, includes the lesson *Properties of Matter* "Smart Eposter Visual." In this specific example, the teacher initiates student engagement by checking for background knowledge of the concept through a short activity that promotes interest and establishes relevance. In Category 3, Lesson 4.11B, students work in groups on a board game designed to reflect the core vocabulary for the lesson. This is an opportunity for students to partake in an educational game-based learning opportunity where they apply scientific knowledge and allow for active engagement. In Category 4, Lesson 5.12C, students complete the activity *4 Corners*. They complete a graphic that includes a word, sentence,

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definition, and illustration to develop vocabulary. These activities reinforce student engagement and mastery of the content.

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

- Materials consistently support flexible grouping opportunities throughout the curriculum to support student learning and engagement. The *Lesson Guides* include options for partners, small groups, and whole group instruction. In Category 1, Grade 5, *Matter and Energy* lesson guide for the Engage activity, the teacher starts by conducting a whole class warm-up session that addresses an illustration related to the topic. Following the warm-up, the students are divided into groups of three, with each group representing particles of solid, liquid, and gas.
- The materials include support for flexible grouping. In Grade 5, Category 2, Electric circuits lesson guide in the Apply/Extend activity, the teacher divides the students into groups. Then, each group is assigned a statement to discuss related to circuits. After the group discussions, the students are paired up to create a graphic representation of closed and open circuits. In Category 2, Lesson 5.7B, the teacher assigns partners or groups to research and design an experimental investigation for magnetism, friction, or gravity. In Category 3, Lesson 4.11B, students complete the Study Guide in partners or triads. In Category 4, Lesson 4.12A, the teacher divides the class into two groups to play the game Dunk the Ball to review core vocabulary. These activities consistently support flexible grouping of students throughout the curriculum to support student learning and engagement.

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

- The materials support multiple types of practices and structures and guidance on how to effectively implement multiple instructional structures. In Grade 5 Lesson 5.6D, *Ecosystem*, each activity within the 5E model arrangement employs icons to facilitate appropriate grouping for the intended learning outcomes. For instance, in the "Engage" section of the lesson, the activity titled "PHENOMENA: CLOUD BREATH," an icon is utilized to visually represent the recommendation for students to work in groups to observe the "Cloud Breath" video of Kate the Chemist demonstrating how to turn air into a cloud. Students then draw a model to explain their initial ideas about what could explain the cloud breath from the video.
- The materials support multiple types of practices and structures and guidance on how to effectively implement multiple instructional structures. In Lesson Guide 5.12A, *The 3 Rs*, in the "ESTABLISH RELEVANCE" section of the 5E model arrangement, the distinctive icon represents a student in a pair setting. This icon has been placed to support the formation of suitable pairs for achieving the desired learning outcome. In this context, the whole group icon serves as a visual representation of a collaborative investigation aimed at conducting field observations by walking around the school grounds to look for biotic (living) and abiotic (nonliving) factors, such as features or patterns in their environment.
- The materials support multiple types of practices and structures and provide guidance on how to effectively implement multiple instructional structures. In grade 5, Category 1, Lesson 5.6B provides direct teaching in the Teach and Discuss section over mixtures and separating the mixtures. The lesson includes opportunities to engage in collaborative learning in the Vocabulary and Apply/Extend section of the lesson.

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

- The materials represent a diversity of communities using images and information that are respectful and inclusive. Materials contain images and real-world examples, and connections throughout the materials represent a diversity of communities and places, including rural, urban, and suburban communities, cities and states across the U.S., and countries around the world. Depictions of places are respectful and inclusive, with an emphasis on community strengths, resources, and unique characteristics.
- The materials represent diversity in images and information about people and places. In the grade 5 Eposter on *Conserving Natural Resources* illustration, the images portray a wide range of individuals encompassing diverse genders, races, ethnicities, and national origins. These images are carefully designed to incorporate various characteristics such as race, ethnicity, skin tone, gender identity and expression, age, disability status, body size and shape, and hair texture. In Category 2, 5.6A *Formative Assessment*, question 1 uses gender-neutral terms such as "a science student." In category 4, 5.13B, the TEKS Video depicts a diverse range of individuals from differing backgrounds.

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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

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

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

Evidence includes but is not limited to:

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

- The materials include an ELPS document for each TEKS. This document provides opportunities for teachers to support students with consideration of their language proficiency. For example, TEKS 5.6A ELPS supporting document includes ways for students to engage with the academic vocabulary in a variety of ways. Students in the Beginning stage of acquisition complete a sentence stem that states, "Items with a greater...will sink in water." For students in the Intermediate stage, students will complete sentence frames and read them to a partner, as well as create task cards for a game. For the Advanced stage, students compare objects but are not prompted to respond orally or in writing. Students who are Advanced High will compare and contrast physical properties through writing.
- The grade 3 materials include guidance for linguistic accommodations. The teacher manual incorporates various scaffolds specifically designed for emergent bilingual (EB) students. These scaffolds include visual aids, sentence stems, graphic organizers, anchor charts, and manipulatives. The materials include a video with a spoken voice-over explaining critical content knowledge with images and examples.
- The materials include opportunities for listening commensurate with various levels of English language proficiency in the Science Videos accessed through the landing page. For example, Video 5.6D includes animated images that support student acquisition of vocabulary while simultaneously providing spoken information about the topic.
- The materials include the opportunity for reading commensurate with various levels of English language proficiency in the *Science Literacy/Vocabulary Mastery* accessed through the landing

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page. For example, Vocabulary Practice 5.7B provides images and sentence frames with the opportunity for students to pick the correct vocabulary term from a drop-down menu to complete the sentence. The *Concept Teacher Edition* for all categories includes a mini-lesson navigation with key content vocabulary words with definitions and illustrations. In these slides, teachers can see the key elements of each concept, such as the energy in a food web example, with words such as consumer, decomposer, and ecosystem.

- The materials include the opportunity for written communication commensurate with various levels of English language proficiency in Differentiated Science Writing accessed from the landing page. The differentiated writing opportunities include an Engage Video and different access points based on the English language proficiency (beginner, intermediate, advanced, and advanced high) of the writer. For example, provided with the same image, four different questions are posed based on English language proficiency. The four questions scaffolded for Earth's Changing Surface are: Beginner- "How does the land change near the ocean? Land near the ocean..." Intermediate- "How do volcanoes form new rock? Volcanoes form new rocks when..." Advanced- "Describe the layers of rock in the photo. The layers of rock are..." Advanced High- "Do you think the fossil is of a fish that died recently, or a long time ago? Explain. The fossil is..." These activities provide guidance to support the various levels of English Language Learners in Linguistic accommodations.

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

- Materials include Multilingual Newcomer Lessons within the Science Literacy/Vocabulary Mastery component to support the strategic use of students' first language as a means to development in English. This resource provides lesson plans, word lists, study guides, and home practice in the following languages: English, Spanish, Arabic, Burmese, Simplified Chinese, Traditional Chinese, Hmong, Korean, Nepali, Persian-Farsi, Portuguese, Somali, and Vietnamese. The Foundational Skills Lesson Plans direct teachers to: "Allow students to respond to the Worksheets initially in their home language. Then help them respond in English."
- The "Dual Language Connections" section in the *Summit K12 Teacher's Guide* outlines the research foundations and ways the program fits a dual-language framework by designing materials in both English and Spanish rather than translating or transadapting materials.
- The Science Writing component includes a Science Cognates section with "context images and sentences, professionally recorded audio in both English and Spanish and the ability for students to speak and record themselves repeating the context sentences." Students view an image, listen to the context sentence first in Spanish and then in English, and record themselves reading it.
- Materials encourage students' academic development of English through the Science Cognates component of the *Science Literacy* section. In Science Cognates, Section 1, students are provided with visual cues and recording tools to first say in Spanish, "Escuchamos la musica en el coche," and then say it in English: "We listen to music in the car."

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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

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

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

Evidence includes but is not limited to:

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

- The materials provide information to be shared with students and caregivers about the design of the program. For example, in grade 5, under the *Dynamic Science Teacher Guide*, a link titled *Home to School Connection* outlines several key program tools caregivers can use when working around science concepts covered in class. This document contains all the core vocabulary words the students need to understand and is organized by reporting categories. Also included in *the Home to School Connections*, materials provide a Vocabulary section, a Field Investigations at Home section, a Science Literacy at Home section, and a Studying the TEKS at Home section, which provides a few quick activities that can be used to support their child at home as they learn science.
- The materials provide an overview of the design of the program available through the *Teachers Guide* called the Online Course Site Map. This document provides a summative overview of the program design and its features, among other things. This resource provides a way for students and caregivers to gain more information about the design of the program.
- Materials provide guidance for students and caregivers on how to access the program at home and to show students' progress. In the *Teacher's Guide*, a *Student Road Map* supports introducing the basics of accessing the program features and what is available with the program. The slides support navigation of the links on the landing page: Science Videos, Concept Mastery, Science Literacy/Vocabulary Mastery, and Scientific and Engineering Practices. The materials include Parent/Guardian Letters Examples that can be accessed from the *Teacher's Guide*. A sample letter includes a general introduction to the Summit K12 materials for caregivers. It also includes more in-depth navigation support for logging into the program from home. The letters

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are provided in both English and Spanish. These resources reinforce student learning and allow a way for the parents to stay connected with the student's learning and curriculum.

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

- Materials encompass comprehensive guidelines for teachers to effectively communicate with caregivers regarding the use of Summit K12 to reinforce how they can help student learning and development. In 5th grade, materials include teacher guidance for communicating with caregivers about the importance of the educational support provided by the student's caregivers. Getting involved with children's education shows your children that you care about their school goals. Encourages the family to be involved with their child's education. They feel the support and do better at school. The *Teacher's Guide* provides a Home to School Connection link to support linking learning between school and home.
- The materials provide information to be shared with caregivers for how they can reinforce student learning and development. In grade 5, category 2, Lesson 5.8B materials provide a Home Connection activity where students explain to a family member about open and closed circuits. Then, students identify some examples of circuits around and in their homes and explain how they transform energy. In Lesson 5.8C, materials provide a Home Connection activity where students observe how light behaves with different objects and demonstrate how light travels in a straight line until it strikes an object. Materials then ask students to explain to a family member how light travels in a straight line until it strikes an object.
- The materials provide information to be shared with caregivers for how they can reinforce student learning and development. For example, when students work on organisms and environments in category 4, the materials under the HomeSchool Connection denote examples caregivers can use at home to connect literacy with the current TEKS the child is learning at school. One example asks caregivers to visit a library and read about how human activities can be harmful or beneficial to an ecosystem. Lesson guide 5.12B includes a section titled Home Connection, where caregivers are asked to work with their child to talk to a family member about how a natural disaster has affected the cycle of matter and animals. These activities provide at-home practice for caregivers to help reinforce student learning and development throughout the curriculum.

Materials include information to guide teacher communications with caregivers.

- The *Dynamic Teacher Guide* includes a section for a generic letter format and information the school can use to communicate to caregivers the program's purpose and how to access its online features. This resource also includes a Parent/ Guardian letter detailing the benefits of the program and basic components of the program. The "Connections to Home" section provides suggestions on how to establish a relationship by incorporating "Field Investigations at Home." By providing these comprehensive resources, the materials aim to foster ongoing communication and partnership between teachers, caregivers, and students while facilitating the sharing of progress updates.
- The Teacher's Guide Home to School Connection link includes teacher guidance and support for clear communication of the TEKS required for student mastery at grade level. The materials offer a letter with ideas of how to accelerate learning, a brief overview of the big ideas of the TEKS, and visuals of the TEKS with Vocabulary Boosters. The information to guide teacher communications with caregivers can be found in the Teacher- Getting Started link located in the

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Teacher's Guide. This guide provides teachers with a sequence of orientation to the material's resources.

- The materials include a "Parent/Guardian Letter" in the *Summit K12 Teacher's Guide* that provides information to guide teacher communications with caregivers. The instructions state, "The attached letter is an example of one that you may send home to the parents or caregivers of your students to introduce them to the [program] K12 Science resources. We suggest sending the letter below, as well as instructions for how to access the program from home, through the district's LMS or portal."

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

Partial Meets | Score 1/2

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

Evidence includes but is not limited to:

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

- Materials are accompanied by a cohesive Scope and Sequence and Pacing Guide linked on the Teacher Resource page for grade 5. The scope and sequence shows an overview of the year as well as an outline of the lesson order with days needed for instruction. For example, the Pacing Guide is organized by reporting category, TEKS, lesson title, and suggested time. This scope and sequence shows clear alignment with the TEKS and English Language Proficiency Standards (ELPS) that includes unit and lesson progression.
- In the Concept Mastery 4th document, the teacher is presented with TEKS that align from one grade level to the next.

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

- The materials provide little clear teacher guidance for how activities and experiences connect concepts and SEP. The lessons draw no clear connections for teachers in any of the teacher guides. However, the materials include a 5th Grade Texas Essential Knowledge and Skills, Science and Engineering Practices-Recurring Themes and Concepts Crosswalk, where a graph shows the SEP concepts covered all year long, which are aligned with the TEKS.
- Lesson guides provide little guidance for facilitating engineering practices. However, the specific TEKS for these are listed at the beginning of each lesson, and there is a one-page engineering practices sheet for students. This does not provide true guidance to teachers within each lesson.

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While no teacher guides provide guidance for facilitating engineering practices, many provide guidance for vocabulary development.

- The materials provide minimal teacher guidance to help students make connections over the course of the year. The connections, when they occur, do not appear purposeful. In the 5.12B, *Energy in a Food Web* Teacher Guide, there are no specific connections made to what students should know from previous learning about food chains/web and the cycling and conservation of matter.

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

- The materials provide a review and practice of knowledge and skills spiraled throughout the year to support mastery and retention. For example, in Category 2, a table represents the vertical alignment between grade levels.
- Practice opportunities build on previously taught science knowledge and skills. For example, the grade 5 lesson guide provides opportunities for students to revisit concepts in the review and evaluate sections.
- The Lesson Guides within the Category 1 include a review of previously taught science knowledge and skills. For example, lesson grade 5.8A, titled Transformation of Energy, shares the same definition of closed circuit. Another pair of lessons in 5.6B share the same definition of mixture. This provides a consistent and repetitive review of terms to support student mastery of key concepts.

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

Partial Meets | Score 1/2

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

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

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

- The materials are organized in a way that facilitates ease of implementation and use, including the accessing and storing of materials. For example, under *Category 2*, provide teacher guidance to implementation of the lessons presented for specific TEKS.
- Materials contain an implementation guide with a visual map of the recommended sequence of lesson implementation and length of time for each section of the lessons. In the Scope and Sequence, a chart outlines a time allotment for 10 minutes to discuss misconceptions. For example, a Lesson Guide states, “The teacher will review the misconceptions with the class and allow time for them to ask questions as needed.” This is followed by 2 bullet points that list misconceptions. Materials include a Teacher Roadmap linked in the Teacher’s Guide.

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

- Materials include science standards correlations for units, lessons, and activities within the context of the grade level. For example, each unit includes a Lesson Guide with the TEKS

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alignment. For example, in the Teacher's Guide, Launch Pad, Lesson Guide 5.6A, it states the TEKS aligned to the lesson objective 5.6A. There is also a list of scientific and engineering practices (SEP) that are connected to the lesson.

- Materials include cross-content standards, including for ELA, math, and social studies within the context of the grade level. The materials include a section on Science Literacy. Within this section, there are cross-content connections to ELA standards, including Cross-Curricular Passages. This provides students with opportunities to practice reading strategies. The Science Writing Skills include opportunities for writing about specific science standards. Materials include a comprehensive list of all equipment and supplies needed to support instructional activities.

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

- The Teacher's Guide includes a "Materials Lists and Lab Inquiry Kits" resource within the Scientific and Engineering Practices section, which lists materials for all lab investigations in the grade level. Teachers also can access guidance documents for lessons and lab investigations by reporting categories that include lists of necessary resources and materials. However, it should be noted that while materials include this chart of materials needed for lab investigations across the year, materials do not include a comprehensive list of equipment and supplies commensurate with TEA recommendations for Grade 5.
- The materials contain a list of equipment and supplies necessary for a particular lesson, including the engagement piece, investigative lab, and extension. Inside each Lesson Guide is a comprehensive materials list that contains all the materials needed for each activity within the lesson. For example, in the 5.8B Lesson Guide, materials include equipment and supplies that support instructional activities for the grade level, which include: Digital Resources, Printable Resources, Optional Resources, and Lab materials.
- Grade 5 materials include individual lists for lab investigations within the lesson guide. For example, the 5.6B Lab Guide materials list includes "4 plastic cups, iron filings, sand, water, pebbles, toothpicks, goggles, cereal (with marshmallows), tweezers, magnet, strainer, tongs, coffee filters, hand lens, and extra cups."

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

- Materials provide student guidance for safety practices and the grade-appropriate use of safety equipment during investigations. For example, the Student Lab guide includes safety information pages for student reference and recall of safety practices during experiments.
- The Teacher Edition, Category 2, Student Lab 5.8C, and Teacher Lab include general guidelines for student safety. These guidelines state, "Students will demonstrate safe practices and the use of safety equipment during classroom and field investigation as outlined in Texas Education Agency-approved safety standards. Students will clean their area after completing the investigation." The materials include some guidance for safety practices and grade-appropriate use of safety equipment.
- The Teacher's Guide includes a safety contract with a list of safety statements. The form provides the opportunity for students and parents to sign in agreement with the safety statements.

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- Materials include student guidance for safety practices and grade-appropriate use of safety equipment during investigations. Materials include a Teacher Notes section detailing guidance on pre-laboratory procedures and safety precautions as routine for the lab when applicable. Student-facing materials include guidance for safety practices and the use of equipment during investigations in the Safety section of Lab Guides. For example, in grade 5, category 4, lesson 5.12B, the Safety section of the Lab states, “Students will demonstrate safe practices and the use of safety equipment during classroom and field investigations as outlined in Texas Education Agency-approved safety standards. Students will clean their area after the investigation.” For example, in grade 5, category 3, lesson 5.10B, the Teacher Notes section of the Lab states, “For safety reasons, students should keep their distance from the hot plate.” All lesson labs include a safety section that is expected for students to follow. For example, the Teacher's Guide includes a Safety Contract with a comprehensive list of safety statements. The form provides the opportunity for students and parents to sign in agreement with the safety statements. The Safety Contract is found throughout all grade level bands (3-5).

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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.

- The materials include a TEKS Pacing Guide and Scope and Sequence to support scheduling considerations for block and traditional scheduling. Materials also include guidance on suggested time for laboratory and field investigations. The scope and sequence provided is designed to be flexible and includes additional instructional opportunities. For example, TEKS 3.6A has a suggested 30-day cycle. The materials describe days of pacing per TEKS and include a minute-by-minute breakdown per activity.

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

- The materials include units, lessons, and activities for a full year of instruction and ensures that all TEKS are addressed. For example, the Pacing Guide contains an overview document providing teachers with considerations for planning instruction at the unit and lesson levels.
- The materials state that the total amount of days and minutes required may vary depending on the grade level and the complexity of the concept being studied. For example, the Scope and Sequence and Pacing Guide states, "Only 150 days have been planned out of the 180 school days, though this course includes more than enough material to cover the full 180 days of instruction." On average, units in the materials have a duration of 20-40 days.
- The materials delineate the order of units to ensure students learn about precursor concepts prior to moving to higher-level concepts. In grade 5, the materials have students classify matter by its physical properties prior to classifying matter by these properties. The materials have

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students communicate solutions to protect our natural resources once students are able to articulate what natural resources are and how they are or might be threatened.

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

- The materials provide units, lessons, and activities for a full year of instruction and ensures that all TEKS are covered.
- Materials include a Year at a Glance section that provides a pacing decision-making table. This chart provides estimated time allotment for the corresponding reporting categories. The materials include a sufficient amount of lessons and activities to support a full academic year of learning. For example, the document states, "Only 150 days have been planned out of the 180 school days, though this course includes more than enough material to cover the full 180 days of instruction." This time frame allows for differentiation and acceleration as needed.

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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.

- Materials include an appropriate amount of white space and an overall design that does not distract from student learning. For example, under the *Teacher edition Launchpad*, the lessons are organized by reporting categories along with TEKS and lesson titles. The student labs are organized by TEKS, lab titles, and subtitles that make it easy for students to follow along with the lesson. Titles such as questions, materials, procedures, and records support student learning.
- Student study guide materials include an appropriate amount of white space and an overall design that does not distract from student learning. In Grade 5, Category 1, lesson 5.6A, *Compare and Contrast Physical Properties*, the student study guide materials include an appropriate amount of white space and overall design that does not distract from student learning. The guide is clear, with titles and headings that are prominent and clear; sections are marked with subheadings.
- Formative Assessment materials are appropriately designed to support student learning. In grade 5, category 2, Formative Assessment 1 for Lesson 5.7B maintains one question per page to not distract the learners. The software provides tools students can use to annotate text (such as highlight, strikethrough, etc.) and pointers while reading digital text. When text is read aloud by the computer, diction is loud, clear, and easy to understand. The formative assessments bold the question and provide appropriate spacing between answer choices to separate them. Accessibility features included within the Formative Assessments are designed to be easily located but not a distraction from the primary task of taking the assessment. The *Lesson Launchpad* is designed so that teachers can locate important information easily for planning and

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implementation. Digital materials include links to previous lessons and materials teachers can access to support differentiated learning within units.

- Materials are appropriately designed to support student learning. In Category 3, student materials include the following: Clear buttons to navigate to the different sections with clearly defined labels such as *Science Videos and Animations*. Titles of different categories are clearly labeled once a student has navigated to a learning section such as *Category 1*. Rows for different concepts alternate with dark and light blue to support students in navigating to the correct content.

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

- Materials embed age-appropriate pictures and graphics that support student learning and engagement without being visually distracting. Each Category within the instructional resources provides E-Posters to aid in the instruction of scientific concepts. These posters incorporate age-appropriate pictures and graphics to support student learning. In Grade 5, Category 1, Lesson 5.6B, e-posters include vocabulary cards with clear and authentic images and graphics to define and support the new words students are learning. The practice for Vocabulary Mastery provides a variety of images that are magnified and clearly show an example of the targeted word. It includes an overview and detailed visuals of mixtures that maintain physical properties like trail, mix, salad, screw, and nails with accurate labels. Visuals also make clear the connections when combining matter and how they work together.
- Materials embed age-appropriate pictures and graphics to support student learning. In Category 2, lesson 5.8B, *the Flow of Electricity* E-Poster includes multiple images to represent forces such as a complete circuit and an incomplete circuit. Imagery is minimal and does not distract from the information on the poster.
- Materials embed age-appropriate pictures and graphics that support student learning and engagement without being visually distracting. In Category 4, materials include a TEKS video for lesson *Ecosystem* where students connect new learning with easily-to-follow voice-over along with visuals and animation. Materials include posters the teacher can use that contain graphics, real-life pictures, and vocabulary words that students can easily understand, such as reforestation, deforestation, ecosystem, and construction.

Materials include digital components that are free of technical errors.

- Yes, materials include digital components that are free of technical errors consistently throughout the curriculum. Yes, the materials include digital components that are free of technical errors. Materials are free of spelling, grammar, and punctuation errors. Materials are free of inaccurate content materials or information. Materials are free of wrong answer sheets to problems In Grade 5, Category 1, Science Videos for lesson 5.6A are free of spelling, grammar, and punctuation errors. In Category 2 Lesson Guide 5.8B, *Electric Circuits* is free of spelling, grammar, and punctuation errors. Category 3, Lesson Guide *Conservation, Recycling, and Disposal*, is free of grammatical, punctuation, and spelling errors. In Category 4, materials include digital components free of technical errors. The lesson guide, *Energy in the Food Web*, is free of inaccurate content materials or information.

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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.	No
3	Materials integrate digital technology that provides opportunities for teachers and/or students to collaborate.	No
4	Materials integrate digital technology that is compatible with a variety of learning management systems.	Yes

Not Scored

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

Materials integrate digital technology and tools that support student learning and engagement. Materials do not integrate digital technology in ways that support student engagement with the science and engineering practices, recurring themes and concepts, and grade-level content. Materials do not integrate digital technology that provides opportunities for teachers and/or students to collaborate. Materials integrate digital technology that is compatible with a variety of learning management systems.

Evidence includes but is not limited to:

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

- Yes, the materials incorporate digital technology and tools to support student learning and engagement throughout all categories in the curriculum. The Grade 5 *Science literacy* section provides differentiated writing activities that promote effective learning. They include engaging features such as learning videos, interactive writing exercises, reading guides, and online assessments. The Digital components incorporate embedded tools like notetaking, variable font size, text-to-speech functionality, bookmarking, a glossary, annotations, highlighting, and editable forms. In the *Scientific Video* section, there is a collection of videos organized by the TEKS that are covered and the lesson name, which helps to support student learning and engagement.
- Yes, the materials incorporate digital technology to support student learning and engagement. Students can access science videos that incorporate animations, access texts, and provide additional explanations. For example, from the landing page, *Science Videos Category* lesson, 5.10A video includes animations of running water to demonstrate runoff, the steps in the water cycle to chunk the information in an accessible way, and different types of weather. Providing the animations supports student learning by enhancing engagement with the science concepts. Students can use accessibility features while taking assessments when appropriate. These online-specific features include highlighting, text-to-speech, calculators, and notepad. In addition, students interact with online information through online-specific question types such

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as drag and drop and multi-select items. These digital components support learning and engagement.

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

- Materials offer vocabulary audio assistance but do not offer opportunities for students to utilize interactive simulations and models, which would allow them to explore scientific and engineering practices within a virtual environment. In Category 1, the *Analyze the Data* section offers vocabulary selection drop box options for ease of selection but does not offer opportunities for students to utilize interactive simulations and models, which would allow them to explore scientific and engineering practices within a virtual environment.
- Materials do not integrate digital technology and tools that support student learning and engagement with the science and engineering practices, recurring themes, and concepts. Student digital components in Formative Assessment 2 for TEKS lesson 5.8C do include embedded tools, such as note-taking, variable font size, text-to-speech, a dictionary, a glossary, annotations, and a drag-and-drop activity in which students drag and drop answers to corresponding images to denote how light behaves differently depending on the object it strikes but they do not support student engagement with the SEP or RTC.
- No, the materials do not include digital technology in ways that support student engagement with science and engineering practices. The online digital component provided for the SEP is a 22-page guide with text-to-speech access. This guide introduces students to the processes but does not encourage students to engage with them. When students are prompted to engage with the RTC, they are prompted to utilize a paper-based graphic organizer, generate a poster, or create a written product. Evidence of engaging with the RTC digitally is not evident. In Category 3, Lesson Guide 5.10C *Apply/Extend* section, students draw the cause-and-effect relationship of slow changes to the Earth's surface in a time-lapse graphic organizer. The materials lack a digital interface to manipulate ideas related to the RTC.
- Materials do not integrate digital technology in ways that support student engagement with science and engineering practices, recurring themes and concepts, and grade-level content. Throughout the lesson guides, teachers are asked to use electronic devices to facilitate student learning. However, the materials do not use digital technology to support student engagement with science and engineering practices. For example, in the lesson titled *Energy in the Food Web*, students work in groups or with a partner to create a food chain on chart paper that includes the following: Sun, producer, primary consumer, secondary consumer, tertiary consumer, and decomposer. Students may also create a slideshow using their electronic device, laptop, computer, iPad, or Chromebook; however, this activity only allows research about the topic and does not include a connection to SEP or RTC.

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

- No, the grade 5 materials do not integrate digital technology that provides opportunities for teachers and/or students to collaborate. Although the materials provide a feedback section for teachers to provide feedback to students in the writing prompts for the short constructed responses, this feature is only a one-way communication for the teacher. The Science formative assessments incorporate digital technology to enhance aides for helping students, materials do not provide an online collaborative platform in which teachers and students can share

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educational materials, create collaborative spaces, post assignments, collaborate on projects, engage in discussions, or seek clarification regarding class material or allow the teacher to give immediate feedback to students.

- Materials do not integrate digital technology that provides opportunities for teachers and/or students to collaborate. Teachers can provide written feedback for students in the *Differentiated Science Writing* dashboard, but the software does not allow students to reply and is unsuited for collaboration.

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

- Yes, digital materials integrate technology compatible across various operating systems and devices. For instance, 5th-grade students' vocabulary resources and materials can be conveniently accessed and used on Chromebooks, iPads, PCs, and Apple computers. Additionally, these materials are available online, allowing access from any device with an internet connection. The Summit K12 Help Center states in a Technical Specifications article that their software "requires no special software installations" and "works on all major platforms".
- Materials integrate digital technology that is compatible with a variety of learning management systems. For example, the Parent/Guardian letters in the *Teacher's Guide* indicate that when using Summit K12 from home, students can "access it from any computer, tablet with an internet connection" because it is a web-based program. In addition, the Parent/Guardian letters include a message to school admins. It states, "Feel free to insert your own graphics and steps to log in to the School's LMS or portal to access the Summit K12 application via Single Sign On (SSO)." Examples of SSO portals include Classlink or Clever.

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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.

- Yes, digital technology and online components are aligned with the grade-level scope and approach to science knowledge and skills progression. The material includes a Scope and Sequence and Pacing Guide document that is grade-level appropriate and aligned with the science knowledge and skills progression. The materials include a suggested time and best use of digital technology, such as the formative assessments and TEKS video on the online platform.
- Materials include digital technology and online components aligned with the 5th-grade-level scope and approach to science knowledge and skills progression. For example, the Category 2 Lesson Launchpad is a digital planning guide with live hyperlinks to other online resources to facilitate planning and ease of use. In this reporting category, the resources for the following TEKS are provided: 5.7A, 4.7A, 3.7A, 3.7B, 5.7B, 5.8A, 4.8A, 3.8A, 3.8B, 5.8B, 4.8B, 4.8C, 5.8C. The TEKS video 5.8B in the *Science Videos and Animations* provides developmentally appropriate vocabulary, language, graphics, images, and diagrams over circuits for Grade 5 students.
- Materials include digital technology and online components that are developmentally appropriate for the grade level. For example, from the landing page *Science Videos and Animations* Category 3, TEKS 5.10A, the video incorporates graphics, computer-generated simulations, and developmentally appropriate photographs for Grade 5rs. In addition, the landing page *Science Videos and Animations* separates the content by category and then lists the videos in order of the TEKS. Within a video on TEKS, information is sequenced in a comprehensible way to the student. For example, Video 5.10B1 begins by stating the objective,

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providing definitions, and then defining the steps in the process of sedimentary rock formation in a logical order.

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

- Yes, the Grade 5 materials provide teacher guidance for using embedded technology to support and enhance student learning. The materials include a teacher guide titled "Online Course Site Map," where teachers are guided on how to use the online features and where and when to access them to facilitate student learning better. The teacher's guide includes a section called *Teacher Getting Started Guide*. The guide includes instructions on accessing online asynchronous teacher training courses and enrolling students into classes so that the educator can monitor and enhance their experience. Materials also include a Student Getting Started guide in the teacher's guide. Educators can introduce the digital technology components of Summit K12 to students to support student learning. The materials provide teacher guidance for using the embedded technology to support and enhance student learning.
- The materials include teacher guidance on effectively utilizing embedded technology to enhance student learning. The Grade 5 teacher resource *Course Design section* includes detailed instructions explaining how to incorporate the embedded technology effectively. The *Implementation guide* offers step-by-step instructions for the setup and utilization of the technology, accompanied by troubleshooting tips to assist teachers in resolving common issues they may encounter. The Teacher's Guide has a map referencing available technologies to enhance the lesson. Additionally, links and tabs are available for easier access by teachers.
- Materials provide teacher guidance for using the embedded technology to support and enhance student learning. The Teacher's Guide includes a *Teacher-Getting Started* guide, which provides clear instructions and tutorials within the teacher platform on how to use the embedded technology. The guide outlines the following:
 - Getting to Know the Dynamic Science Course
 - Course Level Teacher's Guide
 - Scope and Sequence and Pacing Guides
 - Concept Mastery
 - Online Course Site Map
 - Course Philosophy
 - Asynchronous Teacher Training
 - Enrolling students, Student Access and Single Sign On (SSO), iPad Access
 - TEKS Content Mastery Lesson Guides
 - Student Getting Started Presentation and Parent/Guardian Letters
 - Customer Support
- Materials provide teacher guidance for using the embedded technology to support and enhance student learning. The teacher Training tab includes step-by-step videos detailing the components of the curriculum and coursework and is followed by an assessment. Online asynchronous teacher training coursework includes the following:
 - Teacher's Guide Overview and Lesson Planning
 - Science Videos and Animations
 - Science Literacy
 - Concept and Vocabulary Mastery
 - Assessment and Image Banks
 - Scientific and Engineering Practices

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- Science Labs and Inquiry
- STAAR Readiness Resources
- Reports and Dashboards

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

- Yes, the Grade 5 materials include resources for parents and caregivers on supporting student engagement with digital technology and online components. The materials include a letter that can be sent to parents that shows them how to access the LMS from home. Materials provide a Student Getting Started guide, available in the Teacher's Guide, with a walk-through of the basics of the program, lesson samples and components, and log-in information. Materials also include a section for families with links to information about science objectives, extensions, related inquiry projects, and websites for student research. This section is designed to provide families with additional support and resources to enrich their children's educational experience further.