TPS STEAM into Science Grade 6

TPS STEAM into Science Grade 6 Executive Summary

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

Grade	TEKS Student %	TEKS Teacher %	ELPS Student %	ELPS Teacher %
Grade 6	100%	100%	100%	100%
Grade 7	100%	100%	100%	100%
Grade 8	100%	100%	100%	100%

Section 2. Instructional Anchor

- The materials are partially 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 sometimes 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 some educative components to support teachers' content and coherence knowledge.

Section 4. Productive Struggle

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

Section 6. Progress Monitoring

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

- The assessments are partially clear and easy to understand.

Section 7. Supports for All Learners

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

Section 8. Implementation Supports

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

Section 9. Design Features

- The visual design of materials is sometimes clear and easy to understand.
- The materials are not designed to engage and support student learning with the integration of digital technology.
- The digital technology or online components are not developmentally and grade-level appropriate and do not provide support for learning.

Section 10. Additional Information

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

TPS STEAM into Science Grade 6

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.	PM
3	Materials strategically and systematically develop students' content knowledge and skills as appropriate for the concept and grade level as outlined in the TEKS.	M
4	Materials include sufficient opportunities, as outlined in the TEKS, for students to ask questions and plan and conduct classroom, laboratory, and field investigations and to engage in problem-solving to make connections across disciplines and develop an understanding of science concepts.	M

Partial Meets | Score 2/4

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 opportunities for students to develop, practice, and demonstrate mastery of grade-level appropriate scientific and engineering practices as outlined in the TEKS. Materials provide some opportunities to make connections between and within overarching concepts using recurring themes. Materials strategically and systematically develop students' content knowledge and skills as appropriate for the concept and grade level as outlined in the TEKS. Materials include opportunities, as outlined in the TEKS, for students to ask questions, plan and conduct classroom, laboratory, and field investigations, and 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 *Learn by Doing Steam Activity Reader Book* provides lessons with recurring themes, such as a background story and vocabulary that build upon past units. The scientific and engineering practices (SEPs) are hands-on activities that require the use of scientific equipment and materials. Opportunities for cross-curricular content are intertwined within the investigation.
- The sixth grade STEAM Reader asks students to practice observation skills by looking at pond scum through a microscope. After group discussions, students are asked to create hypotheses based on the phenomenon. This practice is a common occurrence in each chapter.
- A section in the *Learn by Doing STEAM Activity Reader Book* asks students to demonstrate mastery of identifying metals, nonmetals, and metalloids by providing descriptions of sample materials and matching them. Another section asks students to use the scientific method when

creating and analyzing density columns. They are also encouraged to practice density equations and manipulate the formula to solve for mass and volume.
- Each chapter begins with an anchoring phenomenon and then provides students with different types of activities such as class discussions, research, vocabulary, reading comprehension, math, and experiments.

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

- The lesson plan section of the *Teacher Textbook* provides students with multiple opportunities to develop, practice, and demonstrate mastery of grade-level TEKS through activities, guided discussions, and investigations. The connection between overarching concepts and recurring themes is not explicitly stated on a consistent basis. The *STEAM Activity Guide - Teacher Edition* contains content-related TEKS and does not provide opportunities to make connections between and within overarching concepts using the recurring themes because the recurring themes are not identified.
- Newly introduced TEKS list overarching concepts and recurring themes. The lessons provide students with opportunities to use models, patterns, and systems to identify the connection between themes and concepts. Activity 3, The Pond Ecosystem in the *STEAM Activity Reader*, and Chapter 5, Activity 4, Solar Oven Design, are strong examples of scaffolding. The materials do not explicitly identify the recurring themes and concepts.
- In the *Learn by Doing STEAM Activity Reader Book - Grade 6*, the instructor is provided with guidance on how to facilitate a discussion on specific systems. This guidance is followed by an activity that allows students to stamp the connection between the concept and themes.
- The materials provide some connections between and within overarching concepts through the narrative texts in the *Learn By Doing STEAM Activity Reader Book - Grade 6 Teacher Edition*; however, while the text weaves stories of different science disciplines together, this doesn't equate to an opportunity because the direct connections between the concepts are not articulated fully by the materials, either by questions posed to students, or guidance provided to the teacher to make the connections.

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

- In the *STEAM Activity Guide - Teacher Edition*, thematic units and learning cycles strategically and systematically outline the order in which students develop key content knowledge and skills that are grade-level appropriate.
- In the *Teacher Textbook*, the Beginning of Strand chart guides the instructor through the best possible teaching strategies that will lead to mastery of grade-level TEKS. Instructors who need to provide students with additional help are guided to use the focus tasks before assessing students or other alternate lessons. Students who know the information but lack understanding require instructors to use STEM Projects to aid in learning.
- In the *Student Textbook*, the lesson begins with an overview of the content and then highlights keywords that are within the chapter. The lesson then allows students the opportunity to investigate, test their knowledge, and reflect on what was learned. The lesson lists are TEKS aligned and show how they are aligned.

TPS STEAM into Science Grade 6

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.

- In the *STEAM Activity Guide - Teacher Edition*, in the Preface section under Problem-Solving, there is an overview that explains how students are taught to problem-solve through the Define, Asses, Plan, Implement, and Communicate approach (DAPIC). Instructors are also provided with a chart that outlines student and instructor responsibilities throughout the learning cycle.
- Students' key roles in exploring include interacting with materials, planning/designing and building models, collecting and recording data, and making predictions about their model during investigations. These roles allow students to effectively engage in problem-solving.
- In the *Learn by Doing STEAM Activity Reader Book*, students practice and apply each part of the scientific method by observing yeast cells under a microscope, then coming up with a hypothesis on what they would expect if they fed the yeast more sugar. Another section asks students to plan, build, and test incline planes. Students also ask and answer questions in a discussion-style setting.
- The *Teacher Program Guide* gives instructors advice on how to have students plan out-of-classroom field studies and classroom investigations. The materials provide opportunities for students to plan investigations, with the exception of the pollution project. Students are asked to research, plan and gather evidence for investigations. The materials provide multiple opportunities for students to plan and carry out an investigation.

TPS STEAM into Science Grade 6

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 meet some of the criteria for this indicator. Materials sometimes 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.

- Materials embed phenomena in some instructional components to support students in constructing, building, and developing knowledge. For example, in the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition*, the materials provide narrative texts that provide access to phenomena that provide a springboard for learning. However, in the *Teacher Textbook - Grade 6 Science* most of the chapters begin with Teacher Guided Questions to Inquiry, which provides a series of questions for the teacher to ask the students to begin the learning cycle. While the questions are designed well, they are not a replacement for observing phenomena.
- Materials provide opportunities for students to develop, evaluate, and revise their thinking as they define problems. In the *Teacher Textbook - Grade 6 Science*, some project-based lessons center around phenomena. Students then design solutions. However, the ideas presented for problems to be solved are not phenomena-inspired ideas. They are problems presented by the teacher.
- The materials provide problems for students to address; however, the problems are often embedded with a specific expected outcome provided by the materials and not created by the

students, making the application and performance of engineering practices less than authentic. For example, in Chapter 5 of the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition*, students are presented with an engineering design challenge to "design and build your own solar oven . . . to heat 50ml of water in a beaker." There is no authentic problem the students are solving or any relevant context for this activity; the materials simply tell the students to complete the task.

- The materials provide some direct connections to the recurring themes and concepts across disciplines as the TEKS require. For example, there are opportunities for students to examine the parts of a system and their interdependence such as atoms and molecules, but there are not opportunities to share this understanding of parts of a system and connect this to students' understanding of systems and interdependence in other scientific disciplines.

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

- In the *Teacher Textbook - Grade 6 Science*, instructors are provided an overview of how to access students' prior knowledge and leverage the learning. The lesson plan that discusses SI units has instructors lead students through scaffolded questions to gauge their prior knowledge.
- In the lesson plan there is a section on phenomena and scaffolding information from the previous year's TEKS. It highlights what standards are built upon and what students should already know.
- In the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition*, instructors learn that mastery of student activities is dependent on a certain level of student comprehension and knowledge. In order to achieve high levels of student mastery, students must apply scientific principles to problems. Instructors are provided different ways to scaffold student learning based on prior knowledge.
- Students are continuously asked to use the scientific method to solve phenomena and engineering problems. The materials are scaffolded so the previous units' lessons, themes, and concepts come back up and are used again in a different way.

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

- Materials outline for the teacher the scientific concepts and goals behind phenomena and engineering problems in some program components. Lesson plans are clearly outlined with activities and investigations that are aligned with the TEKS. The lesson plan also contains objectives, vocabulary words, and a lesson overview to better support student learning.
- In the *Learn by Doing STEAM Activity Reader - Grade 6 Teacher Edition,* the instructor is provided an outline that shows how and when the scientific method is applied throughout the unit. It is recommended that instructors review the process on a consistent basis.
- Teachers are provided clear student learning objectives that are aligned with the TEKS and the anchoring phenomenon. Instructors and students are provided with a scientific method flowchart to aid in learning how to solve the problem in each activity.

TPS STEAM into Science Grade 6

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 an 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.

- Instructors have access to a Scope and Sequence that is located in the *Teacher Textbook* as well as the Online Library. It outlines the order in which students will learn the TEKS and offers guidance to instructors on how to scaffold up or down depending on the needs of the student.
- Materials are aligned and provide connections to prior knowledge. Materials offer a K-8 program and provide a grade-level vertical alignment document demonstrating how students build and connect knowledge across grade levels. The Teacher Supports show how the materials are vertically aligned. The document titled Horizontal and Vertical Alignment Information states, “As students progress within each grade, the STEAM storybooks are the first level in a series of TPS curricular materials, horizontally aligned to allow the students to engage in a curriculum that builds on knowledge and skills aligned with the Texas Essential Knowledge and Skills.”
- The Teacher Program Guide - Grades K-8 Science describes the vertical and horizontal alignment of the program. It references the use of storybooks “to provide an introduction to in a personally relevant manner.” It also includes a Support for Teachers section that states that the *Learn by Doing STEAM Activity Reader Book* provides opportunities to develop knowledge and skills gradually through vertical alignment with the TEKS.
- The *Teacher Textbook - Grade 6 Science* shows instructors how the materials are vertically aligned and designed for students to build and connect their knowledge and skills across grade

levels. Students study and complete descriptive, comparative, and experimental investigations through scaffolding of knowledge and skills.

- Each unit in the *Teacher Textbook - Grade 6 Science* provides students with opportunities to apply learned knowledge of science and engineering by applying appropriate tools. Students are provided with different grade-level-appropriate tools during the investigations.
- Grade 6 students are asked to clarify evidence on what may have caused a rise in global temperatures. In Grade 5, students learn about natural resources and their importance. They quickly learn how to minimize their negative impacts on the world by using the scientific method to design and explain possible solutions. In Grade 4, students learn why natural resources are important and explain their uses in the modern world. This path backtracks all the way to kindergarten. This shows clear alignment through the grade levels.

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

- The *Teacher Program Guide - Grades K-8 Science* describes the lesson progression with each resource. The guide explicitly states teachers begin each unit with the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition* and then move to the exploration in the *Teacher Textbook - Grade 6 Science*. The *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition* introduces all chapters with fictional characters asking and answering questions. Materials intentionally provide content information through the narrative text before students move to exploration. The lesson plans included in the *Teacher Textbook - Grade 6 Science* begin with students engaging with media, discussing what they understood, have seen before, or sparked curiosity. The teacher then begins the instruction, providing steps to complete the investigation if materials offer one.
- In the *Teacher Textbook - Grade 6 Science,* each lesson has a Scaffolding Information section, which provides the instructor with the current TEKS and how they align with past and future TEKS.
- Materials are intentionally sequenced to scaffold learning in a way that allows for deeper understanding. The *Teacher Textbook* has students focus on systems and organisms. In Grade 5, students were only asked to explain how factors or conditions impact stability and change within systems and organisms. In Grades 7 and 8, students explain and analyze how factors or conditions impact systems and organisms.
- Each chapter of the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition* is designed to allow the students to develop knowledge gradually. For example, in Activity 1, students read the chapter text and answer reading comprehension questions on energy. In Activity 3, students analyze a bar graph of solar oven temperatures by month. They identify the mean, median, and mode. The activity's goal is for students to connect the idea that the Earth is tilted closer to the sun during the summer, allowing the sun's energy to reach Earth faster. Activity 4 asks students to apply their knowledge of how energy waves are absorbed and reflected to create a functional solar oven.
- In the *Teacher Textbook - Grade 6 Science*, students begin each activity with a reading comprehension activity and apply that knowledge to create a simulation of acid rain. They see the impact of acid rain and use that information to research other forms of pollutants and their effects. Students are asked to make posters, dioramas, etc., and analyze other students' work to learn about the effects. Students are then provided with cross-content materials (math and reading) to practice data analysis and use CER (claim, evidence, reasoning).

TPS STEAM into Science Grade 6

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. In the *Teacher Textbook - Grade 6 Science,* the lesson plan consists of a description of the concepts that students will be focusing on as well as the NGSS standard that is aligned with the TEKS. Lesson plans provide teachers with a clear overview of the phenomenon with a description of how the TEKS was addressed in prior grade levels. The materials are grade level, with recurring themes and concepts that are practiced in other contents. Each element of the scientific and engineering process is present in all activities, leading to grade-level mastery of the content.
- Materials expect students to construct explanations and design solutions (which builds upon K-5 experiences) and learn how system and system models can be used to represent systems and their interactions. Materials expect students to obtain, evaluate, and communicate information as well as identify structure and function. The recurring theme of TEKS and NGSS alignment is present in each lesson.
- In the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition,* specific core concepts such as systems and systems analysis are a recurring theme in multiple lessons. The Koi Pond Mystery in Chapter 1 describes the cell theory and organelles. Students learn how each organelle is part of a system that contributes to the cell's function.
- Materials include a Project-Based Lesson. Students develop a model of how the geosphere, atmosphere, biosphere, and hydrosphere interact. The instructor reads how the standard was addressed in grades K-5. For example, grade 2 expects students to describe the sun as a star that provides heat and light. Grade 4 expects students to collect and analyze data on how the temperature and length of daylight changes each season.
- Materials clearly and accurately present science and engineering concepts. Materials have students use the scientific and engineering process to build a model of the atmosphere, biosphere, geosphere, and hydrosphere in the state of California. Although students are provided with a procedure, they are still provided with the flexibility to follow through with the process. They are also expected to create a coordinate plane to represent their model and receive feedback from their peers. Students practice coordinating planes in grade 6, allowing them to practice mastery through cross-content learning.

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

- Mastery requirements of the materials are within the boundaries of the main concepts of the grade level. Materials include a broad overview or guidance document detailing increased depth and complexity across the year. Specific lessons include a description in the Scaffolding Information section with a content progression. For example, a Science and Engineering Practices lesson states, “This standard builds upon experiences and background that students may have had at home, and were taught in grades K-2.” Materials continue to note goals for the current lesson and future study. Materials continue to note goals for the current lesson and future study. Materials include an objective in the hands-on portion that states the lesson goals. The same lesson also includes an assessment opportunity. The content describes boundaries and content limitations.
- Materials define student learning boundaries through learning objectives. One learning objective is that students learn about potential energy, kinetic energy, and friction by building and testing a model roller coaster. As students differentiate the types of energy, they learn the

relationship between potential and kinetic energy, how energy is conserved, and how to apply these ideas to the activity. The learning objective matches what students are expected to do during the Test Yourself and Math/Literacy Connections activities at the end of the lesson.

- At times, materials appropriately go beyond grade-level-specific core concepts to challenge advanced learners. The *Teacher Textbook - Grade 6 Science* provides a traditional lesson for 6.6B, Elements, Compounds, and Mixtures, which has students investigate the effect of temperature on the rate of a chemical change with a student investigation with steel wool and whether warm water or cold water would form rust faster. The effect of temperature as a variable is not in grade 6 but introduced in grade 7 in TEKS 7.6D, where students investigate the effect of temperature on the rate of solubility.
- Materials clearly define the boundaries of content that students must master for grade 6. The *Learn by Doing STEAM Activity Reader Book - Grade 6 Student Edition* provides mastery requirements that are within the bounds of the grade-level concepts. Chapter 5 includes information on the electromagnetic spectrum and the calculation of slope.

TPS STEAM into Science Grade 6

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.	PM
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

Partial Meets | Score 3/6

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

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

Evidence includes but is not limited to:

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

- The materials provide some support for teachers in understanding horizontal and vertical alignment. The STEAM into Science - Grade 6 TEKS Correlations document is provided, which outlines where the TEKS appear in the materials; however, this does not provide the teacher with support in understanding horizontal or vertical alignment with how learning progresses during the school year or among school years. The materials provide content examples that are often not in alignment with the vertical alignment of the TEKS, which provides teachers with an incorrect understanding of how grade-level content develops across the grade levels.
- Materials include some guidance that supports teachers in understanding how new learning connects to previous and future learning across grade levels in the Scaffolding Information within the lesson. At the beginning of the Traditional lessons, the Scaffolding Information section in the *Teacher Textbook - Grade 6 Science* provides some information on knowledge students should already have, then lists the TEKS for the previous and future grade levels. Listing the TEKS does not provide enough guidance about connection to future learning. Materials provide minimal guiding documents or information that support teachers in understanding how new learning connects to previous and future learning across grade levels.

- The materials indicate that scientific and engineering practices are present in the materials as indicated in the STEAM into Science - Grade 6 TEKS Correlations document as well as in the *Teacher Program Guide - Grades K-8 Science* where all the science TEKS for grades K-8 are listed. These documents do not support teachers in developing a deeper understanding of the vertical alignment among grade levels.
- The materials provide little teacher support for understanding the horizontal and vertical alignment of the recurring themes and concepts across disciplines as the TEKS require. For example, there are opportunities for students to examine the parts of a system and their interdependence, such as atoms and molecules, but there are no opportunities to make a connection to how the interdependence within atoms relates to the relationship of the biosphere, hydrosphere, atmosphere, and geosphere. The *Teacher Program Guide - Grades K-8 Science* mentions, “TPS help teachers to facilitate students to make connections between . . .recurring themes and concepts,” but there is little evidence in the materials of providing teacher support in understanding these and drawing both horizontal and vertical connections.

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 contain explanations for teachers on grade-level misconceptions to support teachers’ subject knowledge. Each lesson plan in the *Teacher Textbook - Grade 6 Science* has a section titled Common Misconceptions. It provides guidance on how to address misconceptions that students encounter when learning new content. One example states that a major misconception is that students think displacement can be described by location alone. There is further information on how to address that misconception on the same page. Each unit follows the same lesson flow, which allows instructors to catch and address misconceptions. The unit starts with the objective, scaffolding information, a scientific explanation, and common misconceptions. Units provide a clear example of what is continuously found in each unit.
- In the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition*, the instructor is prompted to have students restate the instructions to check for understanding. This technique supports the teacher in recognizing the student's barriers to conceptual development. This prompt is stated at the beginning of the page, which is a consistent trend throughout each activity.
- The materials provide explanations and examples of science concepts to support the teacher’s subject knowledge. For example, the *Teacher Textbook - Grade 6 Science* provides a section titled The Science prior to traditional (TRAD) lessons and a Background and Preconceptions section in the Science Is a Verb (SIAV) lessons. These provide a thorough yet concise explanation of the science contained in the lesson and corresponding activities.

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

- Materials provide a purpose or rationale for the instructional design. The *Teacher Program Guide - Grades K-8 Science* in the Support Notes for Teachers states that the content scaffolds as the characters go alongside the diverse students. The *Teacher Program Guide - Grades K-8 Science*, under the Support Notes for Teachers section, gives information about the rationale of how the program was designed. For example, "The STEAM storybook was designed with two key purposes: first to teach science through the prism of STEAM, science, technology, engineering, and math as an approach more relevant to the lives of students."

- Materials explain the intent of the instructional design of the program. The *Teacher Program Guide - Grades K-8 Science* describes the philosophy of science teaching and learning. They explain the publisher's philosophy that we learn best by doing and the importance of scientific understanding for all students. They also explain the science teacher's role in developing critical thinking, problem-solving, and an appreciation of the scientific process. The *Teacher Program Guide - Grades K-8 Science* describes the Teaching Pedagogy - Storytelling and STEAM. The guide references the research on structure strategies and more information on why teaching science through storytelling is important.
- Materials provide an explanation of the goals of the program. For example, in the *Teacher Program Guide - Grades K-8 Science*, the Philosophy of Science teacher and learning section states, “TPS believes that we learn best by doing. Science is more than memorizing facts. It is a way of organizing and understating the surrounding universe.” The section references active learning, STEAM, storytelling, and inquiry as the main strategies of the program to cover required TEKS. For example, the subsection on research-based strategies states, “Recent research about STEAM content and storytelling can be read at the end of this guide. It heavily impacted the design of our program, and the first component of the program uses storytelling as its main strategy.” The Program Introduction does not reference goals tied to content knowledge, recurring themes and concepts (RTCs), or science and engineering practices (SEPs).
- The How to Use the Program explains the intent and purpose of the instructional design of the program, stating that “students must be with lessons that provide full cognitive involvement.” Students learn best by doing.

TPS STEAM into Science Grade 6

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.	PM
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

Partial Meets | Score 2/4

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

Materials consistently support students' meaningful sensemaking through reading, writing, thinking, and acting as scientists and engineers. Materials provide some 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 support students' meaningful sensemaking through reading, writing, thinking, and acting as scientists and engineers. In the *Learn by Doing STEAM Activity Reader Book - Grade 6 Student Edition,* materials provide reading through storytelling, thinking through the idea boxes, and acting through the design and engineering pieces. There are writing prompts and opportunities to describe what they know or have learned. In the Student Textbook, there are writing activities. Students read like scientists in the *Learn by Doing STEAM Activity Reader Book - Grade 6 Student Edition*. Additionally, this component includes idea boxes to support the teacher in having students think like scientists and stimulate critical thinking through class discussion of the chapter texts. Following each chapter, activities allow the students to act as scientists or engineers investigating and designing engineering solutions.
- In the *STEAM Activity Guide- Grade 6 Teacher Edition*, students are expected to communicate designs through sketches, record ideas in a journal, and design/make a project. Students use

their journals to record their ideas and sketch straight, horizontal, and vertical lines. In the Using Sketches to Communicate section, students are asked to describe their sketches in words. In the Getting the Idea section, the student acts as a scientist and engineer to make sketches to quickly and accurately communicate ideas to others. Each activity supports students' sensemaking through reading, writing, thinking, and acting like scientists.

- Materials support students' meaningful sensemaking through reading, writing, thinking, and acting as scientists and engineers. In the *Learn by Doing STEAM Activity Reader Book - Grade 6 Student Edition,* materials provide reading through storytelling, thinking through the idea boxes, and acting through the design and engineering pieces. There are writing prompts and opportunities to describe what they know or have learned. In the Student Textbook, there are writing activities. Students read like scientists in the *Learn by Doing STEAM Activity Reader Book - Grade 6 Student Edition*. Additionally, this component includes idea boxes to support the teacher in having students think like scientists and stimulate critical thinking through class discussion of the chapter texts. Following each chapter, activities allow the students to act as scientists or engineers investigating and designing engineering solutions.
- Students have the opportunity to write and think in the Literacy Connection. One lesson has students create a T-shirt that teaches the states of matter and different types of physical properties. Another lesson has students read a short article about diamonds. They answer two questions about how diamonds are mined and why they are so valuable. They are then asked to think about diamonds they've seen and describe why they are so beautiful.
- The Classroom Safety lesson in the Student Journal starts by providing students with an image and asking them to investigate the classroom. The scenario in the image is that each student is doing something wrong, and therefore it needs to be identified within a table. The investigation part requires the teacher to provide the TEA safety standards and discuss as a class how to keep oneself safe. The students are to then create a poster or graphic organizer by listening to all the safety rules the class agrees on. The activities that follow require students to plan and conduct a descriptive investigation, comparative investigation, and experimental investigation.
- In the *Teacher Textbook - Grade 6 Science,* students learn that an element is a pure substance represented by chemical symbols. Students read the chapter alone before the group discussion on what an element is and how to read the periodic table. Students are then placed in small groups to research which elements are the Earth's crust, living matter, oceans, and atmosphere. Students then are assigned elements from the periodic table to create a display-sized image. This activity allows students to make sense of how many elements can make up one object through reading, writing, and thinking.
- The *Teacher Program Guide - Grades K-8 Science* provides a philosophy of science teaching and learning as the materials provide teachers with guidance on labs in the "Science is a Verb" explanation found in the Teacher Textbook that partially supports sensemaking. For example, the materials state, "The critical portion of any lab is to have a thorough discussion of the results and student thinking after the experiment is complete. It is suggested you take as much time as the experiment to have this discussion with students. The real learning occurs not from hands-on experiments, but from a deep discussion of the experiment while making connections to the concept they are learning." The guidance supports sensemaking by taking the lesson beyond a hands-on investigation and building conceptual knowledge through discussion.

TPS STEAM into Science Grade 6

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 some opportunities for students to engage with grade-level appropriate scientific texts. The *Student Textbook - Grade 6 Science* provides students with information about potential energy, kinetic energy, and friction by building and testing a model roller coaster. As students differentiate the types of energy, they learn the relationship between potential and kinetic energy, how energy is conserved, and how to apply these ideas to the activity. The lesson and the text and activities in the *Learn by Doing STEAM Activity Reader Book - Grade 6 Student Edition* provide multiple opportunities to gather evidence and develop an understanding of concepts.
- Some materials include scientific text that is partially appropriate for the grade level. The *Student Textbook - Grade 6 Science* provides a traditional lesson for 6.6B, Elements, Compounds, and Mixtures, which has students investigate the effect of temperature on the rate of a chemical change with a student investigation with steel wool and whether warm water or cold water would form rust faster. While an interesting investigation, the TEKS ask students to identify the formation of a new substance, which is provided in other activities within the lesson. This knowledge is then assessed in the student materials. The effect of temperature as a variable is not in grade 6 but introduced for grade 7 in TEKS 7.6D where students investigate the effect of temperature on the rate of solubility.
- The materials include scientific texts that are not grade-level appropriate. In *Student Textbook - Grade 6 Science*, Lesson 6A-D, includes an in-depth discussion and student investigation around endothermic and exothermic reactions. TEKS 6.6E requires students to identify a change in thermal energy as evidence of a possible chemical change. Students can observe and record changes in temperature without the introduction of vocabulary that doesn't appear in the TEKS until High School Chemistry 11C.
- Some of the materials include scientific texts that are not appropriate for the current grade level. For example, in the *Student Textbook - Grade 6 Science,* Lesson 6C TRAD, the students engage in an entire lesson about identifying minerals. The lesson is well organized, however TEKS 6.6C from the 2017 TEKS was removed and now rock identification is based upon how they "form and change through geologic processes in the rock cycle." This lesson has mastery requirements with student pages that must be completed.
- The *Learn by Doing STEAM Activity Reader Book - Grade 6 Student Edition* provides scientific text that includes concepts that are not appropriate to the grade level. Chapter 5 includes information on electromagnetic spectrum and the calculation of slope. While the cross-curricular connections are valuable, both of these appear in the grade 8 science and math curriculums, respectively. Electromagnetic waves are not introduced until TEKS 8.8A and 8.8B.

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 *STEAM Activity Guide - Grade 6 Teacher Edition*, Chapter 1 is titled Need for Speed. The student is expected to convert data tables into a graph. Chapter 2 is called Show Me the Numbers. In this investigation, students are to use graphical representation to identify patterns. In Chapter 7, The Nature of Polymers, students are asked to submit data

tables or graphs showing the proportions and length of time for mixtures that were poured into beakers.

- Materials provide multiple opportunities for students to communicate thinking on scientific concepts in written and graphic modes. One lesson provides a data table to communicate the physical properties of mysterious substances that students investigate. Another lesson intertwines the EDP and a graphic organizer.
- Materials provide multiple opportunities for students to engage in various modes of communication to display understanding. The *STEAM Arts Project Guide K-12* provides numerous hands-on projects students can create that are TEKS aligned, such as "Sled Dogs!" Students identify how forces act on objects and also identify the changes in position, direction, and speed. They then create a dog sled by sketching an image of their model and then creating it by using popsicle sticks, clay, string, and small wheels. At the end of this project, the instructor leads a class discussion, and students work on assessment questions independently.
- The *Teacher Textbook - Grade 6 Science* provides students with a graphic organizer labeled metals, nonmetals, metalloids, and rare earth metals to use while reading the chapter text. This graphic organizer aligns with the objective that students should be able to differentiate between them using the periodic table and their properties. Students use this information to play the "What am I" game so they can ask in-depth questions before having an instructor-led discussion on the aforementioned categories.

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. In the *STEAM Activity Guide - Grade 6 Student Edition*, the students act as scientists and engineers to apply and expand their knowledge of phenomena to make sense of concepts. In Chapter 13, students apply the knowledge that they learned about generating electricity to lead the task for the mayor and present their findings. In the expanding knowledge section, the students are given four options to expand their learning and connect it outside of the classroom.
- In the *Learn by Doing STEAM Activity Reader Book - Grade 6 Student Edition*, the objective of Activity 5 is to build and create an inclined plane. Students test the ability to lift a box to the height of the plane versus pushing it up the plane. After constructing, the materials prompt a discussion and reflection. Instructors are prompted to ask if the plane made things easier and why, how they could use the plane in their daily life, and what they learned. If students struggle, they are provided multiple opportunities to redesign the model based on what they learned.

TPS STEAM into Science Grade 6

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.	PM
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.	PM

Partial Meets | Score 2/4

The materials partially meet the criteria for this indicator. Materials partially 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 some argumentation and discourse throughout to support students' development of content knowledge and skills as appropriate for the concept and grade level. Materials provide some opportunities for students to construct and present developmentally appropriate written and verbal arguments that justify explanations of phenomena and/or solutions to problems using evidence acquired from learning experiences.

Evidence includes but is not limited to:

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

- The materials outline the DAPIC - define, assess, plan, implement, and communicate - process in the *Teacher Program Guide - Grades K-8 Science*. The DAPIC presents a scaffold to help students use evidence to support claims. Teacher guidance in the Program Guide indicates that materials intend for teachers to use the DAPIC in practical investigations for students to communicate claims and solutions based on evidence.
- The materials generally prompt students to use evidence about text evidence and reading comprehension question. In the *Learn by Doing STEAM Activity Reader Book - Grade 6 Student Edition,* Chapter 1, Activity 1, students respond to reading comprehension questions. The materials instruct students to use "text evidence to support the responses where possible.". Then, in Activity 2, students answer several questions requiring them to make claims such as, "What makes the organisms that you have drawn a living thing?"
- The materials prompt students to use evidence to support their hypotheses and claims. For example, Experiment 4 in Newton's Laws of Motion lesson of the *Student Textbook - Grade 6 Science* states, "What evidence is there for this?" in the Student Exercise. However, following this, students are asked, "Why does a hockey puck move easily on ice but not on wood or cement?" The materials do not ask students to provide evidence for their claims. Following this,

the students engage in the Research Project section, and the materials state, "The force forward on the car is provided by the rocket in a similar way to your water rocket in the last section. What would be the main forces opposing the motion of the car? How could you make these forces as small as possible?"

- The materials prompt students to use evidence to support their hypotheses. Activity 2 of the Floating Balls and Sinking Stones lesson in the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition* has students gather samples of liquids of different densities and layer each substance on top of each other. Students write a hypothesis describing what they expect to happen when the liquids are added to the same container. The materials instruct students to answer discussion and analysis questions such as "Which of the liquids was the most dense and which the least dense?" and then prompt students to "Record whether your hypothesis was correct."
- The materials provide prompts for students to use evidence to support their hypotheses or claims but consistently prompt students to use text evidence for Reading Comprehension questions in the *Learn by Doing STEAM Activity Reader Book - Grade 6. Teacher Edition.* For example, in Chapter 6, Activity 1, the instructions to students state, ". . . answer the questions using text evidence to support the responses where possible." However, in Activity 5 of the same chapter, where students make hypotheses, the instructions state, "On the following pages, record your hypothesis, conclusion, and answer to the discussion and analysis questions (1-4), then draw and label your materials and methods and record your results in a table."

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

- The materials include embedded opportunities to develop and utilize scientific vocabulary in context. For example, each project in the STEAM Art Projects component in the *STEAM Activity Guide - Grade 6 Student Edition* lists science vocabulary words that students should focus on while completing the project. The vocabulary is embedded within the steps of the project as opportunities to develop context. In the Austria and Oceania Project, the focus vocabulary words are *average*, *distance*, *speed*, *measurement*, *time*, etc.
- The materials embed opportunities for students to develop and utilize scientific vocabulary. For example, in the *Family/Caregiver Guide - Grades K-8 Science*, the *Learn by Doing STEAM Activity Reader Book - Grade 6 Student Edition* is referenced, and it states that students should review the vocabulary using vocabulary cards. The objective of the vocabulary activity is for students to understand the meaning of the words and recognize when the word is spoken.
- In *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition*, there is evidence that the material includes embedded opportunities for students to develop and utilize vocabulary. For example, Chapter 4, Solar, Wind, Geothermal: Capturing Energy, contains the reading content with vocabulary embedded in the passage. In Activity 6, students review the vocabulary words to understand and use them in a speech.
- The *Student Journal - Grade 6 Science* includes several units that provide opportunities for students to develop and utilize scientific vocabulary. For example, in the Investigation section, students match the image with the vocabulary term by drawing a line to it. In the What Have You Learned section, students match vocabulary with pictures by writing down the correct term and then creating a poster or graphic organizer to explain how the structure is related to its function. In the Test Yourself section, students answer four vocabulary-based questions.
- Throughout the *Student Journal - Grade 6 Science*, students are provided four quadrants with key vocabulary words in them. Students write characteristics of the key vocabulary words with

pictures to better remember the words. Examples of these terms include but are not limited to *air quality*, *pollutants*, and *primary* and *secondary pollutants*.

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

- Materials integrate discourse and sometimes argumentation. Chapter 1 in the *STEAM Activity Guide - Grade 6 Teacher Edition* has students reflect on prior data and knowledge through a discussion. During the discussion, students can ask questions, share data, answer questions, and compare data. This process allows students to learn and construct concepts for themselves. The process of argumentation is not integrated into the materials as readily as discourse, so while students engage in discussion, they are not rising to the level of developing arguments based on collected evidence. There is also no evidence of materials that provide teachers or students with explicit instructions about engaging in argumentation.
- Each chapter in *Learn by Doing STEAM Activity Reader Book - Grade 6 Student Edition* has activities of discourse to support student development of the content of the TEKS and the concept. For example, Activity 4 in Chapter 1, The Koi Pond Mystery, is a class discussion on biological systems. Students examine a system relevant to the chapter and discuss the parts of the system and their interdependence on the system function. Activity 3 requires the teacher to ask the students why the Cell Theory is a theory, not a hypothesis. However, there are rarely opportunities to develop arguments based on collected data or evidence.
- The *STEAM Activity Guide - Grade 6 Student Edition* does not provide consistent opportunities for student argumentation. The content is not in every lesson using the term argumentation but appears in most components in appropriate lessons for the content to be integrated sensibly. Instructors are not consistently told when, where, and how the discussion should be facilitated. The *Teacher Textbook, Grade 6 Science,* does inform the teacher; however, this is not throughout the materials. Instructors are met with prompts such as, "Encourage discussion and courteous debate" or "You may want to have student groups debate about the best solutions." Students often record their data and come back for a class discussion to discuss key points and clarify misconceptions. Students are asked to discuss but rarely construct complete arguments for their findings that are consistently rooted in data from their investigations.
- The materials integrate discourse throughout the materials but rarely engage students in argumentation. For example, in Chapter 2 of the *STEAM Activity Guide - Grade 6 Student Edition*, underneath the Gathering Data - Another Way section, students discuss why labels on graphs are important and why using graphs is beneficial to display information. This is a valuable discussion for students but misses the opportunity for students to work through the argumentation process for developing a strong argument, supported by evidence, for why graphs are beneficial for displaying information.

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.

- The materials provide some opportunities to construct verbal responses but not arguments based on evidence. For example, in the *STEAM Activity Guide - Grade 6 Student Edition*, in Chapter 2, Show Me the Numbers, and in the Gathering Data - Another Way section, students discuss why labels on graphs are important and why using graphs is beneficial to display information.

- The materials provide some opportunities for students to create written and verbal explanations but not arguments based on evidence. In Chapter 4 of the *STEAM Activity Guide - Grade 6 Student Edition,* students devise a plan to accomplish a task. Students write a plan explaining the parts of their experiment. Materials in this chapter focus on communication through sketches and journaling ideas. This opportunity does not prompt students to construct arguments based on evidence from their experiment.
- The materials provide some opportunities to share explanations and results but not to use evidence to construct arguments that justify explanations. Chapter 2, Kitchen Chemistry, in the *Learn by Doing STEAM Activity Reader Book - Grade 6 Student Edition*, has students observe and describe an image of yeast cells in Activity 3. Students explore how to feed the yeast to make them release gas. Students then graph the sugar added compared to the foam volume. Students discuss the data they acquired to support their hypothesis and discuss their results with peers. This does not reach the rigor level of constructing arguments using evidence.
- The materials include some opportunities for students to communicate written and verbal explanations but not to construct arguments based on evidence. The *Teacher Textbook - Grade 6 Science* has students think about what they've learned in the Earth-Sun-Moon lesson and how they would communicate that to other scientists and the public. Students can write a newspaper article, present, or create an educational video. The text guides students on what to do during other presentations, like practicing understanding or listening skills. These activities do not include argumentation rooted in evidence collected during learning experiences.

TPS STEAM into Science Grade 6

Indicator 5.2

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

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

Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- The materials provide teacher guidance on anticipating student responses. For example, in the *Teacher Textbook - Grade 6 Science*, Lesson 6A - D - TRAD, the first investigation has procedures with questions for students to answer and record in a data table. This is then followed by a Questions section at the end of the investigation with questions for students to respond to. In the next section, Focus Questions, possible student responses are in red, only one possible response is listed. There are student-facing questions in the materials, which would guide discussion in reaction to student responses.
- The materials provide some teacher guidance on anticipating student responses. For example, in the *STEAM Activity Guide - Grade 6 Teacher Edition*, Lesson 1, in the Expanding the Idea section, the materials provide elaborate possible student responses to questions posed in the student edition.
- The materials provide some questions to pose to students in the *STEAM Activity Guide - Grade 6 Teacher Edition*, Lesson 5, Teacher Demonstration; the materials provide the question, "What happens to mass as the volume decreases?" and then the materials state, "ask students to answer the questions that are in the student edition of this section."
- The materials provide teacher responses to possible students' responses. The materials divide teacher guidance into correct student responses, incorrect student responses, and partially

correct student responses. The *Teacher Program Guide - Grades K-8 Science* recommends that students responding correctly be provided with "Level 2 assessment questions" from the "Online Library - Assessment tools" for the TEKS being taught and affirm comprehension. The guide recommends that students responding incorrectly be provided with "Level 1 assessment questions." The materials state, "A student responds incorrectly - use the Online Library - Assessment tools; choose Level 1 assessment questions for the TEKS being taught…. Determine if there is a misconception and resolve."

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

- The materials provide teacher guidance on how to scaffold and support students' development and use of scientific vocabulary in context. In the *Teacher Textbook - Grade 6 Science*, Planning for Natural Disasters, the introduction tells the instructor to begin previewing keywords with students. The words and definitions are read aloud as a class, stopping after each term to solicit student knowledge.
- The materials provide teacher guidance on how to support students' development and use of scientific vocabulary. For example, in the Support Notes for Teachers within the *Teacher Program Guide - Grades K-8 Science*, the materials state, " Many more straightforward activities requiring little supervision can also be assigned as homework, particularly the vocabulary at the end of the activities section" in the *Learn By Doing STEAM Activity Reader Book - Grade 6 Teacher Edition*.
- The materials provide little teacher guidance on how to scaffold and support students' development and use of scientific vocabulary in context. The *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition* and the *Teacher Textbook - Grade 6 Science* provide scientific vocabulary in student narrative texts and experiences. Students either interpret the meaning in the context of the narrative text or learn it during the final activity of each chapter, titled Vocabulary Words and Terms.
- The materials provide some teacher guidance for supporting vocabulary development. In the *STEAM Activity Guide - Grade 6 Teacher Edition*, the beginning of each STEAM Art Project outlines the vocabulary in a section titled Science Vocabulary to Focus On, which provides teachers a starting point.
- The materials provide little teacher guidance for supporting vocabulary development. The *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition* includes a section early in the materials titled Vocabulary Guidance. The materials state, "There is a vocabulary component within each activity section, providing an opportunity to review words and terms introduced in the chapter text. The purpose is to examine the meaning(s) of the words and use them in a discussion."

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 student discourse and supporting students in using evidence to construct written and verbal claims. In the *Teacher Program Guide - Grades K-8 Science*, the Define, Assess, Plan, Implement, and Communicate (DAPIC) process is explained. For the Communication section, the guidance states, "The results are analyzed, conclusions are reached, and the results are shared with others. This takes the form of written or oral reports…" In the *STEAM Activity Guide - Grade 6 Teacher Edition*, Lesson 4, Communication, the majority of

the time is spent on students doing activities such as drawing straight lines, drawing a cube, drawing a curved surface, sketching in proportion, and using sketches to communicate.

- The materials provide teacher guidance on preparing for student discourse. In the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition*, the section titled Comprehension Skills provides a bulleted list of activities for teachers to encourage students to "participate in student-led discussion by eliciting and considering suggestions from other group members, taking notes, and identifying points of agreement and disagreement." General guidance for student argumentation and discourse comprehension skills is provided. For example, materials state "Speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively. Listen and generate relevant questions to clarify and deepen understanding, gain information and make pertinent comments. Work collaboratively with others by following agreed-upon rules, norms, and protocols TPS believes that the teacher's application of the guidance above, together with prompts integrated into the activities, will provide information for the teachers to establish a classroom culture".
- An activity in the *Teacher Textbook - Grade 6 Science* has students create a poster of biotic factors in the ecosystem they researched. Students then critique their peers' findings. The teacher guidance for preparing for student discourse includes that they (students) are encouraged to use evidence, observations, logical reasoning, and testing to enable them to critique what they've learned effectively.
- Guidance is also evidenced for STEM projects appearing in the program within the information in the teacher program guide stating 'This approach is referred to by the acronym "DAPIC" - Define, Assess, Plan, Implement, and Communicate. Likewise, communication may be necessary at any stage of the problem-solving process. The DAPIC model allows for all of these variations.
- The materials provide teacher support in preparing students to engage in discourse. For example, the Scientific Method and Design engineering process section contains multiple guidance comments regarding discussions. The Comprehension Skills sections contain guidance on discussion and argumentation. For example, idea boxes are cited throughout the text as points of collaborative discussion, engaging the children in the topic. The idea boxes are designed to promote questions from the text they have listened to, provide opportunities to evaluate details, and synthesize and share predictions and inferences This allows a child to modify their understanding of the text read, discuss topics, and determine the basic theme using text evidence.
- The materials provide guidance on using evidence to construct claims. In the *Teacher Textbook - Grade 6 Science*, in Lesson 6A - D - SIAV Guided Questions to Inquiry, question number four asks, "What evidence do you have that the two chemicals tested in the demonstration were not the same?" In the same lesson, just a few pages later, additional teacher-guided questions are provided, asking students to make claims about the positive and negative impacts to society of making synthetic products.

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

- The materials provide support and guidance for teachers in facilitating students finding solutions. In the *STEAM Activity Guide - Grade 6 Teacher Edition*, the materials provide support and guide teachers in facilitating students in finding solutions and sharing thinking in most of the components. For example, when exploring energy conversions, the materials state, "Not all possibilities are included. Creative students may find numerous conversions encourage students

to see as much as possible. The danger of the datasheet is that it may narrow students' thinking and narrow what they look for."

- The materials provide teacher guidance to engage students' thinking in various modes of communication throughout the year. For example, the *Assessment Guide - Grade 6 Teacher Edition* includes sample responses to "Focus Questions" for the lesson Solving Problems. Specific guidance is provided about communication in the *Teacher Textbook - 5th Grade Science*. It states "Effective science communication is central to education, discussion and scientific argumentation. Not all scientists agree on everything, and when they disagree it is important that they can effectively use data, and current scientific ideas to communicate their reasons for their disagreements. Sometimes scientists must communicate complex ideas to the public. Most members of the public have a lower scientific understanding than a professional scientist, and therefore when communicating with the public it is important to deliver information in a way that can be easily understood. Encourage students to think about what they have learned in today's lesson and discuss the different ways in which they could communicate what they have learned. You might instruct the class to write a newspaper article, create an educational video, or deliver a presentation. Discuss with students the importance of considering their audience when constructing their presentation. Students may create presentations to deliver to the teacher, each other or their parents/carers. Presentations may be delivered individually or collaboratively". Misconceptions are also provided.
- The materials provide support and guidance for teachers in helping students find solutions. For example, in the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition*, Chapter 5, Activity 4, students use the engineering design process to create a solar oven. The *Teacher Edition* provides additional support for helping students find solutions. If students have difficulty building a solar oven or running their investigation of heating water with the solar oven, appendices provide teacher aid with the various designs the students may develop.
- The materials provide support and guidance for teachers in helping students find solutions. In the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition*, Chapter 5, Activity 4, students use the engineering design process to create a balloon rocket. The materials state, "Ask students to first design their device on paper and then build and test on the launch pads. Encourage them to test and redesign if they are unhappy with their first balloon rocket." This is the extent of teacher support and guidance provided. There are suggestions and probing questions in the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition* beginning with the teacher being encouraged to review Newton's Third Law (for every action there is a reaction) and then asking the students how a balloon might be like a rocket when launched.

TPS STEAM into Science Grade 6

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 that include formal and informal opportunities to assess student learning in a variety of formats. Materials assess all student expectations and indicate which student expectations are assessed. Materials include assessments that integrate scientific concepts and science and engineering practices with recurring themes and concepts. Materials include assessments that require students to apply knowledge and skills to novel contexts.

Evidence includes but is not limited to:

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

- Materials provide diagnostic, formative, and summative assessment tools. The *Teacher Program Guide - Grades K-8 Science* contains a section called Support Notes for Teachers. Within the Support Notes for Teachers segment are frequently asked questions with answers. Question 4 in this document asks, “Where are the TPS diagnostic, formative, and summative assessment tools?” The responses state that for the Diagnostic assessments, “The interactive software tool provides automated grading for multiple choice questions; Benchmark tests (Level 1, 2 and 3 Assessments) in Online Library - Blackline Master.”
- The *Teacher Program Guide - Grades K-8 Science* has a Progress Monitoring section that provides information on the four Benchmark tests included in the program. Materials direct teachers to use the Benchmark 1 test to assess prior knowledge and then use the Benchmark 2 test to assess mastery of taught TEKS. Benchmark 3 test can be administered as an end-of-term test, and Benchmark 4 is the end-of-year test. In this respect, Benchmark tests 1, 2, and 3 can be considered diagnostic and formative assessments, and Benchmark 4 can be considered a summative assessment. Materials provide formative and summative assessments in the Interactive Software Tool and Assessment Generator.
- The Assessment Tools K–8 in the *Online Library* provides instructors with an assessment generator to provide a formal assessment for the students. Teachers select the TEKS, Scientific,

and Engineering practice and have options to have multiple choice questions, open-ended questions, or both options.

- Materials provide a range of assessments in the *STEAM Activity Guide - Grade 6 Teacher Edition.* For example, in Chapter 1, the assessment consists of objectives, a problem/task, and requirements for submission. The student assessment is graded based on a grading rubric.
- Materials provide a range of assessments in the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition.* In Chapter 3, materials provide two formative opportunities to assess student learning. In Activity 3, students calculate the density of mystery materials using the formula to solve for density. Students practice solving for density, volume, or mass by rearranging the formula. These activities include a Discuss & Analysis of Results section where students are involved in asking questions and identifying the problems.

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

- Materials indicate which TEKS are assessed across the breadth of the course. In the *Teacher Program Guide - Grades K-8 Science*, the Progress Monitoring section describes the Focus Questions, Performance Tasks with Rubrics, TEKS by Chapter assessment questions, and Assessment Generator. Under Performance Tasks with Rubrics, the materials state, "For each TEKS, a performance task with a rubric is provided. Grade students and enter results onto the report card." The By TEKS, Chapter assessment questions at the end of each chapter, and the materials note, "The major assessment tools are those in the Online Library - Assessment tools." Under Assessment Generator, the materials say, "Teachers can create, save and print assessments to include chosen TEKS and skill levels. The tests can be personalized by the student or by class. Manual grading is required."
- Materials include the Assessment Generator as an online tool for teachers. The Assessment Generator is categorized by grade level, question type, learner level, and TEKS, enabling the teacher to evaluate all student expectations. The online Assessment Generator can create assessments for any grade-level standard. The Benchmark Test tool available to teachers assesses all student expectations and indicates the expectations assessed at the top of each page.
- Chapter 1 in the *STEAM Activity Guide - Teacher Edition* provides the instructor with objectives that align with the task that students must complete for the assessment. The objectives in the chapter consist of calculating averages and identifying patterns in tables. The problem that the students are given is to assemble a mousetrap car and compare their initial data to their final data.
- The *Kilimanjaro Rises Like Olympus Project* in the *STEAM Activity Guide - Grade 6 Student Edition* gives students the standards for the project and the lesson's purpose.
- The *Interactive Assessment Tool - Online Test and Quizzes* provides questions for each student's expectations.
- The *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition* has a section that provides instructors with a way to assess students formally. Each question is aligned with the TEKS and assesses all student expectations.
- Materials indicate which TEKS are assessed across the breadth of the course. In the *Teacher Program Guide - Grades K-8 Science*, the Progress Monitoring section describes the Focus Questions, Performance Tasks with Rubrics, TEKS by Chapter assessment questions, and Assessment Generator. Under Performance Tasks with Rubrics, the materials state, "For each TEKS, a performance task with a rubric is provided. Grade students and enter results onto the

report card." The By TEKS, Chapter assessment questions at the end of each chapter, and the materials note, "The major assessment tools are those in the Online Library - Assessment tools." Under Assessment Generator, the materials say, "Teachers can create, save and print assessments to include chosen TEKS and skill levels. The tests can be personalized by the student or by class. Manual grading is required."

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

- The Assessment Tool in the *Interactive Assessment Software Tool - Online Test and Quizzes* is aligned to the TEKs on which the instructor wants to assess the student. The instructor has the choice to integrate Scientific Concepts, Science of Engineering Practice, recurring themes, and concepts to assess.
- The *Online Library* has an interactive assessment software tool that integrates Scientific Concepts as well as Scientific and Engineering Practices. Instructors can use the online tests and quizzes to assess students on the different TEKS that are being covered up to 100 attempts.
- The *Online Library - Teacher Support* has a section that includes an assessment matrix that includes each unit and its TEKS. Instructors add their students' names to include notes and scores to the concept. Instructors can further track students' understanding of the recurring themes and concepts.

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

- The materials include assessments that require students to apply knowledge and skills to novel contexts. Specifically, the assessments within the program's *Assessment Guides* are activities separate from the lessons in the other program materials. This structure allows for assessment within the topic of study but in a new context, such as during the study of push and pull with magnets. Then, the *Assessment Guide* provides a performance task skills assessment that requires students to apply knowledge and skills about magnets and push and pull in a performance task skills assessment, which includes a rubric for scoring and summative questions.
- Chapter 1 in the *STEAM Activity Guide - Grade 6 Teacher Edition* provides instructors with objectives that align with the problem/task that the student must complete for the assessment. For example, the problem that the students are given is to assemble a mousetrap car and compare their initial data to their final data. The task for students is a continuation of the Chapter 1 activities in the Applying the Idea section.
- The *Student Journal* has a section in each unit where students test themselves on their knowledge and skills/vocabulary. For example, in the second unit on lab equipment, students test themselves on the tools utilized in labs and the introduction of the periodic table.
- The *Student Journal* has a Math and Literacy Challenge where students connect the concepts that are being taught. They can be assessed through the use of knowledge and skills and make a connection with other subjects. For example, Unit 1 has students select three tools and draw or label each with a description of each object. Students explain how and why the material of each object was selected and how it makes it work well.

TPS STEAM into Science Grade 6

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.	PM
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.	PM

Partial Meets | Score 1/2

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

Materials provide information and/or resources that provide guidance for evaluating student responses. Materials partially support teachers' analysis of assessment data with guidance and direction to respond to individual students' needs, in all areas of science, based on measures of student progress appropriate for the developmental level. Assessment tools yield relevant information for teachers to use when planning instruction, intervention, and extension. Materials provide some 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 provide resources for evaluating student responses in most program components. The assessment at the end of Chapter 2 in the *STEAM Activity Guide - Teacher Edition* provides the instructor notes on what to look for when grading and elaborates on how to grade the task that the students solve.
- In the Blackline Master K-8, benchmark tests are broken down by the TEKS level. Assessments range from Level One questions up to Level Three. Instructors have the opportunity to leverage different activities based on the assessment to respond to student data. The assessment provides the instructor with the correct answers for multiple-choice questions.
- The appendices in the *Learn by Doing STEAM Activity Reader Book* provide instructors with an essential content guide to evaluate students' responses by aligning the TEKS, concepts, and vocabulary in student responses.
- In the *Learn by Doing STEAM Activity Reader Book - Teacher Edition*, instructors are provided with guidance for questions that can be used in any way for each lesson at the end of the resource material. TEKS and answers can help guide student responses.
- The Teacher Textbook provides instructors with a support section. The Test Yourself section is used to evaluate student mastery. It includes multiple-choice questions, and the correct answer choice is checked for the teacher's knowledge. The What Have You Learned section includes a

four-square quadrant, stating, “In each of the quadrants below, write down some characteristics of each one of the vocabulary words you recently learned. Add a picture to help you remember the meaning of the term.” The teacher’s guide includes the phrase “student answers will vary.” Throughout the materials, activities and worksheets include possible student answers.

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.

- Materials support teachers’ analysis of assessment data but lack guidance and direction for responding to individual students’ needs based on that analysis.
    - For example, while the Graded Assessment Database offers three levels (Below, At, and Above) to determine measures of student progress, materials lack teacher guidance and direction for using this assessment data to respond to students' needs.
    - The materials include an Assessment Matrix that lists the knowledge statements for core concepts to support tracking overall data for students but lack accompanying teacher guidance for utilizing data in the matrix to drive instruction.
    - The materials contain Intervention Focus Tutorial materials to assist students who are not meeting expectations, but this tool is not directly aligned with assessment data. Materials lack teacher guidance and direction for teachers to use the Intervention Focus Tutorial in response to their analysis of assessment data.
    - The *Assessment Guide - Grade 6 Teacher Edition* offers a range of tools for evaluation and questioning, including multiple-choice and open-ended questions and performance tasks. However, it lacks support materials or resources to help teachers easily analyze and interpret the data they collect.
    - The Beginning of Strand in the *Teacher Textbook - Grade 6 Science* provides general direction on how to proceed with responding to student data.
- Materials lack specific guidance documents and resources to support teachers’ analysis of assessment data. The *Teacher Program Guide - Grades K-8 Science* provides a series of actions to take in response to student data that is limited to assigning new assessment questions (higher or lower level depending on student performance), addressing vocabulary, or assigning an art project. This blanket approach within the general teacher guidance document does not meet students’ individual needs, which are often more complex.

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

- Materials provide various assessment tools and resources, including embedded questioning in student materials, an assessment guide, and an online assessment generator that can be used to support teachers when planning instruction, intervention, and extensions. The information gathered from the assessment tools helps teachers when planning core science and differentiated instruction. Additionally, the materials extend sample responses and rubrics to assist teachers in evaluating student responses and responding to individual students’ needs.
    - The Assessment Generator online tool can be used to create a custom assessment.
    - The *Assessment Guide - Grade 6 Teacher Edition* offers a range of tools for evaluation and questioning, including multiple-choice and open-ended questions and performance tasks.

    - The Graded Assessment Database offers three levels, Below, At, and Above, to support teacher analysis of data.
    - The Assessment Matrix lists the knowledge statements for core concepts to support tracking overall data for students.
- In the *Teacher Program Guide - Grades K-8 Science*, the information provided states, "Level 1 learners will require more time and content from STEM and art projects in conjunction with story books." Level 2 students must follow the original scope and sequence and work on additional projects at home. Level 3 students continue the scope and sequence and can complete the advanced learner content and advanced STEM projects. Benchmark tests determine levels.
- The *Teacher Textbook - Grade 6 Science* uses Beginning of a Strand that directs instructors to determine students' initial understanding using the assessment database. Afterward, the materials direct the instructor to determine the best possible strategy to address student needs.
- The Teacher Support of the Online Library has a video titled "How to use the [platform] assessment generator tool." The tool assists instructors when planning instruction, intervention, and extension lessons. For example, instructors create assessments by TEKS or skill level. The assessments can be utilized as a review or reteach and can be set as multiple choice, open-ended, set at above, below, or at grade level.

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

- Materials provide a variety of resources but lack teacher guidance on how to leverage different activities to respond to student data. Examples of resources included in program components that teachers can leverage in responding to student data include the *Learn By Doing STEAM Activity Reader Book*, the *Student Textbook - Grade 6 Science*, the *Student Journal - Grade 6 Science*, the *STEAM Activity Guide*, the *Assessment Guide - Grade 6 Student Edition*, and the Intervention Focus Tutorial.
- The *Assessment Guide - Grade 6 Teacher Edition* offers review activities, performance tasks, and reteach assessments to assist teachers with direct instruction for using interventions. Support Matrices provide teachers with guidance on resources to use when supporting students. The *Teacher Textbook - Grade 6 Science* offers general suggestions for supporting students but lacks specific guidance on responding to student data.
- The *Teacher Program Guide - Grades K-8 Science* offers general guidance for using different activities to respond to student data. "Level 1 learners will require more time and content from STEM and art projects in conjunction with story books." Level 2 students must follow the original scope and sequence and work on additional projects at home. Level 3 students continue the scope and sequence and can complete the advanced learner content and advanced STEM projects. Additional guidance in this resource directs teachers to "grade and insert results" for "Focus Questions" and "Performance Tasks" onto the report card.

TPS STEAM into Science Grade 6

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.	PM
3	Materials provide guidance to ensure consistent and accurate administration of assessment tools.	M
4	Materials include guidance to offer accommodations for assessment tools that allow students to demonstrate mastery of knowledge and skills aligned to learning goals.	PM

Partial Meets | Score 1/2

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

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

Evidence includes but is not limited to:

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

- Assessments for the grade level contain items that are scientifically accurate, avoid bias, and are free from errors. Materials accurately and correctly present content and concepts for the grade level. Formative and summative assessments include items that present content and examples fairly and impartially with no impact on student performance based on such factors as a student's home language, place of origin, gender, or race and ethnicity. This is evident in the Assessment Generator, which provides TEKS-aligned assessments, and the range of assessments in the *STEAM Activity Guide - Grade 6 Teacher Edition.*
    - For example, in Chapter 2 of the *STEAM Activity Guide*, the assessment uses objects in the scenario that are familiar to all students, such as the PTA, playground equipment, and a playground slide.
    - Chapter 1 of the *Learn by Doing STEAM Activity Reader Book* is titled Koi Pond Mystery. The text includes children of diverse background learning together. The text aligns with the TEKS and includes key vocabulary emphasized in bold. The activities and the questions that fall under reading comprehension are aligned to the scientific process of learning.
    - In the Assessment Generator, the organisms and environments questions that both plants compete for biotic factors.

TPS STEAM into Science Grade 6

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

- Materials use some clear pictures and graphics that are developmentally appropriate. The assessment in Chapter 2 of the *STEAM Activity Guide - Teacher Edition* contains graphics such as the grading rubric but does not contain any pictures. The grading rubric graphic is developmentally appropriate for students to understand the criteria for the grading process. Test questions in the Assessment Generator provide students with developmentally appropriate images on 24 occasions (out of the 671 test questions) for grade 6. Grades 7 and 8 test questions are similar to grade 6.
- Assessment tools in the K-8 Online Library contain limited pictures/images. The Test Yourself section does not include any graphics in the Teacher or Student Edition. The indicator uses the terms pictures and graphics in the plural form. Test questions in the Assessment Generator provide students with developmentally appropriate images on 24 occasions (out of the 671 test questions) for grade 6. Grades 7 and 8 test questions are similar to grade 6.
- Each chapter in the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition* has pictures that are clear and easily understood by the learner. Each image is aligned to the TEKS/concepts that are being presented in the chapter so that the learner is able to make a clear connection. For example, Chapter 1, Mystery of the Koi Pond, has images aligned to the text. The images are clear so that the students can understand the meaning of each term and understand the text. Images in *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition* have questions that include images on five pages.
- Materials in the Intervention Focus Tool include a graphic organizer on the life cycle of stars. The *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition* provides questions that are used formally and informally by the instructor.

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

- Materials provide guidance to ensure consistent and accurate administration of the various assessment tools included in program components. The Progress Monitoring section of the *Teacher Program Guide - Grades K-8 Science* provides guidance on when to administer certain assessment tools. The product has four benchmark tests and guidance for when to give each benchmark. For example, “Benchmark 1 test - to assess natural knowledge at the commencement of term before any program content being taught.” Materials guide the teacher on when to administer benchmarks 2-4 throughout the year.
- Materials provide guidance for the administering items in the Assessment Database tool. The Assessment Database entry screen provides options for teachers to select TEKS-aligned questions, choose the level of questions, and show the answers.
- The *Teacher Program Guide - Grades K-8 Science* provides information on administering and scoring questions from the Assessment Generator. After completing activities in each chapter of the *Learn By Doing STEAM Activity Reader Book - Grade 6 Teacher Edition*, materials state that “teachers will assess students using Level 1 and 2 questions from the Online Library - Assessment generator or Online Library - Interactive software tool….These results should be added to the assessment matrix.”
- The *Teacher Textbook - Grade 6 Science* provides minimal guidance for administering visual assessments. Materials state, “The Creative Science Curriculum encourages two types of assessment: visual lesson plan activities and quizzes/tests.” Materials state teachers can conduct visual assessments by “watching students perform activities, such as found in STEM Project Editions or Arts Projects.”

- The Online Library contains guidance videos for using the Assessment Generator tool, including how to store information and reuse questions. The videos provide guidance on how to create assessments by TEKS, skill level, and how to personalize.
- The Assessment Generator gives an overview of each assessment teachers create. Teachers can see sample student answers to help with scoring open-ended responses.

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

- Materials lack guidance to offer accommodations for assessment tools that allow students to demonstrate mastery of knowledge and skills aligned to learning goals. For example, materials lack suggestions for time, scheduling, or setting accommodations that would allow students of varied needs and abilities to demonstrate grade-level mastery.
- Materials offer a wide range of assessments, allowing students to demonstrate mastery of knowledge and skills aligned to learning goals in various ways, including open-ended responses, projects, performance tasks, and multiple-choice questions. However, materials lack guidance for accommodating students with linguistic, neurodivergent, or other needs on assessments throughout the program. Teacher guidance presented as Tips for ELL Students and Tips for Response to Intervention (RtI) Support mentions help with reading student-facing text but does not include guidance to provide oral administration or other accommodations, such as blank graphic organizers or access to dictionaries.
- Materials include a means to differentiate assessments according to ability level in the Assessment Generator and provide guidance for using the leveled questions feature in the *Teacher Program Guide - Grades K-8 Science*. This tool allows teachers to select items above or below grade level that align with the standard. While this tool offers a differentiated assessment option that changes the expectation for students to demonstrate mastery but does not give guidance to offer accommodations on assessment tools included in the program.

TPS STEAM into Science Grade 6

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 offer 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.

- Materials give an overview of recommended targeted instruction and activities to scaffold learning for students who have not yet achieved grade-level mastery in the Support Notes for Teachers section of the *Teacher Program Guide - Grades K-8 Science.* Here, materials state: “TPS has provided supplements that can be used for after school, reteaching, or additional homework.” The document notes the inclusion of the Learn By Doing Activity Reader Book RTI Scope and Sequence, which provides an alternate pacing plan for each grade level. It also states that STEAM activities “act as reteach tools for students who did not master the content with the first two components,” instruction provided through the *Learn by Doing STEAM Activity Reader Book* and textbook lessons for the grade level.
- The Support Notes for Teachers also recommend using the Online Library - Assessment Tools with “students who remain below grade level” or a “student who responds incorrectly.” In these situations, teachers can “choose Level 1 assessment questions for the TEKS being taught…and discuss answer given with student. Determine if there is a misconception and resolve.” The guidance emphasizes the role of *science language* in causing student misconceptions and recommends that teachers use the science glossary cards provided in the Online Library to review word meanings and use them with students.
- When students struggle with grade-level concepts, materials recommend using the Intervention Focus Tutorial for current and previous grade-level TEKS. Materials state: “Teachers can use more or less of the leveled materials to suit the individual student’s progression. For example, if students are working below or far below grade level due to reading, teachers can use the intervention focus tutorial and choose the grade and appropriate TEKS content that should have been mastered in an earlier grade but was not.”

- Materials include teacher guidance for scaffolding instruction in the Learning Strategies and Scaffolding sections of unit introductions in the *Teacher Textbook - Grade 6 Science*. This guidance is sometimes generalized for all students and not specific to students with learning gaps. For example, guidance included in Introduction Matter and Energy states: "Remind students of modern shells and bones they may have seen" and "Use the analogy of the blocks in a building to help students understand the principle of superposition."
- Materials also include a Scaffolding section for each lesson in the *Teacher Textbook - Grade 6 Science*, which lists previous and future TEKS to support students with gaps in grade-level knowledge, and a Support Matrix Document listing resources that align with each standard. In the Learn by Doing Scope & Sequence, RTI materials provide recommended targeted instruction and activities for each lesson from the STEAM storybooks.

Materials provide enrichment activities for all levels of learners.

- Materials provide enrichment activities embedded in the core component *Learn By Doing STEAM Activity Reader Book - Grade 6 Teacher Edition.* Chapter 4, Solar, Wind, Geothermal…Capturing Energy, includes three enrichment activities. Activity 1 is an ELAR extension that requires students to read the story and answer questions. Activity 2 has students create a food web to show how energy is transformed and conserved. Activity 3 has students research why resource management is important, how conservation increases efficiency, and how technology can help manage air, water, soil, and energy resources.
- Materials include the *STEAM: Real Science Middle School Teacher Edition* in the Online Library of resources. This resource includes enrichment lessons that allow students to apply their knowledge and skills of each concept through the Engineering Design Process (EDP). For example, the "Wheeling Around" lesson objective states that students will develop a model to describe that when the position of objects interacting at a distance changes, different amounts of potential energy are stored in the system.

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

- The materials provide scaffolds and guidance for just-in-time learning acceleration in lessons within the *Teacher Textbook - Grade 6 Science.* Each teacher-led lesson contains suggested scaffolds under the Support header, giving the teacher suggestions for helping students reach mastery of lesson content. For example, in the Making Informed Decisions lesson, guidance under the Support header states: "Provide students with additional time to review the questions, complete their research and answers. Have students work with another student and have time to compare findings. Often, talking things through with a peer will build confidence." Throughout the textbook, these supports serve various instructional purposes outside of just-in-time learning acceleration, including supporting student engagement, helping teachers deliver instructions, and demonstrating scientific concepts.
- The materials contain teacher guidance regarding strategically targeting learning gaps during first instruction. For example, the materials offer a variety of support materials that can be utilized for varied learner needs, such as picture vocabulary cards and a simplified textbook found in the online resources.
- Just in time content is provided and detailed in the teacher program guide K-8 which advises the online materials available. In the Teacher Program Guide K- 8, under the Support Notes for Teachers, bullet three discusses how the goal of the program is for students to master all TEKS. If students are having a difficult time with concepts, it gives teachers guidance on how to

address the students' needs. If students master the TEKS, guidance is also given on how to allow the student to progress and what level of questions to give the student on assessments.

TPS STEAM into Science Grade 6

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

Partial Meets | Score 1/2

The materials partially meet the criteria for this indicator. Materials partially 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 support multiple types of practices (e.g., modeled, guided, collaborative, independent) and provide some guidance and structures to achieve effective implementation. Materials represent a diversity of communities in the images and information about people and places.

Evidence includes but is not limited to:

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

- The IMaST Learning Cycle Section in the S*TEAM Activity Guide - Grade 6 Teacher Edition* provides an overview of Exploring the Idea, Getting the Idea, Applying the Idea, and Expanding the Idea sections. When students explore, the instructor acts as the facilitator. They allow students to test materials, manipulate objects, make observations, and collect data. During the Getting the Idea portion, students discuss their findings and experiences during the Exploring section. The instructor addresses misconceptions in the learning and questions students.
- In the *STEAM Activity Guide - Grade 6 Teacher Edition*, each lesson provides the instructor with an introduction to the lesson and the lesson objectives. In Chapter 1, the introduction provides the instructor with a snippet of what students will be doing in each section of the learning cycle and how to facilitate student learning.
- The *Teacher Textbook - Grade 6 Science* gives an overview of all the steps the instructor can take for a variety of developmentally appropriate instructional approaches to engage students in the mastery of the content. The suggested steps provided by the text are listed sequentially as follows: *Learn by Doing Activity Reader Book*, *Student Textbook* (which has a variety of different instructional approaches), the *STEAM Activity Guide*, and an assessment.

- The scope and sequence outlines each unit with the student learning objective and the key concept that is Texas Essential Knowledge and Skills (TEKS) aligned. For example, Unit 2, Matter and Energy, states that the student knows that matter is made of atoms, can be classified according to its properties, and can undergo changes. The aligned TEKS (6ABCDE) are referenced again in other lessons, such as Kitchen Chemistry in the *Learn by Doing STEAM Activity Reader Book*, Chemical Reactions in the *Online Teacher Textbook - Grade 6 Science* and Getting to Know H_2O in the *STEAM Activity Guide - Teacher Edition*.
- Each chapter in the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition* provides a variety of instructional approaches to engage students in the mastery of the content. For example, Chapter 2, Kitchen Chemistry, has a reading section with background information where key vocabulary and chemical properties are introduced. Activity 1 is a reading comprehension with questions. Activity 2 has students identify physical and chemical changes. Activity 3 allows for experimentation through observing chemical reactions and documenting data. Activities 4–8 are aligned to the periodic table and provide students with practice in identifying the properties of elements.
- Section 2 of the Scientific Investigation and Reasoning starts with students reading The Science, followed by four focus questions. Students then plan an investigation that they can do at home. They share their investigation with other students via video, photos, or other ways of sharing.

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

- In the *STEAM Activity Guide - Grade 6 Teacher Edition* challenge Off to The Races, the instructor is given guidance on putting students into groups of three or four. Students have the choice of forming their own groups, being randomly paired, or choosing a partner and then being paired with another group. In Chapter 1, Need for Speed, the teacher is given guidance on putting the students into groups based on ability level or making diverse groups with different ability levels.
- In the Teaching Pedagogy- Storytelling and STEAM section of the *Family and Caregiver Guide K–8*, it states that the stories could be read in groups with the teacher or in the home with the caregiver. This option gives the instructor flexibility in student grouping options.
- The materials in the *Teacher Textbook - Grade 6 Science* offer many opportunities for flexible groupings. In this resource, the instructor is guided to group students into seven similar-sized groups. In a lesson on scientists, the instructor is directed to divide students into pairs or small groups. Elsewhere, the text states, “Divide students into similar-sized small groups, and ensure there are mixed skill levels in each group if you have a diverse group of students.”
- The *Student Textbook* has students discuss the periodic table after reading the provided story. A small group activity follows this activity, and then an individual activity.
- The *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition* provides activities that support flexible grouping. For example, students explore Newton's Laws of Motion using the EDP to create a balloon rocket. Students build their own balloon rockets, and the instructor creates rocket launchers. Students work in groups to launch their own rockets and collect data about their own launches and others.
- The *Online Library - Interactive Assessment Software Tool* allows teachers to create assessments that are TEKS-aligned and assist instructors with providing extra support to individual students who are struggling with mastering the content. Instructors can create questions to be assigned to the whole group as a class test to assess content. For example, if an instructor wants to focus on the following TEKS 10B for grade 6, the ID is 11609.
- Students read the “The Science” article and answer four focus questions independently. The lesson plan states that students struggling with reading can work with a partner or one-on-one

with an instructor. In a small group, students observe the states of matter and put Nerds candies inside a bottle of soda, which becomes inflated with air due to the reaction. The post-investigation questions are made to have whole group discussions to stamp student understanding.

Materials 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 (e.g., modeled, guided, collaborative, independent) but provide limited guidance and structures to achieve effective implementation.
- Chapter 2 in the *STEAM Activity Guide- Grade 6 Teacher Edition*, states that students can work independently to gather information before their investigation for their data table to complete object descriptions. Students can also work collaboratively during the investigations during the Exploring the Idea section to gather data for five different types of wheels. The teacher is also able to guide learning by asking open-ended questions.
- The *Teacher Textbook - Grade 6 Science* states that the instructor may choose to demonstrate malleability. Additional opportunities for teachers to model a skill are not explicitly stated consistently. For instance, the *Teacher Textbook - Grade 6 Science* contains opportunities for collaboration, such as helping students decide on questions that can be answered using an experimental investigation.
- The Math Link section models how to work the problem, and then the student has a Try It opportunity. In this resource, it says, “Your instructor will demonstrate how to use the conductivity meter.”
- Each chapter in the *Learn by Doing STEAM Activity Reader Book - Grade 6 Student Edition* provides several instructional approaches to engage students in the mastery of the content. For example, Chapter 2, Kitchen Chemistry, has students practice reading comprehension independently in Activity 1. The materials support guided practice by telling the instructor to allow students to observe pictures and require the instructor to explain what the ingredient is in detail that is being experimented on. It supports collaborative practice by allowing students to work in small groups on an experiment and discuss results. It supports modeling practice as instructors model changes in matter. This chapter also supports instructor guidance as it requires the instructor to ask students to restate instructions to check for understanding.
- The *Teacher Textbook - Grade 6 Science* has students work together collaboratively by drawing an ecosystem with their group. They then go around to other groups and add things they think other students are missing from their image. They then identify the abiotic and biotic factors. Instructors model how the equipment works to measure soil parameters.

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

- In the *STEAM Activity Guide - Grade 6 Student Edition*, diversity is shown in the images in the textbook based on race and gender. The textbook includes images of men and women and people of different ethnic backgrounds.
- In the *STEAM Activity Guide- Student Edition*, the images represent a diversity of places, such as the Space Station, an igloo in a cold climate area, and an oil plant on the water.
- In the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition*, multiple images represent a diversity of communities. For example, Chapter 1, School Garden, presents an image that represents children and teachers of diverse backgrounds working together to make a koi pond function. Chapter 2, Kitchen Chemistry, presents students of diverse backgrounds working

together to fry an egg. Chapter 3, Floating Balls and Sinking Stones, presents a diversity of age groups, from a grandmother and her grandson to a mother and daughter interacting with nature.

- In the *Online Library - Crosscutting Library Photographs*, there are numerous locations of images of different concepts that are aligned to the TEKS and show a diversity of communities—for example, the photographs of animals in the water. There are several images of animals found in different ecosystems.
- The materials demonstrate ample amounts of diversity. The *Learn by Doing STEAM Activity Reader Book* has diversity on the book's cover, and each chapter shows images of a diverse learning community. The *Student Textbook - Grade 6 Science* also shows diversity holistically rather than in individual sections.

TPS STEAM into Science Grade 6

Indicator 7.3

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

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

Partial Meets | Score 1/2

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

Materials include some guidance for linguistic accommodations (communicated, sequenced, and scaffolded) not commensurate with various English language proficiency levels as defined by the ELPS. Materials encourage strategic use of students' first language for linguistic, affective, cognitive, and academic development in English.

Evidence includes but is not limited to:

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

- Materials list the ELPS in the *Teacher Program Guide - Grades K-8 Science* and note that the content of program components is intended to align with both TEKS and ELPS for each grade level. The Program Components section lists ELL supports as a feature of each lesson in the *Teacher Textbook* and provides examples of excerpts from grade-level lessons. These excerpts indicate that the generic guidance to support ELL students within lessons does not correspond to language domains or proficiency levels. This overview document lacks further information on guidance for linguistic accommodations commensurate with various levels of English language proficiency as defined by the ELPS.
- Materials include guidance for linguistic accommodations under the ELL (English Language Learner) header at the end of each lesson in the *Teacher Textbook - Grade 6 Science.* For example, in the Grade 6 lesson, Tools, the materials list the following suggestions under the ELL header: "Ensure students understand the adjectives you are using to describe tools. Have students think about the words they can use to describe the different tools. Encourage students to think about prior experiences they have had in which they have thought about and discussed tools." Other lessons in the *Teacher Textbook* offer similar suggestions for supporting emergent bilingual students. For example, the Grade 6 lesson, Cost Benefit Analysis, directs teachers to "Use the focus tutorial so that students can see current grade content with more white space and less text per page. Allow more time for students to review the content using this format." The Mapping Forms of Energy lesson lists two lesson adaptations under the ESL/Reinforcement heading: Students who are still learning English can make a simplified concept map that does

not require them to write a definition for each form of energy. Have these students orally explain each type of energy. You may want to have students illustrate their concept maps with relevant pictures. While these suggestions guide teachers toward providing linguistic accommodations, the guidance is not commensurate with various levels of English language proficiency as defined by the ELPS.

- Materials embed teacher guidance for incorporating literacy strategies in science instruction in the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition;* however, this program component lacks guidance for linguistic accommodations within teacher guidance for activities, science vocabulary, and narrative text. For example, materials present reading comprehension and vocabulary activities without guidance for linguistic accommodations commensurate with the English language proficiency levels defined in the ELPS.

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

- Throughout the program components, materials encourage use of students' first language and use it as a means to linguistic, affective, cognitive, and academic development in English. Materials primarily offer guidance on native language use through flashcards and translations, as well as some oral responses and discussions.
- Materials encourage the use of students' first language in suggestions under the ELL headers in the *Teacher Textbook - Grade 6 Science.* These suggestions pertain to using Spanish glossary cards included in the program components and making flashcards in languages other than English. For example, ELL header guidance in two lessons, Tools and Investigation: Name the Scientist, states: "Use the Spanish glossary cards to assist relevant students." The Spanish glossary cards are available to teachers in the Online Library - Blackline Master - K-8 Science.
- Materials include strategies for supporting emergent bilingual students under the Tips for ELL Students headers in the *STEAM Arts Project Guide K-12* Grade 6 lessons. For example, the Teacher Text states, "If possible, have students work in collaborative groups where students share the same languages, and ideally, one student is advanced in English. Use visual and tactile models to illustrate elements of each activity and focus on the keywords. You can have students create a journal of words in their first language and in English."

TPS STEAM into Science Grade 6

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 the *Family/Caregiver Guide - Grades K-8 Science*, which introduces the philosophy, research-based strategies, program components, assessment information, and a glossary for each grade. Within this resource, the Program Introduction explains the research behind the program content and describes the program's philosophy in easy-to-understand language for students and caregivers. This resource also includes an overview of the components and the sequence of materials intended to be used during instruction. It is available in a digital format for sharing with parents and caregivers.
- Materials include an overview of the *Family/Caregiver Guide - Grades K-8 Science* within the *Teacher Textbook - Grade 6 Science*. This information provides teacher guidance on sharing information about the curriculum with families and caregivers.
- The *Family/Caregiver Guide - Grades K-8 Science* details elements of the program and the purpose behind its design. One element described is practical approaches to teaching and learning science and the benefits of understanding how to "confront scientific arguments, advances, and associated technologies in their daily lives." The materials list everyday science applications that will support students as they grow. The guide continues to address TPS's pedagogical approach, "[using] storytelling as its main strategy," including a reference to research that says, "Students learn best when they enjoy the way a lesson is presented."
- Further, the *Family/Caregiver Guide - Grades K-8 Science* describes research-based strategies considered as TPS developed the program. The materials cite evidence such as "Social lessons improve student learning." and "Students learn in different ways, so the content must be presented that attaches the visual kinesthetic and auditory senses." The research references assist families with understanding the design of the program.

- Additionally, the *Family/Caregiver Guide - Grades K-8 Science* includes links to online materials, and the section included in the *Teacher Textbook - Grade 6 Science* has a guide with the following sections: Program Introduction, Program Components, TEKS, ELPS, Explanation of TEA/SBOE process and [program] approach, Texas Resource Review requirements, Navigation Guide - Online Resource, Information about [program], Progress Monitoring, Family Visits and Teaching Pedagogy - Storytelling and STEAM.

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

- Materials include the *Family/Caregiver Guide - Grades K-8 Science*, a resource designed to facilitate family support for learning. This document references the free digital access that materials provide for families to reinforce student learning.
- The *Family/Caregiver Guide - Grades K-8 Science* provides resources and strategies for caregivers to help reinforce student learning and development, stating that “Parents/caregivers can help enforce some of the requirements of the TEKS at home. The work you can complete with your children will vary between assisting students studying new TEKS content and explaining how it applies to home life and practical assistance with safety measures.” It further suggests “Family Visits” to reinforce student learning and development. The list contains five suggestions: Texas Park, Texas Coast Wetlands, Texas Fishery, Texas Wildlife Reserve, and Gulf Coast Beach. The materials direct parents and caregivers to "ask your family member what studies they have completed that relate to these locations and discuss their thoughts and reviews."
- The *Teacher Textbook - Grade 6 Science* lessons include an At Home section with specific suggestions for home reinforcement. For example, the section in the Naming That Tool lesson includes activities for students to do at home after the investigation. Materials offer the following prompts for caregivers to ask their children: “Ask your child to describe different tools that you have at home from this grade's list of tools; ask your child to name the tool and tell you how it is used in science lessons.”
- Materials also provide the NEST Family Videos to support caregivers with science content knowledge. Each workbook is provided with a Parent and Teacher guide that has activities and coloring pages that students can complete at home with their parents.

Materials include information to guide teacher communications with caregivers.

- Materials provide the Science Report Card as a teacher resource. This resource includes the following guidance for teacher communications with caregivers: “Please fill in the parent comment section so that we can work together to monitor your child’s progress.” The Science Report Card contains rows and columns for teachers to communicate student progress toward mastery of science and literacy standards according to four levels: Novice, Intermediate, Expert, and Not Yet Introduced.
- Materials include teacher guidance for communicating with caregivers in the *Family/Caregiver Guide - Grades K-8 Science*. This guidance includes advice for building relationships and sharing digital resources. For example, materials advise teachers to “provide digital access to caregivers at the start of each term” and suggest that teachers “hold a tutorial meeting in which the teacher can step the caregivers through the program, the digital tools, and the access they will receive to use at home.”

- The *Teacher Program Guide - Grades K-8 Science* offers additional information to guide teacher communication with caregivers, including suggestions for holding regular meetings and emphasis on the importance of actively working with caregivers. This guidance document states that “teachers may wish to ask various caregivers to come into the classroom to discuss how their job roles utilize various STEAM approaches” and affirms that doing so “will also enable caregivers to communicate with the students and feel valued within their child’s education.” It also guides teachers to “acknowledge and show gratitude for the time caregivers give to help the students.”

TPS STEAM into Science Grade 6

Indicator 8.1

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

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- The *Teacher Textbook - Grade 6 Science* contains a Scope and Sequence outlining the TEKS aligned with each unit. This resource outlines the unit, TEKS, textbook reference page, and the number of class periods and revisions needed for each unit. A pacing calendar view is also available that shows the breakdown of units daily.
- An alternate RTI scope and sequence is provided and aligned with the STEAM Storybooks and other instructor-facing materials.

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 year-long tools that indicate where teachers may find opportunities for facilitating student-made connections across core concepts, scientific and engineering practices, and recurring themes and concepts. For example, the materials provide a grade-level scope and sequence document outlining the instances where core concepts, SEPs, and RTS are present throughout program components. Additionally, the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition* contains an Appendix and Essential Content Guide, both outlining chapter contents and connections to science TEKS. The Appendix shows the science concepts covered in each chapter, and the Essential Content Guide shows which chapters align with a given science TEKS.
- The Science is a Verb category in the *Teacher Textbook - Grade 6 Science* includes a Teacher Guided Questions to Inquiry section for each lesson. These questions provide opportunities for

facilitating student-made connections across core concepts. For example, materials provide four questions each for the lesson How Do Forces Act on an Object? These include: “How are the forces the same or different for a car that is moving at a constant speed versus one that is not moving?” and “What happens when forces are balanced?” For each set of questions there is guidance in the Additional Hints section.

- Teacher guidance in the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition* provides support for facilitating student-made connections across systems, one of the grade-level recurring themes and concepts in the TEKS. Under the header “Systems,” materials guide teachers as follows: “Introduce the concept of systems to the students before commencing reading the book. Explain that a system is a sum of its parts. Systems exist in our world on a microscopic scale, from atoms to each of our cells in our body to the macroscopic scale of our Earth and solar system. In each system the whole system is dependent on the complementary sum of its parts.” Materials then highlight examples relevant to chapter contents, as guidance for student discussion at the end of each chapter.

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

- The Pacing Calendar/Year Planner specifies dates for “revision, assessment, and reteach” after each unit. The Horizontal alignment chart shows teachers how knowledge and skills spiral throughout the year. Teachers can also view spiraling from other grades using the vertical alignment chart.
- The TEKS 1-5 Content Guide shows evidence of the materials spiraling knowledge and skills in various program components across the year. The evidence does indicate where specific science and engineering practices are revisited throughout the year that are relevant to the activities included for that concept.
- Materials show spiraling of cross-content connections. The materials provide intentional practice and spiraling of previously taught knowledge and skills from earlier lessons/grade levels and the current lesson’s science knowledge and skills. Materials state: “If students accurately answer either or both questions then once the textbook content that follows has been completed it is highly likely that the science content will have been mastered. Teachers assign level 2 questions for TEKS taught and record results onto the assessment matrix”. Materials then explain what to do if students have not yet mastered content.
- Materials include project-based lessons incorporating multiple standards within an investigation, including some previously taught.

TPS STEAM into Science Grade 6

Indicator 8.2

Materials include classroom implementation support for teachers and administrators.

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- The *Teacher Textbook - Grade 6 Science* includes guidance and recommendations for phenomenon-based learning, embedded technology, background information, and lesson extensions to support and enhance student learning. Instructors can also access a support line via phone and email for additional support and questions regarding the materials.
- Materials provide overview documents to support teachers in understanding how to use all materials. In the *Assessment Guide Teacher Edition*, teachers can reference lesson plans with a sequence and pacing for lesson implementation that includes activity directions and discussion topics. Materials include directions for how to implement the lesson plan, including using given scaffolds and enrichment activities for the lesson. Materials also include a Teacher Support component within the Online Library of the learning platform. Supports include detailed plans for the delivery of lessons.

- The materials include guidance and recommendations in the *Teacher Program Guide – Grades K–8 Science*, with a program introduction, program components, TEKS, LEPS, and a navigation guide to online resources. Within the guide, materials provide an explanation of the different components and how they are used. This resource also includes teacher guidance for getting started with the material with embedded technology. For example, materials explain the use of materials such as online libraries, *Teacher Textbook* lessons, *Student Textbook* activities, and assessment tools.

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

- Materials include a grade-level scope and sequence at the beginning of the *Teacher Textbook - Grade 6 Science.* This resource shows the science TEKS correlated with each unit in the textbook and the corresponding page numbers to reference the TEKS in other program components, such as the *Learn by Doing STEAM Activity Reader Book*.
- Materials provide standards correlations that explain the standards within the context of the grade level through scaffolding information in the *Teacher Textbook - Grade 6 Science.* At the beginning of each traditional textbook lesson, materials showcase what students should already know from previous grades and will learn in future grades, K-5, below the objective students will learn through the lesson, with TEKS correlations.
- The Appendix of the *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition* lists chapters within the program and correlating standards, including science and cross-content standards for Math and ELA. This chart includes the language of the standards for student skills but does not include the TEKS. The Essential Content Guide embedded after the Appendix in the *Learn by Doing STEAM Activity Reader Book - Grade 6* includes science standards correlations by chapter. Materials also include the vertical and horizontal alignment of the *Learn by Doing STEAM Activity Reader Book* in the *Teacher Program Guide - Grades K-8 Science*.
- The *Learn by Doing STEAM Activity Reader Book - Grade 6 Teacher Edition* includes cross-content standards for ELA and math, such as comprehension of increasingly complex text, text-based discussions, and data analysis. Materials also include lessons and projects requiring research skills in the Online Library. These projects involve real-world scenarios correlating science learning with technology, engineering, art, and math skills.

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

- Materials include a comprehensive list of materials students need for activities and investigations in the *Teacher Textbook - Grade 6 Science*. Teachers can view a list of materials needed for specific lessons in the different investigations. The materials detail supplies for use in hands-on exploration in grade 6.
- The *STEAM Activity Guide Grade 6 Teacher Edition* lists materials needed for each lesson portion. This component begins with a phenomenon that requires students to use scientific equipment and supplies to connect prior knowledge with a new concept.
- The RTI Scope and Sequence includes a materials list for each activity considered hands-on or a lab experience.
- Materials provide information in the Online Library for refilling material kits.
- Materials provide a STEAM into Science Grade 6 Textbook Kitting List, which alphabetically lists all required materials to complete activities and investigations.

TPS STEAM into Science Grade 6

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

- In the *Teacher Textbook - Grade 6 Science*, the laboratory safety section outlines how to create safety assessment plans with students and states instructors should do this before each investigation. Each investigation section reminds teachers to ensure safety standards are being followed and notes that safety standards must be aligned with local standards and TEA safety standards.
- The Scientific Method lesson in the *STEAM Activity Guide* includes safety tips for hands-on learning and general safety. Instructors are provided with checklists for general safety practices and usage of safety equipment.
- Materials include guidance for safety practices in the *Scientific, Investigation, and Reasoning Handbook – Grade 6*. The first lesson, "Working Safely and Responsibly," reviews how to behave safely in science lessons.

TPS STEAM into Science Grade 6

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 *Teacher Textbook* provides a detailed scope and sequence with time stamps for the entire unit. In addition, lesson plans list time stamps for the daily lesson. The average lesson time ranges from twenty to fifty minutes.
- Instructors have access to a pacing plan that extends throughout the year. In addition to this pacing plan, there is an RTI-based scope and sequence with time stamps throughout the activity.

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

- The *Teacher Textbook* includes an overview of content and skills to be introduced to students. Scientific concepts, scientific and engineering practices, and building background knowledge provide students with guided inquiries during investigations. These investigations include, but are not limited to, STEM projects and other assessment forms. In the *Teacher Textbook,* lesson plans are in place to implement the sequence of content.
- The content guide for the grade level provides the chapter with corresponding TEKS. The chapters follow a developmental progression, building student content knowledge that follows the scope and sequence.
- The RTI scope and sequence provides specific details on the duration of the units, lesson, content pacing, and sequential chapters. All materials are TEKS-aligned.
- Instructors have access to a flow chart that aids in accessing students' prior knowledge and best practices for the implementation to address gaps in student knowledge. Instructors are also provided with concise, student-friendly objectives and outlines of tasks that can be leveraged to fill in those gaps.

TPS STEAM into Science Grade 6

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

- The *Teacher Textbook* provides an instructional calendar that outlines the TEKS and skills addressed in each unit. The projected time to cover all instructional material is 150 days.
- The pacing plan provides instructors with two weeks of flex days for assessments and reteach options. The RTI lesson plans allow flexibility for reteaching with the instructor choosing which activity aligns best with student needs.

TPS STEAM into Science Grade 6

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.	No
2	Materials embed age-appropriate pictures and graphics that support student learning and engagement without being visually distracting.	No
3	Materials include digital components that are free of technical errors.	Yes

Not Scored

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

Materials do not include an appropriate amount of white space and a design that supports and distracts from student learning. Materials do not 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 do not include an appropriate amount of white space and a design that supports and does not distract from student learning. While some student-facing program components in the materials include an appropriate amount of white space and a design that supports student learning, the core components do not.
    - For example, the *Student Textbook - Grade 6 Science* is text-heavy, lacking adequate white space and other design features to support student learning. Lessons in the textbook often contain one to two pages of closely spaced text without graphic or text features. Chapters and lessons within the textbook lack clear titles that would help students navigate the various topics, activities, and sections.
    - For example, the traditional lesson, Elements, Molecules, and Compounds, in the *Student Textbook - Grade 6 Science* begins with one and a half pages of background information under the heading The Science. The lesson includes an investigation with eight steps to follow. The numbered steps are presented as paragraphs of text, not separated by spaces, and without graphic or text features to help students follow them.
    - For example, each chapter in the Learn *by Doing STEAM Activity Reader Book - Grade 6 Student Edition* has bolded keywords that stand out so that students know the term is important. Activities have space for students to write their responses to questions and graph their responses if needed.
    - For example, the Student Journal provides students with white space to respond to fill-in-the-blank questions and space to create projects based on the questions.

TPS STEAM into Science Grade 6

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

- The materials do not embed age-appropriate pictures and graphics that support student learning and engagement without being visually distracting. Materials frequently use unrealistic clipart, rather than realistic pictures and graphics, when presenting science content and concepts and embed fun and decorative pictures and graphics that are visually distracting to students. Materials also embed pictures and graphics that detract from learning by presenting distorted images or models of scientific content.
    - For example, in the *Student Textbook - Grade 6 Science*, most photographs and clipart lack captions explaining the images and how they relate to the text, thereby lacking support for student learning and engagement.
    - For example, a Project-Based Lesson in the *Student Textbook - Grade 6 Science* includes a clipart image of a young girl doing schoolwork at a desk. The text on the page, titled The Science, explains Newton's second and third laws of motion.
    - For example, in the *Student Textbook - Grade 6 Science,* materials include a Sun-Moon-Earth model that depicts the Earth as inaccurately close to the sun and shows the distance between the Earth and the Moon as equal to the distance between the Earth and the Sun.
    - For example, in Chapter 7 of the *Learn by Doing STEAM Activity Reader Book - Grade 6 Student Edition,* the materials present a cartoonish picture of three children shining a flashlight in a cave above a photograph of quartz amethyst. At this point in the story, the characters are no longer in the cave, and the juxtaposition of the clipart and photograph is visually distracting.

Materials include digital components that are free of technical errors.

- The materials include digital components that are free of technical errors. Teacher digital materials are free of spelling, grammar, and punctuation errors.
    - For example, the *STEAM Activity Guide - Grade 6 Teacher Edition* and *Teacher Textbook - Grade 6 Science* includes activities free of inaccurate content materials or information. The materials are also free of wrong answers to questions asked.
    - For example, the Online Assessment Tools K- 8th Science- Assessment Generator is free of technical errors.
    - For example, the Scientists section in the Online Library provides information on different scientists and their accomplishments. The resources have fact sheets that students can use when researching that scientist. This digital component is free of technical errors.

TPS STEAM into Science Grade 6

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.	No

Not Scored

Materials are somewhat 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 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 do not integrate digital technology that is compatible with a variety of learning management systems.

Evidence includes but is not limited to:

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

- The materials integrate technology and tools that support student learning and engagement. Materials include digital access to components, online assessments, tutorials, and digital technology.
    - For example, the Interactive Assessment Tool allows students to complete tests and quizzes online.
    - For example, the Intervention Focus Tutorial provides digital access to below-level, at-level, and above-level science TEKS for students needing differentiated instruction.
    - For example, the *Teacher Program Guide - Grades K-8 Science* outlines the digital components of the instructional materials and gives an overview of materials that can be accessed digitally.
    - For example, the Online Library includes NEST family videos and workbooks.
    - For example, materials include access to the TPS Alaska Library, which provides a coloring book and audio clips.

TPS STEAM into Science Grade 6

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 do not integrate digital technology to support student engagement with science and engineering practices, recurring themes and concepts, and grade-level concepts. While materials refer to online resources in lessons and activities and provide online assessments, the program lacks such digital technology components as demonstration videos or interactive labs that would support student engagement with the SEPs, RTCs, and grade-level content.

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

- The materials do not integrate digital technology that provides opportunities for teachers and/or students to collaborate. The materials indicate all online resources are separate links and not interconnected, thus preventing digital collaboration among students and teachers.
- Although the materials include online assessments in the Interactive Assessment Tool, they do not allow teachers and/or students to collaborate. The assessments are designed to be completed individually after they are printed in paper-based form by the teacher.
- The materials do not recommend platforms, links, or resources on how those digital suggestions can be accessible to students and teachers.
- The materials do not provide suggestions or resources for collaboration between teachers and students.
- The Intervention Focus Tutorial can be shared between teacher and student to support student learning but does not allow teachers and/or students to collaborate.

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

- The materials do not integrate digital technology that is compatible with a variety of learning management systems but do note that all digital materials are accessible via any computer or mobile device with the internet. The materials recommend internet use for many research-focused activities in student-facing materials.
- The *Teacher Program Guide - K-8 Science* states that digital technology within the materials is compatible with Clever but does not mention other learning management systems.

TPS STEAM into Science Grade 6

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.	No
2	Materials provide teacher guidance for the use of embedded technology to support and enhance student learning.	No
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 somewhat developmentally and grade-level appropriate and provide some learning support.

Digital technology and online components are not developmentally appropriate for the grade level and do not align with the scope and approach to science knowledge and skills progression. Materials do not provide teacher guidance for the use of embedded technology to support and enhance student learning. Materials are available to parents and caregivers to support student engagement with digital technology and online components.

Evidence includes but is not limited to:

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

- Digital technology and online components included in the materials comprise print-based content and resource materials in the Online Libraries and guidance to use the internet for web-based research and resources in student activities. Materials include the following in the Online Libraries: Assessment Tools, Reader Activity Books, Student Reasoning Library, Blackline Master Library, STEAM Library, and the Digital Frog Library. These resources and tools are consistent across the K-8 program and not specific to the grade level.
- The materials lack digital technology and online components outside of the digitized files of print materials. The online materials consist mostly of print-based materials being placed in an online viewer or images being available for display.

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

- The materials do not provide teacher guidance for the use of embedded technology to support and enhance student learning.
    - For example, the materials lack teacher guidance for the use of embedded technology in the *Learn by Doing STEAM Activity Guide*. Materials state, "Please refer to your school's computer safety policy for work that involves students using computers and the Internet."

- For example, materials provide a Crosscutting Library of photographs but lack teacher guidance for embedding these photographs within lessons and activities to enhance student learning.
- For example, while materials provide a video guiding teachers on using the interactive software tool and the assessment generator, this guidance is lacking for other components, such as the intervention focus tutorial. Materials do not include step-by-step instructions for setting up and using technology. Materials do not provide troubleshooting tips for common problems teachers may encounter.

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

- Materials are available to parents and caregivers to support student engagement in online components.
  - For example, the *Family/Caregiver Guide - Grades K-8 Science* that teachers and caregivers should communicate so that digital access to the curriculum is provided for the student at home. Materials provide caregivers with access to online resources, including but not limited to homework, TEKS and ELPS correlations, glossary cards, and digital textbooks. This document allows parents and caregivers to support student engagement with online tools like the Intervention Focus Tutorial.
  - For example, materials provide an e-letter that provides online access to materials, resources, and activities to reinforce student learning and development.
  - For example, materials provide access to NEST family videos to support learning at home but lack guidance to support student engagement with this online component.
  - For example, materials provide parents and caregivers access to digital versions of all Reader Activity Books.