TPS STEAM into Science Grade 7

TPS STEAM into Science Grade 7 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 somewhat designed to strategically and systematically integrate scientific and engineering practices, recurring themes and concepts, and grade-level content as outlined in the TEKS.
- The materials anchor the learning in phenomena and problems as the key lever for driving learning and student mastery of disciplinary knowledge and skills.

Section 3. Knowledge Coherence

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

Section 4. Productive Struggle

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

Section 5. Evidence-Based Reasoning and Communicating

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

Section 6. Progress Monitoring

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

- The assessments are somewhat 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 include a variety of research-based instructional methods that appeal to a variety of learning interests and needs.
- The materials include guidance, scaffolds, supports, and extensions that maximize student learning potential.

Section 8. Implementation Supports

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

Section 9. Design Features

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

Section 10. Additional Information

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

TPS STEAM into Science Grade 7

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

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

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

Evidence includes but is not limited to:

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

- The 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 are hands-on activities that require the use of scientific equipment and materials. Opportunities for cross-curricular content are intertwined within the investigation.
- In the Teacher Edition of the STEAM Activity Guide, instructors guide students through TEKS-aligned activities and phenomena. This guidance gives students multiple opportunities to explore, expand, apply, and analyze scientific ideas, theories, and practices.
- 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.

TPS STEAM into Science Grade 7

Materials provide multiple opportunities to make connections between and within overarching concepts using the 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 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. Materials provide some opportunities to make connections between and within overarching concepts using the recurring themes. Recurring themes and concepts are not stated, leaving the terms open to interpretation instead of explicitly explained, defined, and presented.
- 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. Concepts and themes are not stated, leaving the terms open to interpretation instead of explicitly explained, defined, and presented.
- The Teacher Textbook - Grade 7 introduces to instructors what the overarching concepts and recurring themes are for that specific unit. This is not consistent during each introduction to new TEKS.
- The Learn By Doing STEAM Activity Reader Book Grade 7 provides the instructor with guidance on how to facilitate discussions. The instructor is provided with tasks to give students before, during, and after text discussions to develop oral language. Activity 4 provides the instructor an opportunity to practice these skills with students by discussing the different components of the universe after doing a reading comprehension activity.

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 TEKS-aligned student learning objectives. There are additional supports for Individual student learning.
- The *Teacher Textbook* reintroduces Earth and space to students. Students develop and use models that build upon K-5 experiences and progression. The activities in the unit use multimedia and visual displays to enforce key points.
- The appendix of the Learn By Doing STEAM Activity Reader Book - Grade 7 features an essential content guide. The appendix highlights how each chapter is correlated with the TEKS. This appendix includes ELAR content that are covered in the chapters through reading and vocabulary activities.

TPS STEAM into Science Grade 7

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

- The *Student Textbook* contains focus questions, which ask students to answer key questions within the investigation. The Test Yourself section contains questions allowing students to test their knowledge about the new learning.
- 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 "DAPIC" approach. Instructors are also provided with a chart that outlines student and instructor responsibilities throughout the learning cycle.
- Students are asked to plan an investigation where they have to keep the ice cube cold with given materials. Asked to create an incline plane system using the engineering and design process. (Teacher Textbook Pg 453). Students play a What Am I Game where they ask the teacher questions to identify the mystery substance using pre-taught vocabulary (Teacher Textbook page 310, G6). The student's role is to collect and interpret data, apply the concept, and expand on the concept through reading and global situations. Students are asked to plan an investigation where they have to keep the ice cube cold with given materials. They are also asked to create an incline plane system using the engineering and design process.
- The *Teacher Textbook* provides students with the opportunity to participate in virtual field trips. For instance, materials include a digital field trip series that uses virtual reality with activities to explore different ecosystems.
- The Learn by Doing STEAM Activity Reader Book Grade 7 explicitly details how to teach the scientific method and the engineering design process to students. The text recommends that instructors make a poster of the design process and provides the instructors with questions to ask students throughout the process. In Activity 5, students explore convection in a liquid. They plan the investigation and are guided to connect what happens in the classroom versus what happens in the oceans.

TPS STEAM into Science Grade 7

Indicator 2.2

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

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

Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- In the *Teacher Textbook*, the lesson plan has a section titled Phenomena, which supports student learning. Phenomena are found throughout each unit, anchoring students in the why and how of the learning.
- Activities found In the Learn By Doing STEAM Activity Reader Book- Teacher Edition follow science and engineering processes. Students are consistently asked to develop hypotheses, collect and analyze data, and summarize activity results as they align with the phenomenon.
- The instructor is provided with the lesson purpose and steps of the engineering process that is TEK and grade-level aligned. The activities have students practice scientific and engineering practices that align with the concept.
- Students practice making connections by creating t-shirts showing the different states of matter. The Student Textbook - Grade 7 also highlights activities that drive student learning and mastery of the TEKS. They design posters and create illustrations of literacy text and vocabulary to assist with the learning of academic language.
- The *Teacher Textbook,* under the scaffolding section, highlights the alignment between the anchoring phenomenon and the lab assignments. Students are asked to use previous

experiences with scientific tools and background knowledge to help guide them through lab assignments. Throughout the chapter, they practice each section of the scientific method, using grade-level concepts that are TEKS aligned to aid in learning.

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

- In the *Teacher Textbook,* 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.
- There is a section on phenomena and scaffolding information from the previous year's TEKS located in the lesson plan. It highlights what standards are built upon and what students should already know.
- In the Learn by Doing STEAM Activity Reader Book Grade 7, 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 with 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 to where the previous units' lessons, themes, and concepts are used again in a different way.

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

- 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 7, an outline is provided for the instructor 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. The reader outlines the scientific method in full detail. Instructors use the outlined methods to model agricultural runoff for students.
- Teachers are provided with clear student learning objectives that are aligned with the TEKS and the anchoring phenomenon. Instructors and students are provided with the scientific method flowchart to aid in learning how to solve the problem in each activity.

TPS STEAM into Science Grade 7

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.

- In the Teacher Program Guide - Grades K-8 Science, in the Support for Teachers section, materials include a diagram on vertical alignment. It states that “in order for students to show mastery of the content, it begins with establishing a foundation in Kindergarten. As students progress through each grade, the content is reintroduced and expanded, skills are practiced as the levels and complexity are increased.”
- In the *Teacher Textbook Grade 7*, students study and complete descriptive, comparative, and experimental investigations through scaffolding of knowledge and skills in the lesson.
- Chapter 2 in the Learn By Doing STEAM Activity Reader Book-Grade 7 uses the Lemonade Stand story that connects with the periodic table and its components. The Biodiversity In Our World chapter revisits this story and connects how elements and atoms relate.

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

- In the *Teacher Textbook*, each lesson provides instructors with scaffolding information for prior, current, and future grade-level TEKS. For example, the textbook provides scaffolding on Matter and Energy. It details how students expand their knowledge of the content at each grade level.

During Grade 4, students are expected to classify matter using physical properties and physical states. In Grade 6, students build upon this by comparing and contrasting the states of matter by using the structure, shape, volume, and kinetic energy of atoms and molecules. At the current grade level, they expand this knowledge even more by comparing and contrasting elements and compounds in terms of atoms, molecules, chemical symbols, and chemical formulas.

- Each chapter of the Learn By Doing STEAM Activity Reader Book - Teacher Edition is designed in a way that allows the students to develop knowledge gradually. Activity 1 focuses on reading comprehension, which gives students the opportunity to learn new content.
- Activity 3 provides students with the density formula and three mysterious substances' densities. They are expected to use the formula and identify the mysterious substance using the given density. Activity 4 increases the rigor by having students calculate the density using the displacement method and volume.
- The Essential Content Guide shows the chapters and the TEKS involved in each chapter. Additionally, the pacing guide in the Online Library provides instructors with a daily calendar throughout the unit. The calendar shows an intentional sequence of TEKS to allow for a deeper conceptual understanding of each unit.

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

- In the *Teacher Textbook*, the lesson plan describes the concepts that students will be focusing on. As the lesson progresses, the instructor builds upon the concept and recurring themes.
- Materials clearly and accurately present grade-level-specific core concepts, recurring themes, and science and engineering practices. In the *Teacher Textbook*, students dive deeper into energy, with the Law Of Conservation of Energy being the recurring theme through past and future grades.
- Students are asked to do scientific investigations using the scientific method in each chapter. For example, the Learn By Doing STEAM Activity Reader Book conveys accurate Information when it comes to the signs of a chemical reaction (production of a gas, smell, precipitate, color change, and change in temperature). This information aids students in Activity 8, where the student learning objective is to “investigate two reactions using the scientific method and determine if there is a physical or chemical change.”

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

- In the *Teacher Textbook*, there is a section called Test Yourself where the student has the opportunity to demonstrate mastery of the TEKS from the lesson activities.
- The textbook provides students with multiple choice questions in which they must identify the by-product of photosynthesis, how the plants obtain energy, and how plants start every food chain. These questions are TEKS and student learning objectives aligned.
- The mastery requirements are within the boundaries of the main concepts of the grade level. Each chapter ends with true or false questions, a math link connection, and a literacy connection.
- Students investigate photosynthesis using an *Elodea* leaf. After recording minute-by-minute observations, they are asked to reflect on their data. The math link connection problem provides students with the equation for respiration and includes a balanced equation. The literacy

connection expects students to create a food chain, emphasizing to the instructor that the chain should start with plants.

- Materials include an assessment generator that lets the teacher select below, at, or above grade level with multiple choice, open-ended, or both options. Instructors also have the option to create and insert their own created questions. Questions in the assessment generator align with student learning objectives. Students are expected to compare and contrast elements and compounds in terms of atoms, molecules, chemical symbols, and chemical formulas. Questions in the assessment generator that align to the standard but are not limited to it include, “What is the symbol for carbon dioxide,” “Look at the image. Is it an example of an atom, element, or compound?”

TPS STEAM into Science Grade 7

Indicator 3.2

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

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

Meets | Score 6/6

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

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

Evidence includes but is not limited to:

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

- The Online Library - Teacher support section contains information on the horizontal and vertical alignment that supports student learning through the STEAM storybooks.
- On horizontal alignment, "the STEAM storybooks allow students to engage in a curriculum that builds upon knowledge and skills aligned to the TEKS." Additionally, "As students progress through the storybooks, science knowledge is built within each chapter, beginning with the story introducing science concepts interwoven throughout the storyline."
- On vertical alignment, "the process begins in kindergarten, where the foundation is started and expands through upper-grade levels. The scientific content is reintroduced and reviewed in each grade level, and new content is introduced at a higher level with increasing complexity."
- The section on Background Knowledge In the *Teacher Textbook* clarifies what prior knowledge students should have. The keywords section allows students to use prior knowledge from previous grade levels to connect it to new learnings.
- In the Learn by Doing STEAM Activity Reader Book Grade 7, the appendices provide instructors with a guide highlighting how recurring themes and content are horizontally and vertically aligned in the lessons.

TPS STEAM into Science Grade 7

- In the *Teacher Textbook Grade 7,* there is horizontal and vertical alignment in the process of scientific and engineering practices with each procedure. In each activity, students use scientific and engineering design practices to investigate the problem. They use background information to make a connection with the concept and answer inquiry-based questions.
- Chapter 2, "Lemonade Stand," scaffolds lessons from the past by having students review chemical and physical changes. They practice using the words element, homogeneous and heterogeneous mixtures, and solutions as they learned them in Grade 6. They use this information paired with the scientific method in Activity 3 to investigate the effects of temperature on its ability to dissolve sugar.

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

- The *Teacher Textbook* has a section titled Common Misconceptions. It lists that student misconceptions include: molecules and compounds being referred to as the same things, all mixtures are compounds, and all mixtures are heterogeneous. These are some of the TEK-aligned misconceptions students have.
- In the Learn By Doing STEAM Activity Reader Book- 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.
- Each unit follows the same lesson flow, which allows instructors to catch and address misconceptions. For instance, instructors are provided key vocabulary words (physical change, chemical change, products, reactants, precipitate). This section is followed by background information (the signs of a physical and chemical change), then the misconceptions (physical changes are reversible, chemical changes are not irreversible).
- Students are provided with the objective: "Students will learn that the formation of a new substance may be identified by the evidence of a chemical change." This objective is followed by the lesson plan, lesson structure, science, and student activities. Each lesson plan follows this layout.

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

- The Online Library-Teacher Program Guide provides the instructor with research-based strategies, information, and guides on how to use the program components. It states how the Learn By Doing Activity Reader Book is used as an introduction that provides information for teachers about reading, comprehension skills, scientific method, and safety. Each chapter includes a story to introduce the science concepts about to be taught.
- 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.
- In the Family/Caregiver guide, implementation supports and a navigation guide assist with progress monitoring. A diagram of the navigation guide in the textbook can assist caregivers with students learning at home.
- In the STEAM Activity Guide, the introduction has a learning cycle and an article about how STEM projects are designed to help students master content. The learning cycle consists of Exploring The Idea, Getting The Idea, Applying The Idea, and then Expanding The Idea.

TPS STEAM into Science Grade 7

Indicator 4.1

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

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

Meets | Score 4/4

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

Materials consistently support students' meaningful sensemaking through reading, writing, thinking, and acting as scientists and engineers. Materials provide multiple opportunities for students to engage with grade-level appropriate scientific texts to gather evidence and develop 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 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.

- The System of Units lesson in the *Teacher Textbook* has students learn how to collect quantitative and qualitative data. Students are asked to plan and create an investigation that uses the base unit of measurement that their group was assigned. This activity allows students to use meaningful writing and think and act as scientists.
- The Off To The Races activity can be found In the STEAM Activity Guide-Student Edition. In this activity, students are challenged with building a car using the given materials. This activity allows students to act as scientists and engineers and use thinking skills to solve problems using the Engineering and Design Process (EDP).
- The Teacher Textbook tasks students with identifying mysterious substances based on physical properties (color, hardness, conductivity, etc.). Procedure 1 has students read through how to identify a mysterious substance. Post-investigation, students are asked to write why they think investigating properties are important in their day-to-day life.

- Students are provided sufficient opportunities for meaningful sensemaking through reading. Students read an article called “Name That Tool” under The Science Section. After reading, they participate in a “What Have You Learned” activity, where they apply what they've learned from the reading. Afterward, students engage in a Literacy Challenge with a partner. Using their answers from the Math Challenge, they think and write about what makes the chosen options function so well and what they could do to improve it.

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

- Lesson 12 of the STEAM Activity Guide - Student Edition is called Living In Another World. It starts by having students read a short introduction about diatoms. Students conduct research to find out more information about diatoms and what contributions diatoms provide to the ecosystem as they answer prompts from the Getting The Idea 1 section.
- Chapter 1: Water is Essential for Life, located in the Learning By Doing STEAM Activity Reader Book Grade 7 Teacher Edition, starts by connecting the water cycle to man-made tools such as irrigation systems and sprinkler systems. After reading the chapter, students do a short reading comprehension assignment followed by mapping satellite images of Earth or creating runoff models. The chapter text provides students with sufficient background information to engage in the activities.
- In Learn By Doing STEAM Activity Reader Book Grade 7 Student Edition, each chapter has several activities that require students to use background information and vocabulary terms to answer questions. For example, in Chapter 1: Water Essential for Life, students draw and describe the water cycle and answer a prompt on the benefits and harm of human activity on groundwater. Students then examine a map of a specific location and research an environmental problem in that area and look for the cause and solution.
- Students are provided with an article on plate tectonics, which leads to a lesson about P and S waves during earthquakes. Students read about these waves, and during the introduction, the teacher has students come up and model the waves. The student that is the P wave walks quickly, and the student that is the S wave walks slowly. Students learn that an earthquake occurs when both students walk away from the epicenter.

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-Student Edition, students are provided with multiple opportunities to engage in written and graphic modes of communication. Throughout the materials, students are given the opportunity to write down numbers of measurements, write explanations of how the digestive system works, write statements to explain the process of finding the rate of an airplane, and write the reasons that animals were sorted in particular groups.
- In the STEAM Activity Guide-Teacher Edition, Chapter 2: Show Me The Numbers, students use graphical representation to create a presentation for the PTA. In Chapter 11: Heating and Cooling, students create a time versus temperature graph to show a visual of the temperature changes based on the type of insulation used.
- The Teacher Textbook has students review key energy vocabulary words. Students are provided with step-by-step directions for mapping the different types of energy with their definitions.

Once students are done, they compare and contrast their map with others through a teacher-facilitated discussion.

- In the STEAM Arts Project Guide K-12, there are numerous hands-on projects for students that are TEKS aligned. For example, the activity “Head Binding” has students identify the main functions of the systems of human organisms and create a model of which system they want to research. In the end, students are guided through class/group discussions and answer assessment questions independently.
- The Student Journal is set up so each unit has sections on focus questions, investigation, what was learned where students illustrate or model the concept, math, and literacy challenge. For example, the unit on Science starts off with a food web/chain, then it goes into the investigation, where the students research what they have learned. The students then illustrate a food web and then create a short script to act out with characters who are part of an underwater food web.

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.

- In the STEAM Activity Guide Student Edition, students act as scientists and engineers to apply their knowledge of phenomena to make sense of concepts. In Chapter 8, students apply the knowledge that they learned about digestion to research a disease that can upset the stomach and can impact the digestion of food. They present this information to the class, highlighting how the disease impacts human health.
- In Learn By Doing STEAM Activity Reader Book (TE) Grade 7 Chapter 7: Crime Solved!, students act like scientists by investigating chemical and physical changes. Students run two experiments using ice cubes, vinegar, and baking soda. Post-investigation, students fill out a table with their observations and evidence of that change.
- The Teacher Textbook provides a project-based lesson. Students start by reading a text on how humans use the oceans. They identify how humans harm the ocean and create a glossary of keywords. Instructors have the choice of showing a video or letting students do the research on their own. Students are then asked to create a play where they are a superhero that lives in the ocean. It is a science-based play with the expectation that the audience walks away knowing why the oceans are important to humans and how they harm them. They use this play to make sense of how humans impact the oceans.

TPS STEAM into Science Grade 7

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.	M

Partial Meets | Score 2/4

The materials partially meet the criteria for this indicator. Materials somewhat 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 opportunities for students to construct and present developmentally appropriate written and/or verbal arguments that justify explanations to phenomena and 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.

- Chapter 8 in the STEAM Activity Guide- Teacher Edition begins with students making a hypothesis about how the human digestive system operates. Students write an explanation of how the digestive system works by using diagrams to support their ideas. Students are prompted to begin the description of the process from when the food enters their mouth.
- Chapter 8 in the STEAM Activity Guide - Teacher Edition focuses on the digestive system, the functions of the human body when it comes to digestion, and how the body gets nutrients from food. In the Exploring section, students make a hypothesis about how the human digestive system operates. Students write an explanation using diagrams to support their ideas.
- Chapter 6 in the Learn By Doing STEAM Activity Reader Book has an activity on convection. Activity 5 has students explore convection in a liquid. They observe a liquid as it boils and the changes that occur when cold water is added. They write their hypothesis of what is expected to be seen when the graduated cylinder is heated slowly in comparison to an unheated graduated cylinder. Students record their results and then conclude if their data supports the hypothesis.
- In Activity 4 in Chapter 1, Water Essential For Life! in the Learn By Doing STEAM Activity Reader Book, students run a two-part experiment that examines the potential benefit of drip irrigation. Instructors review the experimental designs with the students before testing. Students record

their results in a table and drawing. Students then discuss, analyze, and conclude if their data supports the hypothesis.
- In the STEAM Activity Guide, students create a visual of a specific ecosystem given particular climate and environmental conditions. They detail why and how the organisms that live in that ecosystem survive and what they do to survive. Students discuss evidence with their peers to support why they added a specific organism.

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

- The STEAM Art Projects component in the STEAM Activity Guide has projects that list 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. For example, in the House Construction and Design Project section, the focus vocabulary words consist of data, materials, analysis, trend, and prediction. While students are working through Activity 6, the instructor asks them what materials they are using to paint and compare the quantities of materials.
- In the Program Components section of the Family and Caregiver Guide, the Learn By Doing Steam Activity Reader Book is referenced and 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 Teacher Edition, there is evidence of embedded opportunities for students to develop and utilize vocabulary. For example, in Chapter 4, Lia-Stealer! contains vocabulary embedded in the passage, and students review the vocabulary words to understand the meaning.
- The Student Journal has several units that contain opportunities for students to develop and utilize scientific vocabulary in the context. For example, students are provided four squares, with each quadrant having a vocabulary word that students write the characteristics of each and draw a picture. Examples of those words are atom, molecule, element, and compound.
- The Blackline Master K-8 section of the Online Library has a glossary that focuses on key terms that are aligned to the grade-specific TEK. Examples of a few terms are volume, wind, accuracy, and aquifers.
- In the Student Focus Exercises, students practice using new vocabulary by spelling and writing words, starting from easy to more difficult ones.

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

- Chapter 1 In the STEAM Activity Guide-Teacher Edition has students reflect on prior data and knowledge in the form of 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.
- Chapter 2 In the STEAM Activity Guide- Student Edition has students discuss why labels on graphs are important and why using graphs is beneficial to display information.
- In the Learn by Doing STEAM Activity Reader Book-Teacher Edition, the words discuss and discussion are stated 54times. These instances include the headings of sections, the overview of the sections, and explanations for the overview, such as the scientific method and reading guidance. The Comprehension skills section does give the teacher guidance on how to facilitate discussion but does not include any evidence or guidance to show the teacher how to

incorporate students proving their answers with evidence. In the Student Textbook, students have opportunities to engage in argumentation and debates on seven occasions. These opportunities are partially integrated throughout the materials with respect to the amount of student activities.

- Each chapter in the Learn By Doing STEAM Science Activity Reader Book Teacher Edition has activities that integrate argumentation and discourse to support students' development of the content. For example, Chapter 3, Crime Solved, has students discuss if they would like to visit their mother's workplace, what type of workplace it is, and why they would like to visit. Activity 8 has students experiment with chemical and physical changes and discuss if each experiment was a physical or chemical reaction. The instructor then asks if the changes are reversible.
- In the Student Journal, there is evidence to show that students are able to discuss concepts or results of experiments with their partners or as a class. For example, students discuss the effects of removing a species from a food chain and are then asked by the instructor to draw a diagram of what was discussed. In another activity, instructors explain to students how an iron gate is susceptible to change, and students create a table to present what is discussed about the iron gate.
- In the *Student Textbook*, students study the four major systems of the Earth. They end the project-based learning assignment by presenting how to manage and preserve the system they are studying. There is a paragraph on why discourse needs to be respectful and based on empirical evidence.

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.

- Chapter 2 in the STEAM Activity Guide - Student Edition has students discuss why labels on graphs are important and why using graphs is beneficial to display information.
- Chapter 4 in the STEAM Activity Guide - Student Edition has students come up with a plan to accomplish a task. Students write a plan explaining the parts of their experiment. Materials focus on communication through sketches and journaling ideas in this chapter.
- Chapter 6 in the Learn By Doing STEAM Activity Reader Book has an Insulation-Design Engineering Challenge where students design and create an insulator for a cup to keep the liquid contents cold. Students define the problem and make sure it is detailed and the design solution addresses the problem. Students design on paper and then build the design to see if it solves the problem. Students apply the scientific method as they build and test their products. They record their materials and methods in labeled drawings and then record their results in a table.
- Activity 1 in the Learn By Doing STEAM Activity Reader Book Student Edition has students read the chapter on Crime Solved and answer the questions using text evidence to support the responses. A few questions that students need to answer are as follows: Why were Lia and Sarah visiting Dr. Lerner's Workplace?, What does a forensic scientist do?, How did they know that Sample 1 was made of steel?, and What was reported in the newspaper?
- In the *Student Textbook*, students study the states of matter in an investigation by testing the physical properties of mysterious substances. After completing all the steps in the procedure, students use empirical evidence to engage in scientific argumentation on differences in their table.

TPS STEAM into Science Grade 7

Indicator 5.2

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

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

Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- Chapter 11 in the STEAM Activity Guide - Teacher Edition provides the instructor with guidance on responses from the student when they are asked the question of how to model the Earth with carbon dioxide in the atmosphere. Possible responses include global warming and carbon dioxide holding in excessive heat.
- Chapter 8 in the STEAM Activity Guide - Teacher Edition provides instructors with responses to the questions found in the student textbook. In the Getting the Idea section, the student and teacher textbooks have similar questions. The teacher textbook provides the instructor with anticipated responses of the student to deepen student thinking.
- The *Teacher Textbook* has student exercises that have activity-based questions. In a lesson on taxonomic systems, students follow the instructions for making a classification tree diagram. Questions following the activity have students analyze and interpret their diagram. Two of the three questions ask students to explain why, which helps to deepen student thinking.
- The Teacher Edition of the Learn By Doing STEAM Reader Activity Reader provides the instructor guidance on expecting students' responses and the use of questioning to deepen their thinking. During the Hoops and Robots unit, students identify and describe the changes in position, direction, and speed of an object when acted upon by unbalanced forces in Activity 4. Students experiment with two balls, one staying motionless on the ground, and students discuss which

law of motion is being displayed. Students then apply a force to a second ball and explain which law of motion is being displayed. Students work together in their groups to answer discussion questions and then create a graph to compare both balls.

- In the Student Journal, students perform three types of investigations: Descriptive, Comparative, and Experimental. Students complete a table on each type by answering and explaining what went well and what can be improved. Students then use the information to create a crossword puzzle with questions aligned to the concept and provide clues for all the keywords from the section.
- During an energy transfer lesson found in the *Teacher Textbook*, the instructor is provided with possible student responses for questions of inquiry. Typical student responses vary in detail, from as vague as students' answers will vary to more complex student responses.

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

- Chapter 8 In the STEAM Activity Guide provides the instructor guidance on how to support students' development by giving students an overview of the different diseases that affect the digestive system. Students choose the opportunity to research topics independently.
- The Preface section in the STEAM Activity Guide - Teacher Edition provides instructors guidance on how to scaffold for students in special populations.
- In the *Teacher Textbook*, the lesson on dissolution starts with scaffolding information for sixth and eighth grade. It then gives the instructor keywords and student misconceptions. The instructor is prompted to model and provide visual and tactile examples of each key term. The rest of the lesson is scaffolded further by having students use and apply key terms in an activity, investigation, and assessment.
- The Teacher Edition of the Learn By Doing STEAM Activity Reader Book provides guidance on how to scaffold students' development and use of scientific vocabulary with appendices that outlines each chapter. Chapter 2, Lemonade Stand, includes TEKS 6(ABCDE). The TEKS contains the scientific vocabulary that the students need to know that will be aligned with the concept of matter and energy. Some of the key vocabulary words include but are not limited to elements, compounds, changes in matter, properties of solutions, the periodic table, chemical formulas, physical and chemical changes, temperature, and surface area.
- In the Learn By Doing STEAM Activity Reader Book - Teacher Edition, the instructor is provided with guidance that specifies what a student can do with vocabulary that is embedded in each chapter. For example, Chapter 3, Crime Solved, has the vocabulary embedded in the text, and students are provided a table with all the vocabulary words in the final activity to highlight keywords they need to know to demonstrate mastery of the content.

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

- Chapter 8 in the STEAM Activity Guide - Teacher Edition has the student hypothesize how the human digestive system works. The student writes an explanation and includes diagrams that support the idea.
- Chapter 15 in the STEAM Activity Guide - Teacher Edition provides the instructor guidance on allowing students to have a debate about the graphs and which graph shows the most accurate picture.

- The *Student Textbook* has a lesson on States of Matter. The student is prompted to collect evidence of the molecule properties by using observation skills. In the Investigation, it states: "Using this empirical evidence, engage respectfully in scientific argumentation with others." Students are asked: What evidence did you use to determine this?
- The *Student Textbook* gives multiple opportunities for students to provide evidence to construct written and verbal claims. The *Teacher Textbook* does not prepare the instructor for prepping student discourse consistently.
- The Teacher Edition of the Learn By Doing STEAM Activity Reader Book provides guidance for instructors on how to prepare students to use evidence to construct written and verbal claims. Under the subsection "Comprehension Skills," instructors encourage students to develop oral language through listening, speaking, discussing, and responding using newly acquired vocabulary. For example, in Chapter 2: Lemonade Stand, students read the chapter and use text evidence to support their responses. In Activity 3, students observe that sugar crystals dissolve faster in warm water than in cold water. The instructor tells students to write their hypotheses and be ready to explain their predicted outcomes. Students analyze and discuss their results on variability, which temperature was more effective at dissolving the sugar, and how they might run their experiment differently.
- The Student Journal provides instructor guidance throughout each unit to support students in using evidence to construct written and verbal claims, such as the investigation on running shoes. Students look at an advertisement by a company that is selling a new type of running shoe and are to assess and explain the claims made in the article.

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

- Chapter 2 in the STEAM Activity Guide - Teacher Edition has an investigation that calls for the instructor to ask the students about their predictions and encourages students to explain their thinking.
- Chapter 3 in the STEAM Activity Guide - Teacher Edition has students make predictions about what changes they think will occur if the wheel diameter is changed.
- The *Teacher Textbook* gives the instructor information that could be used as guidance for students in the Background, Introduction, Teacher Tips, Project-Based Lessons, and Common Misconceptions sections. There are little to no student examples of materials that provide exemplar responses as a guide for eliciting more student thinking or finding solutions.
- Three lessons in the Student Textbook state, "At the end of the lesson, you should take part in a class discussion in which you express ideas and communicate to your classmates, utilizing these new words/phrases. The discussion may be about the lesson you have completed or an associated social or academic topic."
- Chapter 2, Lemonade Stand, in the Learn By Doing STEAM Activity Reader - Teacher Edition has students respond to a prompt on why there are no fish in the Dead Sea. In Activity 3, students test the effect of temperature on the ability of sugar to dissolve in water. Students record results and discuss and analyze their data by answering questions such as the variability of their results, which temperature was more effective at dissolving sugar and why, and how they might scale up their method to make large amounts of sugar solutions.

TPS STEAM into Science Grade 7

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.

- The Chapter 1 assessment in the STEAM Activity Guide - Teacher Edition consists of objectives, a problem/task, and requirements for submission. The student assessment is graded based on a grading rubric.
- The STEAM Arts Project in STEAM Activity Guide - Student Edition has a project named: “Blood River.” Under the Collaboration Discussion and Assessment, the student is provided with questions to answer for the assessment.
- The Introduction of the Teacher Textbook has a section on the Assessment Guide that includes: Safety, Investigation & Reasoning Lessons, Using Tools, Amelia Rose, Science Makers, Multiple Choice and Open Ended Questions, Performance Tasks, and Skills Assessments. It states that “This book includes...and sets out assessments using a variety of strategies: science makers, formal written tests, and reader activity book assessments, plus safety, investigation and reasoning content.”
- Chapter 3 In the Learn By Doing STEAM Activity Reader Book is titled “Crime Solved!” Students calculate the density of mystery materials with the provided volume and mass. Students identify which materials are copper, gold, or silver. Activity 5 has students determine physical or chemical changes with eight practice problems.

- 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, open-ended, or both options.

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

- 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. In the Problem/Task section, students will be assessed on the process and notes they used during the Applying the Ideas section. Students will compare their predictions and develop reasons for differences to the final outcome of the inclined plane experiment. Students will write a conclusion based on what they have learned from the experiment.
- The Blood River Project in the STEAM Activity Guide - 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 expectation.
- The Learn By Doing STEAM Activity Reader Book - Teacher Edition has a section that provides instructors a way to assess students formally. Each question is aligned with the TEKS and assesses all student expectations.
- The Pacing Guide in the Online Library - Teacher Support section has a pacing plan with a day-to-day breakdown of each unit to be taught. After each unit, there is time for revision, assessment, and reteach of the concepts. This format allows instructors to assess all student expectations.

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 that the instructor wants to assess the student on. 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 one hundred 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 track students' understanding of the recurring themes and concepts.

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

- Chapter 1 in the STEAM Activity Guide - Teacher Edition provides instructors with objectives that align with the problem/ task that the student must complete for the assessment. consist of students making inferences from the data collected and identifying patterns in data sets. The problem that the students are given is to pick the best incline based on their knowledge of

inclined planes. Students are graded using a grading rubric with criteria aligned to the objectives of the tasks.

- The Student Journal has a section in each unit where students test themselves on their knowledge and skills/vocabulary. For example, in the unit on systems, students test themselves on the resistance to change, food chains, and different organisms.
- 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, in the unit on systems, students explain what a system is. Students are assessed by creating a short script to act out an imaginary underwater food web. Students are to explain if the food web is stable or unstable.

TPS STEAM into Science Grade 7

Indicator 6.2

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

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- The Chapter 3 assessment 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 answer 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 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.

- The assessment in Chapter 3 of the STEAM Activity Guide Teacher Edition provides the instructor notes so that they can modify the grading rubric based on the needs and levels of the students.
- The assessment in Chapter 2 of the STEAM Activity Guide - Teacher Edition provides the instructor notes so that they can modify the grading rubric based on the needs and levels of the students.
- The Beginning Of Strand in the Teacher Textbook directs the instructor on how to proceed with responding to individual students' needs.
- The Teacher Support section in the Online Library has a Learn By Doing Assessment Rubric that is an Excel spreadsheet with guidance on the TEKS and detailed content. The assessment asks questions about the concepts and then guides instructors with information on how to monitor proficiency levels and use student responses in lessons.
- The STEAM Science section in the Online Library provides activity guides for different topics that instructors can use for students who have demonstrated mastery, have not demonstrated mastery, and special education students. Activities are personalized and assessed based on student journaling. Students that demonstrate mastery work on this as a project and still be assessed formally. For example, the lesson on pollination has students learn about the parts of flowers and understand the process of insect pollination.
- Activities in the Teacher Textbook prompt instructors to include word walls by printing out the vocabulary words from the glossary and encourage students to practice vocabulary to best support all student learning.

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

- In the STEAM Arts Project section of the STEAM Activity Guide Edition, the instructor is provided guidance on how to support RTI students and additional extension activities as students complete the Head Binding project.
- The Teacher Textbook 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 section of the Online Library has a video titled "How to use the [platform] Assessment Generator tool." These exams are formative and can be utilized throughout the school year. Level One is for students showing a lower level of mastery, Level Two is for students on grade level, and Level Three is for students demonstrating mastery.
- The Online Library - Teacher Support section has a Learn By Doing Assessment Rubric that provides instructors with the TEKS, locations of the materials within the resources, specific and general assessment questions, and steps on how to evaluate student levels. For example, TEKS 6

(ABCD) tells instructors what to do after reading the chapter with students, what questions to ask students, then how to assess students regardless of their mastery level.

- The Intervention Focus Tutorial K-8 can be used both for intervention and advanced student content for instructors. Instructors can use the materials as a means for reteaching lessons that students did not demonstrate mastery with or accelerating students who have demonstrated mastery.

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

- 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 answer for multiple-choice questions.
- The Teacher Textbook provides a variety of student resources such as STEAM Arts projects, Focus Tutorials, and Reader books. The instructor uses a diagram that is mentioned so they can choose the resource to best support student mastery level. Some of the situations these activities can be used for are: knows but does not understand and additional individual help.
- The Teacher Support section in the Online Library has a section titled “Blackline Master for K-8.” It provides benchmark tests with an outline for each question and answer that assists instructors in responding to individual student data. These exams are formative and can be utilized throughout the school year. Level One is for students showing a lower level of mastery, Level Two is for students on grade level, and Level Three is for students demonstrating mastery.
- The K-8 Critical Thinking section in the Online Library provides students with practice in answering questions and building literacy skills in science. Instructors use them as reviews for assessments (diagnostic, formative, unit test), homework, or to be done at the beginning of class. The book is designed to help the instructor assess the students’ progress on an ongoing basis and use it as a response to other data.

TPS STEAM into Science Grade 7

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.	M

Partial Meets | Score 1/2

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

Evidence includes but is not limited to:

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

- Each assessment in the STEAM Activity Guide - Teacher Edition contains items that are scientifically accurate, avoid bias, and are free from errors. In Chapter 11, the assessment uses objects in the scenario that are familiar to all students, such as houses, windows, and heating and cooling a home.
- Each chapter in the Learn By Doing STEAM Activity Reader Book - Teacher Edition contains items that are scientifically accurate, avoid bias, and are free from errors. For example, in Chapter 4, “Lia-Stealer!” is about the body systems. The images within the text include people of diverse backgrounds interacting together, and the questions all follow the scientific process of learning.
- The Online Library - STEAM Science/ELA/Math, PSHE Library contains plenty of evidence that is scientifically accurate, avoids bias, and is free from errors. For example, the NEST family videos are of diverse topics and are aligned to the TEKS that are being taught per grade level.
- The Assessment Generator provides instructors with TEKS-aligned assessments. Materials correctly state there is a difference between speed and velocity. They ask students to differentiate between the two as well.

Assessment tools use 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 four occasions (out of the 212 test questions) for grade 6. Grades seven and eight test questions are similar to grade 6.

- Assessment tools in the K-8 Online Library do not contain pictures/images. Referred material by the publisher in the Teacher Textbook is not used as or for an assessment. Questions in the Learn By Doing STEAM Activity Reader Book provide formative and informative assessment questions. 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 four occasions (out of the 212 test questions) for grade six. Grades seven and eight test questions are similar to grade six.
- Each chapter in the Learn By Doing STEAM Activity Reader Book - 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, "Water Essential for Life!" 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. Some images included are of the water cycle, drip irrigation system, sprinkler, forest damaged by fire, etc. Images in The Learn By Doing STEAM Activity Reader Book include questions that reference the images within the text. For example, "What can use drip irrigation technology to help prevent fertiiler run-off.".

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

- Chapter 11 in the STEAM Activity Guide - Teacher Edition contains instructor assessment notes that provide guidance to ensure the accurate administration of assessment tools. The instructor is also given guidance in the assessment overview at the beginning of the chapter for materials to provide to the student in order for them to accurately administer the assessment.
- The materials include a distinct section in the Teacher's Program Guide that supports the teacher in understanding the types of informal assessment tools in the curriculum. Teachers are provided with an assessment matrix to show which assessments are utilized throughout the course. They provide a place to add results from any tests they design from the interactive software tool, assessment generator, or any informal assessment from the materials.
- The Online Library has a Teacher Support section that has "How to Videos" on how to use the assessment generator tool, 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 Learn By Doing STEAM Activity Reader Book - Teacher Edition provides instructors with guidance to ensure consistent and accurate administration of assessment tools using the essential content guide. Each chapter is correlated with the TEKS that follow the lesson.
- The Assessment Generator creates an overview of the created assessment. Instructors can press on the show/hide answer button to see sample student answers and how to score 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.

- The Head Binding Project in the STEAM Art Project section of the STEAM Activity Guide - Student Edition provides the instructor guidance on how to support RTI students with accommodations for assessments.

TPS STEAM into Science Grade 7

- Art Projects and Literacy Connections provide alternative assessments for students that access mastery non-traditionally. Students use what they've learned and are accessed through discussion and debriefing instead of true/false questions, multiple choice, or open-ended questions.
- The materials offer accommodations for assessment tools so that students of all abilities can demonstrate mastery of learning goals. There is also guidance on how to add alternate text for images. For example, when using the Online Assessment Generator, teachers can create assessments with above, below, or at-grade-level questions and reduce the length of the exam with fewer questions to ensure assessment alignment to meet the needs of all students.
- The Assessment Tools K-8 Science in the Online Library has Intervention Focus Tutorials for each grade level. They outline each TEK with vocabulary to review and performance tasks to complete.
- The STEAM Science/ELA/Math/PSHE in the Online Library - STEAM contains activity guides that teachers can assign kits to students who need assistance in improving their literacy and numeracy skills, and the teachers can utilize it as an alternate assessment.

TPS STEAM into Science Grade 7

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 mastery. Materials provide enrichment activities for all levels of learners. Materials provide scaffolds and guidance for just-in-time learning acceleration for all students.

Evidence includes but is not limited to:

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

- In the STEAM Activity Guide, under the IMaST Learning Cycle section, there is a framework in which students learn content. The steps began with exploring, getting the idea, applying the idea, and expanding the idea.
- Chapter 2 In the STEAM Activity Guide-Teacher Edition guides instructors on how to scaffold by asking open-ended questions and encouraging students to try various graph methods, including line graphs, bar graphs, etc. Instead of giving students the answer, the teacher probes and allows students with guidance to complete tasks.
- The Focus Tutorial in the Online Teacher Textbook says that it is “recommended for use for students who really struggle with traditional textbook learning, either due to low English language skills or other special education needs. It can also be useful to students with gaps in learning who are At Grade level.” The summary steps provide the instructor with a step-by-step process on how to use STEAM Guide.
- Each activity in Chapter 1, Water Essential For Life, in the Learn By Doing Steam Activity Reader Book, starts with the instructor asking the students to restate the instructions to check for understanding. Instructors guide students through the usage of microscopes by having the instructor work with students who are having trouble focusing their slides. The instructor adjusts so the students can illustrate what is seen. At the end of each chapter, there is a list of vocabulary terms that students need to review before moving on to the next chapter.
- In Learn By Doing STEAM Activity Reader Book Student Edition, each chapter reading contains sentences in bold that rephrases or provides extra examples or defines the concepts. For example, in Chapter 2, “Lemonade Stand,” rephrasing and extra examples of the text can be found.

- The Teacher Program Guide states that if a student responds incorrectly, it is recommended they use the Online Library - Assessment Tools and Level 1 assessment questions for the TEKS taught and discuss the answer with the student. Teachers are to "Determine the misconception and resolve. Ensure students understand key words and definitions within the chapter being studied or go online to the TPS glossary cards in the online library - blackline master. If the misconception continues, use an art project from the STEAM Activity reader book."

Materials provide enrichment activities for all levels of learners.

- In the Family and Caregiver Guide, under the Family Visit section, it stated that the student textbook contains an At Home section where students are to visit different state locations with their family as well as content that is completed at home with the help of parents/caregivers.
- In Learn By Doing STEAM Activity Reader Grade 7 Teacher Edition, Chapter 3, "Crime Solved," provides students with several enrichment opportunities. Activity 1 is an ELAR extension where students will read and answer questions. In Activities 3 and 4, students apply basic math challenges on solving for density. Activity 5 has students work on several experiments and write down the data (observations) on a table.
- Activities in the Learn By Doing Steam Reader Book are aligned for all levels of learners. Activity 1 is a reading comprehension activity that allows students to work with a partner if they are struggling. Activity 2 is a class discussion where teachers can use discretion on the types of questions they ask students; Activity 3 is a research project. Each chapter has activities that tend to follow this template.

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

- An alternative Scope and Sequence for RTI students along with the TEKS that aligns with the activities is provided in the Online Library - Teacher Support Section.
- In the Teacher Program Guide K- 8, under the Support Needs For Teachers, bullet point 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.
- Students are provided with guidance for just-in-time learning acceleration that can be found in the online learning student reasoning library. There are four scientific investigations and reasoning in the book. For example, the first investigation is on Working Safely and Responsibly, which provides a passage followed by keywords that the student should be aware of and identify within the reading. Focus questions are included, and an investigation section where students design a poster to explain one way that a student can work safely and responsibly in the classroom. The investigation has a section on What Was Learned with questions and a section to evaluate their learning.
- Acceleration of learning works best when scaffolding builds on what students already know, so when students tie background knowledge to new information, they are better at making inferences and better at remembering the new information more effectively so therefore, the publisher provides, through online library resources, a crosscutting library with photographs incase students are researching and are working on a project. They can use this to grab real images through Google.
- Students who are mastering or are at advanced levels complete the section labeled "advanced" in projects. Chapter 5 in the iMaST section has students create questionnaires to ask other

students what influences other students to use tobacco. They then determine the long-term and short-term effects of tobacco. They are then tasked to create a warning label for the surgeon general to dissuade tobacco use in fifteen words or less. They create posters and then calculate how much money a smoker spends over fifteen and thirty years.

TPS STEAM into Science Grade 7

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 2/4

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

Evidence includes but is not limited to:

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

- The IMaST Learning Cycle Section In the STEAM Activity Guide - Teacher Edition provides an overview of Exploring, Getting The Idea, Applying The Idea, and Expanding The Idea sections. When students explore, the instructor acts as the facilitator. They provide students with opportunities to test materials, manipulate objects, make observations, and collect data. During the Getting The Idea section, students engage in discussions about their findings and experiences during the Exploring. The instructor addresses misconceptions in the learning and questions students.
- In the STEAM Activity Guide 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 Online Teacher Textbook gives an overview of all the steps that can be taken by the instructor 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, Student Textbook (which has a variety of

different instructional approaches), the STEAM Guide for STEM and Art projects, and an assessment.

- The scope and sequence outlines each unit with the student learning objective and the key concept that is TEKs aligned. For example, Unit 3, Force, Motion, and Energy, states that the student describes the cause-and-effect relationship between force and motion, and the student understands the behavior of thermal energy as it flows into and out of systems. The aligned TEKS: 7ABCD are referenced again in other lessons such as Baseball Warmups' through the STEAM Activity Reader Book, How Fast Does a Marble Move? in the Teacher Textbook, and What's Your Speed? through the STEAM Activity Reader Guide.
- In Learn By Doing STEAM Activity Reader Book, each chapter provides a variety of instructional approaches to engage students in the mastery of the content. For example, Chapter 3, Crime Solved, has a reading section with vocabulary and key information needed for the hands-on activities. Activity 1 has students read the passage and answer questions. Activity 2 and 5 have students identify the given examples as physical or chemical changes. Activity 3 gives students a mystery substance and has them identify it by solving for density. Activity 4 has students continue to practice solving for density. Activity 7 has students discuss as a whole class.

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

- Chapter 2 In the STEAM Activity Guide Teacher Edition prompts instructors to have students work in groups of two or three. In Chapter 6, What's That Smell, students work in small groups with three or four other students.
- In the Online Teacher Support- Family and Caregiver Guide K-8, in the Teaching Pedagogy-Storytelling and STEAM, it states that the stories could be read in groups with the teacher or in the home with the caregiver.
- The Teacher Textbook tells instructors to direct students to work in large groups for access to more materials. The Teacher Textbook has instructors direct students to work in small groups for the experiment with the materials for Newton's Laws of Motion. The teacher directs the students to work in groups of three or four for an activity on modeling roller coasters.
- The Teacher Edition In Learn By Doing STEAM Activity Reader Book provides activities that support flexible grouping. For example, Activity 1 in Chapter 6, Baseball Warmups, is an individual assignment where students read the passage and then answer questions. Activity 2 is a small group discussion on energy transformation. Activity 5 is a small group where students work on a convection lab. Activity 6 has students work one-on-one in a design challenge. Students create an insulator for a cup to keep the liquid cold, and then they need to run tests and answer questions about the design.
- The Learn By Doing Activity Book has students read the chapter and answer reading comprehension questions by themselves or with a partner. Students then get in small groups in Activity 2 to research body systems. In Activity 4, there is a whole group discussion about how organ systems are dependent on others and what happens if there is a malfunction. Students can use the research to share different points.

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

- Chapter 1 In the STEAM Activity Guide - Teacher Edition has students work collaboratively in the Exploring The Idea section to complete the focus questions. In the Exploring section, the teacher also guides learning by asking probing questions. In Chapter 1, Student Assessment, the

students work independently and collaboratively to write a conclusion about what they have learned.

- Materials partially support modeling. The indicator refers to modeling as the instructor showing students what they should be doing and how. The provided evidence from the publisher does not align with TEA expectations of modeling. Publisher refers to making models of scientific phenomenon compared to showing students how to solve a specific problem (such as calculating speed). The Teacher Textbook states that the instructor may choose to demonstrate malleability. Opportunities for teachers to model a skill are not explicitly stated on a consistent basis. Another part of the Teacher Textbook contains opportunities for collaboration, such as helping students decide on questions that can be answered using an experimental investigation.
- Instructors and students are provided context on how to practice modeling the concept when collaboration among students occurs and independent practice such as answering questions. For example, Chapter 2, "Lemonade Stand," supports independent practice, guidance from the teacher, collaborative practice by students as they work in groups and teacher modeling.
- Unit 2, Matter and Energy, refers the instructor to use Learn By Doing STEAM Activity Reader Book Chapter 2, "Lemonade Stand," as a way to support multiple types of practices. The chapter's activities are aligned to support independent practice, such as Activity 1, which is reading comprehension. Materials support guided practice which tells instructors to make sure to wear safety gear and go over the safe practice of using a hot plate. Materials support collaborative practice by having students work in small groups on an experiment and discuss results. This chapter also supports teacher guidance as it requires the teacher to ask students to restate instructions to check for understanding.
- The Teacher Textbook provides an investigation where students put the continents back together as the supercontinent Pangea. Students do this independently. This activity suggests that teachers should support and guide students as necessary but still allow a productive struggle. Students have the ability to collaborate and research Pangea and its facts, along with a diagram/model/graph, etc.

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

- In the STEAM Activity Guide- Student Edition, diversity is shown in the images in the textbook based on race, age, ability, and gender. The textbook includes images of both 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 a river, a bike trail, a dialysis facility, and a cave
- The Teacher Textbook has directions on "Incorporating diversity into your teachings." They have an introduction, Race and Culture, Disabilities, Gender, and Advanced Learners section.
- The materials demonstrate ample amounts of diversity. The STEAM Activity Reader Book has diversity on the cover of the book, and each chapter shows images of a diverse learning community. The Student Textbook also shows diversity, if looked at holistically rather than individual sections.
- In Learn By Doing STEAM Activity Reader Book Teacher Edition, there are multiple images that represent a diversity of communities (people and places. For example, Chapter 3, Crime Solved, has an image representing children of diverse backgrounds working on an experiment to test solutions and need to observe the changes. Chapter 4, Lia-Stealer, has students of diverse backgrounds who play soccer in the hospital with an injured player, and an X-ray was done. Chapter 5, Fantastic Voyage, is a school play that is being conducted to demonstrate the energy transformation of blood cells and the movement of the blood through the body.

- Students are provided with multiple pages of scientists from different backgrounds and ethnicities that are living and nonliving in the Online Library. These images include facts about famous scientists and their achievements.

TPS STEAM into Science Grade 7

Indicator 7.3

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

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- Under the Problem Solving section in the STEAM Activity Guide- Teacher Edition, it states that the last step of the problem-solving process is communicating. The communication step focuses on analyzing results and sharing results with others, both written and oral. In the Learning To Communicate section of Chapter 4, students utilize their journals to make sketches and orally communicate any design changes they have made or plan to make.
- The ELPS spreadsheet contains Cross-curricular second language acquisition/learning strategies, expectations, audience, type, material component, page number, URL, and description of location.
- The Teacher Edition of the Learn By Doing STEAM Activity Reader Book provides guidance for instructors on linguistic accommodations. Under the subtopic titled "Comprehension Skills," instructors encourage students to develop oral language through listening, speaking, discussion, and responding with newly acquired vocabulary. For example, Chapter 4, Lia-Stealer, has an activity where students read the chapter and write their responses to each question. Activity 2, Cheek Epithelial Cells, has students observe human skin cells sourced from their own cheek. Students listen as the instructor goes over the steps on how to prepare a slide and as the instructor explains what they will be viewing using a model of human skin anatomy. Students write down their observations through illustration. Students label the cell structure and write the magnification that was used to view their cheek cells.
- The Online Learning Teacher Support section has a resource titled "Archway Literacy and Phonics Program" that will assist emergent bilingual (EB) students with meanings, grade-level

science content, and expectations. It is a reference guide that is used with the Archway cards that provide information to help with English language acquisition. For example, Set 2 is titled Orange Cards. Students use capital letters at the start of a sentence, names, etc. They provide practice with the names of the days of the week and tell the students to clap with syllables.

- Under ESL/Reinforcement of the Teacher Textbook, the instructor is guided to have student volunteers read out any keywords and pronounce each term clearly so students who are still learning English can learn the words. The instructor should also encourage students to read aloud or describe images. The instructor should monitor oral language production and encourage students to use self-corrective techniques.

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

- The Adaptations for Special Populations in the STEAM Activity Guide - Teacher Edition states that the EB student might struggle with reading the material. The publisher provides programs such as Archway to assist students in building basic and academic vocabulary and skills.
- Under the Intervention Focus Tutorials in the Online Teacher Support, support for English Language Learners is provided with a web-based intervention tool that covers content for each grade level.
- The Teacher Textbook and the Student Textbook both provide multiple strategies to engage EBs. For example, the Teacher Textbook tells instructors to discuss with students the following words in their first language: fossils, rocks, continental shapes, and seafloor structures. This activity helps students associate English and Spanish vocabulary words.
- Additionally, in the ELL section of the Making Informed Decisions lesson plan in the Teacher Textbook, it says to provide students with time to convert their research findings into their first language. Students use translated keywords (available in Spanish) and create their own first language keyword review cards. EB students are also provided with the "Archway Literacy and Phonics Program" to assist with vocabulary and grade-level concepts.

TPS STEAM into Science Grade 7

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 Family and Caregiver Guide gives an overview of the program, which includes research-based strategies, family support, and a breakdown of each of the program components.
- The Family and Caregiver Guide has a link in the online materials, and the page in the Teacher Textbook 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 a glossary that is available digitally and about the “At Home” activities provided in the Student Textbook.
- The Conservation In The Classroom section of the Learn By Doing STEAM Activity Reader Book has students recycle and pick up trash once a month outside the classroom setting. Students work on a conservation activity twice a month at home. Examples of the activities include turning off lights, four-minute showers, and reusing plastic containers.
- In the Student Journal, students work on an investigation titled “Dirty Water!” where students complete a table by making a connection of how humans contaminate water systems. The instructor gives students a passage that has recently been read in class. Students take it home to work with caregivers by creating a graphic organizer or illustration about the text.
- The beginning of the Teachers Textbook provides instructors, caregivers, and even students a breakdown of what a traditional lesson plan looks like with details and notes about the section.

TPS STEAM into Science Grade 7

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

- Family and Caregiver program guide for grades K-8 can be found in the Online Library. The program guide breaks it down to include program introduction, program components, TEKS for grades K-8, and key terms to review at home for each grade level. There is a section called family visits where families can visit and explore places throughout Texas. Families are to discuss thoughts and views about the content as well as carry conversations about different topics such as How to take care of your health, taking care of pets, and ways to recycle.
- Materials provide resources and strategies for caregivers to help reinforce student learning and development. The NEST Family Videos provides several videos and workbooks to help support them in gaining content knowledge to support their students. 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.
- In the At Home section of the lesson plan, instructors can recommend programs to watch for families at home and report on in class or write about. Caregivers should ask students to make connections between the program and what they learn in class.

Materials include information to guide teacher communications with caregivers.

- Materials include teacher guidance resources for communicating with caregivers. For example, the Program Guide includes information on engaging caregivers as partners in learning and offers suggestions for establishing a relationship, inviting ongoing communication and partnership, and sharing progress updates. It describes suggestions for ways family members can assist students in content mastery, such as “[The program] ask(s) family members to review all new terms and definitions with students at home and identify how they are useful in their daily lives.” Additionally, it shares the free online materials caregivers have access to. An example is “Digital family access costs nothing: [The program Publishing Inc provides parents digital access to families for all homework assignments and lists of keywords and definitions. [The program] can be booked to run workshops to assist parents and teachers, work together on safety standards and other areas such as literacy, where parents can help students master good practice and science, mathematics and literacy content."
- The Family and Caregiver Guide has a section on family visits. It says, “If it is possible to arrange some family time visiting locations in your area or elsewhere.” Some suggestions of locations include a Texas Park, Texas Coast Wetlands, Texas Fishery, Texas Wildlife Reserve, and a Gulf Coast Beach. Families and instructors should discuss what studies they have completed that relate to these locations and discuss their thoughts and views.
- The Student Reasoning Library in the Scientific, Investigation, and Reasoning Handbook states that they offer a teacher/parent edition so that teachers and parents can work together with the students. Parents and teachers can support each other to help increase student achievement.
- The NEST Family Videos provides several videos and workbooks to help support teacher and parent communication. 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.
- There is evidence of teacher guidance materials that include information on preparing for and facilitating different types of conferences with caregivers based on student needs (e.g., data-driven, student-led, virtual, in-person). Evidence is clear for home visits.

- There is evidence of templates for caregivers to communicate concerns or insights regarding a student's level of understanding, such as forms attached to at-home practice activities, space for input on progress reports, or a message box in the online platform. Teachers can share a progress monitoring page that breaks down student grading by assessment (benchmarks, focus questions, and performance tasks) from the Family and Caregivers Guide. The Learn By Doing STEAM Activity Reader Book provides a guide for caregivers to assist in engaging students to read at home and provides the opportunity for there to be open communication between the teacher and caregiver.

TPS STEAM into Science Grade 7

Indicator 8.1

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

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

Partial Meets | Score 1/2

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

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

Evidence includes but is not limited to:

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

- There is a TEKS-aligned scope and sequence outlining the order in which knowledge and skills are taught. The scope and sequence is organized by unit and with a description of the time to spend teaching each unit.
- The scope and sequence is represented in a table format that lists the units with the TEKS strands and the page number. A calendar view is also available that shows the breakdown of units daily. There is evidence of in-depth explanations of the TEKS and how they can be further implemented alongside the ELPS.
- 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.

- In the *Teacher Textbook,* lesson plans provide clear teacher guidance for facilitating activities. There are outlines and descriptions of activities and student action steps. Depth Of Knowledge questions are provided for instructors that accompany the activities. The teacher section outlines training and additional support for the instructor throughout the year.
- In the Learn By Doing STEAM Activity, there is a Design Engineering Process that gives an overview and shows a visual of the design process. There are multiple pieces of evidence of the design process throughout the units. For example, the Lesson Plans for the Properties unit in the Teacher Textbook build on a prior investigation on properties. In addition, the STEAM Activity

Guide lesson Getting to Know H20 project further reviews knowledge and skills on properties of matter.

- The materials spiral activities. The amended scope and sequence paired with the Content Guide do provide evidence on how TEKS are spiraled and revised throughout the year. For example, student expectations 1A and 5E both review thermal energy, Materials do not provide teacher clarity in understanding how activities and experiences connect concepts and RTCs.

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

- In the *Teacher Textbook,* there is a scope and sequence that outlines what is being taught each day. The scope and sequence outlines opportunities for reteaching but does not show evidence of skills spiraling throughout the year. Materials provide review and practice of knowledge and skills spiraled throughout the year to support mastery and retention in the TEKS 1–5 Content Guide; however, the materials do not support mastery and retention. The materials do not come with a reteach plan or ideas for students that have not mastered them. It also suggests that "teachers will likely find that the majority of students have mastered the content," which assumes the content does not need to be retaught or reviewed
- Connections with ELAR content are provided in the introduction, and TEKS are listed by unit, but there is no evidence of repetition or spiraling throughout the scope and sequence. Connections with ELAR content are provided in the introduction with the listed TEKS. The TEKS 1–5 Content Guide and amended Scope And Sequence provide details on how TEKS are spiraled. The assessment generator examines student mastery of the TEK. The materials do not include intentional practice and spiraling of previously taught knowledge and skills from earlier lessons/grade levels and the current lesson's science knowledge and skills. The materials do not come with a reteach plan or ideas for students that have not mastered them. It also suggests that "teachers will likely find that the majority of students have mastered the content," which assumes the content does not need to be retaught or reviewed.

TPS STEAM into Science Grade 7

Indicator 8.2

Materials include classroom implementation support for teachers and administrators.

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

Partial Meets | Score 1/2

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

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

Evidence includes but is not limited to:

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

- The Teacher Edition includes guidance and recommendations for phenomenon-based learning, embedded technology, background information, and lesson extensions to support and enhance student learning. Instructors also have access to a support line via phone and email for additional support and questions regarding the materials.
- Located in the *Teacher Textbook*, instructors have access to the Beginning Of Strand document. The document guides instructors on how to scaffold assignments to support the needs of students. This guidance includes students with disabilities, advanced learners, and emerging bilinguals. The instructional strategies and scaffolds are research-based.
- The Online Teacher Library includes scaffolds for topics that are TEKS-based. They build upon past learning experiences in prior grade levels.

TPS STEAM into Science Grade 7

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

- The Teacher Edition of Learning By Doing gives students the ability to practice ELA-based skills such as comprehension of increasingly complex text and development of oral language through listening and speaking in text-based discussions. Students also practice analyzing data, which uses grade-level math concepts. This example indicates clear and international use of applying cross-content standards.
- The Online Library provides lessons and projects that require student research. Students experience phenomenon-based learning with real-world scenarios that provide multiple opportunities to use technology, engineering, art, and math skills. The reading and math skills are partially integrated into assignments and do not always provide explanations for the instructor on how to model these skills.
- The RTI scope and sequence includes science and engineering practices, recurring themes, and concepts listed alongside the content standards. The chapters are TEKS-aligned with summaries of horizontal and vertical alignment. The Teacher Textbook and the STEAM Activity Reader provide a clear model for the instructor and students on how to solve a math problem. The K-5 TPS Activity Reader Book is disregarded due to this being a review of 6–8 materials.

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

- In the *Teacher Textbook,* instructors have access to a comprehensive list of materials students need for activities and investigations.
- The Teacher Edition of Learn by Doing STEAM activities: grade six begins with a phenomenon that requires students to use scientific equipment and supplies to connect prior knowledge with a new concept.
- The Real Science Middle School Edition provides students opportunities to apply their knowledge of Science concepts on different activities using a variation of materials.There are activities available for TEKS-aligned concepts.
- The RTI scope and sequence includes a materials list for each activity that is considered hands-on or a lab experience. There are links in the online library that include how to refill material kits.

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

- The investigation section of the *Teacher Textbook* requires the instructor to ensure safety standards are being followed when working with chemicals, equipment, and in the environment in which the investigation will take place. The safety standards must be aligned to local standards as well as TEA safety standards.
- In the *Teacher Textbook,* the laboratory safety section outlines how to create safety assessment plans with students that states instructors should do this prior to each investigation. Specific TEA, local safety standards, or assessment guidelines are not consistently represented prior to each hands-on learning experience.
- The Scientific Method lesson in the Learn By Doing workbook includes some safety tips for hands-on learning as well as general safety. Instructors are provided with checklists for general safety practices and usage of safety equipment.

TPS STEAM into Science Grade 7

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 forms of assessment. In the *Teacher Textbook*, there are lesson plans in place to implement the sequences of the 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, and content pacing, as well as 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 7

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 one hundred and fifty days.
- The pacing plan provides instructors 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 7

Indicator 9.1

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

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

Not Scored

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

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

Evidence includes but is not limited to:

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

- Chapter 3 in the STEAM Activity Guide- Student Edition provides students with an appropriate amount of white space. The chapter is designed in a way that uses titles for each section and has graphics to support key concepts.
- Each chapter in the Learn By Doing STEAM Activity Reader - 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.
- The Student Journal provides students with plenty of white space to respond to fill-in-the-blank questions and space to create projects based on the questions. For example, the unit on Matter and Energy has students complete several tables through different investigations. They are provided with space to create a crossword with questions and answers as well as space to respond to math and literacy challenges.

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

- Chapter 3 in the STEAM Activity Guide - Student Edition provides graphics that are used to enhance learning and engage the student without being visually distracting. After each step in the activity, students are provided a visual representation of the setup.
- Each chapter in the Learn By Doing STEAM Activity Reader Book has short paragraphs separated by visuals. These visuals are either illustrations, real-life images, or sketches. For example, Chapter 3, “Crime Solved!” includes illustrations of fingerprints and fibers under a microscope.

There are also images of sample evidence, tools to show displacement, and space for student responses to conclusion questions or fill-in tables.

Materials include digital components that are free of technical errors.

- In the Online Assessment Tools K- 8th Science- Assessment Generator, there are no evident technical errors.
- In the Online Library – STEAM (Science Library), there is no evidence of technical errors.
- The Online Library - NEST Family Videos section has interactive workbooks that students can complete at home and are TEKS-aligned.
- The Online Library - Scientist section provides information on different scientists and their accomplishments. The resources have fact sheets that students can use when researching that scientist.
- Provided links to other resources are fully functional.

TPS STEAM into Science Grade 7

Indicator 9.2

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

1	Materials integrate digital technology and tools that support student learning and engagement.	Yes
2	Materials integrate digital technology in ways that support student engagement with the science and engineering practices, recurring themes and concepts, and grade-level content.	Yes
3	Materials integrate digital technology that provides opportunities for teachers and/or students to collaborate.	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 integrate digital technology in ways that support student engagement with the science and engineering practices, recurring themes and concepts, and grade-level content. Materials do not integrate digital technology that provides opportunities for teachers and/or students to collaborate. Materials 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 Teacher Program Guide in the Online Teacher Support Section outlines all of the digital components of the instructional materials. The guide also provides an overview of materials that can be accessed digitally.
- The STEAM Library in the Online Library has integrated digital technology that supports student learning and engagement, such as the NEST family videos and workbooks. Instructors also have access to the Alaska section in the online library, which provides videos and soundtracks for students to engage with as they learn.

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

- The Teacher Program Guide in the Online Teacher Support section states that the instructor and student will have access to a digital resource called Digital Frog. Students can complete online tours of various environments and collaborate with peers. Instructors and students can also collaborate through the digital software tool that is used for homework assignments.

TPS STEAM into Science Grade 7

- The Learn By Doing STEAM Activity Reader Book integrates digital technology to support student engagement while using science and engineering practices. The chapter titled “Water Essential for Life!” has students research The Great Pacific Garbage Patch and write a composition.
- The Student Journal integrates digital technology to support student engagement and learning. The unit on Newton's Laws of Motion has students research car safety designs and airbags to create their own crash boxes. When researching, students are to look out for information that made them think again, as well as questions that came into their minds about the design and car safety.
- The STEAM Activity Guide has a cyberspace connection where students research keywords such as journal, scientific predictions, etc.

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

- Materials do not integrate digital technology that provides opportunities for teachers and/or students to collaborate. The two pieces of evidence suggested in the rubric tool are for the students to use the internet for research. Doing research is not a collaboration.
- Materials do not integrate digital technology that supports student-to-student collaboration. Materials do not provide a forum for students to post class discussion topics via written or video responses. Materials do not provide a video conferencing platform or encourage the use of existing platforms for student engagement in group projects and discussions. Materials do not provide interactive games and quizzes students can complete collaboratively in pairs or teams.
- Materials do not integrate digital technology that supports teacher-to-student collaboration. Materials do not provide an online collaborative platform in which teachers and students can share educational materials, create collaborative spaces, post assignments, collaborate on projects, and give immediate feedback to students.

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

- In the Teacher Program Guide of the Online Teacher Support section, the material stated that it integrates digital technology that is compatible with Clever. There is no evidence of other LMSs that support the platform.
- The Alaska section in the Online Library has videos and audio that can be downloaded. Materials can be accessed on an iPad, laptop, and smartphone without difficulty.

TPS STEAM into Science Grade 7

Indicator 9.3

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

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

Not Scored

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

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

Evidence includes but is not limited to:

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

- The Teacher Edition of the STEAM Activity Guide follows the scope and sequence as outlined in the Online Library. The scope and sequence outlines the TEKS that align with the units and show the textbook regencies that support the TEK.
- Each chapter in the Learn By Doing STEAM Activity Reader - Teacher Edition uses strategies such as giving background information with key vocabulary and identifying key concepts so that students can answer TEKS-aligned questions. This format assists students as they work on activities that are aligned with literacy and math.
- The Online Library has a section with famous scientists. The materials align with the expectation that students should know important scientists and their contributions.

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

- The How To Use The Program Guide in the Online Teacher Support section provides a step-by-step process on how to utilize the materials.
- Within the Program Components in the Teacher Program Guide, the instructor is given guidance on how to use technology to support student learning. Materials state that the instructor can use the Online Library Teacher Support - Planning Investigations section to provide the students with information to assist them.

- The Online Library - Teacher Support section has “How to Videos” that assist instructors in generating assessments that support and enhance student learning by using the appropriate tools.
- The Online Library-Assessment Tools K-8 has an Intervention Focus Tutorial that teachers can use to support and enhance student learning, especially for students who are struggling to understand a specific concept.
- The Teacher Program Guide includes a description of all online components.

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

- The Family and Caregiver Guide states that the instructor and caregiver should communicate so that digital access to the curriculum is provided for the student at home. Caregivers are given digital access to homework, TEKS and ELPS, worksheets, and glossary cards.
- The Steam section in the Online Library has integrated with digital technology that supports student learning and engagement. For example, the NEST family videos and workbooks are TEKS-aligned and provide another avenue of engagement and learning.
- The Online Library says all Reader Activity Books are available from at home with digital access, providing caregivers and students the opportunity to practice and learn outside the classroom.