Myriad Sensors Conceptual Academy Biology

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Executive Summary

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

TEKS Student %	TEKS Teacher %	ELPS Student %	ELPS Teacher %
100%	100%	100%	100%

Section 2. Instructional Anchor

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

Section 3. Knowledge Coherence

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

Section 4. Productive Struggle

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

Section 5. Evidence-Based Reasoning and Communicating

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

Section 6. Progress Monitoring

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

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Section 7. Supports for All Learners

- The materials provide guidance on fostering connections between home and school.
- The materials include listening, reading, writing, and speaking supports to help Emergent Bilinguals meet grade-level science content expectations.
- The materials include some 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 mostly designed to engage and support student learning with the integration of digital technology.
- The digital technology or online components are developmentally and grade-level appropriate and provide support for learning.

Section 10. Additional Information

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

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Indicator 2.1

Materials are designed to strategically and systematically integrate scientific and engineering practices and course-level content as outlined in the TEKS.

1	Materials provide multiple opportunities for students to develop, practice, and demonstrate mastery of appropriate scientific and engineering practices as outlined in the TEKS.	M
2	Materials strategically and systematically develop students' content knowledge and skills as appropriate for the concept and grade level or course as outlined in the TEKS.	M
3	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 develop an understanding of science concepts.	M

Meets | Score 4/4

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

Materials provide multiple opportunities for students to develop, practice, and demonstrate mastery of SEPs. Materials strategically and systematically develop students' content knowledge and skills as appropriate for the concept and grade level or course as outlined in the TEKS. Materials include sufficient opportunities for students to ask questions, plan and conduct classroom, laboratory, and field investigations, and to engage in problem-solving to 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 appropriate scientific and engineering practices as outlined in the TEKS.

- In Chapter 1, Section 1.3, Science and Technology, students are given various opportunities to develop science practices in different ways, including research and reflection of scientific stereotypes, a phenomenon study, a research activity, and a podcast that reviews different STEM careers. In Chapter 16.3, Hands-On: Survivorship Curves, students are tasked with working through an activity that requires them to create charts, calculate and interpret data, produce and analyze graphs, and practice data analysis allowing students multiple opportunities to demonstrate mastery of scientific and engineering practices.
- Each chapter contains a review section that contains multiple opportunities for students to demonstrate and develop mastery of SEPs. Chapter reviews include activities such as open-ended questioning, data review, data analysis, vocabulary review and memorization games, and more.
- The materials guide the creation of field journals which provide students with opportunities to display mastery of knowledge and SEPs. Field journals are used throughout the materials for data analysis, data recording, experimental note-taking, scientific inquiry, thought processing, and more.

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

- Materials provide a systematic approach to building on knowledge. Materials in Unit 6 build on the concept of cell division. Later in the unit, the processes of inheritance build on the concepts of cell division, all of which is in accordance with the TEKS.
- The Concept Academy Biology (CAB) Pacing Guide has an overview of all chapters and their titles, showing a strategic and systematic approach to student learning by ordering materials in a way that builds students' knowledge. The materials meet the criteria for this indicator because the Pacing Guide has been updated to reflect the alignment with the TEKS.
- Materials provide a CAB Teaching Tips document that outlines key concepts in the materials in the order that they appear by unit chapter. This document shows a clear progression of knowledge and skills from a small-scale perspective of biology (atoms and molecules) to larger ecosystem concepts. Each unit section is aligned with specific TEKS.
- Materials show a clear progression of concepts. For example, Unit 3: The Cell, teaches students about different types of cells and the basic structures of those cells. This naturally progresses into Unit 4: How the Cell Works, which goes into more detail about cell transport, cell communication, cellular respiration, and photosynthesis.

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 develop an understanding of science concepts.

- The materials provide opportunities for students to demonstrate their learning through labs and investigations. For example, in Unit 4.4, students conduct an Analyze and Evaluate: Enzyme Activity where they conduct an investigation and design an experiment about enzymes, such as yeast.
- Chapter 3: The Cell materials include activities that support students to ask questions, plan and conduct classroom and laboratory investigations, and engage in problem-solving to develop an understanding of science concepts. For example, in 3.3, students conduct a Microscope Lab activity where they conduct a laboratory investigation by looking at various specimens under a microscope which they then have to draw, classify, or categorize.
- The CAB pacing guide details various opportunities students have to conduct investigations and ask questions that foster their ability to master the SEPs. Activities include but are not limited to, practice pages, next-time questions, sensor activities, writing activities, analysis and evaluation, exploration and explanation, phenomena, and PhET simulations
- In Chapter 1, Section 1.5, Working with Numbers, students complete a Phenomenon activity called "But is it Gold?" where they analyze data from an experiment and then design and conduct their own experiments.
- Each chapter includes a review tab after the material has been covered. The review tab includes multiple opportunities for students to plan and conduct investigations to develop problem-solving skills and engage in SEPs.

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Indicator 2.2

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

1	Materials embed phenomena and problems across lessons to support constructing, building, and developing knowledge through authentic application and performance of scientific and engineering practices and course-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.	PM

Partial Meets | Score 2/4

The materials partially meet the criteria for this indicator. Materials anchor some of 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 and course-level content. Materials intentionally leverage students' prior knowledge and experiences related to phenomena and engineering problems. Materials outline for the teacher some 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 constructing, building, and developing knowledge through authentic application and performance of scientific and engineering practices and course-level content as outlined in the TEKS.

- Lesson 12.4 includes an investigation involving the phenomenon of smiling. Students take the smile test; afterward, they watch a video explanation. Students collaborate to complete a set of notes. The materials have consistent evidence of embedded phenomena and problems across lessons to support students in constructing, building, and developing knowledge through authentic application and performance of scientific and engineering practices and course-level content as outlined in the TEKS. The TEKS are referenced and in an auxiliary location. The material would benefit the teacher and provide a more clear direction for teachers and students if they were written out as they are covered over the course of the material.
- The materials include activities such as the one in Chapter 3: Living Earth Essay that embeds phenomena and problems across lessons to support students in the performance of scientific and engineering processes. Another example is found in Chapter 5: Genetic Technologies with the Practice Page on Transcription and Translation. The materials contain phenomena and problems of various levels of rigor that support students in constructing, building, and developing knowledge through scientific application. These phenomena and problems are aligned with Biology TEKS referenced in the Pacing Guide. Teachers can reference the full TEKS

in support materials. Directly listing TEKS inside materials as they are visited would benefit both teachers and students.

- In Chapter 1, Section 1.5, "Working with Numbers," students conduct a phenomenon activity titled "But is it Gold?" where they analyze data from an experiment and then design and conduct their experiment. The CAB Pacing Guide outlines various activities students complete throughout the materials. These include practice pages, next-time questions, sensor activities, writing activities, analysis and evaluation, exploration and explanation, phenomenon), PhET simulations, and more. Materials provide consistent evidence of an outline for teachers, including the scientific concepts and learning goals of students. The materials could benefit by being more clear about the alignment of goals and concepts to TEKS by using the language of Bloom's Taxonomy contained in each correlated TEKS.
- The CAB pacing guide details 18 opportunities for students to engage in phenomena inquiries across multiple lessons. The materials provide students with multiple opportunities to engage with phenomena-based learning to develop knowledge. The phenomenon-based learning opportunities and TEKS are found in the CAB pacing guide. The materials would benefit students and teachers if they wrote out the full TEKS as they are reviewed throughout the material in place of TEKS tags. Chapter 4.4 Illustrates a phenomenon-based inquiry activity. These activities do not specifically mention associated TEKS. The materials provide embedded phenomena and problems across the lessons to support students in constructing, building, and developing knowledge through authentic applications and performance of scientific and engineering practices; however, the correlating TEKS are not specifically referenced.

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

- Lesson 4.5 has a section embedded that requires students to indicate what they know regarding photosynthesis before conducting the investigation.
- In Chapter 4, materials include previous ideas that students have learned and experienced about the phenomenon. Chapter 9 materials include the previous content to help students experience the phenomenon and engineering problems.
- Materials provide evidence in various activities. For example, in Chapter 2, Section 2.7, "Phenomenon: Good Hair Day," students explore changes in hair growth. They leverage their hair growth to the information presented in this phenomenon. Chapter 14, Section 14.5, presents the phenomenon, "A Healthy Diet." Materials prompt students to consider their prior knowledge about their own diet and what a healthy diet might entail, prompting them to connect their personal experience to the phenomenon.
- The CAB pacing guide follows a micro-to-macro schedule, allowing students to utilize previously covered topics when investigating new topics and visualize the scope of correlation between each lesson. The materials intentionally leverage students' prior knowledge and experiences related to phenomena and engineering problems. Materials consistently direct students and teachers to consider prior knowledge.

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

- In Chapters 8 and 10 (specifically Lesson 10.1), the materials intentionally leverage students' prior knowledge and experiences related to phenomena and engineering problems. Materials consistently direct students and teachers to consider prior knowledge.

- At the beginning of each phenomenon activity, there is a “Teacher's Corner” section that outlines the goals of the activity, some answers to questions from the activity, along with suggestions on how to build connections. For example, Chapter 14, Section 14.5, “Phenomenon - A Healthy Diet,” provides teacher goals and answers to questions.

The materials offer a vague description of learning goals, including single words or topics. The goals listed in Section 4.4, “Sweet Enzymes,” do not provide adjectives that describe a student's abilities at the conclusion of the goal. The materials offer complete guidance to teachers that can support student learning. The materials provide full TEKS in support material and TEKS tags in the core material. The teacher must imply or reference TEKS to build a learning goal for students that are not explicitly stated. The materials do not consistently list specific skills or knowledge sets directly. The materials offer study tips and a teacher resources page, but the additional resources do not outline the objective/goal clearly.

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Indicator 3.1

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

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

Evidence includes but is not limited to:

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

- The materials help students structure and connect their knowledge from previous units to the current lesson. The materials build and connect knowledge and skills by including explanations of prior knowledge in previous lessons and units. For example, the units in the book start small with the chemistry of life, progress to cells, and then ultimately end with ecological systems. Materials sequence in an order that naturally builds on knowledge and skills within and across units. For example, Chapter 3, The Cell, provides students with an introduction to the cell and its parts. Directly afterward, in Chapter 4, How Cells Work, students build and deepen their knowledge of cells. Materials intentionally scaffold student learning throughout and across chapters. For example, in Chapter 3, The Cell, activities progress in an order that connects knowledge in a progressive sequence starting with “What is a Cell?” and “Cell Theory,” building to different types of cells and functions of cellular organelles.
- The materials intentionally sequence students’ opportunities to build upon prior knowledge from previous lessons as they navigate through the course. The “Cells” chapter precedes the “How Cells Work” chapter, allowing students to first identify cellular components before exploring their functions and interactions The materials’ assessments present students with opportunities to apply knowledge from current and prior content allowing students to build connections across units. Chapter Review Interactive sections contain ”Apply and Discuss” questions that prompt students to use all available knowledge to respond to questions.

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

- The order of the materials presents itself in a way that naturally allows students to progressively go deeper into the topics. For example, in Chapter 4, students first learn about ATP and then learn how ATP is used in cellular respiration and photosynthesis.
- Materials (Chapter 4, How Cells Work, Lesson 4.1, Cellular Transport) include videos to facilitate learning. Materials (Chapter 6, Inheritance, Lesson 6.1, How Cells Reproduce) prompt answers to guide the students' learning.
- Materials intentionally scaffold student learning throughout and across chapters. For example, the overall layout of the chapter progression starts with science, cells, DNA, and genes and builds to analyzing the diversity of life and ecosystems, moving from the smaller picture to larger concepts across materials. In Chapter 18, Ecosystems, Lesson 18.4, Energy Flow in Ecosystems, students learn about how energy moves in an ecosystem throughout the lesson; students are prompted to answer increasingly abstract open-response questions from reviewing reading materials to scenario-based questions where students have to explain what would happen in specific situations.
- Materials provide sequence and scaffold of content, allowing students to stack knowledge and develop deeper conceptual understandings. This sequence structure is evident in Chapter 5, DNA and Genes. The materials clearly contain a sequence designed to scaffold learning. The review sections of each chapter contain assessments that are sequenced and structured to scaffold learning throughout the assessment (Chapter 11, Review).

Materials clearly and accurately present course-specific core concepts and science and engineering practices.

- Materials identify and present biology concepts throughout. The materials clearly cover course-specific and core concepts, as noted in the CAB pacing guide. The guide and materials clearly present science and engineering practices (SEPs) and show alignment. The materials present clear and accurate course-specific core content. The materials offer clear and accurate SEPs. The materials reference a “Field Journal” that is used throughout the material.
- Materials include practice pages. For example, in Chapter 9, Evidence of Evolution, Section 9.1, students complete an activity about the mechanisms of evolution. Another example is in Chapter 8, Natural Selection, Section 8.3, where students complete an activity about Advantageous Traits.
- Materials clearly and accurately present course-specific core concepts and science practices through the identification of TEKS in the lesson and Activity Pacing Guide, Teaching Tips document, and throughout the materials. This includes a concept check provided in the learning materials for each chapter.
- The CAB Pacing Guide provides a clear layout for core concepts and science practices, including categorizing the lesson activities according to type (practice questions, sensory activities, writing, analyzing, evaluating, exploring, explaining, phenomenon, or other).
- The Conceptual Academy Biology Activity/SEP Correlation Chart details the correlation between SEPs, TEKS, and core concepts.

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Mastery requirements of the materials are within the boundaries of the main concepts of the course.

- The Pacing Guide, located in the About This Program, indicates general learning topics to be covered and does specify what TEKS should be mastered by students. For example, in the Sensor Activity “Are Beans Alive?” specific learning objectives are stated as follows, “Students will explore living vs. nonliving things and determine that cells make up all organisms.” These align with TEKS (1A) from this unit as outlined in the Lesson and Activity Pacing Guide as well as denoted in the activity.
- Materials (Chapter 8, Natural Selection, Section 8.3) include next-time questions to facilitate mastery. The materials provide student learning skills and outcomes. Materials (Chapter 10, Diversity of Life, Section 10.1) include exploring and explaining activities to facilitate mastery and understanding.
- At the beginning of each chapter in the textbook PDF, there is a section that provides an outline of learning objectives for that chapter. The CAB Pacing Guide alludes to optional activities within each chapter.
- The CAB pacing guide contains bullets that denote alignment to TEKS where learning objectives are found; these bullets provide or list specific TEKS or learning objectives. Each chapter contains “Instructor Resources'' that provide insight into learning objectives. For example, in the Sensor Activity “Spinach Experiment,” specific learning objectives are stated as follows, “In this experiment, students will explore photosynthesis in action through the basic functions of spinach leaves.” These align with TEKS (11A) from this unit as outlined in the LEsson and Activity Guide as well as denoted in the activity.

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Indicator 3.2

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

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

Partial Meets | Score 3/6

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

Materials somewhat support teachers in understanding the vertical alignment of course-appropriate prior knowledge and skills guiding the development of course-level content and scientific and engineering practices. Materials contain explanations and examples of science concepts, including course-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 vertical alignment of course-appropriate prior knowledge and skills guiding the development of course-level content and scientific and engineering practices.

- Materials somewhat support teachers in understanding the vertical alignment of course-appropriate prior knowledge and skills, as there are no specific TEKS or SEPs provided to teachers that list out vertical alignment. There is a curriculum map; however, there is alignment between chapters and concepts that is not represented.
- Materials (for example, in Chapter 2) do not mention the TEKS and SEPs to support the teachers in understanding the vertical alignment of course-appropriate prior knowledge and skills guiding the development of course-level content and scientific and engineering practice.
- No mention of course-appropriate prior knowledge and/or skills is found in the materials. No mention of course-appropriate prior knowledge and/or skills is found in the materials.
- The material in the Vertical Alignment tool only states chapters in the materials but no specific TEKS or SEPs that teachers can use to promote vertical alignment. The materials ask students to build on vague prior knowledge regarding phenomenon-based activities, but these recall directions are not based on the TEKS or SEPs.

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

- Teachers can use the Teacher Tips in the chapter resources to guide their teaching. This section aligns with the concepts outlined in the TEKS. The teacher tips include the sections within the chapters as well as the TEK associated with that section, such as “How Cells Work” 4.1 Cellular Transport (TEKS 12B), 4.2 Cell Communication 9TEKS 12A), 4.3 ATP and Chemical Reactions (TEKS 11A, 11B)
- Materials provide an in-depth discussion of concepts, and the TEKS supports the teacher's subject knowledge and recognition of barriers to student conceptual development. Materials include videos to explain the concepts, and the TEKS are included.
- Materials provide a “Teaching Tips” document that provides background and explanations for the main concepts in each chapter for the teacher to reference. Instructor Resources are provided at the beginning of each chapter. The Guide to Biology Misconceptions document highlights students’ misconceptions of teachers.
- Materials include teacher guidance for misconceptions in the Instructor Resources tab of each chapter. The embedded videos in the lessons offer examples of science concepts. Misconceptions are addressed within the embedded content.

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

- Materials in Chapter 10 provide the purpose of the instructional design. Materials also include explanations of the chapters and the purpose of the lessons.
- Materials provide reasonable explanations for the intent and purpose of instructional design. In the textbook PDF, the author provides an explanation of the intention and purpose of the layout of the materials and their content. Additionally, there is a description provided about the company and their reason for designing their materials as they have.
- The “About This Program” tab explains the intent and purpose of the program. The instructional design of the program is outlined. The handbook identifies the philosophies used to derive this material. Each of the chapters begins with a preview tab that provides explanations of the material covered in the chapter.

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Indicator 4.1

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

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

Evidence includes but is not limited to:

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

- Materials allow students to make sense through reading, writing, thinking, and acting like scientists and engineers. The About This Section of the Homepage states how students will take part in meaningful sensemaking through reading, videos, and activities. The Pacing Guide includes activities that allow students to make sense of the types of sense-making activities (investigation, reading, etc.) listed at the top of the chart; the name of the activities and where they are located throughout each unit are shown under each type of activity.
- Materials provide ample evidence to support the materials through questioning, reading, thinking, and various activities. Throughout the materials, students read and answer questions in response to reading passages and videos to help with the sensemaking of the content. For example, there are reading passages followed by reading checks, concept checks, and more questioning for students to reflect on their learning. The materials prompt students to work through phenomena using scientific and engineering practices (SEPs). For example, in Chapter

4.4, Phenomenon: Sweet Enzymes, students conduct observations and find evidence of enzymatic action in their field notebook.

- The materials offer consistent opportunities for students to write, think, and act as scientists or engineers. The CAB pacing guide details various activities that are present within the materials ranging in categories such as sensor activities, phenomena, and writing or presentation activities. The materials refer to TEKS 4A and 4B twenty times. These TEKS are directly related to students' opportunities to conduct experiments and activities where they engage with materials as scientists and engineers.

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

- Students are given multiple opportunities to demonstrate various ways to respond and demonstrate their understanding of science concepts. Multiple opportunities are provided for students to engage in grade-level tests to gather evidence and develop an understanding of concepts. The hardcover Student Edition Textbook allows students opportunities to engage with grade-level appropriate scientific texts. These texts can be used to gather evidence and develop scientific concepts. At the end of each section in the Student Edition, students answer questions after engaging in scientific texts. Students answer open-ended questions supporting scientific evidence.
- Lesson 4.3, ATP and Chemical Reactions, includes an article that students read to check their understanding and assess their comprehension of concepts. Material is appropriate to the TEKS. Lesson 12.2, Homeostasis, includes an article that students read and a reading check to assess the understanding.
- Materials provide ample evidence through various readings throughout the materials. For example, in Lesson 9.4, Fossils, students read a segment about fossils that correlates with course-appropriate TEKS, including external links for additional reading articles. In Lesson 6.5, Second Law of Inheritance, students read a section about pea plant inheritance that correlates with course-appropriate TEKS; resources also include an external link for additional reading.
- The materials (Chapter 3, Looking at Cells) consistently offer students grade-level appropriate texts that are aligned with core concepts. The materials offer students the opportunity to engage with grade-level texts that are aligned with the TEKS.

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.

- Students are given multiple chances to act and think like scientists. The Handbook includes opportunities for students to engage in various types of communication. Types of communication are listed at the top of each page, along with the TEKS and level of difficulty to implement. Students are given the choice in Chapter 1 of the Student Edition (Scientific Notation) of how they want to demonstrate their knowledge. Students choose one of the provided writing strategies to demonstrate their understanding of scientific concepts.
- Materials provide multiple opportunities for writing and graphic modes of communication, including written responses to questions, video analyses, descriptions of experiments, and model building. For example Chapter 3.6, Sensory Activity: Cells and Organelles, Experiment #1: Cell Membrane Function, students build a working model to demonstrate a semipermeable membrane in order to support their understanding of this structure and deepen their

understanding of its function. In the Chapter 3 Review (Interactive) section, students review their knowledge of cells and organelles using flashcards and answer various questions in written form.

- Students encounter various opportunities to gather data, including writing opportunities in Chapter 10. Across the material, there are opportunities for students to engage with grade-level texts in a variety of formats, including text and video (Chapter 10).

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

- The Pacing Guide includes activities where students engage with phenomena to make sense of concepts. A suggested amount of time for each phenomenon activity is listed at the top of the page, along with the associated TEKS. Within the first chapter of the Student Edition, students act as scientists while engaging in phenomena. Students collect data and apply their learning to answer a CER after completing the initial investigation. At the end of the investigation, students apply their learning to design their own experiments.
- The “Field Journal” approach indicates that the materials require the student to document their observations, experiences, ideas, questions, and reflections. Chapter 3 includes a laboratory activity to support students acting as scientists and engineers who can learn from engaging in phenomena and the engineering design process.
- Materials provide evidence through various activities where students use science and engineering practices. For example, in Chapter 2.6, Hands-on Activity: Steam Distillation, students use chemical engineering practices to separate cinnamon oil from ground cinnamon. In Chapter 2.2, Phenomenon: Blue-Green Penny, students conduct an experiment and record observations using scientific concepts.
- The materials offer 18 phenomena-based activities (CAB Pacing Guide) scattered throughout the material to provide students with ongoing engagement. The materials provide clear phenomena-based activities (Chapter 12) that promote students to act and design as scientists and engineers.

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Indicator 5.1

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

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

Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- Students use evidence to support their hypotheses and claims, as seen in Activity 14.4. Students complete a lab that addresses humidity in the breath, specifically "Does drinking water increase the amount of water vapor in your breath?" Students collect data throughout the lab, and once the lab is complete, use this evidence to either support or reject their initial hypothesis. In Section 3.6, Cell Organelles, students complete two investigations exploring certain cells and their organelles in an attempt to see how cell organelles work together for the cell. Background information is given via reading and a video, and instructions for the lab are provided. Once students have completed the investigations, students use their data to respond to questions. Ultimately, students use their new knowledge to design their own experiments.
- In Chapter 4.4, Analyze and Evaluate: Enzyme Activity, students design their own experiment, after which they analyze their data using evidence from their experiment. In Chapter 16.3, Hands-On: Survivorship Curves, students work through a series of scenarios analyzing and creating survivorship curves. At the end of the activity, they are put into groups and complete a Claim-Evidence-Reasoning table.

- Students are encouraged to work through phenomena-based learning while keeping a field journal. There is dedicated guidance to support the use of evidence as the students complete the journal, which can be found in the “best practices” section of the field journal section. Students are tasked with responding to questions in short answer formats that require students to defend their responses using evidence to support their stance; see Chapter 16, Interactive Questions, as an example.

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

- Activities in the Student Edition provide opportunities to use scientific vocabulary. The Student Edition of the materials provides key vocabulary terms. The terms identified in a passage are bolded, and an example is given, as seen in 2.1(c), Atoms. The materials have writing activities that students choose from that reinforce the topic being discussed. For example, Writing Activity: Second Law of Inheritance (6.5) asks students to choose a writing strategy that reinforces ideas that relate back to inheritance.
- In Chapter 7.3, Analyze and Evaluate: Cell Cycle Regulation (Part 2), students are prompted to look at images and graphics and answer questions to develop and utilize scientific vocabulary related to genetic technologies and cancer. In Chapter 16.1, Writing Activity: Organisms and Their Environments, students choose from three different prompts to write, using content-appropriate vocabulary, about organisms and their environments.
- The materials provide students with flashcards for each chapter that contains content-specific vocabulary. Each chapter's flashcards are applicable to the content contained within the chapter and assist students in building academic vocabulary. Interactive review sections embedded throughout the materials provide students with opportunities to respond in short answer and multiple choice formats while building academic vocabulary and demonstrating its use in the appropriate context. The videos that are provided throughout the materials offer a closed captioning feature that allows students to read new vocabulary words and see them written and spoken within appropriate contexts.

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

- Students are encouraged to partake in student discourse in the Writing Activity found in Chapter 9, Section 9.1 (Evolution). Students work together to identify evolutionary terms and classify them based on how they fit under the umbrella of evolution. The Explore and Explain Section of Chapter 11.3 asks students to discuss, using evidence, their findings. Students partake in a “jigsaw” activity to share their findings with their peers.
- In Chapter 1.3, Research Activity: Historical Figures, students work individually and then bring their research to their group, where students discuss and refine their research into a structured someVenn diagram together. In Chapter 7.7, Writing: Genetic Technology, students write a paragraph either supporting GMO or organic foods, which they present to the class during a class discussion.
- The materials provide students with opportunities to engage in argumentation and discourse to support student knowledge and content development. These elements are present, there is an area of teacher guidance and scheduling to ensure that students receive these opportunities throughout the material. Students can beassigned group work where they can discuss topics and engage in argumentation and discourse appropriate to the content. I

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

- Materials provide opportunities for students to construct and present arguments with justified responses based on evidence. Students use evidence acquired in Activity 15.1 to explain and answer the questions provided. Students use evidence to draw conclusions to a final question. The PhET activity provided in Section 9.3 of Chapter 9 includes space for students to use evidence from their lab to justify their explanations. Students complete the Natural Selection lab and then use their data to answer conclusion questions and make connections.
- In Chapter 2.1, Explore and Explain: The Fragrant Balloon, students conduct a fragrance observation by adding a scent to balloons and then having someone smell them. They then explain what is going on and why they got the results they did. In Chapter 4.4, Analyze and Evaluate: Enzyme Activity, students observe, collect data, and then design their own experiment about enzymes, after which they must contrast explanations using CER to provide evidence of the phenomena observed.
- Students work on phenomena-based activities and track their progress throughout the year in a “field journal.” The journal encourages students to assemble evidence and respond to questions that require them to justify their answers using acquired knowledge and evidence. Students are asked to “apply and discuss” content. Students justify their responses using evidence acquired from the lesson.

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Indicator 5.2

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

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

Partial Meets| Score 2/4

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

Materials provide some teacher guidance on anticipating student responses and the use of questioning to deepen student thinking. Materials do not include teacher guidance on how to scaffold and support students' development and use of scientific vocabulary in context. Materials provide some teacher guidance on preparing for student discourse and supporting students in using evidence to construct written and verbal claims. Materials give some teacher guidance and support in facilitating the sharing of students' thinking and finding solutions.

Evidence includes but is not limited to:

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

- The start of each chapter contains a section titled "Instructor Resources." These resources include a key to practice pages, questions from the Test Bank, and other articles teachers might find helpful. Under the Instructor Resource of the chapters is a subsection titled "Teaching Tips." While the Activity Handbook offers some guidance about the topics in each chapter, there is a lack of specific examples of when and how to use questioning to deepen student thinking for specific activities. At the beginning of each unit chapter, there is an "Instructor Resources" section that provides answer keys for worksheets that correlate with that unit's content and chapter review question answers. Some activities provide a teacher copy that includes teacher guidance and examples of student responses. For example, Chapter 8.4, PhET Activity: Natural Selection (Teacher), Chapter 4.5, Sensor Activity: Spinach Experiment (Teacher), and Sensor Activity: Photosynthesis - Floating Leaf Disk Assay (Teacher) all provide a teacher version of the lab that includes examples of student responses to questions. Within chapter sections, there is a concept check where students are prompted with questions about the topic. Right below the questions, there are suggested answers to these questions. However, the answers are not suggested as teacher guidance but as student guidance examples.
- The materials provide answer keys for embedded questions throughout the material. These questions include multiple-choice and short-answer responses. Although there are "simple" and "challenging" questions to assign students, there is no clear guidance provided to teachers on

how to apply these questions. For example, if a student struggles with a "Simple" question, what should the teacher do with additional questions to deepen student thinking?

- The teaching tips segment of the material offers some guidance in regard to anticipated student performance. For example, the teaching tips state that students may learn better if they use a specific type of model or approach. The Activity Handbook provides teachers some guidance; however, specific examples of when to use the Activity Handbook are not provided to teachers.

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

- Scientific vocabulary is provided in the materials through the use of bolded words followed by a brief definition. The newly added Word Windows provides teachers with a tool to help scaffold student acquisition, learning, and mastery of content (biology) vocabulary. The Teaching Tips section of the Instructor Resources provides the teacher with keywords to be used within the chapters but does not provide guidance on how to support students' development of these terms or scaffolding.
- While keywords are typically bolded throughout the materials, with the addition of Word Windows, this provides the teacher with a resource to use but not scaffolding for vocabulary acquisition. The Teacher Tips include teacher introduction ideas for lessons; this area is a good place to include key vocabulary terms that teachers should emphasize to students. While there are review activities at the end of each chapter unit that reviews flashcards of key vocabulary, there is no evidence of teacher guidance on how to help students use these terms in context. The materials include a Handbook of Class Activities that has many games and activities for teachers to help students review and understand concepts. The Word Window is used as a word wall, and only one activity to use with it.
- The materials do not provide appropriate guidance to teachers that details scaffolding ideas, suggestions, best practices, or opportunities. The material does include vocabulary and uses it within an appropriate science context. Materials attach photos to concepts that will help build student connections. These components do not have any attached guidance directed to teachers for their use. Any connection to the placement of the photos and text would have to be recognized by the teacher independently due to the lack of clear guidance from the material. The materials make references to ELPS, which may have relationships to scaffolding support for students; however, the ELPS are not stated in the material, and the teacher must embark beyond the material to identify the ELPS and find a correlation to the content. The reference to ELPS is unclear guidance for a teacher. There is no clear guidance on scaffolding to support students' development of vocabulary that is used in context.

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

- The Handbook of Class Activities provides teachers with strategies for grouping students based on the needs of the class. The activities detail how to implement them, the level of implementation, and how viable the activity could be. These activities provided, however, do not necessarily include the use of evidence to construct responses to claims. Chapter 14 of the Student Edition includes an investigation (14.4) where students collect data and then use that data to answer a question using the C-E-R method. However, no guidance for the teacher is provided for this activity.

- Materials include a Handbook of Class Activities wherein several activities can be used to launch a classroom discussion about key concepts. The activity guides the teacher in conducting an activity with students that can include questioning, drawing, sorting, and more. Students then use written or verbal communication to provide their answers to the activity. While there are teacher versions of some of the activities embedded in the materials, these do not include further prompting or questioning guidance for the teacher on how to support students in using evidence to construct written and verbal claims. While there is some guidance and prompting for classroom discussions, there is little to no evidence to show teacher guidance in supporting students with evidence-based claims.
- The activity handbook contains a few activities that engage students in discourse. These verbal-based activities include think-pair-share and storytelling. The activities do not explicitly direct teachers to ensure that students are using evidence to inform their decisions. There are opportunities and elements throughout the material; however, teacher guidance is unclear and not direct. The materials suggest students utilize a "field journal" approach to learning. The inclusion of evidence-based learning can be found in "Field Journal Best Practices." Students are encouraged to include pictures, graphs, tables, and analysis sections within the journal. These pieces could be used for evidence-based conversations.

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

- The Class Activities guide provided in the Teacher Resources portion of the chapters offers strategies that allow students to share their thinking with others. Guidance is offered to the teacher with regards to the type of activity (verbal, written, etc.), how easy it is to implement, what the value of the activity is, and what size of class this would work best with. The Sensor Activity in 14.1 asks students to work within their groups to answer a question (based on data from an investigation). However, there is no guidance for teachers to facilitate the students' thinking or to help them find solutions.
- Materials include a Handbook of Class Activities wherein several activities can be used to facilitate student thinking and sharing of ideas. The activity guides the teacher in conducting an activity with students that can include questioning, drawing, sorting, and more. Students then use written or verbal communication to share their answers with the class. There is a section in the Handbook of Class Activities called "Next-Time Questions," which explains this section. "Next-Time Questions" prompts students to come up with solutions to problems and/or questions. However, there is no instruction or teacher guidance on the facilitation of helping students come to those solutions.
- The materials contain icons that denote when students could work in groups to promote shared thinking and solution-building. The materials used in group settings are limited and sporadic. The materials provide questions during group work; however, these questions are not always seeking debate or analysis. For example, in Chapter 5, the PhET activity contains the following group work question: "Is it possible for a mutation to cause no protein changes? Explain your reasoning." There are five questions in this activity, and the new material offers guidance for teachers for student debate and discussions, The prompted questions could be answered as an individual as well as a group. The materials provide activities, found in the Activity Guide, that will foster sharing of student ideas and incorporate opportunities for team-based solutions to problems. The team-based activities and the materials offer guidance on how teachers should use the rest of the material to find additional opportunities for students to work as teams.

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Indicator 6.1

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

1	Materials include a range of diagnostic, formative, and summative assessments to assess student learning in a variety of formats.	M
2	Materials assess all student expectations over the breadth of the course and indicate which student expectations are being assessed in each assessment.	M
3	Materials include assessments that integrate scientific concepts and science and engineering practices.	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 diagnostic, formative, and summative assessments to assess student learning in a variety of formats. Materials assess all student expectations over the breadth of the course and indicate which student expectations are being assessed in each assessment. Materials include assessments that integrate scientific concepts and science and engineering practices. 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 materials provide teachers with formative and summative assessments during lessons. The Instructor Resources of each chapter provide teachers with a test bank. The authors designed these questions, as stated, for teachers to use for quizzes and exams. The materials include diagnostic questions throughout the materials for teachers to monitor student progress. Sections of the CAB (Teaching Tips) include activities that provide teachers with questions. There are diagnostic assessment tools for the teacher to gauge prior knowledge. In the CAB Teacher Tips document, chapters contain activities for the teacher to do with students before the unit that can help the teacher gauge student knowledge. For example, Chapter 1 suggests the teacher review students' ideas about the characteristics of living things by having students imagine they are exploring space and discuss with partners what they might look for to find life on extraterrestrial planets.
- Each unit section has formative questions such as video check, reading check, concept check, and short answer questions to gauge student understanding. For example, in Lesson 8.1, The Origin of Life, students watch a video and are immediately prompted with a multiple-choice question. Students then complete a reading section and answer a reading check question. This practice continues through a concept check and short answer at the end of the section. Under Chapter 1 Instructor Resources, a CAB Test Bank contains test questions separated by chapter for teachers to pick from to create summative assessments for students for each chapter.

- The materials present a formative assessment in the form of chapter reviews. The materials provide assessments that teachers can find throughout the material. The review section of Chapter 1 has an example of formative assessments. It includes key terms, simple review questions, challenging review questions, and an apply and discuss question.
- Materials include periodic formative assessment that teachers use in smaller segments as they progress through the content. The CAB Pacing Guide depicts TEKS relationships and estimated time requirements needed to complete each section of the material. Materials assess all student expectations over the breadth of the course and indicate which student expectations are being assessed in each assessment. For example, the Pacing Guide provides teachers with a breakdown of the student expectations (TEKS) throughout the course. The authors list the TEKS by unit in order. The CAB Test Bank provides teachers with a list of possible test questions that teachers can use on quizzes and tests. The authors break these questions down by chapter and list the student expectations (TEKS) next to each question.
- The CAB Test Bank contains test questions divided by unit chapters. The authors label each question in the test bank with the ELPS and TEKS it aligns with, providing clear assessment expectations for each chapter test. The Pacing Guide and Teacher Tips list TEKS associated with each lesson or activity and each unit, respectively, providing clear guidance for student learning expectations. For example, Chapter 5 of the teacher guide lists TEKS covered in each chapter section on DNA and genes.
- Each chapter includes a chapter review section that contains simple, challenging, and apply and discuss questions. The review sections have questions that pertain to the content embedded in the chapter, centered around TEKS and High School Biology content. The CAB pacing guide contains a column associating each activity with the related TEKS. These TEKS references are also found as tags throughout the material, such as the one in Lesson 3.1, What is a Cell?

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

- The CAB Question Bank identifies the assessed SEPs within each chapter. The authors list the SEPs alongside the assessed knowledge TEKS. The Explore and Explain activity in Chapter 3 (3.3) identifies the Science and Engineering TEKS required of students to complete the lab. These SEPs are shown on the right side next to the Key Concepts portion of the activity.
- Materials provide several Science and Engineering Practice activities to assess and build on student knowledge of content topics. For example, Activity 3.3, Explore and Explain: Microscope Lab, covers several scientific and content practices. Students observe cells under a microscope, and the materials prompt them to show their learning through various questions and tasks. The CAB Test Bank provides a variety of test questions that assess students' scientific content knowledge, as well as their knowledge and understanding of science and engineering practices.
- The materials offer a review section at the end of each chapter that contains questions of various levels and skills. In addition to these questions are essays and other science and engineering practices-related questions. For example, in Chapter 1, students have access to vocabulary building, multiple choice questions, short answer responses to graphs, and an essay review question within the chapter review. The CAB test bank includes questions and answers that address scientific concepts and science and engineering practices. Each question also has indicators for ELPS and level of difficulty as well.

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

- For example, in Chapter 10 in the Student Edition, students must take their knowledge from the subunit Bacteria and complete a Fantasy Story. The story must include an answer to a problem the community of bacteria is having. In addition, in the Writing Activity from 13.3, students must complete a concept map linking several ideas. Students must connect the skeletal system to other major systems and functions of the human body.
- The CAB Test Bank contains test questions that prompt students with new scenarios or information that students have to rely on learned knowledge to answer. For example, a question from Chapter 10 asks students to analyze the relationship between lungfish, salamanders, and salmon and conclude how they should be represented on an evolutionary tree. Students have to use their knowledge of evolution and classification to finish. Throughout the materials, concept checks assess student knowledge and usually ask students questions about relevant topics in a novel context. For example, in 10.3, Three Domains of Life, students learn about how the three main domains organisms are classified into and some of their characteristics. The concept check at the end of this new knowledge asks, “Are humans more closely related to bread mold or cherries?” requiring students to think critically about how organisms are classified and how to explain how certain species are more closely related than others.
- The materials contain questions within the content where students respond to novel contexts. For example, in Lesson 16.1, students read about the ecological community in an Idaho Brush and then define the definition of community based on their reading. The material contains “Concept Checks” embedded throughout the material after sections of novel reading. These are typically short answer questions after a paragraph or visual. For example, in 16.2, students are asked to predict the population growth of shorebirds that have a habitat where the number of safe nesting sites is limited.

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Indicator 6.2

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

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- Materials provide guidance for teachers in evaluating student responses. Item-specific rubrics are beneficial to teachers and students. Materials guide teachers to look for specific components when evaluating student responses. Materials give teachers follow-up suggestions for formative assessments.
- Concept-check questions have an answer key for them; the materials provide this to teachers and students, allowing students to check responses when they access the answers. There is guidance on how these questions should be evaluated or graded from a teacher's perspective. The materials provide a rubric or exemplar or suggest evaluating each type of questioning throughout the activities. There are various question types with guidance or a rubric on how to weigh the questions, if the teacher should evaluate them, or what the teacher should expect from the answers for the questions when there is not a provided answer key. For example, materials include a standard rubric for teachers to evaluate lab activities. The rubric includes categories teachers expect students to complete and a rating system for poor, approaching, proficient, and mastery-level work. There is a general rubric that teachers use to evaluate whether students are approaching proficient or mastery levels.
- The materials offer summative assessment opportunities with guidance to direct teachers on the reflection of the responses.

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

- Materials offer guidance to teachers and their analysis of student data. Materials include teachers' videos that explain the scoring found in rubrics. There is evidence demonstrating how the materials offer guidance for teachers to respond to data to inform instruction.
- Materials include explanations to teachers of how to score and evaluate student responses to lessons and activities, including a detailed example using student and class sets of data. Materials include questions or prompts for the teacher to use when evaluating data to help respond to students' needs—for example, a list of specific scaffolding or extension activities for students approaching mastery level, respectively. If students remain at approaching, there is guidance for the teacher to suggest the student do alternate activities to help remediate and improve student understanding based on the student's data. Teacher guidance documents explain how the data from a diagnostic assessment can be used to plan small-group instruction to address gaps in learning. For example, the guidance document suggests that after an assessment, the teacher groups students based on their level of proficiency to work together on activities designed to build their knowledge. Alternatively, the document suggests the teacher mix students based on proficiency so they can help and guide each other in an activity.
- The materials have teacher guidance based on measures of student progress. There are small checkpoints throughout the material to assess students. There is guidance for teachers on how to evaluate the responses or modify the delivery of the material based on the results. The CAB pacing guide describes an area of the content that teachers should use as a formative assessment or an evaluation period to direct future lesson activities.

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

- Materials include information for teachers to use for instruction. There is evidence regarding gathering assessment data. A data management tool guides teachers in grouping students based on their level of mastery.
- Materials include a list of questions to support teacher reflection on data analysis to use when planning and suggestions for corrective action. An example could be, "What percentage of students did not understand this topic?" If the answer is less than 50%, then the teacher is advised to do a whole class review and have students who are proficient and above assist others. Assistance can include pairing up and quizzing each other on vocabulary, embedded videos, links to games or simulations, or completing an additional activity or assignment that provides student choice and opportunity while achieving mastery. Assessment materials could include color coding students' level of proficiency so the teacher can see what level students are and determine which students need intervention and extension more easily. The authors could employ color coding in several ways. For example, assessment data tools can provide a report for each activity, chapter, or other. They can color code student names with red for "approaching," yellow for "proficient," and green for "mastery," respectively.
- The assessment tools inside the material produce relevant results that are helpful to teachers in planning and installing interventions or extensions. Embedded skills checks within the curriculum that teachers could use to monitor progress will enable them to understand students better.

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

- The materials provide teacher guidance on leveraging different activities in response to student data. Materials offer intervention activities to teachers who are trying to respond to student data. There is teacher guidance for teachers to be able to respond to student data.
- Materials include intervention activities to reteach concepts. Teacher guidance documents explain how teachers can use data from a diagnostic assessment to plan small-group instruction to address gaps in learning. For example, the guidance document suggests that after an assessment, the teacher can group students based on their level of proficiency to work together on activities designed to build their knowledge.
- The materials offer a variety of resources and teacher guidance that can guide them on how to leverage different activities to respond to student data. The materials implement a section within the Instructor Resources section of the material to support teacher guidance in this area. There are recommendations for interventions within the questioning contained in the material. Additionally, there is guidance on how teachers can support students through student data captures. The CAB pacing guide does list suggestions or advice that indicates teachers should be taking time to review student data and implement appropriate interventions.

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Indicator 6.3

Assessments are clear and easy to understand.

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- The assessments provided align with the TEKS and present the biology content accurately. The Instructor Resource of each chapter of the digital book contains these assessments. The materials presented to students in the Student Edition are neutral when students are trying to answer the assessment questions. Materials provided list several examples for students to pull content from. For instance, in Chapter 18, Ecosystems, the authors identify several aquatic biomes with images and drawings.
- For example, materials provide a CAB Test Bank that includes accurate questions that avoid bias and are error-free. Teachers can use these questions for summative assessments, quizzes, or homework practice. An example of a multiple-choice question from Chapter 5, which teaches students about DNA and genes, that demonstrates these qualities is, “All of the following cell types are particularly prone to damage from mutation-causing agents except . . . brain cells. bone marrow cells. cells in a developing fetus. cancer cells.” The Test Bank also provides the correct answers for each question; for the previous question from Chapter 5, the solution provided is brain cells. For example, Chapter 9 materials include a Practice Page: Mechanisms of Evolution section where students work through a practice worksheet to assess what they have learned in the lesson prior about the mechanisms of evolution. The worksheet instructs students to analyze various scenarios and discuss how they might affect a population with allele frequencies of 50% light moths and 50% dark moths.
- The assessments provided by the materials are scientifically accurate, avoid bias, and are free from errors. For example, in Chapter 17, Communities, a link to answer sheets for practice pages is under the worksheet section. The answers are correct, and the content is bias-free. The

materials offer scientifically accurate assessments that are free from error and bias. For example, in Chapter 18, there are answers provided for teachers to simple review questions. The material offers scientifically accurate assessments that are free from error and bias. For example, a CBA Test Bank answers all questions in a section.

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

- Assessment tools use clear pictures and graphics. For example, in Chapter 5, students are provided with a drawing of a chromosome as well as an image from a microscope. This image is helpful for students to be able to answer the question that follows. The images presented to students are developmentally appropriate. For example, the images of the human body in Chapter 13 are used in a scientific context and stay within the scope of the student's expectations.
- For example, the materials have several images depicting each chapter. These images reflect a snapshot of what students will learn in the chapter, keeping the content relevant and appropriate. Graphics are used in scientific investigations to depict charts or graphs for students to analyze. This data is content-appropriate and within the capabilities of high school students to interpret. For example, Chapter 2.5, Sensor Activity: Investigating a Chemical Reaction, includes time versus pressure graphs that students analyze as part of the experiment.
- The materials use clear pictures and graphics within the developmentally appropriate assessments. For example, in Chapter 16, students are provided a clear graphic of two species of birds, one non-native and one native, competing for food and space. The materials ask them to defend which biological level of organization is represented. The materials use appropriate graphics within assessments. For example, in Chapter 8, there is an essay opportunity for the students, and the materials provide multiple graphics of magnetic fields.

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

- Each chapter provides teachers with a test bank in the Teacher Resources. The test bank questions align with student expectations, and each chapter provides a breakdown by chapter. Teachers are provided with information about answers and responses for student work using the Practice Pages built into the student materials. These keys for teachers support the teacher's understanding of the assessment tool.
- Materials include a CAB Test Bank that contains the following instructions for instructors, “Below is a link to a spreadsheet of test bank questions for all chapters of this program. You might use these questions for quizzes and exams. You might also reformat this spreadsheet for upload to your LMS.” Guiding on when and how teachers can use the test bank, the CAB Pacing Guide includes information on TEKS-aligned activities and which activities are optional for the teacher. This layout helps teachers plan as they decide which activities are more important and should be included and which activities are optional and can be excluded if there is insufficient time.
- The materials provide clear guidance to ensure consistent and accurate administration of assessment tools. The material offers guidance through a structure indicating when assessments should occur (after each section). The teacher can infer that the assessment will happen after the section because it is at the bottom of the links. The materials outline the time to administer each task, provide step-by-step guidance for administering each measure, or include information to support the teacher in understanding the benchmark opportunities. The materials indicate where the teacher should use the assessment tools in the timeline. The

materials show how long each assessment should take. For example, the CAB pacing guide mentions the suggested assessment activities.

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

- Materials provide visual clues that use color-coded text for assessments. Color coding is included for students who need visual clues to help with their assessments. The materials provide teachers with a test bank. that includes reduced answer choice options; this is available for students with shortened test accommodations.
- Materials include guidance to offer accommodations for assessment tools. For example, assessment materials include text-to-speech, allowing students to hover over the text and produce audio recordings of the text for students who need this accommodation. There is an option for speech-to-text or audio recordings for students to convert their voice into a text answer or record their voice as an answer when needed.
- There is a recognizable speaker icon to turn the text-to-speech feature on and off inside the flashcards section of Chapter 10. The materials provide a text-speech feature, allowing students to record their knowledge verbally. Additionally, in Chapter 4, materials include Flashcard Review Questions as multiple-choice questions for students to practice using the language to articulate their understanding of the concepts to classmates and on exams.

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Indicator 7.1

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

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

Evidence includes but is not limited to:

Materials provide recommended targeted instruction and activities to scaffold learning for students who still need to achieve mastery.

- Materials provide targeted instruction and scaffolded activities. The Biology Teaching Tips provide teachers with recommendations for activities that might be appropriate for students to complete. The Tips text provides reinforcement activities throughout the Tips text. The Instructor Resources portion of the chapters includes links to the Teaching Tips guide. The link takes teachers to a PDF document offering different strategies and reminders to teachers about certain parts of the units.
- Chapters 4 and 5, Teaching Tips, include activities and instruction to scaffold learning for students who still need to achieve mastery.
- Materials provide evidence of various scaffolding throughout the student materials. For example, in the Teaching Tips for the Mendelian Inheritance section of Chapter 6, teachers are encouraged to review vocabulary with students, show pictures, review knowledge with questioning, as well as a recommendation of various practices and repetition for students to obtain mastery. The CAB Pacing Guide points out specific content required by the TEKS. The materials include extra activities and learning-scaffolding assignments that teachers can include to help develop students' understanding. For example, in Chapter 2, only the last three sections are marked as "TEKS required," teachers can include sections 2.1–2.5 as necessary for scaffolding purposes.
- The material is clearly outlined in a micro-to-macro format, allowing students to build on prior knowledge throughout the content. The CAB Pacing Guide and Chapter selection page display this intended instruction sequence. The materials provide "Teaching Tips" as guidance for teachers to best pair prior knowledge with current instruction.

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Materials provide enrichment activities for all levels of learners.

- Materials provide enrichment opportunities for all levels of learners. Sensor Activities in the Student Edition offer enrichment activities for all levels of learners. Teachers can also use the extension activities with students. The Conceptual Academy Biology Handbook of “Just-in-Time” Class Activities provides several types of activities for all levels of learners. These activities, as shown, can be either written or verbal, depending on the student's needs.
- For various learning levels, the “Just-in-Time”' class exercises offer a variety of exercises. The exercises, as demonstrated, can be verbal or written, depending on the student's needs. All levels of learners can benefit from the enrichment activities in the Student Edition's Sensory Activities. Teachers can give students access to extension activities.
- Materials provide ample evidence through Teaching Tips, the Handbook of Class Activities, and gamified review. The materials include a Handbook of Class Activities, which recommends engaging activities, games, and more. The materials include Teaching Tips, which contain recommendations for enrichment activities to review and learn new content. For example, in the section on Mendelian Genetics in Chapter 6, the Teaching Tips recommends teachers play a game with students using images to reinforce and extend dominant and recessive traits in humans. At the end of each chapter, a section called “Chapter [X] Review” is interactive and includes flashcards, matching, memorizing, and quiz variations of concept review to help further engage students.
- The materials provide learners of all levels and abilities to engage with the content. The Activity Handbook guides teachers with suggestions for activities, grouping, and assessment variations. The materials offer “sensory activities” where students can uniquely explore and engage with content. The sensory activities are scattered throughout the content, allowing students to experience them throughout the course.

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

- All materials provide scaffolds and guidance for just-in-time learning. The “More to Explore” portion of the Student Edition (webpage) includes opportunities for just-in-time-learning acceleration for students. The end of the lesson chapters include these activities in the student materials. The Conceptual Academy Biology Teaching Tips contains tips for teachers for just-in-time student learning. The entire document includes tips throughout. The Conceptual Academy of Biology, Handbook of “Just-In-Time” Class activities, provides teachers with activities to accelerate all students. The entire document includes strategies throughout.
- For various learning levels, the Conceptual Academy Biology Handbook of “Just-in-Time” Class exercises offers a variety of exercises. The exercises, as demonstrated, can be verbal or written, depending on the student's needs. Chapter 4 includes “More to Explore” at the end of the lesson activities in the materials that give connections for students to learn more about the subject of the lesson.
- Materials provide enough evidence through Teaching Tips and extension links within the materials. The Teaching Tips teachers provide questioning suggestions to facilitate scaffolded learning, ensuring students’ understanding of concepts. At the end of most lesson activities, there is a section called “More to Explore,” which provides links for students to extend their exploration of the content of the lesson.
- The CAB pacing guide provides teachers with detailed guidance for the time needed to complete core content. There is evidence of embedded advice for teachers to modify the course of instruction as required due to time constraints. The materials offer teachers guidance to

complete materials when an accelerated pace is needed. The Activity Handbook covers classroom pacing suggestions.

Myriad Sensors Conceptual Academy Biology

Indicator 7.2

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

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

Meets | Score 2/2

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

Materials include a variety of developmentally appropriate instructional approaches to engage students in the mastery of the content. Materials consistently support flexible grouping (e.g., whole group, small group, partners, one-on-one). Materials consistently support multiple practices (e.g., modeled, guided, collaborative, independent) and provide guidance and structures to achieve effective implementation. Materials represent diverse 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 Pacing Guide includes several developmentally appropriate activities (indicated by the TEKS) that engage students in mastering the content. The Pocketbook Classroom Resource provides students with different types of activities to interact. These activities include, but are not limited to, practice worksheets, next-time questions, lesson-level phenomena, and hands-on activities.
- Lessons and the Activity Pacing Guide include ample developmentally appropriate activities to engage students in content mastery. Chapter 5, DNA and Genes, is developmentally appropriate instruction to engage students in content mastery. Materials are relevant to the TEKS.
- Materials contain sufficient evidence through various instructional materials, activities, demonstrations, games, and more. For example, the materials provide students with multiple learning tools such as text and media, including question-review sections to check for student understanding. In Chapter 3.6, Sensory Activity Experiment #1: Cell Membrane Function, students build a working model of the cell membrane to demonstrate selective permeability.
- The materials' structure suggests a developmentally appropriate approach to engaging and supporting students as they master content. The Teaching Tips sections provide adequate guidance to teachers to support student learning. The materials utilize a double-helix learning

model (About This Program). This approach is developmentally appropriate and conducive to student learning.

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

- All materials support flexible grouping. Phenomena activities include opportunities for students to work flexibly. Each section of the Phenomenon section indicates (in light gray font) what type of grouping is necessary for each activity step. The Writing Activity section of the Student Edition offers opportunities that support flexible grouping. Depending on the writing task students choose, students could work in whole groups, small groups, with a partner, individually, or with a teacher. The materials list the grouping in a light gray font at the top of each student option.
- Sufficient evidence supports flexible grouping throughout the materials, including various activities. For example, the Teaching Tips for Chapter 1 suggest partnering when students review living things' characteristics. In Section 2.1, Phenomenon: Zoom into Water, students work individually to complete the inquiry assignment. Chapters 4 and 10 include activities that support flexible groupings. Activities are indicated or tagged with groupings.
- The Activity Handbook guides teachers when grouping students and considering various learning levels or time constraints. The materials offer guidance to consider when flexible grouping students for activities. Evidence found throughout the Teaching Tips displays opportunities for teachers to utilize advice when flexible grouping.

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

- Materials support multiple types of student practice. The Teaching Tips portion of the teacher materials provides teachers with the guidance to offer structures to help with effective implementation, including notes and specific exercises to improve student comprehension. The Teaching Tips document makes suggestions throughout each section. Conceptual Academy of Biology, a Just-In-Time resource, provides teachers with several resources to support multiple types of practices. The resource describes each task and several variations of how teachers can use this resource within a lesson.
- Materials contain sufficient evidence to support multiple types of practice activities and teacher guidance within those activities. The Teaching Tips document provides teacher guidance to help support effective implementation, including notes for specific activities to expand student understanding. For example, in Section 2.4, PhET Activity: The pH Scale Model, students use a model to conduct a guided pH simulation.
- The materials consistently provide multiple practice opportunities for students to encounter modeled, guided, and collaborative learning environments. The CAB Pacing Guide details a variety of different kinds of learning strategies used in the content. The CAB Pacing Guide provides evidence of multiple opportunities for each learning strategy.

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

- Materials represent a diversity of communities. Chapter 13 of the Student Edition provides several images and videos representing males and females. Some images shown are drawings, while some are photographs. Pictures shown in Chapter 17 of the Student Edition represent diverse communities. Images are throughout Chapter 17.

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- Materials include a variety of humans depicted throughout the lessons and activities, including male and female, and a diversity of cultures, backgrounds, and races. Images throughout the materials also show various places, ecosystems, organisms, and populations.
- The material represents community diversity via images and information about people and places. The materials-embedded video content covers various communities, ecosystems, populations, cultures, and habitats. Multiple lessons (Chapter 8, Charles Darwin) include visual displays of diversity. The materials include representation of diverse groups of people and places. The materials offer images (Chapter 16, Populations) of various cultures and ethnic backgrounds and diversity in species found in multiple areas.

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Indicator 7.3

Materials include listening, speaking, reading, and writing supports to assist emergent bilingual students in meeting course-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.	DNM
2	Materials encourage strategic use of students' first language as a means to linguistic, affective, cognitive, and academic development in English.	M

Partial Meet | Score 1/2

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

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

Evidence includes but is not limited to:

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

- The material provides the ELPS, but they should also provide guidance for linguistic accommodations for the teachers. Suggestions and best practices for the teacher regarding using the ELPS in instruction still need to be included. Sequenced and scaffolded supports appropriate for various levels of English Language Learners are needed.
- Materials do not guide linguistic accommodations for various levels of English language proficiency. The resources tag ELPS throughout, but this is the only place found that mentions the ELPS. The materials should include further support for students and teachers to support bilingual students, such as teacher guidance, student-specific prompts for emergent bilingual (EB) learners, encouragement, and practice opportunities to tailor to EBs, links, or resources provided in another language other than English.
- The materials provide ELPS references. These notations are the maximum extent to which the materials provide guidance and support for EBs. There is no evidence of teacher guidance or support for English Language Learners. The materials reference the ELPS; however, they should explicitly state them, and there needs to be guidance for how the teacher should implement or adjust the material to meet student needs. Teachers are responsible for taking the reference number and finding an additional resource not provided in the materials to complete any action needed to support their learners.
- The Teacher's Guide does not embed scaffolds into the lessons for EB learners. For example, sideboards do not provide sentence stems to support speaking and writing with multiple levels of complexity to reflect four tiers of English language proficiency (i.e., beginning, intermediate,

advanced, and advanced high). Materials do not suggest using graphic organizers to classify information, order steps in a process, or scaffold written tasks. Materials do not include suggestions for linguistic accommodations at critical points in the main lesson, particularly for students at the beginning and intermediate levels, such as sample questions and discussion starters for students with various English language proficiency levels.

- Materials also lack concrete experiences and explicit modeling as linguistic accommodations when delivering direct instruction. For example, when teaching the cell cycle, beginning- and intermediate-level EB students need the opportunity to use labeled visuals or models with accompanying sentence stems instead of writing a paragraph.

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

- Materials that include closed captioning in both English and Spanish are beneficial to EB students and encourage students to use their first language strategically. The mention of students' first language needs improvement in the student materials. Materials include the strategic use of students' first language to develop their English learning. Materials include teacher instructions and specific student guides on how students can use their first language to help build their knowledge of the subject matter and the English language. The materials display guidance for teachers or students that would encourage students to use their native (first) language for linguistic, affective, cognitive, or academic development.
- Materials include guidance for communication with emergent bilingual (EB) students. They provide tips for adjusting the rate of speech to provide comprehensible input of scientific concepts and vocabulary when delivering instruction. Materials suggest teachers rephrase, repeat, or slow down when giving directions for investigations or checking for understanding with EB students before proceeding.
- Materials include linguistically accommodated content in student materials, such as scientific texts that use simplified language, additional visuals, and chunked content for emergent bilingual students, particularly for those at the beginning and intermediate levels of English language proficiency. Step-by-step processes with images for investigations, hands-on activities, and other science or design tasks still need to be included.

Myriad Sensors Conceptual Academy Biology

Indicator 7.4

Materials guide 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 Student Edition provides an About This Program section. This section identifies how the authors laid the book out, as well as the pacing of the materials. The Draft Letter to Parents and caregivers from Chapter 1 identifies the curriculum, the goal of the materials, as well as the covered topics. The sample letter provides a summary of the study of Biology so parents and caregivers can preview the upcoming year.
- At the beginning of the curriculum in Chapter 1 in the Instructor Resources, there is a letter and a video that gives an overview of the design of the curriculum. The letter is for parents and guardians; the video is for students and parents to watch. Teachers can adjust a draft letter at the beginning of each unit in the Instructor Resources and send it home to parents to discuss the upcoming unit materials. Materials include a document about Field Journal Best Practices and a letter to the students explaining the field journal and how students will use it throughout the program.
- The materials provide a draft letter that teachers can deliver to caregivers before the start of each chapter. These communications provide parents or guardians with guidance on student materials. For example, in Chapter 5, parents or guardians can watch a short video to see what students cover about cellular respiration. The material offers caregivers an opportunity to learn about the program's design through the About This Program section. This section clearly outlines the program's design and desired results and includes access to the CAB pacing guide.

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

- The Instructor Resource portion at the start of each chapter contains the “Draft Letter to Parents and Caregivers.” While this section includes the covered information in the current unit, materials also offer guidance on how parents or caregivers can help reinforce student learning.
- In the overview letter to parents and caregivers, a note encourages them to utilize extra activities from the program at home. Materials include instructions to share with caregivers on how they can help reinforce student learning, such as guidance on practice sheets and a list of activities that students can do at home that they are not doing at school. For example, an activity that students can do at home has tips and guidance for the caregiver to help facilitate student learning, such as questioning and an answer key. Materials include letters to caregivers in English and Spanish.
- Each chapter's Instructor Resources section contains a drafted letter teachers can give to caregivers. These letters inform caregivers about what students will cover during the upcoming section. Caregivers could use this information to expand learning at home. The letters include a printable option for parents who lack computers or emails. Materials include guidance for caregivers on what follow-up questions or draws on prior knowledge from home could apply to the content. The materials include information for teachers to communicate with caregivers.

Materials include information to guide teacher communications with caregivers.

- The Instructor Resource portion at the start of each chapter contains a subsection titled “Draft Letter to Parents and Caregivers.” These letters include a brief recap of the materials covered in the previous unit and what will come with the current unit. The letter for Chapter 14 contains a small video teachers can use as an example of a typical lesson video. Materials include guidance in communicating with students.
- For example, materials include a section just for teachers providing examples of ways to keep in touch with caregivers of students. This section includes suggestions for email, phone calls, REMIND messages, or a built-in online communication tool in the program where caregivers can get updates about student successes and grades that are sent out through the school’s Learning Management System. The materials include guidance or templates that teachers can send to caregivers, encouraging them to communicate with teachers about student concerns, grades, and successes.
- Each chapter contains an Instructor Resources section that houses a Letter to Caregivers. These letters describe the content that the chapter will cover. Letters sent through email or LMS have links to videos to explain the content further.

Myriad Sensors Conceptual Academy Biology

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

Partial Meets | Score 1/2

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

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

Evidence includes but is not limited to:

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

- The Pacing Guide references specific TEKS to materials. A time-pacing for each unit chapter, individual activities are included. The Pacing guide lets instructors know how long the lesson should take and what activities go with the lesson as well as how much time in minutes will be needed for students to complete.
- The Pacing Guide references TEKS. Materials include a time-pacing for each unit chapter and individual activities. The chapters are in order of the scope and sequence of the pacing guide.

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

- The lessons and the Activity Pacing Guide were updated to include the TEKS. For example, Lesson 8.5, “Example of Natural Selection,” references both the TEKS and the ELPS. The Pacing Guide also references specific TEKS for this lesson.
- Guidance is provided within the Teaching Tips, which was updated to include addressing the scientific and engineering practices (SEPs) in each chapter. Materials reference engineering and scientific reasoning under the program tab in Teacher Resources. Materials lack clear teacher guidance for facilitating student-made connections across core concepts and scientific and engineering practices. The materials reference TEKS; however, the specific SEPs are not explicitly stated. The materials lack comprehensive guidance for teachers to implement these practices into the curriculum. Teacher guidance is inconsistent throughout the combination of materials.

Some elements have no evidence, while others have limited evidence. Teacher guidance components were updated and included in Teaching Tips.

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

- Multiple types of reviews are given at the end of each chapter of the book. There is an interactive review and a review students do at home. Student worksheets are provided throughout the chapters. Students complete the worksheets online. Materials have opportunities for students to spiral back to prior knowledge or previous content to achieve students' mastery.
- Materials offer reviews at the end of the chapter. Materials spiral content throughout the year to achieve students' mastery or increase retention. For example, Chapter 5 includes a DNA activity where students must understand the nature of biomolecules, such as knowing what a nucleotide is from Chapter 2.
- Review material is present at the conclusion of each chapter. Having review questions Such as "What are the four nucleotides…?" In Chapter 5, the student can't answer this question without knowing what a nucleotide is. Students learned about nucleotides in Chapter 2. Various levels of review provide teachers with the opportunity to assess and support.

Myriad Sensors Conceptual Academy Biology

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 course.	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 course-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 the use of all materials, including text, embedded technology, enrichment activities, research-based instructional strategies, and scaffolds to support and enhance students' learning. Materials include standards correlations but no cross-content standards, that explain the standards within the context of the course. Materials include a comprehensive list of all equipment and supplies needed to support instructional activities. Materials include guidance for safety practices, including the course-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 Handbook of Classroom Activities presents teachers with activities for students to perform during lessons. Activities are broken down by type.
- Materials provide teacher guidance and recommendations for pacing. Minutes necessary are provided, and activity selection allows teachers to adjust to students' needs. Each chapter provides teacher resources located at the top of the page after clicking each chapter button.
- The materials include a Lesson and Activity Pacing Guide located in the "About this Program" section. This guide outlines both recommended and optional materials for a teacher to use, including text, embedded technology, enrichment activities, and research-based instructional strategies. The pacing guide does not contain information about scaffolding. However, within each section of the unit chapters, the materials provide a series of activities and lessons which scaffold prior knowledge taught with new knowledge.
- The materials provide guidance and recommendations for pacing and sequence. Each chapter contains an "Instructor Resources" tab with additional content to enhance enrichment.

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

- Materials include classroom implementation support for teachers and administrators. The Activities Handbook includes tips for optimizing class time, how to form teams, initiating a culture of learning and activities to do in class.
- The materials include a Lesson and Activity Pacing Guide located in the "About this Program" section, which suggests that there are TEKS that correlate with certain activities. TEKs are embedded in the Lesson and Activity Pacing Guide No cross-content standards or standards explanation is included in the materials.

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

- Materials are listed in activities when needed. A comprehensive list is provided to teachers specifically; however, quantities of supplies are not included. Instructor resources provide some materials needed during lessons.
- Materials provide a list of all equipment and supplies needed to support instructional activities. The list is located under the "Button for About" in this program, as the Conceptual Academy Biology - Materials List.
- Though quantities and amounts per lab group are lacking, the Conceptual Academy Biology - Materials List contains a list of all equipment and supplies needed for instructional activities. Within each activity that requires materials, there is a list of equipment and supplies. See Unit 7.3 activity, LAB: Onion Root Tip Mitosis, for an example.

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

- "About This Program" contains a subsection called "Safety Practices and Equipment." Precautions are included for students and teachers, along with safety icons used throughout the materials. Hands-on activities also contain precautions that are to be taken. Symbols are used to show necessary precautions.
- The materials provide adequate safety guidance and considerations. Material provides a list of Safety Practices and Equipment that should be followed at all times, which is located under the button for About This Program, Safety Practices and Equipment.
- The materials guide safety practices which are located in the Safety Practices and Equipment section of the resources. The materials provide a short lesson on Safety Data Sheets (SDS) that teaches students about the importance and use of an SDS. This lesson is located in the "Safety Data Sheet" section of the resources.

Myriad Sensors Conceptual Academy Biology

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 Conceptual Academy of Biology (CAB) Pacing Guide identifies the number of minutes to be spent on each portion of the chapter. The Pacing Guide identifies the number of activities in each lesson. For example, ancillary materials contain guidance for the amount of time needed for teacher-led instruction and classroom collaboration with considerations for block/traditional scheduling or minutes of science instruction.
- The Conceptual Academy of Biology (CAB) pacing guide provides guidance and recommendations on required time for lessons and activities found under CAB “About This Program” button, which provides a link after the second paragraph. In grades 9–12, materials recommend that two out of every five class periods are dedicated to laboratory and/or field investigations.
- The materials include a Lesson and Activity Pacing Guide located in the “About This Program” section that suggests optional materials to be included in the lesson and the length of time for each lesson. Additional evidence in materials is not found.
- The pacing guide provides detailed guidance and recommendations for the timing of lessons and activities. For example, ancillary materials contain guidance for meeting recommendations on time for laboratory and field investigations with considerations for block and traditional scheduling. Also, in biology, a lesson on evidence of evolution lasts 5–7 days or 250–350 minutes.

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

- The Pacing Guide located under the “About this Program” button provides a recommended sequence of materials that follow a logical flow. The Pacing Guide promotes a progression of the material that builds from one lesson to another.
- Skills tracking documents support teachers in identifying the developmental progression of content and skills to ensure that students are supported with instruction organized to optimize their learning.
- The materials include a Lesson and Activity Pacing Guide, located in the “About this Program” section, that implements a sequence of content that follows a logical flow. Each chapter in the materials flows in a logical order that builds on previous lessons in the chapter, for example in Chapter 4: How Cells Work.
- The CAB Pacing Guide contains a detailed sequence of the content that is recommended, but not required. In biology, the materials have students study cell structure and function, the processes of photosynthesis and respiration, and the basics of genetics, such as DNA structure and replication, before the role of nucleic acids and principles of inheritance and variation of traits.

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

- The Pacing Guide, located under the “About this Program” button, provides flexible guidance for 156 lessons that can be completed in 36 weeks.
- In the Lesson and Activity Paging Guide, there are suggestions for optional activities in every section of each chapter, providing flexibility for teaching. In the Lesson and Activity Pacing Guide, there is a clear pacing of activities and lessons that can be completed in the length of one school year. The materials provide detailed suggestions for how to implement the materials with school years of varying length, varying lengths of time for science instruction, options for the full class and small group intervention times, co-teaching, multi-grade classrooms, four-day weeks, extended day and extended year calendars, and online schools.
- The materials Pacing Guide provides a recommendation for the pace of instruction that will complete contents within one academic year. This includes 36 weeks of total instruction, 34 weeks of new instruction, and two weeks of review and preparation for summative assessments.

Myriad Sensors Conceptual Academy Biology

Indicator 9.1

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

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

Not Scored

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

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

Evidence includes but is not limited to:

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

- The Student Edition of the materials includes an appropriate amount of white space. The design also supports and does not distract from student learning. The Student Edition includes clearly defined chapters. Within the chapters, the authors break down the material into topics. The materials provided in each chapter/unit are clearly labeled for students to be able to see.
- There is clear space and separation from different sections of the materials. Each section or activity has a separate page and has the option to make the tasks larger or smaller based on the users' preference while maintaining clear space so as not to distract the user. Each chapter page separates each section and has plenty of space to separate each section by boxes and white space, so it is not overwhelming or distracting to student learning.
- The material offers an appropriate amount of white space that allows students to review the material without becoming distracted. The design is easy to follow and understand. For example, in Lesson 16.2, students can identify the paragraph they should read, the corresponding graph, the concept check below it, and a clickable legend on the left. The materials offer ample white space that allows users to identify sections. For example, in Lesson 16, clear rectangles distinguish sections of the material; users can click to expand these areas for greater detail, further enhancing the ability to focus and prevent distractions.

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

- The figures provided to students in the Student Edition include a small description or summary to aid student learning. For example, in Chapter 7, Figure 7.1 explains the pedigree shown. The figure describes the occurrence of Tay-Sachs within a family and how using pedigree can help

assess the risk of genetic disease. The graphics embedded within the student materials enhance and do not distract from student learning. For example, in Lesson 10.6, Protists, an image of a diatom is shown to enhance the description provided in the text. The authors use this image to enhance student learning.

- The materials contain age-appropriate pictures to support student learning and engagement. For example, Chapters 3 and 4, which teach students about cells, images, and graphics, are specifically about cells, what cells do and create, and how they work or interact with their environment. There are no off-topic pictures, and everything is educationally related to the scientific contents of the chapters. The materials contain graphics such as embedded videos to help students better understand concepts. The videos are topic and age-appropriate to each unit's materials. For example, Lesson 15.2, The Excretory System, contains an appropriate video explaining the importance of the excretory system to help students better understand the material.
- The materials contain age-appropriate pictures and graphics that support student learning without being distracting. For example, Lesson 16.2 has a graph to help students learn about how population growth curves display a logistic growth curve indicating typical carrying capacity and a separate graph with actual data points of Island sheep. The material utilizes a variety of age-appropriate pictures and illustrations that combine animated and real-life visuals for productive student learning. For example, as Lesson 10.7 introduces the need for plant vascular tissue, materials show students an image of ferns growing in Muir Woods National Monument in California.

Materials include digital components that are free of technical errors.

- The materials provided to students are only available digitally. The Student Edition is free of technical errors. The Student Edition includes several links to videos and other activities. The links provided work and are free of technical errors.
- Materials contain links with relevant information to the lesson to which they are linked. For example, in Lesson 7.1, The Human Genome section has an extension link at the bottom of the page that takes students to the website for the Human Genome Project. The link is accurate and works correctly. Many lessons contain videos to help aid student learning, all relevant to the lesson's materials and free of technical errors. For example, Lesson 5.4, How DNA is Copied, contains an informational video explaining how DNA copies itself. The video is relevant to the lesson and is free of any errors.
- Each of the embedded digital components of the material is free from technical errors, and videos are available throughout the content. For example, in Lesson 16.2, Types of Population Growth, the correct video plays when selected. The teacher resources found inside the material open correctly and are working properly. Teachers can assign pages to students or print physical copies. For example, in Chapter 16, the teacher resources have links to practice pages, answer keys, next-time questions, “Edit Lesson,” and assign-to-class options.

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Indicator 9.2

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

1	Materials integrate digital technology and tools that support student learning and engagement.	Yes
2	Materials integrate digital technology in ways that support student engagement with science and engineering practices and course-specific content.	Yes
3	Materials integrate digital technology that provides opportunities for teachers and/or students to collaborate.	Yes
4	Materials integrate digital technology that is compatible with a variety of learning management systems.	No

Not Scored

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

Materials integrate digital technology and tools that support student learning and engagement. Materials integrate digital technology to support student engagement with science and engineering practices and course-specific content. Materials integrate digital technology that providesopportunities for teachers and/or students to collaboratee digitally. Materials somewhat 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.

- Student materials include digital technology and tools that enhance student learning through simulations to help support student learning and engagement. For example, in Section 9.3, students use a PhET simulation to mimic the effects of natural selection on rabbit populations over several generations. In addition, Section 9.3 also includes teacher guidance on how to use the simulation within the context of the course.
- Digital technology and tools enhance student learning through the use of gamification. For example, in Chapter 4 (and other chapters), there is a homework practice session where students play an interactive game and attempt to achieve platinum status as they answer review questions. At the end of each unit chapter is a review section that includes several ways for students to study vocabulary and review content through questioning. Most of the materials are online assignments for students to complete; these assignments include questioning, videos, reading, and more. For example, Unit 8.1, Origin of Life, starts with a video students watch to introduce the materials. After the video, students answer a question and continue into a reading passage.
- The materials integrate digital technology tools. The materials incorporate digital technology and tools that support student learning. The entire program is web-based. The assessments, like the one found in Chapter 5, are all online. These online assessments can be a benefit to the student.

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Materials integrate digital technology in ways that support student engagement with science and engineering practices and course-specific content.

- The materials allow students to use integrated digital technology to support their engagement. For example, in Chapter 5, students use a PhET simulation to understand gene expression and proteins better. The materials also enhance student learning by providing supplemental videos throughout the chapters. Chapter 3 has one video that reinforces the similarities and differences between prokaryotes and eukaryotes.
- For example, in Chapter 2.2, Phenomenon: The Blue-Green Penny, materials provide a video example of the experiment before students conduct the activity themselves. Students are engaged in the example video and watch the protocol as the video supports their understanding. Chapter 2.5, PhET Activity: The pH Scale Model, contains a digital simulation that engages students in using scientific and engineering practices.
- The materials provide digital tools that support student engagement. For example, in Chapter 12, the students use an interactive simulation to learn how the senses work within body systems. After using the simulation, the students answer questions based on their findings. The materials integrate technology tools that promote student engagement. For example, in Chapter 4, students work on a photosynthesis investigation where they first watch videos on collecting data, then use digital tools to collect data, and finally create a presentation based on their data collection.

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

- The materials provided contain an online communication platform for teachers to communicate with students. An online communication platform is beneficial for immediate feedback to students. There are also collaborative group activity cards throughout the program. Materials also need more guidance for students to learn how to communicate socially using online platforms.
- Teachers communicate with individual students through the teacher feedback functionality—the teacher provides personalized feedback to a student on their performance. There is also facilitation of communication or collaboration between students using technology. Materials provide opportunities for students to collaborate online, such as discussion forums, video conferencing options, or collaborate on projects.
- The materials provide a forum or controlled social media platforms where students can collaborate with peers or teachers. The materials need areas where video conferencing can take place.

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

- The materials provided include several online platforms, and they guide teachers on what online platforms support these materials. For example, the Notebook platform works with Google Classroom and ClassLink. Guidance is includes for the teacher to create a class in PocketLab Notebook and to assign lessons in PocketLab Notebook.
- The materials provide a digital PDF version of the textbook, and there are some downloadable worksheets; however, most student activities and labs are not accessible to be used offline.

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Indicator 9.3

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

1	Digital technology and online components are developmentally appropriate for the course 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 course-appropriate and provide support for learning.

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

- The digital technologies provided for students are aligned with the TEKS, as seen in Chapter 10. The materials guide students to use a cladogram to further their understanding of the relatedness between birds, turtles, lizards, and crocodiles. In Chapter 5, students use the PhET activity to explore how mutations can affect the function of a protein. The CAB pacing guide identified the covered student standards in each unit portion. This pacing guide includes the activities performed, including digital activities such as PhETs.
- Digital technology and online components are developmentally appropriate for the course through the use of age and content-appropriate materials that align with the scope and science standards, as well as remain age-appropriate for students in high school by not providing content that is too simple or too complex for a high school student to understand. For example, in Chapter 13.2, Reproduction, the materials use scientifically rendered visualizations of the male and female anatomy, which include labels to the essential, necessary organs high schoolers should understand without going into too much detail that would overwhelm them, nor do they have graphic images that would be inappropriate. Digital technology materials align with the scope and approach to science knowledge and skills progressions, as seen in the CAB Pacing Guide and the PocketLab materials. The pacing guide includes an appropriate scientific progression of materials from molecules and cells. It works students up to the bigger picture and more abstract ideas such as diversity of life and ecosystem dynamics. This same sequence is reflected in the PocketLab materials as the chapters reflect that of the pacing guide.

- The digital and online components of the material are developmentally appropriate for the scope and approach to science knowledge and skills progression. For example, in Lesson 3.4, students watch a video that tours the eukaryotic cell. Online questions follow the video. The materials use developmentally appropriate technology that aligns with the content's scope. In another example, “Too Many Rabbits,” students use an interactive simulation to explore the impacts of overpopulation, limiting factors, and other TEKS-based content.

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

- Materials provided to teachers offer guidance regarding the use of technology to enhance student learning. For example, the Activity Handbook suggests that teachers can use the “shareable” documents of the Practice Pages to support student learning. The CAB pacing guide identifies activities that use PhET simulations to enhance student learning. In addition to this, the Pacing Guide identifies other types of activities that can enhance student learning.
- The CAB Pacing Guide contains information about the style of included activities in each chapter besides the lessons. It also suggests the time and pacing of each unit, as well as an indication of which TEKS requires materials and which are optional. This information guides teachers as they are planning their lessons and pacing their chapters with their school calendar, allowing them to eliminate content as needed that is not TEKS required. Materials include Teacher Tips for each chapter which outlines information about the chapter, includes possible introduction activities, and helps guide the teacher in emphasizing the essential details along with the TEKS for each chapter.
- The materials guide teachers in using embedded technology tools to enhance and support student learning. For example, in Chapter 17, the material shows teachers how to best use the CAB Test Bank regarding formatting, uploads, and downloads. The CAB pacing guide details what embedded technology tools are available and provides guidance/suggestions on when they can best use each activity. The CAB pacing guide also provides anticipated time requirements for each activity.

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

- The materials provided to teachers include a letter that can be sent home to parents informing them of the content at the start of each unit. This letter is in the teacher resource of each chapter. Chapter 1 includes an orientation video for students, parents, and caregivers. This video is an online orientation about the online textbook platform.
- Materials provide an introduction letter to parents and caregivers at the beginning of the materials as an introduction to what the program looks like, along with a video showing the features of the program and how to use it. This letter helps introduce parents and caregivers to the program and help them understand what their students will use to learn, enabling them to understand an overview and follow up with students about the program. At the beginning of each chapter, the materials provide a draft letter for parents and caregivers. This letter includes information about what students will be learning in this chapter and a video link at the end for parents and caregivers to watch to help support student learning during that chapter unit.
- The materials provide letters to parents and caregivers supporting student engagement at home. For example, in Chapter 17, the materials offer a letter to parents detailing how they can extend learning at home and a link to an external video on food chains. The draft letter to

parents and caregivers assists with digital and technology support at home. The letter provides insight to parents on how they can help with learning efforts at home. In companion to the letter is the “Intro to Conceptual Academy Biology” video, a four-minute overview of the topics and structure of the program.