Green Ninja Middle School Science Grade 8

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Executive Summary

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

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

Section 2. Instructional Anchor

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

Section 3. Knowledge Coherence

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

Section 4. Productive Struggle

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

Section 5. Evidence-Based Reasoning and Communicating

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

Section 6. Progress Monitoring

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

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- The materials include guidance that explains how to analyze and respond to data from assessment tools.
- The assessments are clear and easy to understand.

Section 7. Supports for All Learners

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

Section 8. Implementation Supports

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

Section 9. Design Features

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

Section 10. Additional Information

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

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Indicator 2.1

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

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

Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- Materials provide multiple opportunities to develop, practice, and demonstrate mastery of grade-level appropriate scientific practices as outlined in the TEKS. Each Unit contains a culminating project where students must show mastery of the content learned.
- For example, Unit 4, The Universe, is structured to build on knowledge gained during each lesson to allow development and practice of the topic. Unit 4 The Universe Science Method Objectives states, "Analyze Data to understand the universe. Study matter in small things and large. Develop storytelling and filmmaking skills."
- For example, in Unit 2, Chapter 3, Lesson 2.10, students study data on chemicals in milkweed to make predictions on how it could affect milkweed plants.

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

- The materials provide multiple opportunities to use recurring themes in making connections between and within overarching concepts. Recurring themes are reintroduced throughout the curriculum. Teachers can identify these opportunities marked in green throughout the multiple lessons.
- For example, in Lesson 1.11, Engineering Drag Racers Part II, the green call-out box showcases RTC connections of stability and change. The call-out box states, "Students use drawings to analyze their drag racer and highlight how applying external forces to an object can cause a change in velocity. Students also provide evidence that a change in a drag racer's motion depends on the sum of the forces on the vehicle (forces that are balanced and forces that are unbalanced), as well as the mass of the car."
- The materials are systematically organized around a theme, explained by a storyline. Each Unit within the grade level begins with a challenge, emphasizes scientific methods, and ends with a culminating experience, and all are represented on a unique roadmap for the unit referenced throughout the lesson plans. For instance, teachers are guided to emphasize to students to think about weather patterns and the connections to patterns in the data in Unit 3, Chapter 1, Lesson 3.5.

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

- The materials are systematically (methodical fixed plan) designed to develop and build student skills and content knowledge using phenomena appropriate to the grade level as outlined in the TEKS. Each Unit is designed in a way that each lesson builds upon the knowledge from the previous lesson, not only in content but also in science and engineering skills and the understanding of the recurring themes and concepts.
- For example, Unit 4, The Universe, builds on student knowledge gained from Unit 1, Transportation.
- Materials contain a Culminating Experience Teacher Guide that explains, describes, and makes connections between the science and engineering principles and conceptual understanding. This guide contains a Unit Introduction, Roadmap, and Thought Starters designed to help teachers develop students' content knowledge and skills.
- For example, in each lesson, there is a Google Slide deck that is complete with teacher notes and information for when to emphasize the importance of the grade-level content.

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

- The materials give students multiple opportunities to plan and conduct classroom and field investigations. Students are engaged in problem-solving and make connections across disciplines to develop an understanding of science concepts. Materials contain several differentiated options for student exploration of science concepts.
- For example, in Lesson 4.2, Comparing Telescopes, students "will have the opportunity to discuss the pre-assessment with classmates before participating in a class discussion about the universe and their questions."

- For example, in Lesson 2.4, My Own Ecosystem Study, students "prepare to choose locations to study local ecosystems through a series of discussion points and prompts. Then, expectations on-site choice, safety concerns, and ways of observing, studying, and interacting at their locations are clearly explained and modeled."

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Indicator 2.2

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

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

Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- The materials use phenomena as a central anchor that drives student learning across grade-level content in each discipline (earth/space, life, physical science). Materials drive knowledge-building for students. Each Unit is set up with a Unit Storyline that presents the content to students in an engaging phenomena-driven manner.
- The materials embed phenomena and engineering problems with opportunities for students to develop, evaluate and revise their thinking to uncover phenomena and define/solve problems. For example, in Unit 3, Chapter 2, students explore the phenomenon of cyclists on a beach bike path traveling faster in one direction compared to another direction. The following three lessons tie back to this phenomenon, allowing students to modify their thinking and investigations as they learn more content. Additional two phenomena accompany this chapter's content.
- Material is centered around observing and analyzing various phenomena while incorporating TEKS-specified standards for content, science and engineering, and recurring themes. In Grade 8, Lesson 1.9, students are prompted to observe the energy phenomenon by evaluating how mass and speed influence the amount of kinetic energy.

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

- The materials allow different entry points to the learning phenomena and/or solving problems. Students experience the phenomena through various means, such as teacher demonstrations, hands-on experiences, videos, text, data, and images.
- The materials provide guidance for teachers and students to adequately address potential areas of misunderstanding. In each lesson, there is a Background for Teachers and Teacher Tips section that has common student misconceptions noted, which allows the teacher to be proactive in avoiding the misconceptions altogether.
- The materials provide opportunities to leverage students' prior knowledge and experiences related to phenomena and engineering problems, connecting to previous content knowledge and outside-of-school experiences. For example, in Unit 2, Chapter 1, Lesson 2.4, students revisit the phenomenon of Monarch butterfly wing size. Students develop models and investigate the phenomenon before revising their previous thinking.
- Material is designed around the central idea of having students propose real-world solutions. Each unit is structured so that a specific phenomenon is introduced, and students use prior knowledge to complete culminating project. For example, Grade 8, Unit 1 introduces the challenge of proposing sustainable transportation solutions. Students conduct investigations into forces, motion, and energy transfer. They combine science analysis and math skills to compare the efficiency of different modes of transport.

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

- The materials clearly outline the scientific concepts and learning goals behind each phenomenon and engineering problem. For example, for each lesson, there is a snapshot of the lesson goals and objectives as they relate to the phenomenon.
- Student learning goals are indicated in the lesson plan, where the phenomenon is introduced with a teacher guide for activities or discussion for further exploration of the content associated with it. For example, this can be found in the provided Culminating Experience Teacher Guide, which outlines the learning goals and scientific concepts covered in each unit's Culminating Experience, which often contains an engineering problem.
- Material is designed around the central idea of having students propose real-world solutions. Each unit is structured so that a specific phenomenon is introduced and students use prior knowledge to complete culminating project. For example, for teacher support, materials provide guidance on how to use the phenomenon by including a lesson plan and/or in the Background for Teachers sections found in certain lessons.

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Indicator 3.1

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

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

Meets | Score 6/6

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

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

Evidence includes but is not limited to:

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

- Materials connect new learning goals to previous and future learning within and across grade levels. In the Grade 8 unit, The Universe, the materials include a Roadmap that includes what the students have learned in grade 6 and grade 7 but also outlines what they will be learning in grade 8 as well.
- Materials present content in a way that builds in complexity within and across units and grade levels. For example, materials provide a Unit Overview that shows how each unit connects to other units within the series. Additionally, the Unit Overviews provide a Storyline that shows how lessons build and connect across the unit, with specific information for each lesson, including a lesson question, phenomenon or design challenge, what students do and figure out, and how they end up representing what they figure out in the Culminating Experience.

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

- Materials are intentionally sequenced to scaffold learning with opportunities for student exploration of topics before explanations are given by the teacher. For example, students

explore the migration patterns of Monarch butterflies to determine their habitat preferences by analyzing migration patterns before the teacher explains more about insects.
- Pre-assessments and associated activities in the materials provide opportunities for students to activate prior knowledge before exploring new concepts. For example, students discuss their responses to the pre-assessment on weather and climate before exploring a specific Texas case study on Hurricane Harvey.
- Materials provide a Grade Storyline that thoroughly details the theme and a brief outline of the sequence of units and experiences that students will investigate during the course of study.
- Materials are organized in chapters based on different topics. Each chapter introduces a specific concept/phenomena and then proceeds to support that topic with lessons of increasing depth, eventually culminating in a chapter review.

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

- Materials clearly present grade-specific core concepts, recurring themes and concepts, and science and engineering practices. Throughout the grade bands, there is a Unit Overview that clearly presents the Standards, Science and Engineering Practices, and Recurring Themes.
- Across lessons, units, and grade levels, materials are free from scientific inaccuracies and content that is current. For example, in grade 8, Unit 3, Weather and Climate, the culminating experience for students is to complete and present their Cli-Fi stories. Throughout the Unit, the students learn about Hurricanes, Weather Systems, Climate, Climate Change, and Hurricanes in the Future before they complete the relevant culminating experience. Throughout the Core Concepts, RTCs, and SEPs are accurately taught in a relevant manner.
- Each unit begins with a Getting Started section that clearly outlines an overview of the chapter, connections to the Unit Roadmap, and associated phenomena for the concepts in the chapter. For example, the teacher is prompted to emphasize the RTC energy and matter as students consider the changes that take place in a star during a supernova event.

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

- Materials include specific learning targets for each grade level concept. Each chapter includes a Getting Started page where the learning goals for the chapter are stated. For example, Unit 2 Ecosystems, Chapter 3 Overview states, “Through observations of small organisms in pond water, students discover that some living things are too small to see with the naked eye and that many of these organisms are made of a single cell, which leads on to cell theory and the characteristics of living things. Students examine various specimens using microscopes, comparing and contrasting living and nonliving things. Students recognize cells as the basic units of structure and function. They then distinguish between unicellular and multicellular, prokaryotic and eukaryotic, and autotrophic and heterotrophic.”
- Materials clearly define the boundaries of content that students must master for the grade level. Each Unit has multiple assessment points, including Chapter Assessments and Culminating Projects. For example, Unit 1, Transportation, Chapter 3, Efficient Transportation, includes a Chapter Assessment (suggesting two different options, including a one-pager and reading questions).
- Materials provide a pre-assessment at the beginning of each unit. This allows the instructor to gauge the student's knowledge prior to starting the unit. As the unit progresses, there are

multiple points (i.e., exit tickets, checkpoints, and performance assessments,) to gauge progress in the unit.

- Materials feature a Unit Assessment at the end of each unit. This task provides data on student progress and mastery of the key concepts. Additionally, it provides information that can be used for scaffolding, remediation, and/or reinforcement of certain topics during future lessons.

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Indicator 3.2

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

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

Meets | Score 6/6

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

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

Evidence includes but is not limited to:

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

- Materials display vertical and horizontal alignment of the grade-level content, recurring themes and concepts, and scientific and engineering practices. When teachers click on the Standards tab from the Grade Overview page, they will see how different concepts and skills recur within a grade and build across all of the grade bands (6,7,8).
- Materials provide a section for each Grade Overview page called "Curriculum Alignment" that describes the horizontal and vertical alignment.
- Materials provide a feature within the Lessons tab on each Unit Overview page. When the Lessons tab is opened, a list of all lessons within the unit is listed along with the TEKS addressed in each lesson. This feature allows teachers to see how one standard develops over multiple lessons within the unit (part of horizontal alignment).
- Materials provide a feature within the standards tab on each Grade and Unit Overview page that highlights the Emphasizing boxes that provide teachers guidance about the Science & Engineering Practices and Recurring Themes and Concepts. Teachers can swipe sequentially through the Emphasizing boxes for a specific Practice or Recurring Theme across all three middle school grades and see how they align and progress.

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

- Materials include a background information section for each lesson that includes explanations and examples of science concepts. For example, in the Teacher Background section of the lesson, the activity is unpacked with images included to indicate what teachers should expect students to find.
- Materials also mention opportunities for teachers to check for misconceptions. For example, the Food Concept Checkpoint is a formative assessment with multiple choice questions meant to address misconceptions, but those misconceptions are not clearly identified for the teacher in the answer key or lesson explanation.
- Materials provide a Background for Teachers section within units. These areas provide content background knowledge to support teacher understanding. The section also includes information to support teacher facilitation for students with language, academic, or special needs.
- Materials include teacher guidance within each lesson on how content and concepts increase in depth and complexity within the unit. For example, the Teacher Background Section in Lesson 4.27, Carbon Cycle Role Play, states, “Carbon is in a delicate balance between these different locations in the natural Earth system. Any disruption to that balance can disrupt climate, ecosystems, and other natural processes. That's one of the reasons why scientists are concerned about the burning of fossil fuels where humans are making large changes to the carbon cycle.”
- Materials include examples of grade-level student preconceptions. For example, in Lesson 3.25, Natural Climate Change, the Background for Teachers states, "Students may have believed that Earth's atmosphere would have heated during a volcanic eruption. Of course, the magma and lava are very hot, but it is the ash and gasses that a volcano releases that affect the climate. Ash ends up reflecting energy away from Earth, so a large volcano is likely to cause cooling for several years until the ash finally falls out of the upper atmosphere.”

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

- Materials provide a rationale for the structure and organization of the materials. The Green Ninja website states, “Our unique approach to science education, which incorporates leadership development, has been shown to not only improve students' academic performance but also their critical thinking and communication skills, as well as their self-confidence and sense of agency.”
- Materials provide a framework explaining the main intent and goals of the program. For example, the Green Ninja Website states, “Grade 8 centers around the theme of change. Topics include forces and energy, migration, weather, and the universe. Students investigate, learn, and create solutions for change.”
- Materials provide a purpose or rationale for the instructional design of the program on the home page for each grade level course. For example, the grade 8 course homepage introduces the rationale for the Green Ninja materials by stating, “Our curriculum is designed around the TEKS and ELPS, and one of our primary goals is to make learning science fun and engaging. We take to heart the notion that giving students opportunities to work on real-world problems can promote science learning and student engagement and a full description of the research behind the curriculum and the instruction design is provided at https://www.greenninja.org/texas/. The core of the curriculum is helping to make science fun and interesting for students. Student

motivation is a critical component of learning, so our goal is to help teachers make their classes as engaging for students as possible."

- Materials provide a YouTube video embedded on the Overview page that describes the structure and intent of the curriculum.

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Indicator 4.1

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

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

Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- Materials consistently provide learning activities through reading and writing that support students' meaningful sensemaking.
    - For example, in each of the grade bands, there is a Reading Companion that is accompanied by comprehension questions that require different modalities of learning to answer the questions. There are multiple choice questions, short answer questions, and reading, analyzing, and interpreting graphs questions. According to the publisher, the Reading Companion is "...informational text, along with key vocabulary, that accompanies each Green Ninja unit." The reading contains summaries of the key science concepts covered in a particular lesson series.
    - The materials state, "Here are some suggestions for different ways to use the Reading Companion in your classroom:

        - For students who don't have much background in science or prior knowledge to leverage, use the Reading Companion as an introduction to provide context and some understanding.
        - Assign the relevant section of the Reading Companion as homework immediately after a classroom activity. This helps students connect the key science concepts with the classroom activity.
        - Provide the relevant section of the Reading Companion to students in class as they work on evaluation activities, such as developing models, creating storyboards, etc. The content in the Reading Companion serves as a reference for students as they work on their assignments.
        - Assign the Reading Companion as homework at the end of a lesson sequence. This summarizes and reinforces the key science concepts covered in the lessons.
        - At the end of the unit, a) provide all the unit Reading Companions to help students prepare for the unit assessment."
- Materials consistently provide opportunities for students to act as scientists and/or engineers. Each unit is broken into chapters where students use science and engineering practices to investigate a unique phenomenon. A culminating experience is featured at the end of each unit with the intention of giving students an opportunity to apply the knowledge gained.

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

- Materials provide multiple opportunities for students to engage with grade-level appropriate scientific texts to gather evidence and develop an understanding of concepts.
    - For example, each chapter includes a Reading Companion that is highlighted on the Getting Started page of the chapter introduction. The companion includes a passage with illustrations, diagrams, charts, or graphs, as well as bolded unit vocabulary. Questions are included with both multiple-choice and open-ended responses.
- Materials contain a Literacy Section that includes all the student documents and teacher-supporting resources for reading options presented throughout the unit. Vocabulary for the unit is also listed with additional reading resources through Newsela.

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 acting as scientists and engineers as they learn from engaging phenomena and the engineering design process.
    - For example, in Unit 2, Chapter 3, Lesson 2.13, students continue monitoring the radish seeds that they are observing from the lesson two days before. Students continue gathering evidence about how water moves through plants and the properties of water through celery investigations. They will apply this understanding to their unit challenge and investigations of monarch populations and their dependence on the milkweed plants.
    - In Unit 1, Chapter 3, Lesson 1.10, students explore the effects of mass and acceleration by building simple drag racers over several days based on the phenomenon that "Unbalanced forces cause a drag racer to accelerate."

- 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. Each chapter includes two types of summative assessment. For example, Chapter 3, Milkweed, states, “Option 1, One-Pager: Students create a one-page summary of everything they learned in the chapter using words and/or pictures” and “Option 2, Reading Questions: Students complete a series of multiple choice questions with one open-ended question from Milkweed reading questions.”
- Materials provide multiple opportunities to communicate thinking on scientific concepts in written and graphic modes. For example, in Lesson 1.24, Sustainable Transport, Share Plans Day 1, students give oral presentations that can include visual representations and evidence using a Slides Presentation.

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

- Materials support students to act as scientists and engineers who can learn from engaging in phenomena to make sense of concepts and persevere through productive struggle.
    - For example, throughout the grade bands, the units of learning all start out with anchoring phenomena that are depicted in a drawing (Unit Roadmap) and introduced in a "letter" from Green Ninja (Unit Storyline).
    - Throughout the grade bands, the students are working towards completing a culminating project in which the science and engineering practice are applied. Each Unit of learning has a problem (anchoring phenomenon) and students create a solution (culminating event) to this problem using their understanding of the concepts taught to them throughout the specific unit of learning.
- Material lesson instructions give students an opportunity to think critically about a subject that they may not have a high degree of familiarity with. This is intended to assess students' pre-knowledge but also to generate student interest and curiosity.
- Materials are structured to provide opportunities for students to engage in investigating specific phenomena. The units are structured to provide many opportunities for productive struggle using science and engineering concepts. At the end of the unit, students are provided a culminating experience where they apply the knowledge gained to a real-world and often familiar situation.

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Indicator 5.1

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

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

Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- Materials provide opportunities for students to develop how to use evidence to support their hypotheses and claims. Throughout the 6-8 grade band, the materials offer many opportunities for students to participate in CER.
    - For example, in grade 8, Lesson 1.22, Sustainable Transport, Complete CER, materials state, "Here, they will use it to assemble and present a logical argument in support of their transportation proposal. Does the evidence about user needs they have collected indicate there will be interest in their proposal? Are the scientific principles of forces and motion in line with the plan they envision?"
- Materials consistently employ the process of utilizing scientific knowledge to construct predictions and explanations.
    - For example, in grade 8, Lesson 1.6, the extension activity dictates students have to formulate a hypothesis that explains how mass is related to gravitational potential energy, kinetic energy, total energy, and velocity.
    - Many of these opportunities are mentioned in the blue call-out boxes found throughout the lessons.

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

- Materials include vocabulary for each chapter within the unit on the Getting Started pages. The teacher slide deck provides opportunities for students to identify the words and record them in the context of diagrams, models, and images. Questions in the lessons and slide deck allow students to utilize vocabulary in discussion on assignments.
    - For example, in Lesson 3.8, students revisit the phenomenon for the unit and create a new diagram of their understanding of sea breezes in the context of the phenomenon. After the demonstrations and lab activities, students are able to identify key vocabulary, including *wind*, *pressure*, and *temperature*, and their role in the beach scenario.
    - In grade 8, Lesson 3.6, students are asked to define the components of a system and then describe how energy flows through that system.
    - In grade 8, Lesson 2.17, students are asked to define *concentration* prior to beginning a demonstration on the diffusion process.

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

- Materials integrate argumentation and discourse throughout in the form of whole class, small group, and partner discussions. The slide decks and lesson plans frequently prompt teachers to engage students in discussion and encourage the use of evidence to support students' thinking.
    - For example, in Lesson 3.12, students discuss their updated understanding of the unit roadmap, including the following discussion prompts: "Describe the general direction of air movement (from the H to the L), describe the rotation of the high-pressure system (clockwise), describe the rotation of the low-pressure system (counterclockwise), and predict how the air would actually move between these two systems."
    - Lesson 1.22 has students using the CER method "to assemble and present a logical argument in support of their transportation proposal. Does the evidence about user needs they have collected indicate there will be interest in their proposal? Are the scientific principles of forces and motion in line with the plan they envision?"
    - Lesson 4.9 states, "Have students construct an argument with a claim about whether the universe is expanding, contracting, or static. They should support their claim with evidence and use reasoning to describe how the evidence supports their claim."

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

- Materials provide opportunities for students to justify explanations of phenomena and solutions to problems using written and verbal arguments to problems using evidence acquired from learning experiences.
    - For example, in grade 8, Lesson 4.19, Reviewing Stars, teachers "instruct students to return to the life cycle of a star diagram from Lesson 4.15, A Star is Born. Students should edit their diagrams as needed and then add descriptors for each stage. Finally, students should add a small H-R diagram beneath their star life cycle diagram, adding stars to the H-R diagram that are in each stage of the star life cycle. Students return to the Stars Phenomenon image Lesson 4.14 a-stars-phenomenon (from Lesson 4.14 Guest

Stars) - stars come in different colors and sizes. Students are asked to use the knowledge they have gained to answer the following questions: Why might one star be red and another blue? Why might one star be small but another one big?"

- Throughout the grade bands, in every lesson that requires students to use the CER process to create an argument rooted in evidence from their investigations, there is a rubric that helps guide students to ensure that they are including appropriate evidence that justifies their explanations of the phenomena/content based on their learning throughout the lesson.
    - For example, in Lesson 2.7, students are instructed to write out Punnett squares detailing monohybrid crosses and their genotype/phenotype ratios.
    - In Lesson 3.12, students are asked to complete an exit ticket which requires them to write down two things that they learned about cyclones from the lesson.

Green Ninja Middle School Science Grade 8

Indicator 5.2

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

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

Meets | Score 4/4

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

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

Evidence includes but is not limited to:

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

- Materials provide teacher guidance on anticipating student responses and the use of questioning to deepen student thinking. Throughout the grade bands (6,7,8), the Google Slide decks provide guidance for teachers in the slides and the notes portion on many ways to deepen student understanding, including, but not limited to, sentence stems, tie back to prior knowledge/lessons, common student responses, common student misconceptions, and using vocabulary in context emphasis.
    - For example, in Grade 8, Lesson 1.19, Sustainable Transport, What do Users Need? Lesson Plan Part 1a states, "Remind students of the unit challenge—Propose sustainable transportation solutions. Review with students what they have learned so far during this unit, including the way different forces affect different transportation options. Have a short classroom discussion about some of the different transportation options they have reviewed, and discuss how this ties into the forces they have studied (e.g., friction and non-contact forces such as electromagnetism)."
    - The teacher notes section on slide 43 of the Unit 3, Weather and Climate, Google Slide Deck states, "Lesson Plan Part 1a: The driving question for this unit is, Why are there so many hurricanes? A question that follows is, Will there be more hurricanes and extreme

weather in the future? There are many causes of hurricanes. From the previous lessons, students will now have some idea that they are related to extreme rainfall and will be aware of the terrible results that can occur. They now know the names of some of the worst hurricanes and have looked at assessing damage after a hurricane. Ask students to offer some ideas as to what are the causes of hurricanes. Some may be quite accurate, others may be less accurate but accept all answers and explain that students will be gathering more information as the unit progresses. Give students a few minutes to write down questions they have relating to hurricanes and other extreme weather events. Ask students to read out some of their questions. Then give another few minutes for students to try to answer one of their questions. Ask a few students to read their questions and answer. You do not need to tell them if they are right or wrong. Remind them that at this stage, they are not required to have answers, but they will gain knowledge as the unit progresses."

- Lesson 2.2, Migrating Monarchs, Part I, states, "Display page 1 of the Monarch Migration Map. Ask students why the butterflies don't stay in the same place all year. Prompt students to think about what they already know about animals and geography as they come up with their answers. Give students the opportunity to share their ideas. Display page 2 of the Monarch Migration Map. Give students the opportunity to share their observations. Then advance the animation to ask whether they notice a relationship between temperature and where the butterflies are. Be sure students explain their thinking. The monarchs seem to prefer temperatures between 60-80°F—the green and yellow regions on the map. Monarchs migrate south to stay in this temperature range. Explain to students that migration is a behavioral adaptation of monarchs and other animals, including birds. A behavioral adaptation is an action an organism takes in order to survive in an environment. Based on the data in the migration maps, monarchs need to be where it is warm. When the temperature begins to drop in northern climates, the monarchs migrate to where the temperature is warmer. This increases their chances of survival. Students should write the definition of behavioral adaptation in their science notebooks."

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

- Materials provide embedded support for teachers in how to introduce and scaffold students' development of scientific vocabulary. In each of the grade bands (6,7,8) in the Unit Introductions, there is a section (2) Vocabulary. It is described as follows: "Vocabulary in science is not an end goal — it is a communication tool. Scientists can describe rich concepts or very specific items using a single word or phrase, and that saves them time when communicating with other scientists. There are different categories of vocabulary in science education. When and how to introduce the words depends on which type of vocabulary word it is. Conceptual vocabulary: Scientists use discipline-specific vocabulary to label complex concepts with a single word. For these words, it's important that students discover the concept first and introduce the vocabulary after the experience. This sequence mirrors how young children first acquire language — they understand concepts like 'eat' and 'sleep' long before they learn the words to verbalize these concepts. Most bold Green Ninja vocabulary words are conceptual. Procedural vocabulary: Procedural vocabulary are words students need to use during an investigation, such as the names of key tools and materials. You'll want to introduce these words before the investigation."

    - Slide 28 in the grade 8, Lesson 1.10, Google Slide deck discusses the relationship between *weight* and *acceleration*. Students are asked to define the term *acceleration* and use it to evaluate the effects of changes to models.
- Materials use symbols to alert teachers of targeted opportunities for students to use new vocabulary to explain phenomena or problems.
    - In each of the grade bands (6,7,8), there are two symbols used repeatedly throughout the units to alert teachers (and students) that vocabulary can be used in context to explain phenomena. These can be found in the Google Slide decks and in bolded print.

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

- Materials provide teacher supports to prepare for student discourse.
    - For example, Lesson 1.27, Transportation Unit, Final Reflection and Assessment, includes an activity to Discuss Highlights from Student Presentations, including the following prompts to support student discourse: “Here are some prompts to start a 10-minute conversation: What locations did different students choose to work on? What user needs do these locations have that make them the same or different from other locations? What common themes did students choose to focus on? What were some of the technologies discussed? Did you hear about any projects that seem similar to your own? How was their approach the same or different? What did you learn about the “claim-evidence-reasoning” approach to presenting an argument? Can you think of any evidence and reasoning you heard which made a lot of sense to you? Would you like to share your ideas with the community or some international organizations interested in sustainable transportation? To pursue sharing student ideas, see the list of organizations included in teacher notes earlier in the project.”
    - Slide 12 of the Google slide deck in grade 8, Lesson 1.6, details the process for students to work in pairs to write down everything they know about energy. Guiding bullets are included to help focus students on their definitions. Afterward, students share things that were similar and different about their observations.
- Materials provide teacher questions for supporting student discourse and the use of evidence in constructing written and verbal claims.
    - For example, throughout each grade band (6,7,8), teachers are provided supporting questions throughout lessons as students are able to complete a CER (Claim, Evidence, Reasoning Method) to use evidence in their claim, such as during Unit 2, Monarchs. Slide 31 of the Google Slide Deck states, “Lesson Plan Part 2c: Discuss the last question in part 1, Make a claim about when the monarchs will arrive in Angangueo this year. Students should suggest a fairly late arrival date, such as mid-November. Students should use evidence of the trend of later arrival dates in 2021 compared to 2000 to support this claim.”
    - Slide 11 of the Google slide deck in grade 8, Lesson 1.10, details the process for students to engage in whole class discourse regarding what factors affect motion. The speaker notes contain instructions on how to set this up and guidance on how to direct students to the required responses.

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

- Materials provide exemplars of student-written responses. Materials state that teachers can use the exemplars as a guide to help them facilitate students showing their thinking in a written form. Throughout each of the grade bands (6,7,8), in the Chapter review section of each lesson, one of the assessment student choices is a One-Pager. There are several student exemplars provided to help students better understand what the One-Pager looks like when it is completed correctly.
    - For example, in grade 8, Lesson 1.5, Vehicle Energy Use, the following teacher guidance is provided: "Have students discuss in pairs or groups. Students have practiced the skills of scientific discourse with the teacher as a guide. Now, require them to employ the discourse strategies in their pairs or small groups, including the responsibility to respectfully listen, clarify, and question the speaker. Require them to practice pressing one another for evidence-based responses with clear references to the data for evidence. The teacher can evaluate by visiting the teams around the room and listening for these discourse cues. Groups can be responsible for explaining their reasoning about a single pair or consider all of them (depending on time). Groups that finish early can try to sort the comparison pairs into groups that reveal a common explanation or factor that influences energy usage (i.e., 'Bus vs. SUV' and 'Cruise Ship vs. Everything else'). Remind students that class started with the statement (phenomenon): Some vehicles use more energy than others to go a given distance. Now students have started developing an understanding of why this is."
    - Sample CERs are included in the Unit 1, Chapter 4 slide deck, with teacher guidance stating, "If you feel students need more information and an example, the 'Content Knowledge' section of this lesson contains a sample CER analysis that can be used to guide students." These samples help support students that have difficulty sharing their thinking and/or solutions in writing.
    - Slide 43 of the grade 8, Lesson 1.10, Google Slide deck contains sentence stems to prompt students to think about how a roller coaster changes speed as it moves around a track.

Green Ninja Middle School Science Grade 8

Indicator 6.1

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

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- Materials consistently include a range of diagnostic, formative, and summative assessments that include formal and informal opportunities to assess student learning in a variety of formats.
    - For example, the 6th Grade Course Overview highlights various assessment strategies embedded throughout the curriculum. It states, "The Green Ninja curriculum provides a diverse range of assessment types to ensure comprehensive monitoring of student progress. Each assessment type is designed to serve a specific purpose and offers unique insights into student understanding and performance. Here's more information about each assessment type:
        - Pre-assessments: These assessments help gauge students' prior knowledge and understanding of a topic before starting a unit. By identifying existing preconceptions and levels of content knowledge, teachers can tailor their instruction to address misconceptions and meet individual student needs.
        - Exit Tickets: Short, open-ended questions that serve as checkpoints to inform teachers of students' understanding during a lesson or unit. Exit tickets allow for quick feedback and help educators adjust their instruction accordingly to address gaps in knowledge or comprehension.

  - Worksheets/Handouts: These resources often include questions or activities that require students to apply their learning to various tasks. A teacher key is typically provided to offer guidance on evaluating student responses, ensuring consistent and accurate assessment of student work.
  - Concept Checkpoints: These thought-provoking, multiple-choice questions are specifically designed to assess students' understanding of particular science concepts. Many items are crafted to prepare students for state or national assessments, reinforcing essential knowledge and skills.
  - Rubrics: As most summative assessments are performance-based, rubrics are used to evaluate student work in terms of science core ideas, practices, and cross-cutting concepts. Rubrics provide clear criteria for assessment, ensuring consistency and fairness in the evaluation process.
  - Performance Assessments: Culminating projects serve as performance assessments, requiring students to extend their science learning and apply their understanding to real-world scenarios. These assessments demonstrate students' ability to synthesize information, solve problems, and effectively communicate their ideas.
  - Unit Assessments: At the end of each unit, students complete assessments designed to evaluate their understanding of the primary science content. These assessments provide valuable data on student progress and mastery of key concepts, informing future instruction and identifying areas for improvement or reinforcement.

    By incorporating these diverse assessment types into the Green Ninja curriculum, educators can effectively monitor student progress and adapt their teaching strategies to better meet the needs of their students."
- Materials include formative assessments in a variety of formats to measure student learning and determine next steps for instruction.
  - For example, the Google Slide Presentations include checkpoint slides (color-coded teal) to provide formative assessments.
- Materials consistently utilize a combination of formative and summative assessments.
  - Each chapter culminates with a summative assessment. Teachers are provided with multiple options, including student-created summaries of the material or multiple-choice questions. Additionally, throughout the chapters, the materials provide a multitude of opportunities for the instructor to assess ongoing student learning and provide intervention/facilitation when needed.

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

- Materials provide TEKS-based lesson plans that provide student expectations and guidance on how to assess student learning. Each unit consists of chapter assessments and a single unit assessment. The assessments directly address the materials covered within each chapter/unit. Chapter assessments are provided in multiple options, either short answer-based or multiple choice.
  - For example, the TEKS are assessed through a variety of assessments, including pre-assessments, checkpoints, activities, discussions, culminating projects, and unit tests. The TEKS are not identified for each assessment item or as a whole though they do appear to align well with the instruction in the lessons.

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- Materials provide a general overview that lists all the assessments provided in conjunction with the student expectations. Materials provide answer keys for assessments offered in the lesson in which it is presented. In that answer key, a box below each item shows the correlation to the TEKS core science content standard being assessed and the scientific practice and recurring theme/concept that the student draws most heavily upon to answer the question. This table specifies all three dimensions of the TEKS (i.e., core science content, scientific & engineering practices, and/or recurring themes & concepts). Each assessment item can assess a single dimension or can require the integrated application of two or all three of the dimensions.
-

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

- Materials include assessments that require students to integrate scientific knowledge and science and engineering practices appropriate to the student expectation being assessed.
    - For example, in Grade 8, Lesson 4.40, Universe, in the Unit Assessment and Reflection, question 1 states, "Draw a diagram tracking carbon from inside stars all the way into the Texas state flower. Show the different places the carbon goes along the way and label the names of the processes that allow it to move from place-to-place." This requires students to develop and use a model to explain carbon cycling.
- Materials include assessments that require students to integrate recurrent themes appropriate to the student expectation being assessed.
    - For example, Grade 8, Lesson 4.40, Universe, Unit Assessment and Reflection, question 1, states, "Draw a diagram tracking carbon from inside stars all the way into the Texas state flower. Show the different places the carbon goes along the way and label the names of the processes that allow it to move from place-to-place." This requires students to know and understand that systems and system models can be used to understand the behavior of the carbon cycle.
    - Lesson 4.7, Doppler Shift Models, states, "In this lesson, students investigate the Doppler Effect by using water models and a more kinesthetic approach, by using their body movement. Then, students participate in a four part checkpoint to check for understanding."
    - Each unit includes a culminating project. The Green Ninja Website states that this "performance Based Assessment occurs once per unit, using a rubric. Green Ninja's specially designed assessment to assess students' culminating projects" where they merge science concepts and science and engineering practices with recurring themes.

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

- Materials consistently include assessments that require students to apply knowledge and skills to novel contexts. The culminating experience for each unit is a real-world, scenario-based assessment where students apply their learning from the unit to propose a solution.
    - For example, the Unit Assessment for Unit 2 asks students to answer questions based on a population of Southeast Asian butterflies. Students must apply their knowledge of Monarch butterflies, the focus of Unit 2, to answer the questions successfully.
    - In the grade 8 Unit 2 Assessment, students are asked to evaluate their constructed model of genetics for support or need for revision.

    - In the grade 8 Unit 3 Assessment, students are asked to compare a provided model to the greenhouse effect and determine similarities and differences with evidence.
- Materials include assessments that require students to apply knowledge and skills to a new phenomenon or problem.
    - For example, in Unit 4, The Universe, the Chapter 3 Google Slide Deck contains a checkpoint where students complete an exit ticket that asks, "Does gas have mass? Use the results from your investigation as evidence to support your claim."
    - The Unit 2, Monarchs, Culminating Project, states, "Students are introduced to the culminating project where they will design a plan to save the monarchs and present their solutions at the Become a Guardian of the Monarchs Action Conference. Students are given time to brainstorm and plan possible solutions while also reflecting on other action plans to protect monarch butterflies. At the Become a Guardian of the Monarchs Action Conference, students will showcase their solutions with a presentation before taking the final unit assessment on the last day."

Green Ninja Middle School Science Grade 8

Indicator 6.2

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

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- Materials consistently include information and/or resources that provide guidance for evaluating student responses.
    - For example, in the unit pre-assessments, teachers are provided with guidance in the form of an answer key and additional information in the subsequent lesson. In Unit 3, Lesson 3.2, the teacher is guided to have students work with partners to compare and discuss their responses. Then, "after each question is discussed, you may choose to summarize the correct answer, especially if student preconceptions are evident. Use the Weather and Climate Unit pre-assessment key (from Lesson 3.1 Introduction to Weather and Climate) as a guide. Pay particular attention to students' understanding of the sun as an energy source and the resulting interaction between the hydrosphere and the atmosphere."
    - In the Unit 2, Chapter 2 slide deck, the exit ticket brings students back to the initial concept addressed in the phenomenon. The teacher is guided to consider the following when evaluating student responses: "Use students' exit tickets as a formative assessment of their understanding of the mechanism of inheritance. Students' work should show that the chromosome can be divided into sections called genes and that genes code for specific proteins that determine the traits of an organism."

- Throughout the grade levels (6,7,8), materials include information that guides teachers in evaluating student responses. The materials provide an answer key for all student worksheets, assessments, and projects. These answer keys provide suggestions for remediation and also identify for the teacher which portions of the worksheet/assessment are essential for mastery of the content.
- Materials include follow-up suggestions for formative assessments in the Teacher's Guide.
    - For example, in Grade 8, Lesson 3.34, Weather and Society, the concept checkpoint states, "If you look at the average temperature by adding up all the temperatures and divide it by 5, then 75°F is the closest. However, you could also look for an overall pattern in the data and discover cooling since the 10th birthday, so you might expect the trend to continue, so 55°F is most likely. Answer: A or C depending on your justification
      The first three examples actually add heat to the cup of hot cocoa. The last example is the only one that traps the existing heat and prevents it from escaping."

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

- Throughout each of the grade levels (6,7,8), materials provide guidance resources to support teachers' analysis of assessment data.
    - In each grade level, under the tab titled "GN Classroom," there is a subsection of information called "Responding to Assessment Results." There is a table provided that explains the following: "When a student or many students fall below our goals, we must first diagnose the problem and figure out where things went wrong. A student's performance depends on three crucial interactions: the student and the assessment itself, the student and the learning activities that went before the assessment, and the alignment between the assessment and those learning activities. If a student does poorly, it is because of a failure in one of those connections."
- Materials provide guidance or tools to support teachers in responding to data to inform instruction.
    - Each unit contains two or more concept checkpoints designed to be formative assessments of student understanding of particular core concepts. A small box in the lesson where the checkpoint occurs shows the correlation to the content TEKS being assessed, along with guidance for teachers to support students who do not meet expectations.
    - For example, when a teacher clicks the Lessons tab on each Unit Overview page, they will see a list of all lessons within the unit along with the TEKS addressed in each lesson. TEKS in bold indicate formative or summative assessments. This feature allows teachers to see how a lesson and its associated assessments are aligned to the standards.

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

- Materials provide guidance to support teachers' analysis of assessment data. Each unit begins with a pre-assessment, a pre-assessment answer key, and discussion questions to guide

teachers on how to interpret the data and engage students in understanding the initial concepts needed.

- For example, Lesson 3.2, Hurricane Harvey Part I, states, “Begin by having students choose partners. Instruct pairs to discuss their pre-assessment answers.
  Give partners ten minutes to discuss with each other, make revisions, and/or compile questions.
  After students have discussed their answers in pairs, go over each question, calling on different pairs to share their answers. Be sure to give all students time to share.
  After each question is discussed, you may choose to summarize the correct answer, especially if student preconceptions are evident. Use the Weather and Climate Unit pre-assessment key Lesson 3.1 as a guide. Pay particular attention to students' understanding of the sun as an energy source and the resulting interaction between the hydrosphere and the atmosphere.
  The pre-assessment questions are designed to give you an idea of student prior understanding of some of the disciplinary core ideas that will be covered in this unit as well as to identify preconceptions that should be addressed. Students may have varying levels of familiarity with concepts introduced in this discussion. Give students the opportunity to share what they know and inform them that these concepts will be covered in the unit.”

- Materials include assessment tools that yield data teachers can easily analyze and interpret. Throughout the 6th grade course, there are a variety of assessment types, including open-ended opportunities and creative ways for students to showcase learning and for teachers to evaluate their learning.
  - For example, the Unit 3, Weather and Climate Unit, Chapter 3, Google Slide Deck contains a checkpoint on slide 65, and the Teacher's Notes give additional guidance on the material in addition to the answer key.
- Materials provide checkpoints throughout the lessons and culminate with a unit assessment. These tools provide useful data to reference back to the pre-assessment to determine student growth and/or identify areas of concern for re-teaching/scaffolding of instruction.

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

- Throughout each of the grade levels (6,7,8), materials provide a student resource for teachers to use in responding to performance data. There is a chart called “Responding to Assessment Results” found in the GN Classroom Tab. It states, “Once you successfully diagnose the problem, then you can chart a plan for solving it.”
  - For example, “maybe the problem is as simple as the fact that the student misunderstood the intent of a question (student/assessment). If the problem lies in the alignment between the learning activity and assessment, it may require teaching skipped material or rewriting the assessment question."
  - The unit slide decks contain concept checks that include misconceptions as distractors. Teachers are guided to use student responses to misconceptions to guide the discussion.
- Throughout each of the grade levels, materials include intervention activities teachers can use for reteaching concepts. This is intentionally driven by response to student assessment data. These intervention activities are provided for use at any time.

- For example, materials provide resources that teachers could use to respond to student data, including reading passages, reading companions, sentence stems, graphic organizers, and extensions. Materials provide teacher guidance in the Teacher Tips section for every Chapter Review Lesson on how to respond to student data from the end of chapter assessment. The sections are titled “How to Support Students with Reading” and “How to Support Students with One-Pagers.”

Green Ninja Middle School Science Grade 8

Indicator 6.3

Assessments are clear and easy to understand.

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

Meets | Score 2/2

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 to learning goals.

Evidence includes but is not limited to:

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

- Materials contain assessment items for the grade level that are scientifically accurate. Formative and summative assessments include assessment items that align with taught objectives and present grade-level content and concepts, science and engineering practices, and recurring themes and concepts in a scientifically accurate way. Throughout the materials, assessments contain items for the grade level and course that are free from errors.
    - In Unit 1, Transportation, students analyze various transportation trends in multiple parts of the country to include more accurate findings for comparison.
    - The grade 8 Unit 3 Assessment contains graphs/charts referencing real data. The sources of the data are listed in Lesson 3.40.
- Materials contain assessments that avoid bias and are free of errors.
    - For example, in Unit 3, the unit assessment explores weather events in different areas of the world to evaluate and compare the impact of natural events on human activities and earth systems in diverse areas of the world.
    - The calculations for vehicle efficiency in Unit 1, Lesson 1.5, are free from errors.
    - The grade 8 Unit 1 Assessment does not contain any errors related to grammar, spelling, and formatting.

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

- Assessment tools use clear pictures and graphics. Throughout the grade bands (6,7,8), the images that are used help to provide a visual understanding of the content being taught.

  - For example, in grade 8, Lesson 2.16, Cell City, images used in the reading activity to model diffusion add to the students' understanding of the movement of fluids throughout another fluid.
  - The pre-assessment for Lesson 1.1, Transportation, Unit Introduction, contains images of various scenarios where cars are moving. Students are able to visualize the question this way, which is a developmentally appropriate strategy to utilize images in assessments.
  - The Reading Questions Passage Assessment in Lesson 2.32, Chapter Review Lesson, provides a labeled image of the Monarch life cycle.
- Assessments contain pictures and graphics that are developmentally appropriate. Throughout all grade bands (6,7,8), the graphics and images used are appropriate for the grade level without excessive detail that would alarm or overwhelm middle school students.
  - For example, in the Unit 1 Assessment, images of the Green Ninja paddling a canoe in a variety of settings is colorful, simple, and developmentally appropriate.
  - In the Unit 1 pre-assessment, images of a truck in motion over time and associated graphs are color, simple, and developmentally appropriate.
  - The images in the grade 8 Unit 4 Assessment contain images of galaxies that are clear and developmentally appropriate.

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

- Materials provide clear guidance for teachers to consistently and accurately administer assessment tools. Materials offer alternate-form reliability to maintain consistency of test results between two different but equivalent forms of tests.
  - For example, the Culminating Experience Teacher Guide provides detailed information for teachers to administer the performance-based assessment, including guiding questions, student exemplars, and a rubric.
  - The pre-assessments provide guidance for the teachers on when to give pre-assessments and provide options for administration, including digital access through google classroom.
- In each of the grade bands (6,7,8), there is an opportunity for a formative/summative review at the end of each chapter that allows the students choice in assignment to show what they know. There is guidance for the teacher to explain the difference between a one-pager assignment and a reading comprehension assignment.
  - For example, Lesson 1.28, Chapter Review Lesson, includes a Teacher Background Section, providing guidance on how to administer the one-pager with examples of completed ones and details about what should be included in the overall assessment.
  - Lesson 2.32, Chapter Review Lesson, provides an answer key for the Reading Questions Assessment with explanations for questions where students' answers may vary.
- Materials include detailed information that supports the teacher's understanding of assessment tools and their scoring procedures. An assessment guide or a distinct section in the Teacher's Guide on assessment includes an overview of the assessment, scoring procedures, and an answer key.

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

- Materials include guidance to offer accommodations for assessment tools that allow students to demonstrate mastery aligned to learning goals. The Unit Overview provides teachers with a list of assessments within the unit and their purpose, and the teacher may determine if and how those assessments are given to students and accommodate particular needs based on the format of the assessment.
    - For example, the Culminating Experience for Unit 1 includes notes for the teacher in the Access and Equity section that indicates accommodations that can be provided for students that are non-dominant science learners or have special needs. The Background for Teachers states, "Although the lesson plan suggests students may do this project individually, it is recommended that EL learners and non-dominant science learners be paired with stronger students so that they can participate fully in the Culminating Experience. The text in the handout information is well-organized and fairly easy to understand. There are also handouts with information in graph and chart form which may be more challenging. Go over these graphics with students needing additional support. Use the graphics to access prior knowledge and build on students' understanding of transportation in different places to help them visualize differences and come up with ideas for sustainable transport. Set clear goals for each day students work on their projects, and have students check in with daily progress reports to be sure they are on track—a good idea for all learners."
- Materials offer accommodations for assessment tools so that students of all abilities can demonstrate mastery of learning goals.
    - For example, Lesson 4.41, Chapter Review Lesson, states, "You can allow students to choose their own assessment style so that 'lower' students can challenge themselves with the 'high-level' assessment, and 'higher' students can do the one-pager showing their depth of knowledge. Sometimes, 'higher' students need a break from ALL high-level assessments, and sometimes, 'lower' students need the challenge of completing a higher-level task. You can have students complete the chapter assessment by working in small groups (2-3 students). Using small groups for assessments can improve student learning."
    - For example, all video clips (such as the Green Ninja Show Episodes) have closed caption capabilities to help all students see and hear scientific vocabulary in context.

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Indicator 7.1

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

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- Materials consistently provide teacher guidance for scaffolding instruction for students who have not yet achieved mastery. Throughout the grade bands, there are multiple guidance points for the teacher to scaffold learning to a variety of student learning levels. These opportunities can be found incorporated within the lesson plans in the sections labeled “Teacher Background” under the headings “Access and Equity” and “Student Prior Learning.”
    - For example, in Unit 1, Lesson 1.19, materials suggest for teachers to “use the graphics to access prior knowledge and build on students’ understanding of transportation in different places to help them visualize differences and come up with ideas for sustainable transport.”
- Materials include teacher guidance for differentiating activities for students who have not yet achieved mastery as well as advanced learners.
    - For example, in Grade 8, Unit 1, Transportation, Chapter 1, Transportation Trends, Lesson 1.3, Trends in Transportation Part I, the following teacher guidance on differentiation is provided: “Non-dominant Science Learners in General: Many data visualizations (graphs, charts, and infographics) are utilized in this lesson—eight in the Transportation Today handout Lesson 1.3 b-transportation-today.pdf and ten in Future Commuters handout Lesson 1.3 c-future-commuters.pdf. If students have not done much graphing, you should do an introductory lesson such as.”
    - Guidance is offered for “Advanced and Gifted Learners: Instead of giving a summary statement with each dataset (e.g. Drivers under 40 are more open to non-automobile commuting), you can modify the dataset sheets, and challenge learners to come up with the big idea describing each dataset.”

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Materials provide enrichment activities for all levels of learners.

- Materials provide enrichment activities that account for learner variability.
    - For example, materials suggest small group or partner discussions, and include guidance to regularly engage in tasks, such as writing prompts for responding to lessons so students can apply their science knowledge in writing. Each unit includes a list of suggested readings to encourage all students to make connections, learn about the unit concept and standards, and integrate mathematical practice where applicable.
    - In Unit 1, Transportation, Chapter 2, Forces and Energy, Lesson 1.8, KE Cluster: Speed Experiments, students are given the opportunity to extend their learning by, “If time allows, permit teams to repeat their experiments. Provide additional ramp materials and target materials. What new insights do they gain?”
    - In Unit 2, Lesson 2.32, an enrichment activity on Researching Careers is included with a link to a STEM careers website and questions for students to answer.
    - In Unit 3, Lesson 3.10, an extension on the Earth's rotation is provided to explore if the water swirls differently in Australia. A website with an article and video are provided and students are asked to write a summary of the scientists' experiments.

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

- Materials include a variety of means to provide just-in-time learning opportunities for students.
    - These include, but are not limited to, group discussions, teacher tips, and background for teacher sections embedded into the lessons. Throughout each of the grade bands in the Google Slides that accompany each of the lessons there is guidance for the teachers in the “Notes” sections of the slide deck that help to provide scaffolds for “just-in-time” learning acceleration.
        - Some “just-in-time” suggestions that are provided include, but are not limited to, sentence stems, tie backs to previous lessons, lesson/concept analogies, reminders of key concepts to emphasize, possible student misconceptions, and additional resources to investigate.
    - For example, in Lesson 4.1, Welcome to the Universe, materials state, “Ask students what other questions they may have, after watching the video, about the universe. Instruct them to add any new questions to their list. Prompt students to share their questions with a partner so they can see what questions they have in common, and what they have different from each other which may spur more questions they can write down. Ask students to share some of the questions with the whole class.”
- Materials often include questions for teachers embedded in lessons to stimulate student engagement and thinking about the upcoming topic.
    - For example, each unit includes a Google Slides Presentation. Slide 1 of the Slide Deck states, “Lesson Content, including teacher tips and teaching resources, is provided in the notes section of each slide.”
    - Throughout the grade bands, the materials include a Culminating Experience at the end of each unit of learning that contains challenging activities that extend beyond the regular curriculum and stimulate critical thinking, problem-solving, and creativity.

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Indicator 7.2

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

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- Materials engage students in mastery of the content through a variety of developmentally appropriate instructional approaches. Each unit is designed to address multiple learning modalities.
    - For example, the 8th Grade Coursework includes multiple reading activities (Reading Companion used frequently), visual activities (Green Ninja Show/Google Slides), and kinesthetic activities (field investigations). The course overview for 8th grade on the GN Classroom tab provides teacher guidance on facilitating instructional strategies, including science notebooks, charts and posters of science concepts, discussion protocols, and collaborative group work used throughout the course.
    - For example, in Unit 2, students review data on the Monarch butterfly life cycle and migration patterns, play games to model the natural selection of the population, and design models of a cell membrane to develop their understanding of how the milkweed plants that Monarchs depend on can be polluted.
- Materials provide many opportunities for students to learn from various means.

- For example, in Grade 8, Unit 2, Chapter 1, students utilize methods including interactive videos, pre-assessment, role-playing, data analysis, and hands-on activities.

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

- Materials consistently provide guidance to teachers on when to use specific grouping structures based on the needs of students.
  - For example, in Lesson 3.35, Cli-Fi Project Story Part I, the teacher prep notes state, "Students can work on this story activity individually or in small groups depending on what you think is best. Ideally, in the end, students will come up with their own individual stories" when giving teacher guidance on the story development task.
  - In Unit 2, Lesson 2.16, students are to work independently on their cell city analogies but can consult with partners for ideas. Meanwhile, students are conducting an ongoing investigation of the effect of an acid on radish seeds from the previous chapter.
- In each unit, students are given multiple opportunities to utilize flexible grouping, including whole group, small group, and one-on-one.
  - For example, in Lesson 2.2, Migrating Monarchs Part I, the teacher prep notes state, "give them time to discuss their work with a partner. Invite students to ask questions and have other students share their ideas."
  - In Unit 2, Chapter 5, students work with partners in a card sort, participate in whole group modeling of a classroom forest, and independently respond to questions analyzing wildlife in Texas.

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

- Materials allow for the implementation of multiple forms of practices. Students often engage in teacher-guided instruction combined with group collaborative work.
  - For example, in Grade 8, Unit 1, students begin working individually and then progress to pair discussion with a partner. Following the discussion, they move to small groups to utilize a hands-on activity.
  - Each unit provides opportunities for group and independent lab investigations, demonstrations, and scientific discussions. For example, the course overview for 8th grade on the GN Classroom tab provides teacher guidance on facilitating instructional strategies, including science notebooks, charts and posters of science concepts, discussion protocols, and collaborative group work used throughout the course.
- Materials provide a useful tool for teachers to facilitate various modes of instruction. The slide deck incorporated into each unit is constructed so that green backgrounds typically provide instruction activities and grouping sizes. Orange backgrounds are for class discussions, and blue backgrounds are for assessment activities.
  - Lesson 1.7, KE Cluster: Mass Experiments, Teaching Resources include an embedded link to provide guidance on how "The reading and associated questions can be used in various ways to enhance student learning."

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

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

  - For example, the images in the roadmaps, phenomenon, and slide deck represent diverse communities in real-world rural, urban, and suburban settings.
  - The slide deck includes slides titled “Scientists in Action.” Within these slides, individuals of varying ethnicities are shown as representatives of their prospective field of study.
  - Materials contain a unit road map that depicts individuals of varying nationalities. For example, in Unit 1, a Caucasian student is depicted presenting information to an ethnically diverse panel of adults.
  - The Unit 2, Monarchs, Chapter 1, Monarch Survival Strategies, Google Slide presentation has multiple ethnicities represented in the slide deck. Included is a text call out that states, “Abuela, when can we go see the Monarchs?” with an accompanying image representing the appropriate ethnicity.
- Materials represent diversity in the places of focus, including both Texas-specific locations and also those around the world.
  - For example, Unit 3 focuses on Hurricane Harvey, while Unit 2 focuses on the lengthy Monarch butterfly migration path.

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Indicator 7.3

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

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- Materials include linguistic accommodations commensurate with various levels of English language proficiency as defined by the ELPS. Throughout the 6-8 grade band, there are multiple links to ELPS supports to guide teachers with modifications and accommodations needed for all levels of ELLs. These materials can be found embedded within the lessons and chapter reviews in all grade bands.
- Throughout the 6-8 grade band on the unit landing page, there is an Access and Equity section that states the following:

  For English Learners, Guidance for strategic learning techniques and vocabulary acquisition to be used throughout. Vocabulary: Repeat basic and grade-level vocabulary words throughout lessons. Have students provide a definition, use the word in a sentence, and draw the sentence using basic and grade-level vocabulary. Give students time to practice sounding out and spelling the vocabulary words independently, and using the vocabulary in a sentence with a partner. Use a word wall in the classroom for each unit where you highlight basic and grade-level vocabulary words. Encourage students to use vocabulary when asking for and when giving information as applicable. Challenge students to use the words correctly in conversations throughout that unit. Learning Techniques: During discussions, have students repeat the last sentence they heard before contributing to the conversation (i.e., "I heard…say…, I think…."). When using reading handouts, have students circle all unfamiliar words. Then, give students time to create definitions, sentences, and illustrations of each word. Use concept maps,

Encourage elaboration during discussion, Recalling information during the Unit Roadmap discussions, Partner/Group Work, One-pagers as an assessment. More ways to support English Learner students can be found on each chapter review lesson.

- For example, the Chapter Review Lesson 2.32 provides an ELPS Modification and Integrations to Support Literacy Document that includes guidance on Learning Strategies, Vocabulary, Discussion (listening and speaking), Writing, Reading, and Sentence Stems.
- The ELPS Modification and Integrations to Support Literacy Document for Lesson 4.41 includes sentence stems as well as suggestions for organizing information into graphic organizers.

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

- Materials encourage strategic use of students' first language as a means to linguistic, affective, cognitive, and academic development in English.
    - For example, in the chapter review section of each unit, the Access and Equity area indicates supports for English language learners, including having teachers "provide students with a bilingual dictionary to use as needed" and indicating that "translating the handout into the student's native language may also be helpful."
    - In Grade 8, Lesson 2.4, the access and equity statement suggests having students explain interesting facts in their native language or dialect.
    - The ELPS Modifications & Integrations to Support Literacy section of the chapter reviews suggest the use of Google Translate to create a document in students' native language.

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Indicator 7.4

Materials provide guidance on fostering connections between home and school.

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- Materials provide information to share with students and caregivers about the design of the program. Examples include: at the beginning of each grade level overview, there is a section titled “Family and Caregivers.” The following information is provided:

  Dear Family Members and Caregivers,

  We are excited to introduce the Green Ninja curriculum to our Texas middle school students! This innovative program is based on the latest research and focuses on engaging students in authentic science experiences that enhance engagement and drive academic performance. The Green Ninja curriculum is unique in several ways:

  Real-world connections: By presenting science concepts within the context of solving real-world environmental challenges, students gain a deeper understanding of the material and become more invested in their learning.
  Hands-on learning: Students participate in a variety of hands-on activities, experiments, and projects that encourage critical thinking, problem-solving, and collaboration.
  Interdisciplinary approach: The curriculum integrates multiple subject areas, including science, technology, engineering, and math (STEM), as well as social studies, language arts, and environmental education, to provide a well-rounded learning experience.
  As family members and caregivers, your support and involvement play a crucial role in your student's success. Here are some ways you can support their learning:

Encourage curiosity: Ask your student about what they learned in school, and engage in conversations about science and the environment to foster their curiosity.
Reinforce learning: Help your student with homework and projects, and encourage them to explore additional resources related to the topics they are studying.
Connect with the school: Attend parent-teacher conferences, join school committees, and participate in school events to stay informed about your student's progress and the Green Ninja curriculum.
Throughout the course of the Green Ninja program, students will develop essential skills, such as critical thinking, problem-solving, communication, and collaboration. By participating in this engaging and interdisciplinary curriculum, they will be better prepared to understand and address the complex challenges of the 21st century.

We look forward to partnering with you on this exciting learning journey and welcome any questions or feedback you may have. Together, we can support our students in becoming informed and responsible citizens who can make a positive impact on the world around them.

Thank you,
The Team at Green Ninja

- Along with the letter home, there is a QR code that can be scanned that links to a YouTube video that teaches parents 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 provide resources and strategies for caregivers to help reinforce student learning and development.
    - For example, the 8th Grade Course Overview includes information to be shared with families and caretakers that states, “As family members and caretakers, your support and involvement play a crucial role in your students' success. Here are some ways you can support their learning. 1. Encourage Curiosity: Ask your student about what they learned in school, and engage in conversations about science and the environment to foster their curiosity. 2. Reinforce Their Learning: help your student with homework and projects, and encourage them to explore additional resources related to the topics they are studying. 3. Connect with the School: Attend parent-teacher conferences, join school committees, and participate in school events to stay informed about your student's progress and the Green Ninja Curriculum.”
    - The Unit 1, Transportation, Overview offers “specific opportunities for parent involvement: Lesson 1.3 Trends in Transportation Part I Students can discuss transportation needs and choices with their families as part of their research about today's transportation system: Lesson 1.14 Amusement Parks II Encourage a family outing to an amusement park where students can share some of the physics behind the rides after this lesson: Lesson 1.15 Bike Day 1 Parents who have bicycles or are bike enthusiasts will be very excited to introduce their children to the inner workings of bikes. They may even be willing to help in the classroom. Lesson 1.19 Sustainable Transport: What Do Users Need? through Lesson 1.26 Sustainable Transport: Review

Day. Students can encourage their families to implement plans from the culminating experience to make their community's transportation system more sustainable."

- The Unit 2, Monarchs, Overview offers "specific opportunities for parent involvement: Parents can encourage an interest in butterflies found in gardens and parks. Students may live in an area through which monarchs migrate, which would give families ideal viewing at the time of migration. There could be a museum or wildlife park in your area where there is a monarch display. Families could use the interactive website, allowing them to enter data about monarchs and milkweed as well as providing a range of information and resources. Lesson 2.9 Milkweed and Pollution Part I For families with gardens, they can consider researching butterfly friendly native plants for their area and then getting outside to plant them together. Students can talk with their families about the chemicals they use inside their home and garden. Could any of them be harming plants and animals like milkweed or monarchs? They can research less toxic alternative products (which are often cheaper) and put them to use."

- Grade 8, Lesson 3.23, The Greenhouse Effect Part II, states, "As suggested in the Greenhouse Effect Play Script handout, recording the play on a smartphone (or another video device) is a great way to make this experience more real and engaging for students. If students are encouraged to show and explain the play to their parents, they may be more engaged in the activity and will ultimately learn more."

Materials include information to guide teacher communications with caregivers.

- Materials include information to guide teacher communication with caregivers.
  - For example, the home page for each grade level includes a letter to family members and caregivers that can be printed or digitally sent home. This letter indicates the unique features of the curriculum and offers suggestions for how the family member or caregiver can support their child's success in learning the curriculum's content and skills.
  - In the Unit Overview, Home to School Connections are indicated that can be communicated to family members and caregivers. These suggestions are also embedded within those lessons in the Teacher Background area as a reminder.
  - Each Unit Overview gives suggestions the teacher can provide to caretakers for monitoring students' progress. The Unit 3, Weather and Climate, Overview states, "Specific opportunities for parents to monitor student progress: Parents can be invited to class to view the Weather and Climate story presentations."

Green Ninja Middle School Science Grade 8

Indicator 8.1

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

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- The material shows clear alignment to the TEKS and ELPS that includes unit and lesson progression. A Scope and Sequence document for the TEKS and ELPS is provided and integrated into the Standards section of each Grade and Unit Overview in an accessible format that is easy to use and modify. For example, teachers would be able to sort the standards either by grade, unit, or lesson.
- Located in the Getting Started section of each lesson, the sequencing of the instruction per unit is found under the Lesson Plan section stating, "This is the suggested sequence of learning activities for this lesson. Note that session times are estimates. Depending on students' progress, the sessions may be shorter or longer."
- The materials include all 8th Grade TEKS, ELPS, and SEPs standards in multiple areas of the course numerically. For example, on the 8th Grade Course Unit Standards Tab, units are sectioned out, and all standards in that unit are listed.

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

- There is evidence of teacher guidance throughout the learning units. For example, the Teacher Resources provide a lesson plan and a Google Slide presentation to show students for each lesson. Materials include a Unit-to-Unit connection presented in the Grade Overview section.

This provides teacher guidance on how student connections to core concepts, SEPs, and RTCs occur across the grade.

- Each lesson includes a Tying it Together concept at the end of each Unit's lesson. This emphasizes how the lesson connects to what students are learning within the unit. For example, in Grade 8, Unit 3, Weather and Climate the Roadmap, it states, "Throughout the unit, students will be shown this image to remind them of what they've been studying, and how this learning will be applied in their culminating experience."

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

- The materials provided extensions for students to review and enhance student knowledge with connections between other concepts.
- The Teacher Resources section of the materials within each lesson includes a Reading Companion that "can be used in various ways to enhance student learning" including practice of current content in the form of homework. "This summarizes and reinforces the key science concepts covered in the lessons." The materials show how the skills (SEPs and RTCs) are spiraled throughout the grade by highlighting where the Emphasizing boxes are located within the curriculum. These Emphasizing Skills and Concept boxes provide explicit directions for teachers to embed particular practices or recurring concepts directly into the instruction. Materials include teachers guidance in the standards tab with an easy-to-use format so that teachers could easily see how different practices and concepts are spiraled through the year.

Green Ninja Middle School Science Grade 8

Indicator 8.2

Materials include classroom implementation support for teachers and administrators.

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

Meets | Score 2/2

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

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

Evidence includes but is not limited to:

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

- The materials provide teacher guidance through a Getting Started section at the beginning of each chapter within a unit that provides an overview, roadmap connections, chapter vocabulary, reading companion, and chapter phenomena. The slide deck provides technology presentations of key pieces of the lesson and activities ready to present to students, as well as tips to prepare for instruction. These materials include overview documents to support teachers in understanding how to use all materials and resources as intended.
- Materials contain links to embedded technology in the teacher guide as options for teachers to use to support and enhance student learning of science concepts.
- Materials include teacher guidance on strategic learning techniques and vocabulary acquisition to be used throughout grade 8. For example, the Grade 8 Course Overview includes an embedded link to the Teacher Instructions for Using Pocket Lab pdf file.

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

- The materials include the accompanying TEKS, ELPS, and RTCs, as well as cross-content standards. These materials include science standards correlations for units, lessons, and activities within the context of the grade level or course in teacher guidance documents and online resources.
- Cross-curricular connections are made within some lessons in each unit of study in ELA and Math though the standards are not identified. Math extensions are included in some lessons. For example, in Unit 2, Water, in Lesson 2.5, Investigating Temperature II, there is a part of the lesson called Math Extension: Let's Explore Climate!
- Each unit has a Literacy section that provides links to reading companions, vocabulary, and additional reading resources from Newsela.

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

- Materials include a comprehensive list of all equipment and supplies needed to support instructional activities. Items are differentiated between materials provided by the school/teacher, those that are optional, and those that are part of the Green Ninja Kit, as well as alternative materials where applicable.
- Materials include the materials list broken down by access: district/teacher provided or included in the Green Ninja Kit. For example, in the grade 8 Course Overview, both lists can be found with embedded links, as well as an option to export the list as a CSV file, which can be used in other software applications.
- For example, in Unit 2 Monarch Overview the Materials Tab lists every material required, with each accompanying lesson, as well as alternative materials where applicable.
- Materials include some suggestions for teacher implementation of supplies and equipment. For example, in the grade 8 Course Overview, there is a Green Ninja Classroom Tab. This tab includes suggestions for teacher implementation of physical supplies and discarding of supplies.

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

- Spotlight on Safety callouts are highlighted in blue in lesson plans, where applicable. For instance, an grade 8 Weather Field Investigation provides teachers with guidance on learning outdoors, including identifying hazards, setting boundaries, and identifying student deliverables at the end of the experience.
- The materials provide teacher guidance for safety practices and grade-appropriate use of safety equipment during investigations, in accordance with Texas Education Agency Science Safety Standards. This list can be found in the Safety Guidelines section located in the lessons. Chemicals referenced in the Safety Guidelines sections of the lessons are accompanied by MSDS documents.
- In the grade 8 Course Overview Materials Tab lists suggested practices for Field Investigations listing possible misconceptions/things to avoid.
- In Lab Activities, Safety Guidelines state: Danger: Know which allergies and sensitivities your students have, and be prepared for emergencies. Be aware of student allergies to food items such as raw eggs, milk products, food coloring, nuts, and flour. Be aware of student allergies to

latex gloves, balloons, chalk, rubber tubing, bees, and other stinging insects, pollen, feathers, chemicals, plants, or animals. Before any activity involving possible allergens, review the guidance in the CDE Science Safety Handbook. Require students to complete the appropriate form listed in the CDE Science Safety Handbook. Maintain a list of emergency medications and procedures to use if a student is exposed. Warning: Keep food outside the laboratory.

Green Ninja Middle School Science Grade 8

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.

- Materials support scheduling considerations and include guidance and recommendations on required time for lessons and activities. Suggested sequences of learning activities are noted as a clock in each of the lessons. Depending on student's progress, the sessions may be shorter or longer. Extension activities allow teachers to extend time for local needs in scheduling.
    - For example, in Lesson 2.16 Cell City, there is a time estimate next to the clock icon for 35 minutes, suggesting the amount of time needed to complete the activity.
    - For example, in Lesson 2.15, Cells Have Parts, there is a total time of about 45 minutes next to the clock icon at the end of the lesson plan indicating the time required for all activities in the lesson to be complete.

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

- Materials guide strategic implementation without disrupting the sequence of content that must be taught in a specific order following a developmental progression. Each Unit has a Getting Started tab that provides a Unit Roadmap, a conceptual drawing that includes all the elements that will be covered within the unit. Lessons are organized into units by topic, which are broken into chapters that guide students to solve a challenge using scientific methods and end in a culminating experience. The lessons within the unit sequence the content in a developmentally appropriate way to accomplish the unit tasks.
- In the 8th Grade Unit Transportation, the Roadmap depicts a student presenting a proposal for sustainable transportation solutions to community leaders, the unit challenge. As students

proceed through the unit, they learn about the relationships between kinetic energy, mass, and speed—represented by the pickup trucks in the image. The image of the roller coaster represents Newton's Laws of Motion and how they operate within systems. The bicycle in the image represents the all-time most efficient way to move around. Students will be asked to refer to this roadmap throughout the unit as they investigate physics core ideas and utilize them to develop sustainable transportation proposals.

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

- The grade 8 materials include 137 lessons at approximately 45 minutes in length, which are designed to be completed in a school year. Materials provide strategic Guidance for modification to the lesson sequence. For example, the material states: "The first chapter in each unit establishes the unit challenge and the last chapter assesses it, but each interior chapter of the unit stands alone as a cohesive piece that teachers can easily move around to meet their needs."
- The materials include additional extensions and resources, which can supplement the year's long content if the pace of a class has moved faster than outlined in the standard materials. For example, in all chapters of each lesson in the 6-8 grade band, the Chapter Review Lesson has an extension activity that has students explore a career website and answer the following questions: "What are some examples of green careers that are highlighted on the site? How do these careers contribute to a sustainable future? What education and training are typically required for green careers? How do the salaries and job prospects compare to traditional careers in similar fields? Are there any success stories or case studies of individuals who have transitioned to green careers from other fields? What steps can students take to prepare themselves for a career in the green industry?"

Green Ninja Middle School Science Grade 8

Indicator 9.1

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

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

Not Scored

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

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

Evidence includes but is not limited to:

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

- Materials include an appropriate amount of white space and a design that supports and does not distract from student learning. Student documents have clear titles and headings with consistent formatting and sufficient white space to support student attention. Some documents include the strategic use of color, such as the Reading Companions.
    - For example, the Google Slide deck that accompanies each unit uses appropriate-sized font and white space. The slides employ color coding and symbols to indicate activities, discussions, and important vocabulary words consistently across units.
- Materials include a clear heading/title for each page, while subheadings have a clear hierarchy.
    - For example, The Unit 1 Overview page begins with a heading of Introduction followed by bulleted (with specific icons) relevant subheadings of Challenge, Science Methods, and Culminating Experience, following a logical progression.

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

- Materials consistently embed age-appropriate pictures and graphics that support student learning and engagement without being visually distracting. The activities within each unit include student handouts and presentation slides that have clear, visually engaging images that support student learning. These images can be found in the slide deck, reading companions, and unit roadmaps.
    - For example, slide 7 of the Unit 1, Transportation, Google Slide Deck shows three pie charts and asks students to compare the information represented in each chart. This is

an age-appropriate skill for students to complete, as they should be aware of different representations of data and how to interpret it.
    - In Unit 1, Lesson 1.6, the phenomenon shows an image of two trucks with different masses striking a telephone pole.
- Each slide deck has color-coded slides to represent “Discussion Slides.” These are orange in order to showcase the skill for both the teacher and student without distraction.

Materials include digital components that are free of technical errors.

- Materials are free of technical errors, including spelling, grammar, punctuation, and incorrect content and information. Errors are not found in the teacher lesson resources or the slide deck presentation.
    - For example, Lesson 3.2, Hurricane Harvey Part I, has zero technical errors as it is free of spelling, grammar, and punctuation errors.
- Materials are free of inaccurate content materials or information. Each worksheet (embedded or linked) does not contain inaccurate content information.
    - For example, the Pre-Assessment for Unit 2, Monarchs, has clear and accurate information included in the Answer Key, as well as additional background information explaining the content in the Teacher Background Section.

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Indicator 9.2

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

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

Not Scored

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

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

Evidence includes but is not limited to:

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

- Materials integrate digital technology and tools that support student learning and engagement. The PocketLab activities are strategically integrated to provide students with real-time data for lab activities.
    - For example, in Unit 3, students use PocketLab to participate in demonstrations of different densities of water due to temperature and salinity.
    - Videos are strategically integrated to provide students with engaging experiences. In Unit 4, students watch the “Anthropology Apology” video and then participate in discussions about waste.
- Materials provide digital technology and tools enhance student learning through such features as simulations.
    - For example, in Lesson 4.26, Carbon in the Air, students complete a PocketLab simulation to “investigate if the bluebonnet flower could grow and live in a space station as they learn about carbon and concentrates of carbon in the United States and in the world.”
- Materials provide teacher guidance for using simulations, interactives, and related activities to support student learning. Teacher guidance includes suggestions for time and pacing, as well as ways to assist students with making observations, asking questions, collecting data, and

participating in discussions. The digital technology provided can be found in the Teacher's Guide and/or digital presentation (Google Slides) materials.

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

- Materials integrate digital technology in ways that support student engagement with the science and engineering practices, recurring themes and concepts, and grade-level content.
    - For example, materials provide opportunities for students to obtain, evaluate, and communicate information using digital tools. These opportunities can be found in the student digital materials (PhET simulations and PocketLab activities) and Teacher's Guide and/or digital presentation (Google Slides) materials.
    - For example, in Lesson 4.8, From Sound to Light, “students will explore the Spectrum Widget website which shows the spectrum of a star like our Sun. Students' goal is to see what happens to it as it moves towards or away from Earth at different speeds. The Spectrum Widget worksheet Lesson 4.8 guides students through the exploration,” emphasizing Systems as a recurring theme.
    - In Lesson 4.8, students will utilize an online simulation to model the effects on a star's visibility as it moves toward or away from Earth at various speeds (8.5D).
    - Videos are strategically integrated to provide students with engaging experiences. In Unit 4, students watch the “Anthropology Apology” video and then participate in discussions about waste.
- Pocket Lab activities are designed for students to experience real world applications of the content.
    - For example, in Lesson 4.26, Carbon in the Air, students complete a Pocket Lab simulation to “investigate if the bluebonnet flower could grow and live in a space station as they learn about carbon and concentrates of carbon in the United States and in the world.” This task is related to 8.6C, “analyze how differences in scale, proportion, or quantity affect a system's structure or performance.”
    - In Unit 3, students use PocketLab to participate in demonstrations of different densities of water due to temperature and salinity.

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

- Materials integrate digital technology to support student-to-student collaboration.
    - For example, in Lesson 4.26, Carbon in the Air, students work together to complete a PocketLab simulation to “investigate if the bluebonnet flower could grow and live in a space station as they learn about carbon and concentrates of carbon in the United States and in the world” including a discussion of their findings.
    - In Lesson 4.8, From Sound to Light, students are guided through the exploration, then they “explain our original phenomenon” through class discussion.
    - In Unit 3, students collaborate with the teacher to use PocketLab to participate in demonstrations of different densities of water due to temperature and salinity.

Green Ninja Middle School Science Grade 8

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

- Materials utilize digital resources often in Google-based formats, i.e., Google Docs and Google Slides. These formats are commonly implemented in a variety of learning management systems that are found in the classrooms.
- Materials often include files and instructions in PDF format, which enables the teacher to provide student access through a variety of learning management systems. In addition, it allows simplistic viewing on mobile devices when computers are not available.
- Materials are accessible and compatible with multiple operating systems and devices. The Unit Google Slide Decks are accessible and compatible with Chromebooks, iPads, PCs, and Apple computers, and or/smartphones, as well as editable on each of these platforms. For example, Unit 1, Minerals, Slide Deck can be edited and downloaded from the Unit Overview page.

Green Ninja Middle School Science Grade 8

Indicator 9.3

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

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

Not Scored

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

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

Evidence includes but is not limited to:

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

- Digital technology and online components are developmentally appropriate for the grade level and align with the scope and approach to science knowledge and skills progression.
    - For example, the PocketLab and PhET Simulations are used to enhance the teaching of the TEKS aligned content. Each is used when a specific TEKS is being taught. Throughout the grade levels these digital materials can be found In each lesson/unit in the Teacher's Guide.
    - The materials provide a rationale in the course overview for their approach to technology and how it enhances student learning.
    - The materials provide related TEKS and ELPS for online and digital components within the lessons. Hyperlinks are available where appropriate to facilitate planning and ease of use.
- Materials provide a rationale for the use of the digital and online components in the Grade 8 Course Overview, Technology and Teaching Section. It states, "Students use a variety of technologies in their learning in Grade 8. In Unit 1, students consider various technologies that are changing the way people and goods are being moved. They carry out research on the type of technology they will propose as a sustainable form of transport. In Unit 2, students observe images of cells viewed under a microscope. They learn how monarch populations have been tracked over many years, using simple observations but also using more complex technologies to record patterns. In Unit 3, students view weather reporting in action. They update and

analyze weather data for three adopted cities using modern websites that display real-time weather data from around the world. In Unit 4, students compare different telescopes, view images produced by these telescopes, and explore and analyze satellite information as a way to understand Earth's surface. They use a PhET simulation to find out more about waves. A PocketLab device provides data about carbon dioxide inside and outside the classroom. The culminating project asks the students to prepare a video combining their knowledge gained through the unit."

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

- Materials provide clear instructions and tutorials on how to use the embedded technology.
    - For example, the 8th Grade Course Overview, Technology and Teaching Section, gives teacher guidance on how to implement PocketLab Activities, including a video tutorial as well as aPDF of both student instructions and teacher instructions.
- Materials include professional development videos and training for teachers to continue to develop their skills and knowledge in using the embedded technology to support and enhance student learning. Short "Crash Courses" are available, as well as (Zoom) Green Ninja Office Hours where teachers can ask questions and get guidance on embedding technology. All Day Professional Development Opportunities are also available in addition to the Course PockeLab Page that includes video tutorials.

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

- Materials are available to parents and caregivers to support student engagement with digital technology and online components.
    - For example, all of the online simulations are accessible at home or any other location with internet access.
    - The majority of the worksheets and activities are included in PDF format to easily facilitate learning outside of the classroom.
- In the 8th Grade Course Overview, materials provide a PDF letter that teachers can share with families outlining the program and how caregivers can support their students' learning. It encourages families and caregivers to encourage curiosity in their students, get involved with the school and reinforce learning. This can be easily shared through any school's Learning Management System.
- Simulations, Green Ninja Show Videos, and Green Ninja Games like Carbon Command and Carbon Runner, are available on Green Ninja's Website without a required log-in, so they are easily accessible to families and caregivers to help support student engagement.