

A Correlation of
Elevate Science Modules
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To the
New Jersey Science Module Curriculum
Grade 7

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Introduction

This document demonstrates how ***Elevate Science Modules* ©2019** meets the New Jersey Science Model Curriculum. Correlation page references are to the Student and Teacher’s Editions and cited at the page level. Pearson is proud to introduce ***Elevate Science Modules*** for Middle Grades – where exploration is the heart of science! Designed to address the rigors of new science standards, students will experience science up close and personal, using real-world, relevant phenomena to solve project-based problems. Our newest program prepares students for the challenges of tomorrow, building strong reasoning skills and critical thinking strategies as they engage in explorations, formulate claims, and gather and analyze data that promote evidence-based arguments. The blended print and digital curriculum covers all Next Generation Science Standards at every grade level.

Elevate Science helps teachers transform learning, promote innovation, and manage their classroom.

Transform science classrooms by immersing students in active, three-dimensional learning.

Elevate Science engages students with real-world tasks, open-ended Quests, uDemonstrate performance-based labs, and in the engineering/design process with uEngineer It! investigations.

- A new 3-D learning model enhances best practices.
- Engineering-focused features infuse STEM learning.
- Phenomena-based activities put students at the heart of a Quest for knowledge.

Innovate learning by focusing on 21st century skills.

Students are encouraged to think, collaborate, and innovate! With ***Elevate Science***, students explore STEM careers, experience engineering activities, and discover our scientific and technological world. The content, strategies, and resources of *Elevate Science* equip the science classroom for scientific inquiry and science and engineering practices.

- Problem-based learning Quests put students on a journey of discovery.
- STEM connections help integrate curriculum.
- Coding and innovation engage students and build 21st century skills.

Manage the classroom with confidence.

Teachers will lead their class in asking questions and engaging in argumentation. Evidence-based assessments provide new options for monitoring student understanding.

- Professional development offers practical point-of-use support.
- Embedded standards in the program allow for easy integration.
- ELL and differentiated instruction strategies help instructors reach every learner.
- Interdisciplinary connections relate science to other subjects.

Designed for today's classroom, preparing students for tomorrow's world. ***Elevate Science*** promises to:

- Elevate thinking.
- Elevate learning.
- Elevate teaching.

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Unit 1: Structure and Properties of Matter	
Unit Summary	
<p><i>How is it that everything is made of star dust?</i> Students build understandings of what occurs at the atomic and molecular scale. Students apply their understanding that pure substances have characteristic properties and are made from a single type of atom or molecule. They also provide a molecular level accounts to explain states of matter and changes between states. The crosscutting concepts of <i>cause and effect, scale, proportion and quantity, structure and function, interdependence of science, engineering, and technology, and the influence of science, engineering and technology on society and the natural world</i> provide a framework for understanding the disciplinary core ideas. Students demonstrate grade appropriate proficiency in <i>developing and using models, and obtaining, evaluating, and communicating information</i>. Students are also expected to use the scientific and engineering practices to demonstrate understanding of the core ideas.</p>	<p>This unit is addressed in the following Module (s), Topic(s), and Lessons in Elevate Science. Grade 7:</p> <p>Module: Structure and Properties of Matter Topic 1: Introduction to Matter Lesson 1: Describing and Classifying Matter Case Study: An Epic Disaster</p> <p>Module: Atoms and Chemical Reactions Topic 1: Atoms and the Periodic Table Lesson 1: Atomic Theory Case Study: Unlocking the Power of the Atom Lesson 2: The Periodic Table Lesson 3: Bonding and the Periodic Table Lesson 4: Types of Bonds Lesson 5: Acids and Bases</p> <p>Topic 2: Chemical Reactions Lesson 1: Mixtures and Solutions Lesson 2: Chemical Change</p>

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Student Learning Objectives	
<p>Develop models to describe the atomic composition of simple molecules and extended structures. (MS-PS1-1)</p>	<p>Module: Structure and Properties of Matter Topic 1: Introduction to Matter SE/TE: uConnect Lab: The Nuts and Bolts of Formulas, 0 Model It!: Molecules and Atoms, 9 uInvestigate Lab: Modeling Atoms and Molecules, 9 Lesson 1 Check, 12 Topic 1 Review and Assess, 34-35 Evidence-Based Assessment, 36-37</p> <p>Realize* Digital Resources: Introduction to Matter>Topic Launch>uConnect Lab: The Nuts and Bolts of Formulas; Lesson 1, Describing and Classifying Matter>uInvestigate Lab: Modeling Atoms and Molecules; Interactivity: Molecules and Extended Structures</p> <p>Module: Atoms and Chemical Reactions Topic 1: Atoms and the Periodic Table SE/TE: uConnect Lab: Modeling Matter, 0 Quest Kickoff: How can you use chemistry to solve a culinary mystery?, 2-3 Thomson’s Model, 7 Rutherford’s Theory, 9 Model It!: Models of an Atom, 9 uInvestigate Lab: How far away is the electron?, 10 Interactivity: Models of Atoms, 12 Lesson 1 Check, 13 Case Study: Unlocking the Power of the Atom, 14-15</p>

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(Continued)	<p>(Continued)</p> <p>Realize* Digital Resources: Atoms and the Periodic Table>Topic Launch>uConnect Lab: Modeling Matter; Quest Kickoff>Video>Dessert Disaster; Lesson 1, Atomic Theory>uInvestigate Lab: How Far Away Is the Electron?; Interactivity: Models of Atoms; Lesson 2, The Periodic Table>uInvestigate Lab: Classifying Elements; Interactivity: Groups of Elements; Interactivity: Examining Physical Properties of Powders; Lesson 3, Bonding and the Periodic Table>Video>Modeling an Atom; Lesson 4, Types of Bonds>Inquiry Warm-Up Lab: How Do Ions Form?; Interactivity: Build an Ionic Compound; Interactivity: Ionic or Covalent Bonding; uInvestigate Lab: Molecular Compounds; Lesson 5, Acids and Bases>Inquiry Warm-Up Lab: What Cabbage Juice Can Tell You; uInvestigate Lab: Properties of Acids and Bases; Interactivity: Properties and Uses of Acids and Bases; Quest Check-In Lab: Solving the Mystery; Atoms and the Periodic Table>Topic Close>Quest Findings>Complete the Quest!>Interactivity: Reflect on Your Investigation; uDemonstrate Lab: Shedding Light on Ions</p>

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<p>Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred. (MS-PS1-2)</p>	<p>Module: Structure and Properties of Matter Topic 1: Introduction to Matter SE/TE: Quest Kickoff: How can you use Science to make special effects? 2-3 Physical and Chemical Properties, 6-7 Compound From Corn, 10 Lesson 1 Check, 11 Quest Check-In, 11 Case Study: An Epic Disaster, 22-23 Chemical Changes in Matter, 27-29 uInvestigate Lab: Physical and Chemical Changes, 29 Lesson 3 Check, 32 Quest Check-In Lab: Cinematic Science, 32 Topic 1 Review and Assess, 34-35 uDemonstrate Lab: Help Out the Wildlife, 38-39</p> <p>Realize* Digital Resources: Introduction to Matter>Topic Launch>Quest Kickoff>Video>Lights! Camera! Action!; Lesson 2, Measuring Matter>Interactivity: Calculating Density; uInvestigate Lab: Observing Physical Properties; Interactivity: Weight on the Moon; Lesson 3, Changes in Matter>Inquiry Warm-Up Lab: Is a New Substance Formed?; Virtual Lab: What the Matter with My Chocolate?; uInvestigate Lab: Physical and Chemical Changes; Interactivity: Properties of Matter; Quest Check-In Lab: Cinematic Science; Introduction to Matter>Topic Close>Quest Findings>Complete the Quest!>Interactivity: Reflect on Your Movie Screen; uDemonstrate Lab: Help Out the Wildlife</p>

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(Continued)	(Continued) Module: Atoms and Chemical Reactions Topic 2: Chemical Reactions SE/TE: uConnect Lab: What Happens When Chemicals React?, 64 The Essential Question: How can you determine when a chemical reaction has occurred?, 65 Interactivity: Mixing Substances, 69 Lesson 1 Check, 76 Connect It!, 78 Inquiry Warm-Up Lab: Presto Change-O!, 79 Model It!: Wood Work, 80 Reading Check, 81 uInvestigate Lab: Changes in a Burning Candle, 82 Chemistry in the Pizza Kitchen, 82-83 Interactivity: Evidence of Chemical Reactions, 83 Interactivity: Analyze Endothermic and Exothermic Graphs, 85 Lesson 2 Check, 88 It's All Connected, Science/Art: The Art of Chemical Change, 89 Topic 2 Review and Assess, 108-109 Evidence-Based Assessment, 110-111 uDemonstrate Lab: Evidence of Chemical Change, 112-115

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(Continued)	(Continued) Realize* Digital Resources: Chemical Reactions> Lesson 1, Mixtures and Solutions>Interactivity: Mixing Substances; Interactivity: Separating a Mixture; ulnvestigate Lab: Particles in Liquids; Interactivity: Inside a Water Treatment Plant; Lesson 2, Chemical Change>Inquiry Warm-Up Lab: Presto Change-O!; ulnvestigate Lab: Changes in a Burning Candle; Interactivity: Evidence of Chemical Reactions; Virtual Lab: Chemistry of Glow Sticks; Interactivity: Analyze Endothermic and Exothermic Graphs; Chemical Reactions>Topic Close>uDemonstrate Lab: Evidence of Chemical Change
Unit 2: Interactions of Matter	
Unit Summary	
<p><i>How can we trace synthetic materials back to natural ingredients?</i> Students build understandings of what occurs at the atomic and molecular scale. Students apply their understanding that pure substances have characteristic properties and are made from a single type of atom or molecule. They also provide a molecular level accounts to explain states of matter and changes between states. The crosscutting concepts of <i>cause and effect, scale, proportion and quantity, structure and function, interdependence of science, engineering, and technology, and the influence of science, engineering and technology on society and the natural world</i> provide a framework for understanding the disciplinary core ideas. Students demonstrate grade appropriate proficiency in <i>developing and using models, and obtaining, evaluating, and communicating information</i>. Students are also expected to use the scientific and engineering practices to demonstrate understanding of the core ideas.</p>	<p>This unit is addressed in the following Module (s), Topic(s), and Lessons in Elevate Science. Grade 7:</p> <p>Module: Atoms and Chemical Reactions Topic 2: Chemical Reactions Lesson 4: Producing Useful Materials Case Study: Is Plastic Really So Fantastic?</p> <p>Module: Structure and Properties of Matter Topic 2: Solids, Liquids, and Gases Lesson 1: States of Matter Lesson 2: Changes of State Lesson 3: Gas Behavior Case Study: Rising to the Occasion</p>

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Student Learning Objectives	
<p>Gather and make sense of information to describe that synthetic materials come from natural resources and impact society. (MS-PS1-3)</p>	<p>Module: Atoms and Chemical Reactions Topic 2: Chemical Reactions SE/TE: Connect It!, 98 Synthetic Materials, 99-102 Impact of Synthetic Materials, 103-104 Lesson 3 Check, 105 Case Study: Is Plastic Really So Fantastic?, 106-107 Topic 2 Review and Assess, 108-109</p> <p>Realize* Digital Resources: Chemical Reactions> Lesson 4, Producing Useful Materials>Interactivity: Describe the Impact of Synthetics; Video>Producing Useful Materials; uInvestigate Lab: Making Plastic from Starch; Interactivity: The Impact of Synthetics</p>
<p>Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed. (MS-PS1-4)</p>	<p>Module: Structure and Properties of Matter Topic 2: Solids, Liquids, and Gases SE/TE: uConnect Lab: Solid, Liquid, or Gas, 42 Quest Kickoff: How can you use solids, liquids, and gases to lift a car?, 44-45 uInvestigate Lab: Properties of Matter, 47 Model It!: Crystalline and Amorphous Salts, 50 Interactivity: Properties of Solids, Liquids, and Gases, 53 Lesson 1 Check, 54 Quest Check-In, 54 uInvestigate Lab: Mirror, Mirror, 62 Interactivity: Thermal Energy and Changes of State, 63 Lesson 2 Check, 64</p>

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(Continued)	<p>(Continued)</p> <p>Quest Check-In, 64</p> <p>uInvestigate Lab: Testing Charles’s and Boyle’s Laws, 69</p> <p>Model It!: Developing Models, 71</p> <p>Lesson 3 Check, 75</p> <p>Quest Check-In Lab: Phases of Matter, 75</p> <p>Case Study: Rising to the Occasion: Charles’s Law in the Oven, 76-77</p> <p>Topic 2 Review and Assess, 78-79</p> <p>Evidence-Based Assessment, 80-81</p> <p>Quest Findings: Complete the Quest, 81</p> <p>uDemonstrate Lab: Melting Ice, 82-85</p> <p>Realize* Digital Resources: Solids, Liquids, and Gases>Topic Launch>Quest Kickoff>Video>Getting a Lift; Lesson 1, States of Matter>uInvestigate Lab: Properties of Matter; Interactivity: Properties of Solids, Liquids, and Gases; Quest Check-In>Interactivity: Design Your Lift; Lesson 2, Changes of State>Interactivity: Particle Motion and States of Matter; Interactivity: States of Matter; uInvestigate Lab: Mirror, Mirror; Interactivity: Thermal Energy and Changes of State; Lesson 3, Gas Behavior>uInvestigate Lab: Testing Charles’s and Boyle’s Laws; Interactivity: A Hot-Air Balloon Ride; Quest Check-In Lab: Phases of Matter; Solids, Liquids, and Gases>Topic Close>Quest Findings>Complete the Quest!,>Interactivity: Reflect on Your Lift>uDemonstrate Lab: Melting Ice</p>

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Unit 3: Chemical Reactions	
Unit Summary	
<p><i>How do substances combine or change (react) to make new substances?</i></p> <p>Students provide molecular-level accounts of states of matters and changes between states, of how chemical reactions involve regrouping of atoms to form new substances, and of how atoms rearrange during chemical reactions. Students also apply their understanding of optimization design and process in engineering to chemical reaction systems. The crosscutting concept of <i>energy and matter</i> provides a framework for understanding the disciplinary core ideas. Students are expected to demonstrate proficiency in <i>developing and using models, analyzing and interpreting data, designing solutions, and obtaining, evaluating, and communicating information</i>. Students are also expected to use these science and engineering practices to demonstrate understanding of the disciplinary core ideas.</p>	<p>This unit is addressed in the following Module (s), Topic(s), and Lessons in Elevate Science. Grade 7:</p> <p>Module: Atoms and Chemical Reactions Topic 2: Chemical Reactions Quest Kickoff: How can you design and build hot packs and cold packs? Lesson 3: Modeling Chemical Reactions</p>

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Student Learning Objectives	
<p>Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved. (MS-PS1-5)</p>	<p>Module: Atoms and Chemical Reactions Topic 2: Chemical Reactions SE/TE: Model It!: Formation of Ammonia, 93 ulnvestigate Lab: Is Matter Covered?, 93 Interactivity: Model a Chemical Reaction, 93 Mass Conserved, 94 Lesson 3 Check, 97 Topic 2 Review and Assess, 108-109 Evidence-Based Assessment, 110-111</p> <p>Realize* Digital Resources: Chemical Reactions> Lesson 3, Modeling Chemical Reactions>Interactivity: Model a Chemical Reaction; ulnvestigate Lab: Is Matter Conserved?; Interactivity: Reactants and Products; Interactivity: Model the Conservation of Mass</p>

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<p>Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.* (MS-PS1-6)</p>	<p>Module: Atoms and Chemical Reactions Topic 2: Chemical Reactions SE/TE: Quest Kickoff: How can you design and build hot packs and cold packs?, 66-67 Quest Check-In Lab: Energy Salts, 76 Quest Check-In, 88 Quest Check-In, 97 Quest Check-In Lab: Heat It Up or Ice It Down, 105 Quest Findings: Complete the Quest!, 111</p> <p>Realize* Digital Resources: Chemical Reactions>Topic Launch>Quest Kickoff>Video>Hot and Cool Chemistry; Document: Quest Checklist, Quest Rubric; Chemical Reactions>Topic Close>Quest Findings>Complete the Quest!>Interactivity: Reflect on Your Pack</p>
<p>Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success. (MS-ETS1-3)</p>	<p>Module: Atoms and Chemical Reactions Topic 2: Chemical Reactions SE/TE: Quest Kickoff: How can you design and build hot packs and cold packs?, 66-67 Quest Check-In Lab: Energy Salts, 76</p>

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Unit 4: Structure and Function	
Unit Summary	
<p><i>How do cells contribute to the functioning of an organism?</i> Students demonstrate age appropriate abilities to plan and carry out investigations to develop <i>evidence</i> that living organisms are made of cells. Students gather information to support explanations of the relationship between structure and function in cells. They are able to communicate an understanding of cell theory and understand that all organisms are made of cells. Students understand that special structures are responsible for particular functions in organisms. They then are able to use their understanding of cell theory to develop and use physical and conceptual models of cells. The crosscutting concepts of <i>scale, proportion, and quantity</i> and <i>structure and function</i> provide a framework for understanding the disciplinary core ideas. Students are expected to demonstrate proficiency in <i>planning and carrying out investigations, analyzing and interpreting data, and developing and using models</i>. Students are also expected to use these science and engineering practices to demonstrate understanding of the disciplinary core ideas.</p>	<p>This unit is addressed in the following Module (s), Topic(s), and Lessons in Elevate Science. Grade 7:</p> <p>Module: Systems, Reproduction and Growth Topic 1: Living Things in the Biosphere Lesson 1: Living Things Case Study: The Tough and Tiny Tardigrade Lesson 3: Viruses, Bacteria, Protists, and Fungi Lesson 4 Plants and Animals</p> <p>Topic 2: The Cell System Lesson 1: Structure and Function of Cells Lesson 2: Cell Structures Lesson 3: Obtaining and Removing Materials Lesson 4: Cell Division</p>

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Student Learning Objectives	
<p>Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. (MS-LS1-1)</p>	<p>Module: Systems, Reproduction and Growth Topic 1: Living Things in the Biosphere SE/TE: <ul style="list-style-type: none"> uInvestigate Lab: Cheek Cells, 7 Interactivity: What All Living Things Have in Common, 9 Lesson 1 Check, 13 Case Study: The Tough and Tiny Tardigrade, 14-15 Inquiry Warm-Up Lab: Viruses by the Numbers, 28 Interactivity: Life as a Single Cell, 31 uInvestigate Lab: Life in a Drop of Pond Water, 33 Lesson 3 Check, 36 Interactivity: So Many Cells, 39 uInvestigate Lab: Algae and Other Plants, 40 Interactivity: Different Cells, Different Jobs, 41 Plan It!, 43 Lesson 4 Check, 49 Topic 1 Review and Assess, 50-51 Evidence-Based Assessment, 52-53 uDemonstrate Lab: It's Alive, 54-57 Realize* Digital Resources: Living Things in the Biosphere>Lesson 1, Living Things>Interactivity: What All Living Things Have in Common; uInvestigate Lab: Cheek Cells; Lesson 3, Viruses, Bacteria, Protists, and Fungi>Interactivity: Life as a Single Cell; uInvestigate Lab: Life in a Drop of Pond Water; Interactivity: Discovering Rainforest Organisms; Lesson 4, Plants and Animals>uInvestigate Lab: Algae and Other Plants; Interactivity: Different Cells, Different Jobs; Living Things in the Biosphere>Topic Close>uDemonstrate Lab: It's Alive:</p>

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(Continued)	<p>(Continued)</p> <p>Topic 2: The Cell System</p> <p>SE/TE:</p> <p>Quest Kickoff: How can you design a model exhibit for a science museum?, 60-61</p> <p>Interactivity: Functions of All Cells, 63</p> <p>Plan It!: Plastic or Wood?, 67</p> <p>uInvestigate Lab: Observing Cells, 67</p> <p>Interactivity: A Strange Specimen, 69</p> <p>Quest Check-In Lab: Make a Model Cell, 81</p> <p>Quest Check-In Interactivity: Put Your Cells in Motion, 90</p> <p>Topic 2 Review and Assess, 102-103</p> <p>Evidence-Based Assessment, 104-105</p> <p>Quest Findings: Complete the Quest, 105</p> <p>uDemonstrate Lab: Design and Build a Microscope, 106-109</p> <p>Realize* Digital Resources: The Cell System>Topic Launch>Quest Kickoff>Video>Cells on Display; Lesson 1, The Structure and Function of Cells>Interactivity: Functions of All Cells; Virtual Lab: Living or Not? uInvestigate Lab: Observing Cells; Interactivity: A Strange Specimen; The Cell System>Topic Close>Quest Findings>Complete the Quest>Interactivity>Reflect on Your Museum Exhibit; uDemonstrate Lab: Design and Build a Microscope</p>

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<p>Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function. (MS-LS1-2)</p>	<p>Module: Systems, Reproduction and Growth Topic 1: Living Things in the Biosphere SE/TE: <ul style="list-style-type: none"> uInvestigate Lab: Algae and Other Plants, 40 Plan It!, 43 Lesson 4 Check, 49 Topic 1 Review and Assess, 50-51 Evidence-Based Assessment, 52-53 Realize* Digital Resources: Lesson 4, Plants and Animals>uInvestigate Lab: Algae and Other Plants; Interactivity: Different Cells, Different Jobs </p> <p>Topic 2: The Cell System SE/TE: <ul style="list-style-type: none"> Quest Kickoff: How can you design a model exhibit for a science museum?, 60-61 uInvestigate Lab: Observing Cells, 67 Interactivity: A Strange Specimen, 69 Lesson 1 Check, 70 Inquiry Warm-Up Lab: How Large Are Cells, 73 uInvestigate Lab: Comparing Cells, 75 Model It!: The Substance of Life, 77 Interactivity: Structure Function Junction, 77 Interactivity: Specialized Cells, 79 Lesson 2 Check, 81 Quest Check-In Lab: Make a Model Cell, 81 Interactivity: Cell Transport, 84 Model It!: Raisins No More, 86 uInvestigate Lab: Egg-speriment with a Cell, 87 </p>

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(Continued)	<p>(Continued)</p> <p>Interactivity: Entering and leaving a Cell, 88 Model It!, 89 Lesson 3 Check, 90 Quest Check-In Interactivity: Put Your Cells in Motion, 90 ulnvestigate Lab: Modeling Mitosis, 96 Interactivity: A Cell Divides, 97 Lesson 4 Check, 101 Topic 2 Review and Assess, 102-103 Evidence-Based Assessment, 104-105 Quest Findings: Complete the Quest, 105</p> <p>Realize* Digital Resources: The Cell System>Topic Launch>Quest Kickoff>Video>Cells on Display; Cells>Interactivity: Functions of All Cells; Virtual Lab: Living or Not? ulnvestigate Lab: Observing Cells; Interactivity: Through a Microscope; Interactivity: A Strange Specimen; Lesson 2, Cell Structures>ulnvestigate Lab: Comparing Cells; Interactivity: Build a Cell; Interactivity: Structure Function Junction; Interactivity: Specialized Cells; Quest Check-In Lab: Make a Cell Model; Lesson 3, Obtaining and Removing Materials>Interactivity: Cell Transport; ulnvestigate Lab: Egg-speriment with a Cell; Interactivity: Entering and Leaving the Cell; Lesson 4, Cell Division>ulnvestigate Lab: Modeling Mitosis; Interactivity: A Cell Divides; Interactivity: How Does a Broken Bone Heal?; The Cell System>Topic Close>Quest Findings>Complete the Quest>Interactivity>Reflect on Your Museum Exhibit</p>

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Unit 5: Body Systems	
Unit Summary	
<p><i>What are humans made of?</i> Students develop a basic understanding of the role of cells in body systems and how those systems work to support the life functions of the organism. Students will construct explanations for the interactions of systems in cells and organisms. Students understand that special structures are responsible for particular functions in organisms, and that for many organisms, the body is a system of multiple-interaction subsystems that form a hierarchy, from cells to the body. Students construct explanations for the interactions of systems in cells and organisms and for how organisms gather and use information from the environment. The crosscuttings concepts of <i>systems and system models</i> and <i>cause and effect</i> provide a framework for understanding the disciplinary core ideas. Students are expected to demonstrate proficiency in <i>engaging in argument from evidence</i> and <i>obtaining, evaluating, and communicating information</i>. Students use these science and engineering practices to demonstrate understanding of the disciplinary core ideas.</p>	<p>This unit is addressed in the following Module (s), Topic(s), and Lessons in Elevate Science. Grade 7:</p> <p>Module: Systems, Reproduction and Growth Topic 1: Living Things in the Biosphere Lesson 4: Plants and Animals</p> <p>Topic 2: The Cell System Lesson 2: Cell Structures</p> <p>Topic 3: Human Body Systems Lesson 1: Body Organization Lesson 2: Systems Interacting Case Study: Agents of Infection Lesson 3: Supplying Energy Lesson 4: Managing Materials Lesson 5: Controlling Processes</p>

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Student Learning Objectives	
<p>Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. (MS-LS1-3)</p>	<p>Module: Systems, Reproduction and Growth Topic 1: Living Things in the Biosphere SE/TE: Form and Function, 39 Characteristics of Plants, 40-43 Characteristics of Animals, 44-48 Lesson 4 Check, 49 Topic 1 Review and Assess, 50-51 Evidence-Based Assessment, 52-53</p> <p>Topic 2: The Cell System SE/TE: Quest Kickoff: How can you design a model exhibit for a science museum?, 60-61 Parts of a Cell, 73-78 Cells Working Together, 79-80 Lesson 2 Check, 81 Quest Check-In Lab: Make a Cell Model, 81 Quest Check-In Interactivity: Put Your Cells in Motion, 90 Topic 2 Review and Assess, 102-103 Quest Findings: Complete the Quest, 105</p> <p>Realize* Digital Resources: The Cell System>Topic Launch>Quest Kickoff>Video>Cells on Display; Lesson 2, Cell Structures>Inquiry Warm-Up Lab: How Large Are Cells; uInvestigate Lab: Comparing cells; Interactivity: Build a Cell; Interactivity: Structure Function Junction; Interactivity: Specialized Cells; Quest Check-In Lab: Make a Model Cell; The Cell System>Topic Close>Quest Findings>Complete the</p>

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(Continued)	<p>Quest!>Interactivity: Reflect on Your Museum Exhibit</p> <p>Topic 3: Human Body Systems SE/TE: uConnect Lab: How Is Your Body Organized, 110 Quest Kickoff: How do your body systems interact when you train for your favorite sport?, 112-113 Organization of the Body, 115 Inquiry Warm-Up Lab: System-actically Organized, 115 Levels of Organizations, 116-117 uInvestigate Lab: Observing Cells and Tissues, 117 Human Organ Systems, 118-121 Lesson 1 Check, 122 uEngineer It! Impact on Society, STEM, 123 Connect It!, 124 Systems Working Together, 125-132 uInvestigate Lab: Parts Working Together, 128 Interactivity: Communication and Homeostasis, 131 Lesson 2 Check, 133 Case Study: Agents of Infection, 134-135 Connect It!, 136 Food and Energy, 137-139 uInvestigate Lab: Measuring Calories, 138 The Digestive Process, 140-141 The Lower Digestive System, 142-145 Lesson 3 Check, 146 Connect It!, 148 Inquiry Warm-Up Lab: Your Heart, Your Breathing, 149 The Circulatory System, 149-153 Respiratory System, 154-155</p>

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<p>Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories. (MS-LS1-8)</p>	<p>Module: Systems, Reproduction and Growth Topic 3: Human Body Systems SE/TE: Quest Kickoff: How do your body systems interact when you train for your favorite sport?, 112-113 Quest Check-In Lab: Heat Beat, Heart Beat, 159 Connect It!, 160 Inquiry Warm-Up Lab: How Does Your Knee React?, 161 Nervous System, 161-168 uInvestigate Lab: What Are the Parts of the Nervous System?, 163 Model It!: Learn from Experience, 165 Lesson 5 Check, 169 Topic 3 Assess and Review, 170-171 Evidence-Based Assessment, 172-173 Quest Findings: Complete the Quest, 173 uDemonstrate Lab: Reaction Research, 174-177</p> <p>Realize* Digital Resources: Human Body Systems>Topic Launch>uConnect Lab: How Is Your Body Organized?; Quest Kickoff>Video>Peak Performance Plan; Lesson 5, Controlling Processes> Interactivity: Humans vs. Computers; Video: Controlling Processes; Interactivity: Flex Your Reflexes; Human Body Systems>Topic Close>Quest Findings>Complete the Quest!>Reflect on Peak Performance Plan; uDemonstrate Lab: Reaction Research</p>

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Unit 6: Inheritance and Variation of Traits	
Unit Summary	
<p><i>Why do kids look similar to their parents?</i> Students develop and use models to describe how gene mutations and sexual reproduction contribute to genetic variation. Students understand how genetic factors determine the growth of an individual organism. They also demonstrate understanding of the genetic implications of sexual and asexual reproduction. The crosscutting concepts of <i>cause and effect</i> and <i>structure and function</i> provide a framework for understanding how gene structure determines differences in the functioning of organisms. Students are expected to demonstrate proficiency in <i>developing and using models</i>. Students use these science and engineering practices to demonstrate understanding of the disciplinary core ideas.</p>	<p>This unit is addressed in the following Module (s), Topic(s), and Lessons in Elevate Science. Grade 7:</p> <p>Module: Diversity of Life Topic 1: Genes and Heredity Lesson 1: Patterns of Inheritance Case Study: Cephalopods Special Edition Lesson 2: Chromosomes and Inheritance Lesson 3: Genetic Coding and Protein Synthesis Lesson 4: Trait Variations</p>

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Student Learning Objectives	
<p>Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism. (MS-LS3-1)</p>	<p>Module: Diversity of Life Topic 1: Genes and Heredity SE/TE: Quest Kickoff: How can you sell a new fruit?, 2-3 Case Study: Cephalopods Special Edition, 14-15 Design It!: Develop Models, 28 uInvestigate Lab: Modeling Protein Synthesis, 30 Model It!: Use Models, 32-33 Interactivity: making Proteins, 33 Lesson 3 Check, 34 uEngineer It! Impact on Society STEM: Reinventing DNA as Storage Data, 35 uInvestigate Lab: Observing Traits, 38 Model It!: Mutations and Protein Construction, 41 Nondisjunction, 44 Comparing Karyotypes, 45 Interactivity: Track Your Traits, 46 Lesson 4 Check, 47 Quest Check-In Lab: All in the Numbers, 47 Topic 1 Review and Assess, 58-59 Evidence-Based Assessment, 60-61 Quest Findings: Complete the Quest, 61</p>

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(Continued)	(Continued) Realize* Digital Resources: Genes and Heredity>topic Launch>Quest Kickoff>Video>Funky Fruit; Lesson 3, Genetic Coding and Protein Synthesis>Interactivity: The Role of DNA; uInvestigate Lab: Modeling Protein Synthesis; Interactivity: Making Proteins; Lesson 4: Trait Variations>uInvestigate Lab: Observing Traits; Interactivity: Quest Check-In Lab: All in the Numbers; Genes and Heredity>Topic Close>Quest Findings>Complete the Quest!>Interactivity: Reflect on Funky Fruit

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<p>Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation. (MS-LS3-2)</p>	<p>Module: Diversity of Life Topic 1: Genes and Heredity SE/TE: uConnect Lab: Making More, 0 Quest Kickoff: How can you sell a new fruit?, 2-3 Plan It!: Develop a Procedure, 6 Interactivity: Making Copies, 7 uInvestigate Lab: Observing Pistils and Stamens, 7 Making a Punnett Square, 10-11, Lesson 1 Check, 13 Case Study: Cephalopods Special Edition, 14-15 Connect It!, 16 uInvestigate Lab: Chromosomes and Inheritance, 17 Model It!: Develop Models, 20 Interactivity: Colorful Chromosomes, 22, Lesson 2 Check, 24 Quest Check-In Lab: All in the Numbers, 47 Topic 1 Review and Assess, 58-59 Quest Findings: Complete the Quest, 61 uDemonstrate Lab: Make the Right Call, 62-65</p> <p>Realize* Digital Resources: Genes and Heredity>Topic Launch>uConnect Lab: Making More; Quest Kickoff>Video>Funky Fruit; Lesson 1, Patterns of Inheritance>Inquiry Warm-Up Lab: Making More; Interactivity: Making Copies; Quest Check-In>Interactivity: An Apple Lesson; Lesson 2, Chromosomes and Inheritance>uInvestigate Lab: Chromosomes and Inheritance; Interactivity: Colorful Chromosomes; Lesson 4, Trait Variations>Interactivity: Sex-Linked Traits and Disorders; Interactivity: Track Your Traits; Genes and Heredity>Topic Close>Quest Findings>Complete the Quest!>Interactivity: Reflect on Funky Fruits; uDemonstrate Lab: Make the Right Call</p>

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Unit 7: Organization for Matter and Energy Flow in Organisms	
Unit Summary	
<p><i>How do some organisms turn electromagnetic radiation into matter and energy?</i></p> <p>Students provide a mechanistic account for how cells provide a structure for the plant process of photosynthesis in the movement of matter and energy needed for the cell. Students use conceptual and physical models to explain the transfer of energy and cycling of matter as they construct explanations for the role of photosynthesis in cycling matter in ecosystems. They construct scientific explanations for the cycling of matter in organisms and the interactions of organisms to obtain matter and energy from an ecosystem to survive and grow. They understand that sustaining life requires substantial energy and matter inputs, and that the structure and functions of organisms contribute to the capture, transformation, transport, release, and elimination of matter and energy. The crosscutting concepts of <i>matter and energy</i> and <i>structure and function</i> provide a framework for understanding of the cycling of matter and energy flow into and out of organisms. Students are also expected to demonstrate proficiency in <i>developing and using models</i>. Students use these science and engineering practices to demonstrate understanding of the disciplinary core ideas.</p>	<p>This unit is addressed in the following Module (s), Topic(s), and Lessons in Elevate Science. Grade 7:</p> <p>Module: Systems, Reproduction and Growth Topic 2: The Cell System Case Study: The Mighty Mole-Rat</p> <p>Module: Relationships Within Ecosystems Topic 1: Cell Processes Lesson 1: Photosynthesis Case Study: Florida’s Vital Seagrass in Peril Lesson 2: Cellular Respiration</p>

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Student Learning Objectives	
<p>Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms. (MS-LS1-6)</p>	<p>Module: Relationships Within Ecosystems Topic 1: Cell Processes SE/TE: Quest Kickoff: What is causing the organisms in the greenhouse to fail?, 2-3 Connect It!, 4 Living Things and Energy, 5-7 Photosynthesis, 8-9 uInvestigate Lab: Energy from the Sun, 9 Expressing Photosynthesis, 10-11, Lesson 1 Check, 12 uEngineer It! Sustainable Design STEM: Engineering Artificial Photosynthesis, 13 Case Study: Florida’s Vital Seagrass in Peril, 14-15 Lesson 2 Check, 22 Quest Check-In Lab: Accounting for Atoms, 22 Topic 1 Review and Assess, 24-25 Evidence-Based Assessment, 26-27 Quest Findings: Complete the Quest, 27 uDemonstrate Lab: Cycling Energy and Matter, 28-31</p> <p>Realize* Digital Resources: Cell Processes>Topic Launch>Quest Kickoff>Video>Problem in the Greenhouse; Lesson 1, Photosynthesis>Interactivity: Making Food for Cells; uInvestigate Lab: Energy from the Sun; Interactivity: Flower Food; Lesson 2, Cellular Respiration>Inquiry Warm-Up Lab: Cellular Respiration; Interactivity: Making Energy for Cells; Interactivity: The Importance of Cells; Cell Processes>Topic Close>Quest Findings>Complete the Quest!>Interactivity>Reflect on Problem in the Greenhouse; uDemonstrate Lab: Cycling Energy and Matter</p>

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<p>Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism. (MS-LS1-7)</p>	<p>Module: Systems, Reproduction and Growth Topic 2: The Cell System SE/TE: Case Study: The Mighty Mole-Rat, 92-93</p> <p>Module: Relationships Within Ecosystems Topic 1: Cell Processes SE/TE: Quest Kickoff: What is causing the organisms in the greenhouse to fail?, 2-3 Model It!: Trace Energy to the Source, 7 uInvestigate Lab: Energy from the Sun, 9 Lesson 1 Check, 12 Inquiry Warm-Up Lab: Cellular Respiration, 17 uInvestigate Lab: Exhaling Carbon Dioxide, 18 Model It!: SEP Develop Models, 19, Lesson 2 Check, 22 Quest Check-In Lab: Accounting for Atoms, 22 Topic 1 Review and Assess, 24-25 Evidence-Based Assessment, 26-27 Quest Findings: Complete the Quest, 27 uDemonstrate Lab: Cycling Energy and Matter, 28-31</p> <p>Realize* Digital Resources: Cell Processes>Topic Launch>Quest Kickoff>Video>Problem in the Greenhouse; Lesson 1, Photosynthesis> uInvestigate Lab: Energy from the Sun; Lesson 2, Cellular Respiration>Inquiry Warm-Up Lab: Cellular Respiration; uInvestigate Lab: Exhaling Carbon Dioxide; Quest Check-In Lab: Accounting for Atoms; Cell Processes>Topic Close>Quest Findings>Complete the Quest!>Interactivity>Reflect on Problem in the Greenhouse; uDemonstrate Lab: Cycling Energy and Matter</p>

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Unit 8: Earth Systems	
Unit Summary	
<p><i>If no one was there, how do we know the Earth's history? What provides the forces that drive Earth's systems?</i></p> <p>Students examine geoscience data in order to understand processes and events in Earth's history. Important crosscutting concepts in this unit are <i>scale, proportion, and quantity, stability and change, and patterns</i> in relation to the different ways geologic processes operate over geologic time. An important aspect of the history of Earth is that geologic events and conditions have affected the evolution of life, but different life forms have also played important roles in altering Earth's systems. Students understand how Earth's geosystems operate by modeling the flow of energy and cycling of matter within and among different systems. Students investigate the controlling properties of important materials and construct explanations based on the analysis of real geoscience data. Students are expected to demonstrate proficiency in <i>analyzing and interpreting data and constructing explanations</i>. They are also expected to use these practices to demonstrate understanding of the core ideas.</p>	<p>This unit is addressed in the following Module (s), Topic(s), and Lessons in Elevate Science. Grade 7:</p> <p>Module: Earth's Systems Topic 1: Introduction to Earth's Systems Lesson 1: Matter and Energy in Earth's Systems Lesson 2: Surface Features in the Geosphere</p> <p>Module: Earth's Systems Topic 2: Minerals and Rocks in the Geosphere Lesson 1: Earth's Interior Lesson 2: Minerals Lesson 3: Rocks Lesson 4: Cycling of Rocks Case Study: Mighty Mauna Loa</p> <p>Module: Earth's Systems Topic 3: Plate Tectonics Lesson 1: Evidence of Plate Motions Lesson 2: Plate Tectonics and Earth's Surface Case Study: Australia on the Move Lesson 3: Earthquakes and Tsunami Hazards Lesson 4: Volcanoes and Earth's Surface</p>

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(Continued)	(Continued) Module: Earth's Systems Topic 4: History of Earth Lesson 1: Determining Ages of Rocks Case Study: Rewriting the History of Your Food Lesson 2: Geologic Time Scale Lesson 3: Major Events in Earth's History Module: Changing Earth and Human Activity Topic 1: Earth's Surface Systems Lesson 1: Weathering and Soil Lesson 2: Erosion and Deposition Lesson 3: Water Erosion Case Study: Buyer Beware Lesson 4: Glacial and Wave Erosion
Student Learning Objectives	
Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history. (MS-ESS1-4)	Module: Earth's Systems Topic 4: History of Earth SE/TE: uConnect Lab: Dividing History, 150 The Essential Question, 151 Quest Kickoff: How do paleontologists know where to look for fossils?, 152-153 Connect It!, 154 Inquiry Warm-Up Lab: Rock Pancakes, 155 Describing the Ages of Rocks, 155 Determining Relative Ages of Rocks, 156-158 Model It!: Using Fossils to Match Rock Layers, 157 Interactivity: Know Your Index Fossils, 157

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<p>Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process. (MS-ESS2-1)</p>	<p>Module: Earth's Systems Topic 1: Introduction to Earth's Systems SE/TE: uConnect Lab: What Interactions Occur Within Earth's Systems?, 0 The Essential Question, 1 Quest Kickoff: How can you predict the effects of a forest fire?, 2-3 Connect It!, 4 Inquiry Warm-Up Lab: Interaction Actions, 5 uInvestigate Lab: Where Heat Flows, 7 Model It!: Sea Ice and Climate, 8 Interactivity: Thermal Energy and the Cycling of Matter, 9 Lesson 1 Check, 10 Connect It!, 12 uInvestigate Lab: Surface Features, 13 Model It!: Develop Models, 19 GIS Map, 21 Lesson 2 Check, 22 uEngineer It! Defining the Problem STEM: A Daring Bridge, 23 Topic 1 Review and Assess, 36-37 Quest Findings: Complete the Quest!, 39</p> <p>Realize* Digital Resources: Introduction to Earth's Systems>Topic Launch>uConnect Lab: What Interactions Occur Within Earth's Systems; Quest Kickoff>Video>Reflect on Forest Fires; Lesson 1, Matter and Energy in Earth's System>uInvestigate Lab: Where heat Flows; Interactivity: Thermal Energy and the Cycling of Matter; Quest Check-In>Interactivity: Fire and the Earth's Spheres; Lesson 2, Surface Features in the Geosphere>uInvestigate Lab: Surface Features; Interactivity: Constructive and Destructive Forces; Interactivity: Maps and</p>

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(Continued)	<p>(Continued)</p> <p>Models; Quest Check-In>Interactivity: Disrupting the Geosphere; Introduction to Earth’s Systems>Topic Close>Quest Findings>Complete the Quest!>Interactivity>Reflect on Forest Fires; uDemonstrate Lab: Modeling a Watershed</p> <p>Module: Earth’s Systems Topic 2: Minerals and Rocks in the Geosphere SE/TE: uConnect Lab: Build a Model of Earth, 44 The Essential Question, 45 Quest Kickoff: How can you depict Earth’s processes in a movie script?, 46-47 Connect It!, 48 Document: A Wrapped-Up Mystery, 49 Model It!: Develop a Model, 54-55 Interactivity: Hot on the Inside, 54 uInvestigate Lab: Heat and Motion in a Liquid, 56 Lesson 1 Check, 58 uEngineer It! Defining the Problem STEM: Examining Earth’s Interior from Space, 59 Interactivity: So Many Minerals, 62 uInvestigate Lab: Mineral Mash-Up, 64 Model It!: Diamond Formation, 66 uInvestigate Lab: Growing a Crystal Garden, 67 Lesson 2 Check, 68 Quest Check-In Lab: Make Your Own Stalactites and Stalagmites, 68 uInvestigate Lab: A Sequined Rock, 73 Sequencing Sedimentary Rock Formation, 74</p>

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<p>Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales (MS-ESS2-2)</p>	<p>Module: Earth's Systems Topic 3: Plate Tectonics SE/TE: uConnect Lab: How Are Earth's Continents Linked Together?, 94 The Essential Question, 95 Quest Kickoff: How safe is it to hike around Mount Rainier?, 96-97 Quest Check-In Lab: Patterns in the Cascade Range, 106 Connect It!, 108 Inquiry Warm-Up Lab: Stressing Out, 109 The Theory of Plate Tectonics, 109-112 Model It!: Ring of Fire, 112 Plate Boundaries, 113-116 uInvestigate Lab: Plate Interactions, 115 Lesson 2 Check, 117 Case Study: Australia on the Move, 118-119 Stress and Earth's Crust, 121-122 New Landforms from Plate Movements, 123-124 Earthquake Risks and Tsunamis, 128-129 Lesson 3 Check, 130 Connect It!, 132 Interactivity: Volcanoes Changing Earth, 133 Volcanoes, 133 Volcanoes and Plate Boundaries, 134-135 uInvestigate Lab: Moving Volcanoes, 134 Model It!: Hot Spot Modeling, 135 Volcano Landforms, 136-137 Lesson 4 Check, 141 Quest Check-In Lab: Signs of Eruption, 141 Topic 3 Review and Assess, 142-143 Evidence-Based Assessment, 144-145</p>

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<p>Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions. (MS-ESS2-3)</p>	<p>Module: Earth's Systems Topic 3: Plate Tectonics SE/TE: Quest Kickoff: How safe is it to hike around Mount Rainier?, 96-97 Connect It!, 98 Hypothesis of Continental Drift, 99-101 ulInvestigate Lab: Piecing Together a Supercontinent, 101 Mid-Ocean Ridges, 102-103 Interactivity: Land and Sea-Floor Patterns, 102 Ocean Trenches, 104-105 Model It!: Predict North America's Movement, 105 Interactivity: Slow and Steady, 105 Lesson 1 Check, 106 Quest Check-In Lab: Patterns in the Cascade Range, 106 It's All Connected, Science/Social Studies: The Slow Acceptance of Continental Drift, 107 Topic 3 Review and Assess, 142-143</p> <p>Realize* Digital Resources: : Plate Tectonics>Topic Launch> Quest Kickoff>Video>To Hike or Not to Hike; Lesson 1, Evidence of Plate Motions>Interactivity: Puzzling Pieces; ulInvestigate Lab: Piecing Together a Supercontinent; Interactivity: Land and Sea-Floor Patterns; Video>Ocean Ridges and Trenches; Interactivity: Slow and Steady; Quest Check-In Lab: Patterns in the Cascade Range; Plate Tectonics>Topic Close>Quest Findings>Complete the Quest!>Interactivity: Reflect on Mount Rainer's Safety</p>