

A Correlation of
Elevate Science
Grade 4, ©2019



To the
New Jersey Science Model Curriculum
Grade 4

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Introduction

The following document demonstrates how the ***Elevate Science, ©2019*** program supports the New Jersey Model Curriculum for Science. For each standard, correlation references are to the Student Edition and Teacher Edition where applicable.

Elevate Science is a comprehensive K-5 science program that focuses on active, student-centered learning. It builds students' critical thinking, questioning, and collaboration skills, and fuels interest in STEM and creative problem solving while supporting literacy development for elementary-age learners. Developed to support Next Generation Science Standards (NGSS), ***Elevate Science*** integrates three-dimensional learning of the Scientific and Engineering Practices, Crosscutting Concepts (CCC), and Disciplinary Core Ideas (DCIs).

The ***Elevate Science*** blended **print** and **digital** curriculum engages students in phenomena-based inquiry and hands-on investigations.

- Problem-based learning Quests put students on a journey of discovery
- Engineering-focused features infuse STEM learning
- Coding and innovation engage students and build 21st century skills

The Teacher's Edition of ***Elevate Science*** helps elementary educators teach science with confidence: Scaffolding, ELD, differentiated instruction, and an instructional organization based upon the 5E learning model, (Engage, Explore, Explain, Extend/Elaborate, Evaluate), provide all the support needed for successful teaching practices. Professional development offers point-of-use support. A full-view approach to inquiry and testing provides new options for a variety of hands-on labs and assessments for three-dimensional learning.

Elevate Science 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 argument. 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: Weathering and Erosion	
Unit Summary	
<p><i>What do the shapes of landforms and rock formations tell us about the past?</i></p> <p>In this unit of study, students develop understandings of the effects of weathering and the rate of erosion by water, ice, wind, or vegetation. The crosscutting concepts of patterns and cause and effect are called out as organizing concepts. Students demonstrate grade-appropriate proficiency in planning and carrying out investigations and constructing explanations. Students are also expected to use these practices to demonstrate understanding of the core ideas. This unit is based on 4-ESS2-1 and 4-ESS1-1.</p>	<p>This unit is addressed in the following Topic(s) and Lessons in Elevate Science, Grade 4:</p> <p>Topic 4: Earth’s Features Lesson 4: Weathering and Erosion</p> <p>Topic 6: The History of Planet Earth Lesson 1: Patterns in Fossils and Rock Formations Lesson 2: Evidence of Change from Fossils and Rock Formations</p>
Student Learning Objectives	
<p>Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. (4-ESS2-1)</p>	<p>SE/TE: Quest Kickoff: Does X Mark the Spot? That’s Up to You!, 152-153 uConnect Lab: How can rain affect land?, 154 uInvestigate Lab: How can a rock wear away?, 185</p> <p>SE/TE: uBe a Scientist: Weathering, 186 STEM Quest Check-In Lab: How does water affect landforms?, 192</p> <p>Realize™ Digital Resources: Earth’s Features>Topic Launch>Quest Kickoff>Video>Does X Mark the Spot? That’s Up to You!; Earth’s Features>Lesson 3, Rocks, Minerals, and Soil>Interactivity>Mineral Identification; Lesson 4, Weathering and Erosion>Video>Weathering and Erosion; Interactivity>Our Changing Landscape; Earth’s Features>Topic Close>Quest Findings>Interactivity>Does X Mark the Spot? That’s Up to You!</p>

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<p>Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. (4-ESS1-1)</p>	<p>SE/TE: uConnect Lab: Where are fossils found in rock layers?, 246 uInvestigate Lab: What patterns do fossils follow?, 249 Fossils, 250 Rock Formations, 251 uInvestigate Lab: How can rock layers show change?, 259 Visual Literacy Connection: How can layers of rock change?, 262-263 uBe a Scientist: Be a Rock Hound, 264 uDemonstrate Lab: How can you correlate rock layers?, 274-275</p> <p>Realize™ Digital Resources: The History of Planet Earth>Topic Launch>Quest Kickoff>Video>Dig for the Truth; The History of Planet Earth>Lesson 1, Patterns in Fossils and Rock Formations>Video> Patterns in Fossils and Rock Formations; Interactivity> Patterns in Fossils and Rock Formations; Lesson 2, Evidence of Change from Fossils and Rock Formations>Video> Evidence of Change from Fossils and Rock Formations; Virtual Lab>Layers of Time; Interactivity> Evidence of Change from Fossils and Rock Formations; The History of Planet Earth>Topic Close>Quest Findings>Interactivity>Dig for the Truth</p>

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Unit 2: Earth Processes	
Unit Summary	
<p><i>Is it possible to engineer ways to protect humans from natural Earth?</i></p> <p>In this unit of study, students apply their knowledge of natural Earth processes to generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. In order to describe patterns of Earth’s features, students analyze and interpret data from maps. The crosscutting concepts of <i>patterns</i>, <i>cause and effect</i>, and the influence of engineering, technology, and science on society and the natural world are called out as organizing concepts for these disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in planning and carrying out investigations, analyzing and interpreting data, and constructing explanations and designing solutions. Students are also expected to use these practices to demonstrate understanding of the core ideas.</p> <p>This unit is based on 4-ESS2-2, 4-ESS3-2, 3-5-ETS1-2, and 3-5-ETS1-3.</p>	<p>This unit is addressed in the following Topic(s) and Lessons in Elevate Science, Grade 4:</p> <p>Topic 4: Earth’s Features Lesson 1: Maps and Data Lesson 2: Patterns of Earth’s Features</p> <p>Topic 5: Earth’s Natural Hazards Lesson 1: Tectonic Hazards Lesson 3: Impacts of Natural Hazards</p>

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Student Learning Objectives	
<p>Analyze and interpret data from maps to describe patterns of Earth’s features. (4-ESS2-2)</p>	<p>SE/TE: Resource Maps, 162 Patterns of Mountains, 168 Pattern of Earthquakes and Volcanoes, 169 Visual Literacy Connection: How can a Physical Map help me locate different landforms?, 170 Lesson 2 Check, 172 Evidence-based Assessment, 198</p> <p>Realize™ Digital Resources: Earth’s Features>Topic Launch>Quest Kickoff>Video>Does X Mark the Spot? That’s Up to You!; Earth’s Features>Lesson 1, Maps and Data>Video>Maps and Data; Virtual Lab>Where Would You Build the Telescope?; Interactivity>The World of Maps; Lesson 2, Patterns of Earth’s Features>Video>Patterns of Earth’s Features; Interactivity>The Shape of the Land; : Earth’s Features>Topic Close>Quest Findings>Interactivity>Does X Mark the Spot? That’s Up to You!</p>

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<p>Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.* (4-ESS3-2)</p>	<p>SE/TE: uConnect Lab: How can you reduce the impact of rapidly sliding soil?, 206 uEngineer It!: Warning!, 216-217 uInvestigate Lab: Where should you build an earthquake-safe structure?, 227 Quest Check-In Lab: How can you reduce hazard damage?, 232-233 uDemonstrate Lab: How can homes be designed to be more earthquake resistant?, 240-241</p> <p>Realize™ Digital Resources: Earth’s Natural Hazards>Topic Launch>Quest Kickoff>Video>Protect the City! Hazard Incoming!; Earth’s Natural Hazards> Lesson 1, Tectonic Hazards>Video>Tectonic Hazards; uEngineer It!>Interactivity>Bridging the Gap; Lesson 2, Weather Hazards>Video>Weather Hazards; Interactivity>Catastrophic Weather Events; Lesson 3, Impacts of Natural Hazards>Video>Impacts of Natural Hazards; Virtual Lab>Withstanding Earth’s Natural Hazards; Interactivity>A Fun and Safe Wilderness Adventure; Earth’s Natural Hazards>Topic Close>Quest Findings>Interactivity>Protect the City! Hazard Incoming!</p>

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<p>Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. (3-5-ETS1-2)</p>	<p>SE/TE: uConnect Lab: How can you reduce the impact of rapidly sliding soil?, 206 uInvestigate Lab: Where should you build an earthquake-safe structure?, 227 Quest Check-In Lab: How can you reduce hazard damage?, 232-233 uDemonstrate Lab: How can homes be designed to be more earthquake resistant?, 240-241</p> <p>Realize™ Digital Resources: Earth’s Natural Hazards>Lesson 2, Interactivity>Catastrophic Weather Events; Lesson 3, Virtual Lab>Withstanding Earth’s Natural Hazards; Interactivity>A Fun and Safe Wilderness Adventure; Earth’s Natural Hazards>Topic Close>Quest Findings>Interactivity>Protect the City! Hazard Incoming!</p>

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<p>Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. (3-5-ETS1-3)</p>	<p>SE/TE: uConnect Lab: How can you reduce the impact of rapidly sliding soil?, 206 uInvestigate Lab: Where should you build an earthquake-safe structure?, 227 Quest Check-In Lab: How can you reduce hazard damage?, 232-233 uDemonstrate Lab: How can homes be designed to be more earthquake resistant?, 240-241</p> <p>Realize™ Digital Resources: Earth’s Natural Hazards>Lesson 2, Interactivity>Catastrophic Weather Events; Lesson 3, Virtual Lab>Withstanding Earth’s Natural Hazards; Interactivity>A Fun and Safe Wilderness Adventure; Earth’s Natural Hazards>Topic Close>Quest Findings>Interactivity>Protect the City! Hazard Incoming!</p>

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Unit 3: Structure and Function	
Unit Summary	
<p><i>How do the internal and external parts of plants and animals support their survival, growth, behavior, and reproduction.</i></p> <p>In this unit of study, students develop an understanding that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. The crosscutting concepts of <i>systems and system models</i> are called out as organizing concepts for this disciplinary core idea. Students are expected to demonstrate grade-appropriate proficiency <i>in engaging in argument from evidence</i>. Students are also expected to use this practice to demonstrate understanding of the core idea. This unit is based on 4-LS1-1.</p>	<p>This unit is addressed in the following Topic(s) and Lessons in Elevate Science, Grade 4:</p> <p>Topic 7: Structures and Functions Lesson 2: External Structures and Functions of Plants Lesson 3: Internal Structures and Functions of Animals Lesson 4: External Structures and Functions of Animals</p> <p>Topic 8: Human Body Systems Lesson 1: Circulatory and Respiratory Systems Lesson 2: Skeleton, Muscles, and Skin Lesson 4: Digestive, Reproductive, and Other Systems</p>

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Student Learning Objectives	
<p>Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. (4-LS1-1)</p>	<p>SE/TE: uConnect Lab: How do your eyes respond to differences in lighting?, 280 uInvestigate Lab: How are leaf coverings different?, 293 uInvestigate Lab: How can you compare the stomachs of cows and dogs?, 301 uInvestigate Lab: How can you design a protective insect shell?, 309 Solve it with Science: Why do animals shed their exoskeletons?, 315 uInvestigate Lab: How can you model how you breathe?, 341 uInvestigate Lab: How can you test the strength of a bone?, 351 uInvestigate Lab: How intestines arranged inside your body?, 367 uDemonstrate Lab: How do your sensory organs gather information?, 382-383</p> <p>Realize™ Digital Resources: Structures and Functions>Topic Launch>STEM Quest Kickoff>Video>Let Plants and Animals Inspire You!; Structures and Functions>Lesson 1, Internal Structures and Functions of Plants>Video> Internal Structures and Functions of Plants; Interactivity>The Structure of Flowers; Lesson 2, External Structures and Functions of Plants>Video> External Structures and Functions of Plants: Virtual Lab>Partners in Pollination; Interactivity>Leaves, Roots, and Stems; Lesson 3, Internal Structures and Functions of Animals>Video> Internal Structures and Functions of Animals; Interactivity>Eating and Making Food; Lesson 4, External Structures and Functions of Animals>Video> External Structures and Functions of Animals; Interactivity>External and Internal Structures of Plants and Animals; Structures and Functions>Topic Close>STEM Quest Findings>Interactivity>Let Plants and Animals Inspire You!</p>

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Unit 4: How Organisms Process Information	
Unit Summary	
<p><i>How do animals use their perceptions and memories to make decisions?</i></p> <p>In this unit of study, students are expected to develop an understanding that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. By developing a model, they describe that an object can be seen when light reflected from its surface enters the eye. The crosscutting concepts of <i>cause and effect</i>, <i>systems and system models</i>, and <i>structure and function</i> are called out as organizing concepts for these disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in <i>developing and using models</i>. Students are expected to use these practices to demonstrate understanding of the core ideas. This unit is based on 4-LS1-2 and 4-PS4-2.</p>	<p>This unit is addressed in the following Topic(s) and Lessons in Elevate Science, Grade 4:</p> <p>Topic 3: Waves and Information Lesson 3: Waves and the Electromagnetic Spectrum</p> <p>Topic 7: Structures and Functions Lesson 5: Plant and Animal Responses to the Environment</p>
Student Learning Objectives	
<p>Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. (4-LS1-2)</p>	<p>SE/TE: Visual Literacy Connection: How do elephants respond to stimulus?, 318-319 uDemonstrate Lab: How do earthworms respond to stimuli?, 332-333</p> <p>Realize™ Digital Resources: Structures and Functions>Lesson 5, Plant and Animal Responses to the Environment>Video>Plant and Animal Responses to the Environment; Interactivity>, Plants and Animals Respond to the Environment; u Engineer It!>Video>E ye see you!</p>

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<p>Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. (4-LS4-2)</p>	<p>SE/TE: uInvestigate Lab: How is light reflected?, 125</p> <p>Realize™ Digital Resources: Waves and Information>Lesson 3, Waves and the Electromagnet Spectrum>Video>Light Waves; Interactivity>Light Energy and Vision</p>
<p>Unit 5: Transfer of Energy</p>	
<p>Unit Summary</p>	
<p><i>Where do we get the energy we need for modern life?</i> In this unit of study, fourth-grade students develop an understanding that energy can be transferred from place to place by sound, light, heat, and electrical currents. Students also obtain and combine information to describe that energy and fuels are derived from natural resources and that their uses affect the environment. The crosscutting <i>concepts of cause and effect, energy and matter, and the interdependence of science, engineering, and technology, and influence of science, engineering, and technology on society and the natural world</i> are called out as organizing concepts for these disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in <i>planning and carrying out investigations and obtaining, evaluating, and communicating information</i>. Students are also expected to use these practices to demonstrate understanding of the core ideas. This unit is based on 4-PS3-2 and 4-ESS3-1.</p>	<p>This unit is addressed in the following Topic(s) and Lessons in Elevate Science, Grade 4:</p> <p>Topic 1: Energy and Motion Lesson 2: Collisions Lesson 3: Energy Transfer Lesson 4: Electric Circuits</p> <p>Topic 2: Human Uses of Energy Lesson 2: Nonrenewable Energy Sources Lesson 3: Renewable Energy Sources Lesson 4: Environmental Impacts of Energy Use</p>

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Student Learning Objectives	
<p>Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents. (4-PS3-2)</p>	<p>SE/TE: uInvestigate Lab: How does energy transfer between objects?, 17 uInvestigate Lab: How does heat move?, 25 uInvestigate Lab: How does electric energy flow in circuits?, 35 uDemonstrate Lab: What affects energy transfer?, 48-49</p> <p>Realize™ Digital Resources: Energy and Motion>Lesson 2, Collisions>Video>Collisions; Interactivity>The Transfer of Kinetic Energy; Quiz>Collisions; Lesson 3, Energy Transfer>Video>Energy Transfer; Video>Sound Energy; Virtual Lab>Propeller Speed and Thrust; Interactivity>How Does Energy Move? ; Lesson 4>Electric Circuits>Video>Electric Circuits; Interactivity>Choosing the Best Circuit Design; Interactivity>Making an Electric Circuit</p>

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<p>Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment. (4-ESS3-1)</p>	<p>SE/TE: uConnect Lab: How are energy resources used?, 54 Design It!, 70 Visual Literacy Connection: Is renewable energy all around?, 76-77 Impact of Transporting Fuels, 90 uDemonstrate Lab: How can energy resource usage change?, 98-99</p> <p>Realize™ Digital Resources: Human Uses of Energy>Lesson 1, Energy Conversions>Interactivity>Electrical Energy Changes Forms; Lesson 2, Nonrenewable Energy Sources>Video>Nonrenewable Energy Sources; Interactivity>Fossil Fuels; Lesson 3, Renewable Energy Sources>Video>Renewable Energy Sources; Interactivity>Natural Resources; Lesson 4, Environmental Impacts of Energy Use>Video>Environmental Impacts of Energy Use; Virtual Lab>The Best Power for the Place; Interactivity>Human Activity and the Environment</p>

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Unit 6: Force and Motion	
Unit Summary	
<p><i>What is the relationship between the speed of an object and the energy of that object?</i></p> <p>In this unit of study, students are able to use evidence to construct an explanation of the relationship between the speed of an object and the energy of that object, and are expected to develop an understanding that energy can be transferred from object to object through collisions. The crosscutting concept of <i>energy and matter</i> is called out as an organizing concept. Students are expected to demonstrate grade-appropriate proficiency in <i>asking questions, defining problems, and constructing explanations, and designing solutions</i>. Students are also expected to use these practices to demonstrate understanding of the core ideas. This unit is based on 4-PS3-1 and 4-PS3-3.</p>	<p>This unit is addressed in the following Topic(s) and Lessons in Elevate Science, Grade 4:</p> <p>Topic 1: Energy and Motion Lesson 1: Energy, Speed, and Moving Objects Lesson 2: Collisions Lesson 4: Electric Circuits</p>
Student Learning Objectives	
<p>Use evidence to construct an explanation relating the speed of an object to the energy of that object. (4-PS3-1)</p>	<p>SE/TE: uConnect Lab: How can you compare the energy of objects?, 4 uInvestigate Lab: How does starting height affect and object's energy?, 7 uInvestigate Lab: How does energy transfer between objects?, 17 uInvestigate Lab: How does electric energy flow in circuits?, 35 uDemonstrate Lab: What affects energy transfer?, 48-49</p> <p>Realize™ Digital Resources: Energy and Motion>Topic Launch>Quest Kickoff>Video>Energy Changes in Collisions; Energy and Motion>Lesson 1, Energy, Speed, and Moving Objects>Virtual Lab>Propeller Speed and Thrust; Energy and Motion>Topic Close>Quest Findings>Interactivity>Energy Changes in Collisions</p>

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<p>Ask questions and predict outcomes about the changes in energy that occur when objects collide. (4-PS3-3)</p>	<p>SE/TE: STEM Quest Check-In Lab: How does modeling help you understand a collision?, 22-23</p> <p>Realize™ Digital Resources: Energy and Motion>Quiz>Collisions; Lesson 3, Energy Transfer> Virtual Lab>Propeller Speed and Thrust; Interactivity>How Does Energy Move?</p>
Unit 7: Using Engineering Design with Force and Motion Systems	
Unit Summary	
<p><i>How can scientific ideas be applied to design, test, and refine a device that converts energy from one form to another?</i></p> <p>In this unit of study, students use evidence to construct an explanation of the relationship between the speed of an object and the energy of that object. Students develop an understanding that energy can be transferred from place to place by sound, light, heat, and electrical currents or from objects through collisions. They apply their understanding of energy to design, test, and refine a device that converts energy from one form to another. The crosscutting concepts of <i>energy and matter</i> and the <i>influence of engineering, technology, and science on society and the natural world</i> are called out as organizing concepts for these disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in <i>asking questions and defining problems, planning and carrying out investigations, constructing explanations, and designing solutions</i>. Students are also expected to use these practices to demonstrate their understanding of the core ideas.</p> <p>This unit is based on 4-PS3-4, 3-5-ETS1-1, 3-5-ETS1-2, and 3-5-ETS1-3.</p>	<p>This unit is addressed in the following Topic(s) and Lessons in Elevate Science, Grade 4:</p> <p>Topic 1: Energy and Motion Lesson 4: Electric Circuits</p> <p>Topic 2: Human Uses of Energy Lesson 2: Nonrenewable Energy Sources Lesson 3: Renewable Energy Sources Lesson 4: Environmental Impacts of Energy Use</p>

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Student Learning Objectives	
<p>Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.* (4-PS3-4)</p>	<p>SE/TE: STEM Quest Check-In Lab: How can an electric circuit help prevent collisions?, 40-41 uInvestigate Lab: How can a potato provide energy to a light bulb?, 57 uInvestigate Lab: How does a windmill capture wind energy?, 75 STEM Quest Check-In Lab: How can the sun make a motor work?, 80</p> <p>Realize™ Digital Resources: Human Uses of Energy>Topic Launch>STEM Quest Kickoff>Video>Power from the People; Human Uses of Energy>Lesson 1, Energy Conversions>Video>Natural Resources and Energy; Human Uses of Energy>Topic Close>STEM Quest Findings>Interactivity>Power from the People</p>

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<p>Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. (3-5-ETS1-1)</p>	<p>SE/TE: STEM Quest Check-In Lab: How can an electric circuit help prevent collisions?, 40-41 Quest Findings: Energy Changes in Collisions, 42 Quest Check-In: Human Power, 63 STEM Quest Check-In Lab: How can you use a battery to produce motion?, 72 STEM Quest Check-In Lab: How can the sun make a motor work?, 80 Quest Findings: STEM Power from the People, 92</p> <p>Realize™ Digital Resources: Energy and Motion>Topic Close>STEM Quest Findings>Interactivity>Quest Findings: Energy Changes in Collision; Human Uses of Energy>Topic Close>STEM Quest Findings>Interactivity>Power from the People</p>
<p>Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. (3-5-ETS1-2)</p>	<p>SE/TE: STEM Quest Check-In Lab: How can an electric circuit help prevent collisions?, 40-41 Design It!, 70 Quest Findings: STEM Power from the People, 92</p> <p>Realize™ Digital Resources: Human Uses of Energy>Topic Close>STEM Quest Findings>Interactivity>Power from the People</p>

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<p>Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. (3-5-ETS1-3)</p>	<p>SE/TE: STEM Quest Check-In Lab: How can an electric circuit help prevent collisions?, 40-41 uInvestigate Lab: How can a potato provide energy to a light bulb?, 57 STEM Quest Check-In Lab: How can you use a battery to produce motion?, 72 uInvestigate Lab: How does a windmill capture wind energy?, 75 Quest Findings: STEM Power from the People, 92</p> <p>Realize™ Digital Resources: Human Uses of Energy>Topic Close>STEM Quest Findings>Interactivity>Power from the People</p>

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Unit 8: Waves and Information	
Unit Summary	
<p><i>How can we use waves to gather and transmit information?</i> In this unit of study, students use a model of waves to describe patterns of waves in terms of amplitude and wavelength and to show that waves can cause objects to move. The crosscutting concepts of <i>patterns; interdependence of science, engineering, and technology; and influence of engineering, technology, and science on society and the natural world</i> are called out as organizing concepts for these disciplinary core ideas. Students demonstrate grade-appropriate proficiency in developing and <i>using models, planning and carrying out investigations, and constructing explanations, and designing solutions</i>. Students are also expected to use these practices to demonstrate their understanding of the core ideas.</p>	<p>This unit is addressed in the following Topic(s) and Lessons in Elevate Science, Grade 4:</p> <p>Topic 3: Waves and Information Lesson 1: Properties of Waves Lesson 2: Patterns of Waves Lesson 3: Waves and the Electromagnetic Spectrum Lesson 4: Waves and Information</p>
Student Learning Objectives	
<p>Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move. (4-PS4-1)</p>	<p>SE/TE: uInvestigate Lab: How does a wave carry energy?, 107 uInvestigate Lab: What patterns can waves make?, 117 uDemonstrate Lab: How can you model a light or sound wave?, 148-149</p> <p>Realize™ Digital Resources: Waves and Information>Lesson 1, Properties of Waves>Video>Properties of Waves; Interactivity>Sound; Lesson 2, Patterns of Waves>Video>Patterns of Waves; Interactivity>The Doppler Effect</p>

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<p>Generate and compare multiple solutions that use patterns to transfer information. (4-PS4-3)</p>	<p>SE/TE: uInvestigate Lab: What patterns can waves make?, 117 uEngineer It!, Crack That Code?, 114-115 How do cell phone calls work?, Write About It, 137 STEM Quest Check-In Lab: How can you send a message with light?, 132-133 uDemonstrate Lab: How can you model a light or sound wave?, 148-149</p> <p>Realize™ Digital Resources: Waves and Information>Lesson 1, Properties of Waves>uEngineer It! Interactivity: Code Breakers; Lesson 4, Waves and Information>Virtual Lab>Call the Galactic Neighbors</p>
<p>Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. (3-5-EST-1-2)</p>	<p>SE/TE: Quest Check-In: Communicating Tent to Tent, 113 STEM Quest Check-In Lab: How can you send a message with sound?, 123 STEM Quest Check-In Lab: How can you send a message with light?, 132-133 uDemonstrate Lab: How can you model a light or sound wave?, 148-149</p> <p>Realize™ Digital Resources: Waves and Information>Lesson 4, Waves and Information>Virtual Lab>Call the Galactic Neighbors</p>

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New Jersey Science Model Curriculum, Grade 4**

New Jersey Science Model Curriculum Grade 4	Elevate Science Grade 4, ©2019
<p>Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. (3-5-ETS1-3)</p>	<p>SE/TE: Quest Check-In: Communicating Tent to Tent, 113 STEM Quest Check-In Lab: How can you send a message with light?, 132-133 uDemonstrate Lab: How can you model a light or sound wave?, 148-149</p> <p>Realize™ Digital Resources: Waves and Information>Lesson 4, Waves and Information>Virtual Lab>Call the Galactic Neighbors</p>