

A Correlation of
Elevate Science Modules
Grades 6-8 ©2019



To the

Montgomery County, Maryland
Next Generation Science Standards
Curriculum, Grade 8

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Introduction

The following document demonstrates how the ***Elevate Science Middle Grades Modules ©2019*** program supports Montgomery County NGSS Science Curriculum for Grades 6-8. Correlation references include the Student Edition, Teacher Edition, and online Realize™ digital resources.

Savvas Learning Company 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 phenomena, open-ended Quests, uDemonstrate performance-based tasks, 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.

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Table of Contents

Unit 1: Weather and Climate.....	4
Unit 2: Earth’s Materials and Processes.....	14
Unit 3: Forces, Motion, and Interactions	27
Unit 4: Earth, the Solar System, and the Universe.....	36

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Unit 1: Weather and Climate	
<p>Performance Expectation MS-ESS2-4: Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.</p>	<p>Cycles Influencing Weather and Climate SE/TE: The Water Cycle, 19 Model It!, 19 Lesson 2 Check, #5, 20 uDemonstrate Lab, 54-57</p> <p>Earth Systems SE/TE: The Water Cycle, 25-26 Topic 1 Review and Assess, #17, 36-37</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Weather in the Atmosphere >Topic Launch: Weather in the Atmosphere>uConnect Lab: Puddle Befuddlement >Lesson 2: Water in the Atmosphere>Interactivity; Water Cycle;>Worksheet: Water Cycle Earth Systems: Introduction to Earth's Systems >Lesson 3: The Hydrosphere>Interactivity: The Water Cycle</p>
Disciplinary Core Ideas	
ESS2.C: The Roles of Water in Earth's Surface Processes	
<ul style="list-style-type: none"> • Water continually cycles among land, ocean, and atmosphere via transpiration, evaporation, condensation and crystallization, and precipitation, as well as downhill flows on land. 	<p>Cycles Influencing Weather and Climate SE/TE: The Water Cycle, 19</p> <p>Earth Systems SE/TE: The Water Cycle, 25-26</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Weather in the Atmosphere >Lesson 2: Water in the Atmosphere>Interactivity; Water Cycle;>Worksheet: Water Cycle Earth Systems: Introduction to Earth's Systems >Lesson 3: The Hydrosphere>Interactivity: The Water Cycle</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
<ul style="list-style-type: none"> Global movements of water and its changes in form are propelled by sunlight and gravity. 	<p>Cycles Influencing Weather and Climate SE/TE: The Water Cycle, 19 Reading Check, 19 Lesson 2 Check, #1, 20</p> <p>Earth Systems SE/TE: The Water Cycle, 25-26</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Weather in the Atmosphere >Lesson 2: Water in the Atmosphere>Interactivity; Water Cycle;>Worksheet: Water Cycle Earth Systems: Introduction to Earth’s Systems >Lesson 3: The Hydrosphere>Interactivity: The Water Cycle</p>
Science and Engineering Practices	
Developing and Using Models	
<ul style="list-style-type: none"> Develop a model to describe unobservable mechanisms. 	<p>Cycles Influencing Weather and Climate SE/TE: Model It!, 19 Lesson 2 Check, #5, 20 uDemonstrate Lab, 54-57</p> <p>Earth Systems SE/TE: Topic 1 Review and Assess, #17, 36-37</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Weather in the Atmosphere >Topic Launch: Weather in the Atmosphere>uConnect Lab: Puddle Befuddlement >Lesson 2: Water in the Atmosphere>Interactivity; Water Cycle;>Worksheet: Water Cycle</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Crosscutting Concepts	
Energy and Matter	
<ul style="list-style-type: none"> • Within a natural or designed system, the transfer of energy drives the motion and/or cycling of matter. 	<p>Cycles Influencing Weather and Climate SE/TE: Reading Check, 19</p> <p>Earth Systems SE/TE: The Water Cycle, 25-26</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Weather in the Atmosphere >Topic Launch: Weather in the Atmosphere>uConnect Lab: Puddle Befuddlement >Lesson 2: Water in the Atmosphere>Interactivity: Water Cycle;>Worksheet: Water Cycle</p> <p>Earth Systems: Introduction to Earth’s Systems >Lesson 3: The Hydrosphere>Interactivity: The Water Cycle</p>
<p>Performance Expectation MS-ESS2-5: Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.</p>	<p>Cycles Influencing Weather and Climate SE/TE: Major Air Masses, 23-24 Types of Fronts, 25-26 Model It!, 27</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Weather in the Atmosphere >Lesson 3: Air Masses>Interactivity: When Air Masses Collide;>uInvestigate Lab: Weather Fronts >Lesson 4: Predicting Weather Changes>Interactivity: Using Air Masses to Predict Weather;>uInvestigate Lab: Tracking Weather</p>
Disciplinary Core Ideas	
ESS2.C: The Roles of Water in Earth's Surface Processes	
<ul style="list-style-type: none"> • The complex patterns of the changes and the movement of water in the atmosphere, determined by winds, landforms, and ocean temperatures and currents, are major determinants of local weather patterns. 	<p>Cycles Influencing Weather and Climate SE/TE: Connect It!, 22 Major Air Masses, 23-24 Global Patterns and Local Weather, 33</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Weather in the Atmosphere >Lesson 4: Predicting Weather Changes>Interactivity: Using Air Masses to Predict Weather;>uInvestigate Lab: Tracking Weather</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
ESS2.D: Weather and Climate • Because these patterns are so complex, weather can only be predicted probabilistically.	Cycles Influencing Weather and Climate SE/TE: The Future of Meteorology, 35
Science and Engineering Practices	
Planning and Carrying Out Investigations	
• Collect data to produce data to serve as the basis for evidence to answer scientific questions or test design solutions under a range of conditions.	Realize™ Digital Resources: Cycles Influencing Weather and Climate: Weather in the Atmosphere >Lesson 3: Air Masses>uInvestigate Lab: Weather Fronts >Lesson 4: Predicting Weather Changes>uInvestigate Lab: Tracking Weather
Crosscutting Concepts	
Cause and Effect	
• Cause and effect relationships may be used to predict phenomena in natural or designed systems.	Cycles Influencing Weather and Climate SE/TE: Lesson 3 Check, #2, 29 Realize™ Digital Resources: Cycles Influencing Weather and Climate: Weather in the Atmosphere >Lesson 4: Predicting Weather Changes>uInvestigate Lab: Tracking Weather
Performance Expectation MS-ESS2-6: Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.	Cycles Influencing Weather and Climate SE/TE: Energy in the Atmosphere, 9-10 Heat Transfer in the Atmosphere, 67-69 Causes of Winds, 73 Local Winds and Global Winds, 75-77 Model It!, 76 Global Wind Patterns, 78-79 Lesson 2 Check, #4, 80 Surface Currents, 83-86 Deep Ocean Currents, 87-88 Lesson 3 Check, #3, #4, 89 Topic 2 Review and Assess, #15, 92-93 Topic 2 Evidence-Based Assessment, 94-95 Factors That Affect Temperature, 105-107 Realize™ Digital Resources: Cycles Influencing Weather and Climate: Energy in the Atmosphere and Ocean >Lesson 2: Patterns of Circulation in the Atmosphere>Inquiry Warm-Up Lab: Turn, Turn, Turn;>Interactivity: Winds Across the Globe >Lesson 3: Patterns of Circulation in the Ocean>uInvestigate Lab: Modeling Ocean Current Formation;>Interactivity: Keeping Current on Currents

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Disciplinary Core Ideas	
ESS2.C: The Roles of Water in Earth's Surface Processes	
<ul style="list-style-type: none"> Variations in density due to variations in temperature and salinity drive a global pattern of interconnected ocean currents. 	<p>Cycles Influencing Weather and Climate SE/TE: Deep Ocean Currents, 87-88 Lesson 3 Check, #4, 89</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Energy in the Atmosphere and Ocean >Lesson 3: Patterns of Circulation in the Ocean>ulnInvestigate Lab: Modeling Ocean Current Formation</p>
ESS2.D: Weather and Climate	
<ul style="list-style-type: none"> Weather and climate are influenced by interactions involving sunlight, the ocean, the atmosphere, ice, landforms, and living things. These interactions vary with latitude, altitude, and local and regional geography, all of which can affect oceanic and atmospheric flow patterns. 	<p>Cycles Influencing Weather and Climate SE/TE: Global Patterns and Local Weather, 33 Causes of Winds, 73 Local Winds and Global Winds, 75-77 Global Wind Patterns, 78-79 Effects on Climate, 85 Lesson 3 Check, #3, 89 Factors That Affect Temperature, 105-107 Factors That Affect Precipitation, 108-109 Lesson 1 Check, #3, #4, 112</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Energy in the Atmosphere and Ocean >Lesson 2: Patterns of Circulation in the Atmosphere>ulnInvestigate Lab: United States Precipitation</p> <p>Cycles Influencing Weather and Climate: Climate >Lesson 1: Climate Factors>Interactivity: Two Sides of the Mountain</p>
<ul style="list-style-type: none"> The ocean exerts a major influence on weather and climate by absorbing energy from the sun, releasing it over time, and globally redistributing it through ocean currents. 	<p>Cycles Influencing Weather and Climate SE/TE: Global Patterns and Local Weather, 33 Effects on Climate, 85 Global Ocean Conveyor, 88 Distance from Large Bodies of Water, 107 Ocean Currents, 107 Lesson 1 Check, #4, 112</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
Developing and Using Models	
<ul style="list-style-type: none"> • Develop and use a model to describe phenomena. 	<p>Cycles Influencing Weather and Climate SE/TE: Model It!, 76 Lesson 2 Check, #4, 80 Surface Currents, 84 Global Conveyor Belt, 88 Lesson 3 Check, #4, 89 Topic 2 Review and Assess, #15, 92-93 Topic 2 Evidence-Based Assessment, #3, 94-95</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Energy in the Atmosphere and Ocean >Lesson 2: Patterns of Circulation in the Atmosphere>Inquiry Warm-Up Lab: Turn, Turn, Turn;>Interactivity: Winds Across the Globe >Lesson 3: Patterns of Circulation in the Ocean>Investigate Lab: Modeling Ocean Current Formation;>Interactivity: Keeping Current on Currents</p>
Crosscutting Concepts	
Systems and System Models	
<ul style="list-style-type: none"> • Models can be used to represent systems and their interactions—such as inputs, processes and outputs—and energy, matter, and information flows within systems. 	<p>Cycles Influencing Weather and Climate SE/TE: Model It!, 76 Modeling the Coriolis Effect, 77 Global Wind Belts, 78 Lesson 2 Check, #4, 80 Surface Currents, 84 Global Conveyor Belt, 88 Lesson 3 Check, #4, 89 Topic 2 Evidence-Based Assessment, #3, 94-95</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Energy in the Atmosphere and Ocean >Lesson 2: Patterns of Circulation in the Atmosphere>Interactivity: Winds Across the Globe >Lesson 3: Patterns of Circulation in the Ocean>Investigate Lab: Modeling Ocean Current Formation;>Interactivity: Keeping Current on Currents</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
<p>Performance Expectation MS-ESS3-5: Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.</p>	<p>Cycles Influencing Weather and Climate SE/TE: Recent Climate Change, 119-122 Topic 3 Review and Assess, #9, 136-137 Topic 3 Evidence-Based Assessment, 138-139</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Climate >Lesson 2: Climate Change>Interactivity: In the Greenhouse;>Interactivity: Climate Change Q&A</p>
Disciplinary Core Ideas	
ESS3.D: Global Climate Change	
<ul style="list-style-type: none"> Human activities, such as the release of greenhouse gases from burning fossil fuels, are major factors in the current rise in Earth’s mean surface temperature (global warming). Reducing the level of climate change and reducing human vulnerability to whatever climate changes do occur depend on the understanding of climate science, engineering capabilities, and other kinds of knowledge, such as understanding of human behavior and on applying that knowledge wisely in decisions and activities. 	<p>Cycles Influencing Weather and Climate SE/TE: The Greenhouse Effect, 66 Recent Climate Change, 119-122 Dealing with Climate Change, 132-133 uEngineer It!, 135 Topic 3 Review and Assess, #16, 136-137</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Climate >Lesson 2: Climate Change>Interactivity: Human Impact on Climate Change;>Worksheet: Human Impact on Climate Change >Lesson 3: Effects of a Changing Climate>Interactivity: Emission Reduction</p>
Science and Engineering Practices	
<ul style="list-style-type: none"> Ask questions to identify and clarify evidence of an argument. 	<p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Climate >Lesson 2: Climate Change>Interactivity: In the Greenhouse;>Interactivity: Climate Change Q&A</p>
Crosscutting Concepts	
Stability and Change	
<ul style="list-style-type: none"> Stability might be disturbed either by sudden events or gradual changes that accumulate over time. 	<p>Cycles Influencing Weather and Climate SE/TE: Reflect, 115 Math Toolbox, 118 Carbon Dioxide Concentrations, 122 Lesson 2 Check, #6, 123</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Climate >Lesson 2: Climate Change>Interactivity: In the Greenhouse</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

<p style="text-align: center;">Montgomery County Next Generation Science Curriculum, Grade 8</p>	<p style="text-align: center;">Elevate Science ©2019 Grades 6-8 Modules</p>
<p>Performance Expectation MS-ETS1-1: Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.</p>	<p>Structure and Properties of Matter SE/TE: uEngineer It!, 55</p> <p>Earth Systems SE/TE: uEngineer It!, 59</p> <p>Diversity of Life SE/TE: uEngineer It!, 89</p> <p>Realize™ Digital Resources: Forces: Forces and Motion >Lesson 1: Describing Motion and Force>Quest Check-In Interactivity: Define Criteria and Constraints Changing Earth and Human Activity: Earth's Surface Systems >Lesson 2: Erosion and Deposition>Quest Check-In Lab: Ingenious Island Part I Systems, Reproduction, and Growth: Reproduction and Growth >Lesson 4: Factors Influencing Growth>Quest Check-In Interactivity: Make Your Construction Case</p>
<p>Disciplinary Core Ideas</p>	
<p>ETS1.A: Defining and Delimiting Engineering Problems</p>	
<ul style="list-style-type: none"> • The more precisely a design task's criteria and constraints can be defined, the more likely it is that the designed solution will be successful. Specification of constraints includes consideration of scientific principles and other relevant knowledge that are likely to limit possible solutions. 	<p>Structure and Properties of Matter SE/TE: Define the Problem, 94-95</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
Asking Questions and Defining Problems	
<ul style="list-style-type: none"> Define a design problem that can be solved through the development of an object, tool, process or system and includes multiple criteria and constraints, including scientific knowledge that may limit possible solutions. 	<p>Structure and Properties of Matter SE/TE: uEngineer It!, 55</p> <p>Earth Systems SE/TE: uEngineer It!, 59</p> <p>Diversity of Life SE/TE: uEngineer It!, 89</p> <p>Realize™ Digital Resources: Forces: Forces and Motion >Lesson 1: Describing Motion and Force>Quest Check-In Interactivity: Define Criteria and Constraints Changing Earth and Human Activity: Earth's Surface Systems >Lesson 2: Erosion and Deposition>Quest Check-In Lab: Ingenious Island Part I Systems, Reproduction, and Growth: Reproduction and Growth >Lesson 4: Factors Influencing Growth>Quest Check-In Interactivity: Make Your Construction Case</p>
Crosscutting Concepts	
Influence of Science, Engineering, and Technology on Society and the Natural World	
<ul style="list-style-type: none"> All human activity draws on natural resources and has both short and long-term consequences, positive as well as negative, for the health of people and the natural environment. 	<p>Cycles Influencing Weather and Climate SE/TE: uEngineer It!, 135</p> <p>Changing Earth and Human Activity SE/TE: Using Energy Resources, 64 uEngineer It!, 73 Humans and Minerals, 80 Human Impacts, 88-89 Using Natural Resources, 108-109 Wetlands, 129 Human Activities, 140-141</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
<ul style="list-style-type: none"> The uses of technologies and limitations on their use are driven by individual or societal needs, desires, and values; by the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions. 	<p>Atoms and Chemical Reactions SE/TE: uEngineer It!, 77 Impact of Synthetic Materials, 103-104</p> <p>Cycles Influencing Weather and Climate SE/TE: uEngineer It!, 21 uEngineer It!, 135</p> <p>Earth Systems SE/TE: uEngineer It!, 59 uEngineer It!, 131</p> <p>Realize™ Digital Resources: Earth Systems: Plate Tectonics >Lesson 3: Earthquakes and Tsunami Hazards>Interactivity: Earthquake Engineering</p>
<p>Performance Expectation MS-ETS1-2: Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.</p>	<p>Energy Transfer SE/TE: uEngineer It!, 21</p> <p>Cycles Influencing Weather and Climate SE/TE: uEngineer It!, 21</p> <p>Systems, Reproduction, and Growth SE/TE: uEngineer It!, 37 uEngineer It!, 123</p> <p>Relationships Within Ecosystems SE/TE: uEngineer It!, 13</p> <p>Realize™ Digital Resources: Energy Transfer: Thermal Energy >Lesson 3: Heat and Materials>Quest Check-In Lab: Keep the Heat In</p>
Disciplinary Core Ideas	
ETS1.B: Developing Possible Solutions	
<ul style="list-style-type: none"> There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem. 	<p>Energy Transfer SE/TE: Test and Evaluate a Solution, 98</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
<ul style="list-style-type: none"> Evaluate competing design solutions based on jointly developed and agreed-upon design criteria. 	<p>Energy Transfer SE/TE: uEngineer It!, 21</p> <p>Cycles Influencing Weather and Climate SE/TE: uEngineer It!, 21</p> <p>Systems, Reproduction, and Growth SE/TE: uEngineer It!, 37 uEngineer It!, 123</p> <p>Relationships Within Ecosystems SE/TE: uEngineer It!, 13</p> <p>Realize™ Digital Resources: Energy Transfer: Thermal Energy >Lesson 3: Heat and Materials>Quest Check-In Lab: Keep the Heat In</p>
Unit 2: Earth's Materials and Processes	
<p>Performance Expectation MS-ESS2-1: Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.</p>	<p>Earth Systems SE/TE: The Earth System, 5-7 Movement in Earth's Mantle, 56-57 Mineral Formation, 64-66 Model It!, 66 Lesson 2 Check, #5, 68 How Rocks Form, 73-76 The Cycling of Earth's Materials, 79-82 Model It!, 82 Topic 2 Review and Assess, #5, 86-87 uDemonstrate Lab, 90-93</p> <p>Realize™ Digital Resources: Earth Systems: Introduction to Earth's Systems >Topic Launch: Introduction to Earth's Systems>uConnect Lab: What Interactions Occur Within the Earth System? >Lesson 1: Matter and Energy in Earth's Systems>uInvestigate Lab: Where Heat Flows Earth Systems: Minerals and Rocks in the Geosphere >Lesson 2: Minerals>uInvestigate Lab: Mineral Mash-Up >Lesson 3: Rocks>uInvestigate Lab: A Sequined Rock >Lesson 4: Cycling of Rocks>Interactivity: Rocks on the Move</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Disciplinary Core Ideas	
ESS2.A: Earth's Materials and Systems	
<ul style="list-style-type: none"> All Earth processes are the result of energy flowing and matter cycling within and among the planet's systems. This energy is derived from the sun and Earth's hot interior. The energy that flows and matter that cycles produce chemical and physical changes in Earth's materials and living organisms. 	<p>Earth Systems SE/TE: Water and Rock Cycles, 5 Energy Flow, 7 Lesson 1 Check, #3, 10 Movement in Earth's Mantle, 56-57 Mineral Formation, 64-66 How Rocks Form, 73-76 The Cycling of Earth's Materials, 79-82</p> <p>Realize™ Digital Resources: Earth Systems: Introduction to Earth's Systems >Lesson 1: Matter and Energy in Earth's Systems>uInvestigate Lab: Where Heat Flows</p> <p>Earth Systems: Minerals and Rocks in the Geosphere >Lesson 4: Cycling of Rocks>Interactivity: Rocks on the Move</p>
Science and Engineering Practices	
Developing and Using Models	
<ul style="list-style-type: none"> Develop and use a model to describe phenomena. 	<p>Earth Systems SE/TE: Mantle Convection, 57 Model It!, 66 Lesson 2 Check, #5, 68 Model It!, 82 uDemonstrate Lab, 90-93</p> <p>Realize™ Digital Resources: Earth Systems: Introduction to Earth's Systems >Topic Launch: Introduction to Earth's Systems>uConnect Lab: What Interactions Occur Within the Earth System? >Lesson 1: Matter and Energy in Earth's Systems>uInvestigate Lab: Where Heat Flows</p> <p>Earth Systems: Minerals and Rocks in the Geosphere >Lesson 2: Minerals>uInvestigate Lab: Mineral Mash-Up >Lesson 3: Rocks>uInvestigate Lab: A Sequined Rock >Lesson 4: Cycling of Rocks>Interactivity: Rocks on the Move</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Crosscutting Concepts	
Stability and Change	
<ul style="list-style-type: none"> • Explanations of stability and change in natural or designed systems can be constructed by examining the changes over time and processes at different scales, including the atomic scale. 	<p>Earth Systems SE/TE: Eruption!, 76 Lesson 3 Check, #5, 77 uDemonstrate Lab, 90-93</p> <p>Realize™ Digital Resources: Earth Systems: Minerals and Rocks in the Geosphere >Lesson 2: Minerals>uInvestigate Lab: Mineral Mash-Up >Lesson 4: Cycling of Rocks>Interactivity: Rocks on the Move</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

<p style="text-align: center;">Montgomery County Next Generation Science Curriculum, Grade 8</p>	<p style="text-align: center;">Elevate Science ©2019 Grades 6-8 Modules</p>
<p>Performance Expectation MS-ESS2-2: Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.</p>	<p>Earth Systems SE/TE: The Essential Question, 95 The Theory of Plate Tectonics, 109-112 Plate Boundaries, 113-116 Case Study: Australia on the Move, 118-119 Stress and Earth's Crust, 121-122 New Landforms From Plate Movement, 123-124 Volcanoes and Plate Boundaries, 134-135 Volcano Landforms, 136 uDemonstrate Lab, 146-149</p> <p>Changing Earth and Human Activity SE/TE: Connect It!, 4 Breaking Down Earth's Surface, 5 Weathering Earth's Surface, 6-8 Lesson 1 Check, #2, 12 Changing Earth's Surface, 15 Mass Movement, 16 Lesson 2 Check, #2, 20 Connect It!, 22 Water Erosion and Deposition Change Earth's Surface, 25-27 Modeling How a River Changes Earth's Surface, 28 Groundwater Changes Earth's Surface, 29-30 Glaciers Change Earth's Surface, 35-39 Lesson 4 Check, #2, 43 Topic 1 Evidence-Based Assessment, 46-47 uDemonstrate Lab, 48-51</p> <p>Realize™ Digital Resources: Earth Systems: Plate Tectonics >Lesson 2: Plate Tectonics and Earth's Surface>Inquiry Warm-Up Lab: Stressing Out!;>uInvestigate Lab: Plate Interactions >Lesson 4: Volcanoes and Earth's Surface>Interactivity: Volcanoes Changing Earth's Surface</p> <p>Changing Earth and Human Activity: Earth's Surface Systems >Lesson 1: Weathering and Soil>uInvestigate Lab: Freezing and Thawing >Lesson 3: Water Erosion>Interactivity: Mammoth Caves</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Disciplinary Core Ideas	
ESS2.A: Earth's Materials and Systems	
<ul style="list-style-type: none"> The planet's systems interact over scales that range from microscopic to global in size, and they operate over fractions of a second to billions of years. These interactions have shaped Earth's history and will determine its future. 	<p>Earth Systems SE/TE: Plate Motions Over Time, 111 Case Study: Australia on the Move, 118-119 Earthquakes, 125 Hot Spot Volcanism, 135 Explosive Eruptions, 139</p> <p>Changing Earth and Human Activity SE/TE: Connect It!, 4 Breaking Down Earth's Surface, 5 Soil Formation, 10 Changing Earth's Surface, 15 How Water Causes Erosion, 23 Karst Topography, 30 Landforms Formed by Wave Erosion, 41</p> <p>Realize™ Digital Resources: Earth Systems: Plate Tectonics >Lesson 2: Plate Tectonics and Earth's Surface> ulInvestigate Lab: Plate Interactions;>Interactivity: Stressed to a Fault</p>
ESS2.C: The Roles of Water in Earth's Surface Processes	
<ul style="list-style-type: none"> Water's movements—both on the land and underground—cause weathering and erosion, which change the land's surface features and create underground formations. 	<p>Changing Earth and Human Activity SE/TE: Breaking Down Earth's Surface, 5 Mechanical Weathering, 6 Lesson 1 Check, #2, 12 How Water Causes Erosion, 23-24 Water Erosion and Deposition Change Earth's Surface, 25-27 Modeling How a River Changes Earth's Surface, 28 Groundwater Changes Earth's Surface, 29-30 Glaciers Change Earth's Surface, 35-39 Waves Change Earth's Surface, 40-42 Lesson 4 Check, #2, 43</p> <p>Realize™ Digital Resources: Changing Earth and Human Activity: Earth's Surface Systems >Lesson 3: Water Erosion>Interactivity: Karst Topography >Lesson 4: Glacial and Wave Erosion>Interactivity: Effects of Glaciers</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
Constructing Explanations and Designing Solutions	
<ul style="list-style-type: none"> • Construct a scientific explanation based on valid and reliable evidence obtained from sources (including the students' own experiments) and the assumption that theories and laws that describe nature operate today as they did in the past and will continue to do so in the future. 	<p>Earth Systems SE/TE: Case Study: Australia on the Move, 118-119 uDemonstrate Lab, 146-148</p> <p>Changing Earth and Human Activity SE/TE: Connect It!, 4 Connect It!, 22 Reading Check, 28 Groundwater Erosion and Deposition, 29 Glacial Erosion, 37 Lesson 4 Check, #2, 43</p> <p>Realize™ Digital Resources: Earth Systems: Plate Tectonics >Lesson 2: Plate Tectonics and Earth's Surface>Inquiry Warm-Up Lab: Stressing Out!;>uInvestigate Lab: Plate Interactions >Lesson 4: Volcanoes and Earth's Surface>Interactivity: Volcanoes Changing Earth's Surface</p> <p>Changing Earth and Human Activity: Earth's Surface Systems >Lesson 1: Weathering and Soil>uInvestigate Lab: Freezing and Thawing >Lesson 3: Water Erosion>Interactivity: Mammoth Caves</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Crosscutting Concepts	
Scale Proportion and Quantity	
<ul style="list-style-type: none"> Time, space, and energy phenomena can be observed at various scales using models to study systems that are too large or too small. 	<p>Earth Systems SE/TE: 200 Million Years of Plate Motions, 111 Plate Map, 113 Lesson 2 Check, #2, 117 Valleys and Mountains, 123 P and S Waves, 125 Model It!, 135</p> <p>Changing Earth and Human Activity SE/TE: Model It!, 11 Wind Erosion and Deflation, 18 Modeling How a River Changes Earth's Surface, 28 Headland Erosion, 40</p> <p>Realize™ Digital Resources: Earth Systems: Plate Tectonics >Lesson 2: Plate Tectonics and Earth's Surface>Inquiry Warm-Up Lab: Stressing Out!;>Investigate Lab: Plate Interactions</p> <p>Changing Earth and Human Activity: Earth's Surface Systems >Lesson 2: Erosion and Deposition>Investigate Lab: Small, Medium, and Large</p>
<p>Performance Expectation MS-ESS2-3: Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.</p>	<p>Earth Systems SE/TE: Hypothesis of Continental Drift, 99-101 Mid-Ocean Ridges, 102 Sea-Floor Spreading, 103 Ocean Trenches, 104-105 Lesson 1 Check, #2, #3, 106</p> <p>Realize™ Digital Resources: Earth Systems: Plate Tectonics >Topic Launch: Plate Tectonics>Connect Lab: How Are Earth's Continents Linked Together? >Lesson 1: Evidence of Plate Motions>Investigate Lab: Piecing Together a Supercontinent;>Interactivity: Slow and Steady</p>
Disciplinary Core Ideas	
ESS1.C: The History of Planet Earth	
<ul style="list-style-type: none"> Tectonic processes continually generate new ocean sea floor at ridges and destroy old sea floor at trenches. 	<p>Earth Systems SE/TE: Mid-Ocean Ridges, 102 Ocean Trenches, 104-105 Case Study: Australia on the Move, 118-119</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
ESS2.B: Plate Tectonics and Large- Scale System Interactions	
<ul style="list-style-type: none"> • Maps of ancient land and water patterns, based on investigations of rocks and fossils, make clear how Earth's plates have moved great distances, collided, and spread apart. 	<p>Earth Systems SE/TE: 200 Million Years of Plate Motions, 111</p> <p>Realize™ Digital Resources: Earth Systems: Plate Tectonics >Lesson 1: Evidence of Plate Motions>uInvestigate Lab: Piecing Together a Supercontinent</p>
Science and Engineering Practices	
Analyzing and Interpreting Data	
<ul style="list-style-type: none"> • Analyze and interpret data to provide evidence for phenomena. 	<p>Earth Systems SE/TE: Evidence for Continental Drift, 100</p> <p>Realize™ Digital Resources: Earth Systems: Plate Tectonics >Lesson 1: Evidence of Plate Motions>uInvestigate Lab: Piecing Together a Supercontinent</p>
Connections to Nature of Science	
Scientific Knowledge is Open to Revision in Light of New Evidence	
<ul style="list-style-type: none"> • Science findings are frequently revised and/or reinterpreted based on new evidence. 	<p>Earth Systems SE/TE: Hypothesis of Continental Drift, 99-101 Mid-Ocean Ridges, 102 It's All Connected, 107</p> <p>Realize™ Digital Resources: Earth Systems: Plate Tectonics >Lesson 1: Evidence of Plate Motions>uInvestigate Lab: Piecing Together a Supercontinent</p>
Crosscutting Concepts	
Patterns	
<ul style="list-style-type: none"> • Patterns in rates of change and other numerical relationships can provide information about natural systems. 	<p>Earth Systems SE/TE: Connect It!, 98 Reading Check, 101 Plate Motions Over Time, 111</p> <p>Realize™ Digital Resources: Earth Systems: Plate Tectonics >Topic Launch: Plate Tectonics>uConnect Lab: How Are Earth's Continents Linked Together?</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

<p style="text-align: center;">Montgomery County Next Generation Science Curriculum, Grade 8</p>	<p style="text-align: center;">Elevate Science ©2019 Grades 6-8 Modules</p>
<p>Performance Expectation MS-ESS3-1: Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.</p>	<p>Changing Earth and Human Activity SE/TE: The Essential Question, 53 Fossil Fuels, 58-62 Nuclear Energy, 63 Lesson 1 Check, #5, 65 Minerals and Ores, 75-79 Lesson 3 Check, #3, 81 Water on Earth, 85-87 Lesson 4 Check, #2, 90 Topic 2 Review and Assess, #13, 92-93 Topic 2 Evidence-Based Assessment, 94-95 uDemonstrate Lab, 96-99</p> <p>Realize™ Digital Resources: Changing Earth and Human Activity: Distribution of Natural Resources >Lesson 1: Nonrenewable Energy Resources>Interactivity: Distribution of Fossil Fuels >Lesson 3: Mineral Resources>Interactivity: Distribution of Minerals</p>
<p>Disciplinary Core Ideas</p>	
<p>ESS3.A: Natural Resources</p>	
<p>• Humans depend on Earth's land, ocean, atmosphere, and biosphere for many different resources. Minerals, fresh water, and biosphere resources are limited, and many are not renewable or replaceable over human lifetimes. These resources are distributed unevenly around the planet as a result of past geologic processes.</p>	<p>Changing Earth and Human Activity SE/TE: Natural Resources, 57 Coal Formation and Distribution, 59 Petroleum Formation and Distribution, 61 Distribution of Uranium, 63 Using Energy Resources, 64 Distribution of Minerals, 78-79 Humans and Minerals, 80 Case Study: Phosphorus Fiasco, 82-83 Water on Earth, 85 Human Impacts, 88-89 Human Activity, 108</p> <p>Realize™ Digital Resources: Changing Earth and Human Activity: Distribution of Natural Resources >Lesson 1: Nonrenewable Energy Resources>Inquiry Warm-Up Lab: Using Resources</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
Constructing Explanations and Designing Solutions	
<ul style="list-style-type: none"> Construct a scientific explanation based on valid and reliable evidence obtained from sources (including the students' own experiments) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future. 	<p>Changing Earth and Human Activity SE/TE: Coal Formation and Distribution, 59 Lesson 1 Check, #5, 65 Lesson 4 Check, #2, 90 Topic 2 Review and Assess, #13, 92-93 Topic 2 Evidence-Based Assessment, #4, 94-95 uDemonstrate Lab, 96-99</p> <p>Realize™ Digital Resources: Changing Earth and Human Activity: Distribution of Natural Resources >Lesson 1: Nonrenewable Energy Resources>Interactivity: Distribution of Fossil Fuels >Lesson 3: Mineral Resources>Interactivity: Distribution of Minerals</p>
Crosscutting Concepts	
Cause and Effect	
<ul style="list-style-type: none"> Cause and effect relationships may be used to predict phenomena in natural or designed systems. 	<p>Changing Earth and Human Activity SE/TE: Lesson 1 Check, #2, 65 Minerals from Magma, 77 Lesson 3 Check, #3, 81 uDemonstrate Lab, 96-99</p> <p>Realize™ Digital Resources: Changing Earth and Human Activity: Distribution of Natural Resources >Lesson 1: Nonrenewable Energy Resources>uInvestigate Lab: Fossil Fuels</p>
Connections to Engineering, Technology, and Applications of Science	
Influence of Science, Engineering, and Technology on Society and the Natural World	
<ul style="list-style-type: none"> All human activity draws on natural resources and has both short and long-term consequences, positive as well as negative, for the health of people and the natural environment. 	<p>Changing Earth and Human Activity SE/TE: Natural Resources, 56 Using Energy Resources, 64 Humans and Minerals, 80 Human Impacts, 88-89</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

<p style="text-align: center;">Montgomery County Next Generation Science Curriculum, Grade 8</p>	<p style="text-align: center;">Elevate Science ©2019 Grades 6-8 Modules</p>
<p>Performance Expectation MS-ESS3-2: Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.</p>	<p>Cycles Influencing Weather and Climate SE/TE: Types of Severe Storms, 39-44</p> <p>Earth Systems SE/TE: Earthquakes, 125-127 uEngineer It!, 131 Predicting Volcano Hazards, 140 Topic 3 Evidence-Based Assessment, 144-145</p> <p>Changing Earth and Human Activity SE/TE: uEngineer It!, 13 Mass Movement, 16 Math Toolbox, 17 Lesson 2 Check, #4, 20 uDemonstrate Lab, 48-51</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Weather in the Atmosphere >Lesson 5: Severe Weather and Floods>uInvestigate Lab: Predicting Hurricanes;>Quest Check-In Lab: A History of Hazardous Weather</p> <p>Earth Systems: Plate Tectonics >Lesson 3: Earthquakes and Tsunami Hazards>uInvestigate Lab: Analyze Earthquake Data to Identify Patterns;>Quest Check-In Interactivity: Monitoring a Volcano;>Quest Worksheet: Monitoring a Volcano >Lesson 4: Volcanoes and Earth’s Surface>Quest Check-In Lab: Signs of Eruption?</p> <p>Changing Earth and Human Activity: Earth’s Surface Systems >Lesson 1: Weathering and Soil>uEngineer It! Interactivity: Landslide Prevention >Lesson 2: Erosion and Deposition>Interactivity: Predicting Disasters</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Disciplinary Core Ideas	
ESS3.B: Natural Hazards	
<ul style="list-style-type: none"> • Mapping the history of natural hazards in a region, combined with an understanding of related geologic forces can help forecast the locations and likelihoods of future events. 	<p>Cycles Influencing Weather and Climate SE/TE: Lake-Effect Snow, 40 The Path of Hurricane Sandy, 43</p> <p>Earth Systems SE/TE: Stress and Earth’s Crust, 121-122 Earthquakes, 125-127 Earthquake Risks and Tsunamis, 128-129 Volcanoes and Plate Boundaries, 134-135 Predicting Volcano Hazards, 140</p> <p>Changing Earth and Human Activity SE/TE: uEngineer It!, 13 Mass Movement, 16 Lesson 2 Check, #4, 20</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Weather in the Atmosphere >Lesson 5: Severe Weather and Floods>uInvestigate Lab: Predicting Hurricanes;>Quest Check-In Lab: A History of Hazardous Weather</p> <p>Earth Systems: Plate Tectonics >Lesson 3: Earthquakes and Tsunami Hazards>uInvestigate Lab: Analyze Earthquake Data to Identify Patterns >Lesson 4: Volcanoes and Earth’s Surface>Quest Check-In Lab: Signs of Eruption?</p> <p>Changing Earth and Human Activity: Earth’s Surface Systems >Lesson 1: Weathering and Soil>uEngineer It! Interactivity: Landslide Prevention</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
<ul style="list-style-type: none"> Analyze and interpret data to determine similarities and differences in findings. 	<p>Changing Earth and Human Activity SE/TE: Lesson 2 Check, #5, 20</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Weather in the Atmosphere >Lesson 5: Severe Weather and Floods>Investigate Lab: Predicting Hurricanes;>Quest Check-In Lab: A History of Hazardous Weather</p> <p>Earth Systems: Plate Tectonics >Lesson 4: Volcanoes and Earth's Surface>Quest Check-In Lab: Signs of Eruption?</p> <p>Changing Earth and Human Activity: Earth's Surface Systems >Lesson 2: Erosion and Deposition>Interactivity: Predicting Disasters</p>
Crosscutting Concepts	
Patterns	
<ul style="list-style-type: none"> Graphs, charts, and images can be used to identify patterns in data. 	<p>Changing Earth and Human Activity SE/TE: Mass Movement, 16</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Weather in the Atmosphere >Lesson 5: Severe Weather and Floods>Quest Check-In Lab: A History of Hazardous Weather</p> <p>Earth Systems: Plate Tectonics >Lesson 3: Earthquakes and Tsunami Hazards>Investigate Lab: Analyze Earthquake Data to Identify Patterns;>Quest Check-In Interactivity: Monitoring a Volcano;>Quest Worksheet: Monitoring a Volcano >Lesson 4: Volcanoes and Earth's Surface>Quest Check-In Lab: Signs of Eruption?</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Connections to Engineering, Technology, and Applications of Science	
Influence of Science, Engineering, and Technology on Society and the Natural World	
<p>• The uses of technologies and any limitations on their use are driven by individual or societal needs, desires, and values; by the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions. Thus technology use varies from region to region and over time.</p>	<p>Earth Systems SE/TE: Seismographs, 126 Predicting Volcano Hazards, 140</p> <p>Changing Earth and Human Activity SE/TE: uEngineer It!, 13 Mass Movement, 16</p> <p>Realize™ Digital Resources: Cycles Influencing Weather and Climate: Weather in the Atmosphere >Lesson 5: Severe Weather and Floods>uInvestigate Lab: Predicting Hurricanes;>Interactivity: Tinkering with Technology;>Quest Check-In Lab: A History of Hazardous Weather</p> <p>Earth Systems: Plate Tectonics >Lesson 3: Earthquakes and Tsunami Hazards>Interactivity: Earthquake Engineering;>Quest Check-In Interactivity: Monitoring a Volcano;>Quest Worksheet: Monitoring a Volcano</p> <p>Changing Earth and Human Activity: Earth's Surface Systems >Lesson 1: Weathering and Soil>uEngineer It! Interactivity: Landslide Prevention</p>
Unit 3: Forces, Motion, and Interactions	
<p>Performance Expectation MS-PS2-1: Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.</p>	<p>Forces SE/TE: Quest Kickoff, 2-3 uEngineer It!, 33 uDemonstrate Lab, 48-51</p> <p>Realize™ Digital Resources: Forces: Forces and Motion >Topic Launch: Forces and Motion>Quest Kickoff: Build a Better Bumper Car >Lesson 1: Describing Motion and Force>Quest Check-In Interactivity: Define Criteria and Constraints >Lesson 2: Speed, Velocity, and Acceleration>Quest Check-In Lab: Mass, Speed, and Colliding Cars >Lesson 3: Newton's Laws of Motion>Quest Check-In Interactivity: Apply Newton's Laws of Motion >Lesson 4: Friction and Gravitational Interactions>Quest Check-In Lab: Bumping Cars, Bumper Solutions</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Disciplinary Core Ideas	
PS2.A: Forces and Motion	
<ul style="list-style-type: none"> For any pair of interacting objects, the force exerted by the first object on the second object is equal in strength to the force that the second object exerts on the first, but in the opposite direction (Newton's third law). 	Forces SE/TE: Newton's Third Law of Motion, 29-31
Science and Engineering Practices	
Constructing Explanations and Designing Solutions	
<ul style="list-style-type: none"> Apply scientific ideas or principles to design an object, tool, process or system. 	Forces SE/TE: Quest Kickoff, 2-3 uEngineer It!, 33 uDemonstrate Lab, 48-51 Realize™ Digital Resources: Forces: Forces and Motion >Topic Launch: Forces and Motion>Quest Kickoff: Build a Better Bumper Car >Lesson 4: Friction and Gravitational Interactions>Quest Check-In Lab: Bumping Cars, Bumper Solutions
Crosscutting Concepts	
Systems and System Models	
<ul style="list-style-type: none"> Models can be used to represent systems and their interactions—such as inputs, processes and outputs—and energy and matter flows within systems. 	Realize™ Digital Resources: Forces: Forces and Motion >Lesson 2: Speed, Velocity, and Acceleration>Quest Check-In Lab: Mass, Speed, and Colliding Cars
Connections to Engineering, Technology, and Applications of Science	
Influence of Science, Engineering, and Technology on Society and the Natural World	
<ul style="list-style-type: none"> The uses of technologies and any limitations on their use are driven by individual or societal needs, desires, and values; by the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions. 	Forces SE/TE: uEngineer It!, 33 Realize™ Digital Resources: Forces: Forces and Motion >Lesson 4: Friction and Gravitational Interactions>Quest Check-In Lab: Bumping Cars, Bumper Solutions

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
<p>Performance Expectation MS-PS2-2: Plan an investigation to provide evidence that the change in an object’s motion depends on the sum of the forces on the object and the mass of the object.</p>	<p>Forces SE/TE: How Forces Affect Motion, 7-9 Math Toolbox, 10 Connect It!, 24 Newton’s First Law of Motion, 25-26 Newton’s Second Law of Motion, 27-28 uDemonstrate Lab, 48-51</p> <p>Realize™ Digital Resources: Forces: Forces and Motion >Lesson 1: Describing Force and Motion>Inquiry Warm-Up Lab: Is the Force With You? >Lesson 2: Speed, Velocity, and Acceleration>Quest Check-In Lab: Mass, Speed, and Colliding Cars >Lesson 3: Newton’s Laws of Motion>Interactivity: How Are Mass, Force, and Motion Related</p>
Disciplinary Core Ideas	
PS2.A: Forces and Motion	
<ul style="list-style-type: none"> • The motion of an object is determined by the sum of the forces acting on it; if the total force on the object is not zero, its motion will change. The greater the mass of the object, the greater the force needed to achieve the same change in motion. For any given object, a larger force causes a larger change in motion. 	<p>Forces SE/TE: How Forces Affect Motion, 7-9 Math Toolbox, 10 Lesson 1 Check, #5, 11</p>
<ul style="list-style-type: none"> • All positions of objects and the directions of forces and motions must be described in an arbitrarily chosen reference frame and arbitrarily chosen units of size. In order to share information with other people, these choices must also be shared. 	<p>Forces SE/TE: An Object in Motion, 5-6 Lesson 1 Check, #2, 11</p>
Science and Engineering Practices	
Planning and Carrying Out Investigations	
<ul style="list-style-type: none"> • Plan an investigation individually and collaboratively, and in the design: identify independent and dependent variables and controls, what tools are needed to do the gathering, how measurements will be recorded, and how many data are needed to support a claim. 	<p>Forces SE/TE: uDemonstrate Lab, 48-51</p> <p>Realize™ Digital Resources: Forces: Forces and Motion >Lesson 2: Speed, Velocity, and Acceleration>Quest Check-In Lab: Mass, Speed, and Colliding Cars</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Connections to Nature of Science	
Scientific Knowledge is Based on Empirical Evidence	
<ul style="list-style-type: none"> Science knowledge is based upon logical and conceptual connections between evidence and explanations. 	<p>Forces SE/TE: uDemonstrate Lab, 48-51</p> <p>Realize™ Digital Resources: Forces: Forces and Motion >Lesson 2: Speed, Velocity, and Acceleration>Quest Check-In Lab: Mass, Speed, and Colliding Cars >Lesson 3: Newton’s Laws of Motion>Interactivity: How Are Mass, Force, and Motion Related</p>
Crosscutting Concepts	
Stability and Change	
<ul style="list-style-type: none"> Explanations of stability and change in natural or designed systems can be constructed by examining the changes over time and forces at different scales. 	<p>Forces SE/TE: Representing Forces, 7 Lesson 1 Check, #5, 11 Connect It!!, 24</p> <p>Realize™ Digital Resources: Forces: Forces and Motion >Lesson 2: Speed, Velocity, and Acceleration>Quest Check-In Lab: Mass, Speed, and Colliding Cars</p>
<p>Performance Expectation MS-PS2-3: Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.</p>	<p>Forces SE/TE: The Essential Question, 53 Electric Force, Fields, and Energy, 57-59 Magnetic Fields and Current, 76-77 Solenoids and Electromagnets, 78-79 Topic 2 Evidence-Based Assessment, 96-97</p> <p>Realize™ Digital Resources: Forces: Electricity and Magnetism >Lesson 1: Electric Force>uInvestigate Lab: Detecting Charges >Lesson 4: Electric and Magnetic Interactions>Inquiry Warm-Up Lab: How Generators Work;>uInvestigate Lab: Electric Magnetic Motion</p>
Disciplinary Core Ideas	
PS2.B: Types of Interactions	
<ul style="list-style-type: none"> Electric and magnetic (electromagnetic) forces can be attractive or repulsive, and their sizes depend on the magnitudes of the charges, currents, or magnetic strengths involved and on the distances between the interacting objects. 	<p>Forces SE/TE: Electric Force, Fields, and Energy, 57-59 Magnetic Force and Energy, 67-68 Magnetic Fields and Current, 76-77 Solenoids and Electromagnets, 78-79</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
Asking Questions and Defining Problems	
<ul style="list-style-type: none"> Ask questions that can be investigated within the scope of the classroom, outdoor environment, and museums and other public facilities with available resources and, when appropriate, frame a hypothesis based on observations and scientific principles. 	Realize™ Digital Resources: Forces: Electricity and Magnetism >Lesson 4: Electric and Magnetic Interactions>Inquiry Warm-Up Lab: How Generators Work;>Investigate Lab: Electric Magnetic Motion
Crosscutting Concepts	
Cause and Effect	
<ul style="list-style-type: none"> Cause and effect relationships may be used to predict phenomena in natural or designed systems. 	Forces SE/TE: Reading Check, 77 Lesson 3 Check, #2, 80 Topic 2 Evidence-Based Assessment, #2, 96-97 Realize™ Digital Resources: Forces: Electricity and Magnetism >Lesson 1: Electric Force>Investigate Lab: Detecting Charges >Lesson 4: Electric and Magnetic Interactions>Investigate Lab: Electric Magnetic Motion
Performance Expectation MS-PS3-1: Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object. [Clarification Statement: Emphasis is on descriptive relationships between kinetic energy and mass separately from kinetic energy and speed. Examples could include riding a bicycle at different speeds, rolling different sizes of rocks downhill, and getting hit by a whiffle ball versus a tennis ball.]	Energy Transfer SE/TE: Kinetic Energy, 15-16 Math Toolbox, 16 Topic 1 Review and Assess, #8, #9, 42-43 Realize™ Digital Resources: Energy Transfer: Energy >Lesson 2: Kinetic Energy and Potential Energy>Interactivity: Interpret Kinetic Energy Graphs;>Investigate Lab: Mass, Velocity, and Kinetic Energy
Disciplinary Core Ideas	
PS3.A: Definitions of Energy	
<ul style="list-style-type: none"> Motion energy is properly called kinetic energy; it is proportional to the mass of the moving object and grows with the square of its speed. 	Energy Transfer SE/TE: Kinetic Energy, 15-16
Science and Engineering Practices	
Analyzing and Interpreting Data	
<ul style="list-style-type: none"> Construct and interpret graphical displays of data to identify linear and nonlinear relationships. 	Realize™ Digital Resources: Energy Transfer: Energy >Lesson 2: Kinetic Energy and Potential Energy>Interactivity: Interpret Kinetic Energy Graphs;>Investigate Lab: Mass, Velocity, and Kinetic Energy

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Crosscutting Concepts	
Scale, Proportion, and Quantity	
<ul style="list-style-type: none"> Proportional relationships (e.g. speed as the ratio of distance traveled to time taken) among different types of quantities provide information about the magnitude of properties and processes. 	<p>Energy Transfer SE/TE: Math Toolbox, 16 Lesson 2 Check, #2, 20</p> <p>Realize™ Digital Resources: Energy Transfer: Energy >Lesson 2: Kinetic Energy and Potential Energy>Interactivity: Interpret Kinetic Energy Graphs;>Investigate Lab: Mass, Velocity, and Kinetic Energy</p>
<p>Performance Expectation MS-PS3-2: Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.</p>	<p>Energy Transfer SE/TE: Potential Energy, 17-19</p> <p>Forces SE/TE: Energy, Forces, and Motion, 40-41 Model It!, 41 Charges and Potential Energy, 59 Question It!, 59 Potential Energy and Static Electricity, 63 Lesson 1 Check, #3, 64 Magnets and Potential Energy, 68 Potential Energy, 69 Topic 2 Review and Assess, #5, 94-95 Topic 2 Evidence-Based Assessment, 96-97 Demonstrate Lab, 98-101</p> <p>Realize™ Digital Resources: Energy Transfer: Energy >Lesson 2: Kinetic Energy and Potential Energy>Investigate Lab: Energy, Magnetism, and Electricity</p> <p>Forces: Electricity and Magnetism >Lesson 1: Electric Forces>Interactivity: Charged Interactions</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Disciplinary Core Ideas	
PS3.A: Definitions of Energy	
<ul style="list-style-type: none"> A system of objects may also contain stored (potential) energy, depending on their relative positions. 	<p>Energy Transfer SE/TE: Potential Energy, 17-19 Comparing Thermal Energy, 58</p> <p>Forces SE/TE: Energy, Forces, and Motion, 40-41 Model It!, 41 Charges and Potential Energy, 59 Question It!, 59 Potential Energy and Static Electricity, 63 Lesson 1 Check, #3, 64 Potential Energy, 69 Topic 2 Evidence-Based Assessment, 96-97 uDemonstrate Lab, 98-101</p>
PS3.C: Relationship Between Energy and Forces	
<ul style="list-style-type: none"> When two objects interact, each one exerts a force on the other that can cause energy to be transferred to or from the object. 	<p>Energy Transfer SE/TE: Work Related to Energy and Power, 10 Potential Energy, 17 Elastic Potential Energy, 19</p> <p>Forces SE/TE: Charges and Potential Energy, 59 Question It!, 59 Electric Currents and Circuits, 60-61 Potential Energy and Static Electricity, 63 Magnets and Potential Energy, 68</p>
Science and Engineering Practices	
<ul style="list-style-type: none"> Develop a model to describe unobservable mechanisms. 	<p>Forces SE/TE: Model It!, 41 Balloon and Paper, 63 Potential Energy, 69 uDemonstrate Lab, 98-101</p> <p>Realize™ Digital Resources: Energy Transfer: Energy >Lesson 2: Kinetic Energy and Potential Energy>ulnvestigate Lab: Energy, Magnetism, and Electricity</p> <p>Forces: Electricity and Magnetism >Lesson 1: Electric Forces>Interactivity: Charged Interactions</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Crosscutting Concepts	
Systems and System Models	
<ul style="list-style-type: none"> Models can be used to represent systems and their interactions – such as inputs, processes, and outputs – and energy and matter flows within systems. 	<p>Forces SE/TE: Model It!, 41 Balloon and Paper, 63 Potential Energy, 69</p> <p>Realize™ Digital Resources: Energy Transfer: Energy >Lesson 2: Kinetic Energy and Potential Energy>Investigate Lab: Energy, Magnetism, and Electricity</p> <p>Forces: Electricity and Magnetism >Lesson 1: Electric Forces>Interactivity: Charged Interactions</p>
<p>Performance Expectation MS-ETS1-1: Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.</p>	<p>Structure and Properties of Matter SE/TE: uEngineer It!, 55</p> <p>Earth Systems SE/TE: uEngineer It!, 59</p> <p>Diversity of Life SE/TE: uEngineer It!, 89</p> <p>Realize™ Digital Resources: Forces: Forces and Motion >Lesson 1: Describing Motion and Force>Quest Check-In Interactivity: Define Criteria and Constraints</p> <p>Changing Earth and Human Activity: Earth's Surface Systems >Lesson 2: Erosion and Deposition>Quest Check-In Lab: Ingenious Island Part I</p> <p>Systems, Reproduction, and Growth: Reproduction and Growth >Lesson 4: Factors Influencing Growth>Quest Check-In Interactivity: Make Your Construction Case</p>
Disciplinary Core Ideas	
ETS1.A: Defining and Delimiting Engineering Problems	
<ul style="list-style-type: none"> The more precisely a design task's criteria and constraints can be defined, the more likely it is that the designed solution will be successful. Specification of constraints includes consideration of scientific principles and other relevant knowledge that are likely to limit possible solutions. 	<p>Structure and Properties of Matter SE/TE: Define the Problem, 94-95</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
Asking Questions and Defining Problems	
<ul style="list-style-type: none"> Define a design problem that can be solved through the development of an object, tool, process or system and includes multiple criteria and constraints, including scientific knowledge that may limit possible solutions. 	<p>Structure and Properties of Matter SE/TE: uEngineer It!, 55</p> <p>Earth Systems SE/TE: uEngineer It!, 59</p> <p>Diversity of Life SE/TE: uEngineer It!, 89</p> <p>Realize™ Digital Resources: Forces: Forces and Motion >Lesson 1: Describing Motion and Force>Quest Check-In Interactivity: Define Criteria and Constraints</p> <p>Changing Earth and Human Activity: Earth's Surface Systems >Lesson 2: Erosion and Deposition>Quest Check-In Lab: Ingenious Island Part I</p> <p>Systems, Reproduction, and Growth: Reproduction and Growth >Lesson 4: Factors Influencing Growth>Quest Check-In Interactivity: Make Your Construction Case</p>
Crosscutting Concepts	
Influence of Science, Engineering, and Technology on Society and the Natural World	
<ul style="list-style-type: none"> All human activity draws on natural resources and has both short and long-term consequences, positive as well as negative, for the health of people and the natural environment. 	<p>Cycles Influencing Weather and Climate SE/TE: uEngineer It!, 135</p> <p>Changing Earth and Human Activity SE/TE: Using Energy Resources, 64 uEngineer It!, 73 Humans and Minerals, 80 Human Impacts, 88-89 Using Natural Resources, 108-109 Wetlands, 129 Human Activities, 140-141</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
<ul style="list-style-type: none"> The uses of technologies and limitations on their use are driven by individual or societal needs, desires, and values; by the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions. 	<p>Atoms and Chemical Reactions SE/TE: uEngineer It!, 77 Impact of Synthetic Materials, 103-104</p> <p>Cycles Influencing Weather and Climate SE/TE: uEngineer It!, 21 uEngineer It!, 135</p> <p>Earth Systems SE/TE: uEngineer It!, 59 uEngineer It!, 131</p> <p>Realize™ Digital Resources: Earth Systems: Plate Tectonics >Lesson 3: Earthquakes and Tsunami Hazards>Interactivity: Earthquake Engineering</p>
Unit 4: Earth, the Solar System, and the Universe	
<p>Performance Expectation MS-ESS1-1: Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.</p>	<p>Earth’s Place in the Universe SE/TE: The Seasons, 19-20 The Appearance of the Moon, 27-29 Two Types of Eclipses, 30 Eclipses, 31 Model It!, 31 Topic 1 Review and Assess, #17, #19, 36-37 Topic 1 Evidence-Based Assessment, 38-39 uDemonstrate Lab, 40-43</p> <p>Realize™ Digital Resources: Earth’s Place in the Universe: Earth-Sun-Moon System >Lesson 3: Phases and Eclipses>Interactivity: Our View of the Moon;>Interactivity: Eclipses;>Worksheet: Eclipses;>Virtual Lab: Shadows in Space</p>
Disciplinary Core Ideas	
ESS1.A: The Universe and Its Stars	
<ul style="list-style-type: none"> Patterns of the apparent motion of the sun, the moon, and stars in the sky can be observed, described, predicted, and explained with models. 	<p>Earth’s Place in the Universe SE/TE: Movement in the Sky, 8-9 Motions of the Moon, 28</p> <p>Realize™ Digital Resources: Earth’s Place in the Universe: Earth-Sun-Moon System >Lesson 1: Movement in Space>uInvestigate Lab: Watching the Skies >Lesson 3: Phases and Eclipses>uInvestigate Lab: How Does the Moon Move?</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
ESS1.B: Earth and the Solar System	
<ul style="list-style-type: none"> This model of the solar system can explain eclipses of the sun and the moon. Earth's spin axis is fixed in direction over the short-term but tilted relative to its orbit around the sun. The seasons are a result of that tilt and are caused by the differential intensity of sunlight on different areas of Earth across the year. 	<p>Earth's Place in the Universe SE/TE: How Earth Moves, 17-18 The Seasons, 19-20 Two Types of Eclipses, 30 Eclipses, 31 Topic 1 Evidence-Based Assessment, 38-39</p> <p>Realize™ Digital Resources: Earth's Place in the Universe: Earth-Sun-Moon System >Lesson 3: Phases and Eclipses>Interactivity: Eclipses;>Worksheet: Eclipses;>Virtual Lab: Shadows in Space</p>
Science and Engineering Practices	
Developing and Using Models	
<ul style="list-style-type: none"> Develop and use a model to describe phenomena. 	<p>Earth's Place in the Universe SE/TE: Model It!, 31 Topic 1 Review and Assess, #17, #19, 36-37 Topic 1 Evidence-Based Assessment, #3, #4, 38-39 uDemonstrate Lab, 40-43</p> <p>Realize™ Digital Resources: Earth's Place in the Universe: Earth-Sun-Moon System >Lesson 3: Phases and Eclipses>Interactivity: Eclipses;>Worksheet: Eclipses;>Virtual Lab: Shadows in Space</p>
Crosscutting Concepts	
Patterns	
<ul style="list-style-type: none"> Patterns can be used to identify cause-and-effect relationships. 	<p>Earth's Place in the Universe SE/TE: Lesson 2 Check, #2, 24 Topic 1 Evidence-Based Assessment, #4, 38-39 uDemonstrate Lab, 40-43</p> <p>Realize™ Digital Resources: Earth's Place in the Universe: Earth-Sun-Moon System >Lesson 3: Phases and Eclipses>Interactivity: Eclipses;>Worksheet: Eclipses</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Connections to Nature of Science	
Scientific Knowledge Assumes an Order and Consistency in Natural Systems	
<ul style="list-style-type: none"> Science assumes that objects and events in natural systems occur in consistent patterns that are understandable through measurement and observation. 	Earth’s Place in the Universe SE/TE: How Earth Moves, 17-18 The Seasons, 19-20 Gravity, 21 Orbital Motion, 23 Phases of the Moon, 29
Performance Expectation MS-ESS1-2: Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.	Earth’s Place in the Universe SE/TE: Gravity, 21 Understanding the Solar System, 49-52 Formation and Development of Stars, 73 From Stars to Galaxies, 83-85 Topic 2 Evidence-Based Assessment, 94-95 Realize™ Digital Resources: Earth’s Place in the Universe: Solar System and the Universe >Lesson 1: Solar System Objects>Interactivity: Solar System;>Worksheet: Solar System;>Investigate Lab: Pulling Planets >Lesson 4: Galaxies>Investigate Lab: Model the Milky Way
Disciplinary Core Ideas	
ESS1.A: The Universe and Its Stars	
<ul style="list-style-type: none"> Earth and its solar system are part of the Milky Way galaxy, which is one of many galaxies in the universe. 	Earth’s Place in the Universe SE/TE: Galaxies, 85 Extraordinary Science, 91
ESS1.B: Earth and the Solar System	
<ul style="list-style-type: none"> The solar system consists of the sun and a collection of objects, including planets, their moons, and asteroids that are held in orbit around the sun by its gravitational pull on them. 	Earth’s Place in the Universe SE/TE: Understanding the Solar System, 49-52 Structure of the Sun, 53-54 Features of the Sun, 55 The Solar System, 56-57
<ul style="list-style-type: none"> The solar system appears to have formed from a disk of dust and gas, drawn together by gravity. 	Earth’s Place in the Universe SE/TE: Solar System Formation, 58 Lesson 1 Check, #2, 59 Topic 2 Review and Assess, #4, 92-93

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
Developing and Using Models	
<ul style="list-style-type: none"> Develop and use a model to describe phenomena. 	Realize™ Digital Resources: Earth’s Place in the Universe: Solar System and the Universe >Lesson 1: Solar System Objects>uInvestigate Lab: Pulling Planets >Lesson 4: Galaxies>uInvestigate Lab: Model the Milky Way
Crosscutting Concepts	
Systems and System Models	
<ul style="list-style-type: none"> Models can be used to represent systems and their interactions. 	Realize™ Digital Resources: Earth’s Place in the Universe: Solar System and the Universe >Lesson 1: Solar System Objects>uInvestigate Lab: Pulling Planets >Lesson 4: Galaxies>uInvestigate Lab: Model the Milky Way
Connections to Nature of Science	
Scientific Knowledge Assumes an Order and Consistency in Natural Systems	
<ul style="list-style-type: none"> Science assumes that objects and events in natural systems occur in consistent patterns that are understandable through measurement and observation. 	Earth’s Place in the Universe SE/TE: Gravity, 21
Performance Expectation MS-ESS1-3: Analyze and interpret data to determine scale properties of objects in the solar system.	Earth’s Place in the Universe SE/TE: Distances in the Solar System, 50 Math Toolbox, 50 The Solar System, 56-57 Case Study: Comparing Solar System Objects, 60-61 Realize™ Digital Resources: Earth’s Place in the Universe: Solar System and the Universe >Topic Launch: Solar System and the Universe>uConnect Lab: Planetary Measures >Lesson 1: Solar System Objects>Interactivity: Distance Learning
Disciplinary Core Ideas	
ESS1.B: Earth and the Solar System	
<ul style="list-style-type: none"> The solar system consists of the sun and a collection of objects, including planets, their moons, and asteroids that are held in orbit around the sun by its gravitational pull on them. 	Earth’s Place in the Universe SE/TE: Understanding the Solar System, 49-52 The Solar System, 56-57

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
<ul style="list-style-type: none"> Analyze and interpret data to determine similarities and differences in findings. 	Realize™ Digital Resources: Earth’s Place in the Universe: Solar System and the Universe >Topic Launch: Solar System and the Universe>uConnect Lab: Planetary Measures >Lesson 1: Solar System Objects>Interactivity: Distance Learning
Crosscutting Concepts	
Scale, Proportion, and Quantity	
<ul style="list-style-type: none"> Time, space, and energy phenomena can be observed at various scales using models to study systems that are too large or too small. 	Earth’s Place in the Universe SE/TE: The Solar System, 56-57 Realize™ Digital Resources: Earth’s Place in the Universe: Solar System and the Universe >Topic Launch: Solar System and the Universe>uConnect Lab: Planetary Measures
Connections to Engineering, Technology, and Applications of Science	
Interdependence of Science, Engineering, and Technology	
<ul style="list-style-type: none"> Engineering advances have led to important discoveries in virtually every field of science and scientific discoveries have led to the development of entire industries and engineered systems. 	Earth’s Place in the Universe SE/TE: Collecting Space Data, 63-65 uEngineer It!, 71

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
<p>Performance Expectation MS-ESS2-1: Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.</p>	<p>Earth Systems SE/TE: The Earth System, 5-7 Movement in Earth's Mantle, 56-57 Mineral Formation, 64-66 Model It!, 66 Lesson 2 Check, #5, 68 How Rocks Form, 73-76 The Cycling of Earth's Materials, 79-82 Model It!, 82 Topic 2 Review and Assess, #5, 86-87 uDemonstrate Lab, 90-93</p> <p>Realize™ Digital Resources: Earth Systems: Introduction to Earth's Systems >Topic Launch: Introduction to Earth's Systems>uConnect Lab: What Interactions Occur Within the Earth System? >Lesson 1: Matter and Energy in Earth's Systems>uInvestigate Lab: Where Heat Flows</p> <p>Earth Systems: Minerals and Rocks in the Geosphere >Lesson 2: Minerals>uInvestigate Lab: Mineral Mash-Up >Lesson 3: Rocks>uInvestigate Lab: A Sequined Rock >Lesson 4: Cycling of Rocks>Interactivity: Rocks on the Move</p>
Disciplinary Core Ideas	
ESS2.A: Earth's Materials and Systems	
<p>• All Earth processes are the result of energy flowing and matter cycling within and among the planet's systems. This energy is derived from the sun and Earth's hot interior. The energy that flows and matter that cycles produce chemical and physical changes in Earth's materials and living organisms.</p>	<p>Earth Systems SE/TE: Water and Rock Cycles, 5 Energy Flow, 7 Lesson 1 Check, #3, 10 Movement in Earth's Mantle, 56-57 Mineral Formation, 64-66 How Rocks Form, 73-76 The Cycling of Earth's Materials, 79-82</p> <p>Realize™ Digital Resources: Earth Systems: Introduction to Earth's Systems >Lesson 1: Matter and Energy in Earth's Systems>uInvestigate Lab: Where Heat Flows</p> <p>Earth Systems: Minerals and Rocks in the Geosphere >Lesson 4: Cycling of Rocks>Interactivity: Rocks on the Move</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
Developing and Using Models	
<ul style="list-style-type: none"> Develop and use a model to describe phenomena. 	<p>Earth Systems SE/TE: Mantle Convection, 57 Model It!, 66 Lesson 2 Check, #5, 68 Model It!, 82 uDemonstrate Lab, 90-93</p> <p>Realize™ Digital Resources: Earth Systems: Introduction to Earth’s Systems >Topic Launch: Introduction to Earth’s Systems>uConnect Lab: What Interactions Occur Within the Earth System? >Lesson 1: Matter and Energy in Earth’s Systems>uInvestigate Lab: Where Heat Flows</p> <p>Earth Systems: Minerals and Rocks in the Geosphere >Lesson 2: Minerals>uInvestigate Lab: Mineral Mash-Up >Lesson 3: Rocks>uInvestigate Lab: A Sequined Rock >Lesson 4: Cycling of Rocks>Interactivity: Rocks on the Move</p>
Crosscutting Concepts	
Stability and Change	
<ul style="list-style-type: none"> Explanations of stability and change in natural or designed systems can be constructed by examining the changes over time and processes at different scales, including the atomic scale. 	<p>Earth Systems SE/TE: Eruption!, 76 Lesson 3 Check, #5, 77 uDemonstrate Lab, 90-93</p> <p>Realize™ Digital Resources: Earth Systems: Minerals and Rocks in the Geosphere >Lesson 2: Minerals>uInvestigate Lab: Mineral Mash-Up >Lesson 4: Cycling of Rocks>Interactivity: Rocks on the Move</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
<p>Performance Expectation MS-PS1-4: 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.</p>	<p>Structure and Properties of Matter SE/TE: Thermal Energy and Temperature, 57 Changes of State Between Solid and Liquid, 58-59 Changes of State Between Liquid and Gas, 60-62 Changing State from Solid to Gas, 63 Model It!, 63 Connect It!, 66 Pressure and Temperature of a Gas, 67-68 Temperature and Volume, 69-70 How Pistons Work, 74 Topic 2 Review and Assess, #11, 78-79 Topic 2 Evidence-Based Assessment, 80-81 uDemonstrate Lab, 82-85</p> <p>Realize™ Digital Resources: Structure and Properties of Matter: Solids, Liquids, and Gases >Lesson 2: Changes of State>Interactivity: States of Matter;>Worksheet: States of Matter;>Interactivity: Thermal Energy and Changes of State</p>
Disciplinary Core Ideas	
PS1.A: Structure and Properties of Matter	
<ul style="list-style-type: none"> • Gases and liquids are made of molecules or inert atoms that are moving about relative to each other. 	<p>Structure and Properties of Matter SE/TE: Particles of a Liquid, 51 Particles of a Gas, 53</p>
<ul style="list-style-type: none"> • In a liquid, the molecules are constantly in contact with others; in a gas, they are widely spaced except when they happen to collide. In a solid, atoms are closely spaced and may vibrate in position but do not change relative locations. 	<p>Structure and Properties of Matter SE/TE: Particles of a Solid, 48 Particles of a Liquid, 51 Particles of a Gas, 53 Topic 2 Review and Assess, #5, 78-79</p> <p>Realize™ Digital Resources: Structure and Properties of Matter: Solids, Liquids, and Gases >Lesson 1: States of Matter>uInvestigate Lab: Properties of Matter</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
<ul style="list-style-type: none"> The changes of state that occur with variations in temperature or pressure can be described and predicted using these models of matter. 	<p>Structure and Properties of Matter SE/TE: Changes of State Between Solid and Liquid, 58-59 Changes of State Between Liquid and Gas, 60-62 Changing State from Solid to Gas, 63 Model It!, 63 Topic 2 Review and Assess, #11, 78-79 Topic 2 Evidence-Based Assessment, 80-81</p> <p>Realize™ Digital Resources: Structure and Properties of Matter: Solids, Liquids, and Gases >Lesson 2: Changes of State>Interactivity: States of Matter;>Worksheet: States of Matter</p>
PS3.A: Definitions of Energy	
<ul style="list-style-type: none"> The term “heat” as used in everyday language refers both to thermal energy (the motion of atoms or molecules within a substance) and the transfer of that thermal energy from one object to another. In science, heat is used only for this second meaning; it refers to the energy transferred due to the temperature difference between two objects. (secondary) 	<p>Structure and Properties of Matter SE/TE: Thermal Energy, 57</p>
<ul style="list-style-type: none"> The temperature of a system is proportional to the average internal kinetic energy and potential energy per atom or molecule (whichever is the appropriate building block for the system’s material). The details of that relationship depend on the type of atom or molecule and the interactions among the atoms in the material. Temperature is not a direct measure of a system’s total thermal energy. The total thermal energy (sometimes called the total internal energy) of a system depends jointly on the temperature, the total number of atoms in the system, and the state of the material. (secondary) 	<p>Structure and Properties of Matter SE/TE: Temperature and Thermal Energy, 30 Thermal Energy and Temperature, 57</p>
Science and Engineering Practices	
Developing and Using Models	
<ul style="list-style-type: none"> Develop a model to predict and/or describe phenomena. 	<p>Structure and Properties of Matter SE/TE: Model It!, 63 Topic 2 Evidence-Based Assessment, #3, 80-81 uDemonstrate Lab, 82-85</p> <p>Realize™ Digital Resources: Structure and Properties of Matter: Solids, Liquids, and Gases >Lesson 2: Changes of State>Interactivity: States of Matter;>Worksheet: States of Matter</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Crosscutting Concepts	
Cause and Effect	
<ul style="list-style-type: none"> • Cause and effect relationships may be used to predict phenomena in natural or designed systems. 	Structure and Properties of Matter SE/TE: Write About It, 58 Lesson 2 Check, #1, 64
Performance Expectation MS-PS2-4: Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.	Forces SE/TE: Factors That Affect Gravity, 38-39 Literacy Connection, 39 Lesson 4 Check, #4, 42 Realize™ Digital Resources: Forces: Forces and Motion >Lesson 4: Friction and Gravitational Interactions>Enrichment: Gravitational Force of the Sun
Disciplinary Core Ideas	
PS2.B: Types of Interactions	
<ul style="list-style-type: none"> • Gravitational forces are always attractive. There is a gravitational force between any two masses, but it is very small except when one or both of the objects have large mass—e.g., Earth and the sun. 	Forces SE/TE: Universal Gravitation, 38 Factors Affecting Gravity, 39 Lesson 4 Check, #4, 42 Realize™ Digital Resources: Forces: Forces and Motion >Lesson 4: Friction and Gravitational Interactions>Enrichment: Gravitational Force of the Sun
Science and Engineering Practices	
Engaging in Argument from Evidence	
<ul style="list-style-type: none"> • Construct and present oral and written arguments supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem. 	Forces SE/TE: Literacy Connection, 39
Connections to Nature of Science	
Scientific Knowledge is Based on Empirical Evidence	
<ul style="list-style-type: none"> • Science knowledge is based upon logical and conceptual connections between evidence and explanations. 	Forces SE/TE: Literacy Connection, 39 Realize™ Digital Resources: Forces: Forces and Motion >Lesson 4: Friction and Gravitational Interactions>Enrichment: Gravitational Force of the Sun

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Crosscutting Concepts	
Systems and System Models	
<ul style="list-style-type: none"> Models can be used to represent systems and their interactions—such as inputs, processes and outputs—and energy and matter flows within systems. 	For related content, please see: Forces SE/TE: Model It!, 41
Performance Expectation MS-PS2-5: Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.	Forces SE/TE: Quest Kickoff, 54-55 Electric Force, Fields, and Energy, 57-59 Question It!, 59 Static Electricity, 62-63 Magnetic Force and Energy, 67-68 Magnetic Fields, 69-72 Topic 2 Evidence-Based Assessment, 96-97 uDemonstrate Lab, 98-101 Realize™ Digital Resources: Forces: Electricity and Magnetism >Topic Launch: Electricity and Magnetism>Quest Kickoff: Light as a Feather? >Lesson 1: Electric Force>Inquiry Warm-Up Lab: Uncanny Attractions >Lesson 2: Magnetic Force>Quest Check-In Lab: Tracking Levitation
Disciplinary Core Ideas	
PS2.B: Types of Interactions	
<ul style="list-style-type: none"> Forces that act at a distance (electric, magnetic, and gravitational) can be explained by fields that extend through space and can be mapped by their effect on a test object (a charged object, or a ball, respectively). 	Forces SE/TE: Electric Force, Fields, and Energy, 57-59 Question It!, 59 Static Electricity, 62-63 Lesson 1 Check, #4, 64 Magnetic Fields, 69-72 Lesson 2 Check, #5, 73
Science and Engineering Practices	
Planning and Carrying Out Investigations	
<ul style="list-style-type: none"> Conduct an investigation and evaluate the experimental design to produce data to serve as the basis for evidence that can meet the goals of the investigation. 	Forces SE/TE: Question It!, 59 uDemonstrate Lab, 98-101 Realize™ Digital Resources: Forces: Electricity and Magnetism >Lesson 1: Electric Force>Inquiry Warm-Up Lab: Uncanny Attractions >Lesson 2: Magnetic Force>Quest Check-In Lab: Tracking Levitation

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Crosscutting Concepts	
Cause and Effect	
<ul style="list-style-type: none"> • Cause and effect relationships may be used to predict phenomena in natural or designed systems. 	<p>Forces SE/TE: Question It!, 59 uDemonstrate Lab, 98-101</p> <p>Realize™ Digital Resources: Forces: Electricity and Magnetism >Lesson 1: Electric Force>Inquiry Warm-Up Lab: Uncanny Attractions >Lesson 2: Magnetic Force>Quest Check-In Lab: Tracking Levitation</p>
<p>Performance Expectation MS-ETS1-1: Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.</p>	<p>Structure and Properties of Matter SE/TE: uEngineer It!, 55</p> <p>Earth Systems SE/TE: uEngineer It!, 59</p> <p>Diversity of Life SE/TE: uEngineer It!, 89</p> <p>Realize™ Digital Resources: Forces: Forces and Motion >Lesson 1: Describing Motion and Force>Quest Check-In Interactivity: Define Criteria and Constraints</p> <p>Changing Earth and Human Activity: Earth's Surface Systems >Lesson 2: Erosion and Deposition>Quest Check-In Lab: Ingenious Island Part I</p> <p>Systems, Reproduction, and Growth: Reproduction and Growth >Lesson 4: Factors Influencing Growth>Quest Check-In Interactivity: Make Your Construction Case</p>
Disciplinary Core Ideas	
ETS1.A: Defining and Delimiting Engineering Problems	
<ul style="list-style-type: none"> • The more precisely a design task's criteria and constraints can be defined, the more likely it is that the designed solution will be successful. Specification of constraints includes consideration of scientific principles and other relevant knowledge that are likely to limit possible solutions. 	<p>Structure and Properties of Matter SE/TE: Define the Problem, 94-95</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
Asking Questions and Defining Problems	
<ul style="list-style-type: none"> Define a design problem that can be solved through the development of an object, tool, process or system and includes multiple criteria and constraints, including scientific knowledge that may limit possible solutions. 	<p>Structure and Properties of Matter SE/TE: uEngineer It!, 55</p> <p>Earth Systems SE/TE: uEngineer It!, 59</p> <p>Diversity of Life SE/TE: uEngineer It!, 89</p> <p>Realize™ Digital Resources: Forces: Forces and Motion >Lesson 1: Describing Motion and Force>Quest Check-In Interactivity: Define Criteria and Constraints Changing Earth and Human Activity: Earth's Surface Systems >Lesson 2: Erosion and Deposition>Quest Check-In Lab: Ingenious Island Part I Systems, Reproduction, and Growth: Reproduction and Growth >Lesson 4: Factors Influencing Growth>Quest Check-In Interactivity: Make Your Construction Case</p>
Crosscutting Concepts	
Influence of Science, Engineering, and Technology on Society and the Natural World	
<ul style="list-style-type: none"> All human activity draws on natural resources and has both short and long-term consequences, positive as well as negative, for the health of people and the natural environment. 	<p>Cycles Influencing Weather and Climate SE/TE: uEngineer It!, 135</p> <p>Changing Earth and Human Activity SE/TE: Using Energy Resources, 64 uEngineer It!, 73 Humans and Minerals, 80 Human Impacts, 88-89 Using Natural Resources, 108-109 Wetlands, 129 Human Activities, 140-141</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
<ul style="list-style-type: none"> The uses of technologies and limitations on their use are driven by individual or societal needs, desires, and values; by the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions. 	<p>Atoms and Chemical Reactions SE/TE: uEngineer It!, 77 Impact of Synthetic Materials, 103-104</p> <p>Cycles Influencing Weather and Climate SE/TE: uEngineer It!, 21 uEngineer It!, 135</p> <p>Earth Systems SE/TE: uEngineer It!, 59 uEngineer It!, 131</p> <p>Realize™ Digital Resources: Earth Systems: Plate Tectonics >Lesson 3: Earthquakes and Tsunami Hazards>Interactivity: Earthquake Engineering</p>
<p>Performance Expectation MS-ETS1-2: Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.</p>	<p>Energy Transfer SE/TE: uEngineer It!, 21</p> <p>Cycles Influencing Weather and Climate SE/TE: uEngineer It!, 21</p> <p>Systems, Reproduction, and Growth SE/TE: uEngineer It!, 37 uEngineer It!, 123</p> <p>Relationships Within Ecosystems SE/TE: uEngineer It!, 13</p> <p>Realize™ Digital Resources: Energy Transfer: Thermal Energy >Lesson 3: Heat and Materials>Quest Check-In Lab: Keep the Heat In</p>
Disciplinary Core Ideas	
ETS1.B: Developing Possible Solutions	
<ul style="list-style-type: none"> There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem. 	<p>Energy Transfer SE/TE: Test and Evaluate a Solution, 98</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
<ul style="list-style-type: none"> Evaluate competing design solutions based on jointly developed and agreed-upon design criteria. 	<p>Energy Transfer SE/TE: uEngineer It!, 21</p> <p>Cycles Influencing Weather and Climate SE/TE: uEngineer It!, 21</p> <p>Systems, Reproduction, and Growth SE/TE: uEngineer It!, 37 uEngineer It!, 123</p> <p>Relationships Within Ecosystems SE/TE: uEngineer It!, 13</p> <p>Realize™ Digital Resources: Energy Transfer: Thermal Energy >Lesson 3: Heat and Materials>Quest Check-In Lab: Keep the Heat In</p>
<p>Performance Expectation MS-ETS1-3: 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.</p>	<p>Forces SE/TE: uEngineer It!, 33</p> <p>Cycles Influencing Weather and Climate SE/TE: uEngineer It!, 81</p> <p>Realize™ Digital Resources: Changing Earth and Human Activity: Earth's Surface Systems >Lesson 3: Water Erosion>Quest Check-In Lab: Ingenious Island Part II</p>
Disciplinary Core Ideas	
ETS1.B: Developing Possible Solutions	
<ul style="list-style-type: none"> There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem. 	<p>Forces SE/TE: Test and Evaluate a Solution, 112</p>
<ul style="list-style-type: none"> Sometimes parts of different solutions can be combined to create a solution that is better than any of its predecessors. 	<p>Forces SE/TE: Test and Evaluate a Solution, 112 Redesign and Retest the Solution, 113</p>
ETS1.C: Optimizing the Design Solution	
<ul style="list-style-type: none"> Although one design may not perform the best across all tests, identifying the characteristics of the design that performed the best in each test can provide useful information for the redesign process - that is, some of the characteristics may be incorporated into the new design. 	<p>Forces SE/TE: Test and Evaluate a Solution, 112 Redesign and Retest the Solution, 113</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
Developing and Using Models	
<ul style="list-style-type: none"> Develop a model to generate data to test ideas about designed systems, including those representing inputs and outputs. 	<p>Forces SE/TE: uEngineer It!, 33</p> <p>Cycles Influencing Weather and Climate SE/TE: uEngineer It!, 81</p> <p>Realize™ Digital Resources: Changing Earth and Human Activity: Earth's Surface Systems >Lesson 3: Water Erosion>Quest Check-In Lab: Ingenious Island Part II</p>
<p>Performance Expectation MS-ETS1-4: Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.</p>	<p>Structure and Properties of Matter SE/TE: uEngineer It!, 33</p> <p>Changing Earth and Human Activity SE/TE: uEngineer It!, 145</p> <p>Realize™ Digital Resources: Energy Transfer: Thermal Energy >Lesson 2: Heat Transfer>Interactivity: Solar Oven Design;>Worksheet: Solar Oven Design</p>
Disciplinary Core Ideas	
ETS1.B: Developing Possible Solutions	
<ul style="list-style-type: none"> A solution needs to be tested, and then modified on the basis of the test results, in order to improve it. 	<p>Structure and Properties of Matter SE/TE: Test and Evaluate a Solution, 96 Redesign and Retest the Solution, 97</p>
<ul style="list-style-type: none"> Models of all kinds are important for testing solutions. 	<p>Structure and Properties of Matter SE/TE: Scientific Models, 88 Design a Solution, 96</p>
ETS1.C: Optimizing the Design Solution	
<ul style="list-style-type: none"> The iterative process of testing the most promising solutions and modifying what is proposed on the basis of the test results leads to greater refinement and ultimately to an optimal solution. 	<p>Structure and Properties of Matter SE/TE: Test and Evaluate a Solution, 96 Redesign and Retest the Solution, 97</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards Curriculum, Grade 8**

Montgomery County Next Generation Science Curriculum, Grade 8	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
Developing and Using Models	
<ul style="list-style-type: none"> • Develop a model to generate data to test ideas about designed systems, including those representing inputs and outputs. 	<p>Structure and Properties of Matter SE/TE: uEngineer It!, 33</p> <p>Changing Earth and Human Activity SE/TE: uEngineer It!, 145</p> <p>Realize™ Digital Resources: Energy Transfer: Thermal Energy >Lesson 2: Heat Transfer>Interactivity: Solar Oven Design;>Worksheet: Solar Oven Design</p>

©2021 Savvas Learning Company LLC