

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



To the

Montgomery County, Maryland
Next Generation Science Standards
Curriculum, Grade 7

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

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, Grade 7**

Table of Contents

Unit 1: Cellular Structure and Processes	4
Unit 2: Matter and Energy Flow in Ecosystems.....	16
Unit 3: Inheritance and Variation of Traits.....	24
Unit 4: Earth’s History and Evolution.....	32

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
Unit 1: Cellular Structure and Processes	
<p>Performance Expectation MS-LS1-1: Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.</p>	<p>Systems, Reproduction, and Growth SE/TE: Characteristics of Living Things, 5-7 Microorganisms, 27 Bacteria, 30-32 Protists, 33 Fungi, 34-35 Form and Function, 39 Characteristics of Plants, 40-43 Characteristics of Animals, 44-47 Topic 1 Evidence-Based Assessment, 52-53 uDemonstrate Lab, 54-57 Cells, 63 Principles of Cell Theory, 66 Plan It!, 67</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Living Things in the Biosphere >Lesson 1: Living Things>uInvestigate Lab: Cheek Cells >Lesson 3: Viruses, Bacteria, Protists, and Fungi>uInvestigate Lab: Life in a Drop of Pond Water >Lesson 4: Plants and Animals>Interactivity: Different Cells, Different Jobs;>uInvestigate Lab: Algae and Plants</p> <p>Systems, Reproduction, and Growth: The Cell System >Lesson 1: Structure and Functions of Cells>Virtual Lab: Living or Not?;>uInvestigate Lab: Observing Cells</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
Disciplinary Core Ideas	
LS1.A: Structure and Function	
<ul style="list-style-type: none"> All living things are made up of cells, which is the smallest unit that can be said to be alive. An organism may consist of one single cell (unicellular) or many different numbers and types of cells (multicellular). 	<p>Systems, Reproduction, and Growth SE/TE: Characteristics of Living Things, 5-7 Microorganisms, 27 Bacteria, 30-32 Protists, 33 Fungi, 34-35 Form and Function, 39 Characteristics of Plants, 40-43 Characteristics of Animals, 44-47 Principles of Cell Theory, 66</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Living Things in the Biosphere >Lesson 1: Living Things>Investigate Lab: Cheek Cells >Lesson 3: Viruses, Bacteria, Protists, and Fungi>Investigate Lab: Life in a Drop of Pond Water >Lesson 4: Plants and Animals>Investigate Lab: Algae and Plants</p> <p>Systems, Reproduction, and Growth: The Cell System >Lesson 1: Structure and Functions of Cells>Investigate Lab: Observing Cells</p>
Science and Engineering Practices	
Planning and Carrying Out Investigations	
<ul style="list-style-type: none"> Conduct an investigation to produce data to serve as the basis for evidence that meet the goals of an investigation. 	<p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Living Things in the Biosphere >Lesson 1: Living Things>Investigate Lab: Cheek Cells >Lesson 3: Viruses, Bacteria, Protists, and Fungi>Investigate Lab: Life in a Drop of Pond Water >Lesson 4: Plants and Animals>Investigate Lab: Algae and Plants</p>
Crosscutting Concepts	
Scale, Proportion, and Quantity	
<ul style="list-style-type: none"> Phenomena that can be observed at one scale may not be observable at another scale. 	<p>Systems, Reproduction, and Growth SE/TE: Microscopes, 67-69</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Living Things in the Biosphere >Lesson 4: Plants and Animals>Investigate Lab: Algae and Plants</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
Connections to Engineering, Technology and Applications of Science	
<ul style="list-style-type: none"> Interdependence of Science, Engineering, and Technology 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. 	<p>Systems, Reproduction, and Growth SE/TE: Life Produces More Life, 8-9 Cell Theory, 64-68 Extraordinary Science, 71</p>
<p>Performance Expectation MS-LS1-2: Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.</p>	<p>Systems, Reproduction, and Growth SE/TE: Quest Kickoff, 60-61 Parts of a Cell, 73-78 Students Discourse, 77 Model It!, 77 Cells Working Together, 79-80 Lesson 2 Check, #1, 81 Quest Check-In, 81 Moving Materials Into and Out of Cells, 83-88 Model It!, 89 Topic 2 Evidence-Based Assessment, 104-105</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: The Cell System >Topic Launch: The Cell System>Quest Kickoff: Cells on Display >Lesson 2: Cell Structures>Quest Check-In Lab: Make a Cell Model >Lesson 3: Obtaining and Removing Materials>Investigate Lab: Egg-speriment with a Cell</p>
Disciplinary Core Ideas	
LS1.A: Structure and Function	
<ul style="list-style-type: none"> Within cells, special structures are responsible for particular functions, and the cell membrane forms the boundary that controls what enters and leaves the cell. 	<p>Systems, Reproduction, and Growth SE/TE: Parts of a Cell, 73-78 Specialized Cells, 79 Lesson 2 Check, #1, 81 Moving Materials Into and Out of Cells, 83-88 Topic 2 Evidence-Based Assessment, 104-105</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: The Cell System >Lesson 2: Cell Structures>Interactivity: Build a Cell;>Worksheet: Build a Cell >Lesson 3: Obtaining and Removing Materials>Interactivity: Cell Transport</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	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>Systems, Reproduction, and Growth SE/TE: Plant and Animal Cell Differences, 74 Model It!, 77 Quest Check-In, 81 A Selective Barrier, 84 Model It!, 86 Model It!, 89 Topic 2 Evidence-Based Assessment, #1, 104-105</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: The Cell System >Lesson 2: Cell Structures>Quest Check-In Lab: Make a Cell Model >Lesson 3: Obtaining and Removing Materials>Investigate Lab: Egg-speriment with a Cell</p>
Crosscutting Concepts	
Structure and Function	
<ul style="list-style-type: none"> • Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the relationships among its parts, therefore complex natural structures/systems can be analyzed to determine how they function. 	<p>Systems, Reproduction, and Growth SE/TE: Student Discourse, 77 Lesson 2 Check, #4, 81 Large Molecules Move Into and Out of Cells, 88 Quest Check-In, 90</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: The Cell System >Lesson 2: Cell Structures>Interactivity: Structure Function Junction;>Interactivity: Build a Cell;>Worksheet: Build a Cell;>Interactivity: Specialized Cells >Lesson 3: Obtaining and Removing Materials>Investigate Lab: Egg-speriment with a Cell</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

<p style="text-align: center;">Montgomery County Next Generation Science Curriculum, Grade 7</p>	<p style="text-align: center;">Elevate Science ©2019 Grades 6-8 Modules</p>
<p>Performance Expectation MS-LS1-3: Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.</p>	<p>Systems, Reproduction, and Growth SE/TE: Organization of the Body, 115 Reading Check, 115 Levels of Organization, 116-117 Human Organ Systems, 118-121 Lesson 1 Check, #8, 122 Systems Working Together, 125-128 Lesson 2 Check, #5, 133 The Lower Digestive System, 142-145 Reading Check, 145 The Circulatory System, 149-153 Respiratory System, 154-155 Lesson 4 Check, #3, 159 Topic 3 Evidence-Based Assessment, 172-173 uDemonstrate Lab, 174-177</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Human Body Systems >Topic Launch: Human Body Systems>uConnect Lab: How Is Your Body Organized? >Lesson 4: Managing Materials>uInvestigate Lab: Body Systems Working Together</p>
<p>Disciplinary Core Ideas</p>	
<p>LS1.A: Structure and Function</p>	
<p>• In multicellular organisms, the body is a system of multiple interacting subsystems. These subsystems are groups of cells that work together to form tissues and organs that are specialized for particular body functions.</p>	<p>Systems, Reproduction, and Growth SE/TE: Cells Make Up an Organism, 80 Organization of the Body, 115 Levels of Organization, 116-117 Human Organ Systems, 118-121 Systems Working Together, 125-128 Interacting Systems, 129 The Lower Digestive System, 142-145 The Circulatory System, 149-153 Respiratory System, 154-155 Excretory System, 156-157 Topic 3 Evidence-Based Assessment, 172-173</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Human Body Systems >Lesson 2: Systems Interacting>uInvestigate Lab: Parts Working Together</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
<ul style="list-style-type: none"> • Use an oral and written argument supported by evidence to support or refute an explanation or a model for a phenomenon. 	<p>Systems, Reproduction, and Growth SE/TE: Lesson 1 Check, #8, 122 Reading Check, 145 Topic 3 Evidence-Based Assessment, #5, 172-173</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Human Body Systems >Topic Launch: Human Body Systems>uConnect Lab: How Is Your Body Organized? >Lesson 4: Managing Materials>uInvestigate Lab: Body Systems Working Together</p>
Crosscutting Concepts	
Systems and System Models	
<ul style="list-style-type: none"> • Systems may interact with other systems; they may have sub-systems and be a part of larger complex systems. 	<p>Systems, Reproduction, and Growth SE/TE: Organ Systems in the Human Body, 120 Lesson 1 Check, #3, 122 Interacting Systems, 129 Lesson 2 Check, #5, #6, 133 Human Digestive System, 145 Literacy Connection, 153 Systems Work Together, 154 Lesson 4 Check, #3, #4, 159 Quest Check-In, 159 Topic 3 Evidence-Based Assessment, #4, 172-173 uDemonstrate Lab, 174-177</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Human Body Systems >Topic Launch: Human Body Systems>uConnect Lab: How Is Your Body Organized? >Lesson 1: Body Organization>Interactivity: Interacting Systems >Lesson 4: Managing Materials>uInvestigate Lab: Body Systems Working Together</p>
Connections to Nature of Science	
Science is a Human Endeavor	
<ul style="list-style-type: none"> • Scientists and engineers are guided by habits of mind such as intellectual honesty, tolerance of ambiguity, skepticism, and openness to new ideas. 	<p>Systems, Reproduction, and Growth SE/TE: uEngineer It!, 123 Careers: Nutritionist, 147</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

<p style="text-align: center;">Montgomery County Next Generation Science Curriculum, Grade 7</p>	<p style="text-align: center;">Elevate Science ©2019 Grades 6-8 Modules</p>
<p>Performance Expectation MS-LS1-4: Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.</p>	<p>Systems, Reproduction, and Growth SE/TE: The Essential Question, 179 Plant Reproduction, 193 Plant Life Cycles, 194-195 Structures for Reproduction, 196-199 Lesson 2 Check, #2, 200 Animal Behavior, 203-205 Reproductive Strategies, 206-209 Lesson 3 Check, #3, 210 Topic 4 Review and Assess, 224-225 Topic 4 Evidence-Based Assessment, 226-227</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Reproduction and Growth >Topic Launch: Reproduction and Growth>uConnect Lab: To Care or Not to Care >Lesson 2: Plant Structures for Reproduction>uInvestigate Lab: Modeling Flowers >Lesson 3: Animal Behaviors for Reproduction>Interactivity: They’re Acting Like Animals;>uInvestigate Lab: Animal Behaviors for Reproduction</p>
<p>Disciplinary Core Ideas</p>	
<p>LS1.B: Growth and Development of Organisms</p>	
<p>• Animals engage in characteristic behaviors that increase the odds of reproduction.</p>	<p>Systems, Reproduction, and Growth SE/TE: Animal Behavior, 203-205 Reproductive Strategies, 206-209 Lesson 3 Check, #2, 210</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Reproduction and Growth >Lesson 3: Animal Behaviors for Reproduction>Interactivity: They’re Acting Like Animals;>uInvestigate Lab: Animal Behaviors for Reproduction</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
<ul style="list-style-type: none"> Plants reproduce in a variety of ways, sometimes depending on animal behavior and specialized features for reproduction. 	<p>Systems, Reproduction, and Growth SE/TE: Plant Reproduction, 193 Plant Life Cycles, 194-195 Structures for Reproduction, 196-199</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Reproduction and Growth >Lesson 2: Plant Structures for Reproduction>uInvestigate Lab: Modeling Flowers;>Interactivity: Plants and Pollinators</p>
Science and Engineering Practices	
<ul style="list-style-type: none"> Use an oral and written argument 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. 	<p>Systems, Reproduction, and Growth SE/TE: Topic 4 Review and Assess, #9, 224-225</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Reproduction and Growth >Topic Launch: Reproduction and Growth>uConnect Lab: To Care or Not to Care >Lesson 2: Plant Structures for Reproduction>uInvestigate Lab: Modeling Flowers >Lesson 3: Animal Behaviors for Reproduction>Interactivity: They're Acting Like Animals;>uInvestigate Lab: Animal Behaviors for Reproduction</p>
Crosscutting Concepts	
Cause and Effect	
<ul style="list-style-type: none"> Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability. 	<p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Reproduction and Growth >Topic Launch: Reproduction and Growth>uConnect Lab: To Care or Not to Care >Lesson 2: Plant Structures for Reproduction>uInvestigate Lab: Modeling Flowers >Lesson 3: Animal Behaviors for Reproduction>uInvestigate Lab: Animal Behaviors for Reproduction.</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
<p>Performance Expectation MS-LS1-5: Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.</p>	<p>Systems, Reproduction, and Growth SE/TE: The Essential Question, 179 Connect It!, 212 Growth and Development of Organisms, 213 Plant Responses and Growth, 214-216 Write About It, 216 Animal Growth, 217-220 Case Study: Warmer Waters, Fewer Fish, 222-223 Topic 4 Review and Assess, #17, 224-225 Topic 4 Evidence-Based Assessment, 226-227 uDemonstrate Lab, 228-231</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Reproduction and Growth >Lesson 4: Factors Influencing Growth>Interactivity: Breeding Bigger Bovines;>uInvestigate Lab: Watching Roots Grow;>uInvestigate Lab: What Are the Factors?</p>
Disciplinary Core Ideas	
LS1.B: Growth and Development of Organisms	
<ul style="list-style-type: none"> Genetic factors as well as local conditions affect the growth of the adult plant. 	<p>Systems, Reproduction, and Growth SE/TE: Plant Responses and Growth, 214-216</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Reproduction and Growth >Lesson 4: Factors Influencing Growth>uInvestigate Lab: Watching Roots Grow;>uInvestigate Lab: What Are the Factors?</p>
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>Systems, Reproduction, and Growth SE/TE: Connect It!, 212 Write About It, 216 Topic 4 Review and Assess, #17, 224-225 Topic 4 Evidence-Based Assessment, #4, 226-227</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Reproduction and Growth >Lesson 4: Factors Influencing Growth>Interactivity: Breeding Bigger Bovines;>uInvestigate Lab: Watching Roots Grow;>uInvestigate Lab: What Are the Factors?</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
Crosscutting Concepts	
Cause and Effect	
<ul style="list-style-type: none"> Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability. 	<p>Systems, Reproduction, and Growth SE/TE: Lesson 4 Check, #2, 221 Topic 4 Review and Assess, #16, 224-225 uDemonstrate Lab, 228-231</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Reproduction and Growth >Lesson 4: Factors Influencing Growth>uInvestigate Lab: Watching Roots Grow</p>
<p>Performance Expectation MS-LS1-6: Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.</p>	<p>Relationships Within Ecosystems SE/TE: Living Things and Energy, 5-7 Photosynthesis, 8-9 Expressing Photosynthesis, 10-11 Lesson 1 Check, #4, #5, 12 Topic 1 Evidence-Based Assessment, 26-27 Quest Findings, 27 uDemonstrate Lab, 28-31</p> <p>Realize™ Digital Resources: Relationships Within Ecosystems: Cell Processes >Lesson 1: Photosynthesis>Interactivity: Making Food for Cells</p>
Disciplinary Core Ideas	
LS1.C: Organization for Matter and Energy Flow in Organisms	
<ul style="list-style-type: none"> Plants, algae (including phytoplankton), and many microorganisms use the energy from light to make sugars (food) from carbon dioxide from the atmosphere and water through the process of photosynthesis, which also releases oxygen. These sugars can be used immediately or stored for growth or later use. 	<p>Relationships Within Ecosystems SE/TE: Living Things and Energy, 5-7 Photosynthesis, 8-9 Expressing Photosynthesis, 10 uDemonstrate Lab, 28-31</p> <p>Realize™ Digital Resources: Relationships Within Ecosystems: Cell Processes >Lesson 1: Photosynthesis>Interactivity: Making Food for Cells</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
PS3.D: Energy in Chemical Processes and Everyday Life	
<ul style="list-style-type: none"> The chemical reaction by which plants produce complex food molecules (sugars) requires an energy input (i.e., from sunlight) to occur. In this reaction, carbon dioxide and water combine to form carbon-based organic molecules and release oxygen. (secondary) 	<p>Relationships Within Ecosystems SE/TE: Photosynthesis, 8-9 Expressing Photosynthesis, 10</p> <p>Realize™ Digital Resources: Relationships Within Ecosystems: Cell Processes >Lesson 1: Photosynthesis>Interactivity: Making Food for Cells</p>
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>Relationships Within Ecosystems SE/TE: Lesson 1 Check, #4, 12</p> <p>Realize™ Digital Resources: Relationships Within Ecosystems: Cell Processes >Lesson 1: Photosynthesis>Interactivity: Making Food for Cells</p>
Connections to Nature of Science	
Scientific Knowledge is Based on Empirical Evidence	
<ul style="list-style-type: none"> Science knowledge is based upon logical connections between evidence and explanations. 	<p>Relationships Within Ecosystems SE/TE: Topic 1 Evidence-Based Assessment, 26-27</p> <p>Realize™ Digital Resources: Relationships Within Ecosystems: Cell Processes >Lesson 1: Photosynthesis>Interactivity: Making Food for Cells</p>
Crosscutting Concepts	
Energy and Matter	
<ul style="list-style-type: none"> Within a natural system, the transfer of energy drives the motion and/or cycling of matter. 	<p>Relationships Within Ecosystems SE/TE: Stage 1: Trapping the Sun's Energy, 8 Quest Findings, 27 uDemonstrate Lab, 28-31</p> <p>Realize™ Digital Resources: Relationships Within Ecosystems: Cell Processes >Lesson 1: Photosynthesis>Interactivity: Making Food for Cells</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
<p>Performance Expectation MS-LS1-7: Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.</p>	<p>Relationships Within Ecosystems SE/TE: Energy and Cellular Respiration, 17-20 Model It!, 19 Lesson 2 Check, #2, 22 Topic 1 Review and Assess, #16, 24-25 uDemonstrate Lab, 28-31</p> <p>Realize™ Digital Resources: Relationships Within Ecosystems: Cell Processes >Lesson 2: Cellular Respiration>Interactivity: Making Energy for Cells;>uInvestigate Lab: Exhaling Carbon Dioxide;>Interactivity: Energy to Food and Food to Energy</p>
Disciplinary Core Ideas	
LS1.C: Organization for Matter and Energy Flow in Organisms	
<ul style="list-style-type: none"> • Within individual organisms, food moves through a series of chemical reactions in which it is broken down and rearranged to form new molecules, to support growth, or to release energy. 	<p>Relationships Within Ecosystems SE/TE: Energy and Cellular Respiration, 17-20 Lesson 2 Check, #4, 22</p> <p>Realize™ Digital Resources: Relationships Within Ecosystems: Cell Processes >Lesson 2: Cellular Respiration>Interactivity: Making Energy for Cells</p>
PS3.D: Energy in Chemical Processes and Everyday Life	
<ul style="list-style-type: none"> • Cellular respiration in plants and animals involve chemical reactions with oxygen that release stored energy. In these processes, complex molecules containing carbon react with oxygen to produce carbon dioxide and other materials. 	<p>Relationships Within Ecosystems SE/TE: The Big Picture of Photosynthesis, 8 Energy and Cellular Respiration, 17-20 Lesson 2 Check, #1, 22</p> <p>Realize™ Digital Resources: Relationships Within Ecosystems: Cell Processes >Lesson 2: Cellular Respiration>Interactivity: Making Energy for Cells</p>
Science and Engineering Practices	
Developing and Using Models	
<ul style="list-style-type: none"> • Develop a model to describe unobservable mechanisms. 	<p>Relationships Within Ecosystems SE/TE: Model It!, 19 Lesson 2 Check, #2, 22 Topic 1 Review and Assess, #16, 24-25 uDemonstrate Lab, 28-31</p> <p>Realize™ Digital Resources: Relationships Within Ecosystems: Cell Processes >Lesson 2: Cellular Respiration>uInvestigate Lab: Exhaling Carbon Dioxide</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
Crosscutting Concepts	
Energy and Matter	
<ul style="list-style-type: none"> Matter is conserved because atoms are conserved in physical and chemical processes. 	Relationships Within Ecosystems SE/TE: Math Toolbox, 20
Unit 2: Matter and Energy Flow in Ecosystems	
<p>Performance Expectation MS-LS1-3: Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.</p>	<p>Systems, Reproduction, and Growth SE/TE: Organization of the Body, 115 Reading Check, 115 Levels of Organization, 116-117 Human Organ Systems, 118-121 Lesson 1 Check, #8, 122 Systems Working Together, 125-128 Lesson 2 Check, #5, 133 The Lower Digestive System, 142-145 Reading Check, 145 The Circulatory System, 149-153 Respiratory System, 154-155 Lesson 4 Check, #3, 159 Topic 3 Evidence-Based Assessment, 172-173 uDemonstrate Lab, 174-177</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Human Body Systems >Topic Launch: Human Body Systems>uConnect Lab: How Is Your Body Organized? >Lesson 4: Managing Materials>uInvestigate Lab: Body Systems Working Together</p>
Disciplinary Core Ideas	
LS1.A: Structure and Function	
<ul style="list-style-type: none"> In multicellular organisms, the body is a system of multiple interacting subsystems. These subsystems are groups of cells that work together to form tissues and organs that are specialized for particular body functions. 	<p>Systems, Reproduction, and Growth SE/TE: Cells Make Up an Organism, 80 Organization of the Body, 115 Levels of Organization, 116-117 Human Organ Systems, 118-121 Systems Working Together, 125-128 Interacting Systems, 129 The Lower Digestive System, 142-145 The Circulatory System, 149-153 Respiratory System, 154-155 Excretory System, 156-157 Topic 3 Evidence-Based Assessment, 172-173</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Human Body Systems >Lesson 2: Systems Interacting>uInvestigate Lab: Parts Working Together</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
<ul style="list-style-type: none"> • Use an oral and written argument supported by evidence to support or refute an explanation or a model for a phenomenon. 	<p>Systems, Reproduction, and Growth SE/TE: Lesson 1 Check, #8, 122 Reading Check, 145 Topic 3 Evidence-Based Assessment, #5, 172-173</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Human Body Systems >Topic Launch: Human Body Systems>uConnect Lab: How Is Your Body Organized? >Lesson 4: Managing Materials>uInvestigate Lab: Body Systems Working Together</p>
Crosscutting Concepts	
Systems and System Models	
<ul style="list-style-type: none"> • Systems may interact with other systems; they may have sub-systems and be a part of larger complex systems. 	<p>Systems, Reproduction, and Growth SE/TE: Organ Systems in the Human Body, 120 Lesson 1 Check, #3, 122 Interacting Systems, 129 Lesson 2 Check, #5, #6, 133 Human Digestive System, 145 Literacy Connection, 153 Systems Work Together, 154 Lesson 4 Check, #3, #4, 159 Quest Check-In, 159 Topic 3 Evidence-Based Assessment, #4, 172-173 uDemonstrate Lab, 174-177</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Human Body Systems >Topic Launch: Human Body Systems>uConnect Lab: How Is Your Body Organized? >Lesson 1: Body Organization>Interactivity: Interacting Systems >Lesson 4: Managing Materials>uInvestigate Lab: Body Systems Working Together</p>
Connections to Nature of Science	
Science is a Human Endeavor	
<ul style="list-style-type: none"> • Scientists and engineers are guided by habits of mind such as intellectual honesty, tolerance of ambiguity, skepticism, and openness to new ideas. 	<p>Systems, Reproduction, and Growth SE/TE: uEngineer It!, 123 Careers: Nutritionist, 147</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
<p>Performance Expectation MS-LS1-7: Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.</p>	<p>Relationships Within Ecosystems SE/TE: Energy and Cellular Respiration, 17-20 Model It!, 19 Lesson 2 Check, #2, 22 Topic 1 Review and Assess, #16, 24-25 uDemonstrate Lab, 28-31</p> <p>Realize™ Digital Resources: Relationships Within Ecosystems: Cell Processes >Lesson 2: Cellular Respiration>Interactivity: Making Energy for Cells;>uInvestigate Lab: Exhaling Carbon Dioxide;>Interactivity: Energy to Food and Food to Energy</p>
Disciplinary Core Ideas	
LS1.C: Organization for Matter and Energy Flow in Organisms	
<ul style="list-style-type: none"> • Within individual organisms, food moves through a series of chemical reactions in which it is broken down and rearranged to form new molecules, to support growth, or to release energy. 	<p>Relationships Within Ecosystems SE/TE: Energy and Cellular Respiration, 17-20 Lesson 2 Check, #4, 22</p> <p>Realize™ Digital Resources: Relationships Within Ecosystems: Cell Processes >Lesson 2: Cellular Respiration>Interactivity: Making Energy for Cells</p>
PS3.D: Energy in Chemical Processes and Everyday Life	
<ul style="list-style-type: none"> • Cellular respiration in plants and animals involve chemical reactions with oxygen that release stored energy. In these processes, complex molecules containing carbon react with oxygen to produce carbon dioxide and other materials. 	<p>Relationships Within Ecosystems SE/TE: The Big Picture of Photosynthesis, 8 Energy and Cellular Respiration, 17-20 Lesson 2 Check, #1, 22</p> <p>Realize™ Digital Resources: Relationships Within Ecosystems: Cell Processes >Lesson 2: Cellular Respiration>Interactivity: Making Energy for Cells</p>
Science and Engineering Practices	
Developing and Using Models	
<ul style="list-style-type: none"> • Develop a model to describe unobservable mechanisms. 	<p>Relationships Within Ecosystems SE/TE: Model It!, 19 Lesson 2 Check, #2, 22 Topic 1 Review and Assess, #16, 24-25 uDemonstrate Lab, 28-31</p> <p>Realize™ Digital Resources: Relationships Within Ecosystems: Cell Processes >Lesson 2: Cellular Respiration>uInvestigate Lab: Exhaling Carbon Dioxide</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
Crosscutting Concepts	
Energy and Matter	
<ul style="list-style-type: none"> Matter is conserved because atoms are conserved in physical and chemical processes. 	Relationships Within Ecosystems SE/TE: Math Toolbox, 20
Performance Expectation MS-LS1-8: Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.	Systems, Reproduction, and Growth SE/TE: Stimulus and Response, 127 Connect It!, 160 Reflect, 161 Nervous System, 161-165 Model It!, 165 Lesson 5 Check, #3, 169 Topic 3 Review and Assess, #16, 170-171 uDemonstrate Lab, 174-177 Realize™ Digital Resources: Systems, Reproduction, and Growth: Human Body Systems >Lesson 5: Controlling Processes>uInvestigate Lab: What Are the Parts of the Nervous System?;>Enrichment: Polygraph Tests
Disciplinary Core Ideas	
LS1.D: Information Processing	
<ul style="list-style-type: none"> Each sense receptor responds to different inputs (electromagnetic, mechanical, chemical), transmitting them as signals that travel along nerve cells to the brain. The signals are then processed in the brain, resulting in immediate behaviors or memories. 	Systems, Reproduction, and Growth SE/TE: Nervous System, 161-165 Model It!, 165 Lesson 5 Check, #3, 169 Topic 3 Review and Assess, #16, 170-171 uDemonstrate Lab, 174-177
Science and Engineering Practices	
<ul style="list-style-type: none"> Gather, read, and synthesize information from multiple appropriate sources and assess the credibility, accuracy, and possible bias of each publication and methods used, and describe how they are supported or not supported by evidence. 	Systems, Reproduction, and Growth SE/TE: Reflect, 161 Quest Check-In, 169 Realize™ Digital Resources: Systems, Reproduction, and Growth: Human Body Systems >Lesson 5: Controlling Processes>Enrichment: Polygraph Tests

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	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 systems. 	<p>Systems, Reproduction, and Growth SE/TE: Connect It!, 160 Parts of the Nervous System, 163 Lesson 5 Check, #3, 169 uDemonstrate Lab, 174-177</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Human Body Systems >Lesson 5: Controlling Processes>Inquiry Warm-Up Lab: How Does Your Knee React?;>uInvestigate Lab: What Are the Parts of the Nervous System?</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>
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, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
<u>Asking Questions and Defining Problems</u>	
<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	
<u>Influence of Science, Engineering, and Technology on Society and the Natural World</u>	
<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, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	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, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	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, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	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>
Unit 3: Inheritance and Variation of Traits	
<p>Performance Expectation MS-LS3-1: Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.</p>	<p>Diversity of Life SE/TE: Case Study: Cephalopods Special Edition, 14-15 Types of Mutations, 40-41 Model It!, 41 Mutation Effects, 43 Mutations in Reproduction, 44-46 Genetic Evidence for a Common Ancestor, 114-115 Proteins, 116-117</p> <p>Realize™ Digital Resources: Diversity of Life: Genes and Heredity >Lesson 3: Genetic Coding and Protein Synthesis>uInvestigate Lab: Modeling Protein Synthesis</p>
Disciplinary Core Ideas	
LS3.A: Inheritance of Traits	
<ul style="list-style-type: none"> Genes are located in the chromosomes of cells, with each chromosome pair containing two variants of each of many distinct genes. Each distinct gene chiefly controls the production of specific proteins, which in turn affects the traits of the individual. Changes (mutations) to genes can result in changes to proteins, which can affect the structures and functions of the organism and thereby change traits. 	<p>Diversity of Life SE/TE: Chromosomes and Genes, 17-19 Making Proteins, 30-33 Lesson 3 Check, #5, 34 Chromosomes Size, 39 Types of Mutations, 40-41 Protein Changes, 46 Proteins, 116-117</p> <p>Realize™ Digital Resources: Diversity of Life: Genes and Heredity >Lesson 3: Genetic Coding and Protein Synthesis>uInvestigate Lab: Modeling Protein Synthesis</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
LS3.B: Variation of Traits	
<ul style="list-style-type: none"> In addition to variations that arise from sexual reproduction, genetic information can be altered because of mutations. Though rare, mutations may result in changes to the structure and function of proteins. Some changes are beneficial, others harmful, and some neutral to the organism. 	Diversity of Life SE/TE: Chromosomes and Variation, 38-39 Types of Mutations, 40-41 Mutation Effects, 43 Mutations in Reproduction, 44-46 Topic 1 Review and Assess, #15, 58-59 Mutations, 87 Effects of Mutations, 93
Science and Engineering Practices	
Developing and Using Models	
<ul style="list-style-type: none"> Develop and use a model to describe phenomena. 	Diversity of Life SE/TE: Model It!, 41 Realize™ Digital Resources: Diversity of Life: Genes and Heredity >Lesson 3: Genetic Coding and Protein Synthesis>ulInvestigate Lab: Modeling Protein Synthesis
Crosscutting Concepts	
Structure and Function	
<ul style="list-style-type: none"> Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the shapes, composition, and relationships among its parts, therefore complex natural structures/systems can be analyzed to determine how they function. 	Realize™ Digital Resources: Diversity of Life: Genes and Heredity >Lesson 3: Genetic Coding and Protein Synthesis>ulInvestigate Lab: Modeling Protein Synthesis

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
<p>Performance Expectation MS-LS3-2: Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.</p>	<p>Systems, Reproduction, and Growth SE/TE: Asexual and Sexual Reproduction, 183-185 Model It!, 184 Inherited Traits, 186-188 Lesson 1 Check, #5, 191 Topic 4 Review and Assess, #5, 224-225</p> <p>Diversity of Life SE/TE: Forming Sex Cells, 21-23</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Reproduction and Growth >Lesson 1: Patterns of Reproduction>Investigate Lab: Comparing Methods of Reproduction Diversity of Life: Genes and Heredity >Lesson 2: Chromosomes and Inheritance>Interactivity: Look Inside;>Interactivity: Colorful Chromosomes</p>
Disciplinary Core Ideas	
LS1.B: Growth and Development of Organisms	
<p>• Organisms reproduce, either sexually or asexually, and transfer their genetic information to their offspring. (secondary)</p>	<p>Systems, Reproduction, and Growth SE/TE: Asexual and Sexual Reproduction, 183-185</p> <p>Diversity of Life SE/TE: Forming Sex Cells, 21-23</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Reproduction and Growth >Lesson 1: Patterns of Reproduction>Investigate Lab: Comparing Methods of Reproduction Diversity of Life: Genes and Heredity >Lesson 2: Chromosomes and Inheritance>Interactivity: Look Inside</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
LS3.A: Inheritance of Traits	
<ul style="list-style-type: none"> Variations of inherited traits between parent and offspring arise from genetic differences that result from the subset of chromosomes (and therefore genes) inherited. 	<p>Systems, Reproduction, and Growth SE/TE: Sexual Reproduction, 184 Inherited Traits, 186-188 Lesson 1 Check, #6, 191</p> <p>Diversity of Life SE/TE: Chromosomes and Genes, 17-19 Forming Sex Cells, 21-23 Chromosomes and Variation, 38-39</p> <p>Realize™ Digital Resources: Diversity of Life: Genes and Heredity >Lesson 2: Chromosomes and Inheritance>Interactivity: Look Inside;>Investigate Lab: Chromosomes and Inheritance</p>
LS3.B: Variation of Traits	
<ul style="list-style-type: none"> In sexually reproducing organisms, each parent contributes half of the genes acquired (at random) by the offspring. Individuals have two of each chromosome and hence two alleles of each gene, one acquired from each parent. These versions may be identical or may differ from each other. 	<p>Systems, Reproduction, and Growth SE/TE: Sexual Reproduction, 184 Inherited Traits, 186-188</p> <p>Diversity of Life SE/TE: Genes and Alleles, 7 Chromosome Pairs, 19</p> <p>Realize™ Digital Resources: Diversity of Life: Genes and Heredity >Lesson 2: Chromosomes and Inheritance>Interactivity: Look Inside</p>
Science and Engineering Practices	
Developing and Using Models	
<ul style="list-style-type: none"> Develop and use a model to describe phenomena. 	<p>Systems, Reproduction, and Growth SE/TE: Model It!, 184</p> <p>Diversity of Life SE/TE: Meiosis, 22</p> <p>Realize™ Digital Resources: Systems, Reproduction, and Growth: Reproduction and Growth >Lesson 1: Patterns of Reproduction>Investigate Lab: Comparing Methods of Reproduction Diversity of Life: Genes and Heredity >Lesson 2: Chromosomes and Inheritance>Interactivity: Look Inside;>Interactivity: Colorful Chromosomes</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	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 systems. 	Diversity of Life SE/TE: Swapping Genetic Material, 21 Lesson 2 Check, #5, 24
Performance Expectation MS-LS4-5: Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.	Diversity of Life SE/TE: Artificial Selection, 49 Genetic Engineering, 50-53 Controversies of DNA Use, 56 Topic 1 Evidence-Based Assessment, 60-61 Realize™ Digital Resources: Diversity of Life: Genes and Heredity >Lesson 5: Genetic Technologies>Interactivity: Solving Problems with Genetics;>Enrichment: Advances in Genetics
Disciplinary Core Ideas	
LS4.B: Natural Selection	
<ul style="list-style-type: none"> • In artificial selection, humans have the capacity to influence certain characteristics of organisms by selective breeding. One can choose desired parental traits determined by genes, which are then passed on to offspring. 	Diversity of Life SE/TE: Artificial Selection, 49 Artificial Selection, 82
Science and Engineering Practices	
Obtaining, Evaluating, and Communicating Information	
<ul style="list-style-type: none"> • Gather, read, and synthesize information from multiple appropriate sources and assess the credibility, accuracy, and possible bias of each publication and methods used, and describe how they are supported or not supported by evidence. 	Diversity of Life SE/TE: Topic 1 Evidence-Based Assessment, 60-61 Realize™ Digital Resources: Diversity of Life: Genes and Heredity >Lesson 5: Genetic Technologies>Interactivity: Solving Problems with Genetics;>Enrichment: Advances in Genetics
Crosscutting Concepts	
Cause and Effect	
<ul style="list-style-type: none"> • Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability. 	Diversity of Life SE/TE: Lesson 5 Check, #3, 57

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
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. 	<p>Diversity of Life SE/TE: Genetic Engineering, 50-53</p> <p>Realize™ Digital Resources: Diversity of Life: Genes and Heredity >Lesson 5: Genetic Technologies>Interactivity: Solving Problems with Genetics;>Enrichment: Advances in Genetics</p>
Connections to Nature of Science	
Science Addresses Questions About the Natural and Material World	
<ul style="list-style-type: none"> Scientific knowledge can describe the consequences of actions but does not necessarily prescribe the decisions that society takes. 	<p>Diversity of Life SE/TE: Controversies of DNA Use, 56 Lesson 5 Check, #3, #7, 57 Topic 1 Evidence-Based Assessment, 60-61</p> <p>Realize™ Digital Resources: Diversity of Life: Genes and Heredity >Lesson 5: Genetic Technologies>Interactivity: Solving Problems with Genetics</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>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
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. 	Structure and Properties of Matter SE/TE: Define the Problem, 94-95
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. 	Structure and Properties of Matter SE/TE: uEngineer It!, 55 Earth Systems SE/TE: uEngineer It!, 59 Diversity of Life SE/TE: uEngineer It!, 89 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
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. 	Cycles Influencing Weather and Climate SE/TE: uEngineer It!, 135 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

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	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-ETS1-4: 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, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	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>
Unit 4: Earth’s History and Evolution	
<p>Performance Expectation MS-ESS1-4: Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history.</p>	<p>Earth Systems SE/TE: Connect It!, 164 The Geologic Time Scale, 165-167 Dividing Geologic Time, 168-169 Lesson 2 Check, #5, 170 Major Events in the Paleozoic Era, 173-175 Major Events in the Mesozoic Era, 176-177 Major Events in the Cenozoic Era, 178 How Scientists Organize Earth's History, 179 Topic 4 Evidence-Based Assessment, 184-185 uDemonstrate Lab, 186-189</p> <p>Realize™ Digital Resources: Earth Systems: History of Earth >Lesson 2: Geologic Time Scale>Interactivity: A Very Grand Canyon</p>
Disciplinary Core Ideas	
ESS1.C: The History of Planet Earth	
<ul style="list-style-type: none"> The geologic time scale interpreted from rock strata provides a way to organize Earth’s history. Analyses of rock strata and the fossil record provide only relative dates, not an absolute scale. 	<p>Earth Systems SE/TE: Determining Relative Ages of Rocks, 156-158 The Geologic Time Scale, 165-167 Dividing Geologic Time, 168-169 How Scientists Organize Earth's History, 179 Topic 4 Evidence-Based Assessment, 184-185</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	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>Earth Systems SE/TE: Connect It!, 164 Lesson 2 Check, #5, 170 Topic 4 Evidence-Based Assessment, #4, 184-185 uDemonstrate Lab, 186-189</p> <p>Realize™ Digital Resources: Earth Systems: History of Earth >Lesson 2: Geologic Time Scale>Interactivity: A Very Grand Canyon</p>
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: The Geologic Time Scale, 166-167 Question It!, 169 How Scientists Organize Earth's History, 178</p> <p>Realize™ Digital Resources: Earth Systems: History of Earth >Topic Launch: History of Earth>uConnect Lab: Dividing History >Lesson 2: Geologic Time Scale>Interactivity: On the Clock;>uInvestigate Lab: Going Back in Time</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
<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, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	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> ulnvestigate 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, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	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 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, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	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>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
<p>Performance Expectation MS-LS4-3: Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.</p>	<p>Diversity of Life SE/TE: Embryological Development, 104</p> <p>Realize™ Digital Resources: Diversity of Life: Natural Selection and Change Over Time >Lesson 5: Other Evidence of Evolution>Interactivity: Tiny Clues</p>
Disciplinary Core Ideas	
LS4.A: Evidence of Common Ancestry and Diversity	
<ul style="list-style-type: none"> • Comparison of the embryological development of different species also reveals similarities that show relationships not evident in the fully- formed anatomy. 	<p>Diversity of Life SE/TE: Embryological Development, 104</p> <p>Realize™ Digital Resources: Diversity of Life: Natural Selection and Change Over Time >Lesson 5: Other Evidence of Evolution>Interactivity: Tiny Clues</p>
Science and Engineering Practices	
<ul style="list-style-type: none"> • Analyze displays of data to identify linear and nonlinear relationships. 	<p>Realize™ Digital Resources: Diversity of Life: Natural Selection and Change Over Time >Lesson 5: Other Evidence of Evolution>Interactivity: Tiny Clues</p>
Crosscutting Concepts	
Patterns	
<ul style="list-style-type: none"> • Graphs, charts, and images can be used to identify patterns in data. 	<p>Realize™ Digital Resources: Diversity of Life: Natural Selection and Change Over Time >Lesson 5: Other Evidence of Evolution>Interactivity: Tiny Clues</p>
<p>Performance Expectation MS-LS4-4: Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.</p>	<p>Diversity of Life SE/TE: Galapagos Organisms, 76-77 How Natural Selection Works, 83-85 Model It!, 85 Lesson 2 Check, #5, 88</p> <p>Realize™ Digital Resources: Diversity of Life: Natural Selection and Change Over Time >Lesson 2: Natural Selection>Interactivity: Mice Selection on the Prairie;>Interactivity: Lessons From the Potato Famine</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
Disciplinary Core Ideas	
LS4.B: Natural Selection	
<ul style="list-style-type: none"> Natural selection leads to the predominance of certain traits in a population, and the suppression of others. 	<p>Diversity of Life SE/TE: How Natural Selection Works, 83-85 Lesson 2 Check, #4, 88 Sexual Selection, 95</p> <p>Realize™ Digital Resources: Diversity of Life: Natural Selection and Change Over Time >Lesson 2: Natural Selection>Interactivity: Mice Selection on the Prairie</p>
Science and Engineering Practices	
Constructing Explanations and Designing Solutions	
<ul style="list-style-type: none"> Construct an explanation that includes qualitative or quantitative relationships between variables that describe phenomena. 	<p>Diversity of Life SE/TE: Lesson 2 Check, #5, 88</p> <p>Realize™ Digital Resources: Diversity of Life: Natural Selection and Change Over Time >Lesson 2: Natural Selection>Interactivity: Mice Selection on the Prairie;>Interactivity: Lessons From the Potato Famine</p>
Crosscutting Concepts	
Cause and Effect	
<ul style="list-style-type: none"> Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability. 	<p>Diversity of Life SE/TE: Lesson 2 Check, #5, 88</p> <p>Realize™ Digital Resources: Diversity of Life: Natural Selection and Change Over Time >Lesson 2: Natural Selection>Interactivity: Mice Selection on the Prairie</p>
<p>Performance Expectation MS-LS4-5: Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.</p>	<p>Diversity of Life SE/TE: Artificial Selection, 49 Genetic Engineering, 50-53 Controversies of DNA Use, 56 Topic 1 Evidence-Based Assessment, 60-61</p> <p>Realize™ Digital Resources: Diversity of Life: Genes and Heredity >Lesson 5: Genetic Technologies>Interactivity: Solving Problems with Genetics;>Enrichment: Advances in Genetics</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
Disciplinary Core Ideas	
LS4.B: Natural Selection	
<ul style="list-style-type: none"> In artificial selection, humans have the capacity to influence certain characteristics of organisms by selective breeding. One can choose desired parental traits determined by genes, which are then passed on to offspring. 	Diversity of Life SE/TE: Artificial Selection, 49 Artificial Selection, 82
Science and Engineering Practices	
Obtaining, Evaluating, and Communicating Information	
<ul style="list-style-type: none"> Gather, read, and synthesize information from multiple appropriate sources and assess the credibility, accuracy, and possible bias of each publication and methods used, and describe how they are supported or not supported by evidence. 	Diversity of Life SE/TE: Topic 1 Evidence-Based Assessment, 60-61 Realize™ Digital Resources: Diversity of Life: Genes and Heredity >Lesson 5: Genetic Technologies>Interactivity: Solving Problems with Genetics;>Enrichment: Advances in Genetics
Crosscutting Concepts	
Cause and Effect	
<ul style="list-style-type: none"> Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability. 	Diversity of Life SE/TE: Lesson 5 Check, #3, 57
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. 	Diversity of Life SE/TE: Genetic Engineering, 50-53 Realize™ Digital Resources: Diversity of Life: Genes and Heredity >Lesson 5: Genetic Technologies>Interactivity: Solving Problems with Genetics;>Enrichment: Advances in Genetics
Connections to Nature of Science	
Science Addresses Questions About the Natural and Material World	
<ul style="list-style-type: none"> Scientific knowledge can describe the consequences of actions but does not necessarily prescribe the decisions that society takes. 	Diversity of Life SE/TE: Controversies of DNA Use, 56 Lesson 5 Check, #3, #7, 57 Topic 1 Evidence-Based Assessment, 60-61 Realize™ Digital Resources: Diversity of Life: Genes and Heredity >Lesson 5: Genetic Technologies>Interactivity: Solving Problems with Genetics

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
<p>Performance Expectation MS-LS4-6: Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.</p>	<p>Diversity of Life SE/TE: Connect It!, 80 Evolution by Natural Selection, 81-85 Math Toolbox, 84 Model It!, 85 Lesson 2 Check, #4, 88 Sexual Selection, 95</p> <p>Realize™ Digital Resources: Diversity of Life: Natural Selection and Change Over Time >Lesson 2: Natural Selection>Interactivity: Mice Selection on the Prairie;>Virtual Lab: Natural Selection in Butterfly Behavior</p>
Disciplinary Core Ideas	
LS4.C: Adaptation	
<ul style="list-style-type: none"> Adaptation by natural selection acting over generations is one important process by which species change over time in response to changes in environmental conditions. Traits that support successful survival and reproduction in the new environment become more common; those that do not become less common. Thus, the distribution of traits in a population changes. 	<p>Diversity of Life SE/TE: How Natural Selection Works, 83-85</p> <p>Realize™ Digital Resources: Diversity of Life: Natural Selection and Change Over Time >Lesson 2: Natural Selection>Interactivity: Species Adaptation;>Worksheet: Species Adaptation</p>
Science and Engineering Practices	
Using Mathematics and Computational Thinking	
<ul style="list-style-type: none"> Use mathematical representations to support scientific conclusions and design solutions. 	<p>Diversity of Life SE/TE: Math Toolbox, 84</p> <p>Realize™ Digital Resources: Diversity of Life: Natural Selection and Change Over Time >Lesson 2: Natural Selection>Interactivity: Mice Selection on the Prairie;>Virtual Lab: Natural Selection in Butterfly Behavior</p>
Crosscutting Concepts	
Cause and Effect	
<ul style="list-style-type: none"> Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability. 	<p>Realize™ Digital Resources: Diversity of Life: Natural Selection and Change Over Time >Lesson 2: Natural Selection>Interactivity: Mice Selection on the Prairie;>Virtual Lab: Natural Selection in Butterfly Behavior</p>

**A Correlation of Elevate Science Modules, Grades 6-8 ©2019
To the
Montgomery County Next Generation Science Standards, Grade 7**

<p style="text-align: center;">Montgomery County Next Generation Science Curriculum, Grade 7</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>	
<p>• 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>	<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, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	Elevate Science ©2019 Grades 6-8 Modules
Science and Engineering Practices	
<u>Asking Questions and Defining Problems</u>	
<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	
<u>Influence of Science, Engineering, and Technology on Society and the Natural World</u>	
<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, Grade 7**

<p style="text-align: center;">Montgomery County Next Generation Science Curriculum, Grade 7</p>	<p style="text-align: center;">Elevate Science ©2019 Grades 6-8 Modules</p>
<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>
<p>Disciplinary Core Ideas</p>	
<p>ETS1.B: Developing Possible Solutions</p>	
<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, Grade 7**

Montgomery County Next Generation Science Curriculum, Grade 7	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>

©2021 Savvas Learning Company LLC