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A Correlation of

Elevate Science Modules
Grades 6-8 ©2019

To the

Indiana
2016 Academic Standards for Science
Grade 7

Prepared by Savvas Learning Company, formerly Pearson K12 Learning

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Introduction

This document demonstrates how ***Elevate Science ©2019*** meets the Indiana Academic Standards for Science, Grades 6-8. Correlation page references are to the Student and Teacher's Editions and cited at the page level.

Savvas Learning Company is proud to introduce ***Elevate Science*** Middle Grades – where exploration is the heart of science! Designed to address the rigors of new science standards, students will experience science up close and personal, using real-world, relevant phenomena to solve project-based problems. Our newest program prepares students for the challenges of tomorrow, building strong reasoning skills and critical thinking strategies as they engage in explorations, formulate claims, and gather and analyze data that promote evidence-based arguments. The blended print and digital curriculum covers all Next Generation Science Standards at every grade level.

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

Transform science classrooms by immersing students in active, three-dimensional learning.
Elevate Science engages students with real-world tasks, open-ended Quests, uDemonstrate performance-based labs, and in the engineering/design process with uEngineer It! investigations.

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

Innovate learning by focusing on 21st century skills.
Students are encouraged to think, collaborate, and innovate! With ***Elevate Science***, students explore STEM careers, experience engineering activities, and discover our scientific and technological world. The content, strategies, and resources of Elevate Science equip the science classroom for scientific inquiry and science and engineering practices.

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

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

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

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

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

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7.PS Physical Science	
7.PS.1 Draw, construct models, or use animations to differentiate between atoms, elements, molecules, and compounds.	**Structure and Properties of Matter** **SE/TE:** Components of Matter, 8–10 *For supporting content, please see:* Types of Mixtures, 11 **Atoms and Chemical Reactions** **SE/TE:** Development of Atomic Theory, 5–9 A Modern Model of the Atom, 10–12 Bonding, 30–31 Bonding and Periodic Properties, 32–35 Ionic Bonding, 40–41 Covalent Bonding, 42–43 Properties of Compounds, 45–46 *For supporting content, please see:* Elements and the Periodic Table, 29
7.PS.2 Describe the properties of solids, liquids, and gases. Develop models that predict and describe changes in particle motion, density, temperature, and state of a pure substance when thermal energy is added or removed.	**Structure and Properties of Matter** **SE/TE:** Solids, Liquids, and Gases, 47 Describing Solids, 48–50 Describing Liquids, 51–52 Describing Gasses, 53 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 Pressure and Temperature of a Gas, 67–68 Temperature and Volume, 69–73 How Pistons Work, 74 uDemonstrate Lab: Melting Ice, 82–85
7.PS.3 Investigate the Law of Conservation of Mass by measuring and comparing the mass of a substance before and after a change of state.	**Structure and Properties of Matter** **SE/TE:** Conservation of Mass, 28–29 **Atoms and Chemical Reactions** **SE/TE:** Law of Conservation of Mass, 94–95 Interactivity, 94

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7.PS.4 Investigate Newton's first law of motion (Law of Inertia) and how different forces (gravity, friction, push and pull) affect the velocity of an object.	**Forces** **SE/TE:** Describing Velocity, 16 Determining Acceleration, 17–20 Newton's First law of Motion, 25–26 Quest Check-In: Apply Newton's Laws of Motion, 32 *For supporting content, please see:* Newton's Second Law of Motion, 27–28 Factors That Affect Friction, 35–37 Factors That Affect Gravity, 38–39 Energy, Forces, and Motion, 40–41
7.PS.5 Investigate Newton's second law of motion to show the relationship among force, mass and acceleration.	**Forces** **SE/TE:** Determining Acceleration, 17–20 Newton's Second Law of Motion, 27–28 Quest Check-In: Apply Newton's Laws of Motion, 32 Energy, Forces, and Motion, 40–41 *For supporting content, please see:* Newton's Third Law of Motion, 29–31
7.PS.6 Investigate Newton's third law of motion to show the relationship between action and reaction forces.	**Forces** **SE/TE:** Newton's Third Law of Motion, 29–31 Quest Check-In: Apply Newton's Laws of Motion, 32 uEngineer It! Generating Energy from Potholes, 33
7.PS.7 Construct a device that uses one or more of Newton's laws of motion. Explain how motion, acceleration, force, and mass are affecting the device.	**Forces** **SE/TE:** uEngineer It! Generating Energy from Potholes, 33 Quest Findings, 47
7.PS.8 Investigate a process in which energy is transferred from one form to another and provide evidence that the total amount of energy does not change during the transfer when the system is closed. (Law of conservation of energy)	**Energy Transfer** **SE/TE:** Energy Changes Form, 33–35 Energy Changes and the Law of Conservation, 36–38 Energy Conservation, 66 uDemonstrate Lab: 3,2,1…Liftoff!, 46–49

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7.PS.9 Compare and contrast the three types of heat transfer: radiation, convection, and conduction.	**Energy Transfer** **SE/TE:** Thermal Energy, 25 Types of Heat Transfer, 63–65 *For supporting content, please see:* Energy Conservation, 66–67 Quest Check-In: Contain the Heat, 68
7.ESS Earth and Space Science	
7.ESS.1 Identify and investigate the properties of minerals. Identify and classify a variety of rocks based on physical characteristics from their origin, and explain how they are related using the rock cycle. (i.e. Sedimentary, igneous, and metamorphic rocks)	**Earth Systems** **SE/TE:** Defining Minerals, 61–63 Mineral Formation, 64–67 Describing Rocks, 71–72 How Rocks Form, 73–76 The Cycling of Earth's Materials, 79–82 uDemonstrate Lab: The Rock Cycle in Action, 90–93
7.ESS.2 Construct a model or scale drawing (digitally or on paper), based on evidence from rock strata and fossil records, for how the geologic time scale is used to organize Earth's 4.6 billion-year-old history.	**Earth Systems** **SE/TE:** The Geologic Time Scale, 165–167 Dividing Geologic Time, 168–169 uEngineer It! Tiny Fossil, Big Accuracy, 171 *For supporting content, please see:* Describing the Ages of Rocks, 155 Determining the Relative Ages of Rocks, 156–158 Determining Absolute Ages of Rocks, 159–160
7.ESS.3 Using simulations or demonstrations, explain continental drift theory and how lithospheric (tectonic) plates have been and still are in constant motion resulting in the creation of landforms on the Earth's surface over time.	**Earth Systems S** **E/TE:** Constructive and Destructive Forces in the Geosphere, 14–15 Hypothesis of Continental Drift, 99–101 Mid-Ocean Ridges, 102 Sea-Floor Spreading, 103 Ocean Trenches, 104–105 The Slow Acceptance of Continental Drift, 107 The Theory of Plate Tectonics, 109–112 Plate Boundaries, 113–116 Case Study: Australia on the Move, 118–119 New Landforms From Plate Movement, 123–124 *For supporting content, please see:* Stress and Earth's Crust, 121–122 Volcanoes and Plate Boundaries, 134–135 Volcano Landforms, 136–137 uDemonstrate Lab: Modeling Sea-Floor Spreading, 146–149

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7.ESS.4 Construct an explanation, based on evidence found in and around Indiana, for how large scale physical processes, such as Karst topography and glaciation, have shaped the land.	**Earth Systems SE/TE:** Constructive and Destructive Forces in the Geosphere, 14–15 New Landforms From Plate Movement, 123–124 Volcano Landforms, 136–137 **Changing Earth and Human Activity SE/TE:** Breaking Down Earth's Surface, 5 Weathering Earth's Surface, 6–8 Changing Earth's Surface, 15 Mass Movement, 16–17 Erosion and Deposition by Wind, 18–19 How Water Causes Erosion, 23–24 Water Erosion and Deposition Change Earth's Surface, 25–28 Groundwater Changes Earth's Surface, 29–30 Case Study: Buyer Beware, 32–33 Glaciers Change Earth's Surface, 35–39 Waves Change Earth's Surface, 40–42 *For supporting content, please see:* Forming Soil, 9–11
7.ESS.5 Construct a model, diagram, or scale drawing of the interior layers of the Earth. Identify and compare the compositional (chemical) layers to the mechanical (physical) layers of the Earth's interior including magnetic properties.	**Earth Systems** **SE/TE:** Earth's Layers, 51–55 *For supporting content, please see:* Learning About Earth's Interior, 49–50 uEngineer It! Examining Earth's Interior from Space, 59 Movement in Earth's Mantle, 114–115
7.ESS.6 Research common synthetic materials (i.e. plastics, composites, polyester, and alloys) to gain an understanding that synthetic materials do come from natural resources and have an impact on society.	**Earth Systems** **SE/TE:** Global to Local: The Cost of Technology, 69 **Atoms and Chemical Reactions** **SE/TE:** Synthetic Materials, 99–102 Impact of Synthetic Materials, 103–104 Case Study: Is Plastic Really So Fantastic?, 106–109

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7.ESS.7 Describe the positive and negative environmental impacts of obtaining and utilizing various renewable and nonrenewable energy resources in Indiana. Determine which energy resources are the most beneficial and efficient.	**Changing Earth and Human Activity** **SE/TE:** Natural Resources, 57 Fossil Fuels, 58–62 Using Energy Resources, 64 Humans and Minerals, 80 Case Study: Phosphorus Fiasco, 82–83 Human Impacts, 88–89 Using Natural Resources, 108–109 Causes of Air Pollution, 113 Outdoor Air Pollution, 114–116 Controlling Air Pollution, 118–119 *For supporting content, please see:* Nuclear Energy, 63 Reducing Fossil Fuel Usage, 67 Alternative Sources of Energy, 68–71 Balancing Needs, 110
7.LS Life Science	
7.LS.1 Investigate and observe cells in living organisms and collect evidence showing that living things are made of cells. Compare and provide examples of prokaryotic and eukaryotic organisms. Identify the characteristics of living things.	**Systems, Reproduction, and Growth** **SE/TE:** Characteristics of Living Things, 5–7 Life Produces More Life, 8–9 Needs of Living Things, 10–11 Classifying Organisms, 17 Microorganisms, 27 Form and Function, 39 Characteristics of Plants, 40–43 Characteristics of Animals, 44–47 uDemonstrate Lab: It's Alive!, 54–57 Cells, 63–67 Extraordinary Science, 71 Parts of a Cell, 73–78 Cells Working Together, 79–80
7.LS.2 Create a model to show how the cells in multicellular organisms repeatedly divide to make more cells for growth and repair as a result of mitosis. Explain how mitosis is related to cancer.	**Systems, Reproduction, and Growth** **SE/TE:** The Functions of Cell Division, 95 The Cell Cycle, 96–100
7.LS.3 Explain how cells develop through differentiation into specialized tissues and organs in multicellular organisms.	**Systems, Reproduction, and Growth** **SE/TE:** Cells Work Together, 79–80 Interactivity, 79 The Right Cell for the Job, Figure 5, 79 Organization of the Body, 115 Levels of Organization, 116–117

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7.LS.4 Research and describe the functions and relationships between various cell types, tissues, and organs in the immune system, circulatory system and digestive system of the human body.	**Systems, Reproduction, and Growth SE/TE:** Human Organ Systems, 118–121 Systems Working Together, 125–129 Homeostasis, 130–132 *For supporting content, please see:* The Digestive Process, 156–157 The Lower Digestive System, 158–161 The Circulatory System, 165–169
7.LS.5 Compare and contrast the form and function of the organelles found in plant and animal cells.	**Systems, Reproduction, and Growth SE/TE:** Parts of a Cell, 73–78 Cells Working Together, 79–80 Topic 2, Evidence-Based Assessment, 104-105
6-8.E Engineering	
6-8.E.1 Identify the criteria and constraints of a design 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.	**Forces SE/TE:** uEngineer It!, Electromagnetism in Action, 81 **Systems, Reproduction, and Growth SE/TE:** uEngineer It! Gardening in Space, 201 **Structure and Properties of Matter SE/TE:** uEngineer It! Gathering Speed with Superconductors, 33 uEngineer It!, From "Ink" to Objects: 3D Printing, 55 **All modules: Science and Engineering Practices Handbook, End of Text:** Design a Solution Test and Evaluate a Solution Communicate the Solution Redesign and Retest the Solution
6-8.E.2 Evaluate competing design solutions using a systematic process to identify how well they meet the criteria and constraints of the problem.	**Systems, Reproduction, and Growth SE/TE:** uDemonstrate Lab: Design and Build a Microscope, 108, 109 uEngineer It! Artificial Skin, 123 **Structure and Properties of Matter SE/TE:** uDemonstrate Lab: Help Out the Wildlife, 38-41 **All modules: Science and Engineering Practices Handbook, End of Text:** Test and Evaluate a Solution Redesign and Retest the Solution

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6-8.E.3 Analyze data from investigations 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.	**Forces** **SE/TE:** uEngineer It! Generating Energy from Potholes, 33 **Systems, Reproduction, and Growth** **SE/TE:** uDemonstrate Lab, Design and Build a Microscope, 106-107 **All modules: Science and Engineering Practices Handbook, End of Text:** Design a Solution Test and Evaluate a Solution Communicate the Solution Redesign and Retest the Solution
6-8.E.4 Develop a prototype to generate data for repeated investigations and modify a proposed object, tool, or process such that an optimal design can be achieved.	**Energy Transfer** **SE/TE:** uEngineer It! Prosthetics on the Move, 21 uEngineer It! Shockwave to the Future, 69 **Forces** **SE/TE:** uEngineer It! Generating Energy from Potholes, 33 **Waves and Information Technologies** **SE/TE:** uEngineer It! A Life-Saving Mistake, 75 **Systems, Reproduction, and Growth** **SE/TE:** uEngineer It! Gardening in Space, 201 **Structure and Properties of Matter** **SE/TE:** uEngineer It! Gathering Speed with Superconductors, 33 **Cycles Influencing Weather and Climate** **SE/TE:** uEngineer It! Windmills of the Future, 81 **All modules: Science and Engineering Practices Handbook, End of Text:** Design a Solution Test and Evaluate a Solution Communicate the Solution Redesign and Retest the Solution