A Correlation of

Elevate Science

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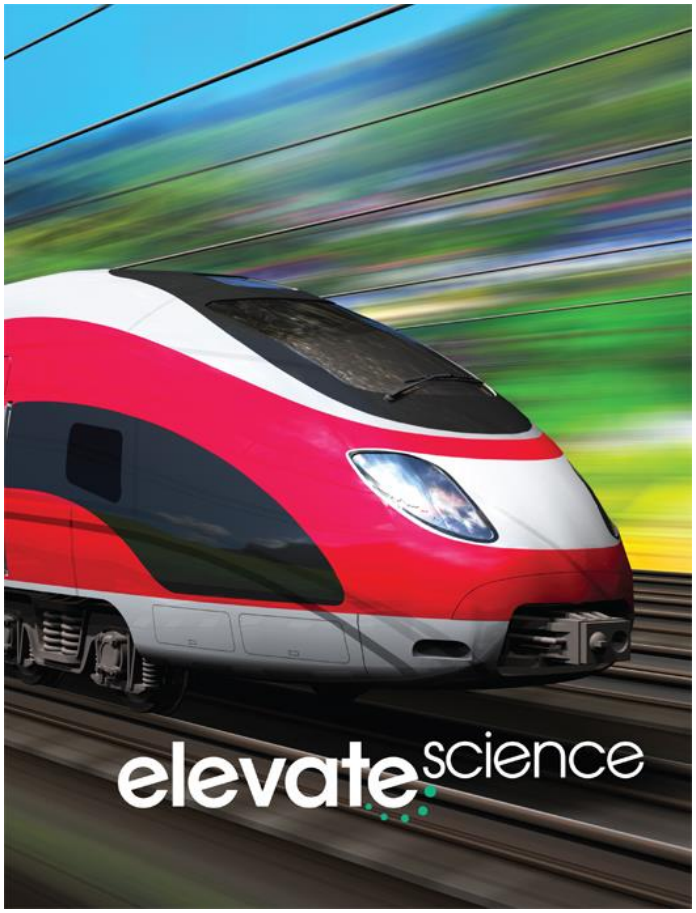

To the

Tennessee Academic Standards for Science, Grade 4

Pearson

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Introduction

The following document demonstrates how the ***Elevate Science, ©2019*** program supports the Tennessee Academic Standards for Science, Grade 4. For each standard, correlation references are to the Student Edition and Teacher Edition where applicable.

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

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

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

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

Elevate Science prepares students for the challenges of tomorrow, building strong reasoning skills and critical thinking strategies as they engage in explorations, formulate claims, and gather and analyze data that promote evidence-based argument. Designed for today's classroom, preparing students for tomorrow's world. ***Elevate Science*** promises to:

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

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4.PS3	4.PS3: Energy	
4.PS3.1	1) Use evidence to explain the cause and effect relationship between the speed of an object and the energy of an object.	**SE/TE:** Quest Kickoff: Energy Changes in Collisions, 2-3 uConnect Lab: How can you compare the energy of objects?, 4 Motion and Energy, 12 Quest Check-In: Energy, Speed, and Motion, 13 uInvestigate Lab: How does energy transfer between objects?, 17 uInvestigate Lab: How does electric energy flow in circuits?, 35 uDemonstrate Lab: What affects energy transfer?, 48-49
4.PS3.2	2) Observe and explain the relationship between potential energy and kinetic energy.	**SE/TE:** Energy in Motion, 9 Energy at Rest, 9 Assessment, 45 **TE Only:** Scaffolded Questions, 9 Differentiated Instruction, 12, 15
4.PS3.3	3) Describe how stored energy can be converted into another form for practical use.	**SE/TE:** Energy, 8 Energy at Rest, 9 Visual Literacy Connection, 10-11 Assessment, 45

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4.PS4	4.PS4: Waves and their Application in Technologies for Information Transfer	
4.PS4.1	1) Use a model of a simple wave to explain regular patterns of amplitude, wavelength, and direction.	**SE/TE:** Wave Characteristics, 109 Visual Literacy Connection: How does a wave move?, 110-111 uInvestigate Lab: What patterns can waves make?, 117 Patterns in Wave Characteristics, 118 u Be a Scientist: Ripples, 118 Visual Literacy Connection: How do wave patterns move?, 120-121 uDemonstrate Lab: How can you model a light or sound wave?, 148-149
4.PS4.2	2) Describe how the colors of available light sources and the bending of light waves determine what we see.	**SE/TE:** Properties of Light Waves, 126 Visual Literacy Connection: How does your see eye color?, 128-129
4.PS4.3	3) Investigate how lenses and digital devices like computers or cell phones use waves to enhance human senses.	**SE/TE:** Waves Outside the Visible Spectrum, 136 Radio Waves, 136-137 Digital and Analog Signals, 138-139 Solve It with Science, 141 Assessment , 145
4.LS2	4.LS2: Ecosystems: Interactions, Energy, and Dynamics	
4.LS2.1	1) Support an argument with evidence that plants get the materials they need for growth and reproduction chiefly through a process in which they use carbon dioxide from the air, water, and energy from the sun to produce sugars, plant materials, and waste (oxygen); and that this process is called photosynthesis.	**SE/TE:** Visual Literacy Connection: What are the functions of internal leaf structures?, 286-287 The Structure and Functions of Stems, 288

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4.LS2.2	2) Develop models of terrestrial and aquatic food chains to describe the movement of energy among producers, herbivores, carnivores, omnivores, and decomposers.	**SE/TE:** See Grade 5, Topic 9, Matter and Energy in Ecosystems
4.LS2.3	3) Using information about the roles of organisms (producers, consumers, decomposers), evaluate how those roles in food chains are interconnected in a food web, and communicate how the organisms are continuously able to meet their needs in a stable food web.	**SE/TE:** See Grade 5, Topic 9, Matter and Energy in Ecosystems
4.LS2.4	4) Develop and use models to determine the effects of introducing a species to, or removing a species from, an ecosystem and how either one can damage the balance of an ecosystem.	**SE/TE:** See Grade 5, Topic 9, Matter and Energy in Ecosystems
4.LS2.5	5) Analyze and interpret data about changes (land characteristics, water distribution, temperature, food, and other organisms) in the environment and describe what mechanisms organisms can use to affect their ability to survive and reproduce.	**SE/TE:** Supporting content: Changing Environments and Survival See also Grade 5, Topic 9, Matter and Energy in Ecosystems, 321

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4.LS4	4.LS4: Biological Change: Unity and Diversity	
4.LS4.1	1) Obtain information about what a fossil is and ways a fossil can provide information about the past.	**SE/TE:** Fossils, 250 Quest Connection, 250 Geologic Time Scale, 253 Lesson 1 Check-In, 253 Quest Check-In Lab: How can you reduce hazard damage?, 254 Fossil Clues on Earth, 260 Quest Findings: Dig for the Truth, 268 Evidence-Based Assessment, 272-273 uDemonstrate Lab, 274-275
4.ESS1	4.ESS1: Earth's Place in the Universe	
4.ESS1.1	1) Generate and support a claim with evidence that over long periods of time, erosion (weathering and transportation) and deposition have changed landscapes and created new landforms.	**SE/TE:** uInvestigate Lab, 185 Quest Connection, 187 Erosion, 188 Deposition, 190 Changes in Landforms over Time, 191 STEM Quest Check-In Lab: How does water affect landforms?, 192 Quest Findings: Does X Mark the Spot? , 194 Evidence-Based Assessment, 198-199
4.ESS1.2	2) Use a model to explain how the orbit of the Earth and sun cause observable patterns: a. day and night; b. changes in length and direction of shadows over a day.	**SE/TE:** See Grade 5 Topic 6, Solar System, and Topic 7, Patterns in Space

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4.ESS2	4.ESS2: Earth's Systems	
4.ESS2.1	1) Collect and analyze data from observations to provide evidence that rocks, soils, and sediments are broken into smaller pieces through mechanical weathering (frost wedging, abrasion, tree root wedging) and are transported by water, ice, wind, gravity, and vegetation.	**SE/TE:** uInvestigate Lab: How can a rock wear away?, 185 Chemical Weathering, 186 uBe a Scientist: Weathering, 186 Physical Weathering, 187 Erosion, 188 Changes in Landforms over Time, 191 Evidence-Based Assessment, 198-199
4.ESS2.2	2) Interpret maps to determine that the location of mountain ranges, deep ocean trenches, volcanoes, and earthquakes occur in patterns.	**SE/TE:** Quest Kickoff: Does X Mark the Spot? That's Up to You!, 152-153 Types of Maps , 159 Resource Maps, 162 Visual Literacy Connection: How can a physical map help me locate different landforms?, 170-171 Quest Check-In, A Changing Landscape, 173
4.ESS2.3	3) Provide examples to support the claim that organisms affect the physical characteristics of their regions.	**SE/TE:** Stem Connection, 84 uInvestigate Lab: Why is oil cleanup so hard?, 85 Impact of Energy Production, 86 Impacts of Nuclear Power, 87 Impact of Obtaining Fuel, 87 Visual Literacy Connection, How can the use of energy damage ecosystems?, 88-89 Impact of Transporting Fuels, 90 Lesson 2 Check, 90 Quest Check-in, Impact Inspections, 91 Assessment, 94-95 Evidence-Based Assessment, 96-97
4.ESS2.4	4) Analyze and interpret data on the four layers of the Earth, including thickness, composition, and physical states of these layers.	**SE/TE:** See Grade 5, Topic 3 Earth's Systems, 264

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4.ESS3	4.ESS3: Earth and Human Activity	
4.ESS3.1	1) Obtain and combine information to describe that energy and fuels are derived from natural resources and that some energy and fuel sources are renewable (sunlight, wind, water) and some are not (fossil fuels, minerals).	**SE/TE:** uConnect Lab: How are energy resources used?, 54 Coal, 66 Fossil Fuels, 66 Petroleum, 67 Where do fossil fuels come from?, 68-69 Natural Gas, 70 U Be a Scientist: Make it Turn, 71 Engineering Connection, 74 Visual Literacy Connection: Is renewable energy all around?, 76-77 Renewable Fuel, 78 STEM Quest Check-In Lab: How can the sun make a motor work?, 80 Evidence-Based Assessment, 96-97 uDemonstrate Lab: How can energy resource usage change?, 98-99
4.ESS3.2	2) Create an argument, using evidence from research, that human activity (farming, mining, building) can affect the land and ocean in positive and/or negative ways.	**SE/TE:** uInvestigate Lab: Why is oil clean up so hard?, 85 Impact of Energy Production, 86 Impact of Obtaining Fuel, 87 Impact of Transporting Fuels, 90 Quest Check-In: Impact Inspections, 91 Evidence-Based Assessment, 96-97

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4.ETS1	4.ETS1: Engineering Design	
4.ETS1.1	1) Categorize the effectiveness of design solutions by comparing them to specified criteria for constraints.	**SE/TE:** uInvestigate Lab: How can a potato provide energy to a light bulb?, 57 Quest Check-In: Comparing Codes, 140 uConnect Lab: How can you reduce the impact of rapidly sliding soil?, 206 Quest Check-In Lab: How can you reduce hazard damage?, 232-233 uDemonstrate Lab: How can homes be designed to be more earthquake resistant?, 240-241 Optimizing Solutions, EM13
4.ETS2	4.ETS2: Links Among Engineering, Technology, Science, and Society	
4.ETS2.1	1) Use appropriate tools and measurements to build a model.	**SE/TE:** uEngineer It: Making a Good Impression, 257-257 uEngineer It: Pump It Up! , 348-349 Developing and Using Models, EM6
4.ETS2.2	2) Determine the effectiveness of multiple solutions to a design problem given the criteria and the constraints.	**SE/TE:** uInvestigate Lab: How can a potato provide energy to a light bulb?, 57 Quest Check-In: Comparing Codes, 140 uConnect Lab: How can you reduce the impact of rapidly sliding soil?, 206 Quest Check-In Lab: How can you reduce hazard damage?, 232-233 uDemonstrate Lab: How can homes be designed to be more earthquake resistant?, 240-241 Optimizing Solutions, EM13

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4.ETS2.3	3) Explain how engineers have improved existing technologies to increase their benefits, to decrease known risks, and to meet societal demands (artificial limbs, seatbelts, cell phones).	**SE/TE:** uConnect Lab: How can you compare the energy of objects?, 4 STEM Quest Check-In Lab: How can an electric circuit help prevent collisions?, 40-41 Career Connection: Vehicle Safety Engineer, 43 uDemonstrate Lab: What affects energy transfer?, 48-49 Quest Kickoff: Power from the People, 52-53 uEngineer It!: Hold That Phone, 82-83 Career Connection: Electrical Engineer, 93 Engineering Practices Toolbox: Design Solutions, 139