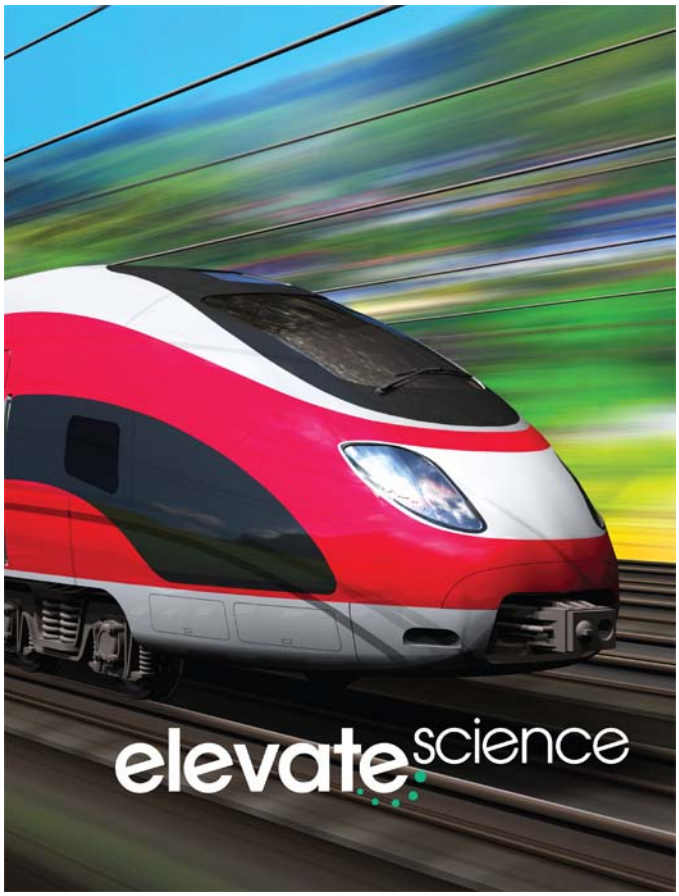
A Correlation of

Elevate Science
Grade 4, ©2019



To the

Missouri
Learning Standards for Science
Grade 4

SAVVAS

A Correlation of Elevate Science ©2019, Grade 4
to the
Missouri Learning Standards for Science, Grade 4

Introduction

The following document demonstrates how the ***Elevate Science, ©2019*** program supports the Missouri Learning 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.

A Correlation of Elevate Science ©2019, Grade 4
to the
Missouri Learning Standards for Science, Grade 4

Table of Contents

PS2 Motion and Stability: Forces and Interactions 4

PS3 Energy 5

PS4 Waves and Their Applications in technologies for Information Transfer 6

LS1 From Molecules to Organisms: Structure and Processes 7

ESS1 Earth's Place in the Universe 9

ESS2 Earth's Systems 10

ESS3 Earth and Human Activity 11

ETS1 Engineering Design 12

A Correlation of Elevate Science ©2019, Grade 4
to the
Missouri Learning Standards for Science, Grade 4

Missouri Learning Standards for Science, Grade 4		Elevate Science Grade 4 ©2019
PS2 Motion and Stability: Forces and Interactions		
PS2.A	Forces and Motion	
PS2.A.1	Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.	**SE/TE:** This standard is addressed in Elevate Science, Grade 3, Topic 1: uInvestigate Lab: How can you describe the motion of an object? 17 Math Toolbox Multiply and Divide, 18 Patterns of Motion, 18 Quest Connection, 19 Visual Literacy How high can it fly? 20-21 Evidence Based Assessment, 46-47 STEM uDemonstrate Lab Why do objects move? 48-49
PS2.A.2	Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.	**SE/TE:** This standard is addressed in Elevate Science, Grade 3, Topic 1 Forces, 26 Equal and Opposite Forces, 30 STEM uInvestigate Lab How can you hold up an object? 35 Visual Literacy How can you move an object? 36-37 STEM uDemonstrate Lab Why do objects move? 48-49
PS2.B Types of Interaction		
PS2.B.1	Plan and conduct a fair test to compare and contrast the forces (measured by a spring scale in Newtons) required to overcome friction when an object moves over different surfaces (i.e., rough/smooth).	**SE/TE:** This standard is addressed in Elevate Science, Grade 3, Topic 1. Contact Forces, 27 uBe a Scientist Friction, 27 Combined Forces, 31 Measuring Forces,39

A Correlation of Elevate Science ©2019, Grade 4
to the
Missouri Learning Standards for Science, Grade 4

Missouri Learning Standards for Science, Grade 4		Elevate Science Grade 4 ©2019
PS2.B.2	Predict how changes in either the amount of force applied to an object or the mass of the object affects the motion (speed and direction) of the object.	**SE/TE:** uInvestigate Lab How does starting height affect an object's energy?, 7 Motion and Energy, 12 uBe a Scientist Force and Speed, 12 Lesson 2 Check, 21
PS3 Energy		
PS3.A	Definitions of Energy	
PS3.A.1	Use evidence to construct an explanation relating the speed of an object to the energy of that object.	**SE/TE:** uConnect Lab: How can you compare the energy of objects?, 4 uInvestigate Lab How does starting height affect an object's energy?, 7 Motion and Energy, 12 Quest Check-In: Energy, Speed, and Motion, 13
PS3.B	Conservation of Energy and Energy Transfer	
PS3.B.1	Provide evidence to construct an explanation of an energy transformation (e.g. temperature change, light, sound, motion, and magnetic effects)	**SE/TE:** Other Energy Changes, 20 Light Energy, 29 Question It!, 29 Quest Connection, 30 Sound Energy, 30 Curriculum Connection, 34 uInvestigate Lab: How does electric energy flow in circuits?, 35 Lesson 4 Check, 39 Quest Check-In Lab, 40-41
PS3.B.2	Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.	**SE/TE:** Quest Kickoff Energy Changes in Collisions, 2-3 Quest Connection, 8 Energy in Motion, 9 Model It, 20 uBe a Scientist Construct a Cradle, 21 Quest Findings, 42

A Correlation of Elevate Science ©2019, Grade 4
to the
Missouri Learning Standards for Science, Grade 4

Missouri Learning Standards for Science, Grade 4		Elevate Science Grade 4 ©2019
PS3.C	Relationship Between Energy and Forces	
PS3.C.1	Use models to explain that simple machines change the amount of effort force and/or direction of force.	**SE/TE:** uInvestigate Lab How does starting height affect an object's energy?, 7 This standard is also addressed in Elevate Science, Grade 3: STEM uDemonstrate Lab Why do objects move?, 48-49
PS4 Waves and Their Applications in technologies for Information Transfer		
PS4.A	Wave Properties	
PS4.A.1	Develop a model of waves to describe patterns in terms of amplitude or wavelength and that waves can cause objects to move. (Boundary: The terms amplitude and wavelength should not be assessed.)	**SE/TE:** uConnect Lab: How do we describe waves?, 104 uInvestigate Lab: How does a wave carry energy?, 107 Waves, 108 Visual Literacy Connection: How does a wave move?, 110-111 uInvestigate Lab: What patterns can waves make?, 117 Patterns in Wave Characteristics, 118 uBe a Scientist: Ripples, 118 Crosscutting Concepts Toolbox: Patterns, 119 Wave Patterns, 119 Visual Literacy Connection: How do wave patterns move?, 120-121 uDemonstrate Lab: How can you model a light or sound wave?, 148-149

A Correlation of Elevate Science ©2019, Grade 4
to the
Missouri Learning Standards for Science, Grade 4

Missouri Learning Standards for Science, Grade 4		Elevate Science Grade 4 ©2019
LS1 From Molecules to Organisms: Structure and Processes		
LS1.A	Structure and Function	
LS1.A.1	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and plant reproduction.	**SE/TE:** Quest Kickoff: Let Plants and Animals Inspire You!, 278-279 uConnect Lab: How do your eyes respond to differences in lighting?, 280 Curriculum Connection, 282 uInvestigate Lab: What parts are inside a flower?, 283 Literacy Toolbox: Compare and Contrast, 284 Plant Systems, 284 Functions of Plant Structures, 285 Visual Literacy What are some functions of internal leaf structures, 286-287 Photosynthesis, 288 uBe a Scientist: Make a Plant Collection, 288 Lesson 1 Check, 289 Quest Check-In Lab: How can you observe a plant's vascular system in action?, 290-291 uInvestigate Lab: How are leaf coverings different?, 293 External Structures of a Plant, 294 Stems and Their Coverings, 295 Visual Literacy Connection: What structures do flowering plants use to reproduce?, 296-297 Adaptations of Flowers, 298 Lesson 2 Check, 298 uInvestigate Lab: How can you compare the stomachs of cows and dogs?, 301 Animal Structures for Support, 302 Quest Connection, 302 Structure of the Animal Heart, 303 Visual Literacy Connection, 304-305 Structure of the Animal Brain, 306 Quest Check-In: Fish Float and Sink, 307 uInvestigate Lab: How can you design a protective insect shell?, 309 Visual Literacy Connection: What do exoskeletons do?, 310-311 Other External Structures of Animals, 312

A Correlation of Elevate Science ©2019, Grade 4
to the
Missouri Learning Standards for Science, Grade 4

Missouri Learning Standards for Science, Grade 4		Elevate Science Grade 4 ©2019
LS1.A.1	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and plant reproduction.	**CONTINUED:** Lesson 4 Check, 313 Quest Check-In: Lobster Claws, 314 Solve it with Science: Why do animals shed their exoskeletons?, 315 Quest Findings: Let Plants and Animals Inspire You!, 326 Topic Assessment, 328-329 Evidence-Based Assessment, 330-331 Quest Kickoff: Make a Human Body Road Map, 336-337
LS1.D	Information Processing	
LS1.D.1	Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.	**SE/TE:** Technology Mimics Life, 139 Engineering Connection, 316 uInvestigate Lab: How can you locate an object using only sound?, 317 Visual Literacy Connection: How do elephants respond to stimulus?, 318-319 Animal Responses to Smells, 320 Lesson 5 Check, 322 Quest Check-In: Sound Off!, 323 uDemonstrate Lab: How do earthworms respond to stimuli?, 332-333 Quest Kickoff: Make a Human Body Road Map, 336-337 uInvestigate Lab: Which parts of the body are more sensitive?, 359 Visual Literacy Connection: What are sensory organs?, 360-361 uBe a Scientist: Reaction Time, 362 STEM Quest Check-In Lab: How can you test signals to and from your brain?, 364-365

A Correlation of Elevate Science ©2019, Grade 4
to the
Missouri Learning Standards for Science, Grade 4

Missouri Learning Standards for Science, Grade 4		Elevate Science Grade 4 ©2019
ESS1 Earth's Place in the Universe		
ESS1.C	The History of Planet Earth	
ESS1.C.1	Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.	**SE/TE:** Quest Kickoff: Dig for the Truth, 244-245 uConnect Lab: Where are fossils found in rock layers?, 246 STEM Connection, 248 uInvestigate Lab: What patterns do fossils follow?, 249 Fossils, 250 Quest Connection, 250 Rock Formations, 251 Rock Strata Can Change, 251 A Colorful Change, 252 Geologic Time Scale, 253 Lesson 1 Check, 253 Quest Check-In: Existing Evidence, 254 STEM Math Connection: Canyonlands, 255 uInvestigate Lab: How can rock layers show change?, 259 Fossil Clues on Earth, 260 Index Fossils, 261 Question It!, 261 Visual Literacy Connection: How can layers of rock change?, 262-263 Comparing Rock Layers, 264 Quest Connection, 264 uBe a Scientist: Be a Rock Hound, 264 Lesson 2 Check, 265 Quest Check-In Lab: What does a core sample tell us?, 266-267 Quest Findings: Dig for the Truth, 268 Topic Assessment, 270-271 Evidence-Based Assessment, 272-273 uDemonstrate Lab: How can you correlate rock layers?, 274-275

A Correlation of Elevate Science ©2019, Grade 4
to the
Missouri Learning Standards for Science, Grade 4

Missouri Learning Standards for Science, Grade 4		Elevate Science Grade 4 ©2019
ESS2 Earth's Systems		
ESS2.A	Earth Materials and Systems	
ESS2.A.1	Plan and conduct scientific investigations or simulations to provide evidence how natural processes (e.g. weathering and erosion) shape Earth's surfaces.	**SE/TE:** uConnect Lab: How can rain affect land?, 154 uInvestigate Lab: How can a rock wear away?, 185 Chemical Weathering, 186 uBe a Scientist: Weathering, 186 Physical Weathering, 187 Quest Connection, 187 Erosion, 188 Movement of Particles, 189 Changes in Landforms over Time, 191 Quest Findings: Does X Mark the Spot? That's Up to You!, 194 Topic Assessment, 196-197 Evidence-Based Assessment, 198-199
ESS2.B	Plate Tectonics and Large-Scale Systems	
ESS2.B.1	Analyze and interpret data from maps to describe patterns of Earth's features.	**SE/TE:** uInvestigate Lab: How do tools help us?, 157 Quest Connection, 158 Read a Map, 158 Types of Maps, 159 Visual Literacy Connection: How can you see the same place in different ways?, 160-161 Resource Maps, 162 Quest Check-In: The Making of a Legend, 163 Patterns of Mountains, 168 Crosscutting Concepts Toolbox: Patterns, 169 Patterns of Earthquakes and Volcanoes, 169 Visual Literacy Connection: How can a physical map help me locate different landforms?, 170-171 Lesson 2 Check, 172 Evidence-Based Assessment, 198-199

A Correlation of Elevate Science ©2019, Grade 4
to the
Missouri Learning Standards for Science, Grade 4

Missouri Learning Standards for Science, Grade 4		Elevate Science Grade 4 ©2019
ESS3 Earth and Human Activity		
ESS3.A	Natural Resources	
ESS3.A.1	Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.	**SE/TE:** Quest Kickoff: Protect the City! Hazard Incoming!, 204-205 uConnect Lab: How can you reduce the impact of rapidly sliding soil?, 206 Quest Connection, 211 Quest Check-In: Beware: Hot Ash!, 215 uEngineer It!: Warning!, 216-217 Quest Check-In: Water Warnings, 224 STEM Engineering Connection, 226 uInvestigate Lab: Where should you build an earthquake-safe structure?, 227 Plan It!, 228 Predict Natural Hazards, 230 When Hazards Strike, 231 Lesson 3 Check, 231 Quest Check-In Lab: How can you reduce hazard damage?, 232-233 Quest Findings: Hazard incoming!, 234 Evidence-Based Assessment, 238-239 uDemonstrate Lab: How can homes be designed to be more earthquake resistant?, 240-241

A Correlation of Elevate Science ©2019, Grade 4
to the
Missouri Learning Standards for Science, Grade 4

Missouri Learning Standards for Science, Grade 4		Elevate Science Grade 4 ©2019
ETS1 Engineering Design		
ETS1.A	Defining and Delimiting Engineering Problems	
ETS1.A.1	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.	**SE/TE:** uEngineer It!: Toys on the Move, 14-15 Engineering Practice Toolbox: Spares and Strikes, 20 Quest Check-In: Human Power, 63 Design It!, 70 uEngineer It!: Crack That Code!, 114-115 uEngineer It!: Take a Hike!, 164-165 uEngineer It!: Eye See You!, 324-325 Defining Problems, EM10 Designing Solutions, EM11
ETS1.B	Developing Possible Solutions	
ETS1.B.1	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.	**SE/TE:** Quest Check In Lab How can an electric circuit help prevent collisions?, 40-41 Quest Kickoff: Protect the City! Hazard Incoming!, 204-205 uConnect Lab: How can you reduce the impact of rapidly sliding soil?, 206 Quest Check In Beware: Hot Ash, 215 Quest Check-In Lab: How can you reduce hazard damage?, 232-233 Quest Findings, 234 uDemonstrate Lab: How can homes be designed to be more earthquake resistant?, 240-241
ETS1.C	Optimizing the Solution Process	
ETS1.C.1	Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	**SE/TE:** uInvestigate Lab How does energy transfer between objects?, 17 Quest Check In Lab How can an electric circuit help prevent collisions?, 40-41 Supporting Content: uDemonstrate Lab: How can homes be designed to be more earthquake resistant?, 240-241