

A Correlation of
Elevate Science
Grades K-5, ©2019



To the
Massachusetts
Science Technology and
Engineering Standards
Grades K-5

**A Correlation of Elevate Science ©2019, Grade K-5
to the
Massachusetts Science and Technology Engineering Standards for Kindergarten**

Introduction

The following document demonstrates how the ***Elevate Science, ©2019*** program supports the Massachusetts Science and Technology Engineering Standards for Grades K-5. 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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Massachusetts Science and Technology Engineering Standards, Grade K		Elevate Science Kindergarten ©2019
Kindergarten		
K-ESS	Earth and Space Sciences	
K-ESS2	Earth's Systems	
K-ESS2-1	Use and share quantitative observations of local weather conditions to describe patterns over time.	SE/TE: uConnect Lab: How does the weather change during the day?, 106 Sunny and Not Sunny, 111 Connecting Concepts Toolbox: Patterns, 118 Sun or Rain, 118 Hot or Cold Weather, 119 Quest Connection, 119 Weather in Different Places, 120 uInvestigate Lab: What is the weather like in different seasons?, 123 Quest Connection, 125 Quest Check-In: Seasonal Changes, 126 Different Seasons, 124-125 Topic Assessment, 138-139 Evidence-Based Assessment, 140-141 uDemonstrate Lab: What is the weather like?, 142-143

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Massachusetts Science and Technology Engineering Standards, Grade K		Elevate Science Kindergarten ©2019
K-ESS2-2	Construct an argument supported by evidence for how plants and animals (including humans) can change the environment.	SE/TE: Quest Kickoff: Trails for All, 188-189 uConnect Lab: How does a plant make a change to the place where it lives?, 190 Jumpstart Discovery!, 198 uInvestigate Lab: How do squirrels change the land?, 199 Quest Connection, 200 Animals in Their Environment, 201 Quest Check-In: Changes in Nature, 203 uInvestigate Lab: How can you model changing the environment?, 205 Getting What We Need, 207 Quest Connection, 207 Quest Check-In Lab: How can people change the land?, 208 Quest Findings: Trails for All, 220 Evidence-Based Assessment, 224-225 uDemonstrate Lab: How can an animal change where it lives?, 226-227
K-ESS3	Earth and Human Activity	
K-ESS3-2	Obtain and use information about weather forecasting to prepare for, and respond to, different types of local weather.	SE/TE: Quest Kickoff: Chasing Storms, 104-105 Temperature, 110 Jumpstart Discovery!, 128 Quest Connection, 131 Be Prepared, 132 Weather Watching, 133 Quest Findings: Chasing Storms, 136 Evidence-Based Assessment, 140-141 uInvestigate Lab: What should you wear?, 165 People Need Clothes and Shelter, 167

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K-ESS3-3	Communicate solutions to reduce the amount of natural resources an individual uses.	SE/TE: <ul style="list-style-type: none"> Investigate Lab: How can you make something useful?, 211 New Uses for Old Things, 212 Quest Connection, 212 Helping Earth, 213 Visual Literacy, 214 What You Can Do, 214-215 Crosscutting Concepts Toolbox: Systems in Our World, 215 Topic Assessment, 222-223

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Massachusetts Science and Technology Engineering Standards, Grade K		Elevate Science Kindergarten ©2019
K-LS	Life Science	
K-LS1	From Molecules to Organisms: Structures and Processes	
K-LS1-1	Observe and communicate that animals (including humans) and plants need food, water, and air to survive. Animals get food from plants or other animals. Plants make their own food and need light to live and grow.	<p>SE/TE: Quest Kickoff: Let’s Build a Park, 146-147 uConnect Lab: What if plants do not get what they need?, 148 Jumpstart Discovery!, 150 ulnvestigate Lab: How do plants get water?, 151 Plants Need Sunlight, 152 Plants Need Air, 153 Literacy Toolbox: Alike and Different, 154 Plants Need Water, 154 Quest Check-In: Caring for Plants at the Park, 155 Jumpstart Discovery!, 156 Animals Need Food, 158 Animals Need Water, 159 Quest Connection, 159 Animals Need Air, 160 Quest Check-In: Fish in the Park, 161 uEngineer It!: It Is Cold Out There!, 162-163 Jumpstart Discovery!, 164 ulnvestigate Lab: What should you wear?, 165 People are Animals, 166 Quest Connection, 167 People Need Clothes and Shelter, 167 Quest Connection, 175 Quest Findings: Let’s Build a Park, 178 uDemonstrate Lab: What needs do pets have?, 184-185 Needs, 194 Crosscutting Concepts Toolbox: Systems in Nature, 202</p>

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Massachusetts Science and Technology Engineering Standards, Grade K		Elevate Science Kindergarten ©2019
K-LS12-MA	Recognize that all plants and animals grow and change over time.	SE/TE: Jumpstart Discovery!, 170 Investigate Lab: How does a plant grow and change?, 171 Living Things have Life Cycles, 172 Life Cycles Can Begin With Eggs, 174-175 Science Practice Toolbox: Ask Questions, 175 Quest Check-In Lab How do caterpillars change?, 176-177 Topic Assessment, 180-181
K-PS	Physical Science	
K-PS1	Matter and its Interactions	
K-PS11-MA	Investigate and communicate the idea that different kinds of materials can be solid or liquid depending on temperature.	The standard is met in Elevate Science, Grade 2, Topic 2, Lesson 2: "Temperature and Matter."

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Massachusetts Science and Technology Engineering Standards, Grade K		Elevate Science Kindergarten ©2019
K-PS2	Motion and Stability: Forces and Interactions	
K-PS2-1	Compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.	<p>SE/TE: Literacy Connection: Cause and Effect, 5 uInvestigate Lab: How can we make objects move?, 7 Pushes and Pulls, 8-9 Ways Objects Move, 10 uInvestigate Lab: How do objects move?, 13 Different Ways to Move, 14 Different Speeds, 15 STEM Quest Check-In: How can you build your sail car?, 16-17 uEngineer It!: Maze Craze!, 18-19 Jumpstart Discovery!, 20 uInvestigate Lab: How do you roll?, 21 Objects Change Motion, 22 Direction and Motion, 24-25 Quest Check-In: How does wind move my sail car?, 26 Evidence-Based Assessment, 32-33 uDemonstrate Lab: How do objects change their motion?, 34-35</p>

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K-PS3	Energy	
K-PS3-1	Make observations to determine that sunlight warms materials on Earth’s surface.	SE/TE: Quest Kickoff: Keep It Cool, 74-75 uConnect Lab: What can you observe about the sun?, 76 Jumpstart Discovery!, 78 uInvestigate Lab: What can the sun do?, 79 Jumpstart Discovery!, 86 uInvestigate Lab: Which objects change in the sun?, 87 The Sun Warms Earth, 88-89 Sunlight and Earth, 90-91 Quest Connection, 91 Quest Check-In Lab: Which material makes the best roof?, 92-93 uDemonstrate Lab: Where is it warmer?, 100-101
K-PS3-2	Use tools and materials to design and build a model of a structure that will reduce the warming effect of sunlight on an area.	SE/TE: Quest Kickoff: Keep It Cool, 74-75 uEngineer It!: Sunny Days, 84-85 Quest Check-In Lab: Which material makes the best roof?, 92-93 Quest Findings: Keep It Cool, 94 Evidence-Based Assessment, 98-99

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Massachusetts Science and Technology Engineering Standards, Grade 1		Elevate Science, ©2019
Grade 1		
1-ESS	Earth and Space Sciences	
1-ESS1	Earth's Place in the Universe	
1-ESS1-1	Use observations of the Sun, Moon, and stars to describe that each appears to rise in one part of the sky, appears to move across the sky, and appears to set.	SE/TE: <ul style="list-style-type: none"> uInvestigate Lab: How can you observe sun patterns?, 87 Sunrise, Sunset, 89 Moon Motions and Phases, 90
1-ESS1-2	Analyze provided data to identify relationships among seasonal patterns of change, including relative sunrise and sunset time changes, seasonal temperature and rainfall or snowfall patterns, and seasonal changes to the environment.	SE/TE: <ul style="list-style-type: none"> uInvestigate Lab: How does the sun cause seasons?, 95 Jumpstart Discovery!, 126 Daily Weather Changes, 128 Quest Connection, 128 Sunlight and Seasons, 129 Seasonal Weather Changes, 130-131 Quest Check-In Lab: How does the season affect the amount of daylight?, 132-133 Quest Findings: Plan a Trip!, 134 Topic Assessment, 136-137 Evidence-Based Assessment, 138-139

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Massachusetts Science and Technology Engineering Standards, Grade 1		Elevate Science, ©2019
1-LS	Life Science	
1-LS1	From Molecules to Organisms: Structures and Processes	
1-LS1-1	<p>Use evidence to explain that (a) different animals use their body parts and senses in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air, and (b) plants have roots, stems, leaves, flowers, and fruits that are used to take in water, air, and other nutrients, and produce food for the plant.</p>	<p>SE/TE: uConnect Lab: How can you make a model of a plant?, 146 Jumpstart Discovery!, 148 uInvestigate Lab: What do the parts of a plant look like?, 149 Roots, 150 Stems and Leaves, 151 Flowers and Fruits, 152 Roots Help Plants Survive, 153 Jumpstart Discovery!, 154 uInvestigate Lab: How do whiskers help a cat?, 155 How Animals Move, 156 Body Coverings and Ways of Breathing, 157 Animals' Sense and Responses, 158 Quest Check-In: Different Shapes, Different Uses, 159 Jumpstart Discovery!, 162 uInvestigate Lab: What can people learn from an acorn shell?, 163 People Mimic Nature, 164-165 Topic Assessment, 178-179 uDemonstrate Lab: How do the spines of catci help them?, 182-183</p>

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1-LS1-2	Obtain information to compare ways in which the behavior of different animal parents and their offspring help the offspring to survive.	SE/TE: Literacy Connection: Main Idea and Details, 189 Investigate Lab: How do nests protect eggs?, 207 Parents Help Young, 209 Quest Connection, 209 Parents Protect Young, 210-211 Parents Teach Young, 212 Quest Check-In: Parents Help Young Learn, 214
1-LS3	Heredity: Inheritance and Variation of Traits	
1-LS3-1	Use information from observations (first-hand and from media) to identify similarities and differences among individual plants or animals of the same kind.	SE/TE: Plants are Alike, 199 Plants are Different, 200 Animals are Alike, 201 Animals are Different, 202 Quest Check-In Alike and Different, 203

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1-PS	Physical Science	
1-PS4	Waves and their Applications in Technologies for Information Transfer	
1-PS4-1	Demonstrate that vibrating materials can make sound and that sound can make materials vibrate.	SE/TE: Quest Kickoff: Sending Sound Messages, 2-3 uConnect Lab: How can a ruler make sound?, 4 ulnvestigate Lab: How does size affect sound?, 7 Sound, 8 Jumpstart Discovery!, 12 ulnvestigate Lab How can you see sound?, 13 Making Sounds, 14 Making Music, 16-17 Quest Check-In Lab: How can instruments talk?, 18-19 Quest Check-In Lab: How can an instrument send a secret?, 25 Topic Assessment, 30-31

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1-PS4-3	Conduct an investigation to determine the effect of placing materials that allow light to pass through them, allow only some light through them, block all the light, or redirect light when put in the path of a beam of light.	SE/TE: Jumpstart Discovery!, 42 uInvestigate Lab: What happens when an object blocks light?, 43 Shadows, 46 Jumpstart Discovery!, 48 uInvestigate Lab: How do materials affect light?, 49 Blocked Light, 50 Light Goes Through, 51 Light Bounces Off, 52 Materials That Reflect, 53 uDemonstrate Lab: How can I change a transparent material?, 72-73
1-PS4-4	Use tools and materials to design and build a device that uses light or sound to send a signal over a distance.	SE/TE: Quest Kickoff: Sending Sound Messages, 2-3 Quest Check-In Lab: How can instruments talk?, 18-19 Quest Connection, 24 Quest Check-In Lab: How can an instrument send a secret?, 25 uEngineer It!: Alert! Alert!, 26-27 Quest Findings: Sending Sound Messages, 28 Quest Kickoff: Help Send a Message, 38-39 Quest Check-In: Give off Light, 47 Quest Connection, 53 Quest Check-In: Materials for a Light Signal, 54 Communicate with Light, 61 Quest Check-In Lab: How can you send secret messages?, 64-65 Quest Findings: Help Send a Message, 66

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1.K-2-ETS	Technology/Engineering	
1.K-2-ETS1	Engineering Design	
1.K-2-ETS1-1	Ask questions, make observations, and gather information about a situation people want to change that can be solved by developing or improving an object or tool.	SE/TE: uEngineer It!: Alert! Alert!, 26-27 uEngineer It!: Windshield Safety, 56-57 uEngineer It!: Design a Tool, 160-161 Improve the Design, EM12-EM13
1.K-2-ETS1-2	Generate multiple solutions to a design problem and make a drawing (plan) to represent one or more of the solutions.	SE/TE: uEngineer It! Design a Cooler, 124-125 uEngineer It!: Design a Tool, 160-161

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Massachusetts Science and Technology Engineering Standards, Grade 2		Elevate Science Grade 2 ©2019
Grade 2		
2-ESS	Earth and Space Sciences	
2-ESS1	Earth's Place in the Universe	
2-ESS2	Earth's Systems	
2-ESS2-1	Investigate and compare the effectiveness of multiple solutions designed to slow or prevent wind or water from changing the shape of the land.	SE/TE: uConnect Lab: Which solution is better?, 116 Jumpstart Discovery!, 130 uInvestigate Lab: How do plants protect fields from wind?, 131 Stop Wind and Water, 134-135 Quest Check-In Lab: How can you protect a coastal town from erosion?, 136-137 uEngineer It!: Stop Wind Erosion, 138-139 Quest Findings!: Save the Town, 140 STEM uDemonstrate Lab How can you compare different solutions?, 146-147
2-ESS2-2	Map the shapes and types of landforms and bodies of water in an area.	SE/TE: uInvestigate Lab: How can you make a map of a special place?, 83 Quest Findings, Map Your Hike, 104 uDemonstrate Lab: What can we find at the playground or park?, 110-111
2-ESS2-3	Use examples obtained from informational sources to explain that water is found in the ocean, rivers and streams, lakes and ponds, and may be solid or liquid.	SE/TE: Jumpstart Discovery!, 90 Rivers and Streams, 92 The Ocean, 92 Lakes and Ponds, 94 Quest Check-In: Describe Earth's Water, 95 Rivers and Streams, 214

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2-ESS2-4(MA)	Observe how blowing wind and flowing water can move Earth materials from one place to another and change the shape of a landform.	SE/TE: uInvestigate Lab How do mountains change?, 125 Erosion and Deposition, 127 STEM Quest Check-In Lab How does the ocean affect a coastal town?, 128 STEM uInvestigate Lab How do plants protect fields from wind?, 131 Changes to Land, 132 Changes to Water, 133
2-LS	Life Science	
2-LS2	Ecosystems: Interactions, Energy, and Dynamics	
2-LS2 3(MA)	Develop and use models to compare how plants and animals depend on their surroundings and other living things to meet their needs in the places they live.	SE/TE: uInvestigate Lab: How can you model how animals spread seeds?, 175 uInvestigate Lab: Who lives in a grassland?, 197 Quest Check-In: Which habitat is best?, 200-201 uEngineer It!: Plan a Habitat on Mars, 202-203 uInvestigate Lab: What do land plants need?, 205 uInvestigate Lab: How do plants survive in water?, 211

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2-LS4	Biological Evolution: Unity and Diversity	
2-LS4-1	Use texts, media, or local environments to observe and compare (a) different kinds of living things in an area, and (b) differences in the kinds of living things living in different types of areas.	SE/TE: uInvestigate Lab: Who lives in a grassland?, 197 Habitats, 198 Quest Connection, 199 Jumpstart Discovery!, 204 Deserts, 206-207 Forests, 206-207 Tundra, 206-207 Grasslands, 208 Quest Connection, 208 Habitat Diversity, 209 Topic Assessment, 220-221 Evidence-Based Assessment, 222-223 uDemonstrate Lab: How can you compare diversity in two habitats?, 224-225
2-PS	Physical Science	
2-PS1	Matter and its Interactions	
2-PS1-1	Describe and classify different kinds of materials by observable properties of color, flexibility, hardness, texture, and absorbency.	SE/TE: Jumpstart Discovery!, 6 uInvestigate Lab: What is different?, 7 Matter Everywhere, 8 Observe Properties, 17 Quest Connection, 18 Test Properties, 18 Quest Check-In: Observe, Measure, Test?, 19 Topic Assessment, 36-37 Evidence-Based Assessment, 38-39

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2-PS1-2	Test different materials and analyze the data obtained to determine which materials have the properties that are best suited for an intended purpose.	SE/TE: Quest Check-In: Build with Solids, Liquids, and Gases, 11 uInvestigate Lab: What can beavers teach engineers?, 15 Uses of Solids, 22 Quest Connection, 23 Quest Check-In: How do you use shapes when building?, 24-25 Quest Check-In: Liquid and Gas Toys, 32 Quest Findings: Toy Building Kit, 34 Topic Assessment, 36-37 Quest Connection, 50 Quest Connection, 57 Quest Check-In: How does temperature change matter over time?, 59 Quest Findings: Building Bridges, 68 Career Connection: Structural Engineer, 69
2-PS1-3	Analyze a variety of evidence to conclude that when a chunk of material is cut or broken into pieces, each piece is still the same material and, however small each piece is, has weight. Show that the material properties of a small set of pieces do not change when the pieces are used to build larger objects.	SE/TE: You Can Change Matter, 51 Quest Check In Matter Can Change, 53 Objects Can Be Assembled from Other Objects, 62
2-PS1-4	Construct an argument with evidence that some changes to materials caused by heating or cooling can be reversed and some cannot.	SE/TE: Jumpstart Discovery!, 54 uInvestigate Lab: How does heating and cooling change matter?, 55 Heating and Cooling, 57 Reversible or Not, 58 Topic Assessment, 70-71 Evidence-Based Assessment, 72-73

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2-PS3	Energy	
2-PS3-1(MA)	Design and conduct an experiment to show the effects of friction on the relative temperature and speed of objects that rub against each other.	The standard is met in Elevate Science, Grade 3, Topic 1, Lesson 3: "Forces and Motion."
2.K-2-ETS	Technology/Engineering	
2.K-2-ETS1	Engineering Design	
2.K-2-ETS1-3	Analyze data from tests of two objects designed to solve the same design problem to compare the strengths and weaknesses of how each object performs.	SE/TE: Quest Findings!: Save the Town, 140 uDemonstrate Lab: How can you compare different solutions?, 146-147

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Massachusetts Science and Technology Engineering Standards, Grade 3		Elevate Science Grade 3, ©2019
Grade 3		
3-ESS	Earth and Space Sciences	
3-ESS2	Earth's Systems	
3-ESS2-1	Use graphs and tables of local weather data to describe and predict typical weather during a particular season in an area.	SE/TE: uInvestigate Lab: When is the air dry?, 101 uBe a Scientist: Forecast the Weather, 102 Weather Graphs, 103 Quest Check-In: A Roof for All Seasons, 108 Topic Assessment, 120-121 Evidence-Based Assessment, 122-123 uDemonstrate Lab: What can barometric pressure tell you?, 124-125 STEM Math Connection: Draw and Analyze Graphs, 141
3-ESS2-2	Obtain and summarize information about the climate of different regions of the world to illustrate that typical weather conditions over a year vary by region.	SE/TE: Quest Kickoff: Climates on Location, 128-129 Sports Connection, 132 Climate Characteristics, 134 Latitude and Climate, 136 Land Features Affect Climate, 138 The Atmosphere and Climate, 139 Quest Check-In: Moody Weather, 140 STEM Math Connection Draw and Analyze Graphs, 141 Local-to-Global Connection, 152 uInvestigate Lab: How do mountains affect climate?, 153 Dry Climates, 154 Wet Climates, 155 World Climate Zones, 156 Quest Connection, 157 Lesson 3 Check, 158 Quest Check-In: Explore the World, 159 Quest Findings: Climates on Location, 160 Topic Assessment, 162-163 Evidence-Based Assessment, 164-165 uDemonstrate Lab: What affects the climate in a region?, 166-167

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Massachusetts Science and Technology Engineering Standards, Grade 3		Elevate Science Grade 3, ©2019
3-ESS3	Earth and Human Activity	
3-ESS3-1	Evaluate the merit of a design solution that reduces the damage caused by weather.	SE/TE: Quest Kickoff Hold on to Your Roof, 86-87 Quest Check In Rainy Weather is Coming, 97 Quest Check In A Roof for All Seasons, 108 How Can a Roof Be Improved?, 116-117 Quest Findings, 118
3-LS	Life Science	
3-LS1	From Molecules to Organisms: Structures and Processes	
3-LS1-1	Use simple graphical representations to show that different types of organisms have unique and diverse life cycles. Describe that all organisms have birth, growth, reproduction, and death in common but there are a variety of ways in which these happen.	SE/TE: uInvestigate Lab: How are life cycles similar and different?, 175 Literacy Toolbox - Use Text Features, 178 Visual Literacy Connection: How are life cycles the same?, 180-181 Topic Assessment, 204-205
3-LS3	Heredity: Inheritance and Variation of Traits	
3-LS3-1	Provide evidence, including through the analysis of data, that plants and animals have traits inherited from parents and that variation of these traits exist in a group of similar organisms.	SE/TE: uInvestigate Lab: How do offspring compare to their parents?, 185 Traits from Parents, 186 Question It!, 187 uBe a Scientist: Identify Traits, 187 Traits in Similar Plants, 188 Lesson 2 Check, 189 Traits in Similar Animals, 189 Topic Assessment, 204-205 uDemonstrate Lab: How can you use evidence to support that a trait is inherited?, 208-209

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Massachusetts Science and Technology Engineering Standards, Grade 3		Elevate Science Grade 3, ©2019
3-LS3-2	Distinguish between inherited characteristics and those characteristics that result from a direct interaction with the environment. Give examples of characteristics of living organisms that are influenced by both inheritance and the environment.	SE/TE: uInvestigate Lab: How can the environment affect an organism?, 195 Inherited Traits and the Environment, 196 Environmental Factors, 197 Quest Connection, 197 Visual Literacy Connection: How can environmental factors affect organisms?, 198-199 Lesson 3 Check, 200 Sunlight and Plant Traits, 200 Topic Assessment, 204-205
3-LS4	Biological Evolution: Unity and Diversity	
3-LS4-1	Use fossils to describe types of organisms and their environments that existed long ago and compare those to living organisms and their environments. Recognize that most kinds of plants and animals that once lived on Earth are no longer found anywhere.	SE/TE: Quest Kickoff: Written in Stone, 254-255 uConnect Lab: What can a fossil tell you?, 256 Kinds of Fossils, 260 Fossil Evidence, 261 Quest Connection, 261 Fossils in Sap and Ice, 264 Question It!, 264 Fossils in Tar, 265 Quest Check-In: Plant, Animal, or Trace?, 266 uInvestigate Lab: What can fossil footprints tell you about an animal?, 269 Clues from Fossils, 270 Lesson 2 Check In, 274 Quest Check-In: Long Ago and Today, 275 Quest Check-In Lab: Where did those fossils come from?, 284-285 Quest Findings: Written in Stone, 286 Topic Assessment, 288-289 uDemonstrate Lab: What were this organism and its environment like?, 292-293

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3-LS4-2	Use evidence to construct an explanation for how the variations in characteristics among individuals within the same species may provide advantages to these individuals in their survival and reproduction.	SE/TE: Visual Literacy Connection How do living things adapt to survive?, 218-219 Differences Can Help Living Things, 221 Lesson 1 Check, 221 Quest Check In How are living things suited to their habitats?, 222-223
3-LS4-3	Construct an argument with evidence that in a particular environment some organisms can survive well, some survive less well, and some cannot survive.	SE/TE: uInvestigate Lab How do sea lions stay warm in cold waters?, 217 Survival in Different Habitats, 220 Quest Check In: How are living things suited to their habitats?, 222-223 Science Practice Toolbox: Argue Using Evidence, 234 uInvestigate Lab: How can you use evidence to infer climate change?, 279 Quest Connection, 282 Climate Change and Extinction, 283 Quest Check-In Lab: Where did those fossils come from?, 284-285 Evidence-Based Assessment, 290-291
3-LS4-4	Analyze and interpret given data about changes in a habitat and describe how the changes may affect the ability of organisms that live in that habitat to survive and reproduce.	SE/TE: Quest Check In: How are living things suited to their habitats?, 222-223 Case Study: Denali National Park, 235 Quest Check-In: A Changing Pond Environment, 241 Evidence-Based Assessment, 248-249 uDemonstrate Lab: How well will the rabbit survive?, 250-251
3-LS4-5(MA)	Provide evidence to support a claim that the survival of a population is dependent upon reproduction.	SE/TE: Diversity of Living Things, 176 Lesson 1 Check, 182

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Massachusetts Science and Technology Engineering Standards, Grade 3		Elevate Science Grade 3, ©2019
3-PS	Physical Science	
3-PS2	Motion and Stability: Forces and Interactions	
3-PS2-1	Provide evidence to explain the effect of multiple forces, including friction, on an object. Include balanced forces that do not change the motion of the object and unbalanced forces that do change the motion of the object.	SE/TE: Quest Kickoff: Pinball Wizard!, 2-3 uConnect Lab: How do things move?, 4 Quest Connection, 9 Changes in Speed, 12 Quest Check-In: Get Rolling!, 13 uInvestigate Lab: How can you describe the motion of an object?, 17 Patterns of Motion, 18 Changing Motion, 19 Quest Connection, 19 Visual Literacy Connection: How high can it fly?, 20-21 Lesson 2 Check, 22 Quest Check-In: Bouncing Around Ideas, 23 uInvestigate Lab: What makes it move?, 25 Forces, 26 Contact Forces, 27 Equal and Opposite Forces, 30 Quest Connection, 30 Combined Forces, 31 Quest Check-In: Launch Your Pinball!, 32 Visual Literacy Connection: How can you move an object?, 36-37 Net Force, 38 Quest Connection, 38 Measuring Forces, 39 Quest Check-In Lab: How can you control your flippers?, 40-41 Quest Findings: Pinball Wizard!, 42 Topic Assessment, 44-45 uDemonstrate Lab: Why do objects move?, 48-49 uConnect Lab: How can you move objects without touching them?, 54 Sports Connection, 224

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Massachusetts Science and Technology Engineering Standards, Grade 3		Elevate Science Grade 3, ©2019
3-PS2-3	Conduct an investigation to determine the nature of the forces between two magnets based on their orientations and distance relative to each other.	SE/TE: Magnetic Poles, 70 Quest Connection, 70 Evidence-Based Assessment, 80-81 uDemonstrate Lab: How can you use a force?, 82-83
3-PS2-4	Define a simple design problem that can be solved by applying the use of the interactions between magnets.	SE/TE: Quest Connection, 70 Quest Check-In: How can magnets sort objects by weight?, 72-73 uEngineer It: Moving Along, 74-75 Quest Findings: Weigh to Go, 76 uDemonstrate Lab: How can you use a force?, 82-83
3.3-5-ETS	Technology/Engineering	
3.3-5-ETS1	Engineering Design	
3.3-5-ETS1-1	Define a simple design problem that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost that a potential solution must meet.	SE/TE: uEngineer It: Riding Above the Lake, 14-15 uInvestigate Lab: How can you make a magnet?, 67 uEngineer It: Design Have Your Fun, and Be Considerate Too, 242-243 Defining Problems, EM10 Designing Solutions, EM11 Optimizing Solutions, EM13
3.3-5-ETS1-2	Generate several possible solutions to a given design problem. Compare each solution based on how well each is likely to meet the criteria and constraints of the design problem.	SE/TE: uEngineer It!: Riding Above the Lake, 14-15 Quest Findings: Help the Pond Organisms Survive, 244

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3.3-5-ETS1-4(MA)	Gather information using various informational resources on possible solutions to a design problem. Present different representations of a design solution.	SE/TE: uEngineer It: Have Your Fun, and Be Considerate Too, 242-243 uEngineer It: Model Rebuilding Dinosaurs, 276-277 Using Models and Prototypes, EM12

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Grade 4		
4-ESS	Earth and Space Sciences	
4-ESS1	Earth's Place in the Universe	
4-ESS1-1	Use evidence from a given landscape that includes simple landforms and rock layers to support a claim about the role of erosion or deposition in the formation of the landscape over long periods of time.	SE/TE: uConnect Lab How can rain affect land?, 154 Erosion, 188 Movement of Particles, 189 Deposition, 190 Changes in Landforms over Time, 191 Lesson 4 Check, 191 STEM Quest Check In Lab: How does water affect landforms?, 192 Quest Findings: Does X Mark the Spot? That's Up to You!, 194 Evidence-Based Assessment, 198-199 Quest Kickoff: Dig for the Truth, 244-245 Rock Formations, 251 uInvestigate Lab: How can rock layers show change?, 259 Comparing Rock Layers, 264 Quest Findings: Dig for the Truth, 268
4-ESS2	Earth's Systems	
4-ESS2-1	Make observations and collect data to provide evidence that rocks, soils, and sediments are broken into smaller pieces through mechanical weathering and moved around through erosion.	SE/TE: uConnect Lab: How can rain affect land?, 154 uInvestigate Lab: How can a rock wear away?, 185 Physical Weathering, 187 Movement of Particles, 189 STEM Quest Check In How does water affect landforms?, 192 Quest Findings: Does X Mark the Spot? That's Up to You!, 194 Evidence-Based Assessment, 198-199

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4-ESS2-2	Analyze and interpret maps of Earth's mountain ranges, deep ocean trenches, volcanoes, and earthquake epicenters to describe patterns of these features and their locations relative to boundaries between continents and oceans.	SE/TE: Types of Maps, 159 Patterns of Mountains, 168 Science Practice Toolbox: Cite Evidence, 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 Patterns Under the Ocean, 172 Solve it With Science: Where is the greatest earthquake risk?, 225
4-ESS3	Earth and Human Activity	
4-ESS3-1	Obtain information to describe that energy and fuels humans use are derived from natural resources and that some energy and fuel sources are renewable and some are not.	SE/TE: uConnect Lab: How are energy resources used?, 54 Using Energy, 58 Coal, 66 Fossil Fuels, 66 Petroleum, 67 Natural Gas, 70 Lesson 2 Check, 71 uBe a Scientist: Make it Turn, 71 Engineering Connection, 74 uInvestigate Lab: How does a windmill capture wind energy?, 75 Visual Literacy Connection: Is renewable energy all around?, 76-77 Renewable Fuel, 78 Energy That Does Not Run Out, 79 STEM Quest Check-In Lab: How can the sun make a motor work?, 80 Quest Check-In: Impact Inspections, 91 Topic Assessment, 94-95 uDemonstrate Lab: How can energy resource usage change?, 98-99

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4-ESS3-2	Evaluate different solutions to reduce the impacts of a natural event such as an earthquake, blizzard, or flood 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 When Hazards Strike, 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
4-LS	Life Science	
4-LS1	From Molecules to Organisms: Structures and Processes	

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4-LS1-1	Construct an argument that animals and plants have internal and external structures that support their survival, growth, behavior, and reproduction.	<p>SE/TE: Quest Kickoff: Let Plants and Animals Inspire You!, 278-279 Literacy Toolbox: Compare and Contrast, 284 Plant Systems, 284 Functions of Plant Structures, 285 Visual Literacy Connection What are some functions of leaf structures?, 286-287 Quest Connection, 288 uBe a Scientist: Make a Plant Collection, 288 Lesson 1 Check, 289 Plant Adaptations to their Environment, 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 Lit Connection: What structures do flowering plants use to reproduce?, 296-297 Adaptations of Flowers, 298 uInvestigate Lab: How can you compare the stomachs of cows and dogs?, 301 Animal Structures for Support, 302 Structure of the Animal Heart, 303 How do lungs and gills compare?, 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 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</p>
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SE = Student Edition		TE = Teacher's Edition

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4-PS	Physical Science	
4-PS3	Energy	
4-PS3-1	Use evidence to construct an explanation relating the speed of an object to the energy of that object.	SE/TE: uInvestigate Lab How does starting height affect an object's energy?, 7 Motion and Energy, 12 Quest Check-In Energy, Speed and Motion, 13 Evidence-Based Assessment, 46-47 uDemonstrate Lab What affects energy transfer?, 48-49
4-PS3-2	Make observations to show that energy can be transferred from place to place by sound, light, heat, and electric currents.	SE/TE: uInvestigate Lab: How does energy transfer between objects?, 17 Other Energy Changes, 20-21 STEM Quest Check-In Lab: How does modeling help you understand a collision?, 22-23 uInvestigate Lab How does heat move?, 25 Visual Literacy Connection: How is energy transferred?, 26-27 Light Energy, 29 Quest Connection, 30 Lesson 3 Check, 31 Sound Waves, 31 Quest Check-In: Crash It!, 32 uInvestigate Lab: How does electric energy flow in circuits?, 35

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4-PS3-3	Ask questions and predict outcomes about the changes in energy that occur when objects collide.	SE/TE: uInvestigate Lab: How does energy transfer between objects?, 17 Visual Literacy Connection: Energy Changes in a Collision, 18-19 Model It!, 20 Quest Connection, 20 Other Energy Changes, 20-21 STEM Quest Check-In Lab: How does modeling help you understand a collision?, 22-23 Quest Check-In: Crash It!, 32 Evidence-Based Assessment, 46-47
4-PS3-4	Apply scientific principles of energy and motion to test and refine a device that converts kinetic energy to electrical energy or uses stored energy to cause motion or produce light or sound.	SE/TE: uBe a Scientist: Construct a Cradle, 21 STEM uInvestigate Lab How can a potato provide energy to a light bulb?, 57 Quest Check In Human Power, 63 STEM Quest Check In How can you use a battery to produce motion?, 72-73 Quest Findings Power from the People, 92
4-PS4	Waves and their Applications in Technologies for Information Transfer	
4-PS4-1	Develop a model of a simple mechanical wave (including sound) to communicate that waves (a) are regular patterns of motion along which energy travels, and (b) can cause objects to move.	SE/TE: uInvestigate Lab: How does a wave carry energy?, 107 uInvestigate Lab: What patterns can wave make?, 117 uBe a Scientist: Ripples, 118 Visual Literacy Connection: How do wave patterns move?, 120-121
4-PS4-2	Develop a model to describe that light must reflect off an object and enter the eye for the object to be seen.	SE/TE: Design It!, 127 Seeing Objects, 127 Topic Assessment, 144-145

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4-PS4-3	Develop and compare multiple ways to transfer information through encoding, sending, receiving, and decoding a pattern.	SE/TE: Quest Kickoff: Be a Message Master!, 102-103 Quest Check-In: Communicating Tent to Tent, 113 uEngineer It!: Crack That Code!, 114-115 Quest Connection, 118 Quest Check-In Lab: How can you send a message with sound?, 123 Quest Connection, 126 Quest Check-In Lab: How can you send a message with light?, 132-133 uInvestigate Lab: How can information from waves be translated?, 135 Quest Check-In: Comparing Codes, 140 Quest Findings: Be a Message Master, 142
4.3-5-ETS	Technology/Engineering	
4.3-5-ETS1	Engineering Design	
4.3-5-ETS1-3	Plan and carry out tests of one or more design features of a given model or prototype in which variables are controlled and failure points are considered to identify which features need to be improved. Apply the results of tests to redesign a model or prototype.	SE/TE: uEngineer It: Pump It Up, 348-349 Using Models and Prototypes, EM12 Optimizing Solutions, EM13
4.3-5-ETS1-5(MA)	Evaluate relevant design features that must be considered in building a model or prototype of a solution to a given design problem.	SE/TE: STEM Quest Check-In Lab: How can an electric circuit help prevent collisions?, 40-41 uEngineer It Model Eye See You, 324-325 Using Models and Prototypes, EM12

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5-ESS	Earth and Space Sciences	
5-ESS1	Earth's Place in the Universe	
5-ESS1-1	Use observations, first-hand and from various media, to argue that the Sun is a star that appears larger and brighter than other stars because it is closer to Earth.	SE/TE: Local-to-Global Connection, 236 uInvestigate Lab: How are distance and brightness related?, 237 Brightness of Stars, 240 Distances of Stars, 240 Plan It!, 241 Lesson 1 Check, 242 Evidence-Based Assessment, 268-269 Stars and Constellations, 297 Lesson 1 Brightness of the Sun and Other Stars
5-ESS1-2	Use a model to communicate Earth's relationship to the Sun, Moon, and other stars that explain (a) why people on Earth experience day and night, (b) patterns in daily changes in length and direction of shadows over a day, and (c) changes in the apparent position of the Sun, Moon, and stars at different times during a day, over a month, and over a year.	SE/TE: uInvestigate Lab: How are we spinning?, 285 Earth's Rotation, 286 Earth's Revolution, 287 Visual Literacy Connection What is the movement of Earth's moon in space?, 288-289 Seasons, 290 Shadow Patterns, 296 uBe a Scientist: Shadow Play, 296 Moon Phases, 300-301 Quest Findings: Plan a Trip Around the World of Patterns, 306 uDemonstrate Lab: What can we tell from shadows?, 312-313

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5-ESS2	Earth's Systems	
5-ESS2-1	Use a model to describe the cycling of water through a watershed through evaporation, precipitation, absorption, surface runoff, and condensation.	SE/TE: uInvestigate Lab: Where did that water come from?, 145 uBe a Scientist: Solid, Liquid, Gas, 147 Visual Literacy Connection: How does water cycle on earth?, 148-149 Energy and the Water Cycle, 150 Quest Check-In: Follow the Flow, 151 Topic Assessment, 174

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5-ESS2-2	Describe and graph the relative amounts of salt water in the ocean; fresh water in lakes, rivers, and ground water; and fresh water frozen in glaciers and polar ice caps to provide evidence about the availability of fresh water in Earth's biosphere.	SE/TE: Visual Literacy Connection: How is freshwater distributed across the Earth?, 156-157 uBe a Scientist: Modeling Water Distribution, 158 Where is Water?, 164 Quest Check-In: Water Resources, 170 Topic Assessment, 174-175 Evidence-Based Assessment, 176-177
5-ESS3	Earth and Human Activity	

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5-ESS3-1	Obtain and combine information about ways communities reduce human impact on the Earth’s resources and environment by changing an agricultural, industrial, or community practice or process.	<p>SE/TE:</p> <p>Quest Kickoff: Take Care of Earth – It’s Our Home!, 182-183</p> <p>uConnect Lab: How can we reuse materials to design new products?, 184</p> <p>Air Resources, 192</p> <p>Quest Check-In: Efficient or Wasteful?, 193</p> <p>uEngineer It!: Make Energy the Solar Way, 194-195</p> <p>Quest Check-In: Save Energy!, 203</p> <p>STEM Connection, 204</p> <p>uInvestigate Lab: What happens to substances over time?, 205</p> <p>Reduce Human Impacts, 209</p> <p>Quest Check-In Lab: How do building materials affect energy efficiency?, 210-211</p> <p>uInvestigate Lab: How can you collect rainwater?, 213</p> <p>Resource Protection, 214</p> <p>Environmental Conservation, 215</p> <p>Visual Literacy Connection: How do people recycle?, 216-217</p> <p>Reduce and Reuse, 218</p> <p>Lesson 4 Check, 219</p> <p>Resource Use, 219</p> <p>Quest Check-In: Increase Conservation, 220</p> <p>Quest Findings: Take Care of Earth – It’s Our Home!, 222</p> <p>Evidence-Based Assessment, 226-227</p> <p>uDemonstrate Lab: How can you use the energy of water?, 228-229</p>

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5-ESS3 2(MA)	Test a simple system designed to filter particulates out of water and propose one change to the design to improve it.	SE/TE: STEM Quest Check-In Lab: How do we filter water?, 160-161 STEM uInvestigate Lab How can you separate salt from water?, 163
5-LS	Life Science	
5-LS1	From Molecules to Organisms: Structures and Processes	
5-LS1-1	Ask testable questions about the process by which plants use air, water, and energy from sunlight to produce sugars and plant materials needed for growth and reproduction.	SE/TE: Plants and Energy, 322 Lesson 1 Check, 326 uInvestigate Lab: What matter do plants need to make food?, 329 Crosscutting Concepts Toolbox: Energy and Matter, 330 Model It!, 330 Photosynthesis, 330 How Plants Gain Mass, 331 Lesson 2 Check, 333 Nutrients from Soil, 333 Quest Check-In Lab: What plant foods provide the most energy and nutrients?, 334-335 Topic Assessment, 348-349

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5-LS2	Ecosystems: Interactions, Energy, and Dynamics	
5-LS2-1	Develop a model to describe the movement of matter among producers, consumers, decomposers, and the air, water, and soil in the environment to (a) show that plants produce sugars and plant materials, (b) show that animals can eat plants and/or other animals for food, and (c) show that some organisms, including fungi and bacteria, break down dead organisms and recycle some materials back to the air and soil.	SE/TE: ulInvestigate Lab: How is the sun involved in your meals?, 321 What is a trophic level?, 324-325 Energy Paths to the Sun, 326 ulInvestigate Lab: What matter do plants need to make food?, 329 Model It!, 330 Photosynthesis, 330 ulInvestigate Lab How do animals get energy from the sun?, 339 Crosscutting Concepts Toolbox: Energy and Matter, 340 Evidence-Based Assessment, 350-351 uDemonstrate Lab: How does matter move through an ecosystem?, 352-353 STEM Connection, 368 ulInvestigate Lab: How can matter change in an ecosystem?, 369 Visual Literacy Connection: Who eats whom?, 372-373 Food Webs, 375 ulInvestigate Lab: How does matter move through an ecosystem?, 387 Cycles of Matter, 392 Quest Check-In: Moving Matter and Energy, 393 Topic Assessment, 398-399
5-LS2-2(MA)	Compare at least two designs for a composter to determine which is most likely to encourage decomposition of materials.	SE/TE: ulInvestigate Lab: What happens to substances over time?, 205 ulInvestigate Lab: How can matter change in an ecosystem?, 369 Supporting Content: Decomposers, 371

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5-PS	Physical Science	
5-PS1	Matter and Its Interactions	
5-PS1-1	Use a particle model of matter to explain common phenomena involving gases, and phase changes between gas and liquid and between liquid and solid.	SE/TE: Visual Literacy Connection What is the matter?, 20-21 Model It!, 28 States of Matter, 28 Topic Assessment, 36-37
5-PS1-2	Measure and graph the weights (masses) of substances before and after a reaction or phase change to provide evidence that regardless of the type of change that occurs when heating, cooling, or combining substances, the total weight (mass) of matter is conserved.	SE/TE: uConnect Lab: What happens to mass when objects are mixed?, 46 Conservation of Matter, 68-69 Visual Literacy Connection: Is matter conserved?, 70-71 uBe a Scientist: Mass and Plant Growth, 72 Lesson 3 Check, 73 uDemonstrate Lab: How does mass change when you make glop?, 94-95

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5-PS1-3	Make observations and measurements of substances to describe characteristic properties of each, including color, hardness, reflectivity, electrical conductivity, thermal conductivity, response to magnetic forces, and solubility.	SE/TE: Observing Properties, 8 uBe a Scientist: Identify Properties, 8 Conductors of Heat and Electricity, 12 Magnetic Materials, 12 Quest Connection, 13 Solubility, 13 uInvestigate Lab: How can you use properties to identify solids?, 27 Color, 30 Texture and Hardness, 31 Quest Check-In lab: How can you compare the properties of matter?, 32-33 Topic Assessment, 36-37 Quest Check-In: Stepping Stone Properties, 62 Evidence-Based Assessment, 92-93
5-PS1-4	Conduct an experiment to determine whether the mixing of two or more substances results in new substances with new properties (a chemical reaction) or not (a mixture).	SE/TE: uInvestigate Lab How can you identify chemical changes?, 65 Mixtures, 80 Visual Literacy Connection: When is a mixture also a solution?, 82-83 Mixtures and Solutions, 85 uBe a Scientist: Kitchen Science, 85 uDemonstrate Lab: How does mass change when you make glop?, 94-95

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5-PS2	Motion and Stability: Forces and Interactions	
5-PS2-1	Support an argument with evidence that the gravitational force exerted by Earth on objects is directed toward Earth’s center.	SE/TE: uInvestigate Lab: How long do objects take to fall?, 279 Gravitational Force, 280 Gravity on Earth, 281 uBe a Scientist: Explore Gravity, 281 Argument from Evidence, 282 Science Practice Toolbox: Engage in Quest Connection, 282 Quest Check-In Lab: How does gravity affect matter?, 283 Topic Assessment, 308-309
5-PS3	Energy	
5-PS3-1	Use a model to describe that the food animals digest (a) contains energy that was once energy from the Sun, and (b) provides energy and nutrients for life processes, including body repair, growth, motion, body warmth, and reproduction.	SE/TE: uConnect Lab: How much food do you need?, 318 uInvestigate Lab: How is the sun involved in your meals?, 321 Energy Paths to the Sun, 326 uInvestigate Lab: How do animals get energy from the sun?, 339 Crosscutting Concepts Toolbox: Energy and Matter, 340 Quest Findings: Plan Your Plate!, 346 Topic Assessment, 348-349

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5-ETS3	Technological Systems	
5.3-5-ETS3-1(MA)	Use informational text to provide examples of improvements to existing technologies (innovations) and the development of new technologies (inventions). Recognize that technology is any modification of the natural or designed world done to fulfill human needs or wants.	SE/TE: uEngineer It: Robot Chef, 24-25 uEngineer It: Foam Sweet Foam, 76-77 uEngineer It: A New Home, 118-119 uEngineer It: Make Energy the Solar Way, 194-195
5.3-5-ETS3-2(MA)	Use sketches or drawings to show how each part of a product or device relates to other parts in the product or device.	SE/TE: uEngineer It: Robot Chef, 24-25 STEM uDemonstrate Lab: How can water move upward, 178-179 uEngineer It: Make Energy the Solar Way, 194-195 STEM uDemonstrate Lab: How can you use the energy of water?, 228-229