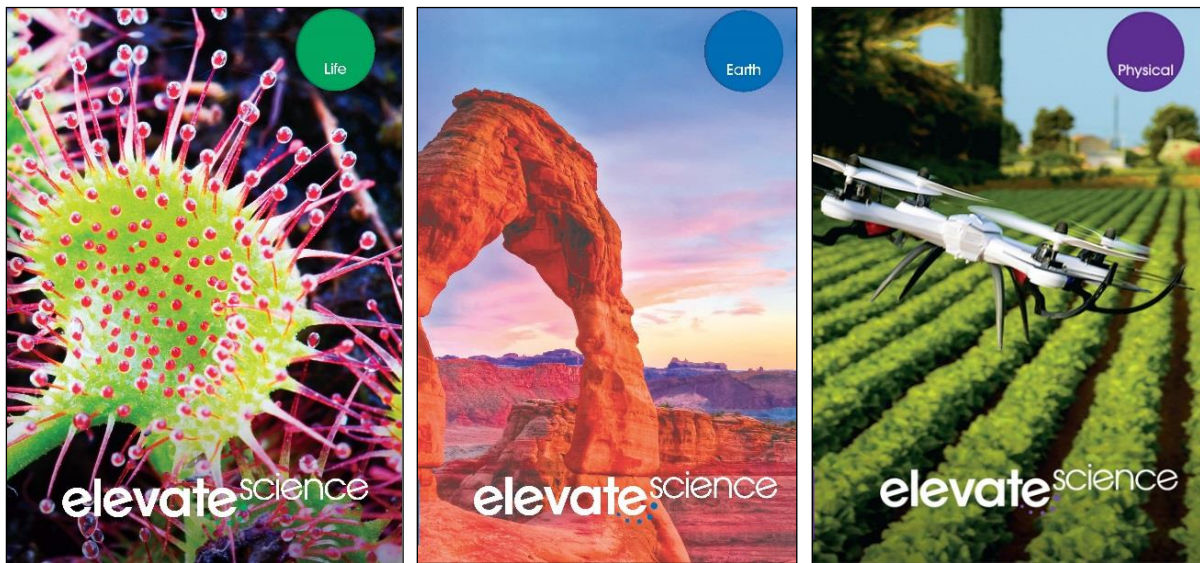


A Correlation of

# Elevate Science

Life, Earth, & Physical

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To the

# New York State Science Learning Standards Performance Expectations Grades 6-8

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**Introduction**

This document demonstrates how the ***Elevate Science*** ©2019 program supports the New York State Science Learning Standards, Grades 6-8. Correlation page references are to the Student and Teacher’s Editions and cited at the page level.

Pearson 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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<b>New York State Science Learning Standards Grades 6-8</b>	<b>Elevate Science: Life, Earth, Physics ©2019</b>
<b>Physical Science</b>	
<b>MS.SPM Structure and Properties of Matter</b>	
<p><b>MS-PS1-1</b> Develop models to describe the atomic composition of simple molecules and extended structures.</p>	<p><b>Elevate Science Physical SE/TE:</b>            Model It!, 9            Types of Solids, 50            Lesson 1 Check, 54            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            Lesson 2 Check, 64            Pressure and Temperature of a Gas, 67–68            Temperature and Volume, 69–70            Pressure and Volume, 71–73            Model It, 71            Graphing Boyle’s Law, 72            How Pistons Work, 74            Lesson 3 Check, 75            Case Study: Rising to the Occasion: Charles’ Law in the Oven, 76–77            Evidence-Based Assessment, 80–81            Melting Ice, 82–85            Thermal Energy, Figure 3, 111            Model It, 144</p>
<p><b>MS-PS1-3</b> Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.</p>	<p><b>Elevate Science Physical SE/TE:</b>            Synthetic Materials, 429–432            Natural Resources as Building Blocks, 430            Impact of Synthetic Materials, 433–434            Case Study, 436–437</p>

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<p><b>MS-PS1-4</b> Develop a model that predicts and describes changes in particle motion, temperature, and phase (state) of a substance when thermal energy is added or removed.</p>	<p><b>Elevate Science Physical SE/TE:</b> Solids, Liquids, and Gases, 42–43 Quest Kickoff, 44–45 Particles of a Liquid, 51 Particles of a Gas, 53 Thermal Energy and Temperature, 57 Changes of State Between Liquid and Solid, 58–59 The Effect of Pressure, 61 Changes of State Between Liquid and Gas, 60–62 Changing State from Solid to Gas, 63 Model It!, 63 Connect It!, 66 Pressure and Temperature of a Gas, 67–68 Temperature and Volume, 69–70 Thermal Energy, 111</p>
<p><b>MS-PS1-7</b> Use evidence to illustrate that density is a property that can be used to identify samples of matter.</p>	<p><b>Elevate Science Physical SE/TE:</b> Determining Density, 18 Density and Temperature, 19 Using Density, 20 Math Toolbox, 20 Topic Review and Assess, 34</p>
<p><b>MS-PS1-8</b> Plan and conduct an investigation to demonstrate that mixtures are combinations of substances.</p>	<p><b>Elevate Science Physical SE/TE:</b> Types of Mixtures, 11 uDemonstrate Lab: Help Out the Wildlife, 38-41 Connect It!, Plan an Investigation, 398 Plan It!, 400 Hands-On Lab, 402 Types of Mixtures, 399</p>

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<b>MS.CR Chemical Reactions</b>	
<b>MS-PS1-2</b> Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.	<b>Elevate Science Physical SE/TE:</b> Quest Kickoff, 2-3 Saving the World's Art, 13 Expressing Weight, Mass, and Volume, 15-17 Determining Density, 18-19 Case Study, 22-23 Physical Changes in Matter, 25-26 Chemical Changes in Matter, 27-29 Quest Kickoff, 332-333 Connect It!, 408 Model It!, 410 Evidence of Chemical Reactions, 412-413 Changes in Energy, 414 Energy Graphs for Chemical Reactions, 415 Affecting Rates of Reactions, 416-417
<b>MS-PS1-5</b> Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.	<b>Elevate Science Physical SE/TE:</b> Conservation of Mass, 28 Law of Conservation of Mass, 424-425 Chemical Equations, 421-423 Types of Chemical Reactions, 426
<b>MS-PS1-6</b> Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy during a chemical and/or physical process.	<b>Elevate Science Physical SE/TE:</b> Energy Conservation, 152 Quest Kickoff, 396-697 Changes in Energy, 414 Energy Graphs for Chemical Equations, 415
<b>MS.FI Forces and Interactions</b>	
<b>MS-PS2-1</b> Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.	<b>Elevate Science Physical SE/TE:</b> Newton's Third Law of Motion, 475-477 Hands-On Lab, 475 uEngineer It!, 479 uDemonstrate Lab, 494-497

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<b>MS-PS2-2</b> Plan and conduct an investigation to provide evidence that the change in an object’s motion depends on the sum of the forces on the object and the mass of the object.	<b>Elevate Science Physical SE/TE:</b> An Object in Motion, 451–452 How Forces Affect Motion, 453–456 Lesson 1 Check, 457 Case Study, 468–469 Newton’s First Law of Motion, 471 Newton’s Second Law of Motion, 472–474 Newton’s Third Law of Motion, 475–477 uDemonstrate Lab, 494–497
<b>MS-PS2-3</b> Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.	<b>Elevate Science Physical SE/TE:</b> The Essential Question, 237 Quest Kickoff, 238–239 Electric Force, 242 Magnetic Force and Energy, 251–252 Magnetic Fields, 253–255 Electromagnetic Principles, 259 Magnetic Fields and Currents, 260–261 Field Strength and Solenoids, 263
<b>MS-PS2-4</b> Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects and the distance between them.	<b>Elevate Science Physical SE/TE:</b> Factors That Affect Friction, 481–483 Universal Gravitation, 484 Factors That Affect Gravity, 484–485 Energy, Forces, and Motion, 486–487
<b>MS-PS2-5</b> Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.	<b>Elevate Science Physical SE/TE:</b> Electric Force, Fields, and Energy, 241–243 Question It!, 243 Magnetic Force and Energy, 251–252 Magnetic Fields, 253–255 Quest Check-In, 257 Electromagnetic Principles, 259 Magnetic Fields and Currents, 260–261 Evidence-Based Assessment, 280–281 Universal Gravitation, 484

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<b>MS.E Energy</b>	
<b>MS-PS3-1</b> Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.	<b>Elevate Science Physical SE/TE:</b> The Essential Question, 87 Mass, Speed, and Kinetic Energy, 102 Elastic Potential Energy, 105 Kinetic and Potential Energy, 120 Energy Transformation and Transfer, 121 Model It, 121 Conservation of Energy in Waves, 125 Evidence-Based Assessment, 130–131
<b>MS-PS3-2</b> Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.	<b>Elevate Science Physical SE/TE:</b> The Essential Question, 86–87 Quest Kickoff, 88–89 Kinetic Energy, 101–102 Potential Energy, 103–106 Reinventing Energy Systems, 117 Model It!, 121 Lesson 4 Check, 125 uDemonstrate Lab, 132–135 Quest Kickoff, 238–239 uDemonstrate Lab, 282–285 Gravitational Potential Energy, 486
<b>MS-PS3-3</b> Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.	<b>Elevate Science Physical SE/TE:</b> uEngineer It!, 107 Reinventing Energy Systems, 117 The Essential Question, 137 Quest Kickoff, 138–139 uEngineer It!, 155 Connect It!, 158 Conductors and Insulators, 159 Materials for Space Shuttles, 163 Plan It!, 164 uDemonstrate Lab, 170–173
<b>MS-PS3-4</b> Plan and conduct an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the temperature of the sample of matter.	<b>Elevate Science Physical SE/TE:</b> Thermal Energy and Heat, 141 Thermal Energy and Amount of Matter, 145 Changes in Temperature, 145 Heat Flow, 150–151 uDemonstrate Lab: Testing Thermal Conductivity, 170-173



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<b>MS-PS3-5</b> Construct, use, and present an argument to support the claim that when work is done on or by a system, the energy of the system changes as energy is transferred to or from the system.	<b>Elevate Science Physical SE/TE:</b> Work Related to Energy and Power, 96 Kinetic Energy, 101–102 Potential Energy, 103–106 Determining Mechanical Energy, 109 More Forms of Energy, 110–115 Energy Changes Form, 119–121 uDemonstrate Lab: 3, 2, 1...Liftoff!, 132-135
<b>MS-PS3-6</b> Make observations to provide evidence that energy can be transferred by electric currents.	<b>Elevate Science Physical SE/TE:</b> Electric Current and Circuits, 244 Energy in Circuits, 245 Electromagnetic Principles, 259 Magnetic Fields and Current, 260–261 Solenoids and Electromagnets, 262–263 Electromagnetic Induction, 270–272 Generators and Transformers, 273–274 Signals and Information, 301–303
<b>MS.WER Waves and Electromagnetic Radiation</b>	
<b>MS-PS4-1</b> Develop a model and use mathematical representations to describe waves that includes frequency, wavelength, and how the amplitude of a wave is related to the energy in a wave.	<b>Elevate Science Physical SE/TE:</b> Types of Waves, 179–181 Properties of Waves, 182–183 Wave Energy, 184 Lesson 1 Check, 185 Making Waves, 232–235 Topic 5 Review and Assess, 228–231 uDemonstrate Lab: Making Waves, 232-235
<b>MS-PS4-2</b> Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.	<b>Elevate Science Physical SE/TE:</b> Case Study: Sound and Light at the Ballpark, 186-187 Reflection, Refraction, and Absorption, 189–191 Plan It! Develop Models, 190 Model It!, 201 Lesson 3 Check, 207 Evidence-Based Assessment, 230-231

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<b>MS-PS4-3</b> Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.	<b>Elevate Science Physical SE/TE:</b> Signals and Information, 301–303 Analog and Digital Signals, 304–306 Transmitting Signals, 307–308 Lesson 2 Check, 309 Case Study, 310–311 Advantages of Digital Signals, 318–319 Lesson 3 Check, 320 Evidence-Based Assessment, 324–325 uDemonstrate Lab: Over and Out, 326–328
<b>Life Science</b>	
<b>MS.SFI Structure, Function, and Information Processing</b>	
<b>MS-LS1-1</b> Plan and conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.	<b>Elevate Science Life SE/TE:</b> Characteristics of Living Things, 5 Cellular Organization, 6 Hands-On Lab, 7 uDemonstrate Lab: It’s Alive, 54–57 Cell Theory, 64–69 Extraordinary Science, 71 Parts of a Cell, 73–78 Cells Working Together, 79–80 Cells Make Up an Organism, 80  <b>TE Only:</b> Interactivity
<b>MS-LS1-2</b> Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.	<b>Elevate Science Life SE/TE:</b> Quest Kick-Off, 60 Parts of a Cell, 73–75 Figure 2, Develop Models, 74 Organelles in the Cytoplasm, 76–78 Model It!, 77 Cells Working Together, 79–80 Quest Check-In, Develop Models, 81 Function of the Cell Membrane, 84–87 Moving Large Particles, 88 Quest Check-In, 89 Quest Findings, 121

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<p><b>MS-LS1-3</b> Construct an explanation supported by evidence for how the body is composed of interacting systems consisting of cells, tissues, and organs working together to maintain homeostasis.</p>	<p><b>Elevate Science Life SE/TE:</b> Specialized Cells, 79 Cells Make Up an Organism, 80 Lesson 2 Check, 81 Levels of Organization, 132–133 Lesson 1 Check, 138 Levels of Organization, 132–133 Human Organ Systems, 134–135 Systems Working Together, 141–145 Homeostasis, 146–148 The Digestive Process, 156–157 The Lower Digestive System, 158–161 The Circulatory System, 165 The Cardiovascular System, 166 Respiratory System, 170–171 Excretory System, 172–173 Central Nervous System, 179 Lesson 4 Check, 175 Review and Assess, 186-187</p>
<p><b>MS-LS1-8</b> Gather and synthesize information that sensory receptors respond to stimuli, resulting in immediate behavior and/or storage as memories.</p>	<p><b>Elevate Science Life SE/TE:</b> The Essential Question, 127 Quest Kickoff, 128–129 Stimulus and Response, 143 Nervous System, 177–181 Neurons, 178 Lesson 5 Check, 185 Review and Assess, 186-187</p>
<p><b>MS.MEO Matter and Energy in Organisms and Ecosystems</b></p>	
<p><b>MS-LS1-6</b> Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.</p>	<p><b>Elevate Science Life SE/TE:</b> Form and Function, 39 Characteristics of Plants, 40 Living Things and Energy, 99–101 Photosynthesis, 102–103 Expressing Photosynthesis, 104–106 uEngineer It!, 107 Living Things and Energy, 99–102 Connect It!, 272 Carbon and Oxygen Cycles, 276</p>

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<p><b>MS-LS1-7</b> Develop a model to describe how food molecules are rearranged through chemical reactions to release energy during cellular respiration and/or form new molecules that support growth as this matter moves through an organism.</p>	<p><b>Elevate Science Life SE/TE:</b>            The Essential Question, 59            Living Things and Energy, 99–101            Model It!, 101            Photosynthesis, 102–103            Figure 4, 102            Expressing Photosynthesis, 104–106            Energy and Cellular Respiration, 109–112            Figure 2, 110            Fermentation, 113–115            Case Study, 116–117            Topic 2 Review and Assess, 118–119            Connect It!, 152</p>
<p><b>MS-LS2-1</b> Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.</p>	<p><b>Elevate Science Life SE/TE:</b>            Organisms and Habitats, 253–254            Math Toolbox, 256            Factors That Limit Population Growth, 258            Lesson 1 Check, 259            Case Study, 260–261            The Value of Biodiversity, 313            Room to Roam, 318            Factors Affecting Biodiversity, 316–318</p>
<p><b>MS-LS2-3</b> Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.</p>	<p><b>Elevate Science Life SE/TE:</b>            The Essential Question, 249            Energy Roles in an Ecosystem, 263–265            Energy and Matter Transfer, 266–269            Model It, 267            Lesson 2 Check, 270            Water Cycle, 274–275            Carbon and Oxygen Cycles, 276–277            Nitrogen Cycle in Ecosystems, 278–279            Lesson 3 Check, 280            Living Things and Energy, 99–101            Photosynthesis, 102–103            Expressing Photosynthesis, 104–106            Conservation of Matter and Energy, 273</p> <p><b>Elevate Science Earth SE/TE:</b>            The Water Cycle, 25–26            Figure 2, 26</p>

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<p><b>MS-LS2-4</b> Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.</p>	<p><b>Elevate Science Life SE/TE:</b>            Case Study: The Case of the Disappearing Cerulean Warbler, 260–261            The Essential Question, 291            Competition and Predation, 297–299            Ecosystem Disruptions and Population Survival, 308–309            Ecology in Action, 311            Factors Affecting Biodiversity, 316–318            Room to Roam, 318            Case Study: The Dependable Elephant, 324–325            Restoring Water, 329            Factors Impacting Ecosystem Services, 331–332            Conservation, 333            Lesson 4 Check, 334</p>
<p align="center"><b>MS.IRE Interdependent Relationships in Ecosystems</b></p>	
<p><b>MS-LS2-2</b> Construct an explanation that predicts patterns of interactions among organisms in a variety of ecosystems.</p>	<p><b>Elevate Science Life SE/TE:</b>            Organisms and Habitats, 253–254            Ecosystem Organization, 255            Populations, 256–257            Factors That Limit Population Growth, 258            Lesson 1 Check, 259            The Essential Question, 291            Niche, 296            Competition and Predation, 297–299            Symbiotic Relationships, 300–301            Parasitism, 302            Lesson 1 Check, 303            Ecosystem Disruptions and Population Survival, 308–309            Lesson 2 Check, 310            Case Study, 324–325            Ecosystem Services, 327–330            Lesson 4 Check, 334            uDemonstrate Lab: Changes in an Ecosystem, 340-343</p>

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<b>MS-LS2-5</b> Evaluate competing design solutions for maintaining biodiversity and protecting ecosystem stability.	<b>Elevate Science Life SE/TE:</b> Quest Check-In, 310 Factors Affecting Biodiversity, 316–318 Question It!, 317 Human Impact, 319–322 Ecosystem Services, 327–330 Factors Impacting Ecosystem Services, 331–332 Conservation, 333 uEngineer It!, 433 Test and Evaluate a Solution, 484
<b>MS.GDR</b> Growth, Development, and Reproduction of Organisms	<b>Elevate Science Life SE/TE:</b> Growth and Development of Organisms, 229 Plant Responses and Growth, 230–232 Animal Growth, 233–236 Lesson 4 Check, 237
<b>MS-LS1-4</b> Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants, respectively.	<b>Elevate Science Life SE/TE:</b> Characteristics of Living Things, 5–7 Life Produces More Life, 8–9 The Essential Question, 195 Plant Reproduction, 209 Structures for Reproduction, 212–215 Lesson 2 Check, 216 Animal Behavior, 219–221 Reproductive Strategies, 222–225 Lesson 3 Check, 226 Avian Artists, 227
<b>MS-LS1-5</b> Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.	<b>Elevate Science Life SE/TE:</b> The Essential Question, 195 Quest Kickoff, 196–197 Genes and the Environment, 205–206 Connect It!, 228 Plant Responses and Growth, 230–232 Animal Growth, 233–236 Lesson 4 Check, 237 Environmental Factors, 386–387 Darwin’s Journey, 419–422 Lesson 1 Check, 423 Darwin’s Search for a Mechanism, 425–427 How Natural Selection Works, 427–429 Genes and Natural Selection, 430–431 Lesson 2 Check, 432

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<p><b>MS-LS3-1</b> Develop and use a model to explain why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.</p>	<p><b>Elevate Science Life SE/TE:</b> Case Study, 358-359 The Genetic Code, 371 Diversity of Life, 381 Chromosomes and Variation, 382-383 Types of Mutations, 384-385 Model It!, 385 Environmental Factors, 386-387 Mutations in Reproduction, 388-390 Lesson 4 Check, 391</p>
<p><b>MS-LS3-2</b> Develop and use a model to describe how asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.</p>	<p><b>Elevate Science Life SE/TE:</b> Asexual and Sexual Reproduction, 199-201 Model It!, 200 Inherited Traits, 202-203 Model It!, 203 Lesson 1 Check, 207 Chromosomes and Variation, 382-383 Gene Flow, 438</p>
<p><b>MS-LS4-5</b> Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.</p>	<p><b>Elevate Science Life SE/TE:</b> Connect It, 392 Artificial Selection, 393 Genetic Engineering, 394-397 Practical Uses for DNA, 398-400 DNA Technologies, 399 Lesson 5 Check, 401</p>
<p><b>MS.NS Natural Selection and Adaptations</b></p>	
<p><b>MS-LS4-1</b> Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.</p>	<p><b>Elevate Science Life SE/TE:</b> The Fossil Record, 443-445 Fossil Evidence of Evolution, 446-447 Comparisons of Anatomy, 448-449 Beginning and End of a Species, 450-452 Lesson 4 Check, 453 Case Study: Could Dinosaurs Roar?, 454-455</p>

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<p><b>MS-LS4-2</b> Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.</p>	<p><b>Elevate Science Life SE/TE:</b>            Quest Kickoff, 2-3            Evolution and Classification, 22-24            Extraordinary Science, 25            Topic 1 Review and Assess, 50-51            Charles Lyell's Rocks, 418            Mary Anning's Fossils, 418            Fossil Evidence of Evolution, 446-447            Comparisons of Anatomy, 448-449</p>
<p><b>MS-LS4-3</b> Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.</p>	<p><b>Elevate Science Life SE/TE:</b>            Connect It!, 442            The Fossil Record, 443-445            Fossil Evidence of Evolution, 446-448            Comparisons of Anatomy, 448-449            Lesson 4 Check, 453            uDemonstrate Lab: A Bony Puzzle, 470-473</p>
<p><b>MS-LS4-4</b> Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.</p>	<p><b>Elevate Science Life SE/TE:</b>            Comparing Types of Reproduction, 201            Genes and the Environment, 205            Lesson 1 Check, 207            Case Study, 358-359            Observing Changes, 414-418            Darwin's Journey, 419-422            Connect It!, 424            Evolution by Natural Selection, 425-432            Connect It!, 434            Processes of Evolution, 435-438            Sexual Selection, 439            Coevolution, 440            Lesson 3 Check, 441</p>
<p><b>MS-LS4-6</b> Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.</p>	<p><b>Elevate Science Life SE/TE:</b>            Overproduction, Figure 3, 427            Hands-On Lab, 427            Math Toolbox, 428            Adaptations for Survival, 295            Artificial Selection, 393            Evolution by Natural Selection, 425-429            Genes and Natural Selection, 430-431</p>



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<b>Earth and Space Science</b>	
<b>MS.SS Space Systems</b>	
<b>MS-ESS1-1</b> Develop and use a model of the Earth-Sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the Sun and moon, and seasons.	<b>Elevate Science Earth SE/TE:</b> Quest Kickoff, 490 Design It!, 506 The Seasons, 507–508 Orbital Motion, 511 The Two Sides of the Moon, 515–516 Motions of the Moon, 516 Eclipses, 518–519 Evidence-Based Assessment, 526–527 Quest Findings, 527 Modeling Lunar Phases, 528–531
<b>MS-ESS1-2</b> Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.	<b>Elevate Science Earth SE/TE:</b> Gravity, 509 Orbital Motion, 511 Connect It!, 536 Understanding the Solar System, 537–540 Hands-On Lab, 539 The Solar System, 544–545 Formation and Development of Stars, 561 From Stars to Galaxies, 571–573 The Universe, 574–575 Understanding the Universe, 576–578 Evidence-Based Assessment, 583
<b>MS-ESS1-3</b> Analyze and interpret data to determine scale properties of objects in the solar system.	<b>Elevate Science Earth SE/TE:</b> Understanding the Solar System, 537–540 Math Toolbox, 538 The Solar System, 544 Reading Check, 545 Case Study: Comparing Solar System Objects, 548-549 Collecting Space Data, 551–553 uDemonstrate Lab: Scaling Down the Solar System, 584–587

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<b>MS.HE History of Earth</b>	
<p><b>MS-ESS1-4</b> Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth’s 4.6-billion-year-old history.</p>	<p><b>Elevate Science Earth SE/TE:</b>            Quest Kickoff, 364–365            Describing the Ages of Rocks, 367            Describing the Relative Ages of Rocks, 368–370            Describing the Absolute Ages of Rocks, 371–372            Connect It!, 376            The Geologic Time Scale, 377–379            Dividing Geologic Time, 380–381            Lesson 2 Check, 382            uEngineer It!, 383            Major Events in the Paleozoic Era, 385–387            Lesson 2 Check, 392</p>
<p><b>MS-ESS2-2</b> Construct an explanation based on evidence for how geoscience processes have changed Earth’s surface at varying temporal and spatial scales.</p>	<p><b>Elevate Science Earth SE/TE:</b>            Soil Formation, 218            Model It, 219            Mass Movement, 224–225            Erosion and Deposition by Wind, 226–227            How Water Causes Erosion, 231–232            Water Erosion and Deposition Change Earth’s Surface, 233–236            Groundwater Changes Earth’s Surface, 237–238            Case Study: Buyer Beware, 241            Glaciers Change Earth’s Surface, 243–245            Glacial Erosion, 245            Glacial Deposition, 246–247            Waves Change Earth’s Surface, 248–250            Lesson 4 Check, 251            Evidence-Based Assessment, 254-255</p>
<p><b>MS-ESS2-3</b> Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.</p>	<p><b>Elevate Science Earth SE/TE:</b>            Connect It!, 156            Hypothesis of Continental Drift, 157–159            Mid-Ocean Ridges, 160            Sea-Floor Spreading, 161            Ocean Trenches, 162–163            Plate Motions Over Time, 169            Tectonic Plates and the “Ring of Fire”, 170            Model It!, 170            Plate Boundaries, 171            Lesson 2 Check, 175            Case Study: Australia on the Move, 176-177</p>

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<b>MS-ES Earth's Systems</b>	
<b>MS-ESS2-1</b> Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.	<b>Elevate Science Earth SE/TE:</b> How Rocks Form, 131-134 The Cycling of Earth's Materials, 137-140 Model It!, 140 Lesson 4 Check, 141 Case Study: Mighty Moana Loa, 142-143
<b>MS-ESS2-4</b> Develop a model to describe the cycling of water through Earth's systems driven by energy from the Sun and the force of gravity.	<b>Elevate Science Life SE/TE:</b> Water Cycle, 274-275  <b>Elevate Science Earth SE/TE:</b> The Water Cycle, 25-26 Distribution of Earth's Water, 27 Surface Water, 28-29 Groundwater, 30 Exploring the Ocean, 31-32 Connect It!, 56 Water Enters the Atmosphere, 57-59 Water Leaves the Atmosphere, 60-62 The Water Cycle, 63 Lesson 2 Check, 64 uDemonstrate Lab, 98-101
<b>MS-ESS3-1</b> Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geologic processes.	<b>Elevate Science Earth SE/TE:</b> Groundwater, 30 Defining Minerals, 119 Mineral Distribution, 125 Lesson 2 Check, 126 Global to Local, 127 The Essential Question, 261 Quest Kickoff, 262-263 Distribution of Minerals, 286 Mineral Distribution, 287 Lesson 3 Check, 289 Evidence-Based Assessment, 302-303

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<b>MS.WC Weather and Climate</b>	
<b>MS-ESS2-5</b> Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.	<b>Elevate Science Earth SE/TE:</b> Earth’s Insulator, 49 Energy in the Atmosphere, 53–54 Connect It!, 66 Model It!, 71 The Essential Question, 45 Major Air Masses, 67–68 Types of Fronts, 69–70 Case Study, 92–93 Evidence-Based Assessment, 96-97
<b>MS-ESS2-6</b> Develop and use a model to describe how unequal heating and rotation of Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.	<b>Elevate Science Earth SE/TE:</b> Earth’s Insulator, 49 Energy in the Atmosphere, 53–54 Connect It!, 66 Model It!, 71 Energy from the Sun, 407–410 Heat Transfer in the Atmosphere, 411–414 Connect It!, 416 Winds, 417–418 Local Winds and Global Winds, 419–421 Global Wind Patterns, 422–423 Connect It!, 426 Surface Currents, 427–430 uDemonstrate Lab, 440–443 Factors That Affect Temperature, 449–451 Factors That Affect Precipitation, 452–453 World Climates, 454–455 Model It!, 455 Lesson 1 Check, 456
<b>MS-ESS3-5</b> Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.	<b>Elevate Science Earth SE/TE:</b> Connect It!, 458 Studying Earth’s Climates, 459–462 Recent Climate Change, 463–466 Lesson 2 Check, 467 Impact of Rising Temperatures, 471–474 Lesson 3 Check, 478 uEngineer It!, 479 Topic 10 Review and Assess, 480–481 Evidence-Based Assessment, 482–483 uDemonstrate Lab: An Ocean of a Problem, 484-487

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<b>MS.HI Human Impacts</b>	
<p><b>MS-ESS3-2</b> Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.</p>	<p><b>Elevate Science Earth SE/TE:</b>            Connect It!, 74            How to Predict Weather, 75–77            Learning from Weather Maps, 78–80            Watching the Clouds Go By, 81            Storm Safety, 90            Case Study, 92–93            Connect It!, 82            Types of Severe Storms, 83–88            Floods and Drought, 89            uEngineer It!, 221</p>
<p><b>MS-ESS3-3</b> Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.</p>	<p><b>Elevate Science Earth SE/TE:</b>            Case Study: Phosphorous Fiasco, 290–291            Human Impacts, 296–297            Quest Kickoff, 310            Balancing Needs, 318            Lesson 1 Check, 319            Controlling Air Pollution, 326            Protecting the Ozone Layer, 327            Plan It, 333            Sustainable Forest Management, 338–339            Sustainable Forestry, 340            Case Study: Nothing Goes to Waste, 342–343            Reducing Water Pollution, 350–351            Plan It, 351            From Wastewater to Tap Water, 353            Quest Findings, 357</p>
<p><b>MS-ESS3-4</b> Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth’s systems.</p>	<p><b>Elevate Science Earth SE/TE:</b>            Human Impacts, 296–297            Question It!, 316            Impact of Agriculture, 317            Balancing Needs, 318            Quest Check-In, 319            Review and Assess, 354            Evidence-Based Assessment, 356-357</p>

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<b>Engineering Design</b>	
<b>MS-ETS1 Engineering Design</b>	
<p><b>MS-ETS1-1</b> Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.</p>	<p>This standard is met throughout Elevate Science Life, Earth, and Physical. For examples, please see:</p> <p><b>Elevate Science Life SE/TE:</b>            U Engineer It! An Artificial Leaf, 107            U Engineer It! Artificial Skin, 139            U Engineer It! Gardening in Space, 217            U Engineer It! Eating Oil, 271            U Engineer It! From Bulldozer To Biomes, 335            U Engineer It! Fossils from Bedrock, 433</p> <p><b>Elevate Science Earth SE/TE:</b>            U Engineer It! Micro-Hydro Power, 281            U Engineer It! From Wastewater to Tap Water, 353            U Engineer It! Windmills of the Future, 425            U Engineer It! Changing Climate Change, 479            U Engineer It! Power from the Tides, 523            U Engineer It! Blast Off, 559</p> <p><b>Elevate Science Physical SE/TE:</b>            U Engineer It! Say "Cheese!", 197            U Engineer It! Electromagnetism in Action, 265            U Engineer It! A Life-Saving Mistake, 299            U Engineer It! When Particles Collide, 367            U Engineer It! Making Water Safe to Drink, 407            U Engineer It! Generating Energy from Potholes, 479</p>

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<p><b>MS-ETS1-2</b> Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.</p>	<p>This standard is met throughout Elevate Science Life, Earth, and Physical. For examples, please see:</p> <p><b>Elevate Science Life SE/TE:</b>            U Engineer It! An Artificial Leaf, 107            U Engineer It! Artificial Skin, 139            U Engineer It! Gardening in Space, 217            U Engineer It! Eating Oil, 271            U Engineer It! From Bulldozer to Biomes, 335            U Engineer It! Fossils from Bedrock, 433</p> <p><b>Elevate Science Earth SE/TE:</b>            uEngineer It! Catching Water With a Net, 24            uEngineer It! Ground Shifting Advances: Maps Help Protect, 84            uEngineer It!, A Disease Becomes a Cure, 160            uEngineer It! Artificial Skin, 215            U Engineer It! Micro-Hydro Power, 281            U Engineer It! From Wastewater to Tap Water, 353            U Engineer It! Windmills of the Future, 425            U Engineer It! Changing Climate Change, 479            uEngineer It!: Power from the Tides, 523            U Engineer It! Blast Off, 559</p> <p><b>Elevate Science Physical SE/TE:</b>            uEngineer It! Prosthetics on the Move, 25            uEngineer It!, Generating Energy from Potholes, 86            uEngineer It! A Daring Bridge, 126            uEngineer It! Windmills of the Future, 169            U Engineer It! Say "Cheese!", 197            U Engineer It! Electromagnetism In Action, 265            U Engineer It! A Life-Saving Mistake, 299            U Engineer It! When Particles Collide, 367            U Engineer It! Making Water Safe to Drink, 407            U Engineer It! Generating Energy from Potholes, 479</p>

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<p><b>MS-ETS1-3</b> Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.</p>	<p>This standard is met throughout Elevate Science Life, Earth, and Physical. For examples, please see:</p> <p><b>Life Science SE/TE:</b>            U Engineer It! An Artificial Leaf, 107            U Engineer It! Artificial Skin, 139            U Engineer It! Gardening in Space, 217            U Engineer It! Eating Oil, 271            U Engineer It! From Bulldozer to Biomes, 335            U Engineer It! Fossils from Bedrock, 433</p> <p><b>Earth Science SE/TE:</b>            U Engineer It! Micro-Hydro Power, 281            U Engineer It! From Wastewater to Tap Water, 353            U Engineer It! Windmills of the Future, 425            U Engineer It! Changing Climate Change, 479            U Engineer It! Power from the Tides, 523            U Engineer It! Blast Off, 559</p> <p><b>Physical Science SE/TE:</b>            U Engineer It! A Daring Bridge, 126            U Engineer It! Windmills of the Future, 169            U Engineer It! Say "Cheese!", 197            U Engineer It! Electromagnetism in Action, 265            U Engineer It! A Life-Saving Mistake, 299            U Engineer It! When Particles Collide, 367            U Engineer It! Making Water Safe to Drink, 407            U Engineer It! Generating Energy from Potholes, 479</p>



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<p><b>MS-ETS1-4</b> Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.</p>	<p>This standard is met throughout Elevate Science Life, Earth, and Physical. For examples, please see:</p> <p><b>Elevate Science Life SE/TE:</b>            U Engineer It! An Artificial Leaf, 107            U Engineer It! Artificial Skin, 139            U Engineer It! Gardening in Space, 217            U Engineer It! Eating Oil, 271            U Engineer It! From Bulldozer to Biomes, 335</p> <p><b>Elevate Science Earth SE/TE:</b>            U Engineer It! Catching Water with a Net, 24            Model It! Develop Models, 71            Model It! How Thunderstorms Form, 85            Model It! Oxbow Lakes, 234            uDemonstrate Lab: Materials on a Slope, 256-259            Model It!: Develop Models, 247            U Engineer It!, A Disease Becomes a Cure, 160            U Engineer It! Micro-Hydro Power, 281            U Engineer It! From Wastewater to Tap Water, 353</p> <p><b>Physical Science SE/TE:</b>            U Engineer It! Say "Cheese!", 197            U Engineer It! Electromagnetism in Action, 265            U Engineer It! A Life-Saving Mistake, 299</p>