A Correlation of

Elevate Science

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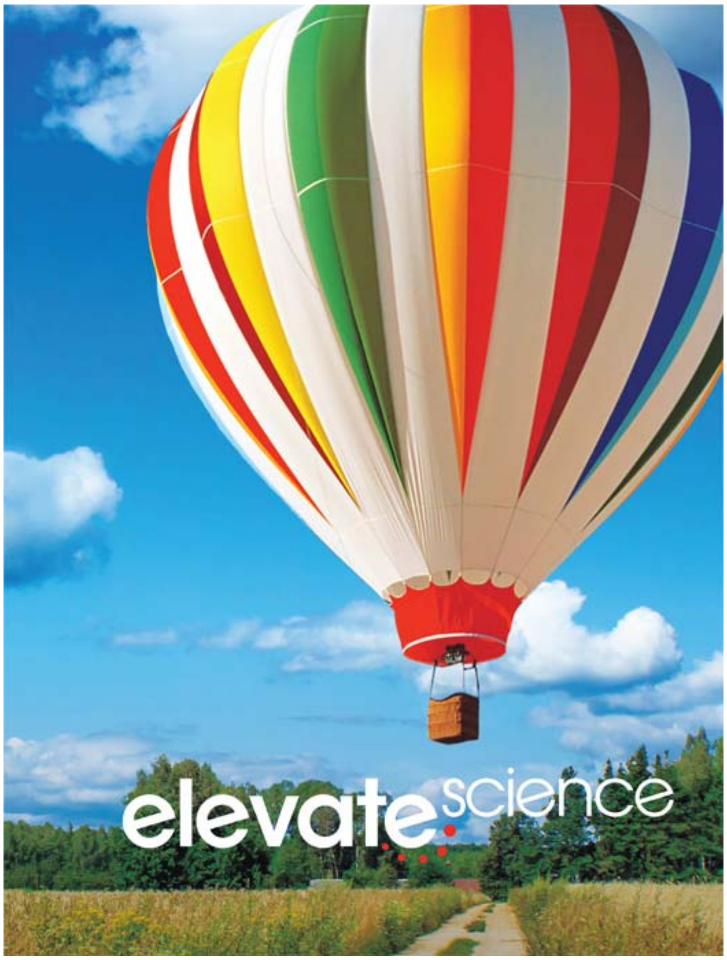

To the

Next Generation Science Standards

Topic Arrangement

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To the
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Introduction

The following document demonstrates how the ***Elevate Science, ©2019*** program supports the Next Generation Science Standards, Grade 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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Next Generation Science Standards	Elevate Science ©2019
5. Structure and Properties of Matter	
Performance Expectation 5-PS1-1	
Develop a model to describe that matter is made of particles too small to be seen. **Clarification Statement** Examples of evidence supporting a model could include adding air to expand a basketball, compressing air in a syringe, dissolving sugar in water, and evaporating salt water. **Assessment Boundary** Assessment does not include the atomic-scale mechanism of evaporation and condensation or defining the unseen particles.	**SE/TE:** 17, 23, 27, 67 **TE Only:** 1d, 16a
Disciplinary Core Ideas	
PS1.A: Structure and Properties of Matter Matter of any type can be subdivided into particles that are too small to see, but even then the matter still exists and can be detected by other means. A model showing that gases are made from matter particles that are too small to see and are moving freely around in space can explain many observations, including the inflation and shape of a balloon and the effects of air on larger particles or objects.	**SE/TE:** 16–17, 20-21, 54 **TE Only:** 26a
Science and Engineering Practices	
Developing and Using Models Develop a model to describe phenomena.	**SE/TE:** 28, **TE Only:** 64a
Crosscutting Concepts	
Scale, Proportion, and Quantity Natural objects exist from the very small to the immensely large.	**SE/TE:** 18, 20–21

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Next Generation Science Standards	Elevate Science ©2019
Performance Expectation 5-PS1-2	
Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved. **Clarification Statement** Examples of reactions or changes could include phase changes, dissolving, and mixing that form new substances. **Assessment Boundary** Assessment does not include distinguishing mass and weight.	**SE/TE:** 46, 49, 57, 65 **TE Only:** 42d, 48a, 56a, 64a, 78a
Disciplinary Core Ideas	
PS1.A: Structure and Properties of Matter The amount (weight) of matter is conserved when it changes form, even in transitions in which it seems to vanish.	**SE/TE:** 65, **TE Only:** 48a, 56a, 64a, 78a
PS1.B: Chemical Reactions No matter what reaction or change in properties occurs, the total weight of the substances does not change.	**TE Only:** 48a, 56a, 64a, 78a
Science and Engineering Practices	
Using Mathematical and Computational Thinking Measure and graph quantities such as weight to address scientific and engineering questions and problems.	**SE/TE:** 46, 57, 65, 74–75, 86–87, EM5 **TE Only:** 48a, 56a, 64a
Crosscutting Concepts	
Scale, Proportion, and Quantity Standard units are used to measure and describe physical quantities such as weight, time, temperature, and volume.	**SE/TE:** 6, **TE Only:** 16a, 26a, 56a, 64a

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Next Generation Science Standards	Elevate Science ©2019
Connecting to Nature of Science: Scientific Knowledge Assumes an Order and Consistency in Natural Systems Science assumes consistent patterns in natural systems.	**SE/TE:** 60, 72
Performance Expectation 5-PS1-3	
Make observations and measurements to identify materials based on their properties. **Clarification Statement** Examples of materials to be identified could include baking soda and other powders, metals, minerals, and liquids. Examples of properties could include color, hardness, reflectivity, electrical conductivity, thermal conductivity, response to magnetic forces, and solubility; density is not intended as an identifiable property. **Assessment Boundary** Assessment does not include density or distinguishing mass and weight.	**SE/TE:** 4, 7, 8, 9, 10–11, 14, 17, 23, 27, 34, 40–41 **TE Only:** 1d, 6a, 26a
Disciplinary Core Ideas	
PS1.A: Structure and Properties of Matter Measurements of a variety of properties can be used to identify materials. (Boundary: At this grade level, mass and weight are not distinguished, and no attempt is made to define the unseen particles or explain the atomic-scale mechanism of evaporation and condensation.)	**SE/TE:** 2–3, 4, 7, 8, 10-11, 14, 27, 32–33, 34, 38–39, 40–41, 63 **TE Only:** 6a, 16a
Science and Engineering Practices	
Planning and Carrying Out Investigations Make observations and measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon.	**SE/TE:** 4, 14, 17, 23, 46, 49, 57, 65, 74–75, 79, 86–87, 94–95 **TE Only:** 6a, 246a, 254a
Crosscutting Concepts	
Scale, Proportion, and Quantity Standard units are used to measure and describe physical quantities such as weight, time, temperature, and volume.	**SE/TE:** 6TE, 7, 9, 11, 29, 37 **TE Only:** 6a, 16a, 26a, 48a, 78a

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Performance Expectation 5-PS1-4	
Conduct an investigation to determine whether the mixing of two or more substances results in new substances.	**SE/TE:** 79, 94–95 **TE Only:** 42d, 64a, 78a
Disciplinary Core Ideas	
PS1.B: Chemical Reactions When two or more different substances are mixed, a new substance with different properties may be formed.	**SE/TE:** 68–69 **TE Only:** 26a
Science and Engineering Practices	
Planning and Carrying Out Investigations Conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered.	**SE/TE:** 65 **TE Only:** 64a, 78a
Crosscutting Concepts	
Cause and Effect Cause and effect relationships are routinely identified and used to explain change.	**SE/TE:** 53, 59, 92–93, 123 **TE Only:** 56a, 78a

Next Generation Science Standards	**Elevate Science ©2019**
5. Matter and Energy in Organisms and Ecosystems	
Performance Expectation 5-PS3-1	
Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun. **Clarification Statement** Examples of models could include diagrams, and flow charts.	**SE/TE:** 318, 339, 342, 352–353 **TE Only:** 314d, 338a
Disciplinary Core Ideas	
PS3.D: Energy in Chemical Processes and Everyday Life The energy released [from] food was once energy from the sun that was captured by plants in the chemical process that forms plant matter (from air and water).	**SE/TE:** 238, 314–315, 320–327, 334–335, 339, 343 **TE Only:** 320a, 338a
LS1.C: Organization for Matter and Energy Flow in Organisms Food provides animals with the materials they need for body repair and growth and the energy they need to maintain body warmth and for motion.	**SE/TE:** 316–318, 323–326, 329, 331, 334–335, 338–347, 375, 389, 393 **TE Only:** 328a, 338a
Science and Engineering Practices	
Developing and Using Models Use models to describe phenomena.	**SE/TE:** 318, 329, 330, 339, 370, 379, 384–385, 387, 402–403, EM6 **TE Only:** 320a, 338a
Crosscutting Concepts	
Energy and Matter Energy can be transferred in various ways between objects.	**TE Only:** 320a, 328a, 338a

Next Generation Science Standards	**Elevate Science ©2019**
Performance Expectation 5-LS1-1	
Support an argument that plants get the materials they need for growth chiefly from air and water. **Clarification Statement** Emphasis is on the idea that plant matter comes mostly from air and water, not from the soil.	**SE/TE:** 329 **TE Only:** 199, 314d, 328a
Disciplinary Core Ideas	
LS1.C: Organization for Matter and Energy Flow in Organisms Plants acquire their material for growth chiefly from air and water.	**SE/TE:** 329, 331, 339, 334–335 **TE Only:** 320a, 328a
Science and Engineering Practices	
Engaging in Argument from Evidence Support an argument with evidence, data, or a model.	**SE/TE:** 334–335, EM6, EM7
Crosscutting Concepts	
Energy and Matter Matter is transported into, out of, and within systems.	**SE/TE:** 321, 329, 330, 333, 336–337 **TE Only:** 328a

Next Generation Science Standards	**Elevate Science ©2019**
Performance Expectation 5-LS2-1	
Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. **Clarification Statement** Emphasis is on the idea that matter that is not food (air, water, decomposed materials in soil) is changed by plants into matter that is food. Examples of systems could include organisms, ecosystems, and the Earth. **Assessment Boundary** Assessment does not include molecular explanations.	**SE/TE:** 379, 384–385, 387, 394–395, 398–399, 402–403 **TE Only:** 314d, 354d, 360a, 368a, 378a, 386a
Disciplinary Core Ideas	
LS2.A: Interdependent Relationships in Ecosystems The food of almost any kind of animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as “decomposers.” Decomposition eventually restores (recycles) some materials back to the soil. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem.	**SE/TE:** 118–119, 205, 212, 324–325, 352–353, 368, 369, 371,372–373, 375, 382, 383, 386, 388 **TE Only:** 328a, 360a, 368a, 378a, 386a

Next Generation Science Standards	**Elevate Science ©2019**
LS2.B: Cycles of Matter and Energy Transfer in Ecosystems Matter cycles between the air and soil and among plants, animals, and microbes as these organisms live and die. Organisms obtain gases, and water, from the environment, and release waste matter (gas, liquid, or solid) back into the environment.	**SE/TE:** 372–373, 392, 352–353, 370, 388, 389, 392 **TE Only:** 328a, 360a, 368a, 378a, 386a
Science and Engineering Practices	
Developing and Using Models Develop a model to describe phenomena.	**SE/TE:** 279, 283, 394–395 **TE Only:** 320a, 328a, 360a, 368a, 378a, 386a
Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena Science explanations describe the mechanisms for natural events.	**SE/TE:** 371 (mechanism for decomposition), 380-381 (mechanism for succession), EM6
Crosscutting Concepts	
Systems and System Models A system can be described in terms of its components and their interactions.	**SE/TE:** 370 **TE Only:** 328a, 360a, 368a, 378a, 386a

Next Generation Science Standards	**Elevate Science ©2019**
5. Earth's Systems	
Performance Expectation 5-ESS2-1	
Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. **Clarification Statement** Examples could include the influence of the ocean on ecosystems, landform shape, and climate; the influence of the atmosphere on landforms and ecosystems through weather and climate; and the influence of mountain ranges on winds and clouds in the atmosphere. The geosphere, hydrosphere, atmosphere, and biosphere are each a system. **Assessment Boundary** Assessment is limited to the interactions of two systems at a time.	**SE/TE:** 103, 121, 134–135, 136–137, 394–395 **TE Only:** 96d, 102a, 110a, 120a
Disciplinary Core Ideas	
ESS2.A: Earth Materials and Systems Earth's major systems are the geosphere (solid and molten rock, soil, and sediments), the hydrosphere (water and ice), the atmosphere (air), and the biosphere (living things, including humans). These systems interact in multiple ways to affect Earth's surface materials and processes. The ocean supports a variety of ecosystems and organisms, shapes landforms, and influences climate. Winds and clouds in the atmosphere interact with the landforms to determine patterns of weather.	**SE/TE:** 98–99, 104, 105, 106–107, 109, 112–113, 114, 115, 121, 122, 123, 124–125, 127, 128, 130, 132–133, 134–135, 136–137 **TE Only:** 102a, 110a, 120a
Science and Engineering Practices	
Developing and Using Models Develop a model using an example to describe a scientific principle.	**SE/TE:** 103, 136–137, 247, 252–253, 255, 262, 264, 270-271, 283 **TE Only:** 102a, 110a, 120a, 246a
Crosscutting Concepts	
Systems and System Models A system can be described in terms of its components and their interactions.	**SE/TE:** 100, 103, 114, 116–117, 134–135 **TE Only:** 102a, 110a, 120a

Next Generation Science Standards	**Elevate Science ©2019**
Performance Expectation 5-ESS2-2	
Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth. **Assessment Boundary** Assessment is limited to oceans, lakes, rivers, glaciers, ground water, and polar ice caps, and does not include the atmosphere.	**SE/TE:** 158, 176–177 **TE Only:** 138d, 144a, 154a, 162a
Disciplinary Core Ideas	
ESS2.C: The Roles of Water in Earth's Surface Processes Nearly all of Earth's available water is in the ocean. Most fresh water is in glaciers or underground; only a tiny fraction is in streams, lakes, wetlands, and the atmosphere.	**SE/TE:** 124–125, 138–139, 147, 140–141, 155, 156–157, 158, 159, 164, 170, 174–175, 176–177 **TE Only:** 144a, 154a, 162a
Science and Engineering Practices	
Using Mathematics and Computational Thinking Describe and graph quantities such as area and volume to address scientific questions.	**SE/TE:** 159, 164, 176–177
Crosscutting Concepts	
Scale, Proportion, and Quantity Standard units are used to measure and describe physical quantities such as weight and volume.	**SE/TE:** 159 **TE Only:** 144a, 162a

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Performance Expectation 5-ESS3-1	
Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.	**SE/TE:** 220, 222 **TE Only:** 180d, 186a, 196a, 204a, 212a
Disciplinary Core Ideas	
ESS3.C: Human Impacts on Earth Systems Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air, and even outer space. But individuals and communities are doing things to help protect Earth's resources and environments.	**SE/TE:** 180–181, 182–183, 185, 192, 193, 194–195, 197, 203, 204, 205, 209, 210–211, 213, 214, 215, 218, 219, 220 **TE Only:** 186a, 196a, 204a, 212a
Science and Engineering Practices	
Obtaining, Evaluating, and Communicating Information Obtain and combine information from books and/or other reliable media to explain phenomena or solutions to a design problem.	**SE/TE:** 184, 187, 210–211, 228–229 **TE Only:** 186a, 196a, 204a, 212a
Crosscutting Concepts	
Systems and System Models A system can be described in terms of its components and their interactions.	**SE/TE:** 206, 208, 213, 224, 228–229 **TE Only:** 186a, 196a, 199, 204a, 212a
Science Addresses Questions About the Natural and Material World. Science findings are limited to questions that can be answered with empirical evidence.	**SE/TE:** EM14

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5. Space Systems: Stars and the Solar System	
Performance Expectation 5-PS2-1	
Support an argument that the gravitational force exerted by Earth on an object is directed down. **Clarification Statement** “Down” is a local description of the direction that points toward the center of the spherical Earth. **Assessment Boundary** Assessment does not include mathematical representation of gravitational force.	**SE/TE:** 279, 280, 281, 283 **TE Only:** 272d, 278a
Disciplinary Core Ideas	
PS2.B: Types of Interactions The gravitational force of Earth acting on an object near Earth’s surface pulls that object toward the planet’s center.	**SE/TE:** 279, 280, 281, 282, 283, 308–309 **TE Only:** 278a
Science and Engineering Practices	
Engage in Argument from Evidence Support an argument with evidence, data, or a model.	**SE/TE:** 279, 282 **TE Only:** 278a
Crosscutting Concepts	
Cause and Effect Cause and effect relationships are routinely identified and used to explain change.	**SE/TE:** 355, 372, 379, 392 **TE Only:** 278a

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Performance Expectation 5-ESS1-1	
Support an argument that the apparent brightness of the sun and stars is due to their relative distances from the Earth. **Assessment Boundary** Assessment is limited to relative distances, not sizes, of stars. Assessment does not include other factors that affect apparent brightness (such as stellar masses, age, stage).	**SE/TE:** 237, 268–269, 297 **TE Only:** 230d, 236a, 246a, 254a, 272d, 294a
Disciplinary Core Ideas	
ESS1.A: The Universe and its Stars The sun is a star that appears larger and brighter than other stars because it is closer. Stars range greatly in their distance from Earth.	**SE/TE:** 236, 237, 240, 241, 242, 268–269, 297 **TE Only:** 236a, 246a, 254a, 294a
Science and Engineering Practices	
Engaging in Argument from Evidence Support an argument with evidence, data, or a model.	**SE/TE:** 234, 237, 247, 255, 262, 270–271 **TE Only:** 236a, 246a, 254a, 278a, 294a
Crosscutting Concepts	
Scale, Proportion, and Quantity Natural objects exist from the very small to the immensely large.	**SE/TE:** 302 **TE Only:** 236a, 246a, 254a

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Performance Expectation 5-ESS1-2	
Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky. **Clarification Statement** Examples of patterns could include the position and motion of Earth with respect to the sun and selected stars that are visible only in particular months. **Assessment Boundary** Assessment does not include causes of seasons.	**SE/TE:** 274–275, 306 **TE Only:** 272d, 284a, 294a
Disciplinary Core Ideas	
ESS1.B: Earth and the Solar System The orbits of Earth around the sun and of the moon around Earth, together with the rotation of Earth about an axis between its North and South poles, cause observable patterns. These include day and night; daily changes in the length and direction of shadows; and different positions of the sun, moon, and stars at different times of the day, month, and year.	**SE/TE:** 274–275, 284, 285, 286, 287, 292, 295, 296, 302, 306, 310–311 **TE Only:** 284a, 294a
Science and Engineering Practices	
Analyzing and Interpreting Data Represent data in graphical displays (bar graphs, pictographs and/or pie charts) to reveal patterns that indicate relationships.	**SE/TE:** 276, 306, 311, 312 **TE Only:** 196a, 284a
Crosscutting Concepts	
Patterns Similarities and differences in patterns can be used to sort, classify, communicate and analyze simple rates of change for natural phenomena.	**SE/TE:** 291, 294, 295, 296, 300, 302, 304–305, **TE Only:** 284a, 294a

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3-5. Engineering Design	
Performance Expectation 3–5-ETS1-1	
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:** 24–25, 118–119, 152–153, 244–245, EM10 **TE Only:** 24–25, 45, 118–119, 152–153, 183, 233
Disciplinary Core Ideas	
ETS1.A: Defining and Delimiting Engineering Problems Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account.	**SE/TE:** 23, 76–77, 213, EM11
Science and Engineering Practices	
Asking Questions and Defining Problems Define a simple design problem that can be solved through the development of an object, tool, process, or system and includes several criteria for success and constraints on materials, time, or cost.	**SE/TE:** 24–25, 118–119, 194–195, 244–245, EM10 **TE Only:** 245a
Crosscutting Concepts	
Influence of Engineering, Technology, and Science on Society and the Natural World People's needs and wants change over time, as do their demands for new and improved technologies.	**SE/TE:** 118–119, 171, 194–195

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Performance Expectation 3–5-ETS1-2	
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:** 23, 76–77, 79, 86–87, 213 **TE Only:** 161, 194–195, 211, 244–245, 304–305, 336–337, 394–395, 396
Disciplinary Core Ideas	
ETS1.B: Developing Possible Solutions • Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions	**SE/TE:** 228–229, EM11
• At whatever stage, communicating with peers about proposed solutions is an important part of the design process, and shared ideas can lead to improved designs.	**SE/TE:** 77, 213
Science and Engineering Practices	
Constructing Explanations and Designing Solutions • Generate and compare multiple solutions to a problem based on how well they meet the criteria and constraints of the design problem.	**SE/TE:** 74–75, 86–87, 88, 194–195, 210–211, 220 **TE Only:** 16a, 26a, 48a, 120a, 144a, 162a, 204a, 212a, 284a
Crosscutting Concepts	
Influence of Engineering, Technology, and Science on Society and the Natural World • Engineers improve existing technologies or develop new ones to increase their benefits, decrease known risks, and meet societal demands.	**SE/TE:** 144, 172, 221, 244–245, 368

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Performance Expectation 3–5-ETS1-3	
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:** 86–87, 336–337 **TE Only:** 34, 222,
Disciplinary Core Ideas	
ETS1.B: Developing Possible Solutions Tests are often designed to identify failure points or difficulties, which suggest the elements of the design that need to be improved. **ETS1.C: Optimizing the Design Solution** Different solutions need to be tested in order to determine which of them best solves the problem, given the criteria and the constraints.	**SE/TE:** 86–87, EM11, EM13
Science and Engineering Practices	
Planning and Carrying Out Investigations Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered.	**SE/TE:** 65 **TE Only:** 204a, 360a