

A Correlation of
Elevate Science
Grade 5, ©2019



To the
Loudoun County Public Schools
Grade 5 Rubric

LCPS Grade Five Rubric

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In grades third through fifth, students will develop and apply more sophisticated skills in posing questions and predicting outcomes, planning and conducting simple investigations, collecting and analyzing data, constructing explanations, and communicating information about the natural world. Students continue to use the engineering design process to apply their scientific knowledge to solve problems. Mathematics and computational thinking gain importance as students advance in their scientific thinking. Technologies and scientific tools are used when appropriate and feasible. Mathematics, computational thinking, and experience in the engineering design process are essential as students advance in their scientific thinking.

Resources Meet the LCPS Science Philosophy and Practice

Criteria	Correlation: Must address the identified need. When appropriate, provide examples in the resource. Use page number and ATE for Annotated Teacher Edition or CT for Core Technology. (Identify no more than 8 correlations.)
<p>Instructional resources should develop students' ability to know, use, and interpret scientific explanations of the natural world; including developing and using models.</p>	<p><i>Elevate Science</i> requires students to engage in scientific inquiry as they engage, think, investigate, and interact with natural phenomena through a variety of investigations designed to integrate elements of three-dimensional learning, such as developing and using models, interpreting and analyzing data, research activities, problem-based exercises and more. Organized by thematic topic, students “experience” science through a variety of scaffolded hands-on, inquiry activities designed to build their understanding of science concepts as they create explanations to explain phenomena about their natural world.</p> <p>For examples, please see the following: ATE: Model It!, 28 uConnect Lab: How can you model Earth?, 100 uInvestigate Lab: How does water move through soil?, 103</p>

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<p>Instructional resources should develop students' ability to generate and evaluate scientific evidence and explanations; including developing and using models.</p>	<p><i>Elevate Science</i> is designed to facilitate the development of students' ability to generate and evaluate scientific evidence and explanations through activities that integrate elements of three-dimensional learning, such as analyzing and interpreting data, constructing explanations and designing solutions, developing and using models, and more. The Quest problem-based learning scenario provides a context for student learning and affords them the opportunity to develop models, generate data, and gather evidence to support their explanations of scientific phenomena.</p> <p>For examples, please see the following: ATE: STEM Quest Check-In Lab: How can you make modeling dough?, 74-75 uInvestigate Lab: How does a greenhouse work?, 111 uEngineer It! Model STEM: What's with the dust?, 244-245</p>
<p>Instructional resources should develop students' ability to understand the nature and development of scientific knowledge; When appropriate, instructional resources present multiple scientific perspectives and interpretations of scientific ideas as a representation of how science develops understanding of the natural world.</p>	<p>A variety of student-centered activities are incorporated in each topic to provide students with multiple perspectives on a theme. Science is presented as a 'quest' to discover knowledge and uncover new ideas, and not presented as a collection of facts to memorize. Students are encouraged to be active participants in their learning as they find solutions to real-world problems and participate in their learning 'adventure'.</p>

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Instructional resources should develop students' ability to participate productively in scientific practices and discourse.

Elevate Science includes a variety of program resources that assist students in developing the ability to participate in scientific discourse and engage in the scientific practices. Each topic opens with an image where students discuss the phenomenon presented and generate questions they would like to explore and learn more about. In-text features in every lesson include prompts like 'Explain', 'Tell', and 'Compare your results with others' for students to share their thinking. Along with teacher edition notes, students are encouraged to engage in conversations about what they think and what they know. The topic activities are built around the application of scientific practices. Students plan and conduct investigations, and interpret and analyze data gathered in the execution of their experiments. They develop and use models to explain the key concepts and use the text (both print and digital) as a method for obtaining and communicating information. Specific features like the Visual Literacy Connections (grades 3-5), the Literacy Connections (K-5), and the Quests (K-8) actively promote the development of the practices through the context of the topic's phenomenon.

For examples, please see the following:

ATE:

Quest: Connect the Spheres, 98-99

Literacy Connection: Cause and Effect, 101

Visual Literacy Connection: How does the ocean affect other systems on Earth?, 124

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<p>Instructional resources reflect current best practices in the field of science instruction (pedagogy).</p>	<p>Students and teachers will benefit from Savvas (formerly Pearson) experience in developing instructional materials informed by a strong research base. Savvas is the only major publisher that consistently invests in outside validation studies that meet the rigorous criteria of the What Works Clearinghouse. A research team, including educational research methodologists, has been working with Savvas for eight years to integrate scientific research practices into the development of our curricula.</p> <p>In <i>Elevate Science</i>, that research is represented in the topic organization which is built around problem-based learning scenarios called Quests. These PBLs provide context for student learning and actively engages the learner in finding solutions to the presented real-world topic challenge. To support engagement and address multiple learning modalities, the digital platform hosts a variety of interactive multimedia resources (video, simulations, interactivities, virtual labs) that further student understanding of the core science concepts. These resources reflect the best practices in elementary science instruction, utilizing a blend of print and digital media for student learning.</p>
<p>Materials consistently provide development and application of concepts and scientific practices through the exploration and use of appropriate technologies.</p>	<p>Flexible classroom management tools within the digital platform provide freedom and control to use a digital, print, or blended format. The inquiry activities in <i>Elevate Science</i> are designed to engage students in hands-on science—making observations, planning investigations, designing solutions and analyzing evidence. Students work like scientists and engineers to understand authentic, real-world phenomena through a variety of lab experiences designed for specific learning objectives. The digital platform provides powerful data gathering interactive experiences to engage students in the exploration of the science concepts. These resources can be used for personalizing learning through data-driven instruction. The assessment resources include technology-enhanced items that allow students to develop and apply concepts and scientific practices and experience next generation assessment formats</p>

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<p>Resource provides opportunities to engage in a meaningful scientific investigation of a watershed (stream or bay) as defined by the Virginia Department of Education (MWEE).</p>	<p><i>Elevate Science</i> provides opportunities for students to engage in the types of investigative essential experiences as described by the Chesapeake MWEE. The student investigations promote active, student-focused questioning, the collection and analysis of self-generated data, and gets them involved in going out-of-doors to explore the natural environment. In several topics in each grade, the Quest real-world problem reflects an environmental theme and encourages students to be active in the promotion of community-based solutions.</p> <p>For examples, please see the following: ATE: Quest Check-In: Follow the Flow, 151 Visual Literacy Connection: How is freshwater distributed across Earth? 156-157 STEM Quest Check-In Lab: How do we filter water? 160-161 Quest Findings: Water, Water, Everywhere, 172 Quest Findings: Take Care of Earth—It’s Our Home!, 222 Quest Check-In Lab: How does change affect organisms in an ecosystem?, 384-385</p>
<p>Resource provides opportunities for students to engage in computational thinking by solving problems that logically organize and classify data and use a series of steps (algorithms).</p>	<p><i>Elevate Science</i> puts students on a path toward success in science learning by making science relevant and meaningful for today’s students and teaching them to work similarly to actual scientists and engineers to understand real-world phenomena. Scientific inquiry, investigating phenomena, computational thinking, problem-solving and analysis and application of core concepts are emphasized as a goal for all students.</p> <p>In many of the investigations where students are gathering data, they engage in grade appropriate computational thinking exercises as a way to help interpret and analyze the data they have generated. Topics include Math toolboxes and Math Connection features that highlight opportunities for students to connect their science learning with mathematical practice.</p> <p>For examples, please see the following: ATE: STEM Math Connection: How many Earths can line up across the sun?, 263 Math Toolbox, 286 STEM Math Connection: Solve Word Problems, 377</p>

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<p>Resources provide opportunities for students to use technology to learn science content and science process skills.</p>	<p>Our innovative technology-enhanced items, performance-based assessments, and adaptive learning programs help measure and build key 21st-century skills in learners of all abilities—including the elements of conceptual understanding, basic and procedural skills, and problem solving. Virtual labs, interactive simulations and videos, along with an interactive student e-text all provide opportunities for students to use technology to learn and practice science concepts and skills.</p> <p>For examples, please see the following: CT: Realize™ Digital Resources: Changes in Matter Lesson 4, Mixtures and Solutions>Video: Mixtures and Solutions Lesson 4, Mixtures and Solutions>Virtual Lab: Special Effects with Matter Lesson 4, Mixtures and Solutions>Interactivity: Mixtures and Solutions</p>
<p>Resources provide opportunities for students to explore advances in technology and scientific discovery that have occurred since your last publication date.</p>	<p>The intuitive digital path is more than an ancillary to <i>Elevate Science</i>; it is a vital component of our approach to learning that places the student at the center of the process of discovery. The digital path enables students to explore science in a way that emphasizes their own quest for knowledge and creativity in exploring and organizing the material and explore advances in technology and scientific discovery that develop beyond publication of printed materials. uEngineer It! investigations and STEM activities encourage students to research and make use of current advances in science and apply those to their Quest solutions.</p>

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Resources Support the LCPS Mission, Core Beliefs and Strategic Goals https://bit.ly/2VV3IDB	
Criteria	Correlation: Must address the identified need. When appropriate, provide examples in the resource. Use page number and ATE for Annotated Teacher Edition or CT for Core Technology. (Identify no more than 8 correlations.)
Instructional resources support the potential for integration into Project-Based Learning (PBL).	<p>Phenomena-Based Quests: Each topic engages students with a phenomena-based learning scenario called a ‘Quest’. The Quest contains a real-world problem for them to solve as they explore the science concept and develop the necessary science inquiry skills. An Essential Question opens the topic and puts students on that path toward mastering the topic content. Students investigate the phenomena and use their experiences, e-text photos, diagrams, and other visual elements to apply them to the concepts they are learning. The scaffolded labs throughout the topic introduce core ideas in context as students ‘experience’ science while they gain new knowledge in the hands-on setting.</p> <p>For examples, please see the following: ATE: Topic 1 Quest: Identify the Mystery Material, 2-3 Topic 2 Quest: Find the Right Mix—and Step on It!, 44-45 Topic 3 Quest: Connect the Spheres, 98-99 Topic 4 Quest: Water, Water, Everywhere, 140-141 Topic 5 Quest: Take Care of Earth—It’s Our Home!, 182-183 Topic 6 Quest: Keeping the Planets in Order, 232-233 Topic 7 Quest: Plan a Trip Around the World of Patterns, 274-275 Topic 8 Quest: Plan Your Plate!, 316-317 Topic 9 Quest: Public Relations Gone Wild!, 356-357</p>

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<p>Instructional resources provide opportunities for Personalized Learning and the exercise of student voice and choice.</p>	<p><i>Elevate Science</i> offers comprehensive differentiation instruction and intervention support to address the needs of all learners—whether they are struggling, on-level, or advanced learners. This support provides system-driven opportunities to personalize learning for students and a library of resources to support the teacher in personalizing instruction and allowing students to exercise their voice and choice. Teachers can individualize the instruction by assigning different resources to either individual students or group of students. Many of the uInvestigate activities give students the opportunity to develop their own plans to investigate the lesson question.</p>
<p>Instructional resources include grade level performance assessments that are formative and summative.</p>	<p>Learning outcomes are at the heart of each assessment we create, including those in our science textbooks. Our innovative technology-enhanced items, performance-based formative and summative assessments, and adaptive learning programs help measure and build key 21st-century skills in learners of all abilities—including the elements of conceptual understanding, basic and procedural skills, and problem solving. In print assessments includes lesson checks, investigation checks, and end-of-topic assessments. There are two types of performance assessments at the end of each topic- the Evidence-based assessment and the uDemonstrate investigation. Both of these assessments require students to demonstrate understating of topic concepts through its application in a new setting.</p> <p>For examples, please see the following: ATE: Evidence-Based Assessment, 400-401 STEM uDemonstrate Lab: How can you model matter cycles in the Earth system?, 402-403</p>
<p>Instructional resources support individual, small group, and whole class learning opportunities and collaboration.</p>	<p><i>Elevate Science</i> provides opportunities for students to work individually, in small, cooperative groups and engage in science and engineering practices as a whole class. The Teacher Edition provides suggested grouping guidelines for the different hands-on activities, and other student interactions. The digital platform allows for group collaboration and the sharing of ideas through the Google integration tools.</p>

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<p>Instructional resources consistently include content promoting use of critical thinking skills and problem-solving approaches and provide opportunities for students to use critical thinking skills and problem solving through a process of sustained inquiry.</p>	<p><i>Elevate Science</i> includes a variety of opportunities for students to practice and demonstrate critical-thinking and problem-solving skills. The uEngineer It activities highlight open-ended problem solving. The digital interactives encourage critical-thinking and analysis. The performance-based tasks, research projects, inquiry investigations, labs, open-ended response questions, multiple choice questions, drag-and-drop questions, and other content that provides opportunities for students to use critical thinking and problem solving through a process of sustained inquiry.</p>
<p>Materials consistently promote the introduction of concepts through concrete experiences.</p>	<p><i>Elevate Science</i> is designed for students to ‘experience’ science and not just read about it. Every lesson begins with the hands-on activity called uInvestigate, giving them concrete experiences to engage their minds and make science real. Up-to-date, accurate, themed topics are used to build knowledge in each unit, emphasizing the common characteristics of a unifying, relevant concept and promoting in-depth understanding through daily lessons.</p> <p>For examples, please see the following: ATE: uConnect Lab: How big is the sun?, 234 uInvestigate Lab: How are distance and brightness related?, 237</p>
<p>Instructional resources provide opportunities for students to apply learning in real-world situations.</p>	<p>The Quest challenge uses real-world challenges to set a context for student learning. Visual analogies connect difficult concepts to real world issues to help students better understand the concepts presented.</p> <p>For examples, please see the following: ATE: Topic 2 Quest Quest Kickoff: Find the Right Mix—and Step on It!, 44-45 Quest Check-In: It’s a Matter of Materials, 55 Quest Check-In, Stepping Stone Properties, 62 Quest Check-In Lab: How can you make modeling dough?, 74-75 Quest Check-In Lab: How can you make a new and improved formula?, 86-87 Quest Findings: Find the Right Mix—and Step on It!, 88</p>

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<p>Materials consistently provide the appropriate level of abstraction and appropriate practical/real-life examples.</p>	<p>A rigorous curriculum offers students equal opportunities to develop understanding, practice key concepts and skills, and apply these concepts and skills in real-world or abstract situations. <i>Elevate Science</i> includes engaging real-life visuals, a write-in student text with practical examples and a consistent organization that aids student learning.</p>
<p>Materials consistently provide sufficient, grade-level appropriate examples of applications of concepts to promote depth of understanding.</p>	<p>Materials present current, scientifically accurate, and grade-appropriate scientific information, phenomena, and representations. Outside fact-checkers verify data used and authenticity of identified facts. A full research bibliography is available showing the research reviewed and sources cited that informed development of <i>Elevate Science</i>.</p>

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Resources are Inclusive, Accessible, Culturally Responsive, and Free of Bias	
Criteria	<p>Correlation: Must address the identified need. When appropriate, provide examples in the resource. Use page number and ATE for Annotated Teacher Edition or CT for Core Technology. (Identify no more than 8 correlations.)</p>
<p>Instructional resources represent women, people of different ages, religious, ethnic and racial minorities and persons with disabilities in many different environments and occupations, and in the roles of current science career fields.</p>	<p>Savvas systematically develops its educational products and vets its partnership products by implementing criteria and standards that reflect multiethnic, multiracial, and multicultural perspectives. Over the years, we have worked with numerous experts and consultants from universities and other educational institutions to provide a broad perspective in our educational materials. While creating high-quality educational content, our standards are aimed at the following:</p> <ul style="list-style-type: none"> • Integrating multicultural experiences into program content so students see themselves as part of what is valued in the school’s curriculum • Fostering self-esteem for greater academic achievement • Empowering students to act effectively in a democratic society and reach their full potential • Reducing prejudice by showing multicultural friendships and people from different backgrounds, working, playing, and living together <p>Our educational materials consider the needs of all students and are designed to provide a fair, balanced representation of various cultural groups and members, including racial, ethnic and religious groups; males and females; older people; and people with disabilities.</p> <p>For examples, please see the following: ATE: Quest Kickoff: Water, Water Everywhere, 140 Quest Kickoff: Plan a Trip Around the World of Patterns, 274 Quest Kickoff: Plan Your Plate, 316</p>

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<p>Instructional resources are free from stereotypes which assign a rigid set of characteristics to all members of a group.</p>	<p><i>Elevate Science</i> considers the needs of all students, is free from stereotypes, and is designed to provide a fair, balanced representation of various cultural groups and members, including racial, ethnic and religious groups; males and females; older people; and people with disabilities.</p>
<p>Instructional resources provide teachers with strategies for meeting the needs of Advanced Learners, English Learners and Special Education students.</p>	<p><i>Elevate Science</i> instructional materials provide LCPS teachers with research-based social and emotional learning curriculum and materials for all learners, including students who receive special education services and students who receive gifted and talented services. Instructional materials also provide differentiating instruction based on diverse learners (i.e., sections provide scaffolds for ELLs and students with disabilities, teacher guidance in the introductory section, etc.) and scaffolded tools for remediation (for example, appendix resources for writing and editing, teacher guidance for assigning reading, etc.).</p> <p>For examples, please see the following: ATE: Differentiated Instruction, 235 ELD Support: Speaking, 238 Differentiated Instruction, 263</p>
<p>Instructional resources include accessibility features and tools for Advanced Learners, English Learners and Special Education students.</p>	<p>Instructional materials provide LCPS students with research-based social and emotional learning curriculum and materials for all learners, including students who receive special education services and students who receive gifted and talented services. Instructional materials also provide differentiating instruction based on diverse learners (i.e., sections provide scaffolds for ELLs and students with disabilities, teacher guidance in the introductory section, etc.) and scaffolded tools for remediation (for example, appendix resources for writing and editing, teacher guidance for assigning reading, etc.).</p> <p>For examples, please see the following: CT: Realize™ Digital Resources: Changes in Matter >Lesson 3, Chemical Changes>Interactivity: Chemical Changes >Lesson 3, Chemical Changes>uEngineer It! Interactivity: Foam, Sweet Foam >Lesson 4: Mixtures and Solutions>Virtual Lab: Special Effects with Matter</p>

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<p>Instructional resources include Tier 2 and Tier 3 vocabulary necessary to support English Learners and Special Education students.</p>	<p>LCPS can be confident in high-quality instructional materials and services that are developed for quality, efficacy, and usability, and are based on critical foundational research and proven classroom results. <i>Elevate Science</i> was developed to meet the needs of a diverse, high-need student population, including economically disadvantaged students, underrepresented racial/ethnic groups, and large populations of ELLs.</p>
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2018 Grade Five Science Standards of Learning	
STANDARD	Correlation: Must address both the standards and the curriculum framework. Use page number and ATE for Annotated Teacher Edition or CT for Core Technology. (Identify no more than 8 correlations.)
5.2 The student will investigate and understand that energy can take many forms. Key ideas include	
a) energy is the ability to do work or to cause change;	Supporting Content: ATE: Energy from Fuels, 198 Energy from Nonfuel Sources, 199 Energy and Body Heat, 340 Energy and Metabolism, 341 Energy and Movement, 342
b) there are many different forms of energy;	ATE: Energy and the Water Cycle, 150 Human Uses of Energy, 198 Visual Literacy Connection: Where is electrical energy generated?, 200-201 Curriculum Connection, 320 Plants and Energy, 322 Animals and Energy, 323 Energy Flow in Ecosystems, 389 CT: Realize™ Digital Resources: Energy and Food >Lesson 1, Energy in Food>Video: Energy in Food

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<p>c) energy can be transformed; and</p>	<p>Supporting Content: ATE: uConnect Lab: How much food do you need?, 318 uInvestigate Lab: How is the Sun involved in your meals?, 321 Quest Check-In Lab: What plant food provide the most energy?, 334-335 uInvestigate Lab: How do animals get energy from the Sun?, 339</p> <p>Please see Elevate Science Grade 4, Topic 1: Energy and Motion, Lesson 3: Energy Transfer</p>
<p>d) energy is conserved.</p>	<p>Related Content: ATE: Conservation of Matter, 68</p> <p>Please see <i>Elevate Science</i> Grade 4, Topic 1: Energy and Motion, Lesson 1: Energy, Speed, and Moving Objects and Lesson 2: Collisions</p>

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STANDARD	Correlation: Must address both the standards and the curriculum framework. Use page number and ATE for Annotated Teacher Edition or CT for Core Technology. (Identify no more than 8 correlations.)
The student will investigate and understand that there is a relationship between force and energy of moving objects. Key ideas include	
moving objects have kinetic energy;	Please see <i>Elevate Science</i> Grade 4, Topic 1: Energy and Motion, Lesson 1: Energy, Speed, and Moving Objects; Lesson 2: Collisions; and Lesson 3: Energy Transfer.
motion is described by an object’s direction and speed;	Please see <i>Elevate Science</i> Grade 4, Topic 1: Energy and Motion, Lesson 1: Energy, Speed, and Moving Objects.
changes in motion are related to net force and mass;	Please see <i>Elevate Science</i> Grade 4, Topic 1: Energy and Motion, Lesson 1: Energy, Speed, and Moving Objects Also see <i>Elevate Science</i> Grade 3, Topic 1: Motion and Forces, Lesson 4: Balanced and Unbalanced Forces.
when objects collide, the contact forces transfer energy and can change objects’ motion; and	Please see <i>Elevate Science</i> Grade 4, Topic 1: Energy and Motion, Lesson 2: Collisions.
e) friction is a force that opposes motion.	Please see <i>Elevate Science</i> Grade 3, Topic 1: Motion and Forces, Lesson 3: Forces and Motion.

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5.4 The student will investigate and understand that electricity is transmitted and used in daily life. Key ideas include	
a) electricity flows easily through conductors but not insulators;	ATE: Conductors of Heat and Electricity, 12 Please also see <i>Elevate Science</i> Grade 4, Topic 1: Energy and Motion, Lesson 4: Electric Circuits
b) electricity flows through closed circuits;	Please see <i>Elevate Science</i> Grade 4, Topic 1: Energy and Motion, Lesson 4: Electric Circuits
c) static electricity can be generated by rubbing certain materials together;	Please see <i>Elevate Science</i> Grade 3, Topic 2: Electricity and Magnetism, Lesson 1: Electric Forces Also see <i>Elevate Science</i> Grade 4, Topic 1: Energy and Motion, Lesson 4: Electric Circuits.
d) electrical energy can be transformed into radiant, mechanical, and thermal energy; and	Supporting Content: ATE: Conductors of Heat and Electricity, 12 Please see <i>Elevate Science</i> Grade 4, Topic 1: Energy and Motion, Lesson 4: Electric Circuits.
e) a current flowing through a wire creates a magnetic field.	Please see <i>Elevate Science</i> Grade 3, Topic 2: Electricity and Magnetism, Lesson 2: Magnetic Forces

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STANDARD	Correlation: Must address both the standards and the curriculum framework. Use page number and ATE for Annotated Teacher Edition or CT for Core Technology. (Identify no more than 8 correlations.)
5.5 The student will investigate and understand that sound can be produced and transmitted. Key ideas include	
a) sound is produced when an object or substance vibrates;	Please see <i>Elevate Science</i> Grade 4, Topic 3: Waves and Information, Lesson 1: Properties of Waves.
b) sound is the transfer of energy;	For supporting content, see <i>Elevate Science</i> Grade 4, Topic 1: Energy and Motion, Lesson 3: Energy Transfer.
c) different media transmit sound differently; and	Please see <i>Elevate Science</i> Grade 4, Topic 3: Waves and Information, Lesson 1: Properties of Waves and Lesson 2: Patterns of Waves.
d) sound waves have many uses and applications.	Please see <i>Elevate Science</i> Grade 4, Topic 1: Energy and Motion, Lesson 3: Energy Transfer. Also see 3: Waves and Information, Lesson 1: Properties of Waves.

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STANDARD	Correlation: Must address both the standards and the curriculum framework. Use page number and ATE for Annotated Teacher Edition or CT for Core Technology. (Identify no more than 8 correlations.)
5.6 The student will investigate and understand that visible light has certain characteristics and behaves in predictable ways. Key ideas include	
a) visible light is radiant energy that moves in transverse waves;	Please see <i>Elevate Science</i> Grade 4, Topic 3: Waves and Information, Lesson 1: Properties of Waves.
b) the visible spectrum includes light with different wavelengths;	Please see <i>Elevate Science</i> Grade 4, Topic 3: Waves and Information, Lesson 1: Properties of Waves and Lesson 3: Waves and the Electromagnetic Spectrum.
c) matter influences the path of light; and	Please see <i>Elevate Science</i> Grade 4, Topic 3: Waves and Information, Lesson 3: Waves and the Electromagnetic Spectrum.
d) radiant energy can be transformed into thermal, mechanical, and electrical energy.	Please see <i>Elevate Science</i> Grade 4, Topic 1: Energy and Motion, Lesson 3: Energy Transfer.

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<p>5.7 The student will investigate and understand that matter has properties and interactions. Key ideas include</p>	
<p>a) matter is composed of atoms;</p>	<p>ATE: Atoms, 18 Molecules 19 Visual Literacy Connection: What is the matter?, 20-21 Same Atoms, Different Matter, 22</p> <p>CT: Realize™ Digital Resources: Properties of Matter >Lesson 2, Model Matter>Video: Model Matter</p>
<p>b) substances can be mixed together without changes in their physical properties; and</p>	<p>ATE: uInvestigate Lab: How can you separate a mixture?, 79 Mixtures, 80 Engineering Practice Toolbox, 81 Visual Literacy Connection: When is a mixture also a solution?, 82-83 Mixtures and Solutions, 85</p> <p>CT: Realize™ Digital Resources: Changes in Matter >Lesson 4, Mixtures and; Solutions>Video: Mixtures and Solutions;>Interactivity: Mixtures and Solutions</p>

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<p>c) energy has an effect on the phases of matter.</p>	<p>ATE: States of Matter, 28 Temperature, 29 uInvestigate Lab: Which properties are affected by temperature?, 57 Changes in Temperature, 59 A Change of Physical State, 60 Particle Changes, 61</p> <p>CT: Realize™ Digital Resources: Changes in Matter >Lesson 2, Physical Changes>Interactivity: Changing States</p>
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5.8 The student will investigate and understand that Earth constantly changes. Key ideas include	
a) Earth's internal energy causes movement of material within the Earth;	<p>ATE: Visual Literacy Connection: What are parts of Earth's geosphere and biosphere?, 106-107 Lithosphere, 108</p> <p>Also see <i>Elevate Science</i> Grade 4, Topic 4: Earth's Features, Lesson 2: Patterns of Earth's Features. See also Topic 5: Earth's Natural Hazards, Lesson 1: Tectonic Hazards.</p>
b) plate tectonics describe movement of the crust;	Please see <i>Elevate Science</i> Grade 4, Topic 4: Earth's Features, Lesson 2: Patterns of Earth's Features. See also Topic 5: Earth's Natural Hazards, Lesson 1: Tectonic Hazards.
c) the rock cycle models the transformation of rocks;	Please see <i>Elevate Science</i> Grade 4, Topic 4: Earth's Features, Lesson 3: Rocks, Minerals, and Soil.
d) processes such as weathering, erosion, and deposition change the surface of the Earth; and	<p>ATE: Geosphere and Atmosphere, 123</p> <p>Also see <i>Elevate Science</i> Grade 4, Topic 4: Earth's Features, Lesson 4: Weathering and Erosion.</p>
e) fossils and geologic patterns provide evidence of Earth's change.	Please see <i>Elevate Science</i> Grade 4, Topic 6: The History of Planet Earth, Lesson 1: Patterns in Fossils and Rock Formations and Lesson 2: Evidence of Change from Fossils and Rock Formations.

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5.9 The student will investigate and understand that the conservation of energy resources is important. Key ideas include	
a) some sources of energy are considered renewable and others are not;	<p>ATE: Natural Resources, 188 Minerals and Rocks, 190 Water Resources, 191 Engineering Connection, 196 Energy from Fuels, 198 Energy from Nonfuel Sources, 199</p> <p>CT: Realize™ Digital Resources: Human Impacts on Earth’s Systems >Lesson 2, Earth’s Energy Resources>Video: Earth’s Energy Resources;>Interactivity: How We Use Earth’s Resources</p>

LCPS Grade Five Rubric

<p>b) individuals and communities have means of conserving both energy and matter; and</p>	<p>ATE: Quest Kickoff: Take Care of Earth—It’s Our Home!, 182-183 Reduce Human Impacts, 209 Resource Protection, 214 Environmental Conservation, 215 Visual Literacy Connection: How do people recycle?, 216-217 Reduce and Reuse, 218</p> <p>CT: Realize™ Digital Resources: Human Impacts on Earth’s Systems >Lesson 4, Protection of Earth’s Resources and Environments>Video: Protection of Earth’s Resources and Environments;>Interactivity: Go Green</p>
<p>c) advances in technology improve the ability to transfer and transform energy.</p>	<p>ATE: Literacy Connection: Using Energy Resources, 185 uEngineer It! Make Energy the Solar Way, 194-195 Human Uses of Energy, 198 Visual Literacy Connection: Where is electrical energy generated?, 200-201 STEM Quest Check-In Lab: How do building materials affect energy efficiency?, 210-211 Resource Use, 219</p> <p>CT: Realize™ Digital Resources: Human Impacts on Earth’s Systems >Lesson 2, Earth’s Energy Resources>Video: Earth’s Energy Resources >Lesson 4, Protection of Earth’s Resources and Environments>Video: Protection of Earth’s Resources and Environments</p>