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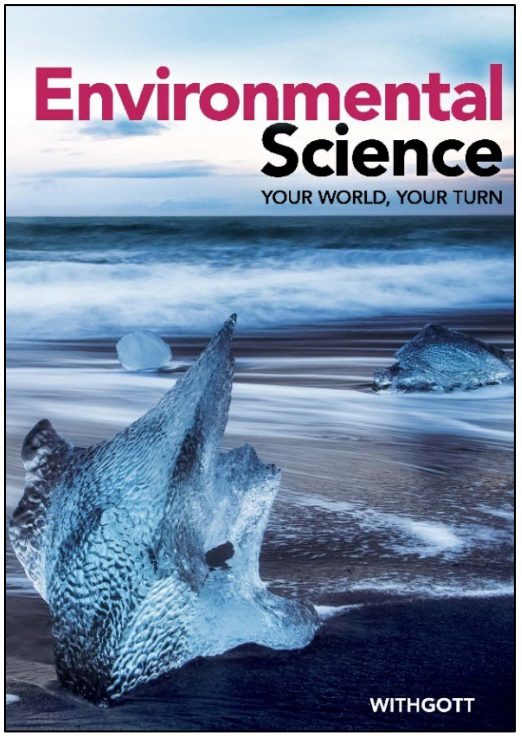

To the

Loudoun County Public Schools
Environmental Science Rubric

Prepared by Savvas Learning Company, formerly Pearson K12 Learning

Science Textbook Correlation to LCPS Science Office Criteria and Environmental Science Standards

LCPS Environmental Science Rubric

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Environmental Science provides students the opportunity to synthesize information and knowledge of physics, chemistry, earth science, and biology while developing the Naturalist Intelligence. Students gain an understanding of ecological concepts including air, water, soil, biological diversity, and human impacts. Inquiry skills are developed through fieldwork, service projects, and collaborative investigation while using appropriate technology. Technologies and scientific tools, including graphing calculators, computers, and probeware are used when appropriate and feasible. Because of the interdisciplinary focus of the course, students are challenged with diverse topics, rigorous reading requirements, and opportunities for written and oral presentations.

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.)**
Instructional resources should develop students' ability to know, use, and interpret scientific explanations of the natural world; including developing and using models.	*Environmental Science* requires students to engage in scientific inquiry as they think, investigate, and interact with natural phenomena through activities designed to integrate elements of three-dimensional learning, such as developing and using models, lab experiments, research activities, problem-based exercises and more. **For examples, please see:** **ATE:** Figure 1, Atom, 65 Figure 13, Positive Feedback Loop, 74 Figure 14, Earth's Spheres, 75

Instructional resources should develop students' ability to generate and evaluate scientific evidence and explanations; including developing and using models.	*Environmental Science* 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. **For examples, please see:** **ATE:** Figure 6, Age Structure Diagrams, 108 Real Data: Turkey Vultures, 112 Science Behind the Stories: The Cloudless Forest, 118-119
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.	*Environmental Science* features a variety of student-centered activities are incorporated in each topic to provide students with multiple perspectives on a theme. Furthermore, teachers can find all activities online and can download and edit these worksheets for easy customization.
Instructional resources should develop students' ability to participate productively in scientific practices and discourse.	*Environmental Science* puts students on a path toward success in science learning and connects performance expectations within and across grades, creating a balanced and coherent sequence designed to deepen student understanding and develop their ability to participate productively in scientific practices and discourse. **For examples, please see:** **ATE:** Peer Review: Go Outside: Abiotic and Biotic Factors, 102 What Do You Think?, 106 Lesson 3 Assessment: Think It Through, 117

Instructional resources reflect current best practices in the field of science instruction (pedagogy).	Students and teachers will benefit from Savvas's 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. We incorporate the following four phases of research into the development of each new curriculum. ▪ During the **first phase** of the research process, we evaluate previous editions of the curriculum to determine best instructional practices as demonstrated by scientific evidence. These practices are incorporated into the new curriculum, establishing a sound research base. ▪ During the **second phase**, authors and researchers conduct extensive literature reviews on content, instructional practices, and education standards. This information is synthesized and embedded into the curriculum. ▪ During the **third phase**, formative research is conducted on the curriculum under development. Classroom field tests investigate usability, teacher and student feedback, and preliminary measures of curriculum effectiveness. School administrators, content specialists, and classroom teachers systematically evaluate the curriculum in development. ▪ The **final phase** of research examines the implementation and effectiveness of the curriculum. Independent, randomized control trial studies are conducted to provide scientific evidence of student achievement on standardized assessments. Implementation details and best practices are documented throughout the study period for synthesis into revised and future curricula, further contributing to their effectiveness. ▪
Materials consistently provide development and application of concepts and scientific practices through the exploration and use of appropriate technologies.	Flexible classroom management tools within the digital platform provide freedom and control to use a digital, print, or blended format. The digital platform provides powerful data reporting for personal data-driven instruction, while technology enhanced items allow students to develop and apply concepts and scientific practices and experience next generation assessment formats.

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)	*Environmental Science* offers multiple opportunities for students to engage in a meaningful scientific investigation of a watershed. See Chapter 14: Water Resources, page 420. In this chapter, students use a map of the watersheds throughout the United States to identify the watershed are they live in. Watersheds are specifically addressed on page 422. See also Watershed Boundaries activity, found on Savvas Realize, Chapter 14, Lesson 1.
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).	The program 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. **For examples, please see:** **ATE:** Calculating Population Growth, 113 Math Handbook, SH 5-13
Resources provide opportunities for students to use technology to learn science content and science process skills.	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. *Environmental Science: Your World, Your Turn* on SavvasRealize.com supports digital learning with online assets for both teacher and students.
Resources provide opportunities for students to explore advances in technology and scientific discovery that have occurred since your last publication date.	The intuitive digital path is more than an ancillary to the program; 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.

Resources Support the LCPS Mission, Core Beliefs and Strategic Goals https://bit.ly/2VV3lDB	
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).	Students build understanding the project-based Central Case, and Connect to the Central Case, located in each chapter. **For examples, please see:** **ATE:** Central Case: Finding Gold in a Costa Rican Cloud, 99 Central Case: Saving the Siberian Tiger, 199
Instructional resources provide opportunities for Personalized Learning and the exercise of student voice and choice.	*Environmental Science* 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.
Instructional resources include grade level performance assessments that are formative and summative.	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.
Instructional resources support individual, small group, and whole class learning opportunities and collaboration.	*Environmental Science* provides opportunities for students to work individually, in small, cooperative groups and engage in science and engineering practices as a whole class.

Science Textbook Correlation to LCPS Science Office Criteria and Environmental Science Standards

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.	*Environmental Science* includes 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.
Materials consistently promote the introduction of concepts through concrete experiences.	Up-to-date, accurate, themed text is used to build knowledge in each unit, emphasizing the common characteristics of a unifying, relevant concept and promoting in-depth understanding through daily lessons. **For examples, please see:** **ATE:** Go Outside: Abiotic and Biotic Factors, 102 Quick Lab: How Do Diseases Spread?, 263
Instructional resources provide opportunities for students to apply learning in real-world situations.	Visual analogies connect difficult concepts to real world issues to help students better understand the concepts presented. **For examples, please see:** **ATE:** Map it: Invading Mussels, 210 Map it: Predicting Earthquakes, 278
Materials consistently provide the appropriate level of abstraction and appropriate practical/real-life examples.	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.
Materials consistently provide sufficient, grade-level appropriate examples of applications of concepts to promote depth of understanding.	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 the program.

Resources are Inclusive, Accessible, Culturally Responsive, and Free of Bias	
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 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.	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: ▪ 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 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.
Instructional resources are free from stereotypes which assign a rigid set of characteristics to all members of a group.	Savvas educational materials consider the needs of all students, are free from stereotypes, 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.

Instructional resources provide teachers with strategies for meeting the needs of Advanced Learners, English Learners and Special Education students.	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.).
Instructional resources include accessibility features and tools for Advanced Learners, English Learners and Special Education students.	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.). **For examples, please see the following:** **ATE:** Reading Strategy and Vocabulary, 200 Differentiated Instruction, 200 Chapter Assessment: Reading Comprehension, 222
Instructional resources include Tier 2 and Tier 3 vocabulary necessary to support English Learners and Special Education students.	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. *Environmental Science* 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. **For examples, please see the following:** **ATE:** Reading Strategy and Vocabulary, 12 Reading Strategy and Vocabulary, 101 Reading Strategy and Vocabulary, 200

2020 LCPS Environmental Science Standards	
STANDARD - II. The Physical World	**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 the fundamentals of matter and its interactions. Key content includes	
● all things are made up of atoms and elements;	**ATE:** Building Blocks of Chemistry, 65-67 Macromolecules, 67-69 Water, 69-71 The Carbon Cycle, 83-85 The Phosphorous Cycle, 86-87 The Nitrogen Cycle, 87-89 A Closer Look: Nutrients, 90-91
● atoms and elements can interact in different ways and can be expressed as different types of chemical reactions;	**ATE:** Building Blocks of Chemistry, 65-67
● chemical processes involve energy;	**ATE:** Building Blocks of Chemistry, 65-67 Forms of Energy, 519
● the law of conservation of energy and matter;	For supporting content, please see: **ATE:** Nutrient Cycling, 83 The Troposphere and Weather, 458-459 Forms of Energy, 519

• water has unique properties and characteristics which plays a critical role in the environment; and	**ATE:** Water, 69-71 The Hydrosphere, 80-82 Surface Water, 422-424 Groundwater, 424-425 The Oceans and Climate, 488-489
• the distribution and movement of water across the Earth affects the biosphere, hydrosphere, lithosphere, and atmosphere.	**ATE:** Figure 18, Distribution of Earth's Water, 80 Figure 19, The Water Cycle, 81 Figure 20, Human Impacts on the Water Cycle, 82 The Hydrosphere, 80-82 Quick Lab, Distribution of Earth's Water, 80

2020 LCPS Environmental Science Standards	
STANDARD - II. The Physical World	**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 how matter flows in the fundamental processes of Earth systems. Key content includes	
● the movement of atoms and elements through the biosphere, lithosphere, hydrosphere, and atmosphere as geochemical processes to include the carbon, oxygen, nitrogen, and water cycles;	**ATE:** Nutrient Cycling, 83 Carbon Cycle, 83-84 Figure 21, Carbon Cycle, 84 Phosphorus Cycle, 86 Figure 23, Phosphorous Cycle, 86 Nitrogen Cycle, 87-89 Figure 24, Nitrogen Cycle, 87 Figure 25, Nitrogen in the Gulf of Mexico, 88
● the components, dynamics, and processes of the atmosphere, lithosphere, and hydrosphere; and	**ATE:** Interacting Systems, 72-74 Earth's "Spheres", 74-75 Figure 14, Earth's Spheres, 75 The Geosphere, 76-78 The Biosphere and Atmosphere, 79 The Hydrosphere, 80-82
● the interrelationships among the atmosphere, geosphere, anthrosphere, and the hydrosphere.	**ATE:** Earth's Spheres, 74-75 Interacting Systems, 72-74

2020 LCPS Environmental Science Standards	
STANDARD - II. The Physical World	**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 students will investigate and understand the major processes and systems that form Earth, including how water, living things, and rock act together to shape landforms. Key content includes	
● the formation of distinctive landforms (the physical processes such as erosion, rock cycle);	**ATE:** Mineral Formation, 393-394 Rocks, 395-397 Figure 6, The Rock Cycle, 397 Erosion, 74 Figure 13, Positive Feedback Loop, 74 Erosion, 358-361
● distribution of the continents (plate tectonics); and	**ATE:** Figure 15, Tectonic Plates, 77 Plate Tectonics, 77 Tectonic Plates, 77–78 Map It, Pangaea, 77 Earthquakes, 277-278 Figure 24, Earthquakes and Tectonic Plates, 278 Map It, Predicting Earthquakes, 278
● the comparison of how natural and human causes of changes to Earth's land surface.	For supporting content, please see: **ATE:** Earthquakes, 277-278 Avalanches, 282-283

2020 LCPS Environmental Science Standards	
STANDARD - III. The Living World	**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 the Earth is one interconnected system to include the hierarchy and the flow of energy within an ecosystem. Key content includes	
● the characteristics and components that define each of the Earth's terrestrial and aquatic biomes;	**ATE:** What Is a Biome, 164-166 The Natural World – 168-180 Describing Aquatic Ecosystems, 181-182 Freshwater Ecosystems, 183-185 Estuaries, 186-187 The Oceans, 187-191
● biotic and abiotic factors in an ecosystem and how energy and matter move between these;	**ATE:** Biotic and Abiotic Factors, 102-103 Figure 2, Biotic and Abiotic Factors, 103 Producers and Consumers, 141-143 Energy and Biomass, 144-145 Food Webs and Keystone Species, 146-148
● the movement of energy through the living world to include food webs, food chains, trophic levels; and	**ATE:** Energy and Biomass, 144-145 Food Webs and Keystone Species, 146-148
● factors limiting population growth in a given area (carrying capacity).	**ATE:** How Populations Grow, 114-115 Limiting Factors and Biotic Potential, 116-117 Figure 12, Logistic Growth, 113 Figure 13, Population Growth in Nature, 115

2020 LCPS Environmental Science Standards	
STANDARD - III. The Living World	**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 describe stability and change as it relates to both populations and ecosystems. Key content includes	
● the Earth in a state of dynamic equilibrium;	**ATE:** Ecological Succession, 149-151
● interactions between individuals (i.e. commensalism, mutualism, parasitism, predation, and competition);	**ATE:** The Niche and Competition, 133-135 Predation, Parasitism, and Herbivory, 136-138 Mutualism and Commensalism, 139-140
● factors that determine growth rates in populations (birth, death, and migration rates);	**ATE:** Population Density, 106 Population Density, 107 Factors That Determine Population Growth, 110-113 History of Human Population Growth, 228-230 Impacts on Population, 242-246
● adaptions of organisms to the environment in terms of ecological niches and natural selection;	**ATE:** Evolution and Natural Selection, 126-130 The Niche and Competition, 133-135
● the role of genetic diversity and population size in the conservation of a species;	**ATE:** Biodiversity, 200-202 Benefits of Biodiversity, 204-206 Legal Efforts, 212-213 Single-Species Approach, 214-215 Ecosystem and Habitat Approaches, 215-217

● the natural processes of change in the environment, including examples of succession, evolution, and extinction;	**ATE:** Evolution and Natural Selection, 126-130 Speciation and Extinction, 131-132 Ecological Succession, 149-153
● factors that influence patterns of ecological succession, including invasive species, loss of biodiversity, and catastrophic events;	**ATE:** Ecological Succession, 149-153 Invasive Species, 153-155 Biodiversity at Risk, 207-208 Causes of Biodiversity Loss, 209-211
● effects of change in the hydrosphere, atmosphere, geosphere, or anthrosphere on the biosphere; and	**ATE:** Causes of Biodiversity Loss, 209-211
● biodiversity and co-evolution in ecosystems.	**ATE:** Mutualism and Commensalism,139-140 Biodiversity, 200-202

2020 LCPS Environmental Science Standards	
STANDARD - IV. Resources	**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 Earth's resources. Key content includes	
● certain resources are nonrenewable because they are replenished at timescales of thousands to millions of years;	**ATE:** Renewable or Nonrenewable, 7 Economics and the Environment, 37-39 Renewable or Nonrenewable Energy, 520 How Fossil Fuels Form, 522-523
● environmental benefits and drawbacks of fossil fuels advantages and disadvantages of renewable resources, including solar, hydrogen fuel cells, biomass, wind, and geothermal energy;	**ATE:** Coal, 523-524 Oil, 525-526 Natural Gas, 526 Pollution from Fossil Fuels, 530-531 Reasons for Alternative Energy, 550-551 Benefits and Costs of Solar Power, 565-566 Benefits and Costs of Wind Power, 568-569
● the benefits and drawbacks of nuclear power; and	**ATE:** Benefits and Costs of Nuclear Power, 539-540
● the benefits and drawbacks of hydroelectric power.	**ATE:** Benefits and Cost of Hydropower, 558-559

2020 LCPS Environmental Science Standards	
STANDARD - IV. Resources	**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 conservation of Earth's resources. Key content includes	
● future availability of nonrenewable resources considering the trend of human consumption of energy;	**ATE:** Sources and Uses of Energy, 520-521 The Supply of Fossil Fuel, 527-528 Figure 10, Consumption of Fossil Fuels, 527
● the effects of natural and human-caused activities that either contribute to or challenge an ecologically sustainable environment;	**ATE:** Pollution from Fossil Fuels, 530-531 Damage Caused by Extracting Fuels, 532-533 Evidence of a Warming Earth, 491-492 Finding the Cause of Climate Change, 595-596
● individuals can alter their own behavior to reduce their environmental impact; and	**ATE:** Use and Production of Electricity, 502-503 Transportation, 504 Other Approaches to Reducing Greenhouse Gases, 504-506 Waste Reduction, 589-592 Waste Recovery, 592-595 A Closer Look: The Recycling Process, 604-605
● changes in the availability of energy will affect society and human activities, such as transportation, agricultural systems, and manufacturing.	**ATE:** Sustainable Agriculture, 381-383 Central Case: Germany's Big Bet on Renewable Energy, 549 The Reasons for Alternative Energy, 550-551

2020 LCPS Environmental Science Standards	
STANDARD - V. Human impact, global climate change, and civic responsibility	**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 the human impact on our environment. Key content includes	
● Population ecology, carrying capacity, human population dynamics, impacts of population growth advantages and disadvantages of balancing short term interests with long term welfare of society;	**ATE:** How Populations Grow, 114-115 Central Case: China's Changing Population Needs, 227 Social Factors, 240-241 Impacts of Population, 242-246 Impacts of Technology, 246-247 Land Cover and Land Use, 292-293 Urban Environmental Impacts, 295-298 Impacts of Sprawl, 302-304
● individual activities and decisions can have an impact on the environment;	**ATE:** Humans and the Environment, 4 Understanding Human Influences, 5-6
● people impact their environment through the use of natural resources to include how agriculture, forestry, ranching, mining, urbanization, transportation, and fishing impact the land, water, air, and organisms; and	**ATE:** Impacts of Population, 242-246 Impacts of Technology, 246-247 Land Cover and Land Use, 292-293 Urban Environmental Impacts, 295-298 Impacts of Sprawl, 302-304 Deforestation, 335-336 Erosion, 358-361 Industrial Agriculture, 367-368

• the allocation of state and federal lands.	**ATE:** Land Cover and Land Use, 292-293 Management Approaches, 327-329 U.S. National Forests, 337-339 Private Land, 340 Fire Policies, 340-342

2020 LCPS Environmental Science Standards	
STANDARD - V. Human impact, global climate change, and civic responsibility	**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 pollution and waste management. Key content includes	
● the effects and potential implications of pollution and resource depletion on the environment at the local and global levels to include air and water pollution, solid waste disposal, depletion of the stratospheric ozone, global warming, and land uses;	**ATE:** Where's Our Water, 420-421 Types of Water Pollution, 435-438 Groundwater Pollution, 439 Ocean Pollution, 440 Sources of Air Pollution, 462-463 Ozone: A Success Story, 472-473 Effects on Ecosystems and Organisms, 497-499 Methods of Solid Waste Disposal, 584-588
● the mechanisms of bioaccumulation and biomagnification;	**ATE:** Biomagnification, 275-276
● pest management; and	**ATE:** Pests, 369-371
● methods used for remediation of land, air, and water pollution.	**ATE:** Green Revolution, 368 Controlling Water Pollution, 441-443 A Closer Look: Wastewater Treatment, 444-445 The Clean Air Act, 470-472 Ozone: A Success Story, 472-473 Success Stories: The Clean Air Act and Acid Rain, 474-475

2020 LCPS Environmental Science Standards	
STANDARD - V. Human impact, global climate change, and civic responsibility	**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 global climate change. Key content includes	
● the use of scientific evidence in reporting changes in average global temperature, greenhouse gases, quantities of artic and land ice, ocean temperature, ocean acidification, and sea level rise;	**ATE:** The Oceans and Climate, 488-489 Evidence of a Warming Earth, 491-492 Studying Climate Change, 493-495 Real Data, Changing Temperature of the Atmosphere, 493 Finding the Cause of Climate Change, 495-496 Effects on Ecosystems and Organisms, 497-499 Science Behind the Stories: Climate Clues in Ice, 508-509
● the relationship of global climate change on the frequency or magnitude of extreme weather events; and	**ATE:** Central Case: Rising Seas May Flood the Maldive Islands, 483 Evidence of a Warming Earth, 491-492 Impact on People Right Now, 500
● actual and potential effects of habitat destruction, erosion, and depletion of soil fertility associated with human activities.	**ATE:** Causes of Biodiversity Loss, 209-211 Erosion, 358-361 Desertification, 361-362 Deforestation, 335-336 Erosion, 358-361 Industrial Agriculture, 367-368 Soil Pollution, 363-364

2020 LCPS Environmental Science Standards	
STANDARD - III. The Living World	**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 civic responsibility and environmental policies. Key content includes	
● consumer choices in Virginia impacts jobs, resources, pollution, and waste here and around the world;	For supporting content, please see: **ATE:** Economics and the Environment, 37-39 Economics and Sustainability, 39-41
● political, legal, social, and economic decisions may affect global and local ecosystems;	**ATE:** What is Environmental Policy, 42-42 History of U.S. Environmental Policy, 44-46 Modern U.S. Environmental Policy, 46-47 International Environmental Policy, 48-50
● the impact of media on public opinion and public policy;	For supporting content, please see: **ATE:** What is Environmental Policy, 42-42 History of U.S. Environmental Policy, 44-46 Modern U.S. Environmental Policy, 46-47 International Environmental Policy, 48-50
● individuals and interest groups influence public policy;	**ATE:** History of U.S. Environmental Policy, 44-46 International Environmental Policy, 48-50 Success Stories: Fighting for Clean Water, 56-57 Wildlife Corridors, 217

• cost-benefit analysis and trade-offs in conservation policy; and	**ATE**: What is Economics, 36-37 Economics and the Environment, 37-39 Quick Lab: Cost-Benefit Analysis, 37 Approaches to Environmental Policy, 50-53
• compare methods used to protect the environment by local, state, national, and international governments and organizations	**ATE:** History of U.S. Environmental Policy, 44-46 Modern U.S. Environmental Policy, 46-47 International Environmental Policy, 48-50 Approaches to Environmental Policy, 50-53