

A Correlation of



©2021

To the

**Colorado**  
**Instructional Unit Samples for**  
**Environmental Science**

**A Correlation of Environmental Science: Your World, Your Turn ©2021  
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**Introduction**

This document demonstrates how ***Environmental Science: Your World, Your Turn ©2021*** supports the Colorado Instructional Unit Samples for Environmental Science. References are to the Student and Teacher editions and are cited at the page level.

***Environmental Science: Your World, Your Turn*** combines high-interest, real-world content with cutting-edge digital support and a variety of hands-on inquiry investigations to help ensure student success in environmental science. Phenomena drives student engagement through unit level Anchoring Phenomena, Claim Evidence Reasoning, Modeling Activities and Problem-Based learning projects. Acclaimed author and active researcher Jay Withgott shows students why learning environmental science is vital. Students dive deeper with 19 Investigative Phenomena Case Studies. These authentic, real-world applications of environmental science excite students and inspire their passion for the environment.

**Anchoring Phenomenon:** Launch every unit with an engaging Anchoring Phenomenon that introduces and unifies the upcoming environmental science concepts. Students track their knowledge throughout the unit in a Claims-Evidence-Reasoning or Modeling document and build understanding with an Anchoring Phenomenon Project.

**Case Studies Drive Learning:** Introduce every chapter with an Investigative Phenomenon Case Study. This engaging real-world case encourages students to draw connections between environmental science and their life while providing a storyline for students to follow. Students “Defend Their Case” at the end of the chapter.

**Hands-on Inquiry:** Editable hands-on inquiry activities, including labs, Take it Local, Real Data math practice, and Claim-Evidence- Reasoning documents support student understanding of the phenomenon under study.

**Student Centered Experience:** Facts, questions, and thought-provoking scenarios including Make a Difference, Find out More, and What Do You Think? appear throughout the book, empowering students to apply the science, make choices, and interact with content.

**Award-Winning Digital Platform:** Access all of your digital content, inquiry labs, planning materials, assessments, and student data in ONE location. The Savvas Realize™ digital platform includes offline capabilities, integration with learning management systems and editable documents and assessments. Our fully digital programs and e-books provide cutting-edge online instruction with a seamless transition from the textbook, allowing students to complete assignments, access videos and activities, and take online tests and remediation.

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<b>UNIT: Matter and Energy in an Ecosystem</b>	
<b>Grade Level Expectations</b>	
<b>Physical Science</b>	
1. Newton's laws of motion and gravitation describe the relationships among forces acting on and between objects, their masses, and changes in their motion – but have limitations	For related content, please see: <b>SE/TE:</b> Flowing and Standing Water, 182 Intertidal Ecosystems, 189 Kinetic Energy, 517 Mechanical Energy, 518 Tidal Energy, 559-560
2. Matter has definite structure that determines characteristic physical and chemical properties	<b>SE/TE:</b> Building Blocks of Chemistry, 64-66 Macromolecules, 67-69 Figure 7 Water Molecule, 69 Properties of Water, 69-70
3. Matter can change form through chemical or nuclear reactions abiding by the laws of conservation of mass and energy	<b>SE/TE:</b> Nutrient Cycling, 83 The Carbon Cycle, 83-85 The Nitrogen Cycle, 87-89 Chapter 3 Assessment, #30, 94 Primary Production, 141-142 Water Pollution, 406 Energy Conversion, 519 Nuclear Energy, 537 Generating Electricity, 538 Nuclear Fusion: The Future?, 541 Electrolysis, 571 Fuel Cells, 572
4. Atoms bond in different ways to form molecules and compounds that have definite properties	<b>SE/TE:</b> Atoms and Elements, 64-65 Bonding, 65 Molecules and Compounds, 66 Macromolecules, 67-69 Properties of Water, 69-70

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5. Energy exists in many forms such as mechanical, chemical, electrical, radiant, thermal, and nuclear, that can be quantified and experimentally determined	<b>SE/TE:</b> Energy From the Sun, 142 Forms of Energy, 518-520 Quick Lab, 520 Nuclear Energy, 537 Generating Electricity, 538 A Closer Look, 542-543 Geothermal Energy, 553-555 Thermal Energy From the Ocean, 560 Harnessing Solar Energy, 562-564
6. When energy changes form, it is neither created nor destroyed; however, because some is necessarily lost as heat, the amount of energy available to do work decreases	<b>SE/TE:</b> Real Data, 144 Energy and Biomass, 144-145 Energy Conversion, 519
<b>Life Science</b>	
1. Matter tends to be cycled within an ecosystem, while energy is transformed and eventually exits an ecosystem	<b>SE/TE:</b> The Water Cycle, 81-82 Nutrient Cycling, 83 The Carbon Cycle, 83-85 The Phosphorus Cycle, 86 The Nitrogen Cycle, 87-89 Chapter 3 Assessment, #30, 94 Producers and Consumers, 141-143 Energy and Biomass, 144-145
2. The size and persistence of populations depend on their interactions with each other and on the abiotic factors in an ecosystem	<b>SE/TE:</b> Biotic and Abiotic Factors, 102-103 Factors That Determine Population Growth, 110-113 Limiting Factors and Biotic Potential, 116-117 Science Behind the Stories, 118-119 Competition, 134-135 Predation, Parasitism, and Herbivory, 136-138 Mutualism and Commensalism, 139-140 Keystone Species, 148 Chapter 5 Assessment, #29, 161
3. Cellular metabolic activities are carried out by biomolecules produced by organisms	<b>SE/TE:</b> Macromolecules, 67-69 Lesson 1 Assessment, #2, 71 Producers, 84 Cellular Respiration, 85 Producers and Consumers, 141-143

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4. The energy for life primarily derives from the interrelated processes of photosynthesis and cellular respiration. Photosynthesis transforms the sun’s light energy into the chemical energy of molecular bonds. Cellular respiration allows cells to utilize chemical energy when these bonds are broken.	<b>SE/TE:</b> Producers, 84 Cellular Respiration, 85 Producers and Consumers, 141-143
5. Cells use the passive and active transport of substances across membranes to maintain relatively stable intracellular environments	For related content, please see: <b>SE/TE:</b> Proteins, 67 Lipids, 69
6. Cells, tissues, organs, and organ systems maintain relatively stable internal environments, even in the face of changing external environments	For related content, please see: <b>SE/TE:</b> Proteins, 67 Negative Feedback Loops, 73 Figure 12 Negative Feedback Loop, 73 A Closer Look, 90-91 Dose-Response Relationship, 258
7. Physical and behavioral characteristics of an organism are influenced to varying degrees by heritable genes, many of which encode instructions for the production of proteins	<b>SE/TE:</b> Nucleic Acids, 68 Evolution and Natural Selection, 126 Mechanisms of Biological Evolution, 127 Condition 2: Individuals of a species vary in their characteristics, 128 Genetic Diversity, 202
8. Multicellularity makes possible a division of labor at the cellular level through the expression of select genes, but not the entire genome	For related content, please see: <b>SE/TE:</b> Nucleic Acids, 68
9. Evolution occurs as the heritable characteristics of populations change across generations and can lead populations to become better adapted to their environment	<b>SE/TE:</b> Evolution and Natural Selection, 126-130 Predation and Evolution, 137 Coevolution and Evolutionary “Arms Races”, 137

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<b>Earth Systems Science</b>	
1. The history of the universe, solar system and Earth can be inferred from evidence left from past events	For supporting content, please see: <b>SE/TE:</b> The Geosphere, 76-78 Map It, 77
2. As part of the solar system, Earth interacts with various extraterrestrial forces and energies such as gravity, solar phenomena, electromagnetic radiation, and impact events that influence the planet's geosphere, atmosphere, and biosphere in a variety of ways	<b>SE/TE:</b> Positive Feedback Loops, 74 The Atmosphere, 79 Energy From the Sun, 142 River Systems, 422 Layers of the Atmosphere, 455-457 The Troposphere and Weather, 458-460 Energy From the Sun, 484-487 Wind Patterns in the Atmosphere, 487 Changes in Earth's Orbit, 490
3. The theory of plate tectonics helps to explain geological, physical, and geographical features of Earth	<b>SE/TE:</b> Plate Tectonics, 77 Types of Plate Boundaries, 78
4. Climate is the result of energy transfer among interactions of the atmosphere, hydrosphere, geosphere, and biosphere	<b>SE/TE:</b> Energy From the Sun, 484-487 Wind Patterns in the Atmosphere, 487 The Oceans and Climate, 488-489 Other Factors That Affect Climate, 489-490

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<p>5. There are costs, benefits, and consequences of exploration, development, and consumption of renewable and nonrenewable resources</p>	<p><b>SE/TE:</b>            Central Case, 515            Advantages of Coal, 524            Dwindling Deposits, 527            Drawbacks, 528            Pollution From Fossil Fuels, 530-531            Damage Caused by Extracting Fuels, 532-533            Disadvantages of Foreign Dependence, 534            Benefits and Costs of Nuclear Power, 539-540            21<sup>st</sup> Century Skills, 543            Chapter 17 Assessment, #39, 547            Benefits of Renewable Energy, 550            Benefits of Biomass Energy, 553            Costs of Biomass Energy, 553            Benefits and Costs of Geothermal Energy, 555            Investigative Phenomenon, 558            Benefits and Costs of Hydropower, 558-559            Costs and Benefits, 560            Benefits and Costs of Solar Power, 565-566            Benefits and Costs of Wind Power, 568-569            Benefits and Costs of Energy From Hydrogen, 572            Point Counterpoint, 574-575</p>
<p>6. The interaction of Earth's surface with water, air, gravity, and biological activity causes physical and chemical changes</p>	<p><b>SE/TE:</b>            Positive Feedback Loops, 74            Earth's "Spheres", 74-75            Weathering, 354            Decomposition, 354            Erosion, 358            Chapter 12 Assessment, #19, 388            Figure 6 The Rock Cycle, 397            Increased Erosion, 405            Effects of Acid Deposition, 468</p>
<p>7. Natural hazards have local, national and global impacts such as volcanoes, earthquakes, tsunamis, hurricanes, and thunderstorms</p>	<p><b>SE/TE:</b>            Earthquakes, 277-278            Volcanoes, 279            Storms, 280-282            Avalanches, 282-283            Economic Effects, 500</p>



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<b>UNIT: Globalization: Promise or Peril?</b>	
<b>Grade Level Expectations (GLE)</b>	
<b>History</b>	
Analyze the key concepts of continuity and change, cause and effect, complexity, unity and diversity over time.	For supporting content, please see: <b>SE/TE:</b> Human Population Growth, 8 History of U.S. Environmental Policy, 44-45 Modern U.S. Environmental Policy, 46-47 Lesson 2 Assessment, #2, 47 Chapter 2 Assessment, #32, 61 History of Human Population Growth, 228-229 Recent Trends in Human Population Growth, 230-231 The Post-Industrial Stage, 239 Development of Agriculture, 365-366 Industrial Agriculture, 367-368 Oxygen, 453 Studying Climate Change, 493-495 Science Behind the Stories, 508-509
<b>Geography</b>	
1. Use different types of maps and geographic tools to analyze features on Earth to investigate and solve geographic questions	<b>SE/TE:</b> Map It, 77 Interpret Maps, 201 Map It, 210 Map It, 278 A Closer Look, 314-315 Map It, 366 Map It, 402 Map It, 422 Interpret Maps, 423 Map It, 534

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2. Explain and interpret geographic variables that influence the interaction of people, places, and environments	<b>SE/TE:</b> Human Population Growth, 8 Success Stories, 56-57 Human Impacts, 82 Investigative Phenomenon, 242 Land Clearing, 244 Investigative Phenomenon, 280 Find Out More, 294 Imported Resources, 296 The Dust Bowl, 362 Selective Breeding and Settlement, 366 Central Case, 391 Environmental Damage and Conflicts, 408 Central Case, 419 Central Case, 483 Future Impact on People, 501 Dependence on Foreign Sources, 534-535
3. The interconnected nature of the world, its people and places	<b>SE/TE:</b> Affluent Societies, 242 Increasing Mobility, 264 Imported Resources, 296 Central Case, 391 Dependence on Foreign Sources, 534-535
<b>Economics</b>	
1. Productive resources - natural, human, capital - are scarce; therefore choices are made about how individuals, businesses, governments, and societies allocate these resources	For supporting content, please see: <b>SE/TE:</b> What Is Economics?, 36-37 Human Impacts, 82 A Limited Resource, 420-421 Dwindling Deposits, 527
2. Economic policies impact markets	<b>SE/TE:</b> What Is Economics?, 36-37 Approaches to Environmental Policy, 50-53 Investigative Phenomenon, 52 Ecological Footprints, 61

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3. Government and competition impact markets	For supporting content, please see: <b>SE/TE:</b> What Is Economics?, 36-37 Address Market Failure, 40 What Is Environmental Policy?, 42-43 Approaches to Environmental Policy, 50-53 Investigative Phenomenon, 52
<b>Civics</b>	
1. Purposes of and limitations on the foundations, structures and functions of government	For supporting content, please see: <b>SE/TE:</b> What Is Environmental Policy?, 42-43 Chapter 2 Assessment, #24, 60
2. Analyze how public policy - domestic and foreign - is developed at the local, state, and national levels and compare how policy-making occurs in other forms of government	For supporting content, please see: <b>SE/TE:</b> International Environmental Policy, 48-50 Approaches to Environmental Policy, 50-53 The Environmental Policy Process, 53-55 Lesson 3 Assessment, #3, 55

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