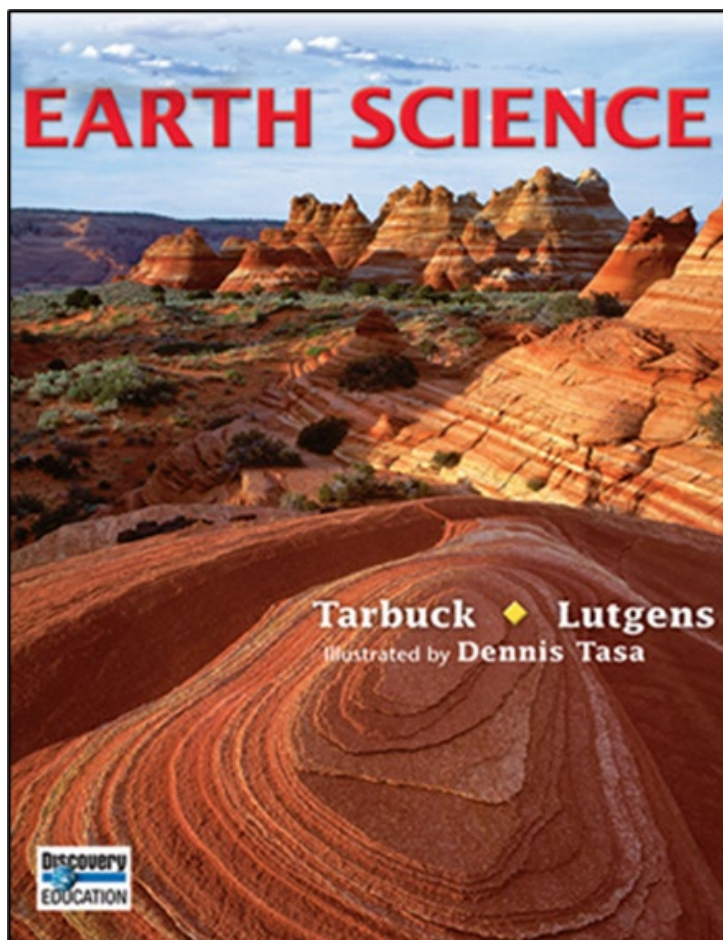


A Correlation of



To the

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**Introduction**

This document demonstrates how **Earth Science** supports the Nebraska College- and Career-Ready Standards for Science 2017: High School Earth & Space Science. Correlation references are to print Student and Teacher Editions, as well as Realize™ digital resources.

Engage in a journey of observation, explanation, and participation with **Earth Science!**

Renowned authors Edward Tarbuck and Frederick Lutgens invite students on a journey of observation, explanation, and participation in the study of Earth's processes. An accessible writing style combined with digital support create a fresh new program that leads your diverse classroom on a path to discovery. Detailed illustrations by Dennis Tasa provide students with a comprehensive and immersive look at the science behind our planet.

The newest edition of Earth Science features support for STEM activities, as well as enhanced resources for both students and teachers:

**21<sup>st</sup> Century Skills:** Each chapter of Earth Science an activity geared toward developing one or 21<sup>st</sup> Century skills. All of these activities task students to capture what they are learning in the science classroom and apply their knowledge to solving real-life problems in order to encourage productive, thoughtful members of the 21<sup>st</sup> century world.

**STEM Activities:** STEM activities support the implementation of the engineering process in an engaging and hands-on way. Excite students with real-world engineering design problem and hands-on inquiry. These activities promote higher-order critical thinking skills and result in improved student student performance. Teachers are provided with point-of-use STEM activities and teaching strategies.

**Savvas Realize:** On savvasrealize.com, you can go digital with online Student Editions and online Teacher Editions, as well as access to editable worksheets.

In addition, *Earth Science* supports the today's diverse classroom with key Spanish resources, including the *Spanish Guided Reading and Study Workbook* and the *Spanish Chapter Tests*.

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<b>(SC.HS.11) Space Systems</b>	
<b>(SC.HS.11.1) Gather, analyze, and communicate evidence to defend that the universe changes over time.</b>	
(SC.HS.11.1.A) Develop a model based on evidence to illustrate the stages of stars, like the sun, and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.	<p><b>SE/TE:</b>            Figure 12 Structure of the Sun, 685            Nuclear Fusion, 689            Earth &amp; Space, Solar Variability and Climate Change, 691            Standardized Test Prep (Questions 3–6), 697            Stellar Evolution, 707–709            Figure 10, 709            Active Art, Lives of Stars, 709            Figure 11, Stellar Evolution, 710            Burnout and Death, 710–712</p> <p><b>TE Only:</b>            Build Science Skills: Use Analogies, 707            Facts and Figures, 709            Facts and Figures, 710            Build Science Skills: Use Analogies, 712;            Reteach, 714            25.5 Assessment: Questions 5–7, 714</p> <p><b>Realize™ Digital Resources:</b>            &gt;Lab Manual&gt;Chapter 22: Origin of Modern Astronomy&gt;Investigation 22: Measuring the Angle of the Sun at Noon            &gt;Lab Manual&gt;Chapter 24: Studying the Sun&gt;Investigation 24: Measuring the Diameter of the Sun            &gt;Reading and Study Workbook&gt;Chapter 24: Studying the Sun&gt;Section 24.3: The Sun            &gt;Reading and Study Workbook&gt;Chapter 25: Beyond Our Solar System&gt;Section 25.1: Properties of Stars            &gt;Reading and Study Workbook&gt;Chapter 25: Beyond Our Solar System&gt;Section 25.2: Stellar Evolution</p>

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<p>(SC.HS.11.1.B) Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.</p>	<p><b>SE/TE:</b> Earth’s Place in the Universe, 6 Expanding Universe, 718–719 The Big Bang, 720–721 Standardized Test Prep, 727</p> <p><b>TE Only:</b> The Birth of the Universe, 698C–698D Address Misconception, 720</p> <p><b>Realize™ Digital Resources:</b> &gt;Lab Manual&gt;Chapter 23: Touring Our Solar System&gt;Investigation 23: Exploring Orbits &gt;Reading and Study Workbook &gt;Chapter 1: Introduction to Earth Science&gt;Section 1.1: What is Earth Science? &gt;Reading and Study Workbook&gt;Chapter 25: Beyond Our Solar System&gt;Section 25.2: Stellar Evolution &gt;Reading and Study Workbook&gt;Chapter 25: Beyond Our Solar System&gt;Section 25.3: The Universe</p>
<p>(SC.HS.11.1.C) Communicate scientific ideas about the way stars, throughout their stellar stages, produce elements.</p>	<p><b>SE/TE:</b> Figure 4 Materials That Formed the Planets, 648 Hertzsprung-Russel Diagram, 704–706 Main Sequence Stage, 708 Red Giant Stage, 709 Death of Massive Stars, 711 Nucleosynthesis, 712 Stellar Remnants, 712–714 Analyze Data, 726</p> <p><b>Realize™ Digital Resources:</b> &gt;Reading and Study Workbook&gt;Chapter 23: Touring Our Solar System&gt;Section 23.1: The Solar System &gt;Reading and Study Workbook&gt;Chapter 25: Beyond Our Solar System&gt;Section 25.1: Properties of Stars &gt;Reading and Study Workbook&gt;Chapter 25: Beyond Our Solar System&gt;Section 25.2: Stellar Evolution &gt;Reading and Study Workbook&gt;Chapter 25: Beyond Our Solar System&gt;Section 25.3: The Universe</p>

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<p>(SC.HS.11.1.D) Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.</p>	<p><b>SE/TE:</b>            Earth-Sun Relationships, 481–482            Ancient Greeks, 615–616            Figure 4, Retrograde Motion, 617            Birth of Modern Astronomy, 617–621            Johannes Kepler, 618            Table 1, Period of Revolution and Solar Distances of Planets, 618            The Solar System Model Evolves, 619            Sir Isaac Newton &amp; Universal Gravitation, 620            22.1 Assessment, 621            Motions of Earth, 622–627            Figure 13: Sidereal Day, 623            Inquiry: Modeling Synodic and Sidereal Months, 636–637</p> <p><b>TE Only:</b>            Common Themes, 612C            Visualizing Planetary Orbits, 618</p> <p><b>Realize™ Digital Resources:</b>            &gt;Lab Manual&gt;Chapter 23: Touring Our Solar System&gt;Investigation 23: Exploring Orbits            &gt;Reading and Study Workbook&gt;Chapter 17: Earth’s Atmosphere&gt; Section 17.1: Atmosphere Characteristics            &gt;Reading and Study Workbook&gt;Chapter 22: Origin of Modern Astronomy&gt;Section 22.1: Early Astronomy            &gt;Reading and Study Workbook&gt;Chapter 22: Origin of Modern Astronomy&gt;Section 22.2: The Earth-Moon-Sun System</p>

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<p><b>(SC.HS.12) Weather and Climate</b></p>	
<p><b>(SC.HS.12.2) Gather, analyze, and communicate evidence to support that Earth's climate and weather are influenced by energy flow through Earth systems.</b></p>	
<p>(SC.HS.12.2.A) Construct an explanation based on evidence for how the sun's energy moves among Earth's systems.</p>	<p><b>SE/TE:</b>            Energy Transfer as Heat, 483–485            Figure 9: Energy Transfer as Heat, 483            What Happens to Solar Radiation? 486–487            How Earth Works: Earth's Atmosphere, 494–495            Inquiry Exploration Lab: Heating Land and Water, 496–497            Powered By the Sun, 588            Inquiry Lab: Quick Lab: Observing How Land and Water Absorb and Release Energy, 590            Climate Changes, 600–603            Solar Variability and Climate Change, 691</p> <p><b>Realize™ Digital Resources:</b>            &gt;Reading and Study Workbook&gt;Chapter 17:            Earth's Atmosphere&gt; Section 17.2: Heating the Atmosphere            &gt;Reading and Study Workbook&gt;Chapter 17:            Earth's Atmosphere&gt; Section 17.3: Temperature Controls</p>

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<p>(SC.HS.12.2.B) Use a model to describe how variations in the flow of energy into and out of Earth’s systems result in changes in climate.</p>	<p><b>SE/TE:</b>            Ancient Climates, 250–251            Quaternary Period, 384–385            Ocean Currents and Climate, 450            Energy Transfer as Heat, 483–485            Figure 9: Energy Transfer as Heat, 483            What Happens to Solar Radiation? 486–487            How Earth Works: Earth’s Atmosphere, 494–495            Inquiry Exploration Lab: Heating Land and Water, 496–497            Water’s Changes of State, 504–506            Factors Affecting Wind, 534–536            El Nino and La Nina, 546–547            Powered By The Sun, 588            Inquiry Lab: Quick Lab: Observing How Land and Water Absorb and Release Energy, 590            Climate Changes, 600–603            Solar Variability and Climate Change, 691</p> <p><b>Realize™ Digital Resources:</b>            &gt;Reading and Study Workbook&gt;Chapter 9: Plate Tectonics&gt;Section 9.1: Continental Drift            &gt;Reading and Study Workbook&gt;Chapter 13: Earth’s History&gt;Section 13.3: Mesozoic Era: Age of Reptiles            &gt;Reading and Study Workbook&gt;Chapter 17: Earth’s Atmosphere&gt; Section 17.2: Heating the Atmosphere            &gt;Reading and Study Workbook&gt;Chapter 17: Earth’s Atmosphere&gt; Section 17.3: Temperature Controls            &gt;Reading and Study Workbook&gt;Chapter 18: Moisture, Clouds, and Precipitation&gt;Section 18.1: Water in the Atmosphere            &gt;Reading and Study Workbook&gt;Chapter 19: Air Pressure and Wind&gt;Section 19.2: Pressure Center and Winds</p>



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<p>(SC.HS.12.2.C) Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate and scale of global or regional climate changes.</p>	<p><b>SE/TE:</b>            Temperature Controls, 488–492            Inquiry Exploration Lab, 550            Circulation in the Atmosphere, 591            Natural Processes That Change Climate, 600–601            Human Impact on Climate, 602–603            Inquiry-Human Impact of Climate and Weather, 606–607</p> <p><b>TE Only:</b>            Integrate Biology, 197            Common Themes &amp; The History of Climate, 586C</p> <p><b>Realize™ Digital Resources:</b>            &gt;Lab Manual&gt;Chapter 21: Climate&gt;Investigation 21: Modeling the Greenhouse Effect            &gt;Reading and Study Workbook&gt;Chapter 17: Earth’s Atmosphere&gt; Section 17.3: Temperature Controls            &gt;Reading and Study Workbook&gt;Chapter 19: Air Pressure and Wind&gt;Section 19.3: Regional Wind Systems            &gt;Reading and Study Workbook&gt;Chapter 21: Climate&gt;Section 21.3: Climate Changes</p>

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<p>(SC.HS.12.2.D) Evaluate the validity and reliability of past and present models of Earth conditions to make projections of future climate trends and their impacts.</p>	<p><b>SE/TE:</b>            Ancient Climates, 250–251            Fossils and Past Environments, 345            Seafloor Sediment and Climate Data, 409            Ocean Currents and Climate, 450            Inquiry Try It!: Global Climate Change: What Is Causing It?, 587            Factors That Affect Climate, 588–591            Figure 9: Global Climates, 594–595            Natural Processes that Change Climate, 600–601            Human Impact on Climate, 602–603</p> <p><b>TE Only:</b>            Integrate Biology, 345            The History of Climate, 586C–586D</p> <p><b>Realize™ Digital Resources:</b>            &gt;Lab Manual&gt;Chapter 21: Climate&gt;Investigation 21: Modeling the Greenhouse Effect            &gt;Reading and Study Workbook&gt;Chapter 17: Earth’s Atmosphere&gt; Section 17.3: Temperature Controls            &gt;Lab Manual&gt;Chapter 20: Weather Patterns and Severe Storms&gt;Investigation 20A: Analyzing Severe Weather Data            &gt;Reading and Study Workbook&gt;Chapter 21: Climate&gt;Section 21.3: Climate Changes</p>

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<b>(SC.HS.13) Earth's Systems</b>	
<b>(SC.HS.13.3) Gather, analyze, and communicate evidence to defend the position that Earth's systems are interconnected and impact one another.</b>	
(SC.HS.13.3.A) Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.	<p><b>SE/TE:</b>            What Is a System, 18            Earth As a System, 19–20            People and the Environment, 20–21            Mechanical Weathering, 126–128            Soil Erosion, 140–142            Triggers of Mass Movements, 144–145 Types of Mass Movements, 145–147            Wells 173–174            Figure 17 &amp; Figure 18, 174–175            Folds, 312–313            Continental Accretion, 324–325            Inquiry Quick Lab: Rates of Mountain Building, 323            Earth &amp; Its Systems: Mountain Building Away from Plate Margins, 326–327            Factors That Affect Climate, 588–591            Natural Processes that Change Climate, 600–601            Human Impact on Climate, 602–603</p> <p><b>Realize™ Digital Resources:</b>            &gt;Lab Manual&gt;Chapter 7: Glaciers, Deserts, and Wind&gt;Investigation 7: Continental Glaciers Change Earth's Topography            &gt;Reading and Study Workbook &gt;Chapter 1: Introduction to Earth Science&gt;Section 1.4: Earth System Science            &gt;Reading and Study Workbook &gt;Chapter 5: Weathering, Soil, and Mass Movements&gt;Section 5.1: Weathering            &gt;Reading and Study Workbook &gt;Chapter 5: Weathering, Soil, and Mass Movements&gt;Section 5.2: Soil            &gt;Reading and Study Workbook &gt;Chapter 5: Weathering, Soil, and Mass Movements&gt;Section 5.3: Mass Movements</p>

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<p>(SC.HS.13.3.B) Develop a model based on evidence of Earth's interior to describe the cycling of matter.</p>	<p><b>SE/TE:</b>  The Rock Cycle, 67–68  The Carbon Cycle, 85  Seismic Waves, 222–223  The Process of Sea-Floor Spreading, 256–257  Figure 10: Sea-Floor Spreading and Subduction, 257  What Causes Plate Motions? 270  Plate Motion Mechanisms, 271  Figure 2.3, Whole Mantle Convection, 271</p> <p><b>TE Only:</b>  Teacher Demo: Seismic Waves, 223  Build Science Skills, Use models, 270</p> <p><b>Realize™ Digital Resources:</b>  &gt;Lab Manual&gt;Chapter 8: Earthquakes and Earth's Interior&gt;Investigation 8A: Modeling Liquefaction  &gt;Reading and Study Workbook &gt;Chapter 3: Rocks&gt;Section 3.1: The Rock Cycle</p>
<p>(SC.HS.13.3.C) Construct an argument based on evidence to explain the multiple processes that cause Earth's plates to move.</p>	<p><b>SE/TE:</b>  Layers Defined by Composition, 234-235  The Process of Sea-Floor Spreading, 256-257  Figure 10: Sea-Floor Spreading and Subduction, 257  Divergent Boundaries, 264  Convergent Boundaries, 265-267  Transform Fault Boundaries, 268  What Causes Plate Motions?, 270  Plate Motion Mechanisms, 271</p> <p><b>TE Only:</b>  Teacher Demo, Observing Plate Movement, 284</p> <p><b>Realize™ Digital Resources:</b>  &gt;Reading and Study Workbook&gt;Chapter 9: Plate Tectonics&gt;Section 9.2: Sea-Floor Spreading  &gt;Reading and Study Workbook&gt;Chapter 9: Plate Tectonics&gt;Section 9.4: Mechanisms of Plate Motions</p>

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<p>(SC.HS.13.3.D) Plan and conduct an investigation of the properties of water and their effects on Earth materials, surface processes, and groundwater systems.</p>	<p>For supporting content, please see:  <b>SE/TE:</b>            Inquiry Try It!, 125            Mechanical Weathering, 126–132            Inquiry Exploration Lab: Effect of Temperature on Chemical Weathering, 150</p> <p><b>TE Only:</b>            Build Science Skills, 195</p> <p><b>Realize™ Digital Resources:</b>            &gt;Lab Manual&gt;Chapter 5: Weathering, Soil, and Mass Movements&gt;Investigation 5: Some Factors That Affect Soil Erosion            &gt;Lab Manual&gt;Chapter 6: Running Water and Groundwater&gt;Investigation 6A: Rivers Shape the Land</p>
<p>(SC.HS.13.3.E) Develop a quantitative model to describe the cycling of carbon and other nutrients among the hydrosphere, atmosphere, geosphere, and biosphere, today and in the geological past.</p>	<p><b>SE/TE:</b>            Earth's Major Spheres, 7–9            Mineral Groups, 38            The Carbon Cycle, 85            Earth's Blanket of Air, 110            Composition of the Atmosphere, 477–478            Human Impact on Climate, 602–603</p> <p><b>TE Only:</b>            Earth Science Refresher, 186C</p> <p><b>Realize™ Digital Resources:</b>            &gt;Lab Manual&gt;Chapter 17: Earth's Atmosphere&gt;Investigation 17B: Investigating Factors That Control Temperature            &gt;Lab Manual&gt;Chapter 21: Climate&gt;Investigation 21: Modeling the Greenhouse Effect            &gt;Reading and Study Workbook &gt;Chapter 3: Rocks&gt;Section 3.4: Metamorphic Rocks            &gt;Reading and Study Workbook &gt;Chapter 4: Earth's Resources&gt;Section 4.4: Protecting Resources            &gt;Reading and Study Workbook&gt;Chapter 17: Earth's Atmosphere&gt;Section 17.1: Atmosphere Characteristics            &gt;Reading and Study Workbook&gt;Chapter 21: Climate&gt;Section 21.3: Climate Changes</p>

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<b>(SC.HS.14) History of Earth</b>	
<b>(SC.HS.14.4) Gather, analyze, and communicate evidence to interpret Earth's history.</b>	
(SC.HS.14.4.A) Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the differences in age, structure, and composition of crustal and sedimentary rocks.	<p><b>SE/TE:</b>            Continental Drift, 248–253            Sea Floor Spreading, 254–260            Earth's Moving Plates, 261–263            Divergent Boundaries, 264            Convergent Boundaries, 265–267            Transform Fault Boundaries, 268            What Causes Plate Motions?, 270–271            Paleomagnetism and the Ocean Floor, 272–273            Visual Summary, Figure 5, 282–283            Convergent Boundary Mountains, 320–322            Inquiry Lab: Rates of Mountain Building, 323 11.3            Assessment, 325            Earth &amp; Its Systems, 326–327            Mid-Ocean Ridges, 405            Seafloor Sediment and Climate Data, 409            Stem Activity: Plate Tectonics, 730</p> <p><b>TE Only:</b>            Integrate History, 256            Teacher Demo, Observing Plate Movement, 284</p> <p><b>Realize™ Digital Resources:</b>            &gt;Lab Manual&gt;Chapter 9: Plate            Tectonics&gt;Investigation 9: Modeling a Plate            Boundary            &gt;Reading and Study Workbook&gt;Chapter 9: Plate            Tectonics&gt;Section 9.1: Continental Drift            &gt;Reading and Study Workbook&gt;Chapter 9: Plate            Tectonics&gt;Section 9.2: Sea-Floor Spreading            &gt;Reading and Study Workbook&gt;Chapter 9: Plate            Tectonics&gt;Section 9.3: Theory of Plate Tectonics            &gt;Reading and Study Workbook&gt;Chapter 9: Plate            Tectonics&gt;Section 9.4: Mechanisms of Plate            Motions</p>

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<p>(SC.HS.14.4.B) Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to reconstruct Earth's formation and early history.</p>	<p><b>SE/TE:</b>            Formation of Earth, 4–5            Discovering Earth's Composition Uniformitarianism, 336            Relative Dating, 337–340            Correlation, 340–341            12.1 Assessment, 341            The Fossil Record, 344–345            Dating with Radioactivity, 347–351            Inquiry Try It! What are Fossils? 363            Inquiry Exploration Lab: Modeling the Geologic Time Scale, 386–387            The Lunar Surface, 631            Lunar History, 633–634            The Planets: An Overview, 645–646            Formation of the Solar System, 647–648</p> <p><b>TE Only:</b>            Use Visuals: Figure 14, 348            Build Science Skills: Apply Concepts, 348            Relate Cause and Effect, 350            Before You Teach Earth's History, 362C–362D</p> <p><b>Realize™ Digital Resources:</b>            &gt;Reading and Study Workbook&gt;Chapter 12:            Geologic Time&gt;Section 12.1: Discovering Earth's            History            &gt;Reading and Study Workbook&gt;Chapter 12:            Geologic Time&gt;Section 12.2: Fossils: Evidence of            Past Life            &gt;Reading and Study Workbook&gt;Chapter 12:            Geologic Time&gt;Section 12.3: Dating With            Radioactivity            &gt;Reading and Study Workbook&gt;Chapter 12:            Geologic Time&gt;Section 12.4: The Geologic Time            Scale</p>

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<p>(SC.HS.14.4.C) Develop a model to illustrate how Earth’s internal and surface processes operate over time to form, modify, and recycle continental and ocean floor features.</p>	<p><b>SE/TE:</b>            Earth’s Major Spheres, 7–9            Earth’s Changing Surface, 9–10            The Rock Cycle, 67–69            Formation of Sedimentary Rocks, 76            Formation of Mineral Deposits, 98–100            Landscapes Shaped by Wind, 203–205            Layers Defined by Composition, 233–234            Layers Defined by Physical Properties, 234–235            Evidence for Continental Drift, 249–250            Figure 10 Sea-Floor Spreading and Subduction, 257            Earth’s Moving Plates, 261–263            Divergent Boundaries, 264            Convergent Boundaries, 265–267            Transform Fault Boundaries, 268            Earth &amp; Its Systems: Plate Tectonics into the Future, 269            Plate Motion Mechanisms, 271            Inquiry: Exploration Lab? Paleomagnetism and the Ocean Floor, 272–273            Volcanoes and Plate Tectonics, 280–285            Other Volcanic Landforms, 292–293            Intrusive Igneous Activity, 295–297            Principle of Isostasy, 310–311            Uniformitarianism, 336            Relative Dating, 337–341            Precambrian Time, 364–366            Ocean Floor Features, 401–404            Mid-Ocean Ridges, 405–406            Explaining Coral Atolls—Darwin’s Hypothesis, 406</p> <p><b>TE Only:</b>            Earth Science Refresher, 306C</p> <p><b>Realize™ Digital Resources:</b>            &gt;Lab Manual&gt;Chapter 8: Earthquakes and Earth’s Interior&gt;Investigation 8A: Modeling Liquefaction            &gt;Lab Manual&gt;Chapter 9: Plate Tectonics&gt;Investigation 9: Modeling a Plate Boundary</p>



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<p>(SC.HS.14.4.D) Construct an argument based on evidence to validate coevolution of Earth’s systems and life on Earth.</p>	<p><b>SE/TE:</b>            People and the Environment, 20–21            Soil Formation, 135–137            Discovering Earth’s History, 336–341            Types of Fossils, 342–343            The Fossil Record, 344–346            Inquiry-Fossil Occurrence and the Age of Rocks, 356–357            How Earth Works, 438–439            World Soils, 755–757</p> <p><b>Realize™ Digital Resources:</b>            &gt;Lab Manual&gt;Chapter 13: Earth’s History&gt;Investigation 13: Determining Geologic Ages            &gt;Lab Manual&gt;Chapter 19: Air Pressure and Wind&gt;Investigation 19: Analyzing Pressure Systems            &gt;Lab Manual&gt;Chapter 20: Weather Patterns and Severe Storms&gt;Investigation 20A: Analyzing Severe Weather Data            &gt;Reading and Study Workbook &gt;Chapter 5: Weathering, Soil, and Mass Movements&gt;Section 5.2: Soil            &gt;Reading and Study Workbook&gt;Chapter 12: Geologic Time&gt;Section 12.1: Discovering Earth’s History            &gt;Reading and Study Workbook&gt;Chapter 12: Geologic Time&gt;Section 12.2: Fossils: Evidence of Past Life            &gt;Reading and Study Workbook&gt;Chapter 12: Geologic Time&gt;Section 12.3: Dating With Radioactivity            &gt;Reading and Study Workbook&gt;Chapter 12: Geologic Time&gt;Section 12.4: The Geologic Time Scale</p>

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<b>(SC.HS.15) Sustainability</b>	
<b>(SC.HS.15.5) Gather, analyze, and communicate evidence to describe the interactions between society, environment, and economy.</b>	
(SC.HS.15.5.A) Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.	<p><b>SE/TE:</b>  Environmental Problems, 21–22  Freshwater Pollution, 108–109  Land Resources, 111–112  Protecting Resources, 113–116 Assessment 4.4, 117  Earth and Its Resources, 117  Environmental Problems Associated With Groundwater, 174–176  Earthquake Hazards, 228–232  Tsunamis, 230  Assessment 8.3, 232  Tornado Warnings, 574  How Earth Works, 578–579  Critical Thinking, 584  Concepts in Action, 584</p> <p><b>TE Only:</b>  Integrate Biology, 197  Integrate Biology, 317  Integrate Social Studies, 574  The History of Climate, 586C–586D</p> <p><b>Realize™ Digital Resources:</b>  &gt;Lab Manual&gt;Chapter 4: Earth’s Resources&gt;Investigation 4B: Desalinization by Distillation  &gt;Lab Manual&gt;Chapter 21: Climate&gt;Investigation 21: Modeling the Greenhouse Effect  &gt;Reading and Study Workbook&gt;Chapter 17: Earth’s Atmosphere&gt; Section 17.3: Temperature Controls  &gt;Reading and Study Workbook&gt;Chapter 19: Air Pressure and Wind&gt;Section 19.3: Regional Wind Systems  &gt;Reading and Study Workbook&gt;Chapter 21: Climate&gt;Section 21.3: Climate Changes</p>

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<p>(SC.HS.15.5.B) Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.</p>	<p><b>SE/TE:</b>            Petroleum and Natural Gas, 96            Tar Sands and Oil Shale, 97            Protecting Resources, 113–116            Environmental Problems Associated with Groundwater, 174–176            Gas Hydrates, 411            Manganese Nodules, 413</p> <p><b>Realize™ Digital Resources:</b>            &gt;Lab Manual&gt;Chapter 4: Earth’s Resources&gt;Investigation 4A: Recovering Oil            &gt;Reading and Study Workbook &gt;Chapter 4: Earth’s Resources&gt;Section 4.1: Energy and Mineral Resources            &gt;Reading and Study Workbook &gt;Chapter 4: Earth’s Resources&gt;Section 4.3: Water, Air, and Land Resources            &gt;Reading and Study Workbook&gt;Chapter 6: Running Water and Groundwater&gt;Section 6.3: Water Beneath the Surface            &gt;Reading and Study Workbook&gt;Chapter 14: The Ocean Floor&gt;Section 14.4: Resources From the Seafloor</p>
<p>(SC.HS.15.5.C) Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.</p>	<p>For supporting content, please see:  <b>SE/TE:</b>            Protecting Resources, 113–116            Environmental Problems Associated with Groundwater, 174–176</p> <p><b>Realize™ Digital Resources:</b>            &gt;Lab Manual&gt;Chapter 4: Earth’s Resources&gt;Investigation 4A: Recovering Oil            &gt;Lab Manual&gt;Chapter 5: Weathering, Soil, and Mass Movements&gt;Investigation 5: Some Factors That Affect Soil Erosion</p>

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<p>(SC.HS.15.5.D) Evaluate or refine a technological solution that increases positive impacts of human activities on natural systems.</p>	<p><b>SE/TE:</b>            People and the Environment, 20–21            Freshwater Pollution, 108–109            Land Resources, 111–112            Keeping Water Clean and Safe, 114            Caring for Land Resources, 115–116            Earth and Its Resources, 117            Inquiry Exploration Lab: Finding Products That Best Conserve Resources, 118–119            Environmental Problems Associated With Groundwater, 174–176</p> <p><b>Realize™ Digital Resources:</b>            &gt;Lab Manual&gt;Chapter 17: Earth’s Atmosphere&gt;            Investigation 17B: Investigating Factors That Control Temperature</p>
<p>(SC.HS.15.5.E) Evaluate a solution to a complex real-world problem based on prioritized criteria and tradeoffs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.</p>	<p><b>SE/TE:</b>            Tar Sands and Oil Shale, 97–98            Alternative Energy Solutions, 102–107            Reading Checkpoint, 103 Assessment 4.2, 107            Stem Activity: The Bycatch Problem, 728            Stem Activity: Space Weather Readiness, 731</p> <p><b>Realize™ Digital Resources:</b>            &gt;Lab Manual&gt;Chapter 14: The Ocean Floor&gt;Investigation 14: Modeling the Ocean Floor            &gt;Lab Manual&gt;Chapter 16: The Dynamic Ocean&gt;Investigation 16: Shoreline Features            &gt;Reading and Study Workbook &gt;Chapter 4: Earth’s Resources&gt;Section 4.2: Alternate Energy Sources</p>

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<p>(SC.HS.15.5.F) Use a computational representation to illustrate the relationships among Earth systems and the degree to which those relationships are being modified due to human activity.</p>	<p><b>SE/TE:</b>            Inquiry Exploration Lab, 210–211            How Earth Works, 494–495            Figure 3, Climate Data for Two Cities, 589            Figure 15, Changes in CO<sub>2</sub> Levels, 602            Inquiry Exploration Lab, 606–607</p> <p><b>Realize™ Digital Resources:</b>            &gt;Lab Manual&gt;Chapter 17: Earth’s Atmosphere&gt;            Investigation 17A: Determining How Temperature            Changes with Altitude            &gt;Lab Manual&gt;Chapter 17: Earth’s Atmosphere&gt;            Investigation 17B: Investigating Factors That            Control Temperature            &gt;Reading and Study Workbook&gt;Chapter 7:            Glaciers, Deserts, and Wind&gt;Section 7.3:            Landscapes Shaped by Wind            &gt;Reading and Study Workbook&gt;Chapter 17:            Earth’s Atmosphere&gt; Section 17.3: Temperature            Controls            &gt;Reading and Study Workbook&gt;Chapter 21:            Climate&gt;Section 21.1: Factors That Affect Climate</p>

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