

EarthComm, Second Edition

Project-Based Space and Earth System Science

Developed by The American Geological Institute in association with It's About Time

© Copyright 2012 It's About Time. All rights reserved.

Correlation to

The Next Generation Science Standards (NGSS)

Achieve, Inc. on behalf of the twenty-six states and partners that collaborated on the NGSS

© Copyright 2013 Achieve, Inc. All rights reserved.

Correlation of EC Sections to NGSS Standards

Chapter 1 Astronomy

EarthComm Section	Section 1 The Size and Scale of the Universe
Correlating Performance Expectation	HS-ESS1-4. Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.

EarthComm Section	Section 2 Locating Astronomical Objects in the Night Sky
Correlating Performance Expectation	HS-ESS1-4. Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.

EarthComm Section	Section 3 Origin of the Universe and the Solar System
Correlating Performance Expectation	HS-ESS1-2. 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. HS-ESS1-6. Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.

EarthComm Section	Section 4 Orbits and Effects
Correlating Performance Expectation	HS-ESS1-4. Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.

EarthComm Section	Section 5 The Sun-Earth-Moon System
Correlating Performance Expectation	HS-ESS1-4. Use mathematical or computational representations to predict the motion of orbiting objects in the solar system. HS-ESS1-6. Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.

EarthComm Section	Section 6 Impact Events and the Earth System
Correlating	HS-ESS1-6. Apply scientific reasoning and evidence from ancient Earth materials,

Correlation of EC Sections to NGSS Standards

Performance Expectation	meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.
--------------------------------	--

EarthComm Section	Section 7 The Electromagnetic Spectrum
Correlating Performance Expectation	HS-ESS1-1. Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy in the form of radiation.

EarthComm Section	Section 8 The Sun and its Effects
Correlating Performance Expectation	HS-ESS1-1. Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy in the form of radiation.

EarthComm Section	Section 9 The Lives of Stars
Correlating Performance Expectation	HS-ESS1-1. Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy in the form of radiation. HS-ESS1-3. Communicate scientific ideas about the way stars, over their life cycle, produce elements.

Correlation of EC Sections to NGSS Standards

Chapter 2 Plate Tectonics

EarthComm Section	Section 1 Where are the Volcanoes and Earthquakes?
Correlating Performance Expectation	<p>HS-ESS2-1. Develop a model to illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.</p> <p>HS-ESS2-3. Develop a model based on evidence of Earth’s interior to describe the cycling of matter by thermal convection.</p>

EarthComm Section	Section 2 Earth’s Moving Lithospheric Plates
Correlating Performance Expectation	<p>HS-ESS2-1. Develop a model to illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.</p> <p>HS-ESS2-3. Develop a model based on evidence of Earth’s interior to describe the cycling of matter by thermal convection.</p>

EarthComm Section	Section 3 What Drives the Plates?
Correlating Performance Expectation	<p>HS-ESS2-1. Develop a model to illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.</p> <p>HS-ESS2-3. Develop a model based on evidence of Earth’s interior to describe the cycling of matter by thermal convection.</p>

EarthComm Section	Section 4 Plate Motions and Plate Interactions
Correlating Performance Expectation	<p>HS-ESS1-5. Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.</p> <p>HS-ESS2-1. Develop a model to illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.</p>

EarthComm Section	Section 5 Plate Boundary Environments
Correlating Performance Expectation	<p>HS-ESS1-5. Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.</p> <p>HS-ESS2-1. Develop a model to illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.</p>

Correlation of EC Sections to NGSS Standards

EarthComm Section	Section 6 The Changing Geography of Your Community
Correlating Performance Expectation	HS-ESS1-5. Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks. HS-ESS2-1. Develop a model to illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.

EarthComm Section	Section 7 Volcanic Landforms
Correlating Performance Expectation	HS-ESS2-1. Develop a model to illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.

EarthComm Section	Section 8 Volcanic Hazards: Flows
Correlating Performance Expectation	HS-ESS3-1. 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.

EarthComm Section	Section 9 Volcanoes and the Atmosphere
Correlating Performance Expectation	HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems. HS-ESS2-4. Use a model to describe how variations in the flow of energy into and out of Earth’s systems result in changes in climate. HS-ESS2-6. Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere. HS-ESS3-1. 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.

EarthComm Section	Section 10 Earthquakes
Correlating Performance Expectation	HS-ESS2-3. Develop a model based on evidence of Earth’s interior to describe the cycling of matter by thermal convection.

EarthComm Section	Section 11 Detecting Earthquake Waves
Correlating Performance Expectation	HS-ESS2-3. Develop a model based on evidence of Earth’s interior to describe the cycling of matter by thermal convection.

Correlation of EC Sections to NGSS Standards

EarthComm Section	Section 12 Earthquake Magnitude
Correlating Performance Expectation	HS-ESS3-1. 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.

Chapter 3 Minerals, Rocks, and Structures

EarthComm Section	Section 1 What Are Minerals?
Correlating Performance Expectation	HS-ESS1-5. Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.

EarthComm Section	Section 2 Igneous Rocks and the Geologic History of Your Community
Correlating Performance Expectation	HS-ESS1-5. Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks. HS-ESS2-3. Develop a model based on evidence of Earth’s interior to describe the cycling of matter by thermal convection. HS-ESS2-5. Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.

EarthComm Section	Section 3 Sedimentary Rocks and the Geologic History of Your Community
Correlating Performance Expectation	HS-ESS1-5. Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks. HS-ESS2-5. Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.

EarthComm Section	Section 4 Metamorphic Rocks and the Geologic History of Your Community
Correlating Performance Expectation	HS-ESS1-5. Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.

EarthComm Section	Section 5 Rock Units and Your Community
Correlating Performance Expectation	HS-ESS1-5. Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.

EarthComm Section	Section 6 Structural Geology and Your Community
Correlating Performance Expectation	HS-ESS1-5. Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.

Correlation of EC Sections to NGSS Standards

EarthComm Section	Section 7 Reading the Geologic History of Your Community
Correlating Performance Expectation	HS-ESS1-5. Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.

EarthComm Section	Section 8 Geology of the United States
Correlating Performance Expectation	HS-ESS1-5. Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.

Correlation of EC Sections to NGSS Standards

Chapter 4 Surface Processes

EarthComm Section	Section 1 The Water Cycle
Correlating Performance Expectation	<p>HS-ESS2-1. Develop a model to illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.</p> <p>HS-ESS2-2. 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> <p>HS-ESS2-5. Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.</p>

EarthComm Section	Section 2 Rivers and Drainage Basins
Correlating Performance Expectation	<p>HS-ESS2-1. Develop a model to illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.</p> <p>HS-ESS2-2. 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> <p>HS-ESS2-5. Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.</p>

EarthComm Section	Section 3 Slopes and Landscapes
Correlating Performance Expectation	<p>HS-ESS2-1. Develop a model to illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.</p> <p>HS-ESS2-2. 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> <p>HS-ESS2-5. Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.</p> <p>HS-ESS3-1. 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>

EarthComm Section	Section 4 High-Gradient Streams
Correlating Performance Expectation	<p>HS-ESS2-1. Develop a model to illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.</p> <p>HS-ESS2-2. 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> <p>HS-ESS2-5. Plan and conduct an investigation of the properties of water and its effects</p>

Correlation of EC Sections to NGSS Standards

	<p>on Earth materials and surface processes. HS-ESS3-1. 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>
--	---

EarthComm Section	Section 5 Low-Gradient Streams
Correlating Performance Expectation	<p>HS-ESS2-1. Develop a model to illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features. HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth’s surface can create feedbacks that cause changes to other Earth systems. HS-ESS2-5. Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.</p>

EarthComm Section	Section 6 Sediments in Streams
Correlating Performance Expectation	<p>HS-ESS2-1. Develop a model to illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features. HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth’s surface can create feedbacks that cause changes to other Earth systems. HS-ESS2-5. Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.</p>

EarthComm Section	Section 7 Soil and Land Use
Correlating Performance Expectation	<p>HS-ESS2-1. Develop a model to illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features. HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth’s surface can create feedbacks that cause changes to other Earth systems. HS-ESS2-5. Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes. HS-ESS3-1. 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>

EarthComm Section	Section 8 Glaciers and the Landscape
Correlating Performance Expectation	<p>HS-ESS2-1. Develop a model to illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features. HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth’s</p>

Correlation of EC Sections to NGSS Standards

	<p>surface can create feedbacks that cause changes to other Earth systems. HS-ESS2-5. Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.</p>
--	--

EarthComm Section	Section 9 Wind and the Landscape
Correlating Performance Expectation	<p>HS-ESS2-1. Develop a model to illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features. HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems. HS-ESS2-5. Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.</p>

EarthComm Section	Section 10 Coastal Processes
Correlating Performance Expectation	<p>HS-ESS2-1. Develop a model to illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features. HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems. HS-ESS2-5. Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.</p>

Correlation of EC Sections to NGSS Standards

Chapter 5 Winds, Oceans, Weather, and Climate

EarthComm Section	Section 1 Global Wind Patterns and Weather
Correlating Performance Expectation	HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.

EarthComm Section	Section 2 Weather Basics
Correlating Performance Expectation	HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.

EarthComm Section	Section 3 Thunderstorms and Flash Floods
Correlating Performance Expectation	HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems. HS-ESS3-1. 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.

EarthComm Section	Section 4 Severe Winds and Tornadoes
Correlating Performance Expectation	HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems. HS-ESS3-1. 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.

EarthComm Section	Section 5 Tropical Storms and Hurricanes
Correlating Performance Expectation	HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems. HS-ESS3-1. 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.

EarthComm Section	Section 6 The Surface Circulation of the Oceans
Correlating	HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth's

Correlation of EC Sections to NGSS Standards

Performance Expectation	surface can create feedbacks that cause changes to other Earth systems.
--------------------------------	---

EarthComm Section	Section 7 The Deep Circulation of the Ocean
Correlating Performance Expectation	HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.

EarthComm Section	Section 8 El Niño and Ocean Circulation
Correlating Performance Expectation	HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.

EarthComm Section	Section 9 Present-Day Climate in Your Community
Correlating Performance Expectation	HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems. HS-ESS2-4. Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.

Correlation of EC Sections to NGSS Standards

Chapter 6 Climate Change

EarthComm Section	Section 1 Paleoclimates
Correlating Performance Expectation	<p>HS-ESS2-4. 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>HS-ESS3-5. Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.</p>

EarthComm Section	Section 2 How Do Earth’s Orbital Variations Affect Global Climate?
Correlating Performance Expectation	<p>HS-ESS2-2. 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> <p>HS-ESS2-4. 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>HS-ESS3-5. Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.</p>

EarthComm Section	Section 3 How Do Plate Tectonics and Ocean Currents Affect Global Climate?
Correlating Performance Expectation	<p>HS-ESS2-2. 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> <p>HS-ESS2-4. 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>HS-ESS2-6. Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.</p> <p>HS-ESS3-5. Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.</p>

EarthComm Section	Section 4 How Do Carbon Dioxide Concentrations in the Atmosphere Affect Global Climate?
Correlating Performance Expectation	<p>HS-ESS2-2. 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> <p>HS-ESS2-4. 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>HS-ESS2-6. Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.</p> <p>HS-ESS3-1. 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> <p>HS-ESS3-5. Analyze geoscience data and the results from global climate models to</p>

Correlation of EC Sections to NGSS Standards

	<p>make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.</p> <p>HS-ESS3-6. Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.</p>
--	---

EarthComm Section	Section 5 How Do Glaciers Affect Sea Level?
Correlating Performance Expectation	<p>HS-ESS2-2. 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> <p>HS-ESS2-4. 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>HS-ESS3-1. 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> <p>HS-ESS3-5. Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.</p>

EarthComm Section	Section 6 How Do Rising and Falling Sea Levels Modify the Landscape?
Correlating Performance Expectation	<p>HS-ESS2-2. 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> <p>HS-ESS2-4. 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>HS-ESS3-1. 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> <p>HS-ESS3-5. Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.</p>

EarthComm Section	Section 7 How Might Global Warming Affect Your Community?
Correlating Performance Expectation	<p>HS-ESS2-2. 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> <p>HS-ESS2-4. 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>HS-ESS2-6. Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.</p> <p>HS-ESS3-1. 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> <p>HS-ESS3-5. Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.</p>

Correlation of EC Sections to NGSS Standards

Chapter 7 Earth’s Natural Resources

EarthComm Section	Section 1 Electricity and Your Community
Correlating Performance Expectation	<p>HS-ESS3-1. 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> <p>HS-ESS3-2. Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.</p> <p>HS-ESS3-3. Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.</p>

EarthComm Section	Section 2 Energy From Coal
Correlating Performance Expectation	<p>HS-ESS3-1. 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> <p>HS-ESS3-2. Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.</p> <p>HS-ESS3-3. Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.</p>

EarthComm Section	Section 3 Energy From Petroleum and Natural Gas
Correlating Performance Expectation	<p>HS-ESS3-1. 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> <p>HS-ESS3-2. Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.</p> <p>HS-ESS3-3. Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.</p>

EarthComm Section	Section 4 Environmental Impacts and Energy Consumption
Correlating Performance Expectation	<p>HS-ESS2-6. Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.</p> <p>HS-ESS3-1. 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> <p>HS-ESS3-2. Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.</p>

Correlation of EC Sections to NGSS Standards

	<p>HS-ESS3-4. Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.</p> <p>HS-ESS3-6. Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.</p>
--	---

EarthComm Section	Section 5 Renewable Energy Sources – Solar and Wind
Correlating Performance Expectation	<p>HS-ESS3-1. 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> <p>HS-ESS3-2. Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.</p> <p>HS-ESS3-4. Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.</p>

EarthComm Section	Section 6 Earth’s Mineral Resources
Correlating Performance Expectation	<p>HS-ESS3-1. 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> <p>HS-ESS3-2. Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.</p> <p>HS-ESS3-3. Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.</p>

EarthComm Section	Section 7 The Costs and Benefits of Mining Minerals
Correlating Performance Expectation	<p>HS-ESS3-1. 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> <p>HS-ESS3-2. Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.</p> <p>HS-ESS3-4. Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.</p>

EarthComm Section	Section 8 Water Supplies
Correlating Performance Expectation	<p>HS-ESS3-1. 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> <p>HS-ESS3-3. Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and</p>

Correlation of EC Sections to NGSS Standards

	biodiversity.
--	---------------

EarthComm Section	Section 9 Using and Conserving Water
Correlating Performance Expectation	HS-ESS3-1. 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. HS-ESS3-4. Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.

EarthComm Section	Section 10 Water Pollution and Treatment
Correlating Performance Expectation	HS-ESS3-1. 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. HS-ESS3-4. Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.

Chapter 8 Earth System Evolution

EarthComm Section	Section 1 The Evolution of the Geosphere
Correlating Performance Expectation	<p>HS-ESS1-5. Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.</p> <p>HS-ESS1-6. Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth’s formation and early history.</p> <p>HS-ESS2-7. Construct an argument based on evidence about the simultaneous coevolution of Earth’s systems and life on Earth.</p>

EarthComm Section	Section 2 The Evolution of the Fluid Spheres
Correlating Performance Expectation	<p>HS-ESS2-6. Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.</p> <p>HS-ESS2-7. Construct an argument based on evidence about the simultaneous coevolution of Earth’s systems and life on Earth.</p>

EarthComm Section	Section 3 The Origin of Life on Earth
Correlating Performance Expectation	<p>HS-ESS2-7. Construct an argument based on evidence about the simultaneous coevolution of Earth’s systems and life on Earth.</p>

EarthComm Section	Section 4 The Biosphere and the Evolution of the Atmosphere
Correlating Performance Expectation	<p>HS-ESS2-7. Construct an argument based on evidence about the simultaneous coevolution of Earth’s systems and life on Earth.</p>

EarthComm Section	Section 5 Geologic Time
Correlating Performance Expectation	<p>HS-ESS2-7. Construct an argument based on evidence about the simultaneous coevolution of Earth’s systems and life on Earth.</p>

EarthComm Section	Section 6 The Fossil Record
Correlating Performance	<p>HS-ESS2-7. Construct an argument based on evidence about the simultaneous coevolution of Earth’s systems and life on Earth.</p>

Correlation of EC Sections to NGSS Standards

Expectation	
--------------------	--

EarthComm Section	Section 7 Evolution
Correlating Performance Expectation	HS-ESS2-7. Construct an argument based on evidence about the simultaneous coevolution of Earth’s systems and life on Earth.

EarthComm Section	Section 8 North American Biomes
Correlating Performance Expectation	HS-ESS2-4. Use a model to describe how variations in the flow of energy into and out of Earth’s systems result in changes in climate. HS-ESS2-7. Construct an argument based on evidence about the simultaneous coevolution of Earth’s systems and life on Earth.

EarthComm Section	Section 9 Mass Extinction
Correlating Performance Expectation	HS-ESS2-7. Construct an argument based on evidence about the simultaneous coevolution of Earth’s systems and life on Earth.