

## Correlation with National Science Standards

Use the chart below to find Science A–Z units that best support the Next Generation Science Standards\* for Middle School Earth and Space Science, and several featured resources from those units that provide strong connections. Each Performance Expectation in the chart represents all three dimensions: Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts.

NOTE: Science A–Z resources primarily align with standards in grades K-5. However, the units and resources listed below provide a foundation for satisfying middle school standards.

Middle School Earth and Space Science Topics: “What is Earth’s place in the Universe? What makes up our solar system and how can the motion of Earth explain seasons and eclipses? How do people figure out that the Earth and life on Earth have changed over time? How does the movement of tectonic plates impact the surface of Earth? How do the materials in and on Earth’s crust change over time? How does water influence weather, circulate in the oceans, and shape Earth’s surface? What factors interact and influence weather and climate? How can natural hazards be predicted? How do human activities affect Earth systems?”

MS. Space Systems		
Performance Expectations	Disciplinary Core Ideas	Science A–Z Units (Featured Resources)
MS-ESS1-1. Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.	ESS1.A: The Universe and Its Stars	<b>3–4 The Solar System</b> (Nonfiction Books; <i>How Does a Lunar Eclipse Work?</i> Science Video; <i>A Guided Tour of the Moon</i> Science Video)
	ESS1.B: Earth and the Solar System	<b>5–6 Atmosphere and Climate</b> (Nonfiction Books) <b>3–4 The Solar System</b> (Nonfiction Books; <i>Orbital Paths</i> Process Activity)
MS-ESS1-2. Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.	ESS1.A: The Universe and Its Stars	<b>5–6 Outside the Solar System</b> (Nonfiction Books; <i>Galaxies Far, Far Away</i> FOCUS Book; <i>Exoplanets</i> FOCUS Book; <i>The Milky Way Galaxy</i> Science Video; <i>Deep-Space Model</i> Process Activity; <i>Properties of Stars</i> Investigation Pack)
	ESS1.B: Earth and the Solar System	<b>5–6 Outside the Solar System</b> ( <i>Nebulae</i> FOCUS Book) <b>3–4 The Solar System</b> (Nonfiction Books; <i>Planets</i> Investigation Pack; <i>The Outer Solar System</i> FOCUS Book; <i>Formation of the Solar System</i> Science Diagram)
MS-ESS1-3. Analyze and interpret data to determine scale properties of objects in the solar system.	ESS1.B: Earth and the Solar System	<b>3–4 The Solar System</b> ( <i>The Asteroid Belt</i> FOCUS Book; <i>Comets</i> FOCUS Book; <i>Galileo’s Moons</i> FOCUS Book; <i>The Outer Solar System</i> FOCUS Book)

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MS. History of Earth		
Performance Expectations	Disciplinary Core Ideas	Science A–Z Units (Featured Resources)
MS-ESS1-4. Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth’s 4.6-billion-year-old history.	ESS1.C: The History of Planet Earth	<b>3–4 Habitats/Environment</b> ( <i>Habitats Then and Now</i> FOCUS Book)
MS-ESS2-2. Construct an explanation based on evidence for how geoscience processes have changed Earth’s surface at varying time and spatial scales.	ESS2.A: Earth’s Materials and Systems	<b>5–6 Changing Landforms</b> (Nonfiction Books; <i>From Fire to Land</i> Quick Reads)
	ESS2.C: The Roles of Water in Earth’s Surface Processes	<b>5–6 Changing Landforms</b> ( <i>Erosion</i> Process Activity; <i>Erosion</i> Investigation Pack) <b>5–6 Water</b> (Nonfiction Books; <i>Glaciers</i> Quick Reads; <i>Settling and Sedimentation</i> Process Activity)
MS-ESS2-3. Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.	ESS1.C: The History of Planet Earth	<b>5–6 Changing Landforms</b> (Nonfiction Books; <i>How Deep is Deep?</i> Quick Reads)
	ESS2.B: Plate Tectonics and Large-Scale System Interactions	<b>5–6 Changing Landforms</b> (Nonfiction Books) <b>3–4 Habitats/Environment</b> ( <i>Habitats Then and Now</i> FOCUS Book)

MS. Earth’s Systems		
Performance Expectations	Disciplinary Core Ideas	Science A–Z Units (Featured Resources)
MS-ESS2-1. Develop a model to describe the cycling of Earth’s materials and the flow of energy that drives this process.	ESS2.A: Earth’s Materials and Systems	<b>5–6 Changing Landforms</b> (Nonfiction Books) <b>5–6 Energy Resources</b> (Nonfiction Books; <i>Light Converts to Heat</i> Science Diagram) <b>5–6 Food Chains</b> ( <i>Paper Food Chains and Food Web</i> Process Activity)
MS-ESS2-4. Develop a model to describe the cycling of water through Earth’s systems driven by energy from the sun and the force of gravity.	ESS2.C: The Roles of Water in Earth’s Surface Processes	<b>5–6 Water</b> (Nonfiction Books; Fiction Books; <i>Water Cycle Model</i> Process Activity; <i>A Working Water Cycle</i> Project-Based Learning Pack; <i>Water, Water Everywhere</i> Science Video; <i>The Water Cycle</i> Interactive Science Lesson)
MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth’s mineral, energy, and groundwater resources are the result of past and current geoscience processes.	ESS3.A: Natural Resources	<b>5–6 Energy Resources</b> (Nonfiction Books; <i>Renewable Energy</i> Investigation Pack; <i>Fission and Fusion</i> Quick Reads) <b>5–6 Changing Landforms</b> ( <i>Open Pit Mining</i> Quick Reads) <b>5–6 Water</b> ( <i>Water for the People</i> FOCUS Book)

MS. Weather and Climate		
Performance Expectations	Disciplinary Core Ideas	Science A–Z Units (Featured Resources)
MS-ESS2-5. Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.	ESS2.C: The Roles of Water in Earth’s Surface Processes	<b>5–6 Atmosphere and Climate</b> (Nonfiction Books; <i>From Space to You</i> Science Video) <b>5–6 Water</b> (Nonfiction Books)
	ESS2.D: Weather and Climate	<b>3–4 Clouds, Wind, and Storms</b> (Nonfiction Books; <i>Ice Storms</i> FOCUS Book; <i>Thunderstorms</i> FOCUS Book; <i>Weather and Climate</i> Interactive Science Lesson)
MS-ESS2-6. Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.	ESS2.C: The Roles of Water in Earth’s Surface Processes	<b>5–6 Atmosphere and Climate</b> ( <i>El Niño and La Niña</i> FOCUS Book; <i>Climate Change</i> FOCUS Book)
	ESS2.D: Weather and Climate	<b>5–6 Atmosphere and Climate</b> (Nonfiction Books; <i>Seasons and Climate</i> FOCUS Book) <b>3–4 Habitats/Environment</b> (Nonfiction Books)
MS-ESS3-5. Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.	ESS3.D: Global Climate Change	<b>5–6 Atmosphere and Climate</b> (Nonfiction Books; <i>Global Climate Change</i> Interactive Science Lesson; <i>Emissions Testing Debate</i> ; <i>Climate Change</i> FOCUS Book; <i>Climate Change Clues</i> Quick Reads; <i>Volcanoes and Climate</i> Quick Reads) <b>5–6 Energy Resources</b> ( <i>Solar Energy Debate</i> )

MS. Human Impacts		
Performance Expectations	Disciplinary Core Ideas	Science A–Z Units (Featured Resources)
MS-ESS3-2. Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.	ESS3.B: Natural Hazards	<b>5–6 Water</b> (Nonfiction Books; <i>Tsunami!</i> FOCUS Book; <i>Hailstorms</i> FOCUS Book) <b>5–6 Changing Landforms</b> ( <i>Tsunami Strike: Japan</i> Science Video)
MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.	ESS3.C: Human Impacts on Earth Systems	<b>5–6 Atmosphere and Climate</b> (Nonfiction Books) <b>5–6 Energy Resources</b> ( <i>Renewable Energy Investigation Pack</i> ; <i>Oil Spills at Sea</i> Quick Reads, <i>Oil Spills and Pom Poms</i> Science Video; <i>Solar Cooker Process Activity</i> ; <i>Solar Energy Debate</i> ) <b>5–6 Changing Landforms</b> ( <i>Beach Erosion Debate</i> )
MS-ESS3–4. Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth’s systems.	ESS3.C: Human Impacts on Earth Systems	<b>5–6 Atmosphere and Climate</b> (Nonfiction Books; <i>Global Climate Change</i> Interactive Science Lesson) <b>5–6 Water</b> ( <i>The Cryosphere</i> FOCUS Book; <i>Dams, Levees, and Dikes</i> Quick Reads; <i>Ice Sheets and Ice Caps</i> Quick Reads)