Science A–Z

ATMOSPHERE AND CLIMATE (5–6)

Correlation of Resources to National Science Standards

Use the chart below to discover how selected Science A–Z resources in the Atmosphere and Climate unit support certain Next Generation Science Standards (NGSS). While a single reading resource, science activity, comprehension support, or lesson cannot satisfy an entire Performance Expectation, using these resources together can help students develop the understandings and abilities they will need in order to satisfy each standard listed below. Most standards cited align with the grade level of this Science A–Z unit. For a reverse correlation tool that connects the standards to resources, visit our NGSS correlations page: www.sciencea-z.com/main/NextGenerationScienceStandards.*

Check the Performance Expectations Key below this chart for the complete text of the standards cited for each resource.

Resource Type	Resource Title	Performance Expectations
Unit Nonfiction Book	*Atmosphere and Climate* (3 reading levels)	**3-ESS2-2; 5-ESS2-1; MS-LS2-4; MS-ESS1-1; MS-ESS2-4; MS-ESS2-5; MS-ESS2-6; MS-ESS3-3; MS-ESS3-4; MS-ESS3-5**
Interactive Science Lesson	*Global Climate Change* Part 1: What Is Global Climate Change?	**3-ESS2-2; 5-ESS2-1**
Interactive Science Lesson	*Global Climate Change* Part 2: Signs of Global Climate Change	**4-ESS3-1; 5-ESS2-1; MS-ESS3-4; MS-ESS3-5**
Interactive Science Lesson	*Global Climate Change* Part 3: Causes of Global Climate Change	**4-ESS3-1; 5-ESS2-1; MS-ESS3-4; MS-ESS3-5**
Process Activity	*Air: Weight and Pressure*	**5-PS1-1; 5-PS2-1**
FOCUS Book	*Going Up!*	**4-ESS3-2; 5-ESS2-1**
FOCUS Book	*Climate Change*	**5-ESS2-1; 5-ESS3-1; 3-5-ETS1-1; 3-5-ETS1-2; MS-ESS2-6; MS-ESS3-2; MS-ESS3-4; MS-ESS3-5; MS-ETS1-1; MS-ETS1-2**
FOCUS Book	*Curtains of Light*	**5-PS1-1; 3-5-ETS1-2; MS-PS2-5**
FOCUS Book	*Seasons and Climate*	**3-ESS2-2; 5-ESS1-2; MS-ESS1-1; MS-ESS2-6**
FOCUS Book	*El Niño and La Niña*	**3-ESS2-1; 3-ESS2-2; 5-ESS2-1; 3-5-ETS1-2; 3-5-ETS1-3; MS-ESS2-5; MS-ESS2-6; MS-ETS1-1; MS-ETS1-2**

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Resource Type	Resource Title	Performance Expectations
Investigation Pack	Topic: Factors That Influence a Climate I. Files: *Temperate Climate Zone: New Zealand; Tropical Climate Zone: Indonesia; Polar Climate Zone: Greenland; Dry Climate Zone: Egypt* Mystery File: *Underwater Volcanoes*	**3-ESS2-2; 5-ESS2-1; MS-ESS2-2; MS-ESS2-5; MS-ESS2-6**
Debate	*Emissions Testing*	**4-ESS3-1; 5-ESS3-1; MS-ESS3-3; MS-ESS3-5**
Science Video	*From Space to You*	**MS-ESS2-5**
Science Video	*Hurricane Hunters*	**MS-ESS2-5; MS-ESS3-2**
Science Video	*Keeping Up with Carbon*	**4-ESS3-1; 5-ESS2-1; 5-ESS3-1; MS-ESS3-3; MS-ESS3-4**
Science Video	*Melting Ice* (no audio)	**5-ESS2-2; MS-ESS3-4**
Science Video	*Space Balloon*	**3-5-ETS1-1; 3-5-ETS1-2; MS-ETS1-1; MS-ETS1-2**
Career Files	*Oceanographer; Climatologist; Carbon Farmer*	**4-ESS3-1; 5-ESS2-1; MS-ESS2-2; MS-ESS2-6; MS-ESS3-2; MS-ESS3-3**
Quick Read	*Climate Change Clues* (3 reading levels)	**5-ESS2-1; MS-ESS3-3; MS-ESS3-5**
Quick Read	*Volcanoes and Climate* (3 reading levels)	**5-ESS2-1; MS-ESS3-2; MS-ESS3-5**
Science Diagram	*Air Pressure and Altitude*	**MS-ESS2-5**
Science Diagram	*Annual Precipitation Map*	**MS-ESS2-4; MS-ESS2-5**
Science Diagram	*Cloud Types*	**MS-ESS2-5**
Science Diagram	*Common Types of Precipitation*	**5-ESS2-2; MS-ESS2-4; MS-ESS2-5**
Science Diagram	*Composition of Earth's Atmosphere*	**5-ESS2-1**
Science Diagram	*Daylight Throughout the Year*	**5-ESS1-2**
Science Diagram	*Earth's Major Climate Zones*	**MS-ESS2-6**
Science Diagram	*Earth's Seasons*	**5-ESS1-2; MS-ESS1-1**
Science Diagram	*Greenhouse Effect*	**4-ESS3-1; MS-ESS2-1; MS-ESS2-6**
Science Diagram	*Light Energy Converts to Heat Energy*	**4-PS3-2**
Science Diagram	*The Water Cycle*	**5-ESS2-1; 5-ESS2-2; MS-ESS2-4**

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Performance Expectations Key

3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

3-ESS2-2. Obtain and combine information to describe climates in different regions of the world.

4-PS3-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.

4-ESS3-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.

4-ESS3-2. Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.

5-PS1-1. Develop a model to describe that matter is made of particles too small to be seen.

5-PS2-1. Support an argument that the gravitational force exerted by Earth on objects is directed down.

5-ESS1-2. Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.

5-ESS2-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.

5-ESS2-2. Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.

5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

MS-PS2-5. Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.

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.

MS-ESS2-1. Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.

MS-ESS2-2. Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.

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.

MS-ESS2-5. Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.

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.

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.

MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

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.

MS-ESS3-5. Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.