



Fourth Grade Curriculum Pacing Guide

Crosscutting Concepts: Patterns; Systems and System Models; Energy and Matter Forecasting the Weather

Estimated Time: 7 weeks

Anchoring Phenomenon	Standard	Instructional Segments	Disciplinary Core Ideas	Science and Engineering Practices	Instructional Notes
<p>What is Weather like in Space?</p> <p>NOAA's GOES-16 Satellite Sends First Images from Space (Document is linked within instructional segment)</p>	<p>S4E3a, b S4E4a, b, c, d</p>	<p>Forecasting the Weather</p>	<p>From A Framework for K-12 Science Education:</p> <p><i>By the end of grade 5</i></p> <p>ESS2.A: EARTH MATERIALS AND SYSTEMS</p> <ul style="list-style-type: none"> The ocean supports a variety of ecosystems and organisms, shapes landforms, and influences climate. Winds and clouds in the atmosphere interact with the landforms to determine patterns of weather. Rainfall helps shape the land and affects the types of living things found in a region. <p>ESS2.C: THE ROLES OF WATER IN EARTH'S SURFACE PROCESSES</p> <ul style="list-style-type: none"> Water is found almost everywhere on Earth: as vapor; as fog or clouds in the atmosphere; as rain or snow falling from clouds; as ice, snow, and running water on land and in the ocean; and as groundwater beneath the surface. Nearly all of Earth's available water is in the ocean. Most freshwater is in glaciers or underground; only a tiny fraction is in streams, lakes, wetlands, and the atmosphere. <p>PS1.A: STRUCTURE AND PROPERTIES OF</p>	<ul style="list-style-type: none"> Asking questions Developing and using models Planning and carrying out investigations Obtaining, evaluating, and communicating information Constructing explanations Analyzing and interpreting data 	<p>Background:</p> <p>Do not allow students to collect outside weather data without supervision. Do not heat water over 85 degrees F. Have plans for broken thermometers or other glassware.</p> <p>By the end of this unit, students are using the following language in their speaking and writing during EXPLAIN or ELABORATE.</p> <ul style="list-style-type: none"> Weather Climate Front

			<p>MATTER</p> <ul style="list-style-type: none"> Matter of any type can be subdivided into particles that are too small to see, but even then, the matter still exists and can be detected by other means (e.g., by weighing or by its effects on other objects). For example, a model showing that gases are made from matter particles that are too small to see and are moving freely around in space can explain many observations... the appearance of visible scale water droplets in condensation, fog, and, by extension, also in clouds or the contrails of a jet. The amount (weight) of matter is conserved when it changes form, even in transitions in which it seems to vanish (e.g., sugar in solution, evaporation in a closed container). <p>ESS2.D: WEATHER AND CLIMATE</p> <ul style="list-style-type: none"> Weather is the minute-by-minute to day-by-day variation of the atmosphere’s condition on a local scale. Scientists record the patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next. Climate describes the ranges of an area’s typical weather conditions and the extent to which those conditions vary over years to centuries. <p>PS3.B: CONSERVATION OF ENERGY AND ENERGY TRANSFER</p> <ul style="list-style-type: none"> Energy is present whenever there are moving objects, sound, light, or heat. When objects collide, energy can be transferred from one 		<ul style="list-style-type: none"> Temperature Pressure Precipitation Cirrus clouds Stratus clouds Cumulus clouds Cumulonimbus Thermometer Rain gauge Barometer Wind vane Anemometer Weather Climate Water vapor Evaporation Condensation Precipitation
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This instructional segment will connect to the role of organisms in an ecosystem. How do changes in the climate affect the ecosystem? Climate Change and Food Chains: [Keeping an Eye on Food Supply](#)