

## 3-ESS2 Earth's Systems

### 3-ESS2 Earth's Systems

Students who demonstrate understanding can:

- 3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.** [Clarification Statement: Examples of data at this grade level could include average temperature, precipitation, and wind direction.]  
[Assessment Boundary: Assessment of graphical displays is limited to pictographs and bar graphs. Assessment does not include climate change.]
- 3-ESS2-2. Obtain and combine information to describe climates in different regions of the world.**

The performance expectations above were developed using the following elements from the NRC document *A Framework for K-12 Science Education*:

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p><b>Analyzing and Interpreting Data</b> Analyzing data in 3–5 builds on K–2 experiences and progresses to introducing quantitative approaches to collecting data and conducting multiple trials of qualitative observations. When possible and feasible, digital tools should be used.</p> <ul style="list-style-type: none"> <li>Represent data in tables and various graphical displays (bar graphs, pictographs and/or pie charts) to reveal patterns that indicate relationships. (3-ESS2-1)</li> </ul> <p><b>Obtaining, Evaluating, and Communicating Information</b> Obtaining, evaluating, and communicating information in 3–5 builds on K–2 experiences and progresses to evaluating the merit and accuracy of ideas and methods.</p> <ul style="list-style-type: none"> <li>Obtain and combine information from books and other reliable media to explain phenomena. (3-ESS2-2)</li> </ul>	<p><b>ESS2.D: Weather and Climate</b></p> <ul style="list-style-type: none"> <li>Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next. (3-ESS2-1)</li> <li>Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over years. (3-ESS2-2)</li> </ul>	<p><b>Patterns</b></p> <ul style="list-style-type: none"> <li>Patterns of change can be used to make predictions. (3-ESS2-1),(3-ESS2-2)</li> </ul>
<p><i>Connections to other DCIs in third grade:</i> N/A</p> <p><i>Articulation of DCIs across grade-bands:</i> <b>K.ESS2.D</b> (3-ESS2-1); <b>4.ESS2.A</b> (3-ESS2-1); <b>5.ESS2.A</b> (3-ESS2-1); <b>MS.ESS2.C</b> (3-ESS2-1),(3-ESS2-2); <b>MS.ESS2.D</b> (3-ESS2-1),(3-ESS2-2)</p> <p><i>Common Core State Standards Connections:</i></p> <p><i>ELA/Literacy –</i></p> <p><b>RI.3.1</b> Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-ESS2-2)</p> <p><b>RI.3.9</b> Compare and contrast the most important points and key details presented in two texts on the same topic. (3-ESS2-2)</p> <p><b>W.3.9</b> Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. (3-ESS2-2)</p> <p><i>Mathematics –</i></p> <p><b>MP.2</b> Reason abstractly and quantitatively. (3-ESS2-1),(3-ESS2-2)</p> <p><b>MP.4</b> Model with mathematics. (3-ESS2-1),(3-ESS2-2)</p> <p><b>MP.5</b> Use appropriate tools strategically. (3-ESS2-1)</p> <p><b>3.MD.A.2</b> Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. (3-ESS2-1)</p> <p><b>3.MD.B.3</b> Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in bar graphs. (3-ESS2-1)</p>		

\*The performance expectations marked with an asterisk integrate traditional science content with engineering through a Practice or Disciplinary Core Idea.

The section entitled "Disciplinary Core Ideas" is reproduced verbatim from *A Framework for K-12 Science Education: Practices, Cross-Cutting Concepts, and Core Ideas*. Integrated and reprinted with permission from the National Academy of Sciences.