

## K-ESS3 Earth and Human Activity

<b>K-ESS3 Earth and Human Activity</b>		
<p>Students who demonstrate understanding can:</p> <p><b>K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.</b> [Clarification Statement: Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; and, grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.]</p> <p><b>K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.*</b> [Clarification Statement: Emphasis is on local forms of severe weather.]</p> <p><b>K-ESS3-3. Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.*</b> [Clarification Statement: Examples of human impact on the land could include cutting trees to produce paper and using resources to produce bottles. Examples of solutions could include reusing paper and recycling cans and bottles.]</p> <p style="font-size: small;">The performance expectations above were developed using the following elements from the NRC document <i>A Framework for K-12 Science Education</i>:</p>		
Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p><b>Asking Questions and Defining Problems</b> Asking questions and defining problems in grades K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested.</p> <ul style="list-style-type: none"> <li>▪ Ask questions based on observations to find more information about the designed world. (K-ESS3-2)</li> </ul> <p><b>Developing and Using Models</b> Modeling in K–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, storyboard) that represent concrete events or design solutions.</p> <ul style="list-style-type: none"> <li>▪ Use a model to represent relationships in the natural world. (K-ESS3-1)</li> </ul> <p><b>Obtaining, Evaluating, and Communicating Information</b> Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information.</p> <ul style="list-style-type: none"> <li>▪ Read grade-appropriate texts and/or use media to obtain scientific information to describe patterns in the natural world. (K-ESS3-2)</li> <li>▪ Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas. (K-ESS3-3)</li> </ul>	<p><b>ESS3.A: Natural Resources</b></p> <ul style="list-style-type: none"> <li>▪ Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. (K-ESS3-1)</li> </ul> <p><b>ESS3.B: Natural Hazards</b></p> <ul style="list-style-type: none"> <li>▪ Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the communities can prepare for and respond to these events. (K-ESS3-2)</li> </ul> <p><b>ESS3.C: Human Impacts on Earth Systems</b></p> <ul style="list-style-type: none"> <li>▪ Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (K-ESS3-3)</li> </ul> <p><b>ETS1.A: Defining and Delimiting an Engineering Problem</b></p> <ul style="list-style-type: none"> <li>▪ Asking questions, making observations, and gathering information are helpful in thinking about problems. (<i>secondary to K-ESS3-2</i>)</li> </ul> <p><b>ETS1.B: Developing Possible Solutions</b></p> <ul style="list-style-type: none"> <li>▪ Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people. (<i>secondary to K-ESS3-3</i>)</li> </ul>	<p><b>Cause and Effect</b></p> <ul style="list-style-type: none"> <li>▪ Events have causes that generate observable patterns. (K-ESS3-2),(K-ESS3-3)</li> </ul> <p><b>Systems and System Models</b></p> <ul style="list-style-type: none"> <li>▪ Systems in the natural and designed world have parts that work together. (K-ESS3-1)</li> </ul> <p style="text-align: center;">-----</p> <p style="text-align: center;"><b>Connections to Engineering, Technology, and Applications of Science</b></p> <p><b>Interdependence of Science, Engineering, and Technology</b></p> <ul style="list-style-type: none"> <li>▪ People encounter questions about the natural world every day. (K-ESS3-2)</li> </ul> <p><b>Influence of Engineering, Technology, and Science on Society and the Natural World</b></p> <ul style="list-style-type: none"> <li>▪ People depend on various technologies in their lives; human life would be very different without technology. (K-ESS3-2)</li> </ul>
<p><i>Connections to other DCIs in kindergarten:</i> <b>K.ETS1.A</b> (K-ESS3-2),(K-ESS3-3)</p> <p><i>Articulation of DCIs across grade-levels:</i> <b>1.LS1.A</b> (K-ESS3-1); <b>2.ESS1.C</b> (K-ESS3-2); <b>2.ETS1.B</b> (K-ESS3-3); <b>3.ESS3.B</b> (K-ESS3-2); <b>4.ESS3.A</b> (K-ESS3-3); <b>4.ESS3.B</b> (K-ESS3-2); <b>5.LS2.A</b> (K-ESS3-1); <b>5.ESS2.A</b> (K-ESS3-1); <b>5.ESS3.C</b> (K-ESS3-3)</p>		
<p><i>Common Core State Standards Connections:</i></p> <p><i>ELA/Literacy –</i></p> <p><b>RI.K.1</b> With prompting and support, ask and answer questions about key details in a text. (K-ESS3-2)</p> <p><b>W.K.2</b> Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic. (<i>K-ESS3-3</i>)</p> <p><b>SL.K.3</b> Ask and answer questions in order to seek help, get information, or clarify something that is not understood. (K-ESS3-2)</p> <p><b>SL.K.5</b> Add drawings or other visual displays to descriptions as desired to provide additional detail. (<i>K-ESS3-1</i>)</p> <p><i>Mathematics –</i></p> <p><b>MP.2</b> Reason abstractly and quantitatively. (<i>K-ESS3-1</i>)</p> <p><b>MP.4</b> Model with mathematics. (<i>K-ESS3-1</i>),(<i>K-ESS3-2</i>)</p> <p><b>K.CC</b> Counting and Cardinality (<i>K-ESS3-1</i>),(<i>K-ESS3-2</i>)</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.