

## Elementary Standards

### 4th Grade

<b>Standard: 4-ESS2. Earth's Systems</b>	
<b>Performance Expectation: 4-ESS2-1.</b> Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.	
<b>Dimension</b>	<b>Classroom Connection</b>
<b><i>Science and Engineering Practice</i></b> <ul style="list-style-type: none"><li>Analyzing and Interpreting Data</li><li>Developing and Using Models</li></ul>	<ul style="list-style-type: none"><li>Students will be given real scientific data in the form of a 3D printed model, which they will need to determine how to analyze in order to “digitize” or create their own versions of the model.</li><li>By manipulating the 3D printed models and making measurements to create their own mountain profiles, students will be able to create their own models of an actual landform. Explanation of how these models can be used to predict future climate change will help students understand why scientists create these types of models.</li></ul>
<b><i>Disciplinary Core Idea</i></b> <ul style="list-style-type: none"><li>ESS2.C: The History of Planet Earth</li></ul>	<ul style="list-style-type: none"><li>By discussing how the exposed mountainside they are working with was shaped by the movement and melting of glaciers over thousands of years, students will understand that the patterns and shapes of the land were formed or changed over very long timescales.</li></ul>
<b><i>Crosscutting Concept</i></b> <ul style="list-style-type: none"><li>Interdependence of Science, Engineering, and Technology</li><li>Cause and Effect</li></ul>	<ul style="list-style-type: none"><li>Knowledge of the Earth and Earth materials is used when designing the best engineering practices to capture data or study a phenomenon, such as how the shape of this mountainside varies due to the effects of ice erosion.</li><li>The shape of the surface of land they are observing is a direct effect of the Earth processes that occurred thousands of years ago.</li></ul>