

Landforms Unit Design - Grade 5

The **Landforms Module** consists of five investigations that introduce students to these fundamental concepts in earth science: change takes place when things interact; all things change over time; patterns of interaction and change are useful in explaining landforms. Students also learn about some of the tools and techniques used by cartographers and use them to depict landforms.

RI Statements of Enduring Knowledge - (Established Goals):

ESS 1 The Earth and earth materials as we know them today have developed over long periods of time, through continual change processes.

Related Rhode Island GSE's (Understandings)	RI Assessment Targets Assessment Evidence
<p>ESS1 (5-6)–1 Students demonstrate an understanding of processes and change over time within earth systems by ... 1a identifying and describing the layers of the earth.</p>	<p>ESS1 (5-8) INQ+ POC –1 <i>Use geological evidence provided to support the idea that the Earth's crust/lithosphere is composed of plates that move.</i> Science Stories, pp. 22-23</p> <p>ESS1 (5-8) SAE–2 <i>Explain the processes that cause the cycling of water into and out of the atmosphere and their connections to our planet's weather patterns.</i> Investigation 2.1, 2.2</p> <p>ESS1 (5-8) POC –3 <i>Explain how earth events (abruptly and over time) can bring about changes in Earth's surface: landforms, ocean floor, rock features, or climate.</i> Investigation 2.1, 2.2 Investigation 2.1, 2.2 Investigation 5.1-5.3</p>
<p>ESS1 (5-6)–2 Students demonstrate an understanding of processes and change over time within earth systems by ... 2a diagramming, labeling and explaining the processes of the water cycle including evaporation, precipitation, and run-off, condensation, transpiration, and groundwater.</p>	
<p>ESS1 (7-8)–3 Students demonstrate an understanding of processes and change over time within earth systems by ... 3a evaluating slow processes (e.g. weathering, erosion, mountain building, sea floor spreading) to determine how the earth has changed and will continue to change over time. 3b evaluating fast processes (e.g. erosion, volcanoes and earthquakes) to determine how the earth has changed and will continue to change over time. 3c investigating the effect of flowing water on landforms (e.g. stream table, local environment).</p>	

<p>ESS1 (3-4) –4 Students demonstrate an understanding of processes and change over time within earth systems by ...</p> <p>4a investigating local landforms and how wind, water, or ice have shaped and reshaped them (e.g. severe weather).</p> <p>4b using or building models to simulate the effects of how wind and water shape and reshape the land (e.g., erosion, sedimentation, deposition, glaciation).</p> <p>4c identifying sudden and gradual changes that affect the Earth (e.g. sudden change = flood; gradual change = erosion caused by oceans).</p>	<p>ESS1 (K-4) INQ+SAE –4 Explain how wind, water, or ice shape and reshape the earth</p> <p>Investigation 3.1-3.3</p> <p>Investigation 3.1-3.3</p> <p>Investigation 3.1-3.3</p>
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Words in **bold** are important for science vocabulary development, and should be used for word walls.

Investigation-Time	Investigation	Focus Questions (Essential Questions)	Big Ideas (Understandings)
1-(2)	Schoolyard Models	<ul style="list-style-type: none"> How do models and maps help us show representations of the earth? 	<ul style="list-style-type: none"> Models represent objects that are very large or processes that occur over a long period of time. Models and maps are ways of representing landforms and human structures. Maps can be made from models
2-(2)	Stream Tables	<ul style="list-style-type: none"> How does water shape landforms? What are erosion and deposition? What are some landforms that result from running water? 	<ul style="list-style-type: none"> Water is an important agent in shaping landforms The wearing away of earth is erosion; the settling of eroded material is deposition. Landforms that result from running water include canyons, deltas, and alluvial fans.
3-(2)	Go With the Flow	<ul style="list-style-type: none"> How does the flow of the land affect erosion and deposition? What happens to the rate of erosion and deposition during flooding? How do humans affect the processes of erosion and deposition? 	<ul style="list-style-type: none"> The slope of the land over which a river flows affects the processes of erosion and deposition. During flooding, the rate of erosion and deposition increases. Humans affect the processes of erosion and deposition.

4-(3)	Build a Mountain	<ul style="list-style-type: none"> • What are topographical maps? • How do topographic maps show elevation? • How do topographic maps represent landforms? 	<ul style="list-style-type: none"> • Topographic maps are two- dimensional representations of three-dimensional surfaces. • Topographic maps show contour lines, which represent points of equal elevation. • Topographic maps use symbols and color to represent landforms.
5-(3)	Bird's-Eye View	<ul style="list-style-type: none"> • What are cartographers? • How are landform maps generated? 	<ul style="list-style-type: none"> • Cartographers use aerial photographs as one tool in constructing topographic maps. • Landform maps can be generated from aerial photographs.