

Unit: Earth & Space Science: Mapping, Earth’s Surface, & Landforms; Erosion, Earth’s Surface, & Landforms

Duration: 4-8 weeks

Desired Results	
<p>Performance Expectations:</p> <p>2-ESS1-1 Use information from several sources to provide evidence that Earth events can occur quickly or slowly.</p> <p>2-ESS2-1 Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.</p> <p>2-ESS2-2 Develop a model to represent the shapes and kinds of land and bodies of water in an area.</p> <p>2-ESS2-3 Obtain information to identify where water is found on Earth and that it can be solid or liquid.</p> <p>K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p>K-2-ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how</p>	<i>Transfer</i>
	<p><i>Meaning</i></p> <p>ENDURING UNDERSTANDINGS: Crosscutting Concepts</p> <p><i>Students will understand that...</i></p> <p>Students identify patterns about where rivers start and end on earth’s surface.</p> <p>Students reason about the cause and effect of rocks tumbling in a river (cause) and turning into sand (effect). Students begin to explore that changes to the earth’s surface can happen slowly through the process of erosion.</p> <p>Students consider the cause and effect of how heavy rains (cause) create canyons on earth’s surface (effect). Students begin to explore that changes to the earth’s surface can happen slowly through the process of erosion.</p> <p>Students apply the concept that changes to earth’s surface can happen rapidly during a landslide. Students mimic natural structures and their functions to create a design solution that lessens the impact of landslides.</p>
	<i>Meaning</i>
	<p><i>Acquisition</i></p> <p>Disciplinary Core Ideas</p> <p><i>Students will know...</i></p> <ul style="list-style-type: none"> Rivers are bodies of water that are moving! When we look at a map of the earth’s surface, we see that big rivers empty into the ocean. Earth’s surface looks flat on a map, but we know that it is actually quite hilly. If we looked at a map with texture we’d
	<p>Science and Engineering Practices</p> <p><i>Students will be skilled at...</i></p> <ol style="list-style-type: none"> Students develop a model of the earth’s surface and carry out an investigation to discover how rivers flow. They construct an explanation about where on the earth’s surface rivers start and end. Students conduct an investigation by modeling how rocks tumble through a

the shape of an object helps it function as needed to solve a given problem.

K-2-ETS1-3 Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

see that rivers begin at points of high land, flow to points of low land and then into the ocean. DCIs: ESS2.B, ESS2.C

- In the last Mystery, we explored how rivers flow from high points of the earth's surface to low points and into the ocean. Oceans are usually next to sandy beaches - but how did all of that sand get there? As the rivers flow toward the ocean, rocks collide into one another causing them to break into smaller pieces. By the time those rocks reach the end of the river, they are tiny rocks - or sand! DCIs: ESS1.C, Foundational for ESS2.A, ESS2.B
- Water is incredibly powerful - even powerful enough to move the earth's surface! Heavy rains wash away dirt and rocks, creating canyons - this process is called erosion. Most canyons have rivers flowing from them, and as time passes the water continues to carry away dirt, rocks, and sand. Because of this, canyons continue to grow deeper and wider over time. DCIs: ESS1.C, ESS2.A, ESS2.B, ESS2.C
- Landslides - when the earth loosens and is washed away down a hill - is more likely to happen after a wildfire! The fire burns the plants, which soak up rainwater and stabilize the soil with their roots. After a heavy rain, the water loosens the soil and washes

river and break. Students construct an explanation for why there is sand at the beach.

3. Students conduct an investigation by modeling what happens to land when it rains over and over. Students construct an explanation for how the water changed the land.
4. Students define the problem that landslides create. They design solutions to stabilize soil and prevent landslides. Students compare their solutions and engage in argument from this evidence to determine which designs are most effective

Inquiry Questions:

1. If you floated down a river, where would you end up?
2. Why is there sand at the beach?
3. What's strong enough to make a canyon?
4. How can you stop a landslide?

	<p>the soil away, causing a landslide. Landslides pose many dangers for people! DCIs: ESS1.C, ESS2.A, ETS1.A, ETS1.B, ETS1.C</p>	
Evidence		
Evaluation Criteria	Assessment Evidence	
	PERFORMANCE TASK(S):	

OTHER EVIDENCE:

Unit assessment

Learning Plan

Summary of Key Learning Events and Instruction