

Unit 2: The Forces of Wind and Water

WEEK 6 Lesson 2

Science and Engineering: Earth's Systems

Testing Approaches to Slowing and Preventing Erosion: Barriers and Planting

Big Ideas	Wind and water can change the shape of the land. The changing shape of the land impacts people. Changes happen over time.
S & E Guiding Question	What resources can we use to understand changes in the shape of the land?
Content Objectives	I can draw and write plans for an investigation. (W.1.2.a) I can work with a group to plan an investigation about slowing and preventing erosion. (Practice 3, 2-ESS2-1)
Language Objective	I can talk with classmates to plan an investigation. (SL.1.2.b, SL.1.2.c)
Vocabulary	approach: a way of doing something barrier: something that prevents movement
Materials and Preparation	Assign children to stable, small groups (about four children each) to work together during this pair of lessons. ● Erosion slides ● Science and Engineering packets, one for demonstration ● writing tools ● collection of materials such as sticks, popsicle sticks, straws, rocks, ● scraps of wood, container lid, pieces of fabric ● aluminum trays, one for each group ● scraps of paper or masking tape, one for each group, to label trays
Opening 10 minutes	<i>In Text Talk we have learned about and recorded different approaches people take to slow or prevent erosion. This week and next you will design and conduct investigations to test these approaches.</i>

	<i>Two approaches we have explored so far are building barriers to hold back water and planting to keep land in place.</i> Briefly review the approaches to slowing and preventing Erosion charts in the slides. <i>Today you will work with a small group to plan an investigation to test one of these approaches: either barriers or planting. We will conduct the investigations tomorrow.</i> Open a packet to show the page, Slowing Erosion Investigation Planning. <i>This is the page your group will use to plan your investigation. On the first line, "Approach," you will either write "barriers" or "planting."</i> <i>Below this is space to draw a diagram. The investigation you plan will be tested on an island. In the box, first draw an island, and then draw a diagram showing your approach. As a group, plan where on the island you will build a barrier or do some planting, and what your barrier or planted area will look like.</i> Show the bin of materials. <i>Your investigation will be a model of an approach to slowing or preventing erosion. Here are some materials you might plan to use. If you are building a barrier, which materials do you think might be useful? [rocks, wood scraps, container lids]</i> <i>If you are planting, what might you use to represent the grass? [sticks, popsicle sticks, straws]</i> <i>In addition to these materials, you might find something else in the classroom that would be useful for your model.</i> Refer again to the Slowing Erosion Investigation Planning page. <i>With your group, decide which materials you will use, and record them here, under "Materials needed."</i> Hold up an aluminum tray. <i>As your group identifies materials, gather them in this tray so you will be ready to do your investigation tomorrow.</i> Refer again to the Slowing Erosion Investigation Planning page. <i>The last section is labeled "Prediction." Here you will record what you think might happen in this investigation. After building a barrier</i>
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	<i>or planting, what do you think will happen when wind and water hit the island?</i>
Investigation 20 minutes	Divide the class into the small groups, with half of the groups planning barriers and the other half planning planting. Help the children identify a recorder for each group who will record the group's ideas in their packet. As children plan, circulate to support their work. Help them identify and gather classroom materials to use in their investigations.
Discussion	<i>Discussion about this experience will happen in Week 7.</i>
Closing	Make sure that children label their group's tray. <i>Next time you will conduct your investigations and record the results!</i>
Standards and Practices	W.1.2.a Investigate questions by participating in shared research and writing projects. SL.1.2.b Build on others' talk in conversations by linking their comments to the remarks of others. SL.1.2.c Ask for clarification and further explanation as needed about the topics and texts under discussion. 2-ESS2-1 Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.
Ongoing assessment	Review each group's plan. What materials did children choose? Are they appropriate? Are there other materials that might be helpful? What predictions have children articulated? Are they plausible? What understandings about approaches to slowing erosion do children's plans reflect?

Notes