

## Stage 1: Desired Results

<p>Established Goals: PS 2.1.d Investigate, measure, and observe the deposition of earth materials.</p>	
<p>Enduring Understandings:</p> <ul style="list-style-type: none"> <li>• Sediment is formed after weathering breaks down rocks into smaller particles.</li> <li>• Water carries rock and sediment downhill creating valleys and cliffs.</li> <li>• Rainwater affects the deposition of materials.</li> <li>• Elements of the land and humans affect the erosional process.</li> </ul>	<p>Essential Questions:</p> <ul style="list-style-type: none"> <li>• What is erosion?</li> <li>• What is sediment and how is it formed?</li> <li>• What are some examples of how erosion helps to shape our land?</li> <li>• How does water shape the land?</li> <li>• How does water move materials that become soil?</li> <li>• Where do we see erosion in our own lives?</li> </ul>
	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>• Define sediment and erosion.</li> <li>• Identify examples of water causing erosion.</li> <li>• Explain how these types of erosion shape the land.</li> <li>• Explain how rain and water deposit earth materials.</li> <li>• Identify ways of preventing erosion of the land.</li> </ul>

## Stage 2: Determine Evidence for Assessing Learning

<p>Performance Tasks:</p> <ul style="list-style-type: none"> <li>• Students will work with their group to perform an experiment that shows how water deposits earth materials.</li> <li>• Students will make predictions about what will happen when more water is poured on their mountains.</li> <li>• Students will use different objects to change how erosion and deposition occur.</li> </ul>	<p>Other Evidence:</p> <ul style="list-style-type: none"> <li>• Students will complete a homework assignment on erosion.</li> <li>• Students will reflect in their science journals on how rain and water deposit earth materials, and where we see examples of this in our lives.</li> </ul>
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### Stage 3: Learning Plan

1. The teacher will review what the class learned about erosion. The teacher will refer to the concept map that was created yesterday.
2. Today we are going to do an experiment to demonstrate how one of the erosional processes we talked about yesterday deposits earth materials, and changes the land.
3. How do you think water may affect the deposition of earth materials?
4. The teacher will then break the class into groups, and assign a job to each member of the group.
5. The teacher will explain that their task is to build a mountain that can stand the effects of having water, which will simulate rain, on top of it.
6. Each group will then be given their materials and given time to build a mountain in their tray.
  - Group 1: sand and gravel
  - Group 2: sand and rocks
  - Group 3: gravel and rocks
  - Group 4: soil and gravel
  - Group 5: soil and rocks
7. One student in each group will be the recorder, and it is their job to draw a picture of the mountain and label the materials used. The teacher will then explain that the group needs to make a prediction about what will happen when two different amounts of water are poured on the top of the mountain.
8. The teacher will instruct the rainmaker to water the mountain with bottle 1 which has 3 holes in it.
9. The teacher will also instruct the timekeeper to record how long it takes for the bottle to empty.
10. The teacher will then instruct the students to measure the amount of eroded material at the bottom of the mountain using a ruler.
11. The students will record the information in the data table.
12. The teacher will instruct the students that they are going to the same experiment with bottle number 2 which has 6 holes and remind the class to make a prediction before performing the steps.
13. We will then come together as class to record our findings on chart paper before moving on to the next part of the experiment.
  - Which materials eroded most? Why?
  - What is sediment? Why does it erode quickly?
  - How did the water affect the deposition of the materials?
14. Now we will use bottle number 3, with 6 holes, to observe how we can stop erosion and affect the deposition of materials
15. Students will be instructed to rebuild their mountains but may use the plastic bags filled with toothpicks and other materials to stop erosion.
16. Before using bottle 3, the recorder will answer the questions Do you think there will be a change in the water flow the way the hill is rebuilt?

Will there be more or less erosion?

17. Students will clean up the experiment and together we will discuss what factors affect erosion, and how can water affect the deposition of earth materials.
18. The teacher will instruct students that today we saw how water can change the land, and that tomorrow we will talk about how wind affects the deposition of earth materials.