4-ESS2-1 Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. [Clarification statement: Examples of variables to test could include angle of slope in the downhill movement of water, amount of vegetation, speed of wine, relative rate of deposition, cycles of freezing and thawing of water, cycles of heating and cooling, and volume of water flow.] [*Assessment boundary: Assessment is limited to a single form of weathering or erosion.*]

Practice: Planning and Carrying out Investigations
Crosscutting Concept: Cause and Effect

TASK 1

What is the movement of weathered materials called?
A. ice wedging
B. erosion
C. weathering
D. evaporation

Source: http://www.uen.org/core/science/sciber/TRB4/downloads/4thassess3.pdf

TASK 2

In the space provided below create a story about a rock that has undergone weathering and has been moved via the process of erosion. Your rock's journey will begin at the top of a tall mountain and end at a beach on a distant ocean. Answer the following questions in your comic strip.

a. How did your rock get from the mountain to the ocean?
b. How has the rock changed?
c. What forces caused the rock to change?

1.	2.	3.
4.	5.	6.

Source: http://www.uen.org/core/science/sciber/TRB4/downloads/4thassess3.pdf

TASK 3

For this card sorting activity, students cut apart the cards below.

Sort the cards into three categories: weathering, erosion, deposition

1 Flood water pounding against a canyon wall and wearing it down	2 Rain washing away soil from a hillside
3 Layers of sediment forming at the bottom of the ocean	4 A mudslide flowing down a steep hill
5 Glaciers dropping rock and sand to form terminal moraines	6 Waves dropping sand on the beach
7 Caves being formed by acid rain dissolving underground limestone	8 Deltas forming at the mouths of rivers

Source: https://www.teacherspayteachers.com/FreeDownload/FREE-Weathering-Erosion-and-Deposition-Sorting-Activity

TASK 4

In this activity, students collect data to understand the concept of weathering by repeatedly measuring the volume of a bar of soap after it had been soaked and then sprayed with water.

Take measurements of your bar of soap at these three time points. Answer the questions below based on your observations and the data you collected.

Soap Data Chart

Measurement In mm. or cm.	Length	Width	Area of the top of your soap.	Height	Volume
Before					
After Soaking					
After Spraying 20 minutes					

What does the data tell you about the soap?

What affected the soap? How was the still water (soaking) different than the spraying?

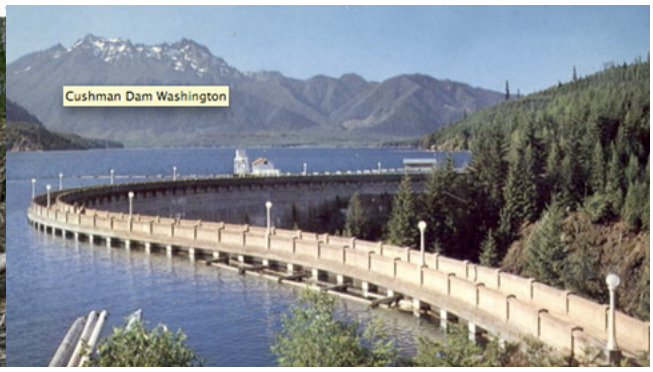
What does this tell you about moving water and how it changes the landscape over time?

Does this process take a long time? How does your data show you the evidence?

Source: http://betterlesson.com/lesson/632985/what-happened-to-my-soap

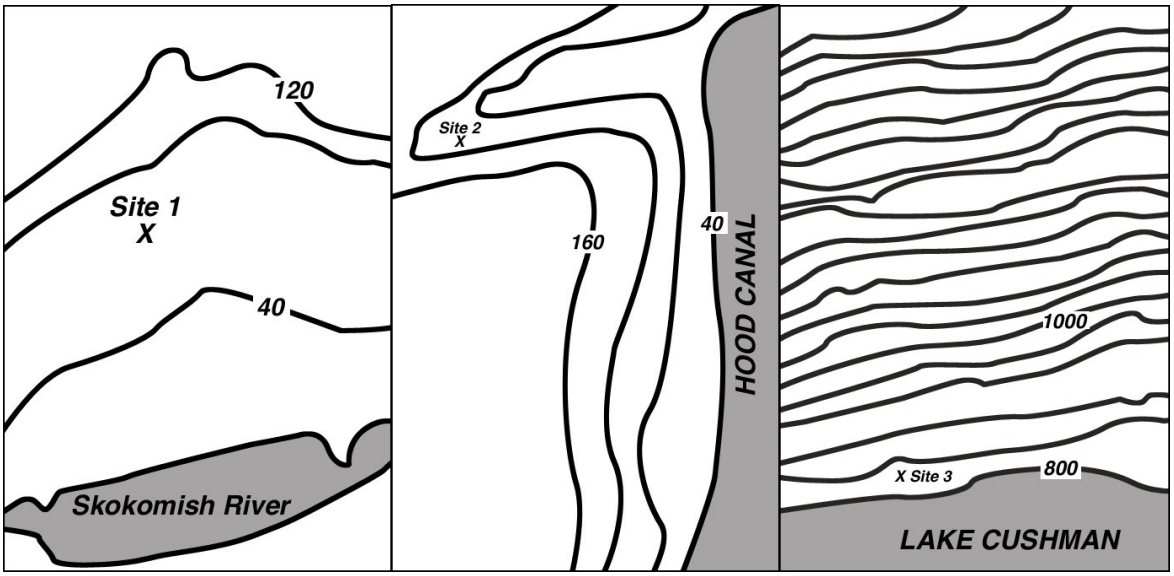
TASK 5

The Evergreen Development Company has found 3 sites in the area where they could build affordable apartments in the Skokomish River area. When completed, 25 families could live there. However, flooding in the Skokomish River area is a major problem. The flooding is partly due to ways that people have used the land in the past. People's use of the land has caused erosion of gravel, soil and sand. The gravel, soil and sand has washed into the Skokomish river and been deposited on the bottom of the river, making the flooding much, much worse.



Mason County does not want the apartments to make the flooding problems worse in the Skokomish River area. So, before Evergreen Development Company can build in the Skokomish area, their plan must be looked at and approved by Mason County government. There are three possible sites for the new apartments: 1. The Skokomish River; 2. Hoodsport; and 3. Lake Cushman.

1. Examine the topographic maps for each of the three sites below.



Site 1: Skokomish River **Site 2: Hood Canal** **Site 3: Lake Cushman**

Using what you can observe in each of the three maps, along with what you know about flooding, erosion, and deposition, make a recommendation to the Mason County government about which, if any, of the three sites to build on. The questions below will help you develop a recommendation.

2. Write down the criteria for a successful solution about where to build the apartments in your own words.

3. What observations would you need to make at each site to determine whether the site meets the criteria?

Specific data to collect:	How would this data help you decide which site, if any, to build on?

4. Using the maps as a guide, which site would you expect erosion caused by the new apartments to be greatest?

Source: http://howpeoplelearn.org/skokweb/skokteacher/index.html