



## **Forces in Nature: Breaking Down Weathering and Erosion**

**\*2022**

**Grade:** 5<sup>th</sup>

**Setting:** Pineridge or other natural area with a variety of habitat/landscapes

**Theme (Bottom Line):** Weathering and Erosion help to shape landscapes and are the factors that help form habitat and space for living things in Natural Areas.

**Description:** Students learn about weathering and erosion and how these factors assist with the creation of habitat within an environment.

**Recommended Time-** 30 minutes

**Recommended Group Size:** 15

**State Standards:** **Earth and Space Science Grade 5.3.3** Earth's major systems interact in multiple ways to affect Earth's surface materials and processes. **Earth and Space Science 5.3.5** Societal activities have had major effects on land, ocean, atmosphere and even outer space

### **Materials list:**

- Scavenger Hunt Sheet/Pens
- Clipboards
- Picture of the Grand Canyon
- Picture Examples of Weathering and Erosion

### **Getting Ready:**

1. Identify areas to easily spot signs of weathering and erosion (near trails, along steep hillsides, etc.) NA staff will have suggestions of where to find examples.

Welcome students and introduce yourself and any other volunteer. Encourage Adults to participate by giving them each a task. Remind them of the difference between a Natural Area and a Park. Explain the theme of the lesson and begin.

### **ENGAGE (Introduction): 5-10 mins.**

Get the students focused with these leading questions.

- Who has heard of the terms “weathering” and “erosion”? How are they different?
  - Weathering is the process of breaking down earth's landforms through wind, water etc. Erosion is the process of having the broken-down material moved away. Show different photos of weathering and erosion and have them guess which they are. These processes can be natural or can be man-made (often problematic- such as walking off trail and wearing down an area/trampling on habitat)

- How long do the processes of weathering and erosion take to have an effect on an area? (can be fast or slow- give examples of water over time or sudden rock breaking off the side of a mountain)
- Can you think of any examples that might happen around your house? How about Natural Areas? Can people cause weathering and erosion?

We will discuss all these questions and more as we explore this Natural Area through a scavenger hunt to look for signs of weathering and erosion and how these areas help to create habitat for living organisms around Natural Areas.

**EXPLORE: 5-10 mins.**

For this activity, students are partnered with another classmate (or 2), a clipboard, scavenger hunt sheet, and pen. Students are given boundaries and are sent to find the answers to the scavenger hunt questions listed on their sheet. Chaperones will be directed to assist students and leader will float around to the different groups to assess their understanding and see if there are any questions.

**EXPLAIN: 5-10 mins.**

Gather students back up to discuss their findings.

- Have students share their different signs of weathering and erosion.
- How has weathering and erosion created a unique environment for plants and animals to live in here and why are these important processes? (certain animals need shelter under rocks, plants can grow where soil has been deposited by wind, some plants need disturbed areas to propagate).
- Circle back to last questions posed in ENGAGE section- were there signs of man-made erosion? How could this be detrimental to this area? (man made erosion can degrade an area that is habitat for plants and animals- happens more quickly than erosion over time due to the elements)

**ELABORATE: 5 mins.**

Now that students better understand what weathering and erosion are, provide photos of several well-known areas (Grand Canyon, Rocky Mountains, Arches) to students grouped into 2 or 3.

- Ask students if they know what their picture is of. Have them brainstorm how weathering and erosion has affected this area over time.
- Students share their thoughts with the group and note if this was natural or man-made weathering and erosion.
- Students also share how the act of weathering and erosion has created an area for plants and animals to thrive in this environment.

**EVALUATE: 5 min.**

- Have students remind you what weathering and erosion are and a few of the examples they found today in our natural area.
- Ask students why man-made erosion is often detrimental to an area.
- Have students share one benefit that weathering and erosion provide to plants or animals.