

Shaping the Earth's Surface (Weathering, Erosion and Deposition)

6th grade Pre-Sly Park Experience Activity

Content Standards:

- NGSS 4-ESS2-1 Earth's Systems
Make Observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.
- NGSS MS-ESS2-2 Earth's Systems
Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.

Objectives:

Upon completion of this lesson students will be able to define and describe:

- Weathering as the process of the breaking down of rock, soil and minerals by physical, chemical or biological processes
- Sediment as the broken down pieces of rock, soil and minerals
- Erosion as the movement of sediment from one location to another by means of water, ice, or wind
- Deposition as the process of sediment being carried by water, ice, or wind and deposited (dropped) in another location

Background Info for Teachers:

The earth's surface is constantly be shaped by internal geologic processes (volcanism, shifting of tectonic plates and uplifting) and external processes (weathering, erosion and deposition). These external processes (weathering, erosion and deposition) play a substantial role in shaping landforms. The resulting landforms are made up of various rock and soil types, plant and animal species and human inhabitants, which have adapted to specific regions.

Materials:

- Weathering, Erosion, and Deposition definitions
- Weathering, Erosion, and Deposition cards
- Heading Cards and Answer Key

Procedures:

Activity 1 (5-15 minutes)

Weathering, Erosion and Deposition Discussion (Anticipatory Set): Review and discuss the meanings of weathering, sediment, erosion and deposition as they pertain to shaping the earth's surface. Briefly describe how they are alike and how they are different.

Activity 2 (15-20 minutes)

1. Organize students into pairs or teams.
2. Hand out the (3) Weathering, Erosion and Deposition heading cards with the arrows and the answer key. Turn the answer key face down and spread the heading cards out on a table in the middle of the team.
3. Hand out the (16) example cards. Shuffle the cards and place them face down in a pile.
4. One person flips over an example card and reads it aloud. He or she identifies the card as an example of weathering, erosion or deposition. If everyone agrees, the card is placed face up on the appropriate heading card, right under the arrow. If some team members don't agree, review the meaning of the three terms and think about which term best describes the example on the card.
5. The next person flips over another example card and follows the directions in Step 4. Continue taking turns until all example cards are placed below a heading card
6. Turn over the answer key and check your answers

Rove around the classroom and check in with students during the activity. Check for understanding with the entire class at the conclusion of the activity.

Assessment:

Students will be given the opportunity to engage in the following:

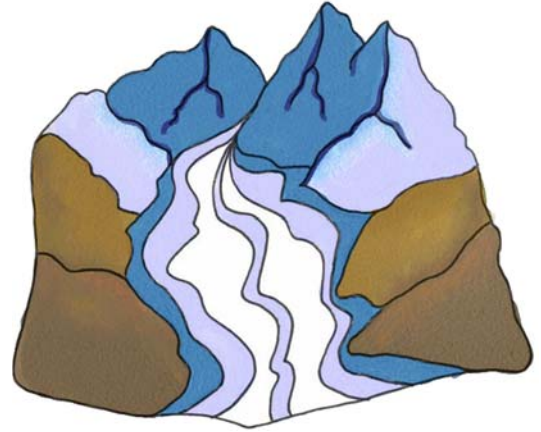
- Guided practice via teacher-to-student interactions during Weathering, Erosion and Deposition Discussion (anticipatory Set)
- Independent/Group practice via Weathering, Erosion and Deposition sorting activity
- Check for understanding during the Weathering, Erosion and Deposition sorting activity as well as with the entire class at the conclusion of the activity.

References

Laura Candler ~ Teaching Resources ~ www.lauracandler.com
(sorting activity idea/graphics)

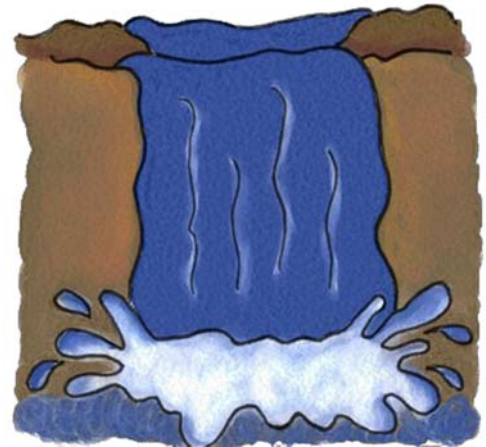
Weathering

The breaking down or disintegration of substances such as rocks and minerals by physical, chemical, or biological processes



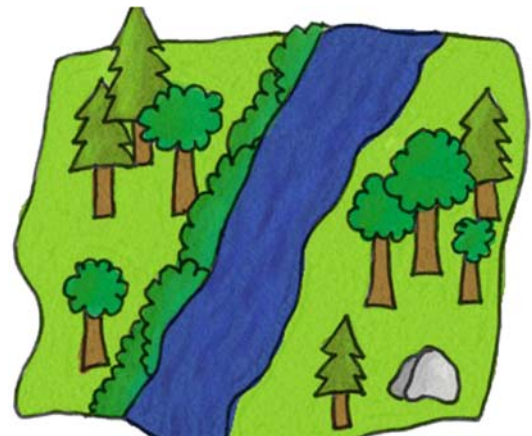
Erosion

The movement of sediment or soil from one location to another by means of water, ice, or wind

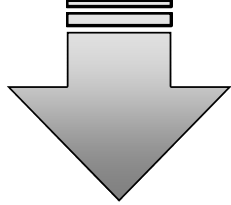


Deposition

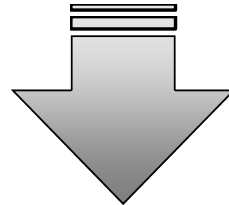
When particles carried by water, ice, or wind are deposited (dropped) in another location



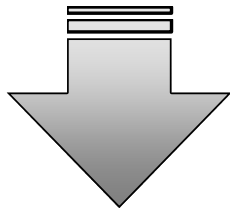
Weathering



Erosion



Deposition



Answer Key

Weathering
1, 7, 9, 11, 12, 14

Erosion
2, 4, 10, 13, 16

Deposition
3, 5, 6, 8, 15

Weathering, Erosion, or 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

Weathering, Erosion, or Deposition?

<p>9</p> <p>Water getting into cracks, freezing, and breaking the rocks or pavement apart</p>	<p>10</p> <p>Wind blowing sand from one location to another</p>
<p>11</p> <p>Wind blasting sand at rock and carving out arches</p>	<p>12</p> <p>Glaciers scraping rocks across the earth's surface</p>
<p>13</p> <p>Muddy water being carried away by a fast-moving river</p>	<p>14</p> <p>Rocks being made smooth by tumbling across a streambed</p>
<p>15</p> <p>Ponds filling up with sediment and becoming marshes</p>	<p>16</p> <p>Flood waters moving soil from one location to another</p>