

Monday, April 6, 2020

Earth Science:
Weathering

Objective: Students will be able to describe the three basic types of weathering, give examples of each, and identify the factors that affect each type of weathering.

Lesson Starter

Watch this video: [Physical & Chemical Weathering](#)

Thought Question:

How can you determine if the weathering is physical or chemical?

Weathering

Read page 1 - “*Weathering*” from the *Geological Society* website.

[Link to page 1](#)

Complete the guided reading questions on the following slide.

Weathering

1. List three types of weathering.
2. What is the difference between weathering and erosion?

Physical Weathering

Read pages 2, 3, 4 - “*Physical Weathering*” from the [Geological Society](#) website.

[Link to page 2](#)

[Link to page 3](#)

[Link to page 4](#)

Complete the guided reading questions on the following slides.

Physical Weathering

1. What are two main types of physical weathering?
2. How does water aid in the physical weathering of rocks?
3. What property of water allows it to contribute to physical weathering?
4. What types of rock are particularly prone to exfoliation?

Chemical Weathering

Read page 5 - “*Chemical Weathering*” from the *Geological Society* website.

[Link to page 5](#)

Complete the guided reading questions on the following slides.

Chemical Weathering

1. How does temperature play a role in chemical weathering?
2. List three types of chemical weathering.
3. Which type of chemical weathering is enhanced by acids?

Biological Weathering

Read page 6 - “*Biological Weathering*” from the *Geological Society* website.

[Link to page 6](#)

Complete the guided reading questions on the following slides.

Biological Weathering

1. Give two examples of living things causing weathering of rock.

Weathering

Extensions:

Quick Quiz - Check your understanding with this quick, self-grading quiz.

[Link to Quiz](#)

Images of Weathering - Study the images of weathering and cite one commonality between the images.

[Link to Images of Weathering](#)

Answers

Weathering

1. List three types of weathering. **There are three types of weathering, physical, chemical, biological.**
2. What is the difference between weathering and erosion? **Erosion is the process by which soil and rock particles are worn away and moved elsewhere by wind, water or ice. Weathering involves no moving agent of transport.**

Physical Weathering

1. What are two main types of physical weathering? **Freeze-thaw & Exfoliation**
2. How does water aid in the physical weathering of rocks? **Freeze-thaw occurs when water continually seeps into cracks, freezes and expands, eventually breaking the rock apart.**
3. What property of water allows it to contribute to physical weathering? **Expands when it freezes**
4. What types of rock are particularly prone to exfoliation? **coarsely crystalline igneous rocks**

Chemical Weathering

1. How does temperature play a role in chemical weathering? **These chemical processes need water, and occur more rapidly at higher temperature, so warm, damp climates are best**
2. List three types of chemical weathering. **Solution , Hydrolysis, Oxidation**
3. Which type of chemical weathering is enhanced by acids? **Solution - removal of rock in solution by acidic rainwater.**

Biological Weathering

1. Give two examples of living things causing weathering of rock.

Trees put down roots through joints or cracks in the rock in order to find moisture. As the tree grows, the roots gradually prize the rock apart.

Even the tiniest bacteria, algae and lichens produce chemicals that help break down the rock on which they live, so they can get the nutrients they need

Many animals, bore into rocks for protection either by scraping away the grains or secreting acid to dissolve the rock

Weathering

Extensions:

Quick Quiz - Check your understanding with this quick, [self-grading quiz](#).

Images of Weathering - Study the images of weathering and cite one commonality between the images.

[All four images show rock breaking down into smaller pieces.](#)