

**AIM:** What is weathering?

**Unit 4:** What happens to rocks after they've formed?

**Do Now:**

- 1) What types of rock can you weather and erode in order to create sediments?
- 2) What is the 3<sup>rd</sup> process along with weathering and erosion? (Hint: look in the parentheses)
- 3) For the following minerals, write down their hardness scale number:

- a. Graphite=
- b. Halite=
- c. Fluorite=
- d. Potassium feldspar=
- e. Quartz=

Before you leave, can you?

- Define chemical and physical weathering and give examples
- Describe 4 different types of physical weathering
- Describe 3 factors that affect the rate and type of weathering

**Key Terms**

**Notes/Explanation**

	<p>1. Weather conditions such as _____, the actions of living things, and other factors can break down rocks at Earth's surface into smaller pieces and they can be carried away as _____</p> <p>2. Weathering is the _____</p> <p>a) Sometimes rocks that are originally below the surface can be moved up because of a process called _____</p> <p>b) Weathering happens when rocks are exposed to _____</p> <p>_____</p> <p>c) There are two types of weathering:</p> <p>a. Chemical weathering: _____</p> <p>-usually see _____</p> <p>b. Physical weathering: _____</p> <p>i. Frost action: water gets into the rock, when water freezes, it _____ and forms cracks</p> <p>ii. Pressure changes: when you _____ pressure, rocks can expand and this causes cracks</p> <p>iii. Abrasion: _____</p> <p>iv. Plant root growth: roots grow into the rocks and as the roots get bigger, the rock cracks</p>
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**Chemical versus physical weathering activity:**

- a) What is chemical weathering? What do you usually observe when a chemical change happens?
- b) What is physical weathering?
- c) Take your piece of chalk and carve your name into the side. What type of weathering is this? Explain.
- d) Drop 3-4 drops of vinegar onto your chalk. What type of weathering is this? How do you know?
- e) Vinegar is an acid. What are 2 rocks that you think can be easily weathered by acid. Why?

3. Different factors affect the rate and type of weathering

- a) Exposure: how much contact a rock has with \_\_\_\_\_
- b) Particle size: \_\_\_\_\_
- c) Mineral composition: \_\_\_\_\_
  - a. Example: rocks with calcite weather quickly because \_\_\_\_\_
  - b. Example: rocks with quartz a hard to weather chemically because quartz doesn't react with many substances
  - c. Example: rocks with minerals with a high hardness number will be more difficult to break down
- d) Climate: chemical weathering is high in \_\_\_\_\_; physical weathering through frost action is common in \_\_\_\_\_

Did you get it?

- 1) When acid rain causes a limestone statue to dissolve, what type of weathering is this?
- 2) When a tree trunk grows larger and cracks a rock into two smaller pieces, what type of weathering is this?
- 3) When a rock with a lot of iron is exposed to oxygen and turns red, what type of weathering is this?
- 4) Look at the Igneous Rock Identification Scheme. What 3 minerals make up most of granite? List the hardness of each mineral next to its name.
- 5) Why do you think granite is such a good building stone? (Used for building construction)

**Summary and Reflection:**

**Homework:** Read pages 182-185

On a separate sheet of paper, answer questions 1-4, 7, and 9

Do NOT just write down the answer, write out the whole thing as a statement