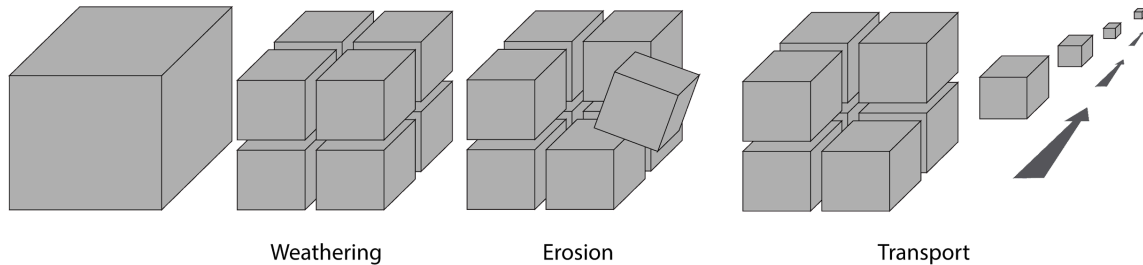
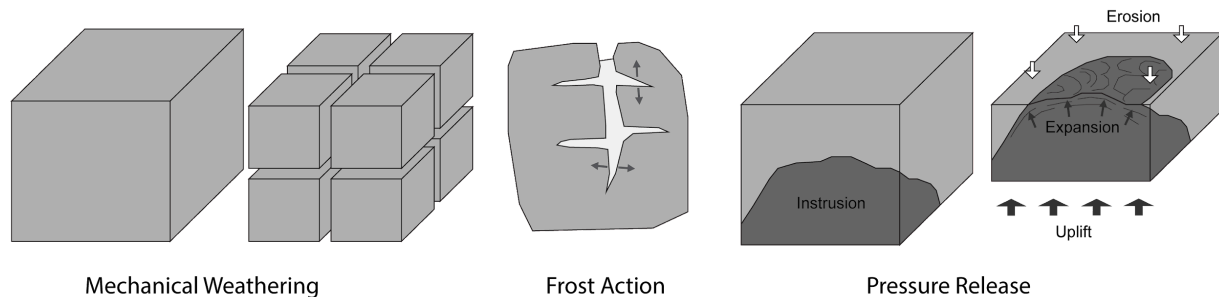


First some review of Weathering: Weathering, Erosion, and Transport



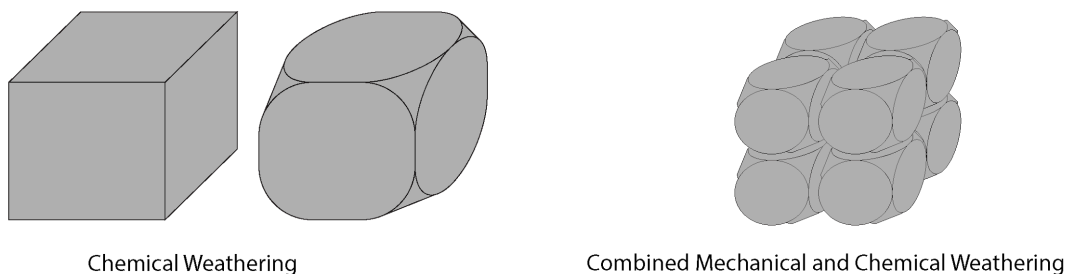
Weathering is the breakdown of material, erosion is the removal of that material from its place, and transport is the movement of that material. Weathering continues to the material during transport.

Mechanical Weathering



Mechanical weathering is the breakdown of material into smaller pieces. The most effective processes are frost action and pressure release. Other mechanical weathering might include the action of plants and animals, thermal variations, and mineral (salt) wedging.

Chemical Weathering



Oxidation – (Rusting) Minerals formed at depth in the crust are unstable in an oxygen rich environment at the surface, many of which will react readily with oxygen to form new minerals.

Acid – (Acid Rain) Acids present in the environment will dissociate in water producing excess H^+ ions that in turn react with minerals, causing those minerals to change into new minerals.

Dissolution – (Cave formation) Some minerals are completely soluble in water when the right chemistry is present.

Now, test your knowledge:

Briefly define the following terms:

weathering –

erosion –

mechanical weathering –

chemical weathering –

frost action -

pressure release –

oxidation –

dissolution –

Answer the following:

1. The physical removal of material from its place is the process of:
 - A. Weathering
 - B. Erosion
 - C. Transport
 - D. Exfoliation
 - E. Hydrolysis
2. True/False. During transport a material will continue to be weathered.
 - A. True
 - B. False

3. In high latitudes (near the poles), this type of weathering is the most common, as water is more often frozen.
 - A. Pressure Release
 - B. Hydrolysis
 - C. Erosion
 - D. Oxidation
 - E. Frost Action
4. Sheetting is a form of this type of mechanical weathering, which occurs when granitic intrusions are uplifted and exposed through erosion, unloading pressure.
 - A. Pressure Release
 - B. Hydrolysis
 - C. Erosion
 - D. Oxidation
 - E. Frost Action
5. The reaction of an iron bearing mineral to become an oxide, such as hematite or limonite is this type of chemical weathering.
 - A. Oxidation
 - B. Acid attack
 - C. Dissolution
 - D. Hydrolysis
 - E. Erosion
6. The development of caves in carbonate (limestone) rock is attributed to this type of chemical weathering.
 - A. Oxidation
 - B. Acid attack
 - C. Dissolution
 - D. Hydrolysis
 - E. Erosion
7. The breakdown of minerals into clay minerals by the abundance of H^+ ions is credited to this type of chemical weathering.
 - A. Oxidation
 - B. Acid attack
 - C. Dissolution
 - D. Hydrolysis
 - E. Erosion

Now, think deeper:

On your own:

8. Describe a place (anywhere in the world) where you have seen weathering (either mechanical or chemical) of a human-made object. (where would you go right now to showcase this phenomena to your family/friends?)

9. Describe a place (anywhere in the world) where you have seen weathering (either mechanical or chemical) of natural earth materials. (where would you go right now to showcase this phenomena to your family/friends?)

10. What is a more prominent type of weathering in the area where you live? Can you list 5 local environmental factors that contribute to either type of weathering?

Working in groups of 2 or 3:

11. Take turns describing your answers to questions 8 and 9 above.

12. Compare your answers to question 10 and decide on the 5 most prominent local environmental factors.