

Chemical Weathering Guided Notes – Student Edition

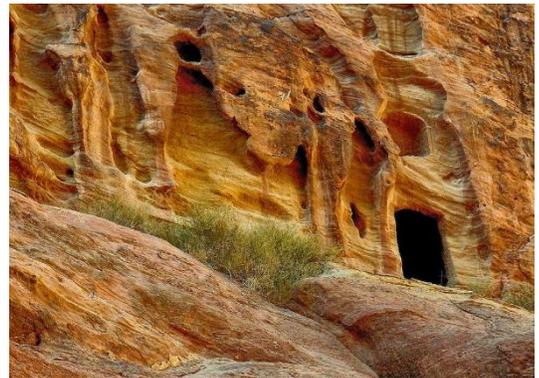
What is Weathering?

_____ describes the breaking down or dissolving of rocks and minerals on the surface of the Earth. Water, ice, acids, salts, plants, animals, and changes in temperature are all _____ of weathering. Weathering constantly _____ the rocky landscape of Earth. It _____ exposed surface over time. Weathering may be categorized as _____ or _____.



What is Chemical Weathering?

_____ weathering occurs when rocks undergo chemical reactions to form new minerals. Water, acids, and oxygen are just a few of the chemicals that lead to _____. Over time, chemical weathering can produce _____ results.



Chemical weathering involves the weakening and subsequent disintegration of rock by _____. These reactions include:

- _____;
- _____; and
- _____.

These processes either _____ or _____ minerals, thus, altering the nature of the rock's mineral composition. _____ and _____ are critical for chemical weathering. This is the reason why chemical weathering of rock minerals generally occurs more quickly in _____, _____ regions.

Oxidation

_____ is the reaction of rock minerals with oxygen, which results in the changing of the mineral composition of the rock. When minerals in rock oxidize, they become less _____ to weathering.

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An example of oxidation is _____, which occurs when oxygen reacts with iron to form iron oxide (rust). Rust changes the _____ of the rocks, plus iron oxide is much more fragile than iron, so weathered region becomes more susceptible to _____.

Hydrolysis

_____, may it be moving or stagnant, is another agent of chemical weathering. Chemical weathering occurs when water dissolves minerals in a rock, producing new compounds. This reaction is called _____.

An example is when water comes in contact with _____. _____ crystals inside the granite react chemically, forming clay minerals. The clay weakens the rock, making it more likely to _____.



Water also interacts with _____ in caves, causing them to dissolve. Calcite in dripping water builds up over many years to create _____ and _____.

In addition to changing the shapes of rocks, chemical weathering from water changes in the _____ of water. For example, weathering over billions of years is a big factor in why the ocean is _____.

Carbonation



When rocks and minerals are altered by hydrolysis, _____ may be produced. One common acid is _____, a weak acid that is produced when carbon dioxide reacts with water. The process of rock minerals reacting with carbonic acid is known as _____.

Carbonation is an important process in the _____ of many caves and sinkholes. Carbonic acid _____ or breaks down minerals in the rock. _____ in limestone dissolves under acidic conditions, leaving open spaces.