

Objectives: Describe the different ways minerals form; Explain how crystal formation is impacted by time; Know the basic crystal shapes

Minerals form in several ways.

In unit two, we learned that all minerals have a _____
_____. Minerals also have a _____
_____. This is important to know because the formation of a mineral is related to the
formation of its _____ which is determined by its
_____.

Recall that all minerals form by _____. Minerals
develop when _____ of one or more _____ join together and
_____ begin to grow. Which minerals form during this general
process is determined by which _____ are present as the mineral
forms. Also, _____ and _____ affect the mineral formation.

There are five ways in which a mineral can form:

1. Water _____
2. Hot water _____
3. Molten rock _____
4. _____ and _____ cause changes
5. _____ produce minerals

Minerals from water evaporation

Water usually has many substances _____ in it. Water is a
_____. This means it causes other substances to dissolve in it. The
substance that is dissolved is the _____. Some, not all, minerals can
dissolve in water. When the water evaporates, the minerals can reform, or
_____. Halite is an example of a mineral that can dissolve in water.
When salt water evaporates, the _____ that make up the halite join to form
_____ and is left behind. The mineral _____ can also form
through this process.

Minerals form when hot water cools

As hot water moves through Earth's crust, it can _____ minerals. When the water cools, the dissolved minerals crystallize and become solid again. In some cases, minerals are moved from one place to another. _____ is a mineral that is affected by this process. When it solidifies (crystallizes) in the cracks, it forms long, narrow channels of gold called _____. In some cases, the mineral that is dissolved is _____ than the mineral that later crystallizes. For example, lead from the mineral _____ can later become part of the mineral _____ as the lead atoms join with different atoms not found in galena.

Minerals form when molten rock cools

Many minerals grow from _____. Magma, molten rock _____ earth, contains most of the types of _____ that are found in minerals. As magma cools, the atoms join together to form different minerals. Minerals can also form as lava cools. Lava is molten rock that has reached earth's _____. _____ is a mineral that forms in this process.

Minerals form because heat and pressure cause changes

Heat and pressure within earth cause new minerals to form as _____ between atoms _____ and _____ again. The mineral garnet can grow and _____ the minerals chlorite and quartz as their atoms combine in new ways. With enough heat carbon found in a rock produces _____. With intense heat and pressure, the carbon forms _____.

Minerals from organisms

Now this may sound bizarre because we learned minerals are inorganic—they aren't produced by living things. However, some organisms do form minerals through a process called _____. For example, ocean animals such as oysters and clams produce _____ and other _____ minerals to form their shells. Humans produce _____ for use in their _____ and _____.