

Resource page for Lesson 2 Rocks and Minerals Gr 4

The difference between a rock and mineral:

A mineral is a naturally occurring, inorganic solid with a definite chemical composition and crystal structure with specific colour and hardness. Examples include diamond, copper, lead, and emerald. Rocks are an aggregate of one or more minerals which are locked together to form a hard solid. They are classified into three basic rock families: **igneous, sedimentary, and metamorphic.**

How rocks are formed/classification of rocks

Rocks are categorized into three groups according to how they form.

Igneous rocks are formed when magma cools. (The rate that the magma cools determines what type of igneous rock is formed). Igneous rocks generally have no layers, have variable textures, and do not contain fossils.

Metamorphic rocks are formed when rocks are exposed to heat and pressure.

When the earth's plates collide and rub against each other, the pressure creates heat and the rocks can change. Rocks are also exposed to extreme heat when they are deep in the earth or when they come in contact with hot molten material. Metamorphic rocks may have alternating bands of light and dark minerals, or may be composed mostly of only one mineral, such as marble or quartzite, and rarely contain fossils.

Sedimentary rocks are formed when sediments are deposited and squeezed together. Weathering from wind, ice, water, plants, and even pollution will break up rocks into small pieces called sediment. This sediment is then eroded, transported, and deposited into layers that are cemented together to form sedimentary rocks. Sedimentary rocks often have flat layers, are composed of pieces that are roughly the same size with pores between these pieces that are commonly filled with smaller grains, and sometimes contain fossils.

The processes that create the three different types of rocks make up what is called the rock cycle. Although it takes an extremely long period of time, all rocks can change into different types of rocks through this cycle.

Heat and pressure = Metamorphic rocks

Weathering, erosion, deposition, and cementation = Sedimentary rocks

Cooling of magma = Igneous rocks

Watch the video (Khan Academy) about the Rock Cycle