

Science Unit 3: Rocks and Minerals (Grade 4)

Content Area: **Science**
Course(s): **Science 4**
Time Period: **Marking Period 2**
Length: **4-6 weeks**
Status: **Published**

Established Goals/Standards

Please choose the appropriate Goals/Standards from the Standards tab above.

SCI.3-4.5.4.4.C.2	Categorize unknown samples as either rocks or minerals.
SCI.3-4.5.4.4.C.b	Earth materials in nature include rocks, minerals, soils, water, and the gases of the atmosphere. Attributes of rocks and minerals assist in their identification.
SCI.3-4.5.4.4.D	The theory of plate tectonics provides a framework for understanding the dynamic processes within and on Earth.

Essential Questions

Please add your Essential Questions by clicking on the Lists tab above.

- What are tectonic plates and how do they move on the earth?
- What is a metamorphic rock and how is it formed?
- What is a mineral?
- What is a rock?
- What is a sedimentary rock and how is it formed?
- What is an igneous rock and how is it formed?
- What properties can help us to classify various types of rocks and minerals?

Enduring Understanding

Please add your Enduring Understandings by clicking on the Lists tab above.

- A mineral is a naturally occurring substance found in the earth's crust.
- A rock is a naturally occurring substance formed from 2 or more minerals.
- Igneous rocks are formed when magma (molten rock deep within the earth) cools and hardens. Sometimes the magma cools inside the earth, and other times it erupts onto the surface from volcanoes.
- Metamorphic rocks are formed under the surface of the earth from the metamorphosis (change) that occurs due to intense heat and pressure (squeezing).
- Rocks and minerals can be classified by studying shape, grain size, luster, color, and hardness.
- Sedimentary rocks are formed from particles of sand, shells, pebbles, and other fragments of material. Together, all these particles are called sediment. Gradually, the sediment accumulates in layers and over a long period of time hardens into rock. Generally, sedimentary rock is fairly soft and may break apart or crumble easily.
- There are eight major plates, or giant slabs of rock, on the surface of the Earth. There are also bunches

of minor plates. The plates are like the skin of the planet. The tectonic plates are floating on top of the molten rock and moving around the planet.

Content

Students will be able to:

- identify the layers of the earth
- distinguish between minerals and rocks
- classify rocks and minerals based on their luster, color, cleavage, streak, and hardness
- identify characteristics of igneous, sedimentary, and metamorphic rocks
- explain how igneous, sedimentary, and metamorphic rocks are formed
- identify places you may find each of the three major types of rock on Earth
- explain what tectonic plates are and how they move

Resources

- Discovery Works textbook
- ActivBoard flipcharts
- Rock Testing Lab
- United Streaming videos
- <http://www.learner.org/interactives/rockcycle/index.html>
- http://www.geography4kids.com/files/earth_rocktypes.html
- <http://kidsgeo.com/geology-for-kids/0025B-rock-cycle.php>