

Welcome/ Staff/Volunteer Names

Introduction: **Today's Topic-Rocks**

Question: Where do rocks come from and how do they change?

Ice Breaker/ **Daily Geology**-Ask students about their mineral-using activities in the last day.
Game: Have them raise their hands, then say their names if they've done the activity.

Background/ Ask the students what geology means. It is the study of the earth.
Exploration: Help the students understand the meaning of rocks and minerals:
Rock-A substance made up of crystals and particles of minerals.
Mineral-A naturally occurring non-living solid substance with a consistent chemical make-up and a special crystal shape. May include one or more elements.
Elements are pure substances made up of one kind of atom.

Activity: **Rock & mineral hunt**-guess which items are made from rocks/minerals.

How do rocks form? Types of Rock and their formation:

Igneous-formed from molten rock-magma in the earth, or lava from volcanoes

Sedimentary-formed from sediment/particles cementing together under water

Metamorphic-extreme heat & pressure changed igneous or sedimentary rock

It takes a VERY long time for most rocks to form. Rock Cycle

Which kind of rock do we find a lot of in Iowa?

Sedimentation experiment.

Volcanoes-Add gases to atmosphere, add water to oceans, build mountains & islands, lava forms rocks, soil is later formed from volcanic rock

Activity: **Eruption demonstration**-Model volcano w/vinegar & baking soda.

Earth's Geologic Features-Show and explain a poster of the layers of the Earth.

Activity: **Earth Layer Model**-Build a model of the Earth's layers with the students.

The **Earth's crust** is made of large pieces, or plates, which slowly move along on the molten magma underneath.

Activity: **Plate Movement** (Blobs)- Move graham crackers on frosting to model various plate movements-rift (ocean floor crack), uplift (mountains), sideways (earthquakes), subduction (one edge under the other-volcano).

Fossils-Preserved remains, impressions, or traces of plants/animals that lived long ago. Hard parts preserve best-bone, shell, tooth. Rapid burial also helps preservation.

Mold-Shape/impression of an ancient animal or plant.

Cast-Material that later filled in the mold. Has the shape of the original creature.

Older fossils are usually found underneath younger ones.

Look for fossils where there is sedimentary rock-stream/river banks, shorelines.

OUTDOOR Look for nearby landforms and places to find fossils.
EXPLORATION: Go to creek mouth.
Look for fossils in river rock.
Check the riverside rocks for different types and fossils.

Activity: Clean off pieces of gravel containing fossils. Take home a small fossil.

Closing: **Sediment Experiment**-Check on the settling sediment jar.

Places to visit to see rocks -Rock & Mineral Show (March) -Devonian Fossil Gorge (Coralville)
-Bluestone Rock Shop (Mt. Vernon Rd.)-Museum of Natural History, U of I
-Rockford Quarry

Send Off: Goodbye!

Next Month-Water Birds

Take Home: Parent Outline

Activities

Fossil

Vocabulary

Geology, mineral, rock, fossil, cast, mold, igneous, sedimentary, metamorphic, volcano, magma, tectonic plates, earthquake

Background and Activity References

www.rahul.net/infodyn/rockhounds/rockhounds.html

<http://www.angelfire.com/ia3/cvrms/>

<http://midamericapaleo.tripod.com/>

Rockhounds Information Page

Cedar Valley Rocks and Minerals Society

Mid-America Paleontology Society

Blobaum, Cindy. 1999. *Geology Rocks! 50 Hands-on Activities To Explore the Earth*. Williamson Publishing, Charlotte, VT.

Land for Life, The Story. National Association of Conservation Districts, League City, TX.

Coloring pages and puzzles on a poster. What is Soil?

Millie and Sam's Fossil Hunt. 2004. University of Iowa Paleontology Repository, Mid-America Paleontology Society. Fossil photos. Background and field guide for beginning fossil hunters.