

EARTH ROCKS

Webelos Adventure Leader Guide

1. Do the following:

- a. Explain the meaning of the word "geology."

ge·ol·o·gy (n)

the study of the rocks, soil etc. that make up the Earth, and of the way they have changed since the Earth was formed

"geo" means *Earth*

"ology" is *the study of*

- b. Explain why this kind of science is an important part of your world.

- Think about where we live – the geology of New England like mountains, hills and drumlin islands
- Think about soil for farming, land to build our homes and places where we build roads for travel
- Think about where we play on fields, hike in the hills or swim at the beach
- Think about rivers, ponds, lakes, hills, mountains, forested areas
- Think about how the weather and climate conditions in New England change that land quickly (mudslides, earthquakes) or slowly (weathering, erosion)

- c. Share with your family or with your den what you learned about the meaning of geology (consider the audience)

- Make a power point presentation with pictures you took to show at a meeting
- Create a diorama of a place you have visited and display it at an open house
- Write a song and perform it for or with friends
- Design a pamphlet for visitors to the area and share it at fundraisers
- Make a Prezi presentation online to teach younger scouts

2. Look for different kinds of rocks or minerals while on a rock hunt with your family or your den.

When did you do this? Record the date and time of your observation

Where did you do this? Record the location with as much detail as the scout is able

Make this part of a hike or examine a few rocks at your meeting place or in your own back yard. **Leave No Trace Principles** call for scouts to leave rocks where they are found. Examine them, but do not remove them.

3. Do the following:

- a. Identify the rocks you see on your rock hunt. Use information in your handbook to determine which types of rocks you have collected.

b. With a magnifying glass, take a closer look at your collection. Determine any differences between your specimens.

Look for properties like color, shine or size of particles. Consider a hand-held micro viewer for this observation. (There are several different kinds of hand-held microscopes available online for about \$12.) The light will allow the scout to see if the minerals that make up the rock are shiny or have specific crystal shapes.

c. Share what you see with your family or den.

4. Do the following:

a. With your family or den, make a **mineral test kit**, and test rocks according to the Mohs scale of mineral hardness.

Collect a penny, a steel nail, a pocket knife, and a drill bit. You can also send for "strike plates" or use a piece of white porcelain tile to see what color line or "streak" the rock leaves behind. This is a clue to the mineral content of the rock.

Background:

Believe it or not, in the early 1800's no one had created a system for identifying minerals. So, (Frederich) Mohs started to study the different physical properties of minerals as a way to identify them. He noticed that some minerals are very soft, others are extremely hard. He also observed that harder minerals could scratch softer ones. With this in mind, Friedrich Mohs decided to develop a scratch test where he could determine the hardness of a mineral. To make his scratch test more accurate and helpful, he carefully observed many minerals and created a list of 10 minerals that he arranged from softest to hardest.

*To this very day we know this list as "**Mohs' Scale of Hardness**."* (from kidsloverocks.com)

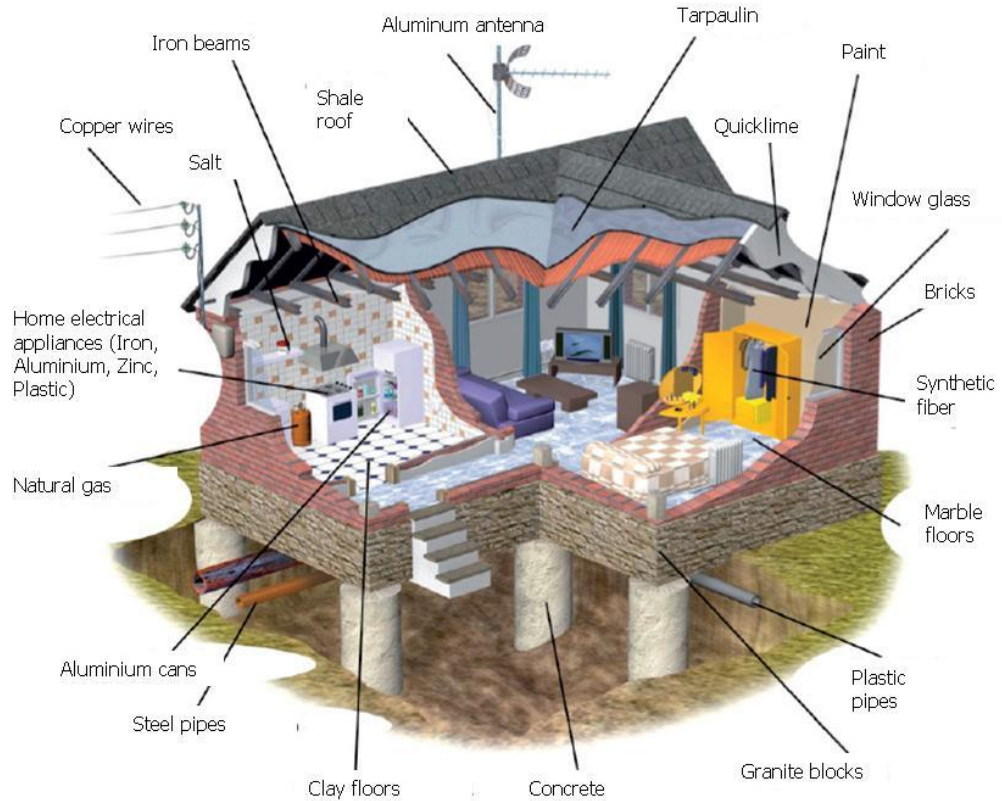
b. Record the results in your handbook.

5. With your family or den, identify on a road map of your state some geological features in your area.

In our area, you may explore Blue Hills, Moose Hill in Sharon, or even consider beaches in the area. Sand is geological, too! The Lloyd Center in Dartmouth features several ecosystems, including forest, coastal estuary and wetlands. Also, the dirt in your back yard counts. Feeling more adventurous? Look toward the Berkshires or even the Appalachian Trail.

6. Do the following:

- a. Identify some of the geological building materials used in building your home. Identify some of the geological materials used around your community. Record the items you find.



7. Do either 7a or 7b:
 - a. Go on an outing with your family or den to one of the nearby locations you discovered on your state map, and record what you see as you look at the geographical surroundings. Share with your family or den while on this outing what you notice that might change this location in the future (wind, water, ice, drought, erosion).
 - b. Do the following:
 - i. With your family or your den, visit with a geologist or earth scientist and discover the many career fields that are included in the science of geology. [Bridgewater State University has regular Open Houses in their science building.](#) Also consider the resources at the [Blue Hills Weather Observatory](#).
 - ii. Ask the geologist or earth scientist about the importance of fossils that are found.
 - iii. Ask the geologist or earth scientist what you can do to help preserve our natural resources.
8. Do at least one earth science demonstration or investigation with your den or with adult supervision, and explore geology in action.