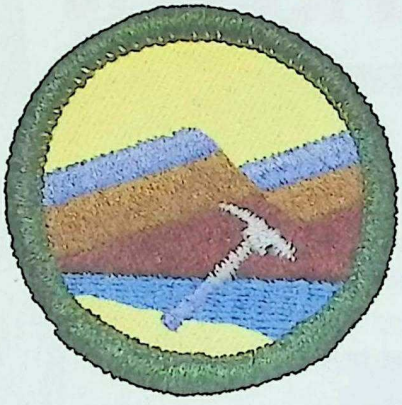
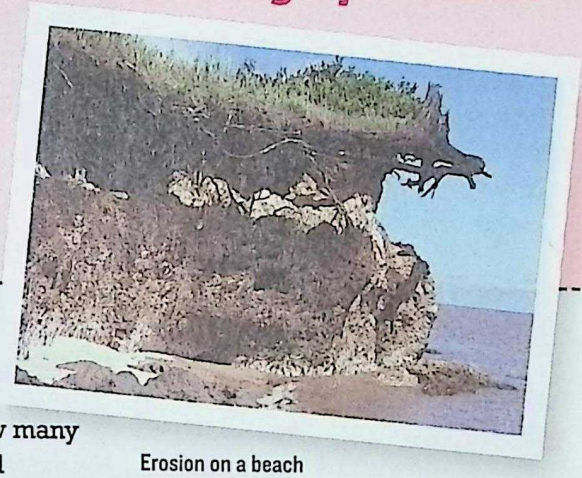
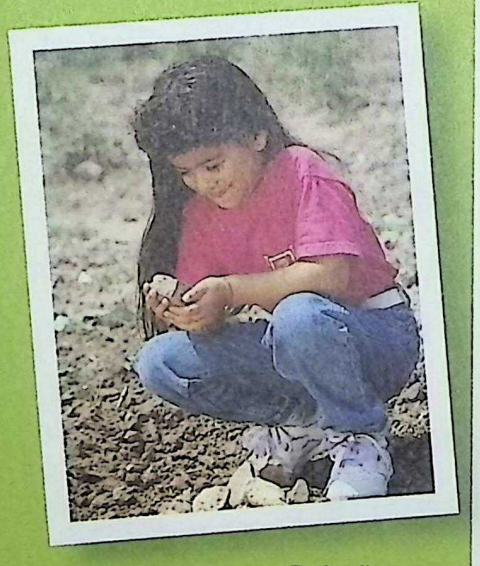
Rocks Rock



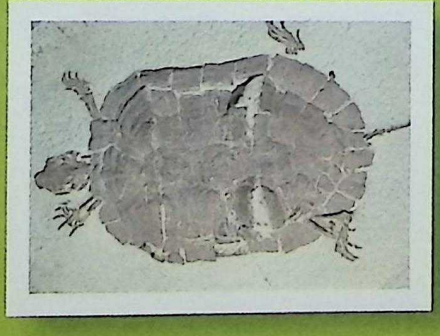
You might not spend a lot of time thinking about rocks. But rocks hold up roads, your house, and your town. Find out what types of rocks are in your area and how they've held up over the years. To earn this badge you must do activity 1.



Erosion on a beach



Rock collecting



Turtle fossil

1. Be a Rock Hound!

Start a rock collection. Go exploration hike to see how many different kinds of rocks and minerals you can find. Before you go, consider what equipment you might need. Take safety precautions! And don't collect any samples from an area where collecting stones is prohibited. If removing a rock will make an impact on the environment, *don't take it home*! Instead, photograph or observe the stone where you found it, so others will get to see it later.

2. Geo Hunt

Search for clues in your community or in a place you visit that shows one or more of the following:

- Where a glacier had been
- Where a volcano had erupted
- Where erosion had happened
- Where water once covered the area
- Where the earth has shifted

Discuss, describe, or show others what you have found.

3. What Type Is It?

Each rock you collect will fall into one of three major categories: igneous, sedimentary, or metamorphic. Which types are yours? Use books, Web sites, or maps to help you figure out which types of rocks you've gathered.

4. Soil Sense

Discover what makes up soil. Collect two soil samples, each sample from a very different spot. Spread each soil sample out on a light-colored sheet of paper, and use your senses.

- *Look:* Are the grains large and easy to see? Medium? Or small? Are there any stones in the soil? Is the overall color of the soil light, medium, or dark?
- *Smell:* What does it smell like? Wet some of the soil and rub it between your fingers and smell it again.
- *Touch:* What does it feel like? Sandy soil feels rocky or pebbly. Clay soil feels sticky. A loamy soil feels gritty.

5. "Geo" Careers

Can you imagine yourself working with dinosaur bones? How about with precious stones? Or have you ever pictured yourself being an expert on volcanoes, the ocean floor, or faraway planets? Believe it or not, all of these careers have backgrounds based in geology (the study of rocks). To learn more about possible geology-related career choices, complete the match-up activity below. Pick one career that you'd like to learn more about.

Career Choice	Definition
1. ___ **Lapidarist**	a) Studies where water is found on earth and the effects of water on or below the surface
2. ___ **Hydrologist**	b) Studies and creates maps for other bodies in the solar system
3. ___ **Geological oceanographer**	c) Cuts, polishes, and engraves precious stones
4. ___ **Paleontologist**	d) Studies how to extract natural resources such as gold, coal, diamonds, and oil from the earth
5. ___ **Astrogeologist**	e) Investigates the shape and the material of the sea floor and the history of the sea sediment and rocks
6. ___ **Seismologist**	f) Studies fossils (forms of life from the past)
7. ___ **Vulcanologist**	g) Studies earthquakes
8. ___ **Mining engineer**	h) Studies volcanoes

Answers: 1c, 2a, 3e, 4f, 5b, 6g, 7h, 8d

6. Wipe Out Erosion!

Erosion is the wearing away of rocks and soil by air, wind, and water. Hook up with a group that is trying to fight the effects of erosion in your area. Some activities to look into could be:

- Planting dune grass to help keep the sand along the shore from being blown out to sea. Small, wooden fences can also be used to create artificial sand dunes. These methods keep the beach where it should be—on the beach!
- Maintaining trails, which could include helping to build terraces or steps along steep paths. Terraces and steps make it harder for rainwater to wash straight down a hill, so less soil is removed when it rains.
- Helping to build a walkway over marshy wetland areas.

7. Around the Globe

Volcanic eruptions, geysers, earthquakes, and tsunamis (tidal waves) have had tremendous impact on people around the world. Pick one of these phenomena, and find out a place where it affected people and what those effects were.

8. The View from Above

Find photographs of the earth taken from a high altitude. Photos that were taken from a plane or satellite would be best. Use these photos to locate:

- Major oceans
- Land areas
- Mountain ranges
- Fault lines
- Volcanoes
- Farmland
- Rivers, lakes, and other inland waterways
- Other features of interest

9. Fossil Fun!

Fossils can be formed in different ways. A fossil may be the image (known as an "impression") that an object leaves in stone, which becomes the "mold" for that object. Make your own "fossil" by pressing a leaf, rock, skeleton, bone, or dead insect into some soft plaster of Paris and allowing it to harden. Look carefully to see the details made in the impression when the item is removed. If you can, go on a fossil hunt.

10. Weathered or Not . . .

To discover firsthand the effects of weather on the land, do one of the following:

- Go for a walk in your neighborhood and look for chips, cracks, and rough areas in a sidewalk. Think about how these might have happened. How has nature helped cause these changes in the sidewalk?
- Discover what happens when water gets into cracks and spaces in rocks and then freezes. Fill a small plastic container with water, put the top on, and then freeze it. What happens to the container? What does this mean for areas where there is water that freezes?
- Acid rain affects different types of stone in different ways. Visit a cemetery and notice the different types of stone used to make the headstones. Or walk around your neighborhood and check out buildings made from different types of stone. Notice how the lettering, statues, carvings, and/or corners are worn away. What conclusions can you draw from your observations?