



#3579

BILL NYE THE SCIENCE GUY: ROCKS AND SOIL

Grade Levels: 6-12
24 minutes

DISNEY EDUCATIONAL PRODUCTIONS 1995

DESCRIPTION

What are rocks? How are they formed? What is dirt? Bill Nye answers questions as he shares the history of rocks and the rock cycle. Explains the three types of rock and discusses erosion and soil profiles. Activities demonstrate plate tectonics, water's effect on rocks, and soil erosion.

ACADEMIC STANDARDS

Subject Area: Science

- ◆ Standard: Understands basic earth processes
 - Benchmark: Knows that rocks come in many different shapes and sizes (e.g., boulders, pebbles, sand)
 - Benchmark: Knows that rock is composed of different combinations of minerals
 - Benchmark: Knows the composition and properties of soils (e.g., components of soil such as weathered rock, living organisms, products of plants and animals; properties of soil such as color, texture, capacity to retain water, ability to support plant growth)

Subject Area: Geography of Places and Regions

- ◆ Standard: Understands the concept of regions
 - Benchmark: Knows areas that can be classified as regions according to physical criteria (e.g., landform regions, soil regions, vegetation regions, climate regions, water basins) and human criteria (e.g., political regions, population regions, economic regions, language regions)
 - Benchmark: Understands how regions change over time and the consequences of these changes (e.g., changes in population size or ethnic composition; construction of a new shopping center, a regional hospital, or a new manufacturing plant; changes in transportation; changes in environmental conditions)



AFTER SHOWING

Discussion Items and Questions

1. In what state did all the rocks in the world once exist? (All rocks in the world once existed in a melted state.)
2. What breaks rock down? (Wind and rain break rock down and make sand.)
3. What is dirt? (Dirt is rock, broken down.)
4. What are the three types of rocks? (The three types of rock are igneous, sedimentary, and metamorphic.)

Applications and Activities

1. Crystal Clear

Objective: To make crystals.

- a. Cut black construction paper to fit inside a jar lid.
- b. Pour $\frac{1}{4}$ cup Epsom salts (obtained from a drug store) into 1 cup of water.
- c. Pour some of the Epsom salts solution into the lid and let it sit for a day.
- d. Crystals will form. Notice how crystals draw together.



2. Eat 'Em Up!!

Objective: To demonstrate the three basic forms of rock.

- a. Use a cookie or brownie mix in powder form (sedimentary rock).
- b. Mix ingredients together and add to the recipe if necessary. Change begins to occur (metamorphic rock).
- c. Place cookie or brownie mix in an oven and bake at the proper temperature (igneous rock).
- d. Try adding some chocolate chips, nuts or candy to make conglomerate rock or various forms of metamorphic rock.

RELATED RESOURCES

Captioned Media Program

- Bill Nye the Science Guy: The Sun #3580
- Every Stone Has a Story #3244
- How Does the Land Wear Down? #3045
- Rocks and Minerals #3075



World Wide Web



The following Web sites complement the contents of this guide; they were selected by professionals who have experience in teaching deaf and hard of hearing students. Every effort was made to select accurate, educationally relevant, and "kid-safe" sites. However, teachers should preview them before use. The U.S. Department of Education, the National Association of the Deaf, and the Captioned Media Program do not endorse the sites and are not responsible for their content.

- **WONDERFUL WORLD OF ROCKS AND MINERALS**

<http://library.thinkquest.org/J002744/adlm.html>

From a ThinkQuest Jr. contestant. Click through basic information about rocks and minerals.

- **BILL NYE LABS**

<http://nyelabs.kcts.org/openNyeLabs.html>

From the wacky Bill Nye the Science Guy. "Teachers' Lounge," "Home Demos," "Demo of the Day," "Ask Bill Nye," and a searchable "T.V. Guide" section. Locate the "Rocks and Soil" episode within the "T.V. Guide" pull-down menu.

- **ROCK HOUNDS**

<http://sln.fi.edu/fellows/payton/rocks/create/index.html>

Graphics to introduce the three basic rock groups. Clickable menu for "Igneous," "Sedimentary," and "Metamorphic" rocks. For further information, return to the "Rock" homepage.

- **ALL ABOUT SAND**

http://www.paccd.cc.ca.us/instadm/physcidv/geol_dp/dndougla/SAND/

In-depth coverage of the topic. Sands of the world. Lots of links.

- **MONTREAL'S BIODOME**

<http://www.ville.montreal.qc.ca/biodome/ebdm.htm>

Live ecosystems, collections, activities, and research teams. A virtual investigation of one of the largest biodomes in the world. Fascinating coverage of the intricate technology behind the scenes.

- **101 HELPFUL THINGS TO DO**

<http://www.oregonzoo.org/ScienceResearch/whatyou.htm>

Things any individual can do at home, in school, or at work to help conserve plant and animal habitats.