

JUST FOR U.S.*

GRADES 4-5

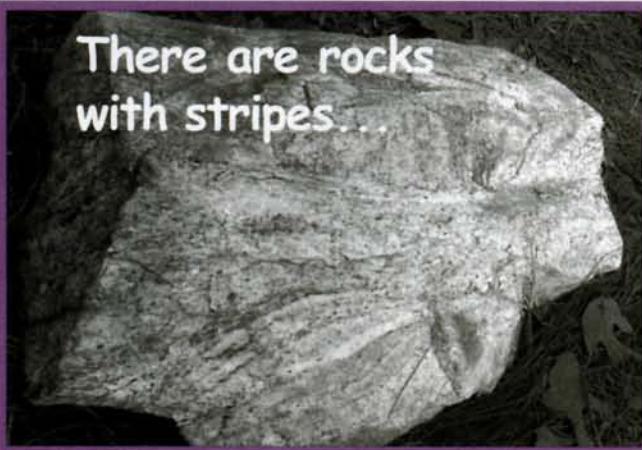
* Understanding Science

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Fernbank's Rock and Mineral Garden

Where can you see large and unusual rocks and minerals outdoors? Welcome to Fernbank Science Center's new rock and mineral garden.

There are rocks
with stripes...



and rocks with dots.



There are crystals...



and petrified logs.



Do You Know the Three Groups of Rock?

Igneous rock cooled from magma.

Sedimentary rock settled out of water or air.

Metamorphic rock changed by heat and pressure.

Rocks Tell Their Stories



Why is this rock full of holes? It began with bubbly hot lava spouting from a volcano. As the lava fell, it cooled to form an **igneous rock** full of bubbles, called **scoria**.



Photo by US Geological Survey

This **slate** was once the sedimentary rock, shale. Then two continents collided. The shale was forced deep underground.

Heat and pressure changed it into a tough **metamorphic rock**. More pressure bent the layers of slate.



Rocks at Work

This millstone is made of a sedimentary rock called **conglomerate**. It was used in an old mill to grind wheat into flour.

In our area many old mills were powered by water. Do you know a road or school near you that is named after an old mill?



In south DeKalb County is Soapstone Ridge. There, 3,000 years ago, Native Americans made bowls from a metamorphic rock called **soapstone**.

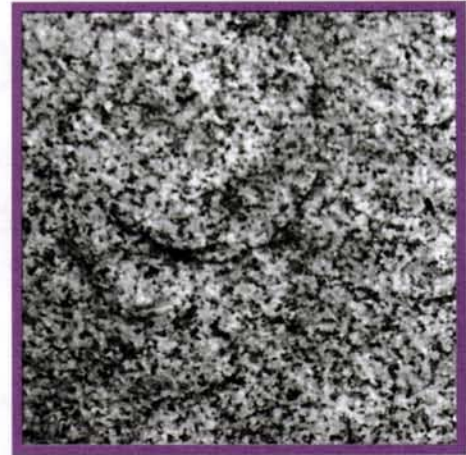
Like soap, soapstone is easy to carve. The person who began to make a bowl from this stone never finished.

Once, a family got their drinking water from a well. They built the top of the well out of a metamorphic rock called **schist**. Today, this well top is at Fernbank. The schist contains the mineral **mica**, which glitters in the sunlight.



Minerals

Rocks are made of minerals. In this rock, **granite**, are several minerals, including quartz, feldspar and mica.



Occasionally, you find big minerals that are not part of any rock. In Fernbank's garden are some huge minerals.

This is a big crystal of a mineral called **gypsum** (JIP-sum).

These **quartz** crystals grew slowly from minerals dissolved in water.



This may look like wood, but it is made of stone. First, a log was buried. Then, bit by bit, water with quartz replaced the wood. Now it is called **petrified wood**.

Grow Your Own Crystals!

The mineral crystals in Fernbank's garden probably took thousands of years to grow. Even so, you can grow some salt crystals in a few days.

You will need a cup half-full of hot water. You will also need salt, a spoon, a ruler and thin thread.

1. Put a spoonful of salt in the hot water.
2. Stir until the salt dissolves.
3. Repeat (1) and (2) until the salt will no longer dissolve.



4. Tie a thin thread to the middle of the ruler.



5. Lay the ruler over the cup. The thread should reach into the water.



6. Leave the water near a window for a few days until it evaporates.
7. Check the thread for salt crystals.

Your new crystals grew from the dissolved salt in the water. Crystals in the earth form the same way. It just takes much more time.



Start a Rock Collection

You can find rocks in your yard or in a creek bed. Here are metamorphic and igneous types common in our area.

White rock with black stripes - **gneiss** (pronounced NICE).

White rock with black dots - **granite** (GRAN-it).

Black rock - **amphibolite** (am-FIB-oh-lite)

Flat rock with gold-colored glitter - **schist** (SHĪST)

Light-colored mineral without black dots or stripes - **quartz**

Hint: If the outside of the rock looks dull, ask an adult to help. The adult may break the rock, using these safety rules.

1. ALWAYS wrap the rock in an old rag first.

2. Put it on a driveway or another hard surface.

3. Wear eye protection.

4. Hit the wrapped rock with a hammer.

