



Curiosity Guide #503

Rocks

Accompanies Curious Crew, Season 5, Episode 3 (#503)

Mineral Hardness Test

Investigation #9

Description

Learn how geologists use a special mineral test kit to determine the hardness of other rocks.

Materials

- Assorted rocks
- Mineral Hardness Test Kit
- Goggles
- Gloves

Procedure

- 1) Purchase a Mineral Hardness Test Kit from a source like Geology.com.
- 2) Put on goggles and gloves.
- 3) Label the first rock you are going to test, Rock A. Lay Rock A on the table, locating a flat side to test.
- 4) While holding Rock A by its edges, select one of the mineral rocks, B, and try to scratch A. Be sure to drag B in only one direction a single time.
- 5) Brush away any leftover sediment and examine the scratched rock.
- 6) If B scratches A, B is harder. If B doesn't make a mark, A may be harder.
- 7) Select another mineral, C, and try again.
- 8) What rocks are harder?

My Results

Explanation

Every rock can be measured by how hard its minerals are, using a scratch test. Geologists use the Mohs Scale as a measurement to identify rock hardness. The scale is a 1-10 range with 1 being as soft as Talc and 10 being as hard as diamond. The Mineral Kit is numbered from softest to hardest: talc, gypsum, calcite, fluorite, apatite, orthoclase, quartz, topaz, corundum, and diamond. These minerals can be used to scratch other rocks to determine which is harder.

Explore further:

Volcanoes can form the third kind of rock, the igneous rocks. The word *igneous* comes from the Latin word *ignis*, which translates to mean "of fire." This makes sense if you think about rock melting from the intense heat in the depths of the earth. We call that melted rock magma and it can erupt in a volcano. Magma is called lava when it leaves the volcano. That flowing lava eventually cools down and hardens into igneous rock. Some magma doesn't make it to the surface but can cool down in air pockets underground, forming igneous rock there, too. Granite, obsidian, pumice, and basalt are all examples of igneous rock. Amazing!

More to think about: Each rock you discover is uniquely special and made from a combination of materials. Imagine if we could interview a rock, call him Rocky, and discover his personal history. We'd probably hear a tale of weathering and erosion, transportation, deposition, and his years as a sedimentary, metamorphic, and igneous rock. Rocky has had quite a long journey, one that we don't want to take for granite! Remember, stay curious and keep experimenting!

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