

Rockhound Hunt

Overview: This is the first of three “field trip” type of labs where students are given a pile of unlabeled rocks, and asked to identify them using the test techniques we’ve covered. The samples for this first set are easy to do since the samples are larger, and the instructional video walks you through every sample and how to tell which is which.

What to Learn: We’ve covered sedimentary rocks in the previous lessons (the rocks used in those lessons are also found in the set required for this lab), so now is your chance to identify igneous and metamorphic rocks in your set by looking at color, streak, hardness, luster, chemical reactivity, and more! Let’s put your new skills to the test. It’s best to work right alongside the video as you go.

Materials

- “Know Your Rocks” (also called “Learn Your Rocks”) set by Geoscience Industries, which includes the following samples: basalt, granite, pumice, rhyolite, diorite, gabbro, andesite, obsidian, bituminous coal, limestone, conglomerate, coquina, shale, siltstone, sandstone, dolomite, anthracite coal, soapstone, marble, amphibolites, quartzite, slate, gneiss, and schist.
- Penny
- Nail
- Streak plate
- Water in a graduated container
- Scale that measures in grams
- Longwave UV light source
- Sunlight

Experiment

1. You’re first going to classify your pile of rocks right along with the instructional step-by-step video. So fire up the video and get your materials out as you complete the data table. You’ll be testing for color, streak, hardness, density, luster, cleavage, fracture, tenacity, acid reaction, and fluorescence. Enjoy your first real geologist rock hunt!

Rockhound Data Table

[illegible]

Quick reference:

- **Mohs' Hardness Scale:** fingernail: <2.5, penny: 2.5-3.5, steel nail (5.5), streak plate (7)
- **Density:** $\rho = \text{mass} / \text{volume}$ (where mass is measured in grams, volume in mL)
- **Luster:** metallic, submetallic, glassy, adamantine, resinous, silky, pearly, greasy, pitchy, waxy, dull
- **Cleavage:** perfect, good, poor, none, and in how many planes: 1, 2, or 3?
- **Fracture:** conchoidal (like a shell), earthy, hackly, jagged, splintery, uneven
- **Tenacity:** brittle, sectile, malleable, ductile, flexible-elastic, flexible-inelastic
- **Acid Test:** Drop a few drops onto your sample and watch for a reaction. If you see a reaction, note this in the data table with a "Y". Otherwise, write "N" for no reaction.
- **UV:** Record the color you see when the sample is exposed to *longwave* UV light.