

Rock Workshop

Overview: This is the third of three geology field trips that we're going to do. Make sure you've completed the first two field trips *and* all the mineral test experiments before attempting this one. Students will have 40 small rock samples to identify using the tests and techniques we've covered.

What to Learn: Today you get to sort and identify as many rocks as you can as you test for streak, hardness, fluorescence, color, magnetism, chemical reactions, and more with this unique set of rocks. You may have to do a little research on the ones that are not yet familiar to you!

Materials

- "Washington Student Rock Pack" (see list below for samples that are included)
- Penny
- Nail
- Streak plate
- Water in a graduated container
- Scale that measures in grams
- Longwave UV light source

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.
2. You'll be testing for color, streak, hardness, density, luster, cleavage, fracture, tenacity, acid reaction, and fluorescence. Enjoy your third real geologist rock hunt!
3. Here are the minerals and rocks included with this set:

• Calcite	• Clay	• Gabbro
• Calcareous Tufa	• Bauxite -	• Pyrite - Iron-
• Pyroxene	Aluminum Ore	Sulfur Ore
• Limestone	• Porphyry	• Granite
• Gypsum	• Limonite - Iron	• Fluorite
• Conglomerate	Ore	• Slate
• Amphibole	• Obsidian (or	• Sulfur
• Fossiliferous	Pitchstone)	• Gneiss
Limestone	• Hematite - Iron	• Barite
• Quartz	Ore	• Marble
• Sandstone	• Felsite	• Graphite
• Mica - Muscovite	• Pyrolusite -	• Mica Schist
• Shale	Manganese Ore	• Talc
• Feldspar -	• Pumice	• Quartzite
Microcline	• Magnetite - Iron	
• Bituminous Coal	Ore	
• Feldspar -	• Basalt	
Plagioclase	• Copper Ore	

Rock Workshop Data Table

Sample	Color	Streak	Hardness	Mass	Density	Luster	Cleavage	Fracture	Tenacity	Acid	UV

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, smooth

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.

Note: You'll need to print out five of these sheets to complete all 40 sample tests.