

ROCKS AND MINERALS MATERIAL LIST

1. In a Geologist's Backpack

Materials to Purchase:

1) Rock Hammer

Amazon: Estwing E3-14P 14 oz Rock Pick with Pointed Tip & Shock Reduction Grip (\$20.33)

2) Hand Lens

Amazon: KINGMAS(R) Pocket 30 x 21mm Glass Magnifier Silver Magnifying Eye Jewellers Loupe (\$3.99)

3) Field Notebook

Amazon: Rite in the Rain All Weather Geological Field Book (\$25.27)

4) Compass

Amazon: Silva Polaris Compass (\$17.75)

5) Geologic Map (can print your own map here for -most- MN Counties):

https://www.mngs.umn.edu/county_atlas/countyatlas.htm

6) Colored Pencils

Amazon: Crayola 24 Ct Colored Pencils, Assorted Colors (\$5.15)

7) Grain Size Card

<http://www.cgsmule.com/Products/Geology-Rock-and-Sand-Identification-Supplies/Geotechnical-Gauge.html> (\$22.95)

8) Backpack + Water

Amazon: Outdoor Products Mist Hydration Pack (\$29.40)

9) Safety Glasses

Amazon: Pyramex Mini Intruder Safety Glasses (12 Pack), Multicolor - For Children or Women with Smaller Facial Sizes (\$15.63)

10) Safety Vest

Amazon: Dickies Pre-School E-Vis Safety Vest (\$10.35)

11) Magnet Pencil

<http://www.cgsmule.com/Products/Magnetic-Hardness-Testing/Pencil-Magnet.html> (\$4.74)

Activity:

Presenter dresses in geologist gear, go through uses of each geology "tool" - can pass around or have students come up to a desk. The materials for this exercise could be from the presenter. Some materials that could be ordered if needed would be the smaller ones such as grain size cards, magnets, scale cards, and a hand lense.

2. Mineral Identification

Materials:

- pennies for hardness test
- magnet (use magnet pencils from activity 3)
- dull nail for hardness test
- glass plate for hardness test
- white streak plates (smooth ceramic and glass)
- the 10 minerals from activity 3 (reused)

*buy 2 samples of each mineral type

#12-20(https://wardsci.com/store/content/externalContentPage.jsp?path=/www.wardsci.com/en_US/earth_mineral_specimens.jsp)

- 12) zinc
- 13) sphalerite
- 14) galena
- 15) pyrite
- 16) malachite
- 17) bauxite
- 18) calcite
- 19) fluorite - get 2 different colors
- 20) sulfur

Rock-forming minerals:

*one sample of each of the following

(https://wardsci.com/store/content/externalContentPage.jsp?path=/www.wardsci.com/en_US/earth_mineral_specimens.jsp)

- 1) olivine
- 2) pyroxene
- 3) hornblende
- 4) muscovite
- 5) biotite
- 6) plagioclase
- 7) orthoclase

Activity:

Bring several different kinds of minerals (2 of each), everyone gets a mineral. Have them make observations on properties (hardness, color, cleavage streak, magnetism, taste, smell, etc. --make a flowchart), and the different minerals listed in both activity 2 and 3). Students match themselves up first based on the properties of their sample. Once matched - could regroup into rocks (others would make their own category?), we could make an easy to follow flow chart for this activity.

3. Everyday Use Minerals

Materials:

*buy 2 samples of each mineral type #1-11

(https://wardsci.com/store/content/externalContentPage.jsp?path=/www.wardsci.com/en_US/earth_mineral_specimens.jsp)

- 1) talc (baby powder)
- 2) galena (batteries)
- 3) fluorite (toothpaste)
- 4) chalk (colored sidewalk chalk)
- 5) halite (table salt)
- 6) native copper (copper wire, clock)
- 7) gypsum (drywall)
- 8) feldspar (ceramic tile)
- 9) magnetite, hematite (taconite pellet)
- 10) graphite (pencil)
- 11) quartz (glass) - 1 clear colored sample "milky quartz" & 1 purple colored sample "amethyst"

Activity:

Go through uses of each - pass around, utilizing this link if desired →

<http://mineralogy4kids.org/minerals-your-house>. The materials needed for this activity would be the minerals listed, and possibly the household item for which they are used. Table salt: additionally could break a large example with a hammer (show with a hand lense how it breaks into cubes along cleavage planes)

Rock/Mineral/Fossil Kits (Amazon)

American Education, Minerals:

https://www.amazon.com/gp/product/B00657Z0L6/ref=s9_dcacsd_dcoop_bw_c_x_11_w

Igneous:

https://www.amazon.com/gp/product/B00657WHK1/ref=s9_dcacsd_dcoop_bw_c_x_5_w

Fossil:

https://www.amazon.com/American-Educational-General-Fossil-Collection/dp/B077GLSJLV/ref=sr_1_1?srs=13862177011&ie=UTF8&qid=1529312668&sr=8-1&keywords=fossils

Sedimentary:

https://www.amazon.com/gp/product/B00657WI16/ref=s9_dcacsd_dcoop_bw_c_x_8_w

Metamorphic:

https://www.amazon.com/American-Educational-Specimen-Metamorphic-Collection/dp/B00657WGY0/ref=sr_1_2?srs=13862177011&ie=UTF8&qid=1529312683&sr=8-2&keywords=metamorphic