

# Mineral Discovery Kit

## 1. Purpose:

- A. Show difference between Minerals and Rocks
- B. Conduct tests used to determine the identity of a mineral

## 2. Age Group:

Primary grades 1 – 6

## 3. What is a mineral

- A. Minerals have the same chemical make up where ever they are found  
Quartz (SiO<sub>2</sub>) is quartz no mater where in the world it found.
- B. Minerals naturally occur in nature  
Quartz found in a mine is a mineral; synthetic quartz crystals are not.
- C. Minerals are made up of substances that were never alive  
Oil or coal are not minerals because they are the remains of living animals
- C. Attributes of minerals

### i. Hardness of minerals

Supplies for hardness tests : Penny Steel blade Glass

Crystals of:

Hardness of 1	Talc	Scratched by a fingernail
Hardness of 2	Gypsum	Scratched by a fingernail
Hardness of 3	Calcite	Scratched by a copper penny
Hardness of 4	Fluorite	Scratched by a knife blade
Hardness of 5	Apatite	Scratched by glass
Hardness of 6	Feldspar	Will scratch a knife blade
Hardness of 7	Quartz	Will scratch glass
Hardness of 8	Topaz	Will scratch glass
Hardness of 9	Corundum	Will scratch topaz
Hardness of 10	Diamond	(Sorry no diamonds)

### ii. Streak test

Supplies for streak test

Non glazed white tile

Samples of:

Galena	graphite
Hematite	native copper

### iii. Cleavage

Supplies for cleavage

Calcite (?) Fluorite (?)

Galena

### iv. Fracture

Conchoidal	like glass
Hackly	splintery like broken wood
Even	breaks into even sheets or layers
Uneven	breaks into uneven layers – step like in appearance

#### 4. What is a rock

- A. Rocks are composed of many different types of minerals
- B. Rock specimens
  - i. Igneous rocks (Rocks of volcanic origin)
    - Granite
    - Pumice
    - Obsidian
    - Basalt
    - Vesicular Basalt
  - ii. Metamorphic rocks (Rocks changed by heat and pressure)
    - mica Schist
    - quartzite
    - marble
  - iii. Sedimentary
    - Limestone
    - Shale
    - Sandstone
    - Conglomerate

#### 5. Activities:

- A. Take a field trip. Collect samples and identify them as a rock or mineral.
  - i. Determine:
    - a. Color
    - b. Hardness
    - c. Luster
    - d. Streak
    - e. Cleavage
    - f. Crystal habit

Do you have enough information to find out what your sample is?  
If no, where could you go find such information?
  - ii. Organize your collection.
    - a. Collections can be organized by:
      - Where they were found
      - chemical make-up
      - Who collected them
      - Any other way you can think of.

Tell why you organized your collection the way you did