

Name \_\_\_\_\_  
Partner \_\_\_\_\_  
Class prd \_\_\_\_\_ Lab prd \_\_\_\_\_  
Date \_\_\_\_\_

## Mineral Treasure Hunt

"Find a Mineral" set # \_\_\_\_\_

**Materials :** "Find A Mineral" set, tweezers, magnifier, streak plate, glass, nail, penny, file, separating tray, dichotomous key for identifying minerals

**Objective:** By the end of this lab exercise students will be able to use standard mineralogical methods to isolate and identify 13 different minerals.

Students will also be able to take a rock sample and identify some of the rock's mineralallic components .

### Special Safety Precautions:

1. Do NOT taste any of these minerals.
2. After using these materials, thoroughly wash your hands with soap and water.

### Procedure:

1. Remove the three rocks which you find in it. Set these to the side for use later. Next take the bag of mixed mineral specimens and empty it into the large center section of the separating tray. In this mixture you will find the majority of the material to be small tan-brown pieces of quartz. These serve only as a background for the minerals with which we will be working.

There are 13 other different minerals in the bag. You will be able to separate them on the basis of their basic differences using: (1) color, and/or (2) streak, and/or (3) luster.

2. Sift through the mixture and separate out 3or 4 different types of mineral fragments in the side sections of the separating tray. Select several pieces of each type and pile them together. Some differences are subtle, so look carefully. *Have your teacher spot check your minerals.*

3.
  - a) Using the penny, nail, glass, file, your thumbnail, magnifying lens, and streak plate, fill in the DATA TABLE with the characteristics of the different minerals.
  - b) be careful when determining streak colors. Use the powder residue on your finger to be sure
  - c) in checking hardness, make sure you know what scratches what
  - d) keep color descriptions down to one or two words
  - e) in terms of luster, choose between the following words ONLY:  

<i>metallic</i> - shiny like polished metal	<i>glassy</i> - shiny like crystal or clean window
<i>waxy</i> - shiny, but not like metallic or glassy, may have a pearly texture	<i>dull</i> - no luster, not shiny

- f) in terms of clarity, use the words "transparent", "translucent", or "opaque" to describe how well you can see *through* the mineral.
3. Using the dichotomous key find the name of each mineral and write in the appropriate place in the column labeled IDENTIFICATION.
  4. Repeat 1-3 until all 13 minerals are identified and keyed.

### **ANALYSIS AND CONCLUSIONS**

1. Some of the mineral pieces within each type are different, for example the fluorine chunks. Choose two different types of minerals which display variations in their characteristics. Why do individual mineral pieces have variations within the group?
  
2. There are two multicolored rocks in each "Find a Mineral" set made of some of the minerals you identified in this exercise. What three (3) minerals from the chart do you think are in these two rocks? Why did you choose these minerals?
  
3. Choose one of the minerals you identified. How could this mineral be functionally used? Why? Suggest another use of this mineral for which it would be inappropriate. Why?
  
4. The mineral crystals in the two separate rocks are quite different in size. Suggest a reason why this is so.

5. Which mineral(s) do you think the third rock has in it? Explain your answer.  
How is this rock different than the other two multicolored rocks?
6. Which mineral characteristic is the easiest (usually) to determine, and is also one of the least useful in identification? Why is this so?
7. Which one mineral characteristic is the most useful in identifying minerals? Explain your answer.