

1. Define **mineral**. (Give a comprehensive, scientific definition.)

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**First:** Obtain a mineral testing kit from your teacher. Each kit should have a white porcelain streak plate, a glass plate, and a magnet or a compass. Then obtain *one* set of minerals in a container and place the samples on your table. You should have only 1 set of minerals at your table at a time. Make sure that you are not destroying the minerals while testing them!

Sample Number	Mineral Name	Luster (circle one)	Cleavage	Streak	Harder than glass	Other Distinguishing Characteristics
1		Met <b>or</b> Non-Met				
2		Met <b>or</b> Non-Met				
3		Met <b>or</b> Non-Met				
4		Met <b>or</b> Non-Met				
5		Met <b>or</b> Non-Met				
6		Met <b>or</b> Non-Met				
7		Met <b>or</b> Non-Met				
8		Met <b>or</b> Non-Met				
9		Met <b>or</b> Non-Met				
10		Met <b>or</b> Non-Met				
11		Met <b>or</b> Non-Met				
12		Met <b>or</b> Non-Met				
13		Met <b>or</b> Non-Met				
14		Met <b>or</b> Non-Met				
15		Met <b>or</b> Non-Met				

List the four most abundant minerals (below) in **rock** sample number 16. (Use a magnifying lens.)

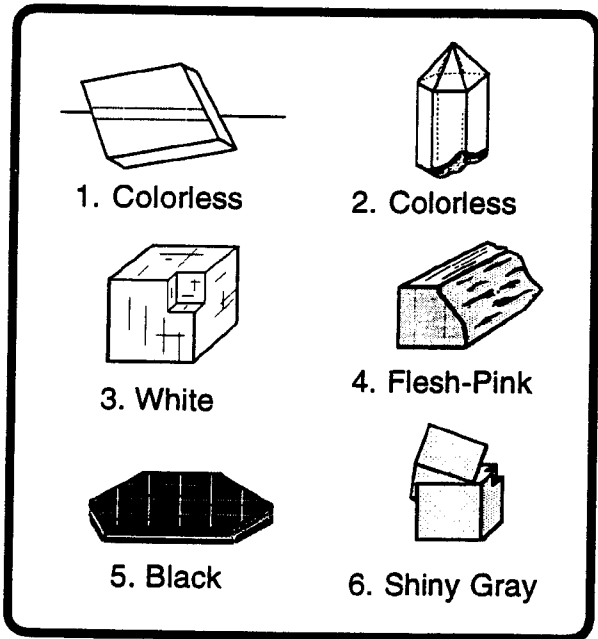
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Name the following properties, useful in identifying minerals:

2. This is the way a crystal of the mineral splits. \_\_\_\_\_
3. This is the way that light penetrates or reflects off a fresh surface of a mineral. It's metallic or non-metallic. \_\_\_\_\_
4. This property is tested by trying to scratch a known mineral with a sharp, fresh corner of the unknown mineral. \_\_\_\_\_
5. This test is used to find the color of the powder of the mineral. It is tested by rubbing the sample on a white porcelain plate. \_\_\_\_\_
6. Although this property is very easy to see, care must be taken because impurities can change this property greatly. Clear quartz, milky quartz, rose quartz, smoky quartz, amethyst, and agate are all forms of quartz that show variations in this property. \_\_\_\_\_



Identify each of the mineral crystals shown to the left. Enter the names in the chart below. (The first one has been done for you.)

#	Name	Letter	#	Name	Letter
1	Calcite	D	4		
2			5		
3			6		

Next, pick one of the descriptions below and enter the proper letter next to each name. (Note the "D" next to the name Calcite.)

- A. A mineral family with one perfect cleavage direction. (Splits into thin, flexible sheets.)
- B. Crystals of this mineral are hexagonal but it splits unevenly. It's hardness is 7 on Mohs' scale.
- C. This is an ore of lead with a very high specific gravity and a bright metallic luster.
- D. Clear crystals of this mineral show a single dot as two dots through the mineral. Reacts with acid.
- E. A compound consisting of equal numbers of sodium and chlorine atoms. Abundant in sea water.
- F. A member of the most common family of minerals. Usually pink or white. It contains a lot of aluminum.

Return your mineral set to your teacher. **Be sure the set is complete**, or your group will loose points on the lab!

1. If there are thousands of minerals, why should you learn to identify only about a dozen?  
\_\_\_\_\_
2. What feature of a mineral determines the shape of its crystals?  
\_\_\_\_\_

The following minerals are specifically named in the Earth science syllabus. It is important that you be able to use these characteristics of each of these five minerals. You should do this with the mineral sample in front of you, so you can directly observe the most important characteristics.

A. **Quartz** Color(s): Clear, White, or Pastel Shades Luster: \_\_\_\_\_  
 Hardness: \_\_\_\_\_ Cleavage/Fracture/Streak: \_\_\_\_\_  
 Other Distinguishing Properties: \_\_\_\_\_

B. **Feldspar** Color(s): \_\_\_\_\_ Luster: \_\_\_\_\_  
 (Sodium/Calcium, or Potassium Feldspar)  
 Hardness: \_\_\_\_\_ Cleavage/Fracture/Streak: \_\_\_\_\_  
 Other Distinguishing Properties: \_\_\_\_\_

C. **Calcite** Color(s): \_\_\_\_\_ Luster: \_\_\_\_\_  
 Hardness: \_\_\_\_\_ Cleavage/Fracture/Streak: \_\_\_\_\_  
 Other Distinguishing Properties: \_\_\_\_\_

D. **Mica** Color(s): \_\_\_\_\_ Luster: \_\_\_\_\_  
 (Muscovite or Biotite)  
 Hardness: \_\_\_\_\_ Cleavage/Fracture/Streak: \_\_\_\_\_  
 Other Distinguishing Properties: \_\_\_\_\_

E. **Magnetite** Color(s): \_\_\_\_\_ Luster: \_\_\_\_\_  
 Hardness: \_\_\_\_\_ Cleavage/Fracture/Streak: \_\_\_\_\_  
 Other Distinguishing Properties: \_\_\_\_\_

F. For A-E above, **circle** the property you feel is the most useful in identifying each of these five minerals.

**Extra Credit:** List the properties of any mineral that is not named in your science papers, and no other student has used before you (this year).

Mineral Name \_\_\_\_\_

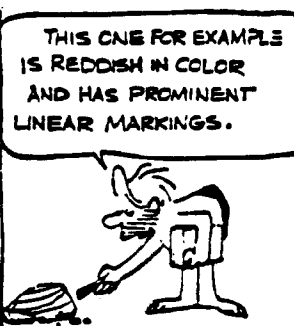
Color(s): \_\_\_\_\_ Luster: \_\_\_\_\_

Hardness: \_\_\_\_\_ Cleavage/Fracture/Streak: \_\_\_\_\_

Other Distinguishing Properties: \_\_\_\_\_



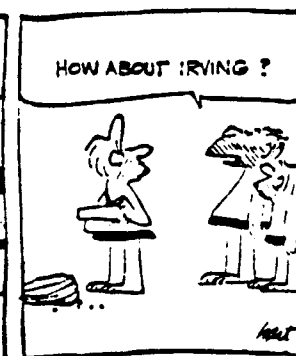
Mineral Identification



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