

Lab: Mineral Identification

Name: _____ Date: _____ Pd: _____

Geologists rely on several relatively simple tests to identify minerals. These tests are based on a mineral's physical and chemical properties. The best way to identify a mineral is to use a combination of the tests, as many minerals may share similar properties.

Materials:

- Streak Plate
- Nail
- Penny
- Magnet
- 8 Mineral Samples
- List of Minerals to Identify

Procedure: DEFINITIONS!

In lab today, we will identify minerals using results from the following tests and observations; **DEFINE** each:

- **Color:**
- **Luster:**
- **Texture:**
- **Streak:**
- **Density:**
- **Hardness:**
- **Cleavage:**
- **Fracture:**

In order to identify each of the mineral samples in your container, you will need to complete each of the tests listed above. Record your data on the table provided.

Mineral Specimen	Color	Luster	Streak	Hardness	Other
Feldspar var. Microcline	white, red, green	vitreous	white	6	cleavage angle under 90 degrees
Halite	colorless, white, pink	transparent	white	2.5	salty taste
Quartz var. Milky	colorless to white	vitreous	none	7	conchoidal fracture
Mica var. Muscovite	colorless, yellow, brown	vitreous to pearly	none	2-2.5	thin sheets are elastic
Graphite	black	metallic to dull	black	1-2	greasy feel
Pyrite	pale brass yellow	metallic	brown	6-6.5	is brittle, has conchoidal fracture
Magnetite	iron-black	metallic	black	6	magnetic
Mica var. Biotite	green, brown, black	splendent	none	2.5-3	thin sheets are elastic
Gypsum var. Satin Spar	white, gray	silky	white	2	fibrous gypsum
Fluorite	green, yellow, purple	vitreous	white	4	forms cubic crystals, fluoresces
Talc	white, green, gray	pearly to greasy	white	1	greasy feel
Gypsum var. Selenite	colorless	transparent	white	2	bladed gypsum
Hematite	red, brown, black	dull to metallic	dark red	5.5-6.5	becomes metallic upon heating
Calcite	white, yellow, brown, blue	vitreous to earthy	white	2	can be scratched with a fingernail
Gypsum var. Alabaster	white, gray, yellow	pearly to earthy	white	2	can be scratched with a fingernail

ANALYSIS:

Use your knowledge of minerals as well as your results from the lab to answer the following questions below:

1. Many people believe that the way to identify a diamond is by its ability to scratch glass. Glass has a hardness scale rating of 5.5. Do you believe that a diamond is the only mineral that will scratch glass? *EXPLAIN*.
2. Why is it important (often necessary) to identify a mineral using more than one identification test? *EXPLAIN*.
3. What is the difference between cleavage and fracture? *EXPLAIN* in word form and/or draw an illustration.
4. What is the difference between a mineral and an element? *EXPLAIN*.
5. In the identification table, Magnetite is listed as an 'ore of iron'. *EXPLAIN* what this means. → *RESEARCH* this if not in your notes!
6. What elements are in Mica? → *RESEARCH* this if not in your notes!
7. Which mineral identification test do you think would be the most unreliable test (when used alone)? *EXPLAIN* why.
8. List terms you may use to describe the luster of a mineral **other than** metallic or nonmetallic.

