NAME: _____

MINERAL IDENTIFICATION LAB

On a separate sheet of paper which should be attached to the BACK of this lab, define the following terms:

CRYSTAL	MINERAL	PRECIPITATION	TETRAHEDRON
CLEAVAGE	STREAK	LUSTER	HARDNESS
MOH'S SCALE	SILICATE	SILICON	ABUNDANT
MONOMINERALIC	POLYMINERALIC	CARBONATE	

DIRECTIONS: On the center desk in the back of the room there are several containers each holding several pieces of the same mineral. Take ONE sample from ONE container making careful note of the number on the container. Each group should also take the following:

> A magnifying lens
> A glass scratch plate
> A tile streak plate

Use the equipment to test for streak, hardness, and other characteristics which may be of value in identifying each mineral sample. Fill in data on the "Mineral Identification Results" chart (next page) and use the "Mineral Identification Key" to identify each sample. When you are finished with each sample be sure to return it to the proper container **before taking the nexy sample**.

DO NOT TAKE MORE THAN ONE SAMPLE AT A TIME! There is no need to start with sample #1 as long as you identify them all.

AFTER you have completed all your mineral identifications, THEN you may define the vocabulary and answer the questions. Since these are things that can be done at home, class time should be devoted to mineral identification BEFORE any other work is done!

	Cleavage	Streak	Hardness	Luster	Specific Characteristics	Mineral Name
1						
2						
3						
4						
5						
6						

NOTE: Although the chart above provides room for 6 different samples, it is only necessary to complete data for as many samples as have been provided. This may be fewer than 6.

Here are the ***only possible answers for the chart above!***

Cleavage: yes or no

Streak: colored (specify which color) **or** none or white

Hardness: harder or softer (than glass)

Luster: metallic or nonmetallic

Characteristics: Any special characteristics which helped you identify this particular sample such as color, crystal shape, optical properties, or smell.

Mineral name: The name of this mineral according to your observations and the chart provided with this lab.

Mineral Identification Key

CLEAVAGE	STREAK	HARDNESS*	LUSTER	SPECIFIC CHARACTERISTICS	MINERAL
Does not show cleavage	Colored	As hard as glass or harder than glass	Metallic	Streak: black Color: black Hardness: 5.5–6.5	MAGNETITE
		Not as hard as glass	Nonmetallic	Streak: yellow Color: yellow Hardness: 1.5–2.5	SULFUR
	None or white	Harder than glass	Nonmetallic	Streak: none to white Color: green to yellow Hardness: 6.5–7.0	OLIVINE
		Not as hard as glass	Nonmetallic	Streak: white Color: white to gray Hardness: 2.0	ALABASTER (GYPSUM)
Shows cleavage	Colored	As hard as glass or harder than glass	Nonmetallic	Streak: pale green Color: dark green to black Hardness: 5.0–6.0 Cleavage: 2 planes not at right angles	HORNBLENDE
		Not as hard as glass	Metallic	Streak: black to silver gray Color: gray-black Hardness: 2.5 Cleavage: 3 planes at right angles	GALENA
	None or white	Harder than glass	Nonmetallic	Streak: none to white Color: white to pink Hardness: 6.0 Cleavage: 2 planes at right angles	ORTHOCLASE (FELDSPAR)
		Not as hard as glass	Nonmetallic	Streak: white Color: varies, may be transparent Hardness: 3.0 Cleavage: 3 planes not at right angles	CALCITE

*Hardness of glass: about 5.5

Answer the following questions:

1) What determines the physical properties of a mineral? _____

_____

2) Name two different minerals that have exactly the same chemical composition.

_____ and _____

3) What two elements are common to all silicate minerals?

_____ and _____

4) What is the most abundant element in the lithosphere?

_____

5) What is the percent (by mass) of silicon in the lithosphere?

_____%

6) What is the percent (by volume) of calcium in the Earth's crust?

_____%

7) What is the chemical composition of quartz? (words or chemical formula)
(Hint: Use a dictionary - more than one, if necessary)

_____

8) What is the composition of limestone? (words or chemical formulas)
(Hint: Use a dictionary - more than one, if necessary)

_____

9) What term is used to describe the way in which minerals that do not show cleavage break?

_____

10) Give an example of a naturally occurring mineral that is made of only one element.

_____