

# DENSITY LAB

name \_\_\_\_\_ hr \_\_\_\_\_

## **STATION 1 –PEPSI VERSUS DIET PEPSI**

Calculate the density of the pepsi can and the diet pepsi can. To find the volume of the pop, use information from the can. Please note that there is air in the top of every can that also has volume (takes up space). The air volume is approximately 23 mL. Add this to the liquid volume to get the total volume. Find the mass of each can using the triple beam balance. Record your data below IN A NEAT CHART. Include mass, volume, and density. (Put a unit label next to all numbers) (12 pts)

A] Densities above what number sink in water?

B] Objects or liquids with what density float in water?

C] Which can will float? DO NOT GUESS OR EXPERIMENT! Prove that your answer is correct to the teacher BEFORE you confirm your hypothesis by testing!

## **STATION 2 –METAL CYLINDER VERSUS METAL CYLINDER**

Calculate the density of the long cylinder and the short cylinder. Use the water displacement method to find the volume. Find the mass of each cylinder using the triple beam balance. Record your data below IN A NEAT CHART. Include mass, volume, and density. (Put a unit label next to all numbers) (12 pts)

## **STATION 3- CUBE VERSUS CUBE**

Handle all the blocks in the black trays. DO NOT mix up the sets of blocks. Using *just your hands* and your *brains*, determine which block in the tray is more dense. Make a chart that shows your data. MAKE IT NEAT. (4pts)

### Station 4- Mystery Minerals

Find the density of the 2 minerals at this station. Use the chart to hypothesize which mineral is which. Make a chart that shows your data. MAKE IT NEAT. (12 pts)

Densities of some common minerals and metals, in grams/cubic centimeter		
	Density	Color description of mineral
ice	0.9	Clear
sulfur	2.1	Yellow in color
halite	2.2	Clear
gypsum	2.3	Opaque white
graphite	2.3	Silvery grey
feldspar	2.6	Orange, pink, or green
calcite	2.7	Clear
quartz	2.7	Clear
fluorite	3.2	Clear green, purple, blue
corundum	4.0	Brown, blue, green
Pyrite (fools gold)	5.0	Gold color
magnetite	5.2	Grey to black
galena	7.5	Silvery grey
copper	8.9	Orange metallic
native silver	10.5	White metallic
gold	19.3	Gold color

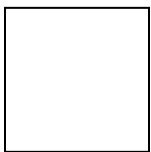
A] I think the hexagon mineral is \_\_\_\_\_

B] I think the crystal mineral is \_\_\_\_\_

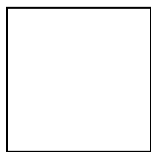
C] If gold and fool's gold look the same, how do you tell the difference?

D] If you were to hold a cube of graphite and a cube of galena in each hand (both cubes having the same volume) Which would feel heavier to your hand?

E] Draw the atoms in a cube of silver and a cube of gold. (2pts)



silver



gold

F] What is the definition of density? NOT THE FORMULA!! What does it mean?