LAB: DENSITY

Students: Please read the following information given below, and then come to class on your lab day with the following already prepared in your notebooks:

1) Date, 2) Partner, 3) Title, 4) Purpose, 5) Materials, 6) Safety,
7) Procedures/Observations, and 8) Data & Calculations (collect data in your notebooks)

The last 2 pages need to be printed out. These pages will be turned in. Data for this lab should be collected in your notebooks and later, rewritten in the Data and Calculations section. The data, calculations, and questions will be due one week after performing the lab in class (your next lab class).

What's a penny made of…….copper, right? Determine the density of pennies that were made before 1982 and then compare them to the density of pennies that were made after 1982.

Part 1 - Pre-1982 pennies:

Five pre-1982 pennies should be counted out. If they are not dry, dry them with a paper towel. Record the mass of these pre-1982 pennies. Record the volume of the pre-1982 pennies. **REMEMBER to** tilt the graduated cylinder and *carefully* slide the pennies down to the bottom. PLEASE TAP OUT ANY AIR BUBBLES THAT FORM IN BETWEEN THE PENNIES. Calculate density using the proper units. Remember to show all work.

Part 2 - Post-1982 pennies:

Five post-1982 pennies should be counted out. If they are not dry, dry them with a paper towel. Record the mass of these post-1982 pennies. Record the volume of the post-1982 pennies. **REMEMBER to** Tilt the graduated cylinder and *carefully* slide the pennies down to the bottom. PLEASE TAP OUT ANY AIR BUBBLES THAT FORM IN BETWEEN THE PENNIES. Calculate density using the proper units. Remember to show all work.

CP CHEMISTRY MRS. PITTENGER

Name_____ Date_____

Period_____ Lab Group #_____

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Data & Calculations: SHOW ALL WORK BELOW. INCLUDE ALL UNITS!

A) Pre-1982 pennies	B) Post-1982 pennies

C) Using a reference book, find the density of copper. _____

Based on your calculations: What was the density of the Pre-1982 penny?_____

Based on your calculations: What was the density of the Post-1982 penny?_____

D) Compare your density values to the actual density of copper by calculating the percent error for both the pre-1982 penny and post-1982 penny below:

Circle your final calculation of percent error for each penny.

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Conclusions & Questions

1. Is density a physical or chemical property? _____

2. Iron is a denser object than water. If there is a sample of water and a sample of iron that both have the same mass, will iron have more or less volume than the water sample? Explain your answer thoroughly.

3. Can you find the density of solids that are soluble (dissolve) in water using the same method you used in this experiment? Explain your answer thoroughly.

4. Describe how the density of solids that float in water can be determined. An example such as cork can be considered here. Explain your answer thoroughly.

5. Give an explanation for the results that were obtained for both the pre-1982 and post-1982 pennies. Use at least one reference and cite your reference with the proper notation.