Investigation: Volume and Density

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Partner: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Core: \_\_\_\_\_\_\_\_\_\_\_\_\_

**Directions:** During this lab, we will be investigating the volume and density of various objects around the room. For each object, you and your partner will have to decide whether to use the *Volume Formula* or the *Displacement Method* in order to determine the volume. **You must SHOW ALL WORK and include SI Units for full credit!!! *For mass calculation, only one person at a time may use the digital scales in the back.*** Once you calculate the Volume and Density, please put the final answer on the blank beside the word.

Volume = \_\_\_\_\_\_\_\_\_\_ × \_\_\_\_\_\_\_\_\_\_ × \_\_\_\_\_\_\_\_\_\_, unit: \_\_\_\_\_\_\_\_

Density = \_\_\_\_\_\_\_\_\_\_\_\_ ÷ \_\_\_\_\_\_\_\_\_\_\_\_\_, unit: \_\_\_\_\_\_\_\_\_\_

1. Object: Dice
   1. *Volume:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
      1. Method: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      2. Calculation:
   2. *Density:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
      1. Mass: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      2. Volume: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      3. Calculation:
2. Object: Crayon
   1. *Volume: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
      1. Method: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      2. Calculation:
   2. *Density:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
      1. Mass: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      2. Volume: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      3. Calculation:
3. Object: TextBook
   1. *Volume:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
      1. Method: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      2. Calculation:
   2. *Density:\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
      1. Mass: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      2. Volume: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      3. Calculation:
4. Object: Paper Clip Chain
   1. *Volume:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
      1. Method: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      2. Calculation:
   2. *Density: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
      1. Mass: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      2. Volume: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      3. Calculation:
5. Object: Marble
   1. *Volume: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
      1. Method: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      2. Calculation:
   2. *Density: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
      1. Mass: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      2. Volume: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      3. Calculation:
6. Object: Tissue Box
   1. *Volume: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
      1. Method: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      2. Calculation:
   2. *Density: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
      1. Mass: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      2. Volume: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      3. Calculation:

**Conclusion Questions:** Please complete these questions *in your science notebooks*, in complete sentences.

1. How did you know whether to use the volume formula or the displacement method? Please explain your thought process *in detail*.
2. What is the difference between volume and density?
3. Explain how density relates to atoms. How do you know?