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Water Displacement Student Lab Packet

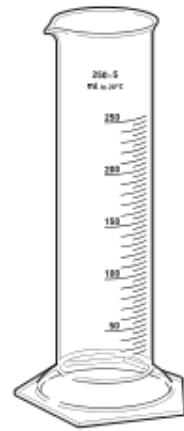
Name: _____ Date: _____

Water Displacement How Can We Find Volume of an Object?

Purpose: In this experiment I will be measuring _____
by _____.

Procedure:

1. Gather your materials with your partner and fill a graduated cylinder with 50mL of water.
2. Set the graduated cylinder on the lab table and read the beginning volume by reading the **bottom** of the meniscus.
3. Record the beginning volume in your data chart.
4. Put object 1 in the cylinder, determining the volume of the first object at your table.
5. Record the ending water level in mL in your data chart after the item is placed in the graduated cylinder.
6. Repeat step 3 for each of the items on your table and record the water levels in your data chart.
7. For each object, follow the formula:



Volume of liquid with object - beginning volume = volume of object

Data Collection:

My Partner's Name: _____

My Test Results:

<i>Name of Object</i>	<i>Volume of Water Before Adding Object (mL)</i>	<i>Volume of Water After Adding Object (mL)</i>	<i>Difference in Volume (mL)</i>
Object 1:			
Object 2:			
Object 3:			
Object 4:			

Calculate Volume with Water Displacement Data:

1 mL of water = 1 cubic centimeter

Volume of Object 1= _____

Volume of Object 3= _____

Volume of Object 2= _____

Volume of Object 4= _____




Data Analysis:

- 1) Why is it necessary to write the beginning volume before you measure the volume of each object?

- 2) In math you measure volume by multiplying length x height x width. Why is it important to have another method of measuring volume? (Think about some of the objects you just measured).

- 3) Which do you think is easier to find—the volume of a regular shaped object or an irregular shaped object? Why do you think that?

- 4) What did we do well in this experiment? Why do you believe that your results are accurate?



5) What do we need to do better next time? What could have made the experiment more accurate? Was there anything that made you think the results were not accurate?

Conclusion:

Was there a difference in the calculated volumes between different people in your class for the same object? Is that what you expected? Explain why or why not.

How does volume relate to our everyday life? Why would it be good to know how much volume something has?



Above and Beyond: Additional Questions

1. How does the weight of an object affect its volume?
2. What might be some sources of errors when using water displacement to measure volume?
3. Create a real-life story about someone that needed to find the volume of an object. Get as creative as you want, as long as it is realistic!
4. Brainstorm how you would find the volume of a liquid. What about finding the volume of a gas?