FUTURE GOALS

Water Displacement
Student Lab Packet
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:

<table>
<thead>
<tr>
<th>Name of Object</th>
<th>Volume of Water Before Adding Object (mL)</th>
<th>Volume of Water After Adding Object (mL)</th>
<th>Difference in Volume (mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Object 1:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Object 2:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Object 3:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Object 4:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
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?