

Lab Partners:

Name: _____

Chemistry – Block _____

Date: _____

DENSITY LAB

Data Table #1:

Tool	Calibration (be sure to include units)	To what place will your answer be recorded?
Centigram Balance		
Graduated Cylinder		
Metric Ruler		

Data Table #2:

Samples	Mass (grams)	Volume	Density $D = M / V$ Show your "setup" in the white space above where you record your final answer. <i>Note: pay attention to</i> <i>SF!</i>
<p>Wood block</p>		length: width: height: $(l)(w)(h) = \underline{\hspace{2cm}} \text{ cm}^3$ <i>Note: pay attention to SF!</i>	<p style="text-align: right;"><u> </u> g/cm³</p>
<p>10 large paper clips</p>		starting volume: ending volume: net volume: <u> </u> mL <i>Note: pay attention to SF!</i>	<p style="text-align: right;"><u> </u> g/mL</p>
<p>Glass marble(s)</p>		starting volume: ending volume: net volume: <u> </u> mL <i>Note: pay attention to SF!</i>	<p style="text-align: right;"><u> </u> g/mL</p>
<p>Tap water</p>	Dry graduated cylinder: <u> </u> g With water sample in cylinder: <u> </u> g Net: <u> </u> g	Exact volume of water: <u> </u> mL <i>Note: pay attention to SF!</i>	<p style="text-align: right;"><u> </u> g/mL</p>

Analysis:

Word process the answers to these questions ON SEPARATE PAPER. Turn in your data tables along with the answers to the questions below when the experiment write-up is due.

1. *Think carefully about your answer to this question:* For YOU, what was the most challenging part of this experiment? Detail your response.
2. Why do we use water displacement for the paper clips and the limestone to measure volume?
3. You will calculate the PERCENT ERROR in the density calculations for the 4 samples. Your teacher will provide you with the accepted value for the density of each sample. How do you calculate percent error?

<i>Sample</i>	<i>Density Actual Value</i>
Wood Block	.564 g/cm³
Paper clips	7.9 g/mL
Limestone	2.4 g/mL
Tap Water	1.0 g/mL

4. Using your formula above for #3, create and **insert a new table** (for YOUR work) and calculate % ERROR for each sample. You may WRITE in your work onto the table you created (instead of word-processing) showing ALL WORK as you do your calculations. Discuss the error you got for each sample. Review actual values for each sample from the table above. Was it a lot, a little? Explain your results. If you had a lot of error, WHY do you think your results were so bad? What would you do differently?
5. There are two different meanings of the word PRECISION as we have discussed in class and in this experiment. What are the two different meanings of the word PRECISION? Detail your response.