Name	Date
Partners:	
	THE BIG D: Density!!
OBJECTIVE:	You will be able to calculate the densities at different materials and recognize that density is one of the most important properties of matter.
VOCABULARY	:
mass:	
volume:	
density:	
PROCEDURE:	
<ol> <li>Measure Record</li> <li>Find the volume irregular number</li> <li>Repeat</li> <li>Repeat</li> <li>Calcula to the n</li> </ol>	re the <i>mass</i> of an object using the digital scale. Your answer will be in grams (g). your finding to the <u>nearest tenth of a gram</u> in the correct location on the Report Sheet. e <i>volume</i> of the object using the appropriate method. If the object is a rectangular shape, determine the in cubic centimeters (cm <sup>3</sup> ) by using the metric ruler and the volume formula ( <i>v</i> = <i>lwh</i> ). If the shape is r, determine the volume in milliliters (mL) by using the water displacement method. <u>Do NOT round this</u> after using the volume formula. Record your findings in the correct location on the Report Sheet. steps 1 and 2 for the remaining items. the the density of each object by dividing the mass by the volume. Record all your density calculations <u>nearest tenths place</u> on the Report Sheet.
them in	the chart under summary question #1 at the end of this lab.
I will do one ex	ample with you so that you see how it is done. Watch and Record!!
Sample: Gray	plastic cube Density Calculation: (show your work!)
Mass	
=	w = h =

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Density: \_

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Volume \_\_\_\_\_

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(Don't forget to round each measurement/calculation according to the procedure and attach correct units!)

1. Wood Bar Mass I = w = h =	Density Calculation: (show your work!)
Volume	Density:
2. Steel Sphere Mass	Density Calculation: (show your work!)
Volume	Density:
3. Aluminum Cube Mass	Density Calculation: (show your work!)
I = w = h = Volume	Density:
4. Calcite (white/gray mineral) Mass	Density Calculation: (show your work!)
Volume	Density:

5. Wood Cube Mass I = w = h =	Density Calculation: (show your work!)	
Volume	Density:	
6. Glass Sphere Mass	Density Calculation: (show your work!)	
Volume	Density:	
7. Aluminum Bar Mass	Density Calculation: (show your work!)	
I = w = h = Volume	Density:	
8. Galena (silver mineral) Mass	Density Calculation: (show your work!)	
Volume	Density:	

## **DISCUSSION QUESTIONS:**

1. When everyone is totally done with their calculations, I will give you the values to put in this chart.

Object		Actual Density (g/cm <sup>3</sup> or g/mL)
1.	wood bar	
2.	steel sphere	
3.	aluminum cube	
4.	calcite	
5.	wood cube	
6.	glass sphere	
7.	aluminum bar	
8.	galena	

- 2. Referring to the correct densities that I gave you recorded in the chart above: Does the size or shape of samples made out of the same material affect density?
- 3. Look back at your Report Sheet and the density calculations that you made and compare them to the actual values in the chart above. I'm sure you will notice that sometimes you did get the exact density measurement. But you probably had some measurements that were a little off or even off by a lot. Name 2 different things that may have caused error in your measurements.

4. Thinking Question: Why is it important to measure the mass of an irregular object before finding its volume?

5. Using the actual density values of the materials from the chart above, and the Properties of Water chart on the *Earth Science Reference Tables*, put the items in the correct column on the table below.

Item will float in liquid water	Item will sink in liquid water			

Density of liquid water: