

Density Lab: Glass Marbles

Name: _____

Block: _____

Date: _____

Procedure	Measurement
Measure and record the mass of 1 glass marble.	<i>Be sure to include correct units.</i>
Get a 25 mL graduated cylinder. What is the calibration of this measuring device? Be careful to look very, very closely.	<i>Be sure to include correct units.</i>
Now, look at the amount of space in between the calibration marks. There is only a tiny bit of space, right? Does it seem even possible that you could read out yet another decimal place? NO! So, using some common sense here, to what decimal place will you record your answer using <i>this</i> graduated cylinder?	
Measure and record the volume of the glass marble. Use water displacement method. Add tap water to graduated cylinder. Write down the initial volume:	<i>Be sure to include correct units.</i>
Drop the marble into the graduated cylinder. Write down the new volume:	<i>Be sure to include correct units.</i>
What is the calculated volume of the marble?	<i>Be sure to include correct units.</i>
Calculate the density of the marble. $D = m / V$	<i>SHOW YOUR MATH SETUP.</i> <i>Be sure to include correct units.</i> <i>Round your answer to the tenths place.</i>
What is the density of distilled water?	<i>Be sure to include correct units.</i>
Will a marble float or sink in water?	
The <i>actual value</i> for the density of the glass marble is 2.5 g/mL. Calculate the % error. $\% \text{ Error} = \frac{ \text{"actual value"} - \text{"what you got"} }{\text{"actual value"}} \times 100$ Note that the numerator in the equation above is the "absolute value".	<i>SHOW YOUR MATH SETUP.</i> <i>Remember, the units for error is a percentage!</i> <i>Round your answer to the closest whole number.</i> 8% or less error is acceptable