NEW Part C: Mass and Volume

The following instructions and data tables are intended to replace the instructions that start at the bottom of page 16 and continue to page 17.

1. Measure the mass of a single cube and enter both the mass and the volume of the cube in the table below. Divide the mass by the volume and enter this ratio into the last column of the table.
2. Join two plastic cubes together and repeat the process done for the single cube in part A, i.e., measure the mass of the piece made by joining together two cubes and enter its mass and volume into the table along with the ratio of its mass divided by its volume.
3. Now construct larger pieces by joining together the indicated number of plastic cubes and complete the table below.

# of Cubes	Mass (g)	Volume (cm^3)	Ratio of mass/volume (g/cm^3)
1 (single cube)			
2			
5			
12			
18			
25			

4. Make a graph of the mass in grams and the volume in cubic centimeters to picture the mass per unit volume ratio. Put the volume on the x-axis (the horizontal axis) and the mass on the y-axis (the vertical axis). The mass and volume data from each trial will be a data point so there will be a total of six data points.
5. Draw a straight line on your graph that is as close as possible to the data points and the origin (0, 0) as a seventh data point. If you wonder why (0, 0) is also a data point, ask yourself about the mass of a zero volume of water!
6. Calculate the slope of your graph. (See appendix II on page 397 for information on calculating a slope.) Show your slope calculations on your graph.
7. Calculate a percent difference. Use 1.0 g/cm^3 (grams per cubic centimeter) as the accepted value.
8. Answer questions #10 and #11 on page 18 in your lab manual. Continue on to results on page 19 and finish the lab.