Measuring Density (REPLACEMENT for Part-C page 19)

Part C-Mass Versus Volume

Select either Data Set for Metal A or Data Set for Metal B below to plot. You will do one and your partner will do the other Data Set.

Metal A

Volume	Mass (g)	
(cm3)		
7.89	17.22	
6.80	18.11	
7.92	21.21	
9.75	22.25	
8.17	23.19	
9.84	25.44	
10.1	26.36	
11.4	28.29	
11.8	28.73	
11.7	29.69	

Metal B

Volume	Mass (g)	
(cm3)		
6.63	53.90	
6.45	54.53	
6.42	57.15	
6.61	57.34	
7.97	69.15	
8.40	69.43	
7.98	72.24	
9.65	84.84	
9.65	86.14	
9.84	87.67	

- 1. Calculate the respective densities for the metals using an average of the Mass and Volume for each metal. (Report the values in the table on this page and attach it along with your graphs to the REPORT FORM pages and turn in.)
- 2. Graph the Mass (vertical axis) vs. Volume (horizontal axis) for your Data Set (graph paper is in Appendix C). Scale your graph to use as much of the graph paper as possible. Provide a Title, label the axes (include units), show each data point and draw the best possible straight line balancing the differences in the distance of the points on each side of the line using a ruler. Draw the line through the y-axis. Calculate the slope of the line, slope (m) = $\Delta y / \Delta x$, which equals the metal's density. (Report the values below.)
- 3. The respective metals are either aluminum, density = 2.64 g/cm³ or copper, density = 8.94 g/cm³. Using these as accepted values, identify A and B, then calculate and record the calculated % error in the experimental densities using the two methods.

	A	В
Metal identified		
Density (g/cm ³) averaged		
Error (%) averaged		
Density (g/cm ³) graphed		
Error (%) graphed		