FLINN SCIENTIFIC

Name_____

Density Is a Periodic Property

Data Table

Element	Sample	Initial Mass (g)	Final Mass (g)	Mass of Solid (g)	Initial Volume (mL)	Final Volume (mL)	Volume of Solid (mL)
Silicon	1						
	2						
	3						
Tin	1						
	2						
	3						
Lead	1						
	2						
	3						

Post-Lab Calculations and Analysis *(Use a separate sheet of paper to answer these questions.)*

1. Complete the Data Table: Calculate both the mass (initial mass – final mass) and volume (final volume – initial volume) of each sample 1–3 for all three elements, silicon, tin, and lead. Record these results in the Data Table.
2. Using the mass and volume data, calculate the density of each sample 1–3 for all three elements. Construct a Results Table to summarize the results. *Note:* The density of a solid is usually reported in units of g/cm^3. Recall that 1 mL = 1 cm^3.
3. Calculate the average value (mean) of the density calculations 1–3 for each element, silicon, tin, and lead. Record all results in the Results Table. Use the range of density values for each element to estimate "plus-or-minus" (±) error for each average (e.g., 7.0 ±0.2 g/cm^3).
4. On a graph, plot the period number of Si, Sn, and Pb on the x-axis versus the average density of each element on the y-axis. Using a ruler or straightedge, draw a "best-fit" straight line through the data points. Use this "best-fit" straight line to predict the density of germanium.
5. Look up the actual density of germanium in a reference source and calculate the percent error between the predicted and actual values (see PreLab Question #3).