Student's Name _____ Date _____ Class _____

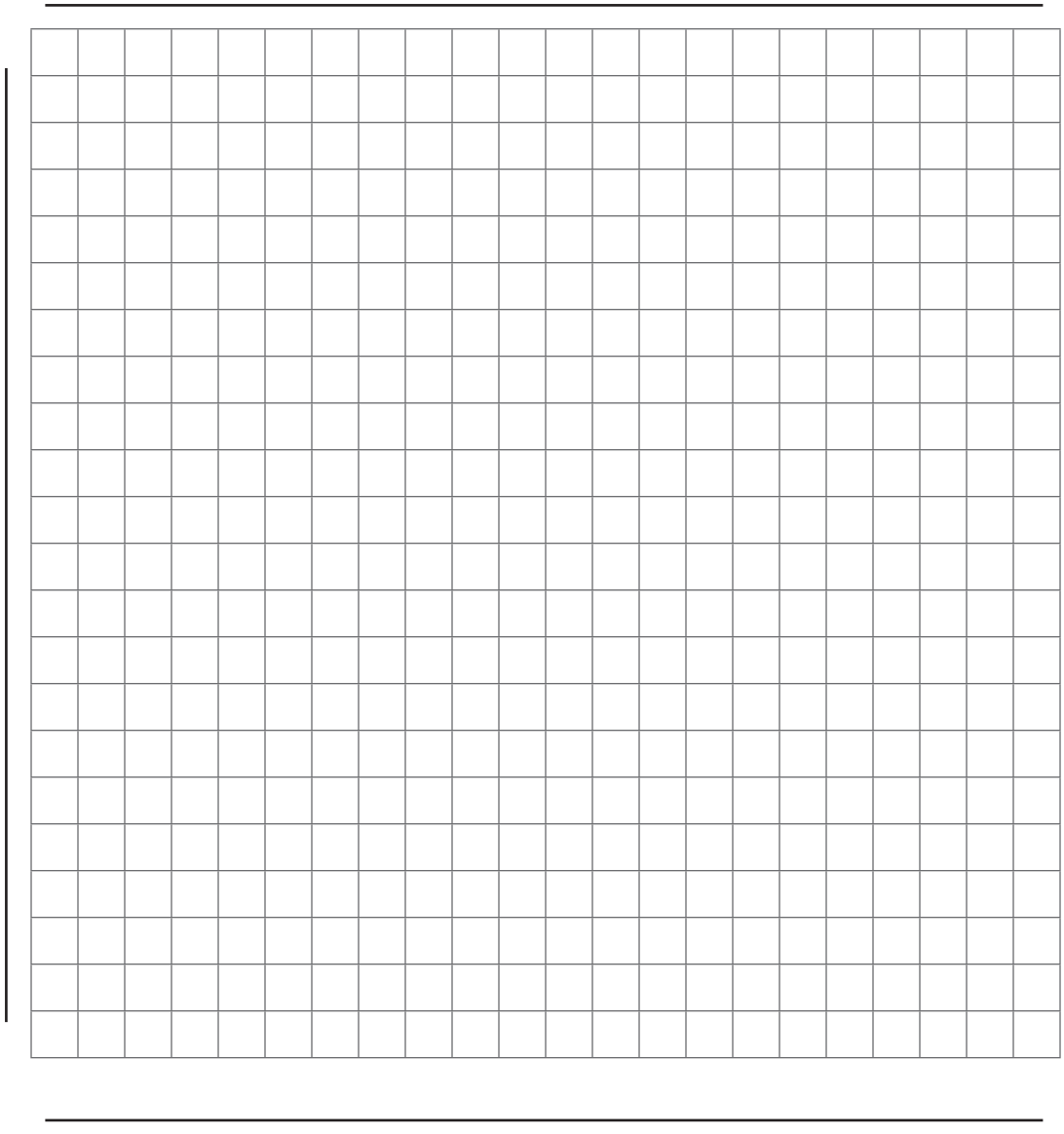
Student Sheet 3.1: Measuring the Mass, Volume, and Density of Liquids

Directions: Use the table below to record data during your investigation.

Table 1.

Volume of Water (mL)	Mass of Graduated Cylinder (g)	Mass of Graduated Cylinder and Water (g)	Mass of Water (g)	Volume of Water (mL)	Density of 1 mL of Water (density in g/mL)
00.0			0.0	0.0	––
25.0					
50.0					

Directions: Use the grid below to create a graph of the relationship between mass and volume of water.



Lesson Master 3.1: Suggestions for Making a Graph of the Relationship Between Mass and Volume of Water

1. Give the graph a title that describes the data being displayed.
2. Cover as much space on the graph as possible with plotted data.
3. Label the horizontal x axis "Mass (g)" and label the vertical y axis "Volume (mL)."
4. Set the scale for each axis with even divisions, letting the highest measured value in the data fit on the axis.
5. Make sure all spaces on the x and y axis scales are equal, even if they are not marked in the same intervals.
6. Make scaling of the axes start from zero at the intersection of the axes (called the origin) and increase in value, moving right on the x axis and upward on the y axis.
7. Plot the location of each data point on the graph with a small dot.
8. Instead of connecting each data point, use the overall spread of points to construct a line. Follow the trend in data, or the general direction of your data points to draw a line. Notice that some or all of the plotted points may not fall on the line.

Student's Name _____ Date _____ Class _____

Student Sheet 3.2: Comparing the Densities of Different Substances

Directions: Use the table below to record data during your investigation.

Table 1.

Substance	Length, l (cm)	Width, w (cm)	Height, h (cm)	Volume $V = l \times w \times h$ (cm^3)	Mass, m (g)	Density $d = m \div V$ (g/cm^3)
Aluminum						
Transparent Plastic						
Wax						
White Plastic						

Student's Name _____ Date _____ Class _____

Student Sheet 3.4: Building a Density Column

Table 1. Calculating Density				
Liquid	**Mass (g)**	**Volume (cm^3)**	**Calculation**	**Density (g/cm^3)**
Corn Syrup				
Isopropyl Alcohol				
Vegetable Oil				
Water				

Table 2. Calculating Density				
Irregular Object	**Mass (g)**	**Volume (cm^3)**	**Calculation**	**Density (g/cm^3)**
Copper Shot				
Nylon Spacer				
Steel Bolt				

Student's Name _____ Date _____ Class _____

Student Sheet 3.5: Building a Density Bottle

Table 1. Calculating Density			
Liquid	**Density (g/cm^3)**	**Green Bead (Float or Sink)**	**UV Bead (Float or Sink)**
Corn Syrup			
Isopropyl Alcohol			
Salt Brine			
Vegetable Oil			
Vinegar			
Water			