LESSON 50 LAB

Raindrops Keep Falling Measuring Liquids

Name _____

Date _____ Period _____

Purpose

To experiment with rain gauges and to understand proportional mathematical relationships.

Materials

- 400 mL ungraduated beaker
- 250 mL Florence flask
- 100 mL graduated cylinder or 600 mL graduated beaker
- wash bottle
- ruler marked in inches and centimeters

Data Collection

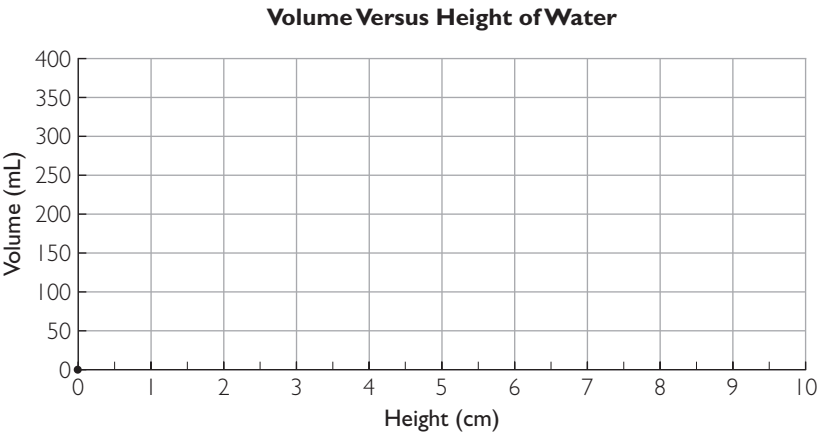
1. Use the wash bottle to carefully pour water to a height of 2.0 cm into the 400 mL ungraduated beaker. Make sure you measure from the zero on the ruler.
2. Transfer the water to the graduated cylinder or graduated beaker. Measure and record the volume. Repeat this process for the heights of water given in the table.

Height (cm)	0 cm	2.0 cm	4.0 cm	6.0 cm	8.0 cm
Volume in beaker (mL)					
Volume in flask (mL)					

3. Repeat the procedure for the 250 mL Florence flask.

Graph of Data

1. On the graph below, plot the volume of rain in milliliters versus its height in centimeters for the 400 mL beaker. Draw a straight line through the points and label it "400 mL beaker."



2. Explain why the data points lie roughly on a straight line.

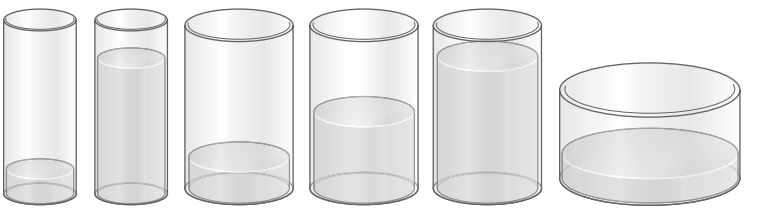
3. What volume would you predict for 10.0 cm of water? Explain how you arrived at your answer. Use the data table and the graph to assist you in answering the question.

4. Plot the volume of rain in milliliters versus its height in centimeters for the 250 mL Florence flask on the same graph. Draw a best-fit curve through the points and label it "250 mL Florence flask."

5. Explain why the data points do not lie on a straight line for the Florence flask.

6. Analysis Imagine that you use a 400 mL beaker as a rain gauge and your next-door neighbor uses a 600 mL beaker with a larger diameter. How should your results compare after an evening's rainfall? Explain your reasoning.

7. Making Sense These drawings show rain amounts at different times of the day for three different sizes of rain gauge. Explain the variations in the height and volume of the rainfall.



8. If You Finish Early Gather more data for the 250 mL Florence flask. Plot the data. Explain the variation in volume with increasing height.