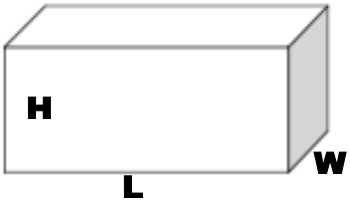
Measuring Volume

Name:
Date:
Period:

Part A: Measuring Volume by Formula

Use the formula to find the volume of the box. Measure the exact length, width, and height first, then round to the nearest centimeter (no decimals) before calculating your answer. Include your **units** in your answer.



Volume = length x width x height

= _____ x _____ x _____ (*exact measurement)*

= _____ x _____ x _____ (*round to the nearest #*)

= _____ (*final answer*)

Part B: Measuring Volume by Graduated Cylinder

1. Make a prediction: How many drops of water do you think it will take to make 1 milliliter? _____ drops
2. Fill a graduated cylinder with 7 milliliters of water.
3. Count the number of drops it takes to raise the water to 8 milliliters. Record this information in the chart below.
4. Leave the water in the cylinder. Count how many drops it takes to raise the water to 9 milliliters. Record this information in the chart below.
5. Leave the water in the cylinder. Count how many drops it takes to raise the water to 10 milliliters. Record this information in the chart below.
6. Calculate the average and round to the nearest tenth. Remember to show your work below.

Amount (#) of drops to 8 mL	Amount (#) of drops to 9 mL	Amount (#) of drops to 10 mL	Average (show your work)
			Average = $\frac{(\#\text{ of drops to 8 mL}) + (\#\text{ of drops to 9 mL}) + (\#\text{ of drops to 10 mL})}{3}$ Average =

How close was your prediction to the **average**? Explain why.

How many drops do you predict it would take to make 1 liter? Why? **[HINT: 1L = 1000mL]**

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Part C: Explaining Volume

The volume of the box in Part A is _____ cm^3. Since 1 cm^3 (solid) = 1 mL (liquid), if you took the **10 mL** from your graduated cylinder in Part B and poured it into the box in Part A, what do you **predict** would happen? Explain why.

10 mL equals _____ cm^3. I know this because _____. Since the volume of the box in Part A is _____, I predict that if I poured 10 mL of water into the box, then _____

_____

because _____

_____.

Part D: The Color Challenge

Part I:

1. Check to make sure the 6 test tubes are in order: A, B, C, D, E, & F.
2. Check to make sure your "clean water" cup is filled half full with water. Use this to rinse your graduated cylinder and test tubes.
3. The second cup is used for contaminated/waste water (dirty water).
4. Into test tube A, measure 25 mL of red water.
5. Into test tube C, measure 17 mL of yellow water.
6. Into test tube E, measure 21 mL of blue water.
7. Raise your hand and Ms. Tao will check your test tubes!

Part II:

1. From test tube C, measure 4 mL and pour into test tube D.
2. From test tube E, measure 7 mL and pour into test tube D. Swirl.
3. From test tube E, measure 4 mL and pour into test tube F.
4. From test tube A, measure 7 mL and pour into test tube F. Swirl.
5. From test tube A, measure 8 mL and pour into test tube B.
6. From test tube C, measure 3 mL and pour into test tube B. Swirl.
7. Save your results. Measure the liquid of each test tube by pouring it into a clean graduated cylinder and record how many mL were found in each test tube.

Test Tube	Color of Liquid	Volume of Liquid (mL)
A		
B		
C		
D		
E		
F		

Reflection: Look on the board and answer the questions in the "L" side of your notebook.