Team members_____Date_____

Fluid Capacity for Hydraulic System Device

Key terms: Volume formula for cylinder Pi x r^2 x height
Millimeters
Milliliters
Graduated cylinder
Predicted amount
Actual amount
Radius
Diameter
Rounding
Pi = 3.14

Summary
The objective of this activity will be to calculate the predicted fluid volume using the given formula. This formula is the standard for computing cylinder volume. This calculation will then be compared to the actual amount of fluid measured to the nearest milliliter using a graduated cylinder.

Directions – All measurements are to be made using millimeters

A. Predicted Fluid Amount – record information in table provided
Oral Syringe
1. Accurately measure the diameter of the oral syringe and then divide by 2 to get the radius.
2. Now measure the length of the oral syringe that contains fluid and record in millimeters.

Aquarium Tubing
1. Accurately measure the diameter of the aquarium tubing and then divide by 2 to get the radius (round to the nearest tenth).
2. Now measure the length of all the tubing used in the device for a cumulative total in millimeters.

B. Actual Fluid Amount
Oral Syringe and Aquarium Tubing
1. Using a graduated cylinder accurately measure the amount of fluid contained within the each entire sub-system.

Team members_____Date_____

Fluid Capacity Data Sheet

Theoretical amount
Actual amount

	Theoretical Amount		Actual Amount	
	Oral Syringe	Aquarium tubing	Oral Syringe	Aquarium tubing
Diameter (mm)				
Radius (mm) d/2=r				
Height/length (mm)				
Cylinder Volume (mL) Pi x r^2 x height				
Total Volume (mL)				
Extra Credit Compute % of error				