Density Explorations

Density is... amount of mass per unit volume

example; water is 1gr/mL (one gram per milliliter)

It is *"how much stuff in how much space"*

Question:

How can we determine the density of unknown materials?

Materials:

Triple Beam Balance
graduated cylinders
string
test objects
ruler
cm cubes

Procedures:

1. Measure dimensions of cm cube = 1x1x1 cm
2. Determine mL equivalent by submerging in graduated cylinder

# of cubes	start mL		end mL		volume of cube mL	
	100	25	100	25	100	25
1	80		81		1	
2	80		82		2	
3						
4						
5						

3. Calculate the mL to cm^3 . . .

For water, 1 gram = 1 milliliter = 1 cm^3

So, 1 milliliter of volume is the SAME as 1 cc (cubic centimeter, or $cm^{3)}$

Item ID	Mass (g)	Volume (mL)			Density g/mL (calculation)
		start vol	end vol	actual vol	
fishing wt					
glass marble					

1. How did you determine the volume of an irregularly shaped object? (displacement method - explain in steps...)

2. Calculate the density values for each unknown (separate column)

3. Order the unknowns from least to greatest density.

4. How can we figure out what the samples are made of?

5. Why is it important to do class data or multiple tests of an experiment?

6. Write up a short summary and conclusion of what we did(brief summary overview), why we did it(group data, etc) and what you learned. (Details needed...)