What is the Density of Water?

Objective: Identify and calculate density

Materials: Wood, aluminum, iron, Styrofoam, Gummi Bear, candle, water, graduated cylinder
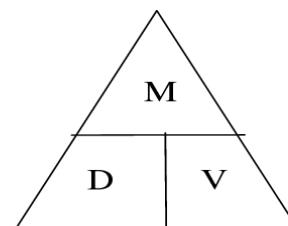
Warm-up Activity: Take each item (6) and drop into a graduated cylinder (filled half-way with water) to determine whether they float or sink

Guided Practice:
Density = Mass / Volume
Mass = Density x Volume
Volume = Mass / Density

1. Formula – State the correct formula
2. Substitute – Replace the letters with the correct values (and units)
3. Solve – do the math

Try these
1. The volume of a liquid that fills a flask is 750 cm^3. The mass of the liquid is 525 g. What is the liquid's density?

2. Platinum's density is 21.45g/cm^3. If a platinum flute's mass is 2.000 kg, what is the volume?

3. If you had 1230 cm^3 of a liquid, which has a density of 1.22g/cm^3, what would be its mass?

Activity:
Find the mass and volume of the six (6) objects. Calculate the density of each object.

Record your data into a table showing the following:

Object	Mass	Volume	Density	Float Or Sink in Water
Wood				
Aluminum				
Iron				
Styrofoam				
Gummi Bear				
Candle				

NOTE: Reorder the items above into a second table in order of density from most to least value!

Conclusion: Using your data, what is the density of water?
(Clue: The midpoint between floating and sinking.)

Summarizing activity: The density of pure water is 1g/cm^3. If you put the following objects in pure water, what would you see?

Object	Density	Sink or Float
Brass	8.40g/cm^3	
Lead	11.5g/cm^3	
Magnesium	1.74g/cm^3	
Vegetable Oil	0.78g/cm^3	
Rubbing Alcohol	0.87g/cm^3	
Motor Oil	0.95g/cm^3	