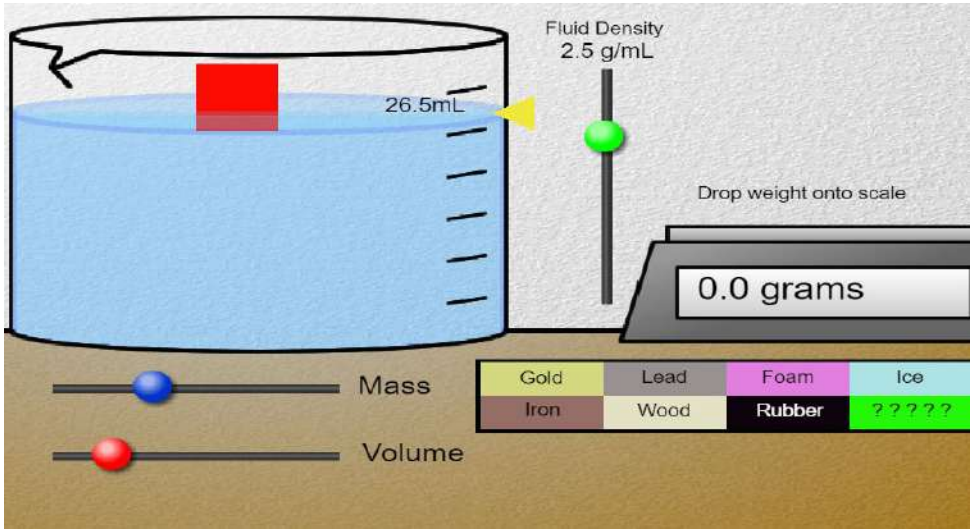
Density Virtual Lab!!!



Slide 2: Pre-Lab Instructions

Slide 3: Virtual Lab

Slide 4: Virtual Lab Recording Chart

Slide 5: Post-Lab Chart

Slide 6: Post Lab Questions

Density Pre-lab

Pre-Lab Questions:

1. What is Density?
2. What is the equation to solve for Density?
3. What derived unit is used to express density in a solid?
4. What derived unit is used to express density in a liquid?

To Determine the Density of an Object using a Liquid:

1. Weigh the object to get its mass
2. Measure the Volume of a Liquid (i.e. Water)
3. Record both Measurements
4. Place the object into the liquid
5. Measure the liquid's displacement (how much did that liquid rise with the object in the container?)
6. Do this math:
   a. Volume of Liquid with Object (V_2) - Initial Volume of Liquid without object (V_1)
7. Take the initial mass of the object and divide it by the answer you obtained in step 6 to get the density of that object.
8. Express density in the correct derived unit! (g/mL)

Density Simulation Lab

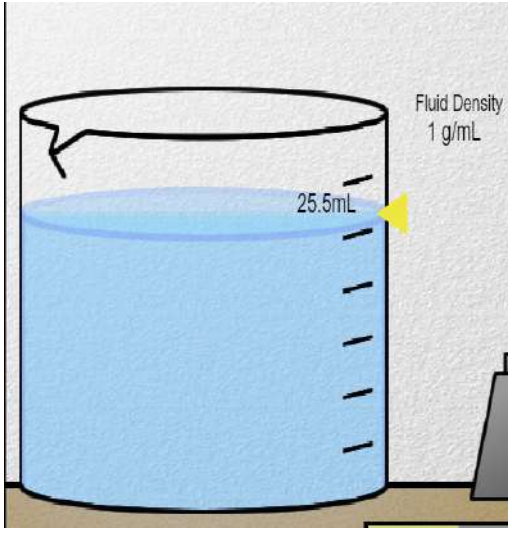
https://www.simbucket.com/simulation/density-lab/

Instructions:

1. Go to the above link
2. Click on “Turn Fluid into Water”
3. Record the Fluid Density
4. Record the initial volume of water in the container.
5. Weigh each object and record its weight
6. Place each object in the water and record the new volume of the water with each object in it.
7. Follow the Post Lab Instructions to determine the density of each object.

Virtual Lab Recording Chart

Fluid Density of Water	Initial Volume of Water in Container



Object	Weight of Object	New Volume of Water
Gold		
Lead		
Foam		
Ice		
Iron		
Wood		
Rubber		
Unknown		

Virtual Lab Post-Lab Chart

Object	**Weight of Object**	**Volume 1:** Initial Volume of Water	**Volume 2:** New Volume of Water	**Displaced Volume of Water:** Volume 2 - Volume 1	**Density of Object:** Weight of object / Displaced volume of water
Gold					
Lead					
Foam					
Ice					
Iron					
Wood					
Rubber					
Unknown					

Post Lab Questions:

1. What object had the largest density?

2. What object had the smallest density?

3. List the objects from the least dense to the most dense below:

4. One well known application of density is determining whether an object will float or sink in water. If the object's density is less than the density of water, it will float, if its density is more than that of water, it will sink. What objects did you test proved that they would float in water?

5. Compare the densities of all your objects and then look at your unknown. What do you believe the unknown item is?