

ICP: Density of Fluids

Objectives:

1. Learn how to find the density of liquids and use your understanding to make a density column.
2. Use a density column to predict the density of a solid.



Density Column

Notes:

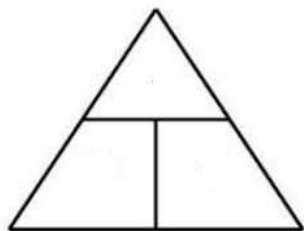
- A fluid is defined as any matter that is able to flow.

Density

1. What is density?

Density is a _____ of the amount of matter or _____ that can fit in a given _____. It is the ratio of a material's mass to its volume.

2. What is the formula for density?



3. What does density tell me about an object?

- Density is important because it affects whether objects will _____ or _____.
- If density is less than 1.0 g/mL, the object _____ in water.
- If density is more than 1.0 g/mL, the object _____ in water.

4. Where would I see density in my everyday life?

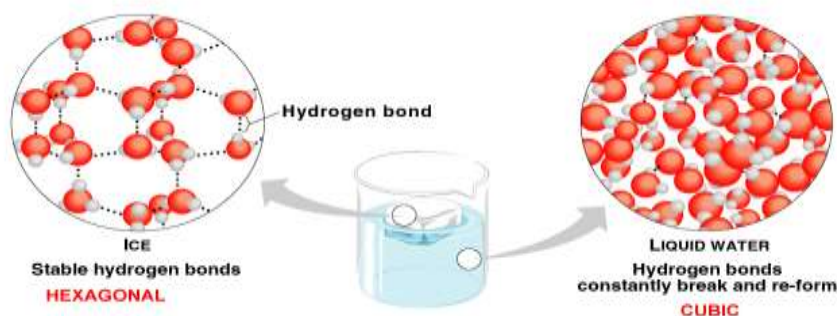
- * _____ – you want the balloon to get off the ground.
- * _____ – you don't want the ship to sink! People don't like to be on a sinking ship.
- * _____ – you don't want to overload the truck!
- * _____ – you want to make sure you actually bought a gold necklace.

5. Density values chart

Object	Density Value (g/mL or g/cm ³)	Sinks or Floats in water?
Water (4°C)		
Ice water (0°C)		
Aluminum		
Silver (solid)		
Silver (liquid)		
Gold		
Iron		
Gasoline		
Baby Oil		

6. **REMEMBER:** the phase of matter depends on its _____. The _____ the temperature, the farther the molecules are spread out and the faster they are moving. Therefore a _____ of one material will be denser than a _____ of the same material.

7. An exception to the rule is _____. Solid _____ (_____) is less dense than liquid _____. That is why _____ floats in your drinks. _____ molecules freeze into _____ crystals that form a pattern that has a lot of empty space. The molecules in liquid _____ are more tightly packed. See the illustration below.



8. Practice Problems

9. Clay Practice: A review of triple-beam balances and displacement method

Clay Mass (g)	Volume (mL)	Density (g/mL)	Density (g/mL) (rounded to nearest whole number)	Sinks or Floats?
10				
20				
30				

10.

