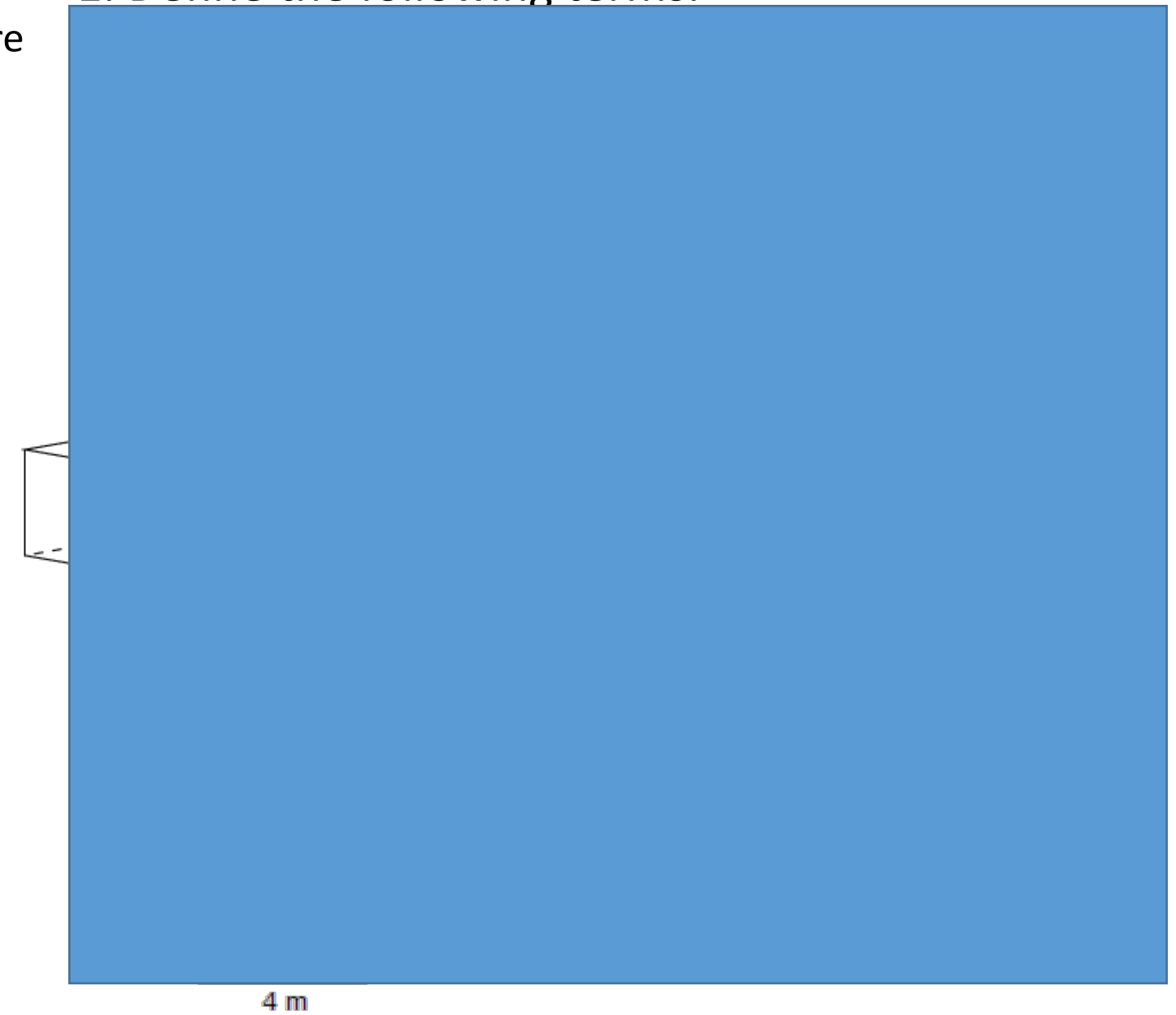
Agenda

- New seats
- NO BELL WORK CHECK OR FRIDAY QUIZ! (you're welcome xoxo)
- Return exams
- Density notes

Bell Work

1. Define the following terms.



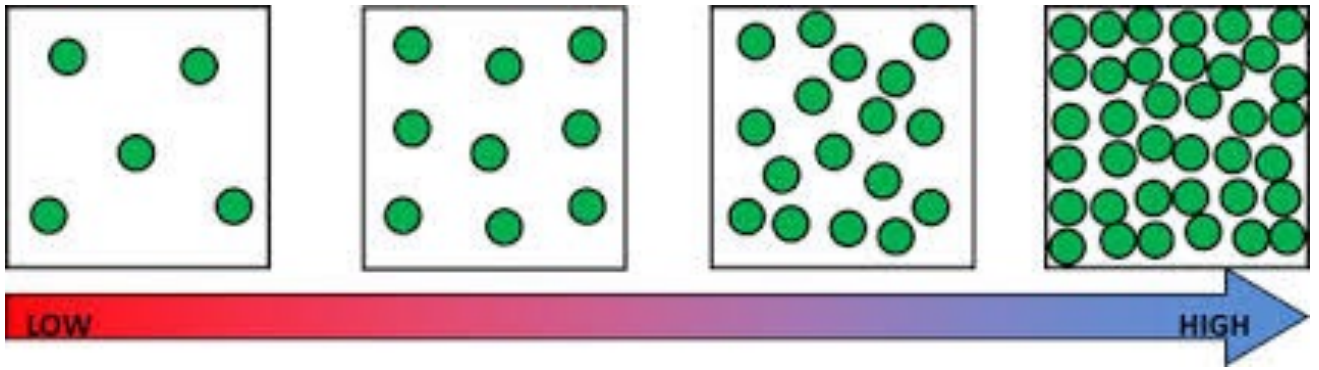
Unit 4: Density

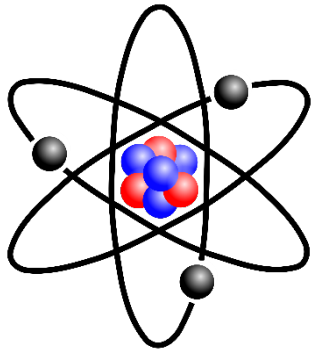
You can try this at home!!!

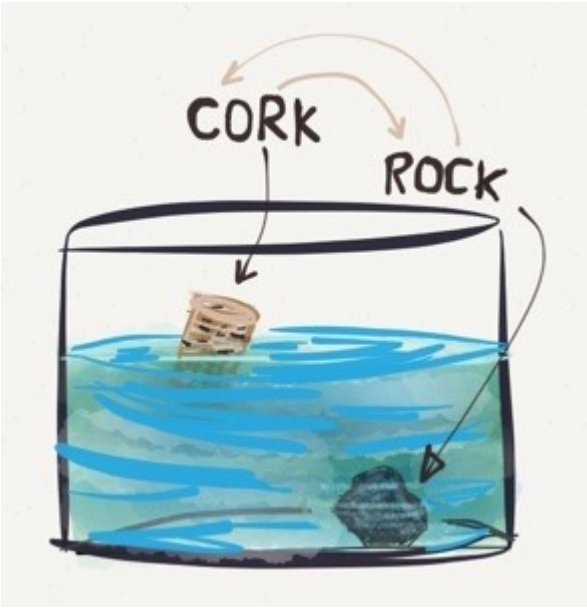
Pour the layers *slowly and in order*! They might mix but if you let the cup sit out for a couple hours they will separate because they have *different densities*! Kewl!!!

Density

- Density describes how much **matter** (or mass) occupies the **volume** (or space) of a substance
- Matter is anything that has **mass** and takes up **space**.
- Two objects can be the **same size** but have **different densities**.
- Can a gas have a density?
  - ***Yes!!! The matter in a gas is very spread out so it will have a small mass and a large volume!***







Density

- Changing the shape of an object **does not** change its density because it does not alter the **amount of matter** occupied by the volume of the object
- Exception!
  - Squishing a loaf of bread changes the density of the bread!
  - Slicing a loaf of bread does not change the density of the bread!
  - Why?

Density

- Density is the measure of the **mass divided by the volume** of an object.
- The metric base unit for density is **grams per centimeters cubed (g/cm^3)** for solids and **grams per milliliter (g/mL)** for liquids.
- In order to calculate the density of an object, we need to know the **mass** and the **volume**.

Density of a diamond = **3.53 g/cm^3**

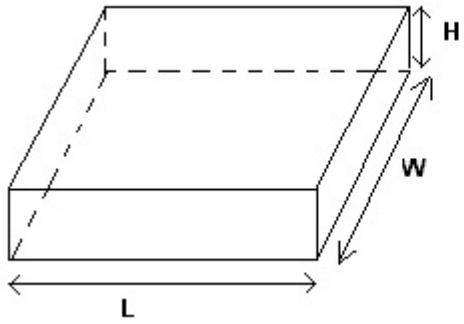
Density of Dawn dish soap = **0.932 g/mL**

Density

- We can measure the mass of a solid or liquid using a **scale** or balance.
- We can measure the volume of a liquid by using a **beaker**, **graduated cylinder**, or **Erlenmeyer flask**.
- How do we measure the volume of a solid without water displacement???
  - A formula!!

The formula for the volume of a solid is :

Volume = length x width x height



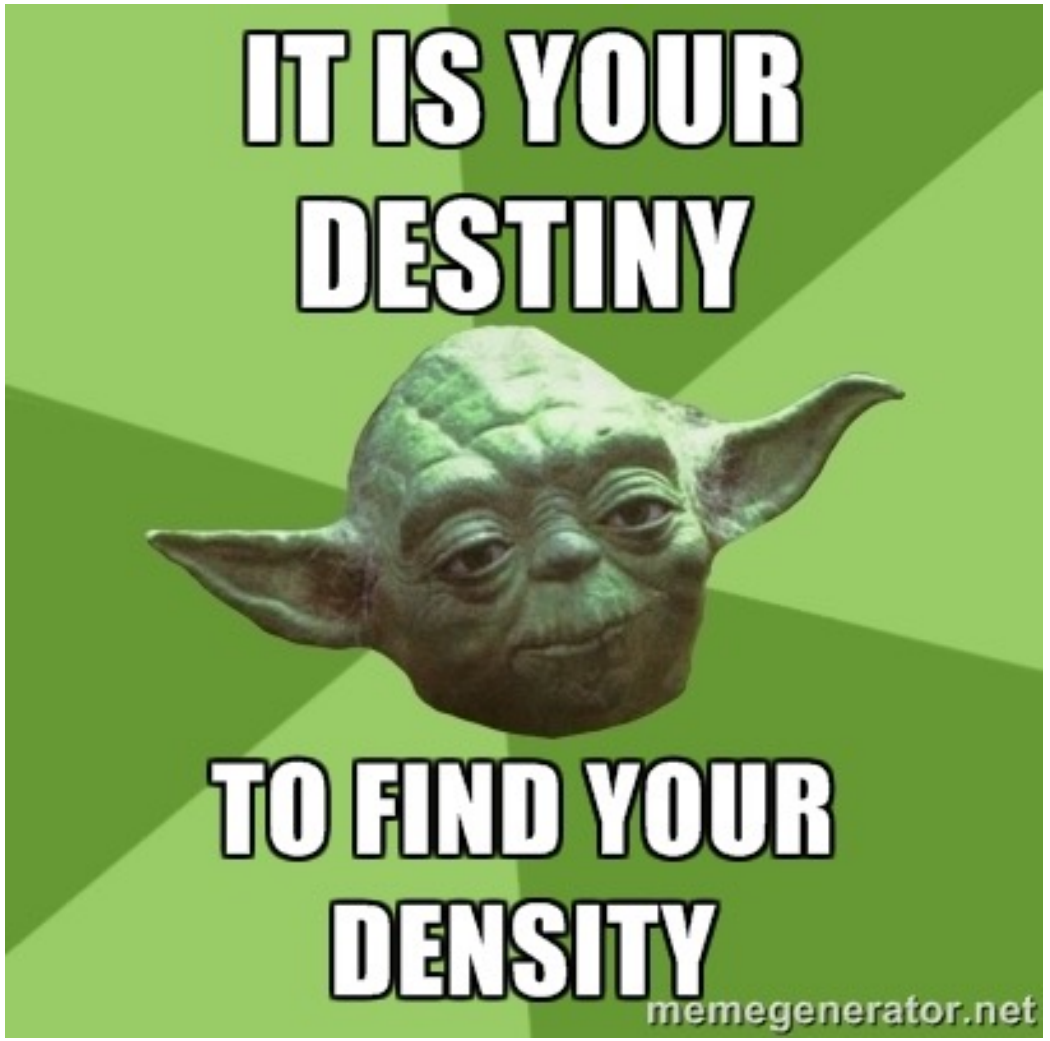
Volume = L*W*H

Density

- The units for volume when you are calculating density are:
  - Solids: **cm³**
  - Liquids: **mL**

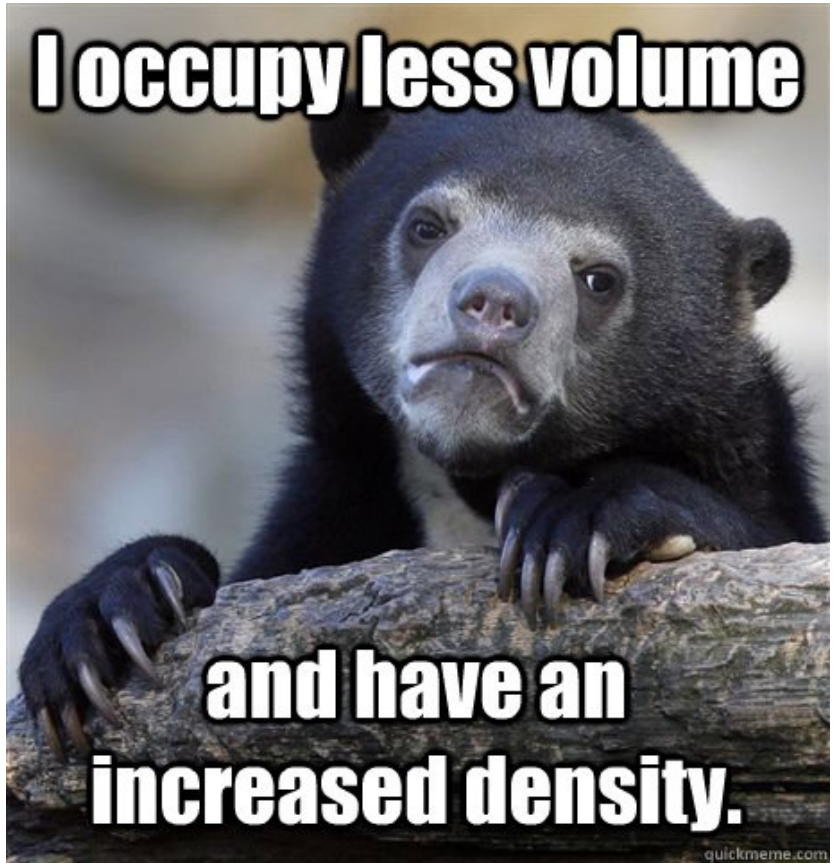
- You have to convert metric measures to cm and mL **before** calculating density

- **1** cm^3 = **1**mL



Practice! Calculate the volume of the following solid objects:

Length (cm)	Width (cm)	Height (cm)	Volume (cm^3)
6 cm	3 cm	1 cm	
10 cm	5 cm	2 cm	
5 cm	2 cm	8 cm	
2.5 cm	3.5 cm	1.5 cm	
1.5 cm	10 cm	2.5 cm	
4.3 cm	3.7 cm	1.8 cm	
8.5 cm	8.8 cm	8.2 cm	
9.7 cm	13.3 cm	2.9 cm	

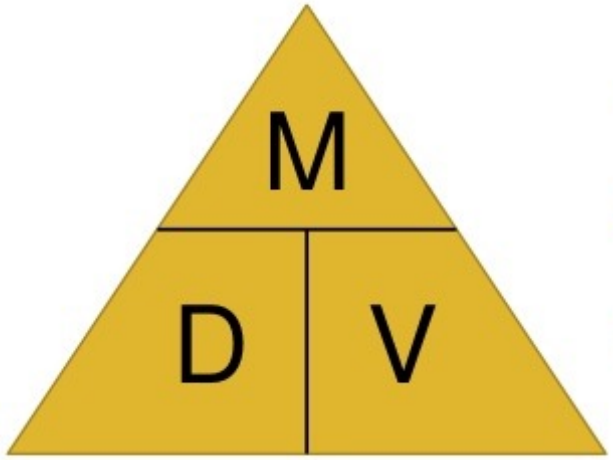


Round decimal answers to the nearest 1000^{th} place (0.001)

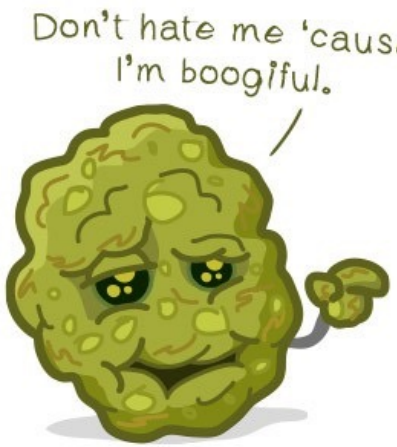
Density

- The formula for density is:
  - Density = **<u>Mass</u>** ÷ **<u>Volume</u>**

- Use the magical triangle of power, unicorns, and boogers!!!

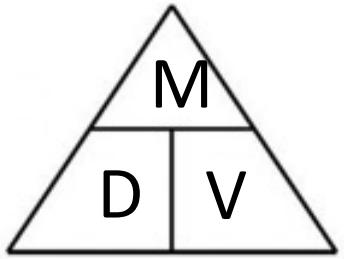


- Density =
- Mass =
- Volume =



CLASS TIME!!!!!!

- Work on density worksheet!



The formula for the volume of a solid is :

DON'T FORGET!!! THE METRIC UNITS FOR DENSITY ARE:

- FOR A SOLID: g/cm3
- FOR A LIQUID: g/mL

1. A rock has a volume of 15 cm3 and a mass of 45g. What is the density of the rock? Show your work.

WORK ON YOUR WORKSHEET! YOU WILL HAVE TIME TO WORK ON THIS AGAIN TOMORROW!