BASIS header:

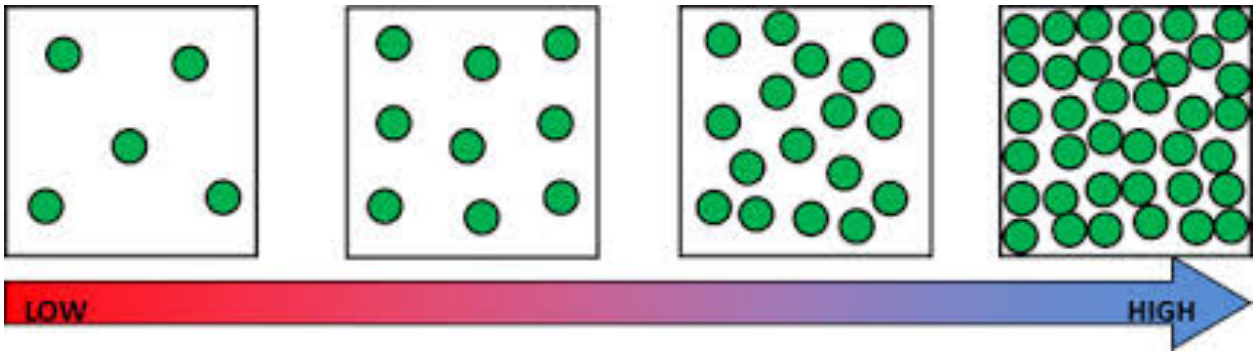
Density

Density describes how much _____ (or mass) occupies the _____ (or space) of a substance

Matter is anything that has _____ and takes up _____.

Two objects can be the _____ but have _____.

Can a gas have a density?



Changing the shape of an object _____change its density because it does not alter the _____ 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 is the measure of the _____of an object.

The metric base unit for density is _____ **(**_____**)** for solids and _____ **(**_____**)** for liquids.

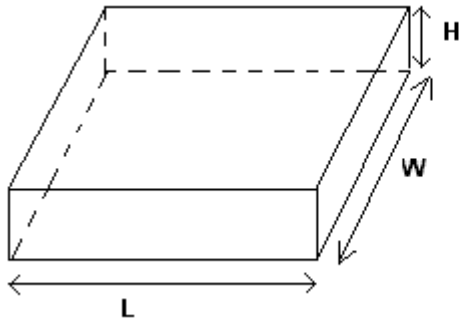
In order to calculate the density of an object, we need to know the _____ and the _____.

We can measure the mass of a solid or liquid using a _____ or balance.

We can measure the volume of a liquid by using a _____, _____,

or _____.

How do we measure the volume of a solid without water displacement???



The formula for the volume of a solid is:

Volume = _____ x _____ x _____

The units for volume when you are calculating density are:

- Solids: _____
- Liquids: _____

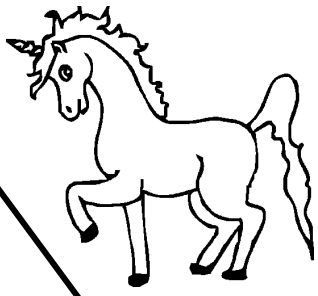
You have to convert metric measures to cm and mL _____ calculating density

_____ cm^3 = _____mL

PRACTICE! CALCULATE THE VOLUME OF THE FOLLOWING SOLID OBJECTS:

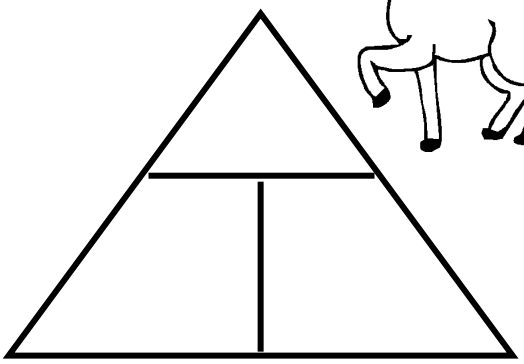
Length (cm)	Width (cm)	Height (cm)	Volume (cm^3)
6 cm	3 cm	1 cm	
10 cm	5 cm	2 cm	
5 cm	2 cm	8 cm	
2.5 cm	3.5 cm	1.5 cm	
1.5 cm	10 cm	2.5 cm	
4.3 cm	3.7 cm	1.8 cm	
8.5 cm	8.8 cm	8.2 cm	
9.7 cm	13.3 cm	2.9 cm	

Round your answer to the nearest 1000th place (0.001)!!!



The formula for density is:

Density = _____ ÷ _____



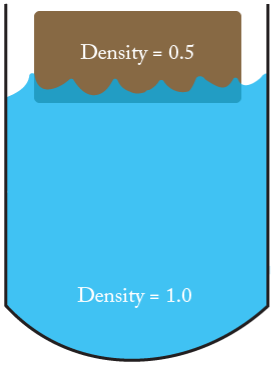
Use the magical triangle of power, unicorns, and boogers!!!

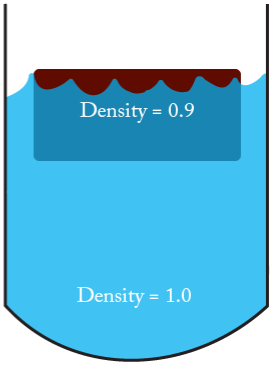
Density =

Mass =

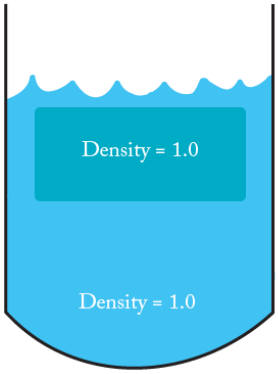
Volume =

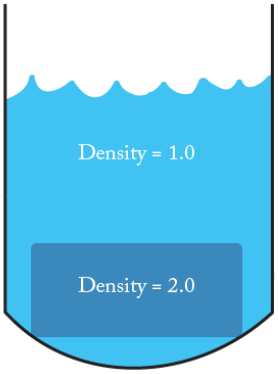
If you put a solid object in a liquid and the solid object is _____ dense than the liquid than the object will _____.





If you put a solid object in a liquid and the solid object is _____ dense than the liquid than the object will _____.





The density of pure water is _____. Which of the following materials will float or sink on pure water?

Material	Density	Float or Sink
Air	0.001 g/cm^3	
Corn oil	0.93 g/mL	
Glycerin	1.26 g/mL	
Corn Syrup	1.38 g/mL	
Wood	0.85 g/cm^3	
Steel	7.81 g/cm^3	
Rubber	1.34 g/cm^3	
Ice	0.92 g/cm^3	
Water	1.00 g/mL	

Assuming that the materials don't mix, show how the materials would "stack up" in a graduated cylinder.

Top layer →

Bottom layer →

Material	Density
Air	0.001 g/cm^3
Corn oil	0.93 g/mL
Glycerin	1.26 g/mL
Corn Syrup	1.38 g/mL
Wood	0.85 g/cm^3
Steel	7.81 g/cm^3
Rubber	1.34 g/cm^3
Ice	0.92 g/cm^3
Water	1.00 g/mL

The density of salt water is _____. Which of the following materials will float or sink on salt water?

Material	Density	Float or Sink
Air	0.001 g/cm^3	
Corn oil	0.93 g/mL	
Glycerin	1.26 g/mL	
Corn Syrup	1.38 g/mL	
Wood	0.85 g/cm^3	
Steel	7.81 g/cm^3	
Rubber	1.34 g/cm^3	
Ice	0.92 g/cm^3	
Water	1.00 g/mL	

DENSITY CONCEPT QUESTIONS

1. A gold-colored ring has a mass of 18.9 grams and a volume of 1.12 cm^3. Is the ring pure gold? (The density of gold is 19.3 g/cm^3)

2. Why does an air bubble rise to the surface of a glass of soda?

3. Why do companies make airplanes out of aluminum instead of cast iron? Why do companies make weightlifting equipment out of cast iron instead of aluminum?

4. Why does changing the shape of an object not change its density?

5. Describe the "loaf of bread" example we discussed in class. Why does slicing the bread not change the density whereas squishing the loaf of bread does change the density?