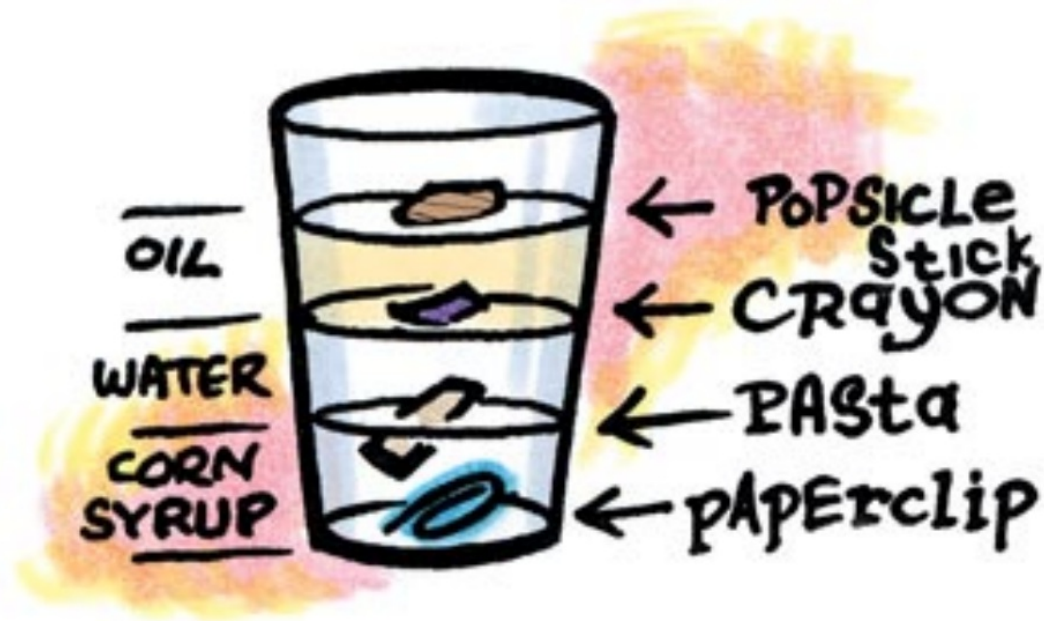
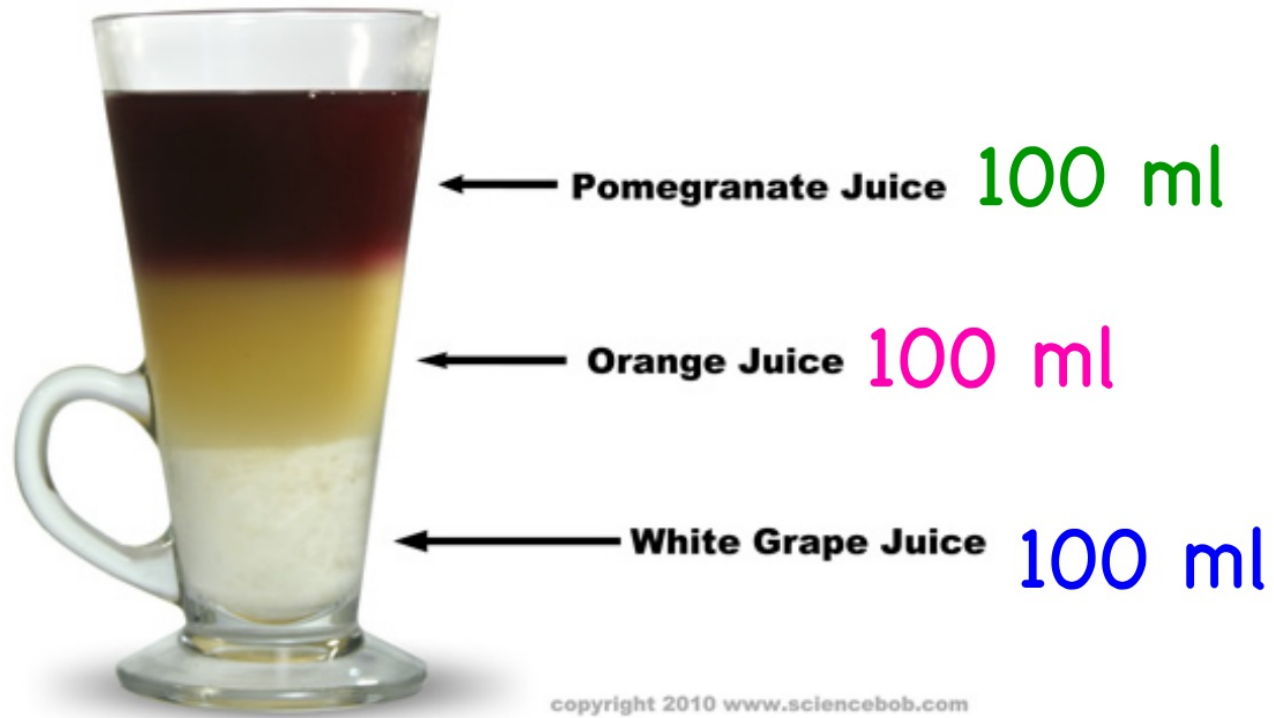


# Density



?



different volume?

different mass?

different density?

?

# Review:

**Mass:** A measure of how much **matter** is in an object.

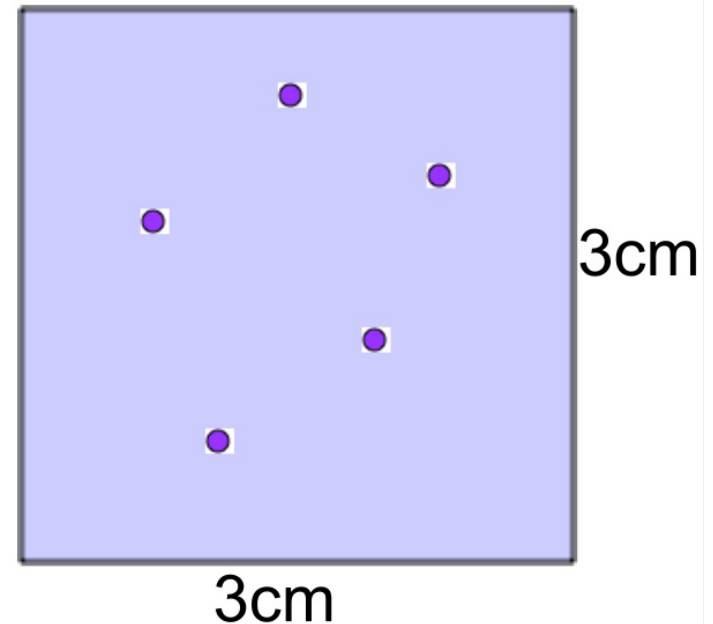
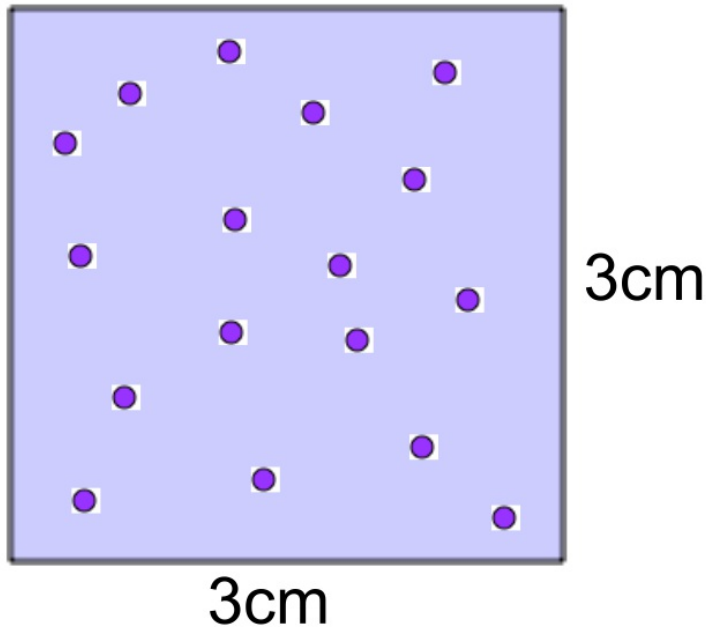
**Volume:** The amount of **3-dimensional space** an object occupies.

**Weight:** "Heaviness". The downward force caused by **gravity** on an object.

*chemical? physical?*



- Demonstration: People in a square
- How about this: Which square is more dense?





## Similarities



## Differences



# Hypothesis...



?

sink?

float?

?

sink?

float?



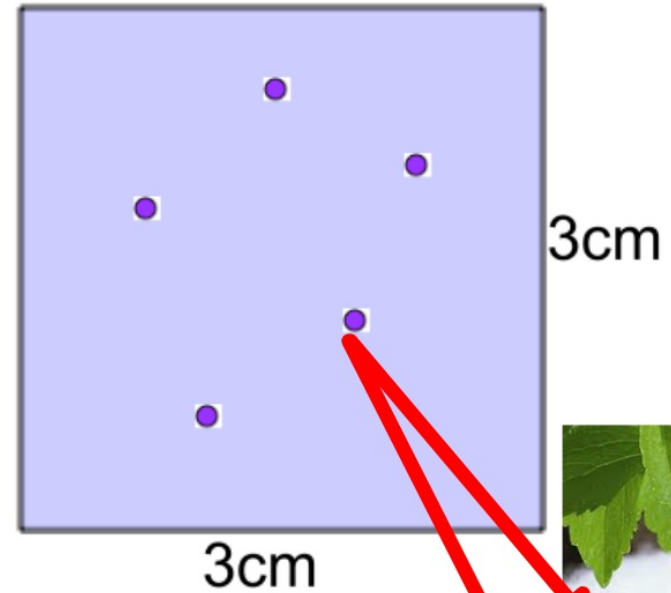
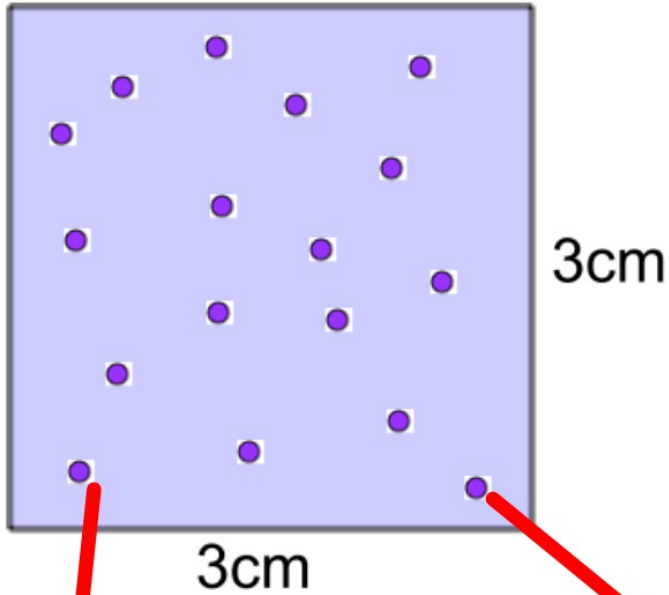
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Nutrition Facts Coke		
Serving Size	12 fl oz	
Amount Per Serving		
Calories	140	
	% Daily Value*	
Total Fat	0.0 g	0 %
Sodium	50 mg	2 %
Total Carbohydrate	39 g	13 %
Sugars	39 g	
Protein	< 1 g	0 %

\* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Carbonated Water, **High Fructose Corn Syrup** and/or **Sucrose**, Carmel Color, **Phosphoric Acid**, Natural flavors, Caffeine

Nutrition Facts Diet Coke		
Serving Size	12 fl oz	
Amount Per Serving		
Calories	0	
	% Daily Value*	
Total Fat	0.0 g	0 %
Sodium	40 mg	2 %
Total Carbohydrate	< 1 g	0 %
Protein	< 1 g	0 %

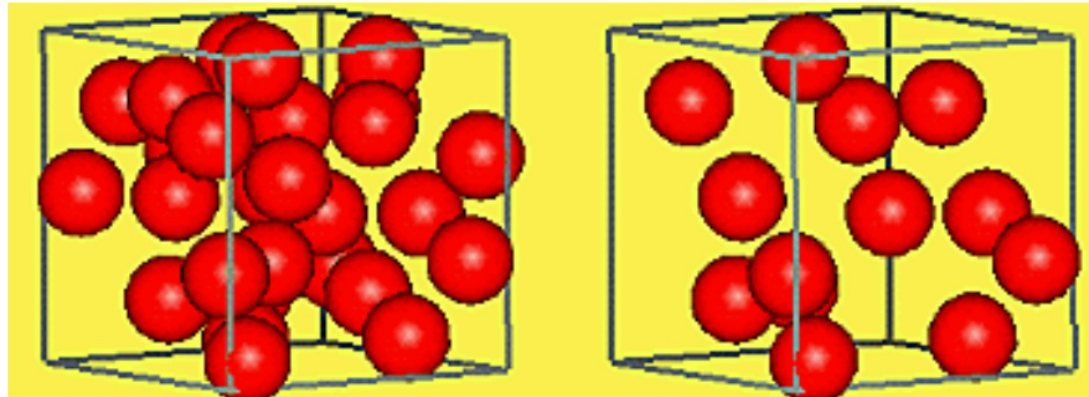
\* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Carbonated Water, Caramel Color, Aspartame, **Phosphoric Acid**, Potassium Benzoate, Natural flavors, **Citric Acid**

# **DENSITY:**

**Amount of matter per unit volume.**

**Density is the ratio of mass to  
volume (M/V).**



# 7 Side Effects of Soda

Phosphoric Acid - Weakens bones and rots teeth

Excessive artificial sweeteners makes you crave more

Carmel Color - Made from the chemical caramel, is purely cosmetic, it doesn't add flavor yet is tainted with carcinogens.

Formaldehyde - Carcinogen, it is not added in soda but when you digest aspartame, it will break down into 2 amino acids and methanol = formic acid + formaldehyde (diet sodas)



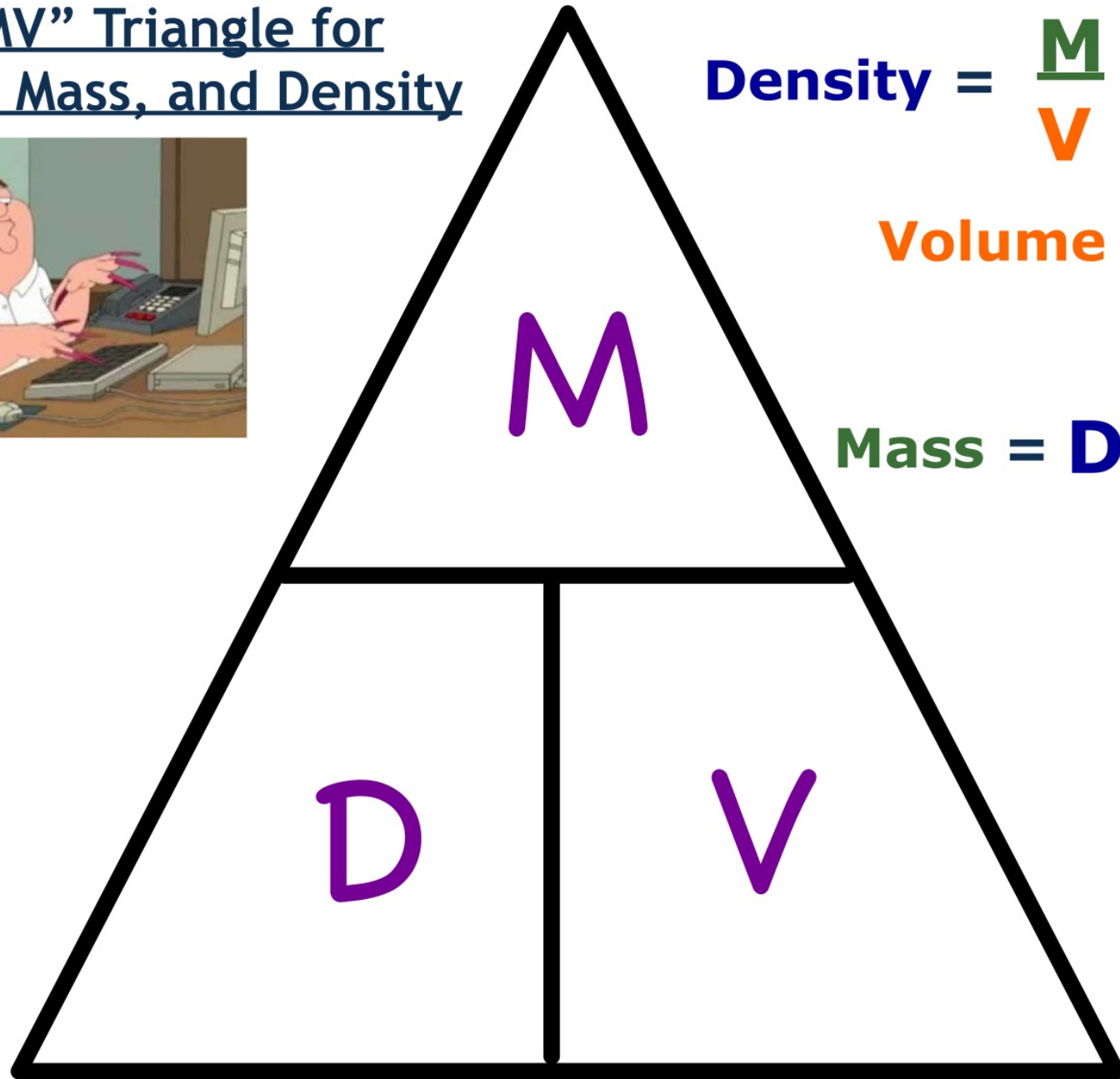
High Fructose Corn Syrup is a Concentrated form of sugar, fructose derived from corn. It increases body fat, cholesterol and triglycerides and it also makes you hungry.

Potassium Benzoate = preservative that can be broken down to benzene in your body. Keep your soda in the sun and benzene = Carcinogen

Food Dyes = impaired brain function, hyperactive behavior, difficulty focussing, lack of impulse control.

Dave Sommers

# The “DMV” Triangle for Volume, Mass, and Density



$$\text{Density} = \frac{M}{V}$$

$$\text{Volume} = \frac{M}{D}$$

$$\text{Mass} = D \times V$$