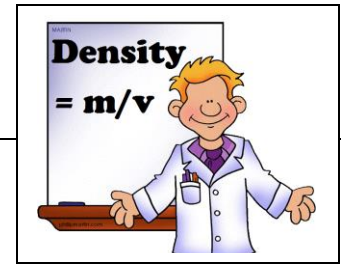


## Week 12 – SCIENCE NOTE PAGE

### Density



#### Review –

- All matter has \_\_\_\_\_ and takes up space.
  - **Mass:** the amount of material something has in it;
    - Example: golf ball has more mass than a ping-pong ball;
    - **SI Unit:** kilogram (kg); or gram (g)
- To determine how much space a substance actually occupies, we measure its \_\_\_\_\_.
  - **Volume:** the space an object occupies;
    - **SI Unit:** liter (l); or milliliter (ml) or centimeters cubed (cm<sup>3</sup>)

#### Density

- What is DENSITY?
  - A measure of the mass of a substance within a given \_\_\_\_\_.
    - **Density = mass / volume or  $D = m/v$**
    - **SI Unit:** grams/milliliter (g/ml) or grams/centimeters cubed (g/cm<sup>3</sup>)
      - Density tells us **how far apart** atoms are from each other in a substance
        - The farther apart individual atoms are **the less** dense the substance is
        - The closer they are **the more** dense the substance is.
  - Remember **Density is a** \_\_\_\_\_ Property of substances – we can USE density to **identify** substances!
    - Example: a gold bar versus a gold watch



VERSUS



Mass: 20,000 grams  
Volume: 1,040 cm<sup>3</sup>

$$D = m/v$$

$$D = 20,000g/1,040 \text{ cm}^3$$

$$D = 19.2 \text{ g/cm}^3$$

Mass: 550 grams  
Volume: 28.5 cm<sup>3</sup>

$$D = m/v$$

$$D = 550/28.5 \text{ cm}^3$$

$$D = 19.2 \text{ g/cm}^3$$

The density of gold is 19.2 g/cm<sup>3</sup>!!!



#### Pepsi vs. Diet Pepsi

What happens when you put a can of Pepsi and a can of Diet Pepsi in water?

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WHY does this happen?

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