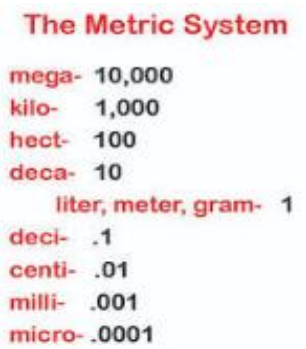
Physical Science

Unit 1: Using Mathematics to Explain the World

Fall 2018 Aug 13th – Aug 27th

1. I can use The Metric System Base 10 decimal system.



a. Also Known as the International System of Measurements (SI)
b. the decimal measuring system based on the meter, liter, and gram as units of length, capacity, and weight or mass
c. The Metric System is based on the numerical value of 10s which is why it so easily converts to decimals.
d. The Prefixes are the same for any base unit: Liters, Meters, or Grams it don't matter which is in use.
e. Identify the most precise measuring prefix for various tasks.
f. I can transition from one base to another.

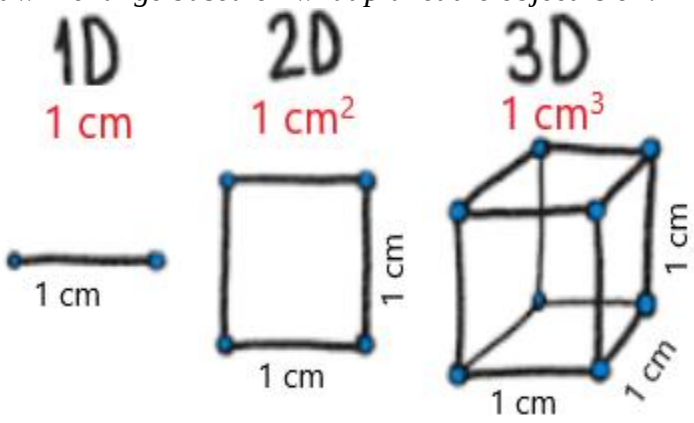
2. I understand the fundamental difference of Mass vs Weight.

a. Mass and Weight are not the same.
   - ➔ The **mass** of an object is a fundamental property of the object; a numerical measure of its inertia; a fundamental measure of the amount of matter in the object
   - ➔ **Weight** is used to describe the mass of the object and the force that is acting on it, which is most often GRAVITY.

b. **Mass** is constant and will never change!!!!
c. **Weight** changes based on the change in the force acting on the mass. (when/where gravity changes)
   - ➔ *Ex: The gravity on different planets is not the same; therefore, the weight of an object will change based on what planet the object is on.*

3. I understand the 1-D, 2-D, 3-D world and how to measure it precisely.

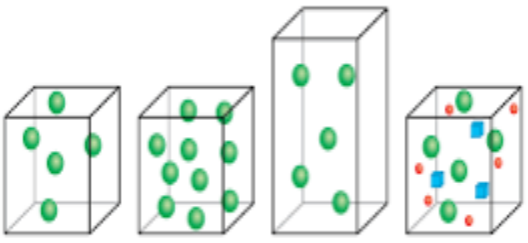
a. Volume is a measure of the amount of space an object exists in "occupies".



b. The Volume "Rule of Thumb"
   - ➔ Meters for the volume of a solid & Liter for the volume of a liquid
c. 1 cm = 1 mL both occupy the same amount of space.

4. I understand the concept of density.

a. Density is where mass and volume meet.
   - ➔ How much mass (matter aka stuff) is in that amount of space that the object is occupying (volume)
b. I can use the Density formula D = M/V to solve for density, mass or volume.



5. I understand how to read a graph scientifically.

a. Analyze all titles/headings/labels on the graph.
b. Analyze the horizontal component/trend and Vertical component/trend separately.