Name:_____ Date: _____

Physical Science Notes 1
Measurement I

U.S. Customary Units

- The US uses different units than most other countries in the world.
- Since science experiments must be repeated in order to be considered valid, scientists cannot use this system.
- U.S. Customary Units are derived from the British system of measurement.
- Some examples include:
  - Length - feet, inches, yards
  - ~~Mass~~ volume - cups, gallons, pints, quarts, teaspoons
  - Speed - mph
  - Weight - lbs, ounces

The Metric System – (Le Systeme Internationale d'Unites)

- Created by scientists in the 1700's
- Updated in the 1960's
- Based on multiples of 10.
- **Metric System Base Units**

Measurement	**Unit of Measure**	**Abbreviation**
Length	meter	m
Mass	Kilogram	kg
Time	second	s
Temperature	Kelvin	K
Electrical Current	ampere	A
Amount of Substance	mole	mol
Intensity of Light	candela	cd

- **Metric System Prefixes**
  - The metric system is based on multiples of 10.
  - Prefixes are used to indicate which multiple of 10 should be used with the units

Prefix	Abbreviation	Multiplying Factor
Kilo-	k	1000
Hecto-	h	100
Deca-	da	10
Deci-	d	.1
Centi-	c	.01
Milli-	m	.001
Micro-	μ	.000001

  - If there is no prefix, the multiplying factor is 1.
  - Another way of looking at the relationship between these prefixes is to say that:
    - 1 kilometer = 10 hectometers = 100 decameters = 1000 meters
    - 1 meter = 10 decimeters = 100 centimeters = 1000 millimeters
    - 1m = .1 dam = .01 hm = .001 km
    - .01 hm = .1 dam = 1m = 10dm
    - 1mm = .0001 dam