Measurements

Measurements are comparisons of properties against accepted standards, called units.

ENGLISH / US SYSTEM OF UNITS:

1 foot = 12 in 1 yard = 3 ft 1 mile = 1760 yd

5280 ft = 1 mile

So what's the problem?

The English system of units has different conversion factors for every kind and size of unit. This makes the system hard to use and prone to calculation errors.

English units are nonstandard and difficult to use. Solution?

THE METRIC SYSTEM

Metric Base Units:

Length	meter	m
Mass	kilogram *	kg
Temperature	Kelvin	K
Time	second	s

All metric units are made up of COMBINATIONS of BASE UNITS!

* we usually treat the gram as if it's the base unit for mass!

- One meter is approximately 3.3 feet.
- One kilogram is approximately 2.2 pounds.

What about SIZE?

Metric units may be made larger or smaller by adding PREFIXES.

A few common metric prefixes:

mega-	10^{6}	M
kilo-	10^{3}	k
centi-	10^{-2}	c
milli-	10^{-3}	m
micro-	10^{-6}	μ

Bigger units

smaller units

MEMORIZE the common metric prefixes listed in the study guide

Applying prefixes

1 _____ m = _____ m

1 cm = 10^{-2} m (1/100 m)

1 km = 10^{3} m (1000 m)