

## Vocabulary: Unit Conversions



### Vocabulary

- **Base unit** – a unit in the *metric system* on which other units are based.
  - Examples of base units include meters (length), grams (mass), seconds (time), and liters (volume).
- **Cancel** – to cross out, remove, delete, or invalidate something.
  - In an algebraic expression, identical terms found in the numerator and denominator can be cancelled, such as the unit “seconds” in this equation:

$$120 \text{ ~~seconds~~} \cdot \frac{1 \text{ minute}}{60 \text{ ~~seconds~~}} = 2 \text{ minutes}$$

- **Conversion factor** – a ratio or fraction equivalent to one that is used to multiply or divide a quantity when converting from unit to another.
  - For example, the conversion factor for seconds to minutes is:

$$\frac{60 \text{ seconds}}{1 \text{ minute}}$$

This conversion factor is equivalent to one because 60 seconds is equal to 1 minute.

- **Dimensional analysis** – a technique in which cancelling units is used to obtain the correct solution to a problem.
- **Metric system** – a system of units developed in France in 1790.
  - The metric system consists of base units and *prefixes*.
  - The modern version of the metric system is the International System of Units, or *Système Internationale* (SI) in French.
- **Prefix** – a word or symbol placed before a unit that multiplies that unit by a power of 10.
  - Examples of metric prefixes include *micro-* (1/1,000,000), *milli-* (1/1,000), *centi-* (1/100), and *kilo-* (1,000).
  - Prefixes can be applied to any unit in the metric system.
- **Scientific notation** – a convenient method of writing very large or very small numbers.
  - A number in scientific notation consists of a number between 1 and 10 multiplied by a power of 10.
    - For example, 41,600,000 in scientific notation is  $4.16 \times 10^7$ .