# Conversions

# Which container holds more? The 2 liter soda bottle or the ½ gallon milk jug?


# To compare,

We need the same unit of measure for both objects.

# Single Unit Conversions

Example:
Convert 2 liters into gallons. Round to the nearest tenth.

Measures just one thing.

In this case, just volume.

- Example: Convert 2 liters into gallons. Round to the nearest tenth.

1. Write the original value as a fraction with __1__ as the denominator. INCLUDE UNITS.

At the bottom left of the page, complete step one for our example.

$$\frac{2L}{1}$$

- Example: Convert 2 liters into gallons. Round to the nearest hundredth.

2. Look up the appropriate conversion rate. Write this **conversion** factor as a fraction with the starting unit in the denominator and the desired units in the numerator.

$$\frac{2L}{1} \qquad \frac{1.0\ gallon}{3.79\ L}$$

Example: Convert 2 liters into gallons. Round to the nearest hundredth.

3. Multiply the numerator and denominator separately. Cancel units when possible.

$$\frac{2\,\cancel{L}}{1} \qquad \frac{1.0\ gallon}{3.79\,\cancel{L}} \qquad \frac{2\ gallon}{3.79}$$

Example: Convert 2 liters into gallons. Round to the nearest hundredth.

4. Divide the numerator by the denominator. Round according to directions.

$$\frac{2\cancel{L}}{1} \qquad \frac{1.0\ gallon}{3.79\ \cancel{L}} \qquad \frac{2\ gallon}{3.79} \qquad 0.537 \qquad 0.54$$

# Double Unit Conversions: measuring 2 different things

Examples:

- miles per hour
- $ per pound
- grams per liter

Example: 30.25 miles per hour into feet per minute. Round to the nearest hundredth.

1. Write the original value as a fraction.

   INCLUDE UNITS.

   At the bottom left of the page, complete step one for our example.

$$\frac{30.25 miles}{1 hr}$$

Example: 30.25 miles per hour into feet per minute. Round to the nearest hundredth.

2. Look up the conversion RATES.

Position units in fractions so they cancel.

$$\frac{30.25 miles}{1 hr} \qquad \frac{5280\ feet}{1 mile} \qquad \frac{1\ hr}{60\ min.}$$

- Example: 30.25 miles per hour into feet per minute. Round to the nearest hundredth.

3. Multiply the numerator and denominator separately. Cancel units when possible.

$$\frac{30.25 miles}{1\ hr} \quad \frac{5280\ feet}{1 mile} \quad \frac{1\ hr}{60\ min.} \quad \frac{159456\ ft}{60\ min.}$$

Example: 30.25 miles per hour into feet per minute. Round to the nearest hundredth.

3. Divide numerator by denominator. Round if necessary

$$\frac{30.25 \cancel{miles}}{1 \cancel{hr}} \quad \frac{5280\ feet}{1 \cancel{mile}} \quad \frac{1 \cancel{hr}}{60\ min.} \quad \frac{159456\ ft}{60\ min.}$$

$$2657.6\ ft/min$$