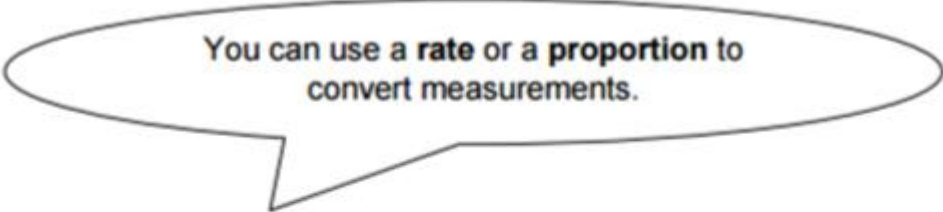


The two most common systems of measurement used around the world are the **metric system** and the **customary system**. The United States uses the customary system of measurements. Some examples of **customary measurements** are yards (yd), feet (ft), ounces (oz), and pounds (lb).

Problem 1

Nicole bought 2 pounds of grapes. How many ounces is this?

How do you **convert**, or change, pounds to ounces?



You can use a **rate** or a **proportion** to convert measurements.

1 pound (lb) = 16 ounces (oz)

$$\frac{1 \text{ lb}}{16 \text{ oz}} = \frac{1 \text{ lb} \times 2}{16 \text{ oz} \times 2} = \frac{2 \text{ lb}}{32 \text{ oz}}$$

Two pounds is equal to 32 ounces. So, Nicole bought 32 ounces of grapes.

Problem 2

Joel bought 42 inches of wire. How many yards is that?

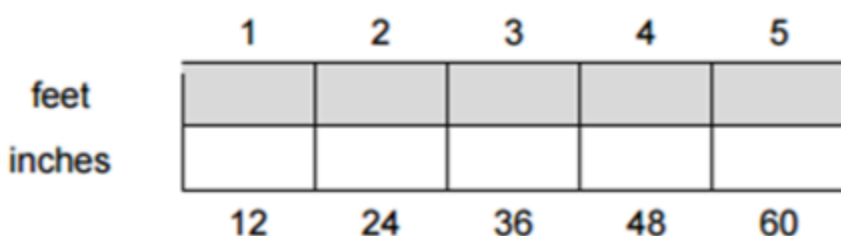
Conversion factor: $\frac{1 \text{ yd}}{36 \text{ in.}}$

$$\frac{1 \text{ yd}}{36 \text{ in.}} = \frac{\frac{7}{6} \text{ yd}}{42 \text{ in.}}, 42 \text{ in.} = \frac{7}{6} \text{ or } 1 \frac{1}{6} \text{ yd}$$

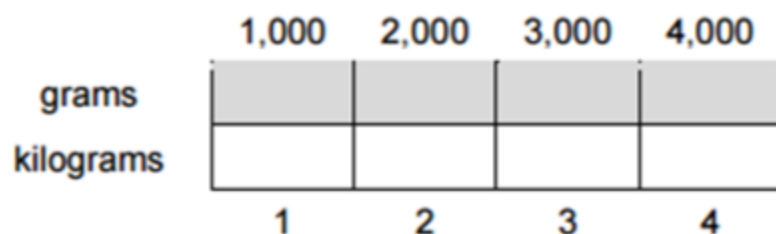
42 inches is $1 \frac{1}{6}$ yards. Joel bought $1 \frac{1}{6}$ yards of wire.

1. Convert 5.5 yards to inches. _____
2. Convert 450 inches to yards. _____

You can use a bar model to convert measurements.



$$\frac{1}{12} = \frac{3}{36} \text{ so } 3 \text{ feet} = 36 \text{ inches}$$



$$\frac{1,000}{1} = \frac{4,000}{4} \text{ so } 4,000 \text{ g} = 4 \text{ kg}$$

Customary Measurements

Length	Weight	Capacity
1 ft = 12 in. 1 yd = 36 in. 1 yd = 3 ft 1 mi = 5,280 ft 1 mi = 1,760 yd	1 lb = 16 oz 1 T = 2,000 lb	1 c = 8 fl oz 1 pt = 2 c 1 qt = 2 pt 1 qt = 4 c 1 gal = 4 qt

Metric Measurements

Length	Mass	Capacity
1 km = 1,000 m 1 m = 100 cm 1 cm = 10 mm	1 kg = 1,000 g 1 g = 1,000 mg	1 L = 1,000 mL

You can use relationships between customary and metric units to convert within the same measurement system. You can use a table to identify a relationship.

in.	12	24	36
ft	1	2	3

or

in.	18	27	45
ft	1.5	2.25	3.75

- A foot is _____ inches.
 - An inch is _____ foot.
- To convert feet to inches, _____.
 - To convert inches to feet, _____.

