

## MEASUREMENT

### What Is Measurement?

- Measurement is the use of units to show size, length, weight, or capacity.
- There are **customary** measurements and **metric** measurements.

#### How to **measure**:

- **Customary units** of length are inches, feet, yards, and miles.

$$12 \text{ inches} = 1 \text{ foot}$$



- **Metric** units of length are centimeters, meters, and kilometers.

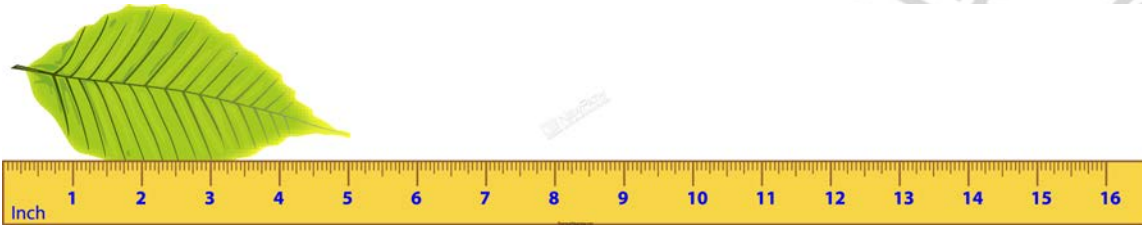
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$$100 \text{ centimeters} = 1 \text{ meter}$$
$$1,000 \text{ meters} = 1 \text{ kilometer}$$

- To measure the length of an object, a ruler can be used. There are both customary and metric rulers.

For example:



This is a customary ruler. It shows inches. This leaf is 5 inches long.

- Customary units of weight are ounces, pounds, and tons.

$$\begin{array}{l} 16 \text{ ounces} = 1 \text{ pound} \\ 2,000 \text{ pounds} = 1 \text{ ton} \end{array}$$

- Metric units of weight are milligram, gram, and kilogram.



- To find the number of pounds in a given amount, divide the number of ounces by 16.
- To find the number of ounces in a given amount, multiply the number of pounds by 16.

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For example:

If there are 16 ounces in a pound, how many ounces are there in 2 pounds?

For this question, there are two things that can be done. One is to add  $16 + 16$ . The second is to multiply  $16 \times 2$ . Both of these will give you the same answer.

$$\begin{array}{l} 16 + 16 = 32 \\ 16 \times 2 = 32 \end{array}$$

**There are 32 ounces in 2 pounds.**

- Customary units of capacity are teaspoons, tablespoons, ounces, cups, pints, quarts, and gallons.

**3 teaspoons = 1 tablespoon**  
**2 tablespoons = 1 fluid ounce**  
**8 fluid ounces = 1 cup**  
**2 cups = 1 pint**  
**2 pints = 1 quart**  
**4 quarts = 1 gallon**

- Metric units of capacity are measured in milliliters, liters, and kiloliters.

**1,000 milliliters = 1 liter**  
**1,000 liters = 1 kiloliter**

- To measure the capacity of something, measuring cups and cylinders are used.

- To find the amount of liquid in a container, you can multiply the number of measuring cups by the amount of liquid in each cup.

For example,

A mixing bowl holds 2 quarts of liquid. How many pints of liquid can it hold?



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It is known that there are two pints in a quart. Since the problem states there are **2 quarts**, simply **multiply 2 x 2**.

$$2 \times 2 = 4$$

**The mixing bowl will hold 4 pints.**

## Try This!

- Write the following measurements on the line.



How long is the bee?

\_\_\_\_\_

There are 1,000 milligrams in 1 gram. How many milligrams are there in 4 grams?



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There are \_\_\_\_\_

\_\_\_\_\_ tons?

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