## MEASUREMENTS AND TEMPERATURE



## Unit Overview

In this unit, you will continue to measure lengths of various objects using measure units in the customary system and also the metric system. You will also learn temperatures in Fahrenheit degrees, and then temperatures in Celsius degrees.

## Measure the Length

The chart below shows the customary units of length.

## Customary Units of Length

12 inches (in) $=1$ foot ( ft )

$$
3 \text { feet }(\mathrm{ft})=1 \text { yard }(\mathrm{yd})
$$

$$
1,760 \text { yards }(\mathrm{yd})=1 \text { mile }(\mathrm{mi})
$$

When completing the questions section, you may refer to the chart for reference. It would be wise to memorize this chart because you will use measurement for the rest of your life.

An inch is the standard unit used to measure length. When measuring with a ruler, line up the end of the ruler with the end of the object you are measuring.


Click on the link to watch the video "U.S. customary units: distance".


The chart below shows the metric units of length.

| Metric Units of Length |
| :---: |
| 100 centimeters $(\mathrm{cm})=1$ meter $(\mathrm{m})$ |
| 1,000 meters $(\mathrm{m})=1$ kilometer $(\mathrm{km})$ |

Click on the link to watch the video "Metric system: units of distance".


## Length

## Kilometer ( $\mathbf{k m}$ )

A kilometer is a distance that is about 7 blocks long. Kilometers are used to measure long distances.


## Meter (m)

A meter is about as long as a baseball bat. A meter stick could be used to measure the length of a room.

## Centimeter (cm)

A centimeter is about the width of the pinky finger. A centimeter is a little less than half an inch long.


## Temperature

Temperature can be measured in degrees Fahrenheit. Degrees is shortened to ${ }^{\circ}$ and Fahrenheit is shortened to F . A warm sunny day is 85 ${ }^{\circ}$ F or 85 degrees Fahrenheit. Look at the thermometer below to see some important temperatures.

## Fahrenheit



There are two main temperature scales:

- ${ }^{\circ}$ F, the Fahrenheit Scale (used in the US), and
- ${ }^{\circ} \mathbf{C}$, the Celsius Scale (part of the Metric System, used in most other countries)

They both measure the same thing, temperature! But use different numbers:

- Boiling water (at normal pressure) measures $\mathbf{1 0 0}^{\circ}$ in Celsius, but $212^{\circ}$ in Fahrenheit
- And as water freezes it measures $\mathbf{0}^{\circ}$ in Celsius, but $32^{\circ}$ in Fahrenheit

Like this:


Click on the link to watch the video "Comparing Celsius and Fahrenheit temperature scales".


| Typical Temperatures |  |  |
| :---: | :---: | :--- |
| $\mathbf{o} \mathbf{C}$ | $\underline{\mathbf{o F}}$ | Description |
| 180 | 356 | Moderate Oven |
| 100 | 212 | Water boils |
| 40 | 104 | Hot bath |
| 37 | 98.6 | Body temperature |
| 30 | 86 | Beach weather |
| 20 | 68 | Room temperature |
| 10 | 50 | Cool Day |
| 0 | 32 | Freezing point of water |
| -18 | 0 | Very Cold Day |
| -40 | -40 | Extremely Cold Day |

Click here to play some interactive games and learn more about temperature.

