



# Units of Measurement

Standard units are a universal set of measurements that help scientists measure things in the same way, allowing everybody to understand and compare collected data. One unit describes one measurement of a particular quantity. Here are some metric units.

## Weight

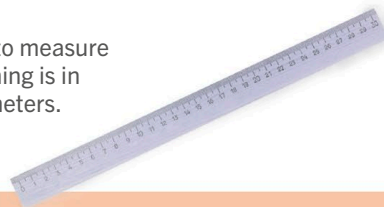
Scales are used to measure something's weight in grams or kilograms.



Quantity	Base unit	
weight	gram (g)	kilogram (kg)

## Length

Rulers are used to measure how long something is in centimeters or meters.



Quantity	Base unit	
length	centimeter (cm)	meter (m)

## Volume

Beakers are used to measure the volume of liquids in cubic centimeters or cubic meters.



Quantity	Base unit	
volume	cubic centimeter (cm <sup>3</sup> )	cubic meter (m <sup>3</sup> )

## Time

Stopwatches and timers can be used to measure time in seconds, minutes, or hours.



Quantity	Base unit	
time	seconds (s)	minutes (m)

## Mole

Unique beakers are used to measure the mole, which is both the mass and volume of substances (see page 109).



Quantity	Base unit
mole	mole (mol)



## Key Facts

- ✓ Units help scientists measure things using certain equipment.
- ✓ Using the same units helps scientists compare data with each other.
- ✓ Different pieces of equipment measure things using different units.



## Converting Units

Units can be converted between different levels using a number called a conversion factor.

$\xrightarrow{\times 1,000}$	
g	kg
mm	m
m <sup>3</sup>	dm <sup>3</sup>
mol/dm <sup>3</sup>	mol/cm <sup>3</sup>
$\xleftarrow{\div 1,000}$	