

# Measurement – Units and systems

## English summary

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Physical quantities can be measured.

Only physical quantities of the same type can be compared

To make measurements we use an instrument.

A set of units to be used with measurements operations is called systems of measurement.

The International System of Units (SI) is the international standard measurement system.

It's a metric and decimal system based on seven base units.

base unit name	SI name	SI symbol
Length (l)	meter	m
Mass (m)	kilogram	kg
Time (t)	second	s
Electric current (I, i)	ampere	A
Thermodynamic temperature (T)	kelvin	K
Amount of substance (n)	mole	mol
Luminous intensity (I <sub>v</sub> )	candela	cd

All derived units come from these fundamental units.

The SI fixes writing style, rule and prefix to be used with small and large numbers.

English speaking countries still use a non decimal system. Customary units of measurement are still common in USA and UK.

We use non decimal systems for angles and time.

If is needed a value for a measure without the use of an instrument, we make an estimation or compute an approximated and uncertain value.

Measuring also required an upper or lower bounds of values.

Every measure taken has also an observation error: random or systematic.