

Measurements, Units, and Significant Figures

Measurement requires a number and a unit.

Measurement		English system	SI units (metric)	Conversion factor
mass		pounds (lb)	kilograms (kg)	1 lb = 453.6 g
length		feet (ft)	meters (m)	1 in = 2.54 cm
time		minute (min)	second (s)	1 min = 60 sec
volume	length ³	fluid ounces	liters (L=1 dm ³)	12 fl oz = 355 mL
		cubic inch (in ³)	cubic cm (cm ³)	
density	mass/length ³	lb/ft ³	kg/dm ³	
area	length ²	square feet (ft ²)	square m (m ²)	
speed	length/time	miles/hour	m/s	
temperature		Fahrenheit (°F)	Celsius (°C)	°F-32 = 1.8 °C
			kelvins (K)	K = °C + 273.15
pressure	mass/(length•time ²)	lb/in ²	atmosphere (atm)	14.7 lb/in ² = 1 atm
		inches of Hg	mm of Hg (torr)	1 bar = 0.987 atm
		bar	Pascal (Pa)	1 bar = 10 ⁵ Pa
energy	(mass•length ²)/time ²	calories (cal)	joules (J)	1 cal = 4.184 J

SI unit	abbreviation		SI prefix names	abbreviation	Number	
gram	g		giga	G	10 ⁹	billion
meter	m		mega	M	10 ⁶	million
second	s		kilo	k	10 ³	thousand
liter	L		deci	d	10 ⁻¹	tenth
			centi	c	10 ⁻²	hundredth
			milli	m	10 ⁻³	thousandth
			micro	μ	10 ⁻⁶	millionth
			nano	n	10 ⁻⁹	billionth
			pico	p	10 ⁻¹²	trillionth

Significant Figures

Rounding Off - less than 5, round down; more than 5, round up; equals 5, round to even number.

Adding or Subtracting - result has same number of decimal places as data with smallest number of decimal places.

Multiplying or Dividing - result has same number of significant digits as data with smallest number of significant digits.