

Measurement Conversions

<u>Topic</u>	<u>Common Units</u>	<u>Conversion Facts</u>
Length	inch (in.) foot (ft) yard (yd) mile (mi)	12 in. = 1 ft 3 ft = 1 yd 36 in = 1 yd 1,760 yd = 1 mi 5,280 ft = 1 mi
Weight	ounce (oz) pound (lb) ton (T)	16 oz = 1 lb 2,000 lb = 1 T
Capacity	quart (qt) gallon (gal) bushel (bu)	4 qt = 1 gal 32 qt = 1 bu (dry)
Area	square inch (in ²) square foot (ft ²) square yard (yd ²) acre square mile (mi ²)	144 in ² = 1 ft ² 9 ft ² = 1 yd ² 43,560 ft ² = 1 acre 640 acres = 1 mi ²
Volume	cubic inch (in ³) cubic foot (ft ³) cubic yard (yd ³) cubic mile (mi ³)	1,728 in ³ = 1 ft ³ 27 ft ³ = 1 yd ³
Time	second (sec or s) minute (min) hour (hr or h)	60 sec = 1 min 60 min = 1 h 3,600 sec = 1 h
Speed	ft/sec or fps mi/h or mph	
Temperature	degree Fahrenheit (°F)	

<u>Topic</u>	<u>Basic Units (Root word(s))</u>
Length	meter (m)
Mass	gram (g)
Capacity	liter (L)
Area	square meter (m ²)
Volume	cubic meter (m ³)
Time	second (s)
Speed	meter per second (m/s) or kilometer per hour (km/h)
Temperature	degree Celsius (°C) or Kelvin (K)

<u>Prefix</u>	<u>Symbol</u>	<u>Meaning</u>	<u>Power of 10 (and value)</u>
Tera	T	one trillion	10^{12} or 1,000,000,000,000
Giga	G	one billion	10^9 or 1,000,000,000
Mega	M	one million	10^6 or 1,000,000
kilo	k	one thousand	10^3 or 1,000
hecto	h	one hundred	10^2 or 100
deka	dk or da	ten	10^1 or 10
— ROOT —	-----	one	10^0 or 1
deci	d	one tenth	10^{-1} or 0.1
centi	c	one hundredth	10^{-2} or 0.01
milli	m	one thousandth	10^{-3} or 0.001
micro	mc or μ	one millionth	10^{-6} or 0.000001
nano	n	one billionth	10^{-9} or 0.000000001
pico	p	one trillionth	10^{-12} or 0.000000000001

T — — G — — M — — k h dk ROOT d c m — — mc — — n — — p

<u>Topic</u>	<u>Customary/Metric Conversion Facts</u>
Length	1 in. = 2.540 cm 1 cm \approx 0.3937 in. 1 ft \approx 0.3048 m 1 m \approx 3.28 ft 1 yd \approx 0.9144 m 1 m \approx 1.094 yd 1 mi \approx 1.6093 km 1 km \approx 0.6214 mi
Weight	1 oz \approx 28.3 g 1 g \approx 0.0353 oz 1 lb \approx 0.4536 kg 1 kg \approx 2.205 lb
Capacity	1 qt \approx 0.9464 L 1 L \approx 1.057 qt 1 gal \approx 3.785 L 1 L \approx 0.2642 gal 1 fl oz \approx 29.574 mL 1 mL \approx 0.03381 fl oz
Area	$1 \text{ in}^2 \approx 6.4516 \text{ cm}^2$ $1 \text{ ft}^2 \approx 929 \text{ cm}^2$ $1 \text{ yd}^2 \approx 8,361 \text{ cm}^2$ 1 ha (hectare) = $1 \text{ hm}^2 \approx 2.47$ acres $1 \text{ mi}^2 \approx 2.59 \text{ km}^2$
Volume	$1 \text{ in}^3 \approx 16.3871 \text{ cm}^3$ $1 \text{ ft}^3 \approx 28,317 \text{ cm}^3$ $1 \text{ yd}^3 \approx 0.7646 \text{ m}^3$ $35.3 \text{ ft}^3 \approx 1 \text{ m}^3$
Temperature	$F = 1.8C + 32$ $C = \frac{F - 32}{1.8}$ $K = C + 273.15$ $C = K - 273.15$