

Metric Conversion scale

Great Mighty King Henry Died monday drinking chocolate milk maybe no one noticed											
Giga ___	Mega ___	Kilo	Hecto	Deka	base unit (meter)	dec	centi	milli ___	micro ___	nano ___	pico
G-	M-	K-	H-	D- or dk-	m,g,L,s	d-	c-	m-	μ-	n-	p-
10^9	10^6	1000	100	10	1	0.1	0.01	0.001	10^{-6}	10^{-9}	10^{-12}

NOTE: The dashes in the scale above represent other prefixes not shown. They must be included when moving decimal spaces.

SI (metric) measurement system and the United States Customary Systems (USCS)

Equivalents

You are expected to memorize the boldface prefixes and their values. The other information you are expected to use this sheet for until you “learn by using.”

1 giga (G)	=	1,000,000,000	meters
1 mega (M)	=	1,000,000	meters
1 kilo (k)	=	1,000	meters
1 hecto (h)	=	100	meters
1 deka (da)	=	10	meters
base (none)	=	1	meters
1 deci (d)	=	0.1	meters
1 centi (c)	=	0.01	meters
1 milli (m)	=	0.001	meters
1 micro (μ)	=	0.000 001	meters
1 nano (n)	=	0.000 000 001	meters
1 pico (p)	=	0.000 000 000 001	m

Equivalents

$$1 \text{ in} = 2.54 \text{ cm}$$

$$1 \text{ gal} = 3.78 \text{ L}$$

$$1 \text{ lb} = 4.45 \text{ N}$$

$$1 \text{ m} = 3.28 \text{ ft}$$

$$1 \text{ mi} = 5280 \text{ ft}$$

$$1 \text{ m} = 39.37 \text{ in}$$

$$1 \text{ hp} = 746 \text{ W}$$

$$5 \text{ km} = 3.1 \text{ mi}$$

$$1 \text{ }^\circ\text{C} = 1.8 \text{ }^\circ\text{F}$$

$$1 \text{ gal} = 400 \text{ ft}^2$$

$$1 \text{ ft}^2 = 929 \text{ cm}^2$$

$$1 \text{ m}^3 = 264 \text{ gal}$$

$$1 \text{ gal} = 3785.5 \text{ cm}^3$$

$$1 \text{ kg} = 9.81 \text{ N}$$

Metric Conversion

K ing Kilo	H enry Hecto	D oesn't Deka	U sually Base Unit	D rink Deci	C hocolate Centi	M ilk Milli
1000 x larger than a unit	100 x larger than a unit	10 x larger than a unit	Meter (length) Liter (liquid volume) Gram (mass/weight) 1 unit	10 x smaller than a unit	100 x smaller than a unit	1000 x smaller than a unit
1 kilo = 1,000 units	1 hecto = 100 units	1 deka = 10 units		10 deci = 1 unit	100 centi = 1 unit	1,000 milli = 1 unit
2 meters = .002 kilometers	2 meters = .02 hectometers	2 meters = .2 dekameters	m = meter L = liter g = gram	2 meters = 20 decimeters	2 meters = 200 centimeters	2 meters = 2,000 millimeters

DIVIDE numbers by a power of 10 when going from **SMALLER** to **LARGER**.

MULTIPLY number by a power of 10 when going from **LARGER** to **SMALLER**

Scientific Notation to Numbers

Scientific Notation involves moving decimals.

$$\begin{aligned}
 &7.74521 \times 10^5 \\
 &= \underline{7.74521} \\
 &= 774\,521 \checkmark
 \end{aligned}$$

Because the exponent is **Positive 5**, move the decimal point 5 places **to the right**.
No Zeroes needed to fill empty gaps.

$$\begin{aligned}
 &6 \times 10^{-3} \\
 &= \underline{0006.} \\
 &= 0.006 \checkmark
 \end{aligned}$$

Because the exponent is a **Negative 3**, move the decimal point 3 places **to the left**.
Add in Zeroes to fill the empty gaps.