

3/29/2008

### The Metric System

Meter - (m) metric unit of length  
Gram - (g) metric unit of mass (weight)  
Liter - (L) metric unit of volume

All other units are powers of ten and are named by adding prefixes:

milli - 1/1000	$10^{-3}$
centi - 1/100	$10^{-2}$
deci - 1/10	$10^{-1}$
meter	} 1 $10^0$
gram	
liter	
deka - 10	$10^1$
hecto - 100	$10^2$
kilo - 1000	$10^3$

A milligram is 1/1000 of a gram.  
A centimeter is 1/100 of a meter.  
A deciliter is 1/10 of a liter.  
A dekagram is 10 grams.  
A hectoliter is 100 liters.  
A kilometer is 1000 meters.

Because the metric system is based on powers of ten, you can convert metric units by simply moving the decimal point.

To convert to smaller units, move the decimal point to the right.

kilo- 1000	hecto- 100	deka- 10	meter gram liter	deci- 1/10	centi- 1/100	milli- 1/1000
$10^3$	$10^2$	$10^1$	$10^0$	$10^{-1}$	$10^{-2}$	$10^{-3}$

To convert to larger units, move the decimal point to the left.

When converting, use the chart to decide how many places and in which direction you should move the decimal point.

Examples:

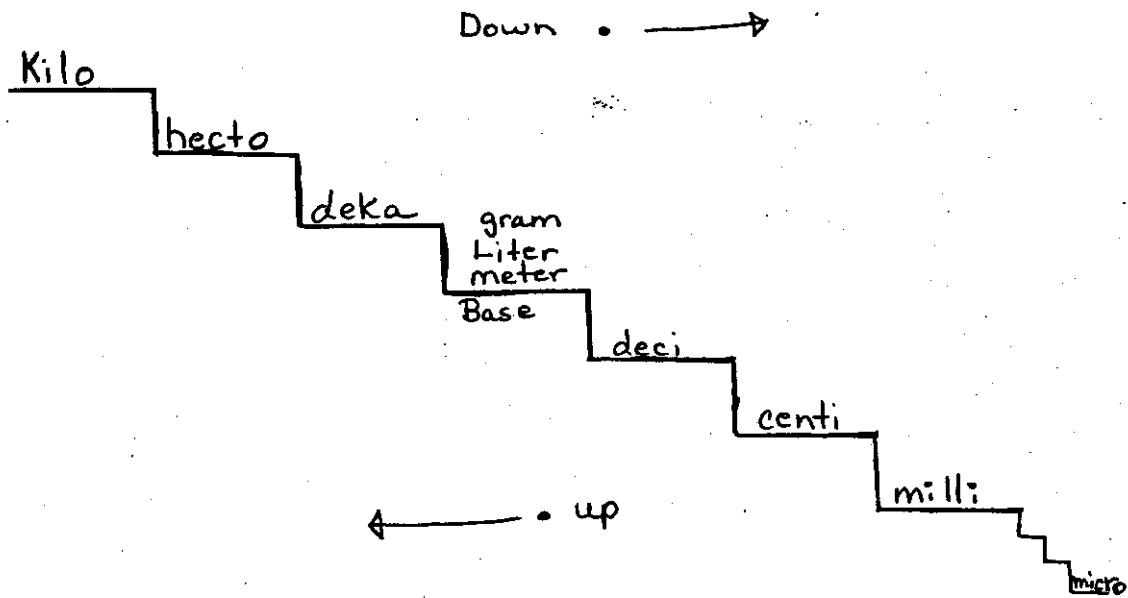
Convert 1 gram into milligrams.  
Smaller unit, so move the decimal 3 places to the right - 1000 mg.

Convert 1 centiliter into liters.  
Larger unit, so move the decimal 2 places to the left - .01 L.

Convert 1 millimeter into kilometers.  
Larger unit, so move the decimal 6 places to the left - .000001 km.

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# Metric Step Chart



3/24/2008

CHEAT SHEET  
METRIC CONVERSIONS

TABLE 1

LENGTH

1 inch (in)	= 2.54 centimeters (cm)	<del>2.54</del> 6
1 foot (ft)	= 0.3048 meter (m)	
1 yard (yd)	= 0.914 meter (m)	
1 mile (mi)	= 1.609 kilometer (km)	
1 millimeter (mm)	= 0.03937 inch (in)	
1 meter (m)	= 1.09 yards (yd)	
1 kilometer (km)	= 0.621 mile (mi)	

MASS

1 ounce (oz)	= 28.35 grams (g)	= 28350mg
1 pound (lb)	= 453.6 grams (g)	
1 ton (tn)	= 907.2 kilograms (kg)	
1 gram (g)	= 0.03527 ounce (oz)	
1 kilogram (kg)	= 2.2 pounds (lb)	

VOLUME

1 fluid ounce (fl oz)	= 29.57 milliliters (mL)
1 quart (qt)	= 0.946 liter (L)
1 gallon (gal)	= 3.785 liters (L)
1 liter (L)	= 1.06 quart (qt)

1 gal = 3.785 L = 3785 mL