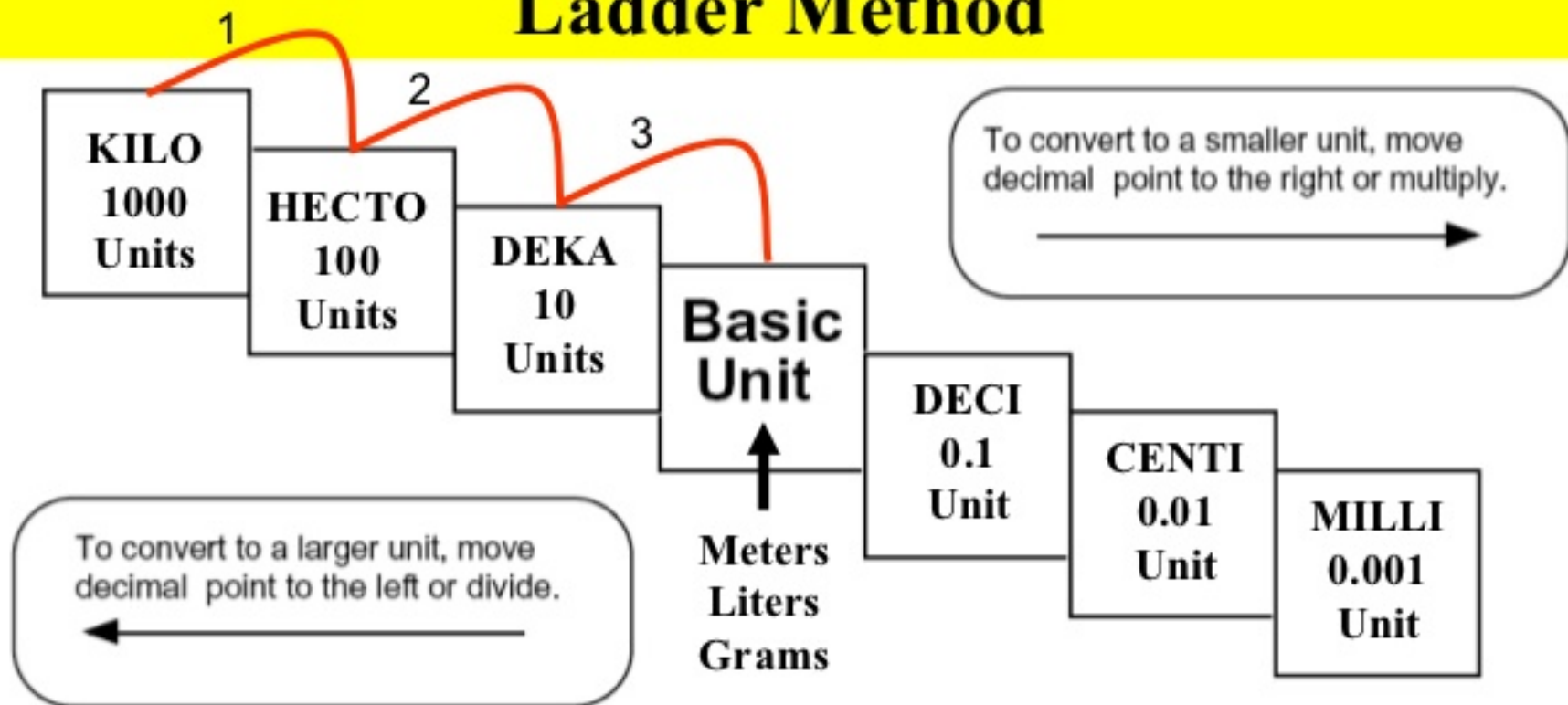


Ladder Method



How do you use the “ladder” method?

1st – Determine your starting point.

2nd – Count the “jumps” to your ending point.

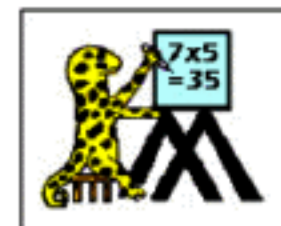
3rd – Move the decimal the same number of jumps in the same direction.

$$4 \text{ km} = \underline{\hspace{2cm}} \text{ m}$$

↑ Starting Point ↑ Ending Point

How many jumps does it take?

$$4. \underbrace{\hspace{0.5cm}}_1 \underbrace{\hspace{0.5cm}}_2 \underbrace{\hspace{0.5cm}}_3 = 4000 \text{ m}$$



MATH CONVERSION CHART – LENGTHS

METRIC CONVERSIONS					
1 centimeter	=	10 millimeters	1 cm	=	10 mm
1 meter	=	100 centimeters	1 m	=	100 cm
1 kilometer	=	1000 meters	1 km	=	1000 m

STANDARD CONVERSIONS					
1 foot	=	12 inches	1 ft	=	12 in
1 yard	=	3 feet	1 yd	=	3 ft
1 yard	=	36 inches	1 yd	=	36 in
1 mile	=	1760 yards	1 mi	=	1760 yd

METRIC -> STANDARD CONVERSIONS					
1 millimeter	=	0.03937 inches	1 mm	=	0.03937 in
1 centimeter	=	0.39370 inches	1 cm	=	0.39370 in
1 meter	=	39.37008 inches	1 m	=	39.37008 in
1 meter	=	3.28084 feet	1 m	=	3.28084 ft
1 meter	=	1.09361 yards	1 m	=	1.09361 yd
1 kilometer	=	1093.6133 yards	1 km	=	1093.6133 yd
1 kilometer	=	0.62137 miles	1 km	=	0.62137 mi

STANDARD -> METRIC CONVERSIONS					
1 inch	=	2.54 centimeters	1 in	=	2.54 cm
1 foot	=	30.48 centimeters	1 ft	=	30.48 cm
1 yard	=	91.44 centimeters	1 yd	=	91.44 cm
1 yard	=	0.9144 meters	1 yd	=	0.9144 m
1 mile	=	1609.344 meters	1 mi	=	1609.344 m
1 mile	=	1.609344 kilometers	1 mi	=	1.609344 km



Metric System Prefixes

Prefix	Symbol	Multiplier (Scientific Notation)	Multiplier
Exa	E	10^{18}	1,000,000,000,000,000,000
Peta	P	10^{15}	1,000,000,000,000,000
Tera	T	10^{12}	1,000,000,000,000
Giga	G	10^9	1,000,000,000
Mega	M	10^6	1,000,000
Kilo	k	10^3	1,000
Hecto	h	10^2	100
Deka	da	10^1	10
Deci	d	10^{-1}	0.1
Centi	c	10^{-2}	0.01
Milli	m	10^{-3}	0.001
Micro	μ	10^{-6}	0.000,001
Nano	n	10^{-9}	0.000,000,001
Pico	p	10^{-12}	0.000,000,000,001
Femto	f	10^{-15}	0.000,000,000,000,001
Atto	A	10^{-18}	0.000,000,000,000,000,001

Meter = m = 1

MATH CONVERSION CHART – LIQUID VOLUME (US)



Please note that these conversions work for US liquids only!

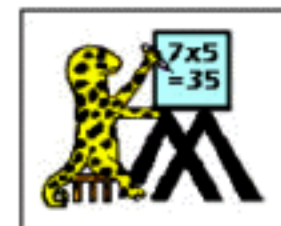
METRIC CONVERSIONS					
1 centiliter	=	10 milliliters	1 cl	=	10 ml
1 liter	=	1000 milliliters	1 l	=	1000 ml

STANDARD CONVERSIONS					
1 tablespoon	=	3 teaspoons	1 Tbsp	=	3 tsp
1 fluid ounce	=	2 tablespoons	1 fl oz	=	2 Tbsp
1 fluid ounce	=	8 drams	1 fl oz	=	8 drams
1 gill	=	4 fluid ounces	1 gi	=	4 fl oz
1 cup	=	8 fluid ounces	1 cup	=	8 fl oz
1 pint	=	2 cups	1 pt	=	2 cups
1 pint	=	16 fluid ounces	1 pt	=	16 fl oz
1 quart	=	2 pints	1 qt	=	2 pt
1 gallon	=	4 quarts	1 gal	=	4 qt
1 gallon	=	128 fluid ounces	1 gal	=	128 fl oz
1 gallon = 4 quarts = 8 pints = 16 cups = 128 fluid ounces					

METRIC -> STANDARD CONVERSIONS					
1 milliliter	=	0.033814 fluid ounces	1 ml	=	0.033814 fl oz
1 liter	=	33.814022 fluid ounces	1 l	=	33.814022 fl oz
1 liter	=	2.113376 pints	1 l	=	2.113376 pints

STANDARD -> METRIC CONVERSIONS					
1 fluid ounce	=	29.57353 milliliters	1 fl oz	=	29.57353 ml
1 pint	=	473.17648 milliliters	1 pt	=	473.17648 ml
1 pint	=	0.47318 liters	1 pt	=	0.47318 l
1 gallon, liquid	=	3.7854 liters	1 gallon	=	3.7854 l





MATH CONVERSION CHART – WEIGHT (US)

METRIC CONVERSIONS					
1 gram	=	1000 milligrams	1g	=	1000 mg
1 kilogram	=	1000 grams	1 kg	=	1000 g
1 tonne (1 megagram)	=	1000 kilograms	1 tonne (1 Mg)	=	1000 kg

STANDARD CONVERSIONS					
1 ounce	=	16 drams	1 oz	=	16 dr
1 pound	=	16 ounces	1 lb	=	16 oz
1 hundredweight	=	100 pounds	1 cwt	=	100 lb
1 ton (short)	=	20 hundredweight	1 ton	=	20 cwt
1 ton (short)	=	2000 pounds	1 ton	=	2000 lb

METRIC -> STANDARD CONVERSIONS					
1 gram	=	0.035274 ounces	1 g	=	0.035274 oz
1 kilogram	=	2.20462 pounds	1 kg	=	2.20462 lb
1 kilogram	=	35.27396 ounces	1 kg	=	35.27396 oz
1 tonne	=	1.10231 ton, short	1 tonne	=	1.10231 ton, short

STANDARD -> METRIC CONVERSIONS					
1 ounce	=	28.34952 grams	1 oz	=	28.34952 g
1 pound	=	453.59237 grams	1 lb	=	453.59237 g
1 pound	=	0.45359 kilograms	1 lb	=	0.45359 kg
1 hundredweight	=	50.8023 kilograms	1 cwt	=	50.8023 kg
1 ton, short	=	0.90718 tonnes	1 ton, short	=	0.90718 tonnes



Unit	Abbreviation	Metric Equivalent	U.S. Equivalent
Units of length			
Kilometer	km	1,000 meters	0.62 miles; 1.6 km/mile
Meter*	m	100 cm; 1,000 mm	39.4 inches; 1.1 yards
Centimeter	cm	1/100 m; 0.01 m	0.39 inches; 2.5 cm/inch
Millimeter	mm	1/1,000 m; 0.001 m	0.039 inches; 25 mm/inch
Micrometer	mcm	1/1,000 mm; 0.001 mm	
Nanometer	nm	1/1,000 mcm; 0.001 mcm	
Units of weight			
Kilogram	kg	1,000 g	2.2 lb
Gram*	g	1,000 mg	0.035 oz.; 28.5 g/oz
Milligram	mg	1/1,000 g; 0.001 g	
Microgram	mcg	1/1,000 mg; 0.001 mg	
Nanogram	ng	1/1,000 mcg; 0.001 mcg	
Units of volume			
Liter*	L	1,000 mL	1.06 qt
Deciliter	dL	1/10 L; 0.1 L	
Milliliter	mL	1/1,000 L; 0.001 L	0.034 oz.; 29.4 mL/oz
Microliter	mcl	1/1,000 mL; 0.001 mL	

*Basic unit

Celsius-Fahrenheit Temperature Conversion Scale

CELSIUS TO FAHRENHEIT

Use the following formula to convert Celsius readings to Fahrenheit readings:

$$^{\circ}\text{F} = 9/5^{\circ}\text{C} + 32$$

For example, if the Celsius reading is 37°

$$^{\circ}\text{F} = (9/5 \times 37) + 32$$

$$= 66.6 + 32$$

98.6°F (normal body temperature)

FAHRENHEIT TO CELSIUS

Use the following formula to convert Fahrenheit readings to Celsius readings:

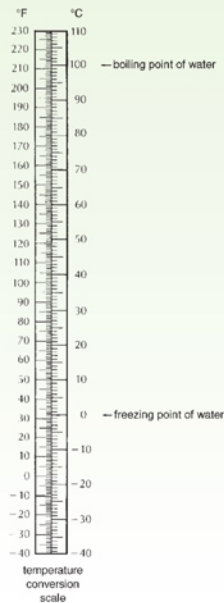
$$^{\circ}\text{C} = 5/9 (^{\circ}\text{F} - 32)$$

For example, if the Fahrenheit reading is 68°

$$^{\circ}\text{C} = 5/9 (68 - 32)$$

$$= 5/9 \times 36$$

20°C (a nice spring day)



°F	°C
-400.0	-240.0
-364.0	-220.0
-328.0	-200.0
-292.0	-180.0
-256.0	-160.0
-220.0	-140.0
-184.0	-120.0
-148.0	-100.0
-112.0	-80.0
-76.0	-60.0
-58.0	-50.0
-49.0	-45.0
-40.0	-40.0
-31.0	-35.0
-22.0	-30.0
-13.0	-25.0
-4.0	-20.0
5.0	-15.0
14.0	-10.0
17.6	-8.0
21.2	-6.0
24.8	-4.0
28.4	-2.0
32.0	0.0

°F	°C
35.6	2.0
39.2	4.0
42.8	6.0
46.4	8.0
50.0	10.0
59.0	15.0
68.0	20.0
77.0	25.0
86.0	30.0
95.0	35.0
104.0	40.0
113.0	45.0
122.0	50.0
131.0	55.0
140.0	60.0
149.0	65.0
158.0	70.0
167.0	75.0
176.0	80.0
185.0	85.0
194.0	90.0
203.0	95.0
212.0	100.0
230.0	110.0

°F	°C
248.0	120.0
266.0	130.0
284.0	140.0
302.0	150.0
320.0	160.0
338.0	170.0
356.0	180.0
374.0	190.0
392.0	200.0
428.0	220.0
464.0	240.0
500.0	260.0
536.0	280.0
572.0	300.0
608.0	320.0
644.0	340.0
680.0	360.0
716.0	380.0
752.0	400.0
788.0	420.0
824.0	440.0
860.0	460.0
896.0	480.0

Temperature Conversion Formulas

$$^{\circ}\text{C} = (5/9) * (^{\circ}\text{F} - 32)$$

$$^{\circ}\text{F} = (9/5) * ^{\circ}\text{C} + 32$$