

Go up the ladder,  
move the decimal to  
the left!

## THE METRIC LADDER!

Giga – 1,000,000,000

Mega – 1,000,000

Kilo – 1,000

Hecto - 100

Deka - 10

No Prefix - Base unit – gram,  
liter, meter

deci - 1/10

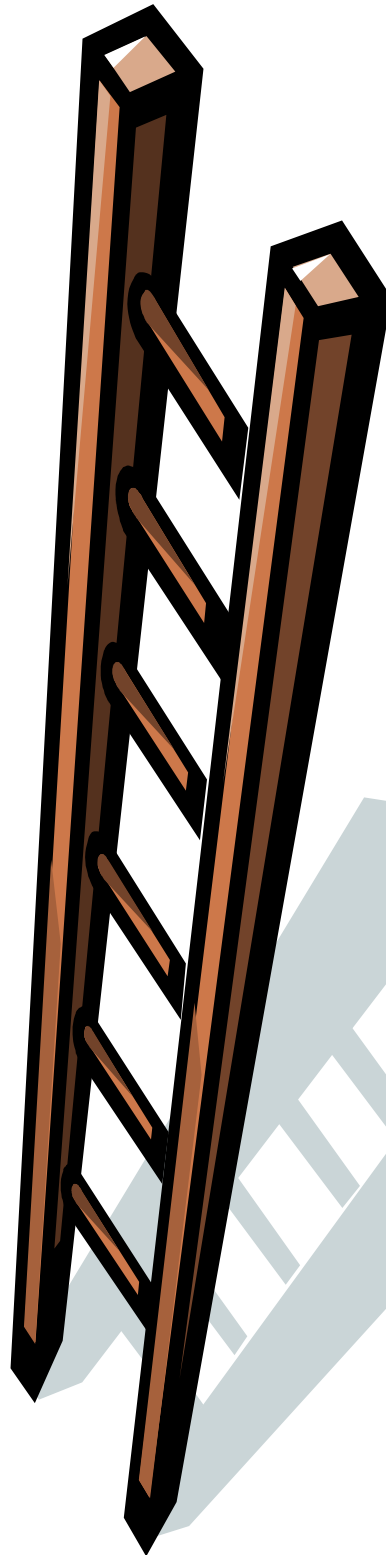
centi - 1/100

milli - 1/1000

micro – 1/1,000,000

nano – 1/1,000,000,000

pico – 1/1,000,000,000,000



G 10<sup>9</sup>

M 10<sup>6</sup>

K 10<sup>3</sup>

H 10<sup>2</sup>

D 10<sup>1</sup>

No Prefix – base  
unit - 10<sup>0</sup>

d 10<sup>-1</sup>

c 10<sup>-2</sup>

m 10<sup>-3</sup>

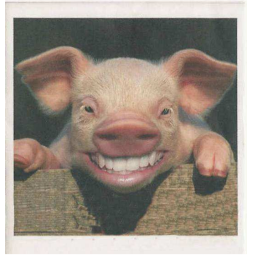
μ 10<sup>-6</sup>

n 10<sup>-9</sup>

p 10<sup>-12</sup>

Go down the ladder,  
move the decimal to  
the right!

## FUN METRIC CONVERSIONS!



To convert from one metric unit to another, you look at how many powers of ten you are moving through on the ladder – that is it! **DON'T COUNT STEPS ON THE LADDER – ONLY LOOK AT HOW MANY POWERS OF TEN YOU ARE GOING THROUGH!** Don't worry about the negative numbers!

Here's an example:

A mole can dig over 7,523 cm of tunnel in a single night! That's over 750 feet, by the way! Let's convert 7,523 cm into Hm.

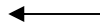
A cm, which is where we start, is  $= 10^{-2}$ .

We are going to a Hm, which is  $= 10^2$

Going from  $10^{-2}$  to  $10^2$ , is four powers of ten: from  $-2$  to  $0$ , and then from  $0$  to  $2$ .

We are moving up the ladder, and that means **MOVE THE DECIMAL TO THE LEFT** four places!

So, that would equal: 7,523. cm = .7523 Hm



Do these metric conversions, using the metric ladder!

1. One human hair can support up to 3.01 Kg. That's almost 7 pounds! Convert 3.01 Kg to Dg.
2. It only takes 15,400 grams of force or weight to rip off your ears. Convert this to Mg.
3. Coca-Cola used to contain 253,000  $\mu\text{g}$  of cocaine when it was initially introduced. Convert this to dg.
4. In a hot climate, you can sweat as much as 11.355 Liters of water a day. Convert this to mL!
5. A runner consumes about 795.2 centiliters (cL) of oxygen while running a 100-yard dash. Convert this into HL.

6. If you spray 755,000,000 ng of antiseptic spray on a polar bear, its fur will turn purple!  
Convert this into grams.
  
7. Dentists have recommended that a toothbrush be kept at least 1,834 mm away from a toilet to avoid germs hitting the toothbrush resulting from the flush. Convert 1,834 mm into dm.
  
8. It's physically impossible for you to lick your elbow, because it is 609,000,000 nm away from your mouth. Convert this into km.
  
9. When an average sized cow is milked, there's sometimes .0395 HL of blood that comes out with the milk. This bloody milk can't be sold, so companies that make chocolate milk use it since the chocolate hides the blood. Convert .0395 HL to mL.
  
10. The human heart can pump blood so hard that it could squirt blood 9144 mm. Convert this to meters!
  
11. Over 25% of your old pillow – .0044 Mg, to be exact – is made of old skin flakes, and the mites or “bed bugs” that eat the skin! Convert .0044 Mg into cg.
  
12. The average lead pencil, if sharpened with minimal loss of graphite, will draw a line 56.35 Km long or write approximately 50,000 English words. That’s 35 miles! Wow! Convert 56.35 Km into meters.



## THAT'S ABOUT HOW BIG? HOW LONG? HOW MUCH?



Do you know what certain metric measurements look like? For example, what is the.....

- |                                     |            |          |          |          |
|-------------------------------------|------------|----------|----------|----------|
| 1. The length of a ten dollar bill? | 1.5 mm     | 15 cm    | 15 m     | 15 Km    |
| 2. The size of a computer screen?   | 470 nm     | 470 mm   | 470 m    | 470 Km   |
| 3. The mass of a fly?               | 1 mgram    | 1 gram   | 1 Kg     | 1 Mg     |
| 4. The distance to Las Vegas?       | 6,500 nm   | 6,500 cm | 6,500 m  | 6,500 Km |
| 5. The volume of a bottle of soda?  | 500 pL     | 500 mL   | 500 L    | 500 KL   |
| 6. The mass of the moon?            | 5,000 mg   | 5,000g   | 5,000 Kg | 5,000 Gg |
| 7. The volume of a drop of water?   | 25 mL      | 25L      | 25KL     | 25ML     |
| 8. The width of a human hair?       | 80 $\mu$ m | 80 cm    | 80 m     | 80 Km    |