Some More Examples of Metric Conversions

Here are some more examples. They follow the same procedure as the problem presented above.
Some problems with **mass** and **volume** are also shown. They are worked the same way as the length problems.

1. Convert 3 kilometers (km) into millimeters (mm).

$$3 \text{ km} \times \frac{1000 \text{ m}}{1 \text{ km}} \times \frac{1000 \text{ mm}}{1 \text{ m}} = 3,000,000 \text{ mm}$$

2. How many dekagrams (dag) are in 424 milligrams (mg)?

Table # 2 C Metric Conversion Table For Mass

Number of Grams in each unit			1 Unit	Number of units in each Gram					
1000 g	100 g	10 g	1 g	10 dg	100 cg	1000 mg	10^6 µg	10^9 ng	10^{12} pg
1 kg	1 hg	1 dag	1 g	1 g	1 g	1 g	1 g	1 g	1 g

$$424 \text{ mg} \times \frac{1 \text{ g}}{1000 \text{ mg}} \times \frac{1 \text{ dag}}{10 \text{ g}} = .0424 \text{ dag}$$

Notice that in this problem, the ratio $\frac{1000 \text{ mg}}{1 \text{ g}}$ was flipped upside down so that @mg@ will cancel out. The ratio
for dekagrams was also flipped for the same reason.

3. What is the volume in hL of 758 ml of alcohol?

$$758 \text{ ml} \times \frac{1 \text{ L}}{1000 \text{ ml}} \times \frac{1 \text{ hL}}{100 \text{ L}} = .00758 \text{ hL}$$

The following page of practice problems can be printed. The answers for the problems are also given so that you can
make a quick determination whether or not you are doing them correctly.

Assignment # 1 is worksheet that follows these practice problems. Check the Assignment Schedule page.

Also there are several web sites on the Internet that have explanations and examples of problems.
You may find these Web Sites helpful. Sometimes a different way of explaining an idea helps a student understand the
concept better.
You will find these links in the **Activities Page** of the **Chem One Web Site**.