Multiplication, decimals, and place value!

When multiplying, especially with decimals, it is very important to know what type of number your answer is going to be. In this way we can avoid problems like not knowing where our decimal point should go.

By thinking of the decimals we multiply in fractional form, it can become simpler to visualize what form our answer will be in.

$$\begin{array}{r} 3 \\ \times\ 0.5 \\ \hline 1.5 \end{array} \quad = \quad \frac{3}{1} \times \frac{5}{10} \quad = \quad \frac{15}{10} \quad = \quad 1\frac{5}{10} = 1.5$$

In this way, we can see what multiplying these types of numbers should give us:

tenths x tenths = hundredths

$$\frac{}{10} \times \frac{}{10} = \frac{}{100}$$

tenths x hundredths = thousandths

$$\frac{}{10} \times \frac{}{100} = \frac{}{1000}$$

hundredths x hundredths = ten thousandths

$$\frac{}{100} \times \frac{}{100} = \frac{}{10000}$$

3.26

x 1.11

0.0326 ⟵——— This is six ten thousandths

0.326 ⟵——— This is six thousandths

3.26 ⟵——— This is six hundredths

3.6186