**Lesson 2.4b Multiplying/Dividing Scientific Notation**

**Multiplying:**

* **Steps:**
1. Multiply the bases of both scientific notation numbers
2. Add the exponents together
3. Make sure the numbers are in scientific notation

**Ex 1:** (5 \* $10^{3}$) \* (3 \* $10^{2}$)

 Step 1: (5 \* 3) = 15

 Step 2: $10^{3+2}$ = $10^{5}$

 Step 3: 15 \* $10^{5}$

 1.5 \* $10^{5+1}$

 **1.5 \*** $10^{6}$

**Dividing:**

* **Steps:**
1. Divide the bases of both scientific notation numbers; if the number is a fraction, convert to decimal.
2. Subtract the exponents
3. Make sure the numbers are in scientific notation

**Ex 2:** $\frac{8\* 10^{8}}{4\* 10^{4}}$

 Step 1: ($ \frac{8}{4}$ ) = 2

 Step 2: $10^{8-4}$ = $10^{4}$

 Step 3: **2 \*** $10^{4}$

**Ex 3:** $\frac{2\* 10^{3}}{8\* 10^{6}}$

Step 1: ( $\frac{2}{8}$ ) = $\frac{1}{4}$ = 0.25

 Step 2: $10^{3-6}$ = $10^{-3}$

 Step 3: 0.25 \* $10^{-3}$

 2.5 \* $10^{-3-1}$

  **2.5 \*** $10^{-4}$