Scientific Notation

Scientific notation is the way that **scientists** write very large numbers or very small numbers. For example, instead of writing 5,600,000,000,000 we write 5.6×10^{12}

I. Whole Numbers to Scientific Notation:

1) Move the decimal to the left.

2) Count the number of times you jumped and that's the exponent.

3) Add a multiplication sign and the number 10.

$$10,000,000 = 1 \times 10^{7}$$

$$67,000,000,000 = 6.7 \times 10^{10}$$

Faraday

II. Decimals to Scientific Notation

1) Move the decimal to the right.

2) Count the number of times you jumped and that's the negative exponent.

3) Add a multiplication sign and the number 10.

$$.00008 = 8 \times 10^{-5}$$

$$.00000058 = 5.8 \times 10^{-7}$$

III. Scientific Notation to Whole Numbers:

1) Rewrite all of the numbers that are not zeros.

2) Look at the exponent. That's the number places you must move the decimal to the right.

3) Fill in the place values with zeros.

$$3 \times 10^5 = 300,000$$

$$8.99 \times 10^{10} = 89,900,000,000$$

IV. Scientific Notation to Decimals:

1) Rewrite all of the numbers that are not zeros.

2) Look at the exponent. That's the number places you must move the decimal to the left.

3) Fill in the place values with zeros.

$$7 \times 10^{-5} = .00007 =$$

$$6.12 \times 10^{-8} = .0000000612$$