Mini – Lesson: Scientific Notation

Part I: Converting to scientific notation

e.g., 159 000 g

Step #1: Place a decimal after the first non – zero digit of the measurement.

1.

Step #2: Include digits after the decimal to the last non – zero digit.

1.59

Step #3: Write "x 10"

1.59 x 10

Step #4: Determine the exponent by counting digits between the original decimal location and the new location.

If the number has a value greater than one, the exponent is positive

1.59×10^{5}

If the number has a value less than one, the exponent is negative

Have students try a few exercises.

35 000 mL -------→ 3.5×10^{4} mL

0.000 0034 g ------→ 3.4×10^{-6} g

0.070 90 km -------→ 7.09×10^{-2} km

Part II: Converting from scientific notation

Step #1: If the exponent is positive, move the decimal to the right.

If the exponent is negative, move the decimal to the left and insert the appropriate number of zeros.

e.g., 4.5×10^{-3} g  4 5 **0.0045 g**

e.g., 6.07×10^{2} mL 6 0 7  **607 mL**

SCIENTIFIC NOTATION WORKSHEET NAME: _____

Change the following numbers to proper scientific notation.

1. 65.7
2. 0.005 45
3. 22 450 000
4. 88 500
5. 184.7
6. 0.0034
7. 0.000 000 080 3
8. 67 830 000 000 000 000
9. 3 450 000
10. 0.000 000 000 000 000 000 065

Change the following numbers into standard notation.

1. 4.395×10^{5}
2. 1.13×10^{9}
3. 2.24×10^{3}
4. 1.508×10^{6}
5. 2.5×10^{4}
6. 2.5×10^{-3}
7. 4.56×10^{-6}
8. 3.6×10^{-4}
9. 1.0×10^{-2}
10. 5.08×10^{-8}