COMPLETION OF THIS PAPER IS REQUIRED. SUGGESTED DUE DATE IS: _____

Name: _____ Date: _____ Period: _____

1

Measurements and Calculations (CHEMACTIVITY: Scientific Notation)

How Are Measurements and Calculations Important in the Science of Chemistry?

2 – Mastered 1 – Not Yet Mastered 0 - Incomplete

1. **On your own…** Read Section 5.1A, pp. 126-128 in your textbook.
2. What is **scientific notation**:

_____

_____

_____

_____

3. Describe the "anatomy" of a number expressed in scientific notation

_____

_____

_____

_____

4. Explain the difference between a positive exponent (power of ten) vs. a negative exponent:

_____

_____

_____

_____

_____

5. Express each of the following in correct scientific notation.

78,000	_____	16	_____
0.00053	_____	0.0043	_____
250	_____	0.875	_____
2,687	_____	0.0126	_____

6. Express each of the following in standard (decimal) form.

5.2×10^{3} _____ 3.6×10^{1} _____

9.65×10^{-4} _____ 6.452×10^{2} _____

8.5×10^{-2} _____ 8.77×10^{-1} _____

2.71×10^{4} _____ 6.4×10^{-3} _____

7. In the back of your textbook…read Appendix C (pp. A6 - A7). Using these instructions, perform the following math on your calculator: (If you don't get the answers given…you are NOT entering the numbers correctly!)

$(1.50 \times 10^{7}) \times (3.75 \times 10^{-4}) =$ _____ (5625 or 5.625×10^{3})

$2.5 \times 10^{23} / 3.4 \times 10^{19} =$ _____ (7352.9 or 7.3529×10^{3})

8. Practice the following using your calculator. Record your answer in correct scientific notation.

$(6.02 \times 10^{23})(9.63 \times 10^{-2}) =$ _____

$\frac{5.6 \times 10^{-18}}{8.9 \times 10^{8}} =$ _____

$(-4.12 \times 10^{-4})(7.33 \times 10^{12}) =$ _____

$\frac{8.57 \times 10^{8}}{1.5 \times 10^{-10}} =$ _____

Essential Content and Skills:
How are measurements and quantities expressed using scientific notation?
How are quantities expressed in scientific notation expanded to their decimal equivalent?
How is scientific notation correctly entered on a calculator?
How are answers given by a calculator in scientific notation correctly recorded?