Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Homeroom: \_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_ **1.8**

**Multiplying, Dividing, and Squaring Numbers Using Scientific Notation (SPI.MATH.2.3)**

|  |  |
| --- | --- |
| ***Key Point*** | ***Notes*** |
| **Scientific Notation** | **Scientific notation** is a way of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  Screen shot 2011-04-17 at 9  A number in correct scientific notation has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |
| **Exponents** | * If the number is \_\_\_\_\_\_\_then the exponent is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; if the number is \_\_\_\_\_\_\_\_ then the exponent is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * Every time you move the decimal to the RIGHT, exponent DECREASES by 1. * Every time you move the decimal to the LEFT, exponent INCREASES by 1. |
| **Multiplying in Scientific Notation** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the numbers and **\_\_\_\_\_\_** the exponents  Ex: **(7.50 x 105 ) \* (6.1 x 103 ) = 46 x 108** = **4.6 x 107** |
| **Dividing in Scientific Notation** | Divide the \_\_\_\_\_\_\_\_\_\_\_and **SUBTRACT** the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  Ex: (7.50 x 103 ) / (6.1 x 105 ) = 1.2 x 10-2 |
| **Using Powers in Scientific Notation** | Square the numbers and **MULTIPLY** the exponents  Ex: (7.50 x 103 )2= 7.52 x 103x2 = 56.25 x 106  = 5.62 x 107 |
| **How Do I Do This in My Calculator?** | * 1.) Begin by placing an open parentheses around your number * 2.) To get a base at a power of 10, hit the 2nd button and then the, button. You should see an uppercase E show up on your screen. This is the equivalent to x10. * 3.) After the E, type the power that the number is raised to * 4.) Close the parentheses * 5.) Use whichever operations (+, -, \*, /, ^) that the problem requires. * 6.) Repeat steps 1-4 for other number   7.) Hit enter to solve |
| **So What?** | *Write a brief summary of what you learned here:* |

**“I Own This” (Independent Practice):**

*You may use a separate sheet of paper and a calculator for your calculations.*

1. Why do scientists use scientific notation?
2. **Bill Gates-**so wealthy his worth has to be classified using scientific notation



Salary (standard notation): 968,799.00

Scientific Notation:

Net worth: $40,000,000,000.00

Scientific Notation:

3. Simplify (3.9 x 109)2

4. (1.67 x 1025 )(8.84 x 1024)

5. 6.7 x 106

2.3 x 109

6. Simplify (8.8 x 109)5

7. (6.78 x 102 )(8.42 x 10-10)

8. 9.7 x 10-2

2.1 x 106