

# Scientific Notation Study Guide

Name: \_\_\_\_\_

Period: \_\_\_\_\_

**Answer each question before the end of the class period, use this paper as a study guide for tomorrow's Quest.**

1.) Describe in your own words why we use scientific notation?

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2.) If you were to change a number in Scientific Notation, which number would indicate the number of places you will move the decimal?      The Multiplier OR The Exponent

3.) **Fill in the Blank:** If a number has a \_\_\_\_\_ exponent, move it to the right to change it into standard form. If the number has a negative exponent, move it to the \_\_\_\_\_ to change it into standard form.

**Solve: Change each number into Scientific Notation**

4.) 360,000

5.) .0008512

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**Solve: Write each number in Standard Form**

6.)  $7.395 \times 10^2$

7.)  $1.25 \times 10^{-5}$

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8.) **Fill in the Blank:** When adding or subtracting numbers in scientific notation, first choose the number with the \_\_\_\_\_ exponent. Next, convert each number to have the same exponent by moving the decimal to the \_\_\_\_\_.

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**Solve each addition and subtraction problem. Show your Work.  
Write the final answer in Scientific Notation.**

9.)  $(6 \times 10^6) - (5 \times 10^5)$

10.)  $(2 \times 10^5) + (8 \times 10^4) + (8.28 \times 10^5)$

11.)  $(3.62 \times 10^{-2}) + (7.8 \times 10^{-5})$

12.) **Fill in the Blank:** When Multiplying numbers in scientific notation, first use the \_\_\_\_\_ Rule of Exponents. Next, add your exponents and \_\_\_\_\_ your multipliers. If needed, change your number into scientific notation.

13.) When Dividing numbers in scientific notation, first use the Quotient Rule of Exponents. Next, \_\_\_\_\_ your exponents and \_\_\_\_\_ your multipliers. If needed, change your answer into scientific notation.

14.) **Circle the correct choice:** When changing numbers into scientific notation, move the decimal to the right and then (add/subtract) the number of places you moved the decimal, to the exponent.

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15.) When changing numbers into scientific notation, if moving the decimal to the (left/right), subtract the number of places you moved the decimal, to the exponent.

**Solve: Show your work and be sure to write your final answer in Scientific Notation.**

16.)  $(7.1 \times 10^{-5})(6.7 \times 10^{-6})$

17.)  $\frac{(1.6 \times 10^6)}{(4 \times 10^6)}$

18.) **Be prepared to solve at least one word problem:**

When the Sun makes an orbit around the center of the Milky Way, it travels  $2.025 \times 10^{14}$  kilometers. The orbit takes 225 million years. At what rate does the Sun travel? Write your answer in scientific notation. (Hint: use formula Rate = distance / time)