

# Scientific Notation

- ✓ 8.EE.3 Recognize and use scientific notation.

# Agenda

## Homework

- Workbook pg. 48
- CN Summary

## Materials

- Math Notebook
- Go Math Book

## DO NOW

Tear out pg. 48 from Go Math Book

In NOTEBOOK, set up Cornell Notes

- **Topic:** Scientific Notation  
– NEGATIVE powers of 10
- **EQ:** Explain how to use scientific and standard notation to express really small numbers.

# Homework Review

- [Go Math Workbook](#)

# Recap: Why use scientific notation?


- A SHORTCUT way to write
  - REALLY REALLY **large** numbers and
  - REALLY REALLY **small** numbers
- <http://htwins.net/scale2/>

# How do you convert from **Standard** Notation to **Scientific** Notation for really small numbers?



- 1) Move the decimal to the RIGHT as many spaces as needed to get a number greater than or equal to 1, but less than 10
- 2) Write your multiplication sign and your base 10.
- 3) Count how many spaces the decimal moved and this is the NEGATIVE exponent.

$$0.00463 = 4.63 \times 10^{-3}$$



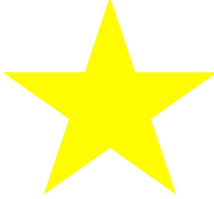
# Try changing these numbers from Standard Notation to Scientific Notation:

1) 0.0007903       $7.903 \times 10^{-4}$

2) 0.00000001       $1.0 \times 10^{-7}$

3) 0.023       $2.3 \times 10^{-2}$

4) 0.0000626       $6.26 \times 10^{-5}$



# How do you convert from **Scientific** Notation to **Standard** Notation?

- 1) If the exponent on 10 is **NEGATIVE**, move the decimal to the **LEFT**
- 2) The exponent tells you how many spaces to move to the left
- 3) Do NOT forget to fill in your **zeroes, including one in front of the decimal**

$$\begin{array}{ccccccc} 0 & 0 & 0 & 4 & . & 08 & \times 10^{-3} = 0.00408 \\ & \curvearrowright & \curvearrowright & \curvearrowright & & & \\ & 3 & 2 & 1 & & & \end{array}$$

Try changing these numbers to Standard Notation:

1)  $9.678 \times 10^{-4}$

0.0009678

2)  $7.4521 \times 10^{-3}$

0.0074521

3)  $8.51 \times 10^{-7}$

0.000000851

4)  $4.09748 \times 10^{-5}$

0.0000409748