Scientific Notation

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

Agenda

Homework

- Workbook pg. 42
- Write summary for CN (cornell notes)

Materials

- Whiteboard
- Math Notebook
- Math Workbook

DO NOW

Tear out pg. 42 from Go Math Book

In NOTEBOOK, set up Cornell Notes

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

Try the following on your whiteboard

- 10^0 1
- 10^1 10
- 10^2 100
- 10^3 1000
- 10^4 10000

Special Trick:

When you have a power of 10, the exponent tells you how many zeroes will be in your answer

Why use scientific notation?

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

Compare and Contrast numbers in scientific and standard notation

- **Scientific Notation**
  - a number equal to or greater than 1, but less than 10
  - multiplied by a power of ten
  - Example: 3.45×10^3
- **Standard Notation**
  - Any number as we would normally write it

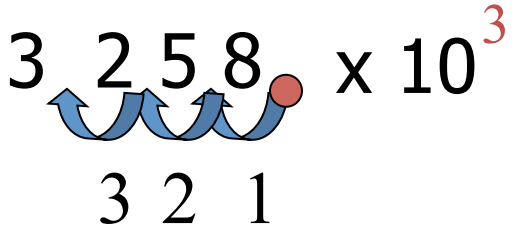
Where is the invisible decimal?

- ALL numbers have a decimal
- If you do **not** see a decimal, the decimal is at the END of the number

3,258.

How do you convert a very LARGE number from Standard Notation to Scientific Notation?

1) Move the decimal to the LEFT as many spaces as needed to get a number between 1 & 10
2) Write your multiplication sign and your base 10.
3) Count how many spaces the decimal moved and this is the exponent.



Try changing these numbers from Standard Notation to Scientific Notation:

1) 9,872,432 9.872432×10^6

2) 3,4500,000 3.45×10^7

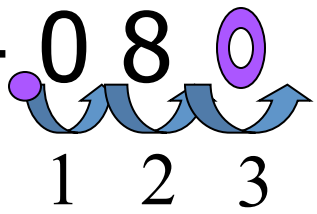
3) 8,376 8.376×10^3

4) 56,730 5.673×10^4

How do you convert a very LARGE number from Scientific Notation to Standard Notation?

1) If the exponent on 10 is **POSITIVE**, move the decimal to the **RIGHT**
2) The exponent tells you how many spaces to move to the right
3) Do NOT forget to fill in your **zeroes**

$4.08 \times 10^3 = 4.08$



Try changing these numbers from Scientific Notation to Standard Notation:

1) 9.678×10^4 96780

2) 7.4521×10^3 7452.1

3) 8.51×10^7 85100000

4) 4.09748×10^5 409748