

8th Grade Lesson 50

- I can write numbers greater than 10 using scientific notation.
- I can write numbers between 0 and 1 using scientific notation.

$$0.0534 \times 1000 = 53.4$$

$$1000 = 10^3$$

$$100,000 = 10^5$$

$$100 = 10^2$$

$$10 = 10^1$$

$$10^{-5} = .00001$$

$$0.0534 \times 10^3 =$$

1.

$$1 = 10^0$$

$$0.1 = 10^{-1}$$

When we multiply a number by a positive power of 10, we move the decimal point to the right the number of places indicated by the exponent.

Scientific Notation is a way of writing very large or very small numbers.

3 Steps for writing large numbers in scientific notation.

1. Place the decimal point just to the right of the first nonzero digit.
2. Count the number of places the decimal point moved to the left.
3. Multiply the number in step one by 10^b (b is the number of places the decimal point moved) to indicate where the decimal point should be.

Write 7,024,000 in scientific notation.

$$7.024 \cdot 10^6$$

Write 476.23 in scientific notation.

$$4.7623 \cdot 10^2$$

What about a very small number like 0.00476?

$$4.76 \times 10^{-3}$$

3 Steps for writing small numbers (between 0 and 1) in scientific notation.

1. Place the decimal point just to the right of the first nonzero digit.
2. Count the number of places the decimal point moved to the right.
3. Multiply the number in step one by 10^{-b} (b is the number of places the decimal point moved) to indicate where the decimal point should be.

Write 0.0652 in scientific notation.

$$6.52 \cdot 10^{-2}$$

Write these numbers in standard notation:

$$4.6 \times 10^{-4}$$

0.00046 0.00046

$$4.6 \times 10^4$$

46000
46000

Assignment:

Problem Set 50