

## Scientific Notation

### Big Ideas:

Scientific notation is a way to express very small or very large numbers

Scientific Notation is Expressed as two factors:

1. a number between 1 and 10 (known as the MANTISSA)
2. A power of 10

\*Negative exponents represent small numbers

\*Positive exponents represent large numbers

$$\begin{array}{ccc} \text{Standard Form} & = & \text{Scientific Notation} \\ 0.0000057 & = & 5.7 \times 10^{-6} \\ \swarrow & & \nwarrow \\ \text{Mantissa} & & \text{Power of 10} \end{array}$$

### Examples:

Write in scientific notation:

a. 0.000789

$$7.89 \cdot 10^{-4}$$

b. 40,600,000,000

$$4.06 \cdot 10^{10}$$

Write in standard form:

a.  $3.4 \times 10^{-9}$

$$0.0000000034$$

b.  $5.032 \times 10^{12}$

$$5,032,000,000,000$$