

Crystal Redfield

Course 2/ Math 7
Scientific Notation
July 1, 2011

- scientific notation is used to write very small and very large numbers
- convert between scientific notation form and standard form

Scientific Notation



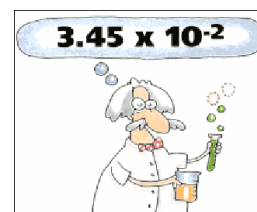
Mathmaticious

K what do you KNOW?	W what do you WANT to know?	L what have you LEARNED?

KWL Chart

Converting Scientific Notation

Kimberley Thomas



Convert Scientific Notation

SCIENTIFIC NOTATION

A number is written in **scientific notation** if it is of the form
 $c \times 10^n$
 where $1 \leq c < 10$ and n is an integer. *

Move the box to reveal the answer.

Scientific Notation

Sort the given values.

2.35×10^5
 2.1203×10^{-16}
 5×10^{-9}
 45.9×10^{-6}
 3.214×10^1
 12×10^0
 10.3×10^9
 6.09×10^7
 -78.3×10^{23}
 1.9×10^{-22}
 -4.89×10^8

Written in proper
scientific notation



Not written in proper
scientific notation

Correct Scientific Notation?

Scientific notation is used to write really big numbers.

decimal notation → scientific notation

123,000,000,000★

45,000,000★

67,800,000,000,000★

9,000★

Move the star to count the number of decimal places.

The amount of moves will give you the exponent value.

decimal to scientific notation

Scientific notation is used to write really big numbers.

scientific notation → decimal notation

7.82 x 10³★

3.04 x 10⁸★

5 x 10⁴★

6.2103 x 10¹⁰★

The exponent tells you how many decimal places you need to move.

scientific notation to decimal

An example of a really big number.
Please write it in scientific notation.

As the planets orbit the sun, the closest Pluto gets to Earth is approximately 2,700,000,000 miles.★

Earth to Pluto

An example of a really big number.
Please write it in scientific notation.

The speed of light in a vacuum is approximately 186,000 miles per second.★

Speed of Light

Scientific notation is used to write really small numbers.

decimal notation → scientific notation

0.000000034★

0.0000000005609★

0.000000000064★

0.007★

Move the star to count the number of decimal places.

The amount of moves will give you the exponent value.

decimal to scientific notation

Scientific notation is used to write really small numbers.

scientific notation → decimal notation

4.8 x 10⁻⁶★

1.2 x 10⁻¹²★

9 x 10⁻²★

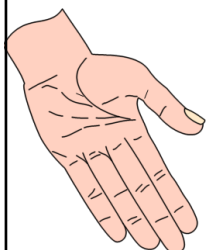
7.1034 x 10⁻⁵★

The exponent tells you how many decimal places you need to move.

scientific notation to decimal

An example of a really small number.
Please write it in scientific notation.

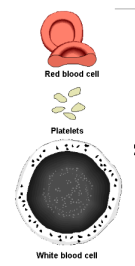
Human fingernails grow at a rate of about 0.00286 inches per day. ★



Fngernails

An example of a really small number.
Please write it in scientific notation.

The thickness of a red blood cell is approximately 0.0003125 of an inch. ★



Red Blood Cells

How do you know that a number written in scientific notation will be really big or really small ?

Closure Question

When do you write a **negative** exponent when converting to scientific notation?

When do you write a **positive** exponent when converting to scientific notation?

Closure Question

Extra Practice

Rewrite in decimal form.

- | | |
|-------------------------|----------------------------|
| 1. 3.79×10^5 | 5. 3.589×10^{-3} |
| 2. 2.5×10^{-2} | 6. 9.1187×10^0 |
| 3. 8.44×10^1 | 7. 1.0056×10^{-5} |
| 4. 6.5393×10^4 | 8. 7.2658746×10^8 |

Extra Practice

Extra Practice

Rewrite in scientific notation.

- | | |
|---------------|------------|
| 7,960,000,000 | 63,000,000 |
| 0.007485 | 0.0602 |
| 45.668 | 22,078,600 |
| 998.653 | 22,078,600 |
| 0.0000056388 | 64.3 |

Extra Practice

K what do you KNOW?	W what do you WANT to know?	L what have you LEARNED?

KWL Chart

"Converting Scientific Notation" lesson slides 4 through 18 created by Kimberley Thomas

Scientific Notation 2.5

Homework:

Jun 30-10:37 AM