

Scientific Notation

Making very big and very small numbers easier to read.

Name _____
Date _____
Block _____

Consider...

- Scientists and mathematicians use very big and very small numbers quite often.
- Ex. The distance from the earth to the sun is approx. _____ km. This kind of number is really clumsy to work with if you want to do calculations.

A tidier way...

- How about we take that number... 149 500 000 km, and write it a neater way...

1.495 x 10⁸ km – this is much easier to read.

Here's how we do it...

- Step 1 Given the number 149 500 000

- Place the decimal after the first _____ number:

- Step 2

- Count how many steps to the _____ -...

_____ = ___ spaces

- Step 3

- Drop all the extra _____...

- Step 4

- Multiply by a power of '____'

Notice that the exponent is the same as the number of spaces the decimal moved.

What about very small numbers?

For example...

0.000 030 5

The rules are exactly the same...

Step 1/2) _____ (**is the first non-zero number**)

Step 3) _____

Step 4) _____

Notice – now the exponent is _____

- Going backwards...

To go back to 'standard form', just count the number of spaces (in the exponent), and move the decimal back.

Ex. 1 4.23×10^3

= _____

= _____

Ex. 2 6.023×10^{-5}

= _____

= _____