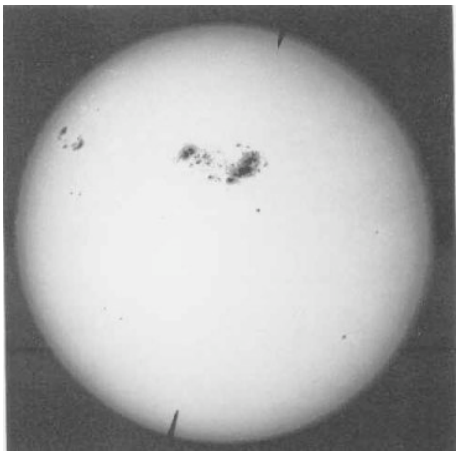
Scientific notation I

Physicists and astronomers almost always use very small or very large numbers in the calculations or measurements.

Scientific notation is the best, and most compact, way to work with very large and small numbers.

This activity will review how to write numbers in this form, and translate them back into ordinary numbers.



Solar diameter 1.392 x 10^9 meters

Scientific notation is a compact way to write very large or small numbers that scientists frequently encounter in studying the universe.

- Scientific notation is used to write very large or small numbers.

Here's how to do it!

Count the number of places to move the decimal point to the right or left and write the number like this:

The number 1,350,000,000 can be written as

$1.35 \times 10^{+9}$

The number 0.000000000000017 can be written as

1.7×10^{-14}

Now you try!

1) Re-write the following numbers in Scientific Notation:

a) 5,990,000,000,000,000 kilometers
b) 0.000135 centimeters
c) 299,794.5 kilometers/second
d) 147,000,000 kilometers
e) 0.00000000000000000000000000000165 centimeters
f) 31,000,000 seconds
g) 1.458 trillion cubic kilometers

2) Write these in normal numerical form:

a) 1.45×10^{-3} centimeters
b) $3.1 \times 10^{+12}$ cubic centimeters
c) $8.7 \times 10^{+4}$ seconds
d) $2.99 \times 10^{+10}$ centimeters/second
e) 1.9×10^{-33} seconds
f) $5.4 \times 10^{+27}$ kilograms
g) $8.9 \times 10^{+10}$ watts