**Scientific Notation**

It is important to understand and to be able to compare the size of things in our world and the universe. One of the ways that scientists do this is by using **exponential notation**, or powers of ten. Click on the link below for a fun journey through space at the speed of powers of ten.

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|  | [**Secret Worlds: The Universe Within**](http://micro.magnet.fsu.edu/primer/java/scienceopticsu/powersof10/index.html) |  |
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To help the [SI units](http://www.unc.edu/~rowlett/units/sipm.html) apply to a wide range of phenomena, the 19th General Conference on Weights and Measures in 1991 extended the list of metric prefixes so that it reaches from yotta- at 1024 (one septillion) to yocto- at 10-24 (one septillionth). Here are the metric prefixes, with their numerical equivalents stated in the American system for naming [large numbers](http://www.unc.edu/~rowlett/units/numbers.html):

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| yotta- (Y-) | 1024 | 1 septillion |
| zetta- (Z-) | 1021 | 1 sextillion |
| exa- (E-) | 1018 | 1 quintillion |
| peta- (P-) | 1015 | 1 quadrillion |
| tera- (T-) | 1012 | 1 trillion |
| giga- (G-) | 109 | 1 billion |
| mega- (M-) | 106 | 1 million |
| kilo- (k-) | 103 | 1 thousand |
| hecto- (h-) | 102 | 1 hundred |
| deka- (da-)\*\* | 10 | 1 ten |
| deci- (d-) | 10-1 | 1 tenth |
| centi- (c-) | 10-2 | 1 hundredth |
| milli- (m-) | 10-3 | 1 thousandth |
| micro- (µ-) | 10-6 | 1 millionth |
| nano- (n-) | 10-9 | 1 billionth |
| pico- (p-) | 10-12 | 1 trillionth |
| femto- (f-) | 10-15 | 1 quadrillionth |
| atto- (a-) | 10-18 | 1 quintillionth |
| zepto- (z-) | 10-21 | 1 sextillionth |
| yocto- (y-) | 10-24 | 1 septillionth |

**http://www.unc.edu/~rowlett/units/prefixes.html**