# FB-DC9 Electric Circuits: Metric Notation

The metric system, besides being a collection of measurement units for all sorts of physical quantities, is structured around the concept of scientific notation. The primary difference is that the powers-of-ten are represented with alphabetical prefixes instead of by literal powers-of-ten. The following number line shows some of the more common prefixes and their respective powers-of-ten:
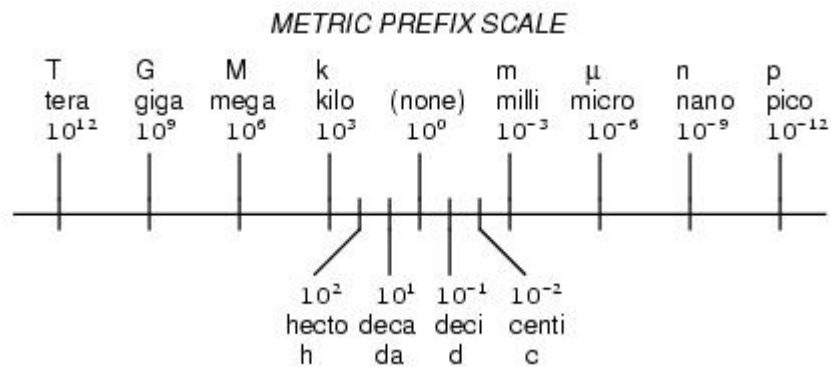
Looking at this scale, we can see that 2.5 Gigabytes would mean 2.5×10^9 bytes, or 2.5 billion bytes. Likewise, 3.21 picoamps would mean 3.21×10^{-12} amps, or 3.21 1/trillionths of an amp.

Because the major prefixes in the metric system refer to powers of 10 that are multiples of 3 (from "kilo" on up, and from "milli" on down), metric notation differs from regular scientific notation in that the significant digits can be anywhere between 1 and 1000, depending on which prefix is chosen. For example, if a laboratory sample weighs 0.000267 grams, scientific notation and metric notation would express it differently:

2.67×10^{-4} grams (scientific notation)

267 μgrams (metric notation)

The same figure may also be expressed as 0.267 milligrams (0.267 mg), although it is usually more common to see the significant digits represented as a figure greater than 1.

Section Review:
- The metric system of notation uses alphabetical prefixes to represent certain powers-of-ten instead of the lengthier scientific notation.