



Math for the people, by the people.

metric system

Canonical name	MetricSystem
Date of creation	2013-03-22 18:29:37
Last modified on	2013-03-22 18:29:37
Owner	PrimeFan (13766)
Last modified by	PrimeFan (13766)
Numerical id	7
Author	PrimeFan (13766)
Entry type	Definition
Classification	msc 00A05
Related topic	DecimalPlace

The *metric system* is a system of weights and measures first proposed in France and gradually coming closer to worldwide acceptance in which for each given dimension, each larger unit is ten times the smaller unit (or viceversa, each smaller unit is a tenth of the larger unit). This makes it easier and more convenient to convert larger units to smaller units and viceversa. In ancient systems prior to the metric system, units for a given dimension often related to one another by different scaling factors. For example, in Biblical times, a talent was 60 mina, a mina was 60 shekels and a shekel was 24 giru. To convert 17 talents to shekels was thus different from converting shekels to giru or talents to giru, etc. By contrast, to convert 17.29 kilograms to centigrams is a simple matter of moving the decimal point to the right (and adding significant zeroes as necessary), and the difference in converting kilograms to milligrams or hectograms entails only changes in where to move the decimal point and how far. Furthermore, the basic units are determined by measurements which are known to remain constant and double-checkable throughout the planet, and not ephemeral and hard-to-verify measurements (such as the shoe size of the current king). The system is further standardized by the use of consistent prefixes to add to the basic units to make them larger or smaller.

The basic units are:

http://planetmath.org/BasicLengthLength	Meter
Mass	Gram
Time	Second
Temperature	Kelvin

The standard prefixes are:

Kilo	1000.0000
Hecto	100.0000
Deca	10.0000
(none)	1.0000
Deci	0.1000
Centi	0.0100
Milli	0.0010
Micro	0.0001

Measurement systems consistently based on 10 (rather than arbitrarily varying practical numbers like 12, 24 and 60) had been proposed since at least the 15th Century. It wasn't until after the French Revolution that the proposals were taken seriously. Nowadays, the metric system has been adopted by scientists all over the world, but the general population of the

United States remains an important group of hold-outs.