

Metric System Basics

Units of Length

Length and distance in the metric system are based on the standard unit called the meter. All other metric units for length and distance are multiples or submultiples of the meter. Some of the other metric units of length are shown below.

Name	Abbreviation	Value
kilometer	km	1,000 meters
hectometer	hm	100 meters
dekameter	dam	10 meters
meter	m	1 meter
decimeter	dm	.1 meter
centimeter	cm	.01 meter
millimeter	mm	.001 meter

The metric system is based on the decimal system (base ten). When one unit of measure is compared to the next unit of measure in the metric system, it is 10 times more or 10 times less than the next unit. From this you can see that a meter is 10 times the length of a decimeter, 100 times the length of a centimeter, and 1,000 times the length of a millimeter ($10 \times 10 \times 10$).

$$1 \text{ kilometer (km)} = 10 \text{ hectometers (hm)}$$

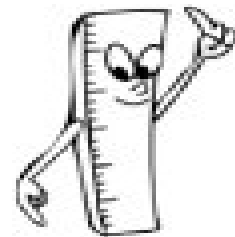
$$1 \text{ hectometer (hm)} = 10 \text{ dekameters (dam)}$$

$$1 \text{ dekameter (dam)} = 10 \text{ meters (m)}$$

$$1 \text{ meter (m)} = 10 \text{ decimeters (dm)}$$

$$1 \text{ decimeter (dm)} = 10 \text{ centimeters (cm)}$$

$$1 \text{ centimeter (cm)} = 10 \text{ millimeters (mm)}$$



Compared to a mile, how long is a kilometer (km)? Below are some of the U.S. units of length converted to metric units of length. This will give you an idea of how the metric units of length compare to the U.S. units of length.

$$1 \text{ inch} = 2.54 \text{ cm}$$

$$1 \text{ foot} = 30.48 \text{ cm}$$

$$1 \text{ yard} = 0.9144 \text{ m}$$

$$1 \text{ mile} = 1.61 \text{ km}$$