

# Measurements: Metric vs. Customary Systems

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# Quick Overview

## Metric System

- Used in all parts of the world
- Easy to convert
- Multiple or fraction of 10
- Meters, grams, and liters are the units of measurement
- Prefixes like kilo-, centi-, deca- used

## Customary System

- Only used in the United States
- Not so simple conversion
- No “formula”
- Inches, feet, yards, miles, ounces, pounds, tons, fluid ounces, cups, pints quarts, and gallons are the units of measurement

# Charts: Converting within metric units of measurement

Prefix	Symbol	Multiplier	
exa	E	$10^{18}$	1,000,000,000,000,000,000
peta	P	$10^{15}$	1,000,000,000,000,000
tera	T	$10^{12}$	1,000,000,000,000
giga	G	$10^9$	1,000,000,000
mega	M	$10^6$	1,000,000
kilo	k	$10^3$	1,000
hecto	h	$10^2$	100
deka	da	$10^1$	10
deci	d	$10^{-1}$	0.1
centi	c	$10^{-2}$	0.01
milli	m	$10^{-3}$	0.001
micro	$\mu$	$10^{-6}$	0.000,001
nano	n	$10^{-9}$	0.000,000,001
pico micro micro	p $\mu\mu$	$10^{-12}$	0.000,000,000,001
femto	f	$10^{-15}$	0.000,000,000,000,001
atto	a	$10^{-18}$	0.000,000,000,000,000,001

# Charts: Converting within customary measurement

Common Customary Measurements			
Length	Weight	Time	Capacity
1 foot = 12 inches 1 yard = 36 inches 1 yard = 3 feet 1 mile = 5,280 feet 1 mile = 1,760 yards	1 pound = 16 ounces 1 ton = 2,000 pounds	1 minute = 60 seconds 1 hour = 60 minutes 1 day = 24 hours 1 week = 7 days 1 year = 12 months 1 year = 365 days 1 leap year = 366 days	1 cup = 8 fluid ounces 1 pint = 2 cups 1 quart = 2 pints 1 quart = 4 cups 1 gallon = 4 quarts 1 gallon = 16 cups

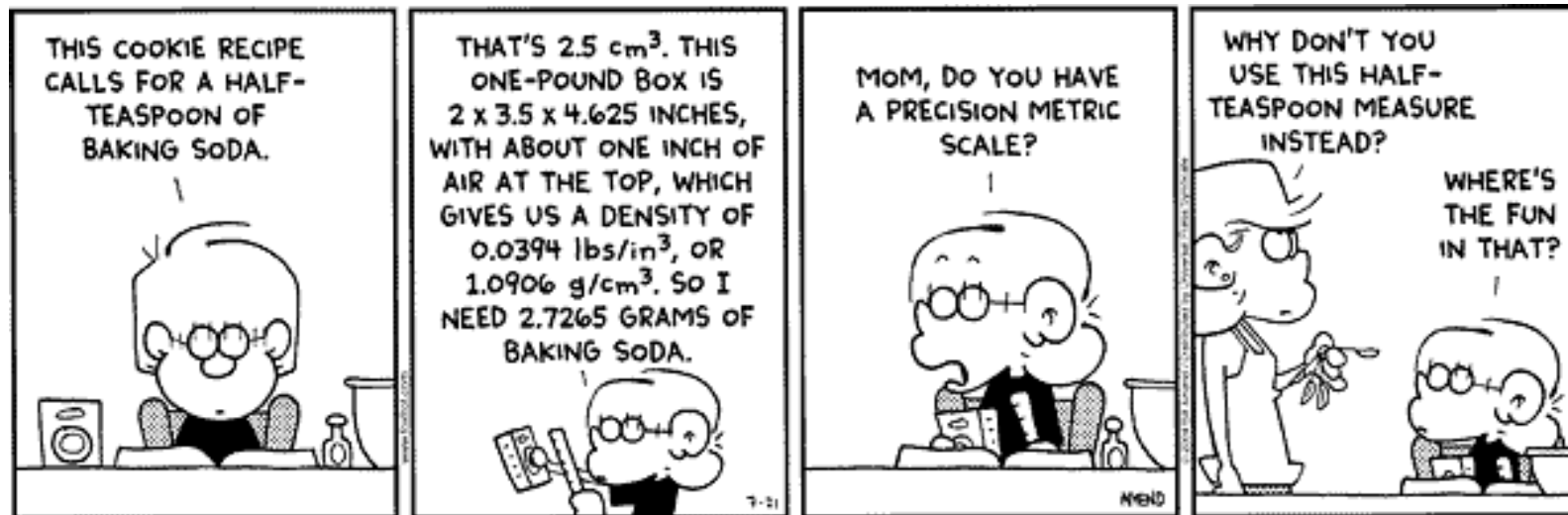
# Charts: Converting between the two systems of measurement

Customary Units	Metric Units
1 inch	2.54 centimeters
1 foot	30.48 centimeters or 0.3048 meter
1 yard	0.914 meter
1 mile	1.609 kilometers
1 ounce	28.350 grams
1 pound	454 grams or 0.454 kilogram
1 fluid ounce	29.574 milliliters
1 quart	0.946 liter
1 gallon	3.785 liters

Metric Units	Customary Units
1 centimeter	0.394 inch
1 meter	3.281 feet or 1.093 yards
1 kilometer	0.621 mile
1 gram	0.035 ounce
1 kilogram	2.205 pounds
1 milliliter	0.034 fluid ounce
1 liter	1.057 quart or 0.264 gallon

# Kahn Academy Video

- <http://www.khanacademy.org/math/arithmetic/rates-and-ratios/metric-system-tutorial/v/u-s--customary-and-metric-units>
- To the left is a list of other videos to watch dealing with the metric and customary systems of measurement



## In conclusion...

- Metric system uses meters (distance), grams (weight), and liters (volume)
  - Conversion deals with multiple or fractions of 10
  - 1,000 grams = 1 kilogram
  - .01 meters = 1 centimeter
- Customary system uses miles, feet & inches (distance), pounds & ounces (weight), and gallons, fluid ounces & quarts (volume)
  - There are different rules for conversion
  - 12 inches = 1 mile
  - 16 ounces = 1 pound

# Works Cited

- <http://www.radioing.com/eengineer/metric.html>
- <http://6thmathshsid.wikispaces.com/Customary+Measurement>
- <http://www.mathatube.com/converting-between-customary-and-metric-units-chart.html>
- <http://fy.chalmers.se/~f3amj/cartoon.html>