

Dave's Math Tables: *Weights and Measures*

([Math](#) | [General](#) | [Weights and Measures](#) | [Volumes](#))

Unit Conversion Tables for Volumes

A note on the metric system:

Before you use this table convert to the base measurement first, in that convert centi-meters to meters, convert kilo-grams to grams. In this way, I don't have to list every imaginable combination of metric units.

The notation $1.23\text{E} - 4$ stands for $1.23 \times 10^{-4} = 0.000123$.

from \ to	= __ feet ³	= __ gallons	= __ inches ³	= __ liters	= __ meters ³	= __ miles ³
foot³		7.480519...	1728	28.31684...	0.02831684...	6.793572E - 5
gallon	0.1336805...		231	3.785411...	0.003785411...	9.081685...E - 5
inch³	(1/1728)	(1/231)		0.01638706...	1.638706...E - 5	3.931465...E - 6
liter	0.03531466...	0.2641720...	61.02374...		(1/1000)	2.399127...E - 4
meter³	35.31466...	264.1720...	61023.74...	1000		2.399127...E - 4
mile³	1.471979...E + 11	1101117...E + 11	21243580E + 11	4468181...E + 11	12.168181...E + 9	
pint	0.01671006...	(1/8)	28.875	0.4731764...	4.731764...E - 4	1.135210...E - 4
quart	0.03342013...	(1/4)	57.75	1.056688...	9.463529...E - 4	2.270421...E - 4
yard³	27	201.974...	46656	0.001307950...	0.7645548...	1.834264...E - 4

To use: find the unit to convert **from** in the left column, and multiply it by the expression under the unit to convert **to**.

Examples: $\text{foot}^3 = \underline{1728} \text{ inches}^3$; $2 \text{ feet}^3 = \underline{2 \times 1728} \text{ inches}^3$.

Useful Exact Volume Relationships

fluid ounce = (1/8) cup = (1/16) pint = (1/32) quart = (1/128) gallon

gallon = 128 fluid ounces = **231 inches³** = 8 pints = 4 quarts

quart = 32 fluid ounces = 4 cups = 2 pints = (1/4) gallon

Useful Exact Length Relationships

cup = 8 fluid ounces = (1/2) pint = (1/4) quart = (1/16) gallon

mile = 63360 inches = 5280 feet = 1760 yards

yard = 36 inches = 3 feet = (1/1760) mile

foot = 12 inches = (1/3) yard = (1/5280) mile

pint = 16 fluid ounces = (1/2) quart = (1/8) gallon

inch = **2.54 centimeters** = (1/12) foot = (1/36) yard

liter = 1000 centimeters³ = **1 decimeter³** = (1/1000) meter³

Note that when converting volume units:

1 foot = 12 inches

$(1 \text{ foot})^3 = (12 \text{ inches})^3$ (cube both sides)

1 foot³ = 1728 inches³

The linear & volume relationships are not the same!
