



## Recipe Amount Conversions & Formula Cost

There are two separate systems for measurements: the U.S. system of measurement (which includes pounds, ounces, gallons, pints, etc.) and the metric system of measurement (e.g. grams, liters, meters).

### U.S. system of measurement

Weight	
	1 lb = 16 oz
Volume	
	1 gal = 4 qt
	1 qt = 2 pt
	= 4 cups
	= 32 fl oz
	1 pt = 2 cups
	= 16 fl oz
	1 cup = 8 fl oz
	= 48 tsp
	1 fl oz = 2 tbsp
	1 tbsp = 3 tsp

### Unit Abbreviations

Pound = lb  
 Ounce = oz  
 Gallon = gal  
 Quart = qt  
 Pint = pt  
 Fluid ounce = fl oz  
 Teaspoon = tablespoon  
 Tsp = teaspoon

### Metric system of measurement

Quantity	Unit (abbreviation)
Weight	gram (g)
Volume	liter (L)
Length	meter (m)
Temperature	Celsius (°C)
Common conversions	
1 kg = 1000 g	Kilo = 1000
1 cm = 100 mm	Centi = 100
1 dg = 0.10 g	Deci = 1/10
1 ml = 0.001 L	Milli = 1/1000
These prefixes (kilo-, deci-, centi-, milli-) can be applied to any metric unit.	

Conversion fractions are used to convert between different units for the same quantity being measured (weight or volume or length) or between different systems of measurement. This worksheet focuses on conversions within one system of measurement, either metric or imperial.

**Example 1:** A recipe calls for 4 fluid ounces (8 oz) of milk. You only have a set of measuring cups to work with. What amount of milk in cups is needed?

**Answer:** We set up a conversion fraction to translate between the unit we have and the unit we want. We have fluid ounces, but we want cups. We must set up a conversion fraction with fluid ounces and cups so that the unit "fluid ounces" cancels.

$$4 \text{ fl oz} \times \frac{1 \text{ cup}}{8 \text{ fl oz}} = 0.5 \text{ cup milk}$$

The unit fl oz must be on the top and bottom for it to cancel, leaving cups behind. If the number that is NOT "1" is in the numerator (top of the fraction), you multiply by that number. If it's in the denominator (bottom of the fraction), you divide by that number. In this example, "8" is the non-one number and it's in the bottom so we divide 4 fl oz by 8.

**Example 2:** A bread recipe calls for 2500 g of flour. How much flour is this in kg?

**Answer:** Set up a conversion fraction to translate between the unit we have and the unit we want. The prefix kilo- means 1000, so we use the following fraction:

$$2500 \text{ g} \times \frac{1 \text{ kg}}{1000 \text{ g}} = 2.5 \text{ kg}$$