Metric Conversions

Use these tables to help you convert between metric units:

Linear units (metres for distance, grams for mass, litres for capacity, . . .)

Move decimal 1 place to the RIGHT for each step down →

1000 ($\times 10^3$) kilo- (km)	100 ($\times 10^2$) hecto- (hm)	10 ($\times 10^1$) deca- (dam)	1 ($\times 10^0$) (m)	0.1 ($\times 10^{-1}$) deci- (dm)	0.01 ($\times 10^{-2}$) centi- (cm)	0.001 ($\times 10^{-3}$) milli- (mm)

← Move decimal 1 place to the LEFT for each step up

Square units (square metres for area, . . .)

Move decimal 2 places to the RIGHT for each step down →

1 000 000 ($\times 10^6$) km²	10 000 ($\times 10^4$) hm²	100 ($\times 10^2$) dam²	1 ($\times 10^0$) m²	0.01 ($\times 10^{-2}$) dm²	0.000 1 ($\times 10^{-4}$) cm²	0.000 001 ($\times 10^{-6}$) mm²
	hectare (ha)	are (a)	centare (ca)			

← Move decimal 2 places to the LEFT for each step up

Cubic units (cubic metres for volume, . . .)

Move decimal 3 places to the RIGHT for each step down →

1 000 000 000 ($\times 10^9$) km³	1 000 000 ($\times 10^6$) hm³	1000 ($\times 10^3$) dam³	1 ($\times 10^0$) m³	0.001 ($\times 10^{-3}$) dm³	0.000 001 ($\times 10^{-6}$) cm³	0.000 000 001 ($\times 10^{-9}$) mm³
			kilolitre (kL)	litre (L)	millilitre (mL)	

← Move decimal 3 places to the LEFT for each step up

Example 1: Convert: 355 cg = _____ g

Solution:

Method 1: By Moving Decimals

1. Look at the chart. We are starting at **cg**, and we are going to the base unit, **g**. This is 2 steps to the left.
2. We move the decimal place in the number 2 places to the left.

$$3\,5\,5. \Rightarrow 3.5\,5$$

3. The answer is: 355 cg = 3.55 g

Method 2: By Using Conversion Factors

1. Create a fraction that represents the conversion you want to do, here centigrams to grams. Put the unit you're converting *from* on the bottom. (1 cg = 0.01 g, so 100 cg = 1 cg)
2. Multiply the measurement by this fraction. The units should cancel.

$$355 \text{ cg} \times \frac{1 \text{ g}}{100 \text{ cg}} = 3.55 \text{ g}$$

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