

Printable Metric & Imperial Conversion Chart

The most common metric ↔ imperial conversions — length, weight, volume, temperature, area, and speed. NIST-sourced exact values. Print at 100% scale.

LENGTH

NIST SP 811 exact values

IMPERIAL	METRIC	REVERSE
1 inch	2.54 cm (exact)	1 cm = 0.394 in
1 foot	30.48 cm (exact)	1 m = 3.281 ft
1 yard	0.9144 m (exact)	1 m = 1.094 yd
1 mile	1.609 km	1 km = 0.621 mi
1 nautical mile	1.852 km (exact)	—

WEIGHT

NIST SP 811 · avoirdupois ounce and pound

IMPERIAL	METRIC	REVERSE
1 oz (avoirdupois)	28.35 g	1 g = 0.0353 oz
1 lb	453.6 g = 0.4536 kg	1 kg = 2.205 lb
1 stone	6.35 kg = 14 lb	1 kg = 0.157 stone

VOLUME

US customary · NIST HB 44

US IMPERIAL	METRIC
1 US fl oz	29.57 ml
1 US cup	236.6 ml
1 US pint (2 cups)	473 ml
1 US quart (4 cups)	946 ml
1 US gallon	3.785 L
1 UK pint	568 ml (≠ US pint)

TEMPERATURE

$^{\circ}\text{F} = (^{\circ}\text{C} \times 9/5) + 32$ · $^{\circ}\text{C} = (^{\circ}\text{F} - 32) \times 5/9$

$^{\circ}\text{FAHRENHEIT}$	$^{\circ}\text{CELSIUS}$	REFERENCE POINT
-40$^{\circ}\text{F}$	-40 $^{\circ}\text{C}$	Same in both scales
32$^{\circ}\text{F}$	0 $^{\circ}\text{C}$	Water freezes (sea level)
98.6$^{\circ}\text{F}$	37 $^{\circ}\text{C}$	Normal body temperature
212$^{\circ}\text{F}$	100 $^{\circ}\text{C}$	Water boils (sea level)

QUICK MENTAL BENCHMARKS

Approximate rules of thumb — not exact

TO ESTIMATE QUICKLY	RULE OF THUMB
cm → inches	Divide by 2.5 (exact: ÷ 2.54)
kg → lbs	Multiply by 2.2 (exact: × 2.205)
km → miles	Divide by 1.6 (exact: ÷ 1.609)
L → US quarts	Roughly 1 L ≈ 1 quart (exact: 0.946 qt)
$^{\circ}\text{C} \rightarrow ^{\circ}\text{F}$ (approx)	Double it, then add 30 (exact: $\times 9/5 + 32$)
$^{\circ}\text{F} \rightarrow ^{\circ}\text{C}$ (approx)	Subtract 30, then halve (exact: $-32 \times 5/9$)

AREA & SPEED

NIST SP 811

IMPERIAL	METRIC
1 sq ft	0.0929 m ²
1 acre	0.4047 ha = 4047 m ²
1 mph	1.609344 km/h (exact)
1 knot	1.852 km/h (exact)