

Strategy Overview: Conversions



What is it?

Conversion is the ability to change measurements from one system to the other. Canada uses two systems of measurement: metric and imperial. Metric measures are common in most workplaces, but several sectors, such as construction and aerospace use materials and machines that are calculated or calibrated with imperial measures.

How does it help?

Being able to convert between the two systems is essential to completing the foundational math required in almost all occupations.

About conversions:

- Conversion changes how a measurement is expressed. It does not change the measurement itself. For example, a 2.5-centimetre (cm) line (metric measurement) and a one-inch (in.) line (imperial) are the same length.
- Measurement conversions are often required for length or distance, area (the size of a flat or 2D object), weight, and volume (the size of a 3D object).
- Conversion from metric to imperial or imperial to metric can be calculated quickly using conversion tables and the following five steps.

Step 1. Decide if you are converting for length, area, weight, or volume.

Step 2. Decide if you are converting from metric to imperial or imperial to metric.

Step 3. Find the correct conversion table and multiplication number.

Step 4. Multiply the original measurement by the conversion factor.

Step 5. If needed, round the decimal to the required number of places.

Conversion Tables (with common measurement abbreviations)

Length

Imperial unit	Metric unit
Inch (in.)	2.54 centimetres (cm)
Foot (ft.)	30.48 centimetres (cm)
Yard (yd.)	0.91 metres (m)
Mile (mi.)	1.61 kilometres (km)

Metric	Imperial
Centimetre (cm)	0.39 inches (in.)
Metre (m)	3.28 feet (ft.)
Metre (m)	1.0936 yards (yd.)
Kilometre (km)	0.62 miles (mi.)

Strategies for Success: Conversions

Example: Convert 20 **metres** (m) to **yards** (yd.). Round to two decimal places.

Step 1. Converting for **length**

Step 2. Converting from **metric to imperial**

Step 3. Multiplication number is **1 metre = 1.0936 yards (yd.)**

Step 4. 20 (metres) x 1.0936 = **21.872**

Step 5. Round to two decimal places = **21.87 yards (yd.)**

Area

Imperial unit	Metric unit	Metric	Imperial
Acre	0.40 hectare	Hectare	2.47 Acre
Square inch (in ²)	6.45 sq centimetres (cm ²)	Sq centimetres (cm ²)	0.16 Sq inches (in ²)
Square foot (ft. ²)	0.09 sq metres (m ²)	Sq metres (m ²)	10.76 Sq feet (ft. ²)
Square yard (yd. ²)	0.84 sq metres (m ²)	Sq metres (m ²)	1.20 Sq yards (yd. ²)
Square mile (mi. ²)	2.60 sq kilometres (km ²)	Sq kilometres (km ²)	0.39 Sq miles (mi. ²)

Weight (Mass)

Imperial unit	Metric unit	Metric	Imperial
Ounce* (oz.)	28.35 grams (g)	Gram (g)	0.035 ounces (oz.)
Pound (lb.)	0.45 kilograms (kg)	Kilogram (kg)	2.21 pounds (lb.)
Ton (US) (t)	0.91 metric tons (MT)	Metric ton (MT)	1.1 tons (t)

**An ounce (oz.) is used for dry measurements while a fluid ounce (fl. oz.) is for liquid measurements.*

Example: Convert 17 **kilograms** (kg) to **pounds** (lb.). Round to one decimal places.

Step 1. Converting for **weight**

Step 2. Converting from **metric to imperial**

Step 3. Multiplication number is **kilogram (kg) = 2.21 pounds (lb.)**

Step 4. 17 (kilograms) x 2.21 = **37.57**

Step 5. Round to one decimal places = **37.6 pounds (lb.)**

Capacity (Volume)

Imperial unit	Metric unit	Metric	Imperial
Fluid ounce*	29.57 millilitres (ml)	Gram (g)	0.035 ounces (oz.)
Quart (US)	0.95 litres (L)	Kilogram (kg)	2.21 pounds (lb.)
Gallon (US)	3.79 litres (L)	Metric ton (MT)	1.1 tons (t)

*A fluid ounce (fl. oz.) is used to measure fluids while an ounce (oz.) is used for dry measurements.

Common Multipliers at a Glance

Multiply	By	To Get	Multiply	By	To Get
Millimetre (ml)	0.0394	Inch (in.)	Inch (in.)	25.4	Millimetre (ml)
Metre (m)	39.3701	Inch (in.)	Inch (in.)	0.0254	Metre (m)
Metre (m)	3.2808	Foot (ft.)	Foot (ft.)	0.3048	Metre (m)
Metre (m)	1.0936	Yard (yd.)	Yard (yd.)	0.9144	Metre (m)
Kilometre (km)	3280.84	Foot (ft.)	Foot (ft.)	0.0003048	Kilometre (km)

Strategy Practice



Write your answers in the space provided.

1. Which table will you use to convert from litres to quarts?
2. What number should you multiply by to convert an inch to a metre?
3. What is the abbreviation for grams?
4. Use the conversion tables to complete the following practice questions.

Area

Convert 37 square yards to square metres. Round to one decimal place. List all the steps. Include the abbreviations.

Capacity (Volume)

Convert 27 fluid ounces to millilitres. Round to one decimal place. List all the steps. Include the abbreviations.

Strategy Answer Key



Now check your answers using the answer key.

1. Which table will you use to convert from litres to quarts?

Capacity (Volume)

2. What number should you multiply by to convert inches to metres?

0.0254 (common multipliers table)

3. What is the abbreviation for grams?

g

4. Use the conversion tables to complete the following practice questions.

Area

Convert 37 square yards to square metres. Round to one decimal place. List all the steps.
Include the abbreviations.

Step 1. Converting for area

Step 2. Converting from imperial to metric

Step 3. Multiplication number is 1 square yard = 0.84 square metres

Step 4. $37 \text{ (square yards)} \times 0.84 = 31.08$

Step 5. Round to one decimal place = 31.1 square metres (m²)

Capacity (Volume)

Convert 27 fluid ounces (fl. oz.) to millilitres (ml) Round to one decimal place. List all the steps.
Include the abbreviations.

Step 1. Converting for capacity

Step 2. Converting from imperial to metric

Step 3. Multiplication number is 1 fluid ounce (fl. oz.) = 29.57 milliliters (ml)

Step 4. $27 \text{ fl. oz. (fluid ounces)} \times 29.57 = 798.39$

Step 5. Round to one decimal place = 798.4 ml (milliliters)

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