

CURRICULUM RESOURCE

Digital Tools for Apprenticeship: Metric Conversions for iPhone and Android

OALCF ALIGNMENT

Competency	Task Group	Level
Competency A - Find and Use Information	A1. Read continuous text	2
Competency A -Find and Use Information	A2. Interpret documents	2
Competency C - Understand and Use Numbers	C3. Use measures	2
Competency D - Use Digital Technology	N/A	2

Goal Paths (check all that apply)

- Employment
- Apprenticeship
- Secondary School Credit
- Postsecondary
- Independence

Embedded Skills for Success (check all that apply)

- Adaptability
- Collaboration
- Communication
- Creativity and innovation
- Digital
- Numeracy
- Problem Solving
- Reading
- Writing

NOTES: Part one of a six-part series on basic workplace and apprenticeship digital tools.

ACKNOWLEDGEMENTS

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DIGITAL TOOLS FOR WORKPLACE AND APPRENTICESHIP

Note for practitioners:

This series of **Skills for Success Curriculum Resources** is a beginner's guide to the certain handy digital tools for use in the workplace or on apprenticeships. The goal is to provide basics tools to employed learners, or learners seeking employment, so that they can thrive as employees.

This series looks at a range of apps, from imperial-to-metric conversion apps guides to measurement and business basics apps. The goal of the series is to give employees an expanded digital toolkit for use on the job.

These resources are learner-based and activity-focused, with each topic area serving as a walk-through of the information or technology, followed by personalized activities. The activities invite learners to respond to lesson material or explore their own ideas on the subject.

The series is divided into six sections that can be used separately or in tandem:

- Metric Conversions (for iPhone and Android)
- AR Ruler (for iPhone and Android)
- Tradify (for iPhone and Android)
- Share My Toolbox (for iPhone and Android)
- St. John Ambulance (for iPhone and Android)
- Server Life for iPhone and Android

DIGITAL TOOLS: Metric Conversions for iPhone and Android

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*This is Section One:
Metric Conversions for iPhone and Android*

Overview

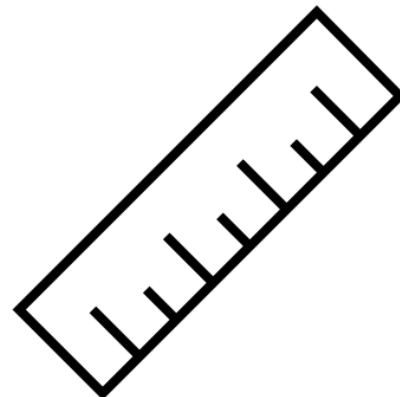
The **metric** system is used to measure things like length, weight, and temperature. It also measures area, volume, angles, and more. It is the most common measurement system in Canada. The metric system uses measurements such as:

- kilometres, metres, and centimetres for length
- kilograms and grams for weight
- Celsius for temperature
- kilometres per hour for speed

The **imperial** system is used to measure the same things. But it is different. It is the most common measurement system in the United States. But it is also used in Canada.

The imperial system uses measurements such as:

- miles, yards, and inches for length
- pounds and ounces for weight
- Fahrenheit for temperature
- miles per hour for speed



Sometimes, at work or in life, it is necessary to convert a measurement from one system to the other. This resource will introduce you to a handy app to make these conversions. It's called **Metric Conversions**.

Conversions at Work and in Life

When do you need to use conversions? There are many examples:

- Lumber is cut in **imperial** measurements. A “two-by-four” is two inches by four inches. But building codes are in **metric** measurements like metres and centimetres (cm).
- Many tools are still made using imperial measurements. But plans for buildings are often in metric.
- You are making a recipe that uses metric measurements like millilitres (ml). You will have to figure out how many “cups” that is.



Let's discuss!

What is **your** experience?

1. Are you at a job where you have to do conversions? Yes No

2. If so, which job?

3. What are some conversions you've done before? Check all that apply:

You had to convert **inches** to **centimeters** when doing building work?

You had to convert your weight from **pounds** to **kgs** for a doctor?

You had to convert **grams** to **ounces** for a recipe?

Conversion Tables

Conversion Tables

Conversions can be done using conversion tables. These tables show you how to turn one measurement into the other. It usually involves multiplication. Although we will be learning a conversion app, knowing how to use conversion tables is a good idea.

Let's look at some examples. We'll start with **length**:

Metric			Imperial
1 millimetre (mm)		=	0.03937 inches
1 centimetre (cm)	10 mm	=	0.3937 inches
1 metre (m)	100 cm	=	1.0936 yards
1 kilometre (km)	1000 m	=	0.6214 mile

How the table works:

Multiply the metric measurement you want to convert by the number in the imperial column. For example, you want to get 500 mm in inches. Multiply 500 by 0.03937.

500 mm converted to inches:

$$\begin{array}{r}
 500 \\
 \times 0.03937 \\
 \hline
 = 19.7
 \end{array}$$

So 500 mm is **19.7 inches**.

Metric			Imperial
1 millimetre (mm)		=	0.03937 inches
1 centimetre (cm)	10 mm	=	0.3937 inches
1 metre (m)	100 cm	=	1.0936 yards
1 kilometre (km)	1000 m	=	0.6214 mile

**Now you try it.**

Calculate the conversions.

Using the tables, and a **calculator**, do the conversions below. Then check the answers on the next page.

1. Your job site is 22 kilometres away. How far is this in **miles**?

Answer: _____

2. Q is putting in a new sink that is 79 centimetres wide. How many inches is this?

Answer: _____

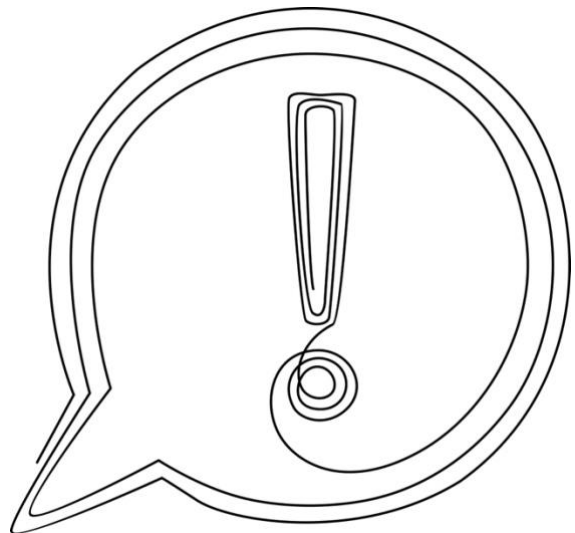
Answers:

1. 22×0.6214
 $= 13.67$

Your job site is **13.67 miles** away.

2. 79×0.3937
 $= 31.1$

The sink is **31.1 inches** wide.



Let's look at some different tables. The one below is also for length. But it does conversions the other way around from imperial to metric:

Imperial			Metric
1 inch (in)		=	2.54 centimetres
1 foot (ft)	12 in	=	0.3048 metres
1 yard (yd)	3 ft	=	0.9144 metres
1 mile (mi)	1760 yd	=	1.6093 kilometres

Try some more conversions (answers on the next page):

1. F's driveway is 15 yards long. How many **metres** is this?

Answer: _____

2. Y is 6 feet, 3 inches tall. How many **centimetres** is this? (Remember that there are 12 inches in 1 foot and 100 centimetres in 1 metre.)

Answer: _____

Answers:

$$1. \quad 15 \times 0.9144 \\ = \mathbf{13.716}$$

F's driveway is **13.716 metres** long.

2. This one is a little trickier. It involves a couple steps: you must turn feet into inches or metres into centimetres. If you want to turn feet into inches, you would multiply 6 by 12. (There are 12 inches in 1 foot.)

$$6 \times 12 = 72 \text{ (inches)}$$

But remember: Y is 6 feet, **3 inches** tall. So add the other three inches:

$$72 + 3 = 75 \text{ (inches)}$$

Y is 75 inches tall. Now you can convert from inches to centimetres:

$$75 \times 2.54 = \mathbf{190.5 \text{ centimetres}}$$

If you want to turn metres into centimetres, first convert from imperial to metric:

$$6 \text{ feet:} \quad 6 \times 0.3048 = \mathbf{1.82 \text{ metres}}$$

$$3 \text{ inches:} \quad 3 \times 2.54 = \mathbf{7.6 \text{ centimetres}}$$

Now turn metres into centimetres:

$$1.82 \times 100 = 182.88 \text{ centimetres}$$

$$7.6 \text{ centimetres} + 182.88 \text{ centimetres} = \mathbf{190.5 \text{ centimetres}}$$

Let's look at one more. This table converts measurements of **weight** from metric to imperial:

Metric			Imperial
1 milligram (mg)		=	0.0154 grain
1 gram (g)	1,000 mg	=	0.0353 ounce (oz)
1 kilogram (kg)	1,000 g	=	2.2046 pounds (lbs)
1 tonne (t)	1,000 kg	=	1.1023 short ton

Try some more conversions (answers on the next page):

1. L works in a bakery and the bun recipe calls for 125 grams of flour? How many **ounces** is this?

Answer: _____

2. G is making an order for a restaurant. The bag of rice is 25 kilograms. How many **pounds** is this?

Answer: _____

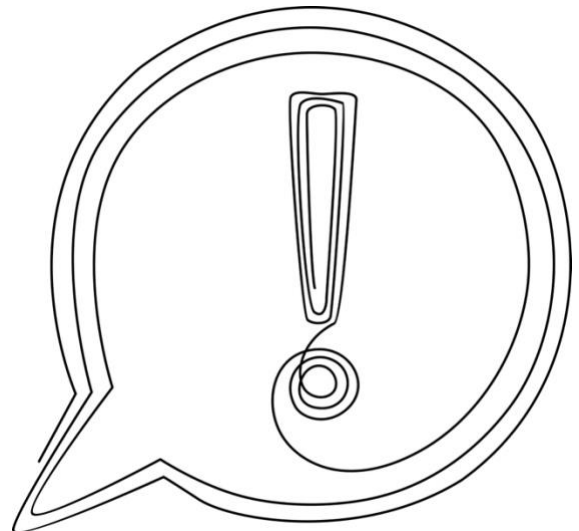
Answers:

1. 125×0.0353
 $= 4.4$

The recipe requires **4.4 ounces** of flour.

2. 25×2.2046
 $= 55.1$

The bag of rice is **55.1 pounds**.



Conversion Tables Tips

There are conversion tables for many different kinds of measurement, including volume, area, speed, and temperature. There are also conversion tables for converting **within** metric or imperial. In other words, there are tables that will help you turn centimetres into metres or ounces into pounds.

Some other things to keep in mind:

- Your answer will often come to many decimal places. This means that there may be many numbers behind the period, such as:
6.3032343 or **76.01209324**
- Usually, it's okay to use just the first couple decimal places:
6.3032343 or **76.01209324**
- But always be sure to double check your work. Do the calculations at least twice, especially for important jobs.
- You can also double check your calculations using the Metric Conversions app.
- Print off conversion tables to have handy on the job. Here are a couple websites with all the conversion tables:

<https://www.mathsisfun.com/metric-imperial-conversion-charts.html>

<https://math-salamanders.s3-us-west-1.amazonaws.com/Measurement/Math-Conversion-Charts/Basic-Conversion-Charts/basic-conversion-chart.pdf>

Metric Conversions App

Metric Conversions App

Now we will get started using the Metric Conversions app for iPhone or Android smartphones. This app is an accurate and quick way to convert measurements of all kinds. But first we need to download the app onto the phone.

Getting Metric Conversions for iPhone

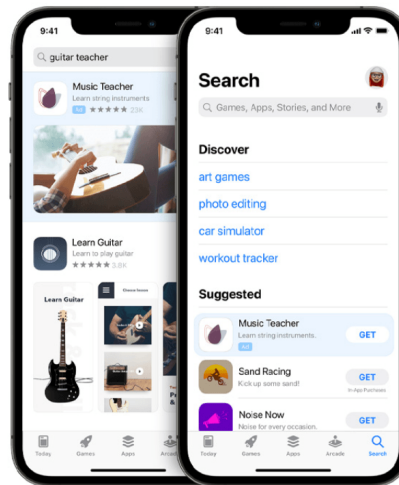
If you have an **iPhone**, start here. (If you have an Android, skip to section 2.)



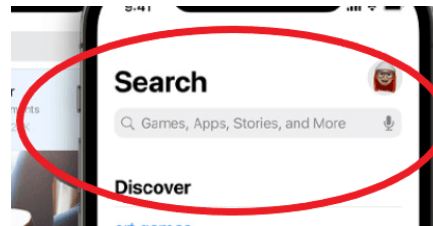
Tap the App Store icon:



The App Store looks like this:



Type in the search bar:
Metric Conversions



Find the correct app. You may have to scroll down a little. Its icon looks like this:



Tap **GET**.



New Task!

Download the app.



- Follow the steps above and download the app.
- Make sure the icon appears on your phone.
- Once it's downloaded, skip ahead to section 3 and we will try it out!

Getting Metric Conversions for Android

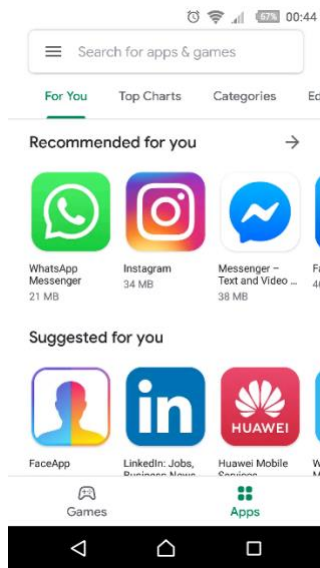
If you have an **Android**, start here. (If you have an iPhone, skip to section 3.)



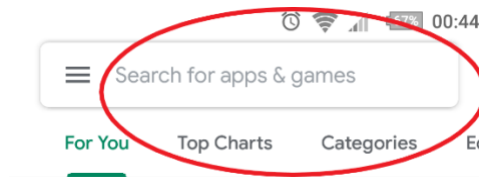
Tap the Google Play icon:



The Google Play store looks like this:



Type in the search bar: **Metric Conversions**



Find the correct app. You may have to scroll down a little.



Tap **GET**.

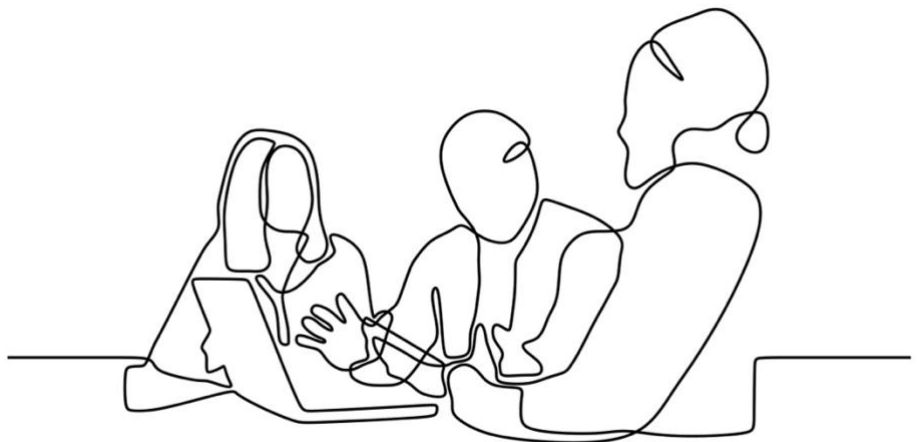
Its icon looks like this:



**New Task!**

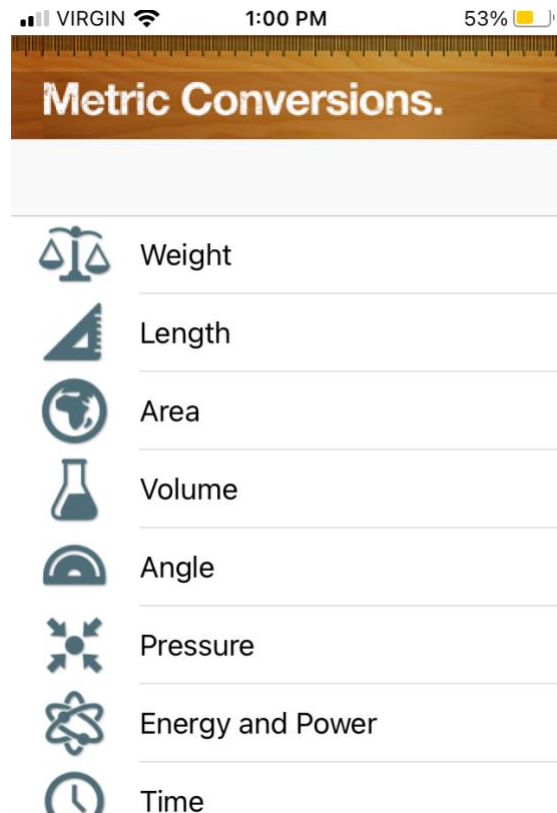
Download the app.

- Follow the steps above and download the app.
- Make sure the icon appears on your phone.
- Once it's downloaded, skip ahead to section three and we will try it out!



Using Metric Conversions

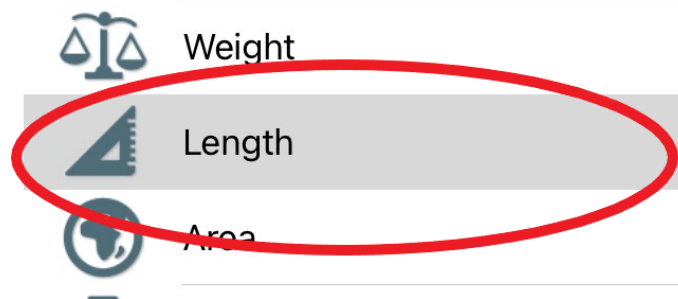
The Metric Conversions home screen looks like this:



You can see there is a list of different types of measurements.

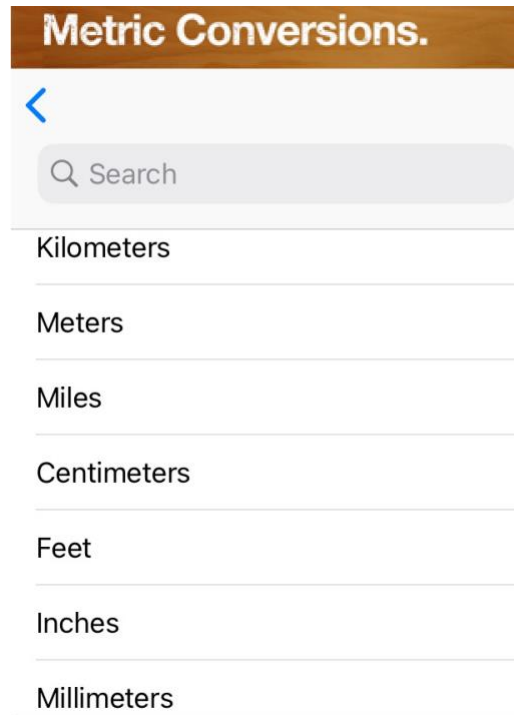
This app can convert any of these measurements for you, in lots of different ways.

Let's start by tapping **Length**:



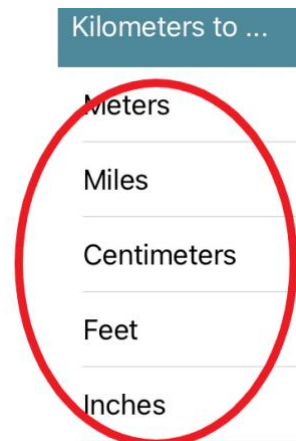
You will arrive at another screen.

It shows different types of length measurements:



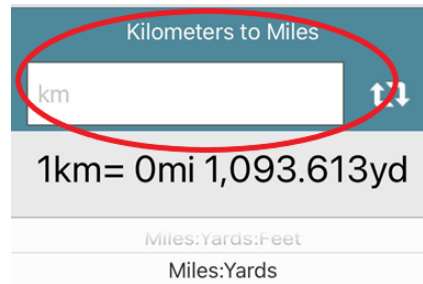
To begin converting, just choose a measurement. Let's use **kilometres**.

You will then be asked what you would like to convert kilometres to:

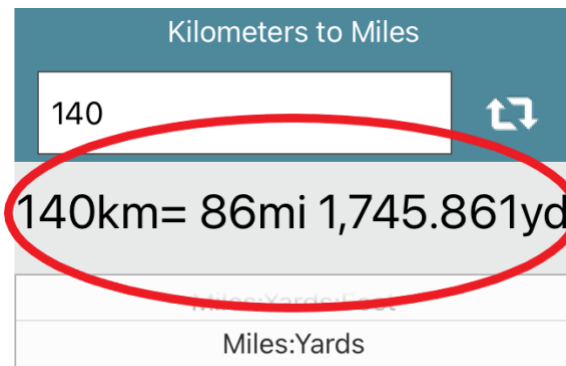


Let's choose **miles**.

We arrive at a screen that looks like this:



Type in a distance. Let's choose **140 kilometres**. Type the number into the bar and the conversion appears below:



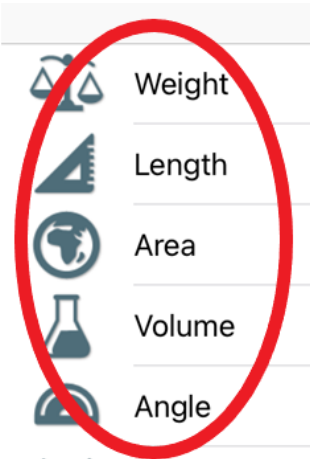
140 kilometres = **86 miles, 1745.86 yards**



Now you try it.

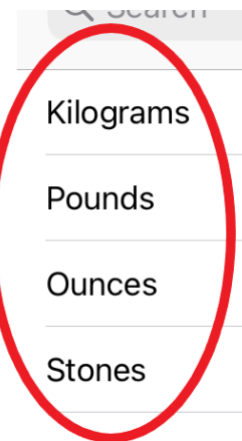
Do your own conversion on the app.

First, choose a **type** of measurement:



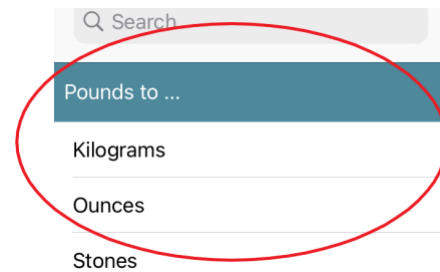
Which did you choose?

Next, choose the **size** of measurement. For example, if you chose weight, choose between kilograms, pounds, ounces, and so on:



Which did you choose?

Next, choose what you want to convert to. For example, if you chose pounds, choose between other weight measurements:

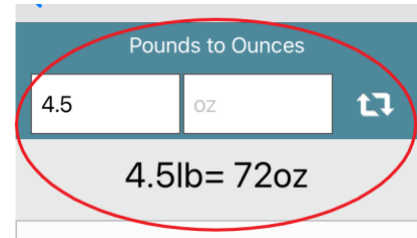


Which did you choose?

Finally, enter an amount and see the conversion.

For example, 4.5 pounds equals 72 ounces.

Which did you choose?



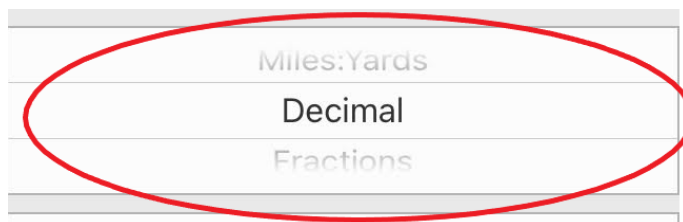
Now we're familiar with how the app works. Let's test it out. We will redo some of the conversion table questions using the app:

1. Your job site is 22 kilometres away. How far is this in **miles**?

Conversion table answer: **13.67 miles**

App Answer: _____

Hint: The answers will match if the dial in the middle of the app is set to **decimal**:



2. G is making an order for a restaurant. The bag of rice is 25 kilograms. How many **pounds** is this?

Conversion table answer: **55.1 pounds**

App Answer: _____

Now use the app to try some new questions:

1. P is driving south for the weekend. P has to drive 203 miles. How many **kilometres** is P driving?

Answer: _____

2. R uses four pints (UK) of water baking. How many **litres** of water did R use?
(Hint: this is the measurement called **Volume**.)

Answer: _____

3. H and J work at a warehouse. They have to carry a box weighing 40 kilograms. How many **pounds** do they have to carry?

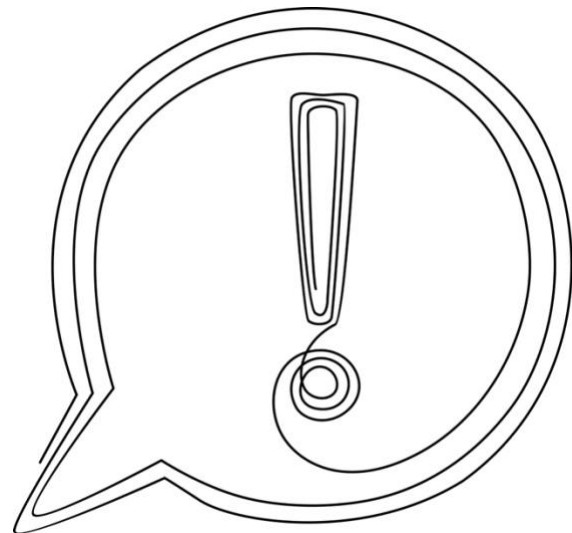
Answer: _____

4. G is from the USA. You tell G that it is 30 degrees Celsius. G wants to know the temperature in **Fahrenheit**.

Answer: _____

Answers:

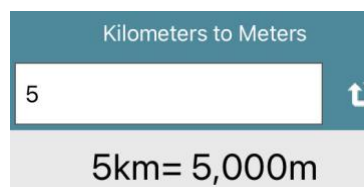
1. 326.69 km
2. 2.27 litres
3. 88 pounds
4. 86 Fahrenheit



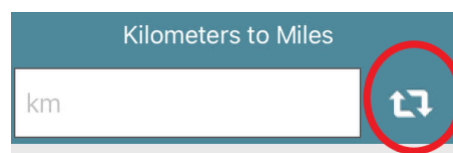
Tips and Tricks

Metric Conversions has a few features that make using it even better. Here are a few tips and tricks:

- Remember the different ways you can do conversions:
 - metric to imperial
 - imperial to metric
 - measurements within metric or imperial (like pounds to ounces or kilometres to metres)



- The arrows beside the bar let you switch the measurements you're converting. For example, this is converting from kilometres to metres. But if you tap the arrows, it will convert from metres to kilometres.



- The app even allows you to convert currency (money):



Skills for success

Skills for Success

The **Skills for Success** (SFS) are the everyday skills Canadians need for work, learning and life. Several SFS are required for you to be successful using Metric Conversions or conversion tables:

- **Numeracy.** Numbers skills are essential when doing measurements. They become even more important as you make conversions.
- **Digital.** The Metric Conversions app requires flexing your basic digital skills. You will need digital skills to download and navigate the app.
- **Problem Solving.** Working with different measurement systems requires some problem solving. Identify the problem. Then think about it carefully. Then work toward a solution.
- **Creativity and Innovation.** Sometimes applying technology to on the job or apprenticeship problems is a way to show creativity and innovation. Keep learning new tools!

Learn more about the Skills for Success here:

<https://www.canada.ca/en/services/jobs/training/initiatives/skills-success.html>

- Also see the other resources in this series: **Digital Tools for Workplace and Apprenticeship Basic Skills**