



NORTHERN CAPE DEPARTMENT OF EDUCATION

MATHEMATICAL

LITERACY

LEARNER NOTES

CONVERSIONS

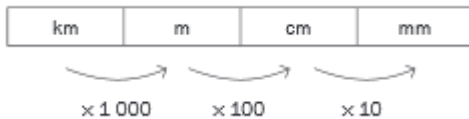
CONVERSION

METRIC CONVERSIONS

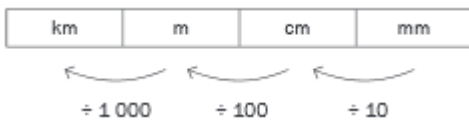
Length

Conversion factors for length
10 millimetres (mm) = 1 centimetre (cm)
1 000 millimetres (mm) = 1 metre (m)
100 centimetres (cm) = 1 metre (m)
1 000 metres (m) = 1 kilometre (km)

Here is a visual representation of converting between units of length:



We can also reverse it to find lengths in larger units:



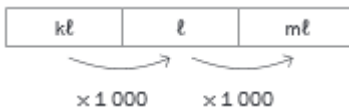
General method:

- **BIG** unit to a **SMALL** unit → **MULTIPLY**
- **SMALL** unit to **BIG** unit → **DIVIDE**

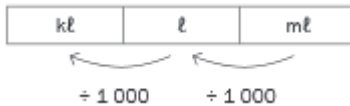
Volume

Conversion factors for volume
1 000 millilitres (mℓ) = 1 litre (ℓ)
1 000 litres (ℓ) = 1 kilolitre (kℓ)

Here is a visual representation of converting between units of volume:



And you can also reverse it:



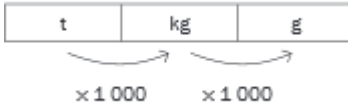
General method:

- **BIG** unit to a **SMALL** unit → **MULTIPLY**
- **SMALL** unit to **BIG** unit → **DIVIDE**

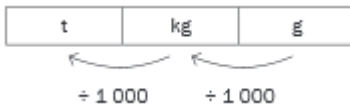
Weight

Conversion factors for weight
1 000 mg (mg) = 1 gram (g)
1 000 grams (g) = 1 kilogram (kg)
1 000 kilograms (kg) = 1 tonne (t)

Here is a visual representation of converting between units of weight:



And one can also reverse it:



General method:

- **BIG** unit to a **SMALL** unit → **MULTIPLY**
- **SMALL** unit to **BIG** unit → **DIVIDE**

Cooking conversions

The following table shows some conversions used in cooking:

Conversions for cooking and baking
1 cup = 250 ml
1 tablespoon (tbsp) = 15 ml
1 teaspoon (tsp) = 5 ml

QUESTION 1

1. An urn of boiling water in an office has a capacity of 20 litres.
 - a) If it filled to maximum capacity, calculate the number of 250 ml cups that can be shared from it. (3)
 - b) After everyone has had their morning tea, there are only 6 litres of water left in the urn.
 - (i) How much water is this in ml? (2)
 - (ii) How many 250 ml cups of water are left in the urn now? (3)
 - (iii) What percentage is the remaining 6 litres of the urn's capacity? (3)
2. Three friends measure their height in different unit:
Jolene is 155 cm, Petru is 1,65 m and Thandi is 1 700 mm.
Which friend is the tallest? (4)
3. Mpho works out that she needs 125 mm of ribbon per gift she wants to wrap.
Calculate the total cost of the ribbon needed, if the ribbon cost R8,90 per meter and she needs to wrap 50 gifts. (4)

4. Which crate is the heaviest?

Crate A: 12,20 kg

Crate B: 0,0125 t

Crate C: 12 100 g

(4)

5. Jonathan uses the following recipe to make chocolate muffins:

$\frac{2}{3}$ cup of baking cocoa

2 large eggs

2 cups of flour

$\frac{1}{2}$ cup of sugar

2 teaspoons of baking soda

$1\frac{1}{3}$ cups of milk

$\frac{1}{3}$ cup of sunflower oil

1 teaspoon of vanilla essence

$\frac{1}{2}$ teaspoon of salt

5.1 If 1 teaspoon = 5 ml, calculate how much baking soda Jonathan will use. Give your answer in ml.

(2)

5.2 Calculate the amount of vanilla essence Jonathan will use in this recipe. Give your answer in ml.

(2)

5.3 Jonathan does not own measuring cups but he does own a measuring jug calibrated in ml.

How many ml of flour does he need?

(1 cup = 250 ml)

(2)

5.4 If Jonathan buys a 100 ml bottle of vanilla essence, how many times will he be able to use the same bottle, if he bakes the same amount of muffins each time?

(2)

5.5 The recipe above is used to make 30 muffins. Calculate how many cups of flour Jonathan will need to make 45 muffins.

(2)

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IMPERIAL CONVERSIONS

You will be given the conversion table(s) in order to convert between metric and imperial.

Length

- Miles (mi)
- Yards (yd)
- Feet (ft)
- Inches (in)

From Imperial to Metric
1 in = 2,54 cm
1 ft = 0,3048 m
1 yd = 0,9144 m
1 mi = 1,6093 km

From Metric to Imperial
1 cm = 0,3937 inches
1 m = 1,0936 yards
1 m = 3,2808 feet
1 km = 0,6214 miles

Volume

- UK pint (pt)
- UK gallons (gal)
- US quarts (qt)
- US fluid ounces (fl. oz)

From Imperial to Metric
1 UK pint = 0,5682 ℓ
1 UK gallons = 4,5461 ℓ
1 US quarts = 0,9464 ℓ
1 US fluid ounce = 29,5735 mℓ

From Metric to Imperial
1 ℓ = 1,7598 UK pint
1 ℓ = 0,2199 UK gallons
1 ℓ = 1,0566 US quarts
1 mℓ = 0,0338 US fluid ounces

Weight

- Ounces (oz)
- Pounds (lb)

From Imperial to Metric
1 ounce = 28,3495 g
1 pound = 0,4535 kg

From Metric to Imperial
1 g = 0,0352 ounces
1 kg = 2,2046 pounds

TEMPERATURE

- $^{\circ}\text{C} = (^{\circ}\text{F} - 32^{\circ}) \div 1,8$
- $^{\circ}\text{F} = (1,8 \times ^{\circ}\text{C}) + 32^{\circ}$
- **B O D M A S**
() of $\div \times + -$

TIME

1 Year	= 365 days
1 Year	= 12 months
1 Year	= 52 weeks
1 Month	= \pm 4 weeks
1 Week	= 7 days
1 Day	= 24 hours
1 Hour	= 60 minutes
1 Minute	= 60 seconds

General method:

- **BIG** unit to a **SMALL** unit \rightarrow **MULTIPLY**
- **SMALL** unit to **BIG** unit \rightarrow **DIVIDE**

am. (ante meridiem)	Before noon (midday)	Morning (00:00 – 11:59)
pm. (post meridiem)	After noon (midday)	Afternoon (11:59 – 23:59)

- Distance = speed \times time
- Speed = $\frac{\text{distance}}{\text{time}}$
- Time = $\frac{\text{distance}}{\text{speed}}$

QUESTION 2

Sara is a qualified chef and owner of Pizza Den situated in Kimberley. She is busy compiling a recipe book called, “The easy Pizza Book”.

In most cases she used both metric and imperial measurements because she intends to sell the book internationally.

Basic Pizza Dough	Rich Pizza Dough
350 g White flour 5 ml (1 tsp) salt 6 g ($2\frac{1}{2}$ tsp) dry yeast 15 ml (1 tbsp) olive oil 8 fl.oz lukewarm water 1 egg	8 oz White flour 5 ml (1 tsp) salt 6 g (tsp) dry yeast 75 ml (5 tbsp) lukewarm milk 40 g ($1\frac{1}{2}$ oz) unsalted melted butter 1 egg, beaten
Oz. = ounces Fl.oz. = fluid ounces Tsp. = teaspoon Tbsp. = tablespoon	The pizza base must be baked in a preheated oven of 450 °F for 0,25 hours.

Use your notes and the information above to answer the questions that follow.

1. How many kilograms of white flour is needed to make the basic pizza dough? (2)
2. How many fluid ounces of salt is needed to make the rich pizza dough? (2)
3. At what temperature (in degrees Celsius) must the oven be preheated? (3)
4. Write down the baking time in minutes. (2)
5. Sara must deliver a pizza 6 miles from her store. She must deliver the pizza within 10 minutes before it turns cold. She will drive at an average speed of 70 km/h.
 - 5.1 Determine the distance in km. (2)
 - 5.2 Determine if the pizza will still be warm at delivery. (4)

[15]