





### Steps to Success

Date	11.2.21
Subject/s	Maths
Learning Objective 	To calculate using metric units of measure

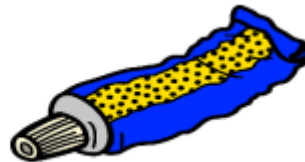
		SA 	TA 
Success Criteria 	I can convert between units of measure		
	I can use bar models to help me solve problems		
	I can apply methods for addition, subtraction, multiplication and division		
Support	Independent	Adult Support ( )	Group Work

#### Pre-task:

How would you solve this problem? Show your working.

A tube of toothpaste holds 75 ml.

How many tubes can be filled using 3 litres of toothpaste?



## Pre-task Answers

3 litres = 3000ml

$3000 \div 75 = 40$  (could use bus stop method for this)

Answer: 40 tubes of toothpaste

## Teacher led

Today we are focusing on using a variety of metric measures to solve problems. This will involve converting units.

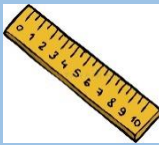
Remember these key facts:

Length/distance:

1km = 1000m

1m = 100 cm

1cm = 10mm



Weight/mass:

1kg = 1000g



Capacity:

1l = 1000ml



Let's begin by looking at this example.

First, I can see that there are two measurements – one is in m, the other is in cm. I will need to convert them into the same unit.

I will change 80cm into m because the question asks **how many metres**.

To change 80cm into m I will divide 80 by 100 because there are 100cm in 1m. I can use a place value grid to help me.

Now I can add them together – I know I need to do this because it says how many **altogether**.

$1.2\text{m} + 0.8\text{m} = 2\text{m}$

They have 2m of material altogether.

Children are asked to cut a length of ribbon. Oliver's measures **1.2m**. Steven's measures **80cm**.

How many metres of material do they have altogether?

T	0	1/10	1/100
8	0	8	

A plank of wood is 30cm in width. The whole fence is 6m long.



How many planks are there in the fence?

Let's look at another. This time, I will use a bar model to help me.

6m = 600cm														
30cm														

How many lots of 30cm will go into 600cm.

$600 \div 30 =$

I know that  $6 \div 3 = 2$ , so  $60 \div 30 = 2$ ,

so  $600 \div 30 = 20$

20 planks are in the fence.

## Fluency/Problem solving

Tom has three bags of sugar, each weighing 1.3kg. He is going to need 2.4kg to bake his cake orders this week.

How many grams of sugar will he have left over?

There are 12.75L of lemonade. Ten tables will each have one jug which holds 750ml. How much spare lemonade will there be in millilitres?

**The table shows the weight of some animals at the wildlife park.**

Tiger	Meerkat	Lion	Asian Otter	Indri Lemur
196kg	750g	_____kg	$\frac{1}{4}$ kg	9.5kg

**Their total weight is 566.5kg. What is the weight of the lion?**

There is a gap in the fence that is 275cm wide. This plank of wood is  $\frac{1}{4}$  m wide.



**How many planks of wood will fill the gap?**









## Fluency/problem solving answers

1,500g
5,250ml
360kg
11 planks

## Further Challenge:

Professor Fronkin is trying to organise his chemical cabinet.

He has different chemicals in a variety of bottles and he wants to make a new potion.

A	B	C	D	E	F	G	H
							
1,250ml	1,050ml	0.26L	$\frac{1}{4}$ of 2.32L	0.9L	1.1L	200ml	875ml



Find the different combination of potions Professor Fronkin can use to fill his new bottle as close to maximum capacity as possible. You must use at least 3 chemicals.