Year 5 Maths – Measurement - Length – Home / School Learning, Week D

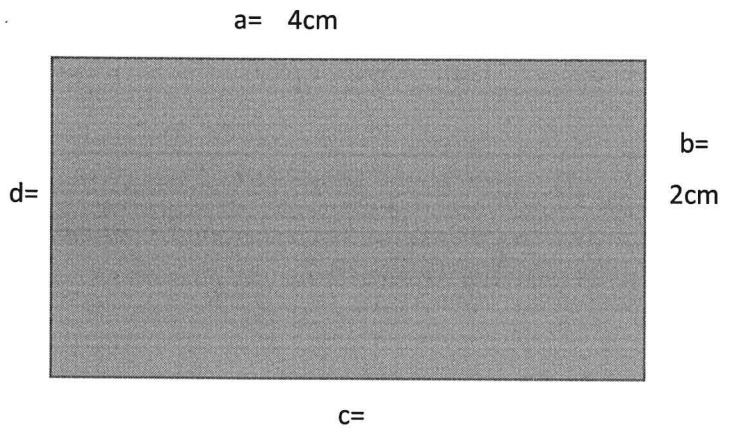
Converting Units of Length

Learning Intention:
Students will:

- ***Be able to measure the perimeter of a shape just from given measurements***

When measuring perimeter remember it is the "distance around the outside of a 2D shape'.

So if I'm measuring the perimeter of a rectangle with sides 2cm and 4cm I would add the following:



Perimeter = (a) 4cm + (b) 2cm + (c) 4cm + (d) 2cm = 12cms

When measuring and converting length it is important to remember:

1cm = 10 mm

1m = 100cm

1km = 1000m

Tasks: - Complete the perimeter word problems

- Complete the Metric Units Challenge Cards that relate to Length

Year 5 Maths – Number – Fractions and Decimals
Home / School Learning, Week D

Week D – Fractions and Decimals

Learning Intention:
Students will:

- ***order fractions with like denominators***
- ***order fractions with different denominators***

When ordering fractions it is important that when comparing all fractions, they ***MUST*** have the same denominators. When fractions do not have the same denominators, first we must change the fractions to ***EQUIVALENT FRACTIONS*** in order to compare. To do this we find a number that the denominators have in common as a factor of:

$$\frac{2}{3} = \frac{4}{6} = \frac{8}{12} = \frac{16}{24}$$

These fractions are all the same or ***EQUIVILENT.*** All I have done is double each number. So on the first question on pg 1 it asks to order the following fractions:

$$\frac{3}{4} \quad \frac{2}{3} \quad \frac{11}{12} \quad \frac{5}{6} \quad \frac{7}{12}$$

The common number that all of the denominators is a factor of is 12. So when I write these as equivalent fractions, remember the rule:

What I do to the bottom I must do to the top!!

Which means for fraction 3/4 I must times each by 3 as 4x3 = 12. For fraction 2/3 I times each by 4 as 3x4= 12. 11/12 stays the same as it already has 12 as a denominator, as does 7/12. For 5/6 I times each by 2 as 6x2 = 12

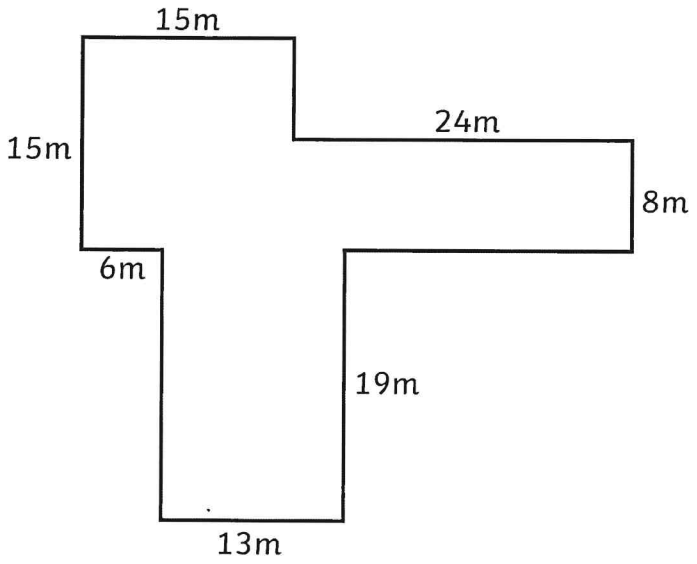
$$\frac{3_{(x3)}}{4_{(x3)}} = \frac{9}{12} \qquad \frac{2_{(x4)}}{3_{(x4)}} = \frac{8}{12} \qquad \frac{5_{(x2)}}{6_{(x2)}} = \frac{10}{12}$$

Now I order these from smallest to largest:

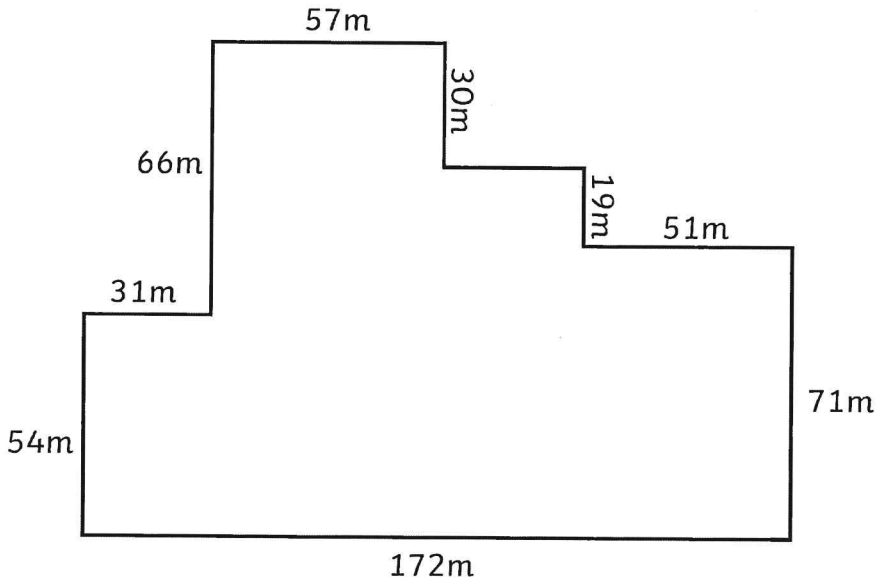
$$\frac{7}{12} \quad \frac{2}{3} \quad \frac{3}{4} \quad \frac{5}{6} \quad \frac{11}{12}$$

Perimeter Word Problems

1. The school caretaker needs to price up some new guttering for the whole way round the school building. Work out the total perimeter of the school building from this plan so that she will know how much guttering to buy.

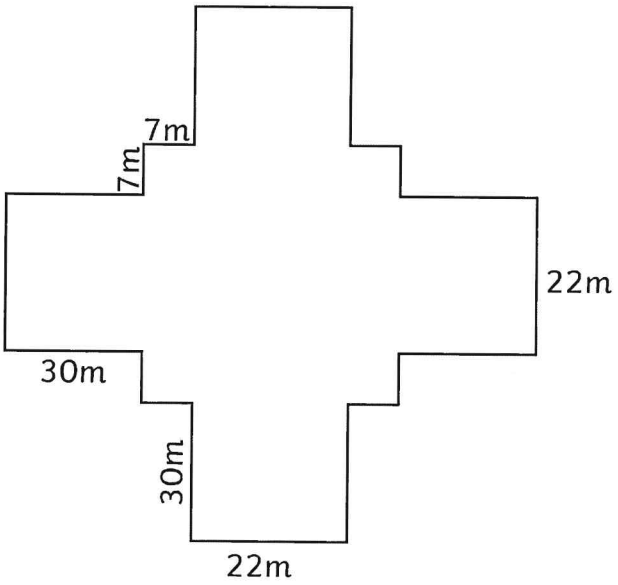


2. Andy is planning a campsite for a music festival. He has a few fields for the campsite, but needs to put fencing around the perimeter of the whole site. Work out how many metres of fencing he will need.

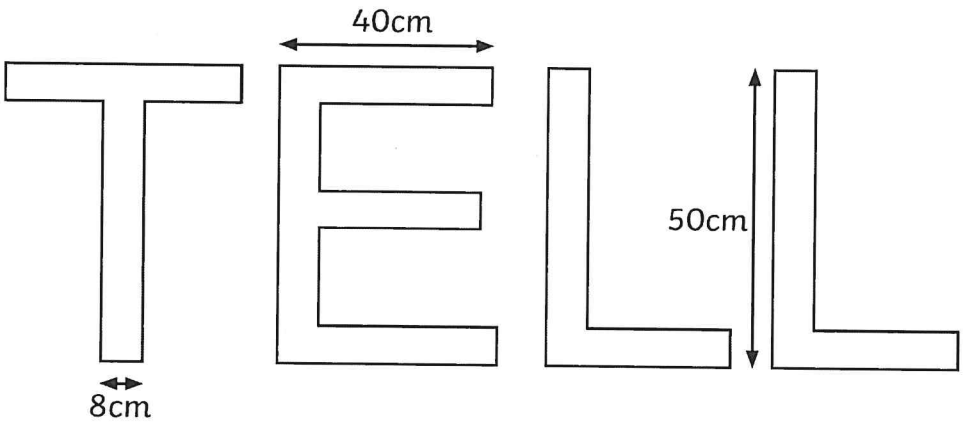


Perimeter Word Problems

3. Emma wants to run 2km. She is going to run five times around the perimeter of her local park. What is the total distance she will run and will she have reached her 2km target? (The park has a vertical and horizontal line of symmetry.)

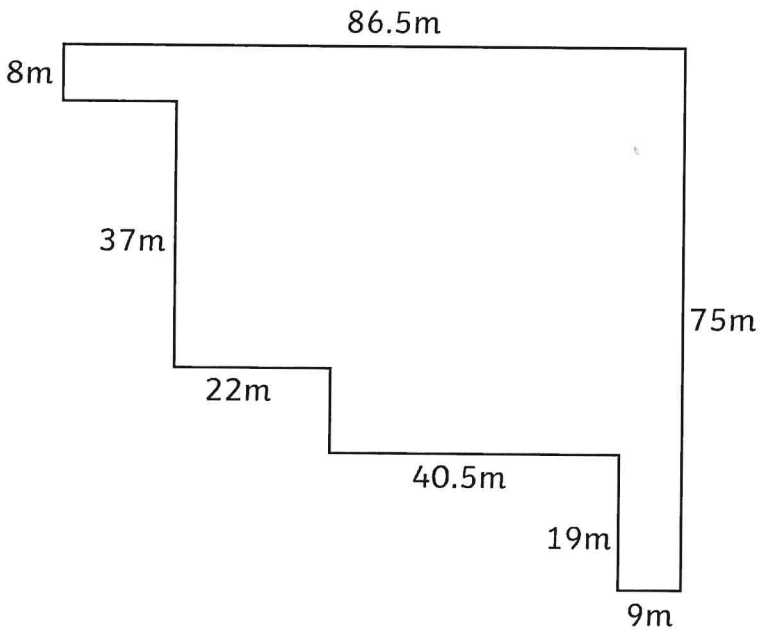


4. Miss Taylor is creating a bullying display with the word TELL in the middle. Work out the perimeter of the whole word so that she can work out how much luminous tape to use round the edge of the letters to make them stand out. (All the letters are the same height and width.)

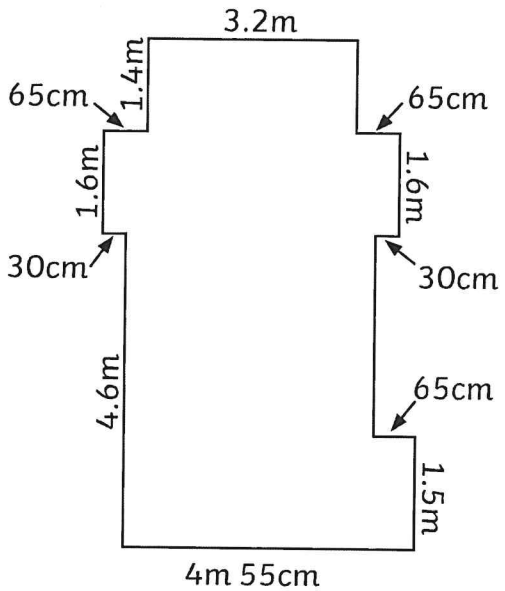


Perimeter Word Problems

5. Joe is a fork lift truck driver. Every day, he has to go three times around the perimeter of the warehouse where he works. How far does he travel in one day?

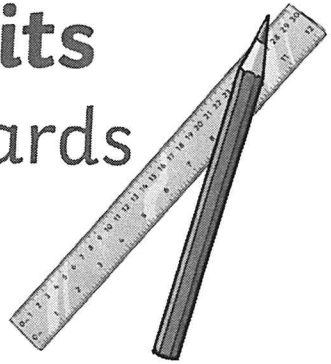


6. A Year 5 teacher wants to decorate their classroom for Diwali by putting up strings of fairy lights around the classroom. Work out the perimeter of the classroom and how many strings of 6m fairy lights she will need.

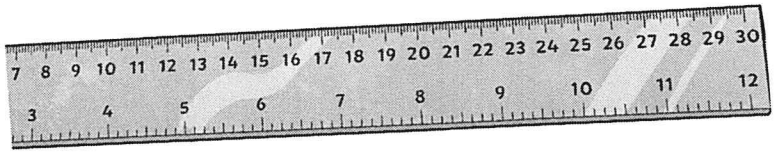


Reading and Comparing Metric Units

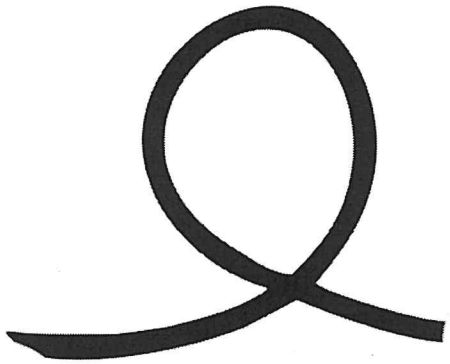
Challenge Cards



Imagine that your ruler snapped and the first measurement you can see is 7cm. Can you still measure accurately with a broken ruler? Try measuring the length of a few objects on your table, starting at 7cm and write down the strategy you used. Up for an extra challenge? This time your ruler snapped at 3.8cm!

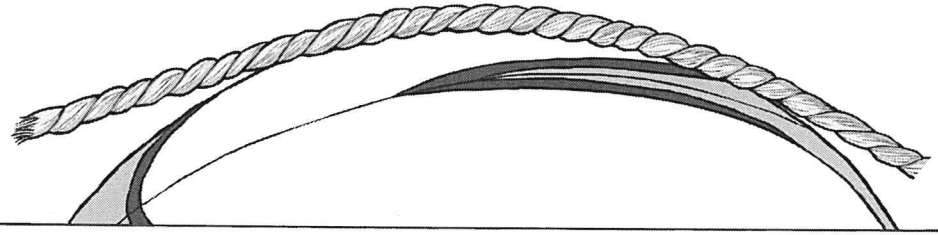


How can you measure the length of an object that has curves? Try measuring this squiggle and record how you did it. Have a go making your own squiggle for a classmate to measure.



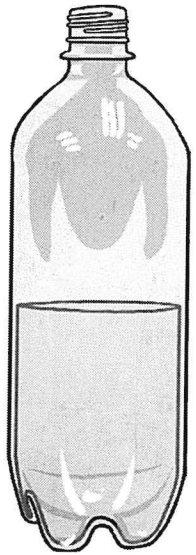
Measure around a curved object in your classroom using a piece of string, scrap paper or something else you can find that will bend with the object. When you have the measurement, straighten out your string and place it next to a ruler to record the measurement.

Now, try measuring the same object with your ruler. What do you notice?



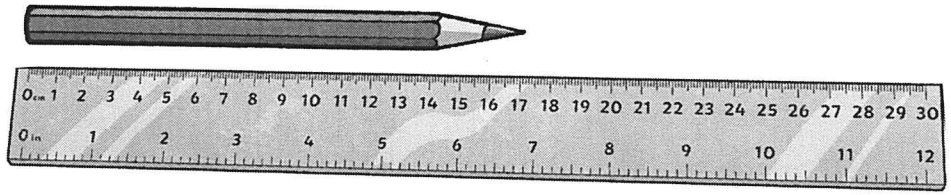
Reading and Comparing Metric Units

Have a look at your drink bottle and see if you can find how many millilitres it holds (you can compare to your classmates' drink bottles to help). It is recommended that children aged 9 to 12 years old drink 1.5 litres (L) or 1500 millilitres (ml) of water every day. How many times would you need to drink and refill your drink bottle to reach the 1500ml target? For an extra challenge, try working out how many litres of water you would need to drink every week or even month.



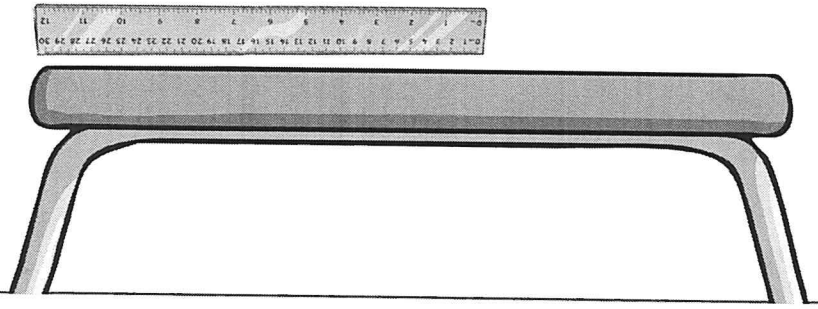
Reading and Comparing Metric Units

How long is your pencil in metres? Remember that there are 100 centimetres in 1 metre. Try measuring your pencil with a metre ruler (ask permission first). Now try measuring your pencil in centitmetres using a 30cm ruler. What unit of measurement did you find easier? Which was more accurate and why?



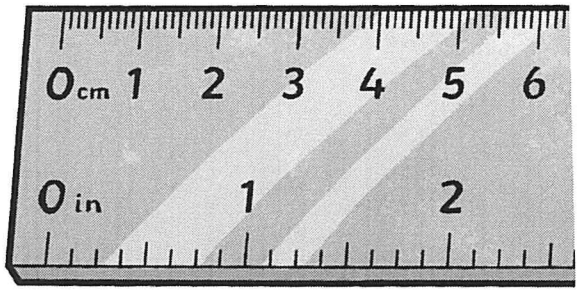
Reading and Comparing Metric Units

How long is your table in centimetres? Remember that there are 100 centimetres in 1 metre. Try measuring your table with a 30cm ruler. Now try measuring your table in metres with a metre ruler (ask permission first). What unit of measurement did you find easier? Which was more accurate and why?



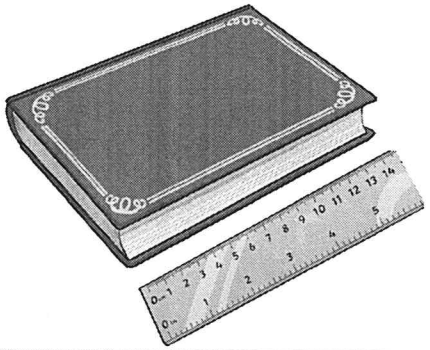
Reading and Comparing Metric Units

Why is it important to begin measuring length at 0, rather than the edge of a ruler? Find a ruler where the 0 is not at the very edge and record the length of 5 objects around your classroom using the very edge of the ruler. Now measure the same 5 objects but lining the object up with the 0 on your ruler. What do you notice?



Reading and Comparing Metric Units

This book is 14cm and 7mm long. You can see where the ruler has larger marks for cm and smaller marks for mm. Try measuring 5 objects in your classroom using cm and mm. Up for a challenge? Convert your measurements into cm, mm or even metres. For example, this book would be 14.7cm, 147mm or 0.147m.

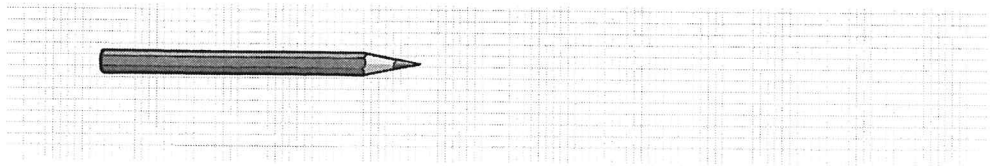


Reading and Comparing Metric Units

Create a set of instructions for a classmate to draw an object on grid paper. For example:

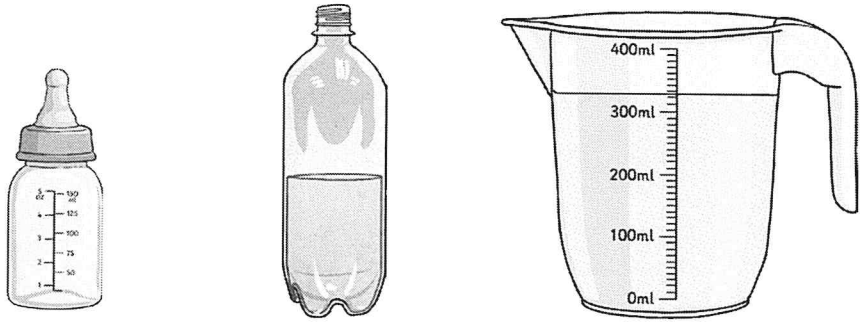
1. Start your drawing 6cm from the left and 10cm from the top of your page.
2. Draw a line going down for 8cm
3. Next, draw a line going to the right for 12cm

If you would like to create a challenge, try including some instructions with cm, mm or even metres.



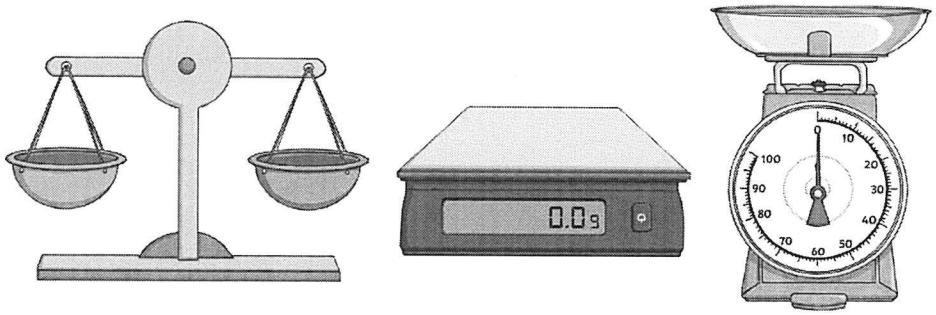
Reading and Comparing Metric Units

Find some containers around the room that have liquid in them. Some ideas could be: Drink bottles, tubs of paint, glue containers, sunscreen or spray bottles. Can you make a collection of at least 3 containers that hold 1 litre of liquid? Remember that there are 1000 milliltres in 1 litre. Up for a challenge? Try 2, 5 or even 10 litres?



Reading and Comparing Metric Units

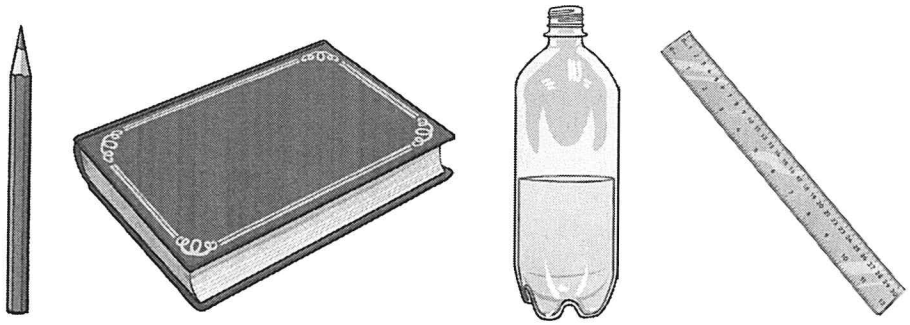
Find some objects you would like to measure in grams. If you don't have a scale to help you, try to find objects such as glue sticks or food packets that will tell you how many grams they hold. Can you make a collection of at least 3 objects that weigh 1 kilogram? Remember that there are 1000 grams in 1 kilogram



Reading and Comparing Metric Units

Find some objects that weigh as close as possible to these measurements:

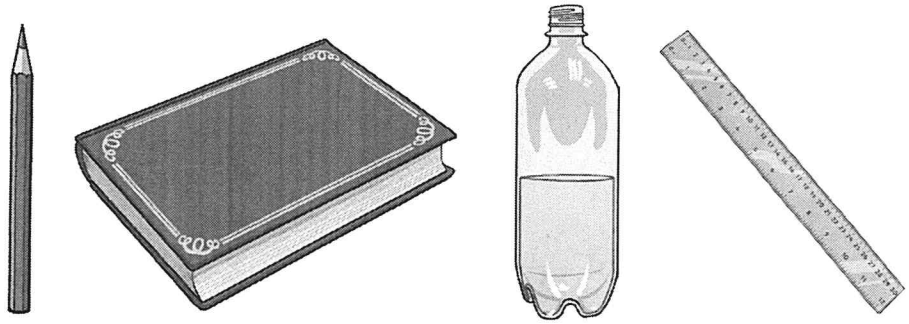
1 gram, 10 grams, 100 grams and 1000 grams



Reading and Comparing Metric Units

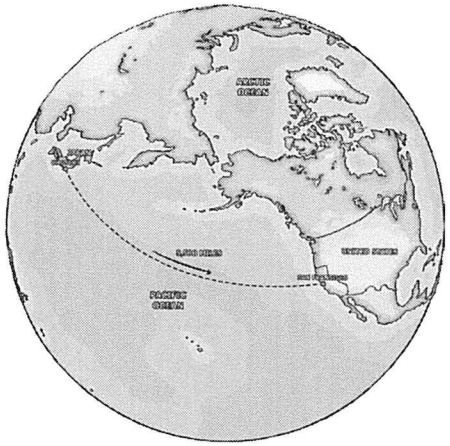
Find some objects that are as close as possible in length to these measurements:

1 millimetre, 10 millimetres, 100 millimetres and 1000 millimetres



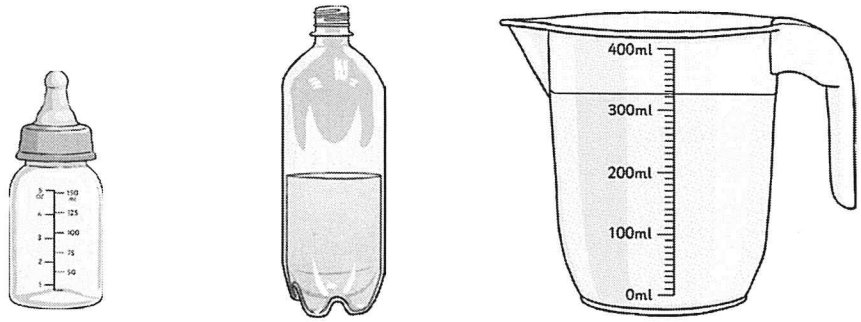
Reading and Comparing Metric Units

Using Google Maps, find the distance between places that you travel to a lot. Some ideas could be: between your house and your school, from your house to a friend or family member's house or from your house to the local shops or park. Remember to record your answers in either metres (m) or kilometres (km) and that 1000m is equal to 1km.



Reading and Comparing Metric Units

Find 5 containers around the room that have liquid in them, but are not full. Some ideas could be: Drink bottles, tubes of paint or spray bottles. Draw a picture of each object and estimate how much liquid has been used and how much is left in millilitres. Give a reason for each estimate.



Ordering Fractions

Aim: to order fractions

Order these fractions from smallest to largest. You may wish to write the fractions with a common denominator.

1.

$\frac{3}{4}$	$\frac{2}{3}$	$\frac{11}{12}$	$\frac{5}{6}$	$\frac{7}{12}$
$\frac{\quad}{12}$	$\frac{\quad}{12}$	$\frac{\quad}{12}$	$\frac{\quad}{12}$	$\frac{\quad}{12}$
___	___	___	___	___

Smallest Largest

2.

$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{5}{12}$	$\frac{1}{12}$
___	___	___	___	___
___	___	___	___	___

Smallest Largest

3.

$\frac{2}{5}$	$\frac{3}{10}$	$\frac{1}{2}$	$\frac{3}{5}$	$\frac{7}{20}$
___	___	___	___	___
___	___	___	___	___

Smallest Largest

Ordering Fractions

LO: Order fractions where the denominators are multiples.

Order these fractions from smallest to largest. You may wish to write the fractions with a common denominator.

1.

$\frac{2}{3}$	$\frac{7}{12}$	$\frac{1}{6}$	$\frac{1}{3}$	$\frac{5}{6}$
$\frac{\quad}{12}$	$\frac{\quad}{12}$	$\frac{\quad}{12}$	$\frac{\quad}{12}$	$\frac{\quad}{12}$
___	___	___	___	___

Smallest — Largest

2.

$\frac{1}{2}$	$\frac{5}{8}$	$\frac{1}{4}$	$\frac{3}{4}$	$\frac{1}{8}$
$\frac{\quad}{8}$	$\frac{\quad}{8}$	$\frac{\quad}{8}$	$\frac{\quad}{8}$	$\frac{\quad}{8}$
___	___	___	___	___

Smallest — Largest

3.

$\frac{3}{5}$	$\frac{7}{10}$	$\frac{1}{5}$	$\frac{3}{10}$	$\frac{2}{5}$
$\frac{\quad}{10}$	$\frac{\quad}{10}$	$\frac{\quad}{10}$	$\frac{\quad}{10}$	$\frac{\quad}{10}$
___	___	___	___	___

Smallest — Largest

Ordering Fractions

LO: Order fractions where the denominators are multiples.

Order these fractions from smallest to largest. You may wish to write the fractions with a common denominator.

1.

$\frac{3}{10}$ $\frac{44}{100}$ $\frac{9}{10}$ $\frac{71}{100}$ $\frac{17}{100}$

$\frac{\quad}{100}$ $\frac{\quad}{100}$ $\frac{\quad}{100}$ $\frac{\quad}{100}$ $\frac{\quad}{100}$

___	___	___	___	___

Smallest Largest

2.

$\frac{64}{100}$ $\frac{6}{10}$ $\frac{73}{100}$ $\frac{7}{10}$ $\frac{74}{100}$

___ ___ ___ ___ ___

___	___	___	___	___

Smallest Largest

3.

$\frac{2}{100}$ $\frac{21}{100}$ $\frac{2}{10}$ $\frac{1}{10}$ $\frac{12}{100}$

___ ___ ___ ___ ___

___	___	___	___	___

Smallest Largest