

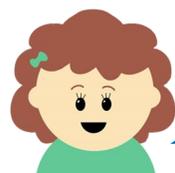
YR4 LENGTH AND PERIMETER KNOWLEDGE ORGANISER

Key Concepts

- Convert between different units of measure
- Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres

Key Vocabulary

- convert
- distance
- kilometre
- length
- measure
- metre
- perimeter
- rectangle
- rectilinear
- width



Perimeter is the distance around the edge of a shape.

Kilometres

1 kilometre = 1,000 metres

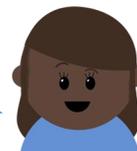
1 metre = 100 centimetres

1 centimetre = 10 millimetres



I know that there are 1,000 metres in a kilometre.

That means there must be 2,000 metres in 2 kilometres.



Half of 1,000 metres is 500 metres. So I know that 1/2 kilometre is 500 metres.



I've noticed a pattern when we convert m to km!



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Converting Kilometres

There are 1,000 metres in 1 kilometre. To convert metres into kilometres, simply divide by 1,000.

4,000m = km?

$4,000 \div 1,000 = 4$ so 4,000m = 4km

To convert kilometres into metres, simply multiply by 1,000.

7km = m?

$7 \times 1,000 = 7,000$ so 7km = 7,000m

Remember, to **multiply and divide by 1,000**, we can use our place value columns:

TH	H	T	O
4	0	0	0

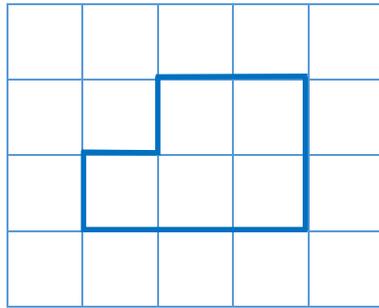
To divide by 1,000, each digit moves 3 columns to the right. In the number above, the 4 would move from the thousands column to the ones.

To multiply by 1,000, each digit moves 3 columns to the left then we put 0 as a place holder.

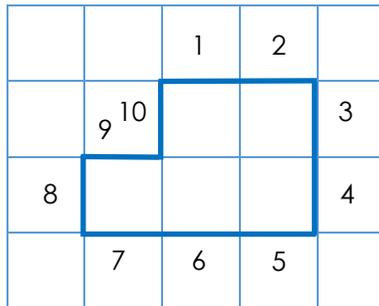
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Perimeter on a Grid

This shape is drawn on a cm² grid. To find the perimeter, we can use the squares to help us count the length of the sides:



This shows that the shape has a perimeter of 10cm.



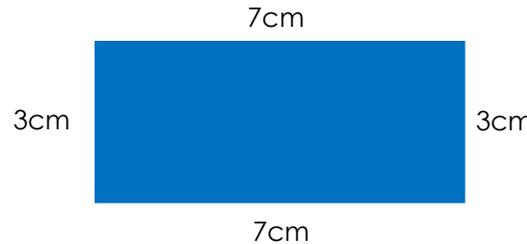
It can help to mark numbers on the shape as you count so you don't miss a side or count one twice!

Perimeter of a Rectangle

To calculate the perimeter of a rectangle, you need to add together the lengths of all the sides.



Because we know that **opposite sides are equal** in a rectangle, we can work out the missing side lengths.



$$7\text{cm} + 7\text{cm} + 3\text{cm} + 3\text{cm} = 20\text{cm}.$$

Therefore the perimeter of this rectangle is 20cm.

We can calculate this in different ways:

$$7\text{cm} + 3\text{cm} = 10\text{cm}. \text{ Then, } 10\text{cm} \times 2 = 20\text{cm}$$

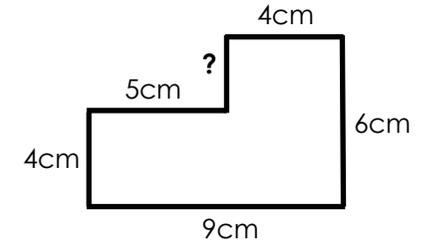
$$7\text{cm} \times 2 = 14\text{cm}, \quad 3\text{cm} \times 2 = 6\text{cm} \text{ and } 14\text{cm} + 6\text{cm} = 20\text{cm}$$



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Perimeter of Rectilinear Shapes

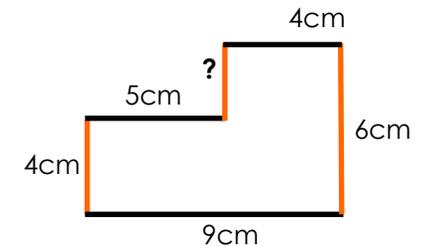
A rectilinear shape is made up of rectangles. If you know the measurements of all sides, then you just need to add them all up to find the perimeter.



Sometimes, there will be a missing length. You need to use the other lengths to work out the missing length.



The missing measurement is on a **vertical** line. This means I need to use the other vertical lines to find the missing length.



The 4cm length + ? length will total the same as the 6cm side opposite. Therefore, the ? must = 2cm. Now you know the missing length, you can add up all the measurements to find the perimeter: $4 + 6 + 9 + 4 + 5 + 2 = 30\text{cm}$