

Calculate the perimeter of rectilinear shapes

Notes and guidance

Building on the previous step, children move on to calculating the perimeter of rectilinear shapes where they first need to find the missing length(s). This could involve addition or subtraction depending on the information given in the question.

Children identify equivalent sides and, after calculating any unknown lengths, annotate the shape, ensuring that every side is labelled. This helps to prevent errors or omissions when calculating the perimeter.

Children also work backwards from a given perimeter to work out an unknown side length.

Things to look out for

- Children may need support to identify equivalent sides.
- Children may use the wrong operation to find the missing length. For example, they may add together two sides rather than subtract them.
- When finding the perimeter of a complex rectilinear shape, children may miss a side when adding, or add the same side twice.

Key questions

- What lengths do you know?
What lengths do you need to find out?
- What is the total horizontal/vertical length of the shape?
Which sides add together to give the same total?
- Where is the missing length on the shape?
- How many missing lengths are there on the shape?
- Do you need to add or subtract to find the missing length?
How do you know?
- Are you finding a part or a whole?

Possible sentence stems

- The side measuring _____ and the side measuring _____ are equal to the side measuring _____
- To work out the unknown length, I need to _____ because ...
- There are _____ sides, so I need to add together _____ lengths to find the perimeter.

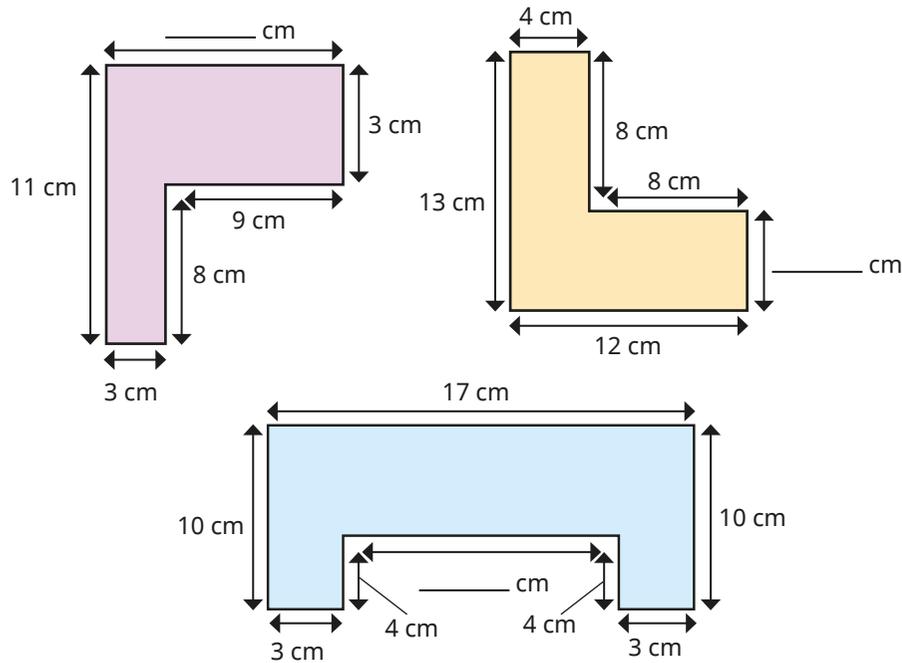
National Curriculum links

- Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres

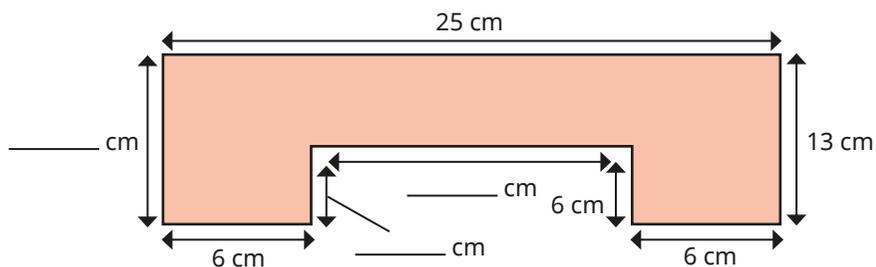
Calculate the perimeter of rectilinear shapes

Key learning

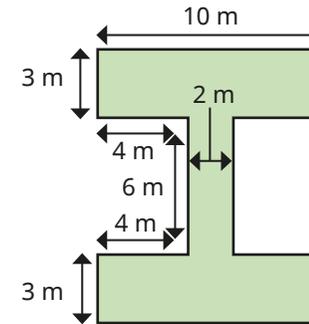
- Work out the perimeters of the rectilinear shapes.



- Find the unknown lengths and the perimeter of the rectilinear shape.



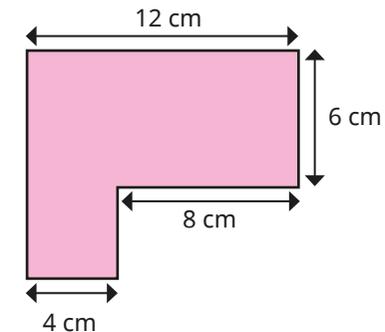
- Work out the perimeter of this shape.



How did you work out the perimeter?

Compare methods with a partner.

- The perimeter of this rectilinear shape is 44 cm.

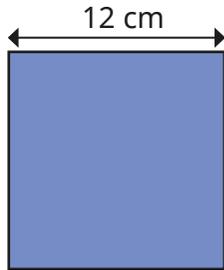


Work out the unknown lengths.

Calculate the perimeter of rectilinear shapes

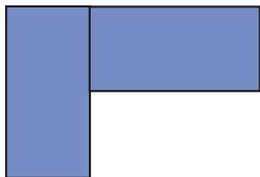
Reasoning and problem solving

The length of one side of a square is 12 cm.



The square is cut in half to make two rectangles.

The two halves are put together to make this shape.

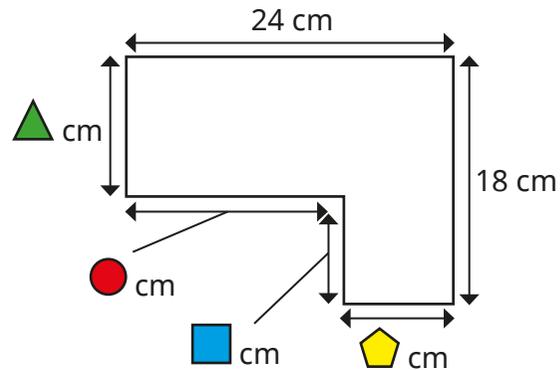


What is the perimeter of the new shape?

How did you work it out?

60 cm

▲, △, ● and ■ all represent whole numbers.



What could the value of ▲ and ■ be?

What could the value of ● and ⬠ be?

Using these values, what is the perimeter of the rectilinear shape?

Experiment for other values.

What do you notice?

multiple possible answers, e.g.

▲ = 13 and ■ = 5

● = 18 and ⬠ = 6

The perimeter is 84 cm.