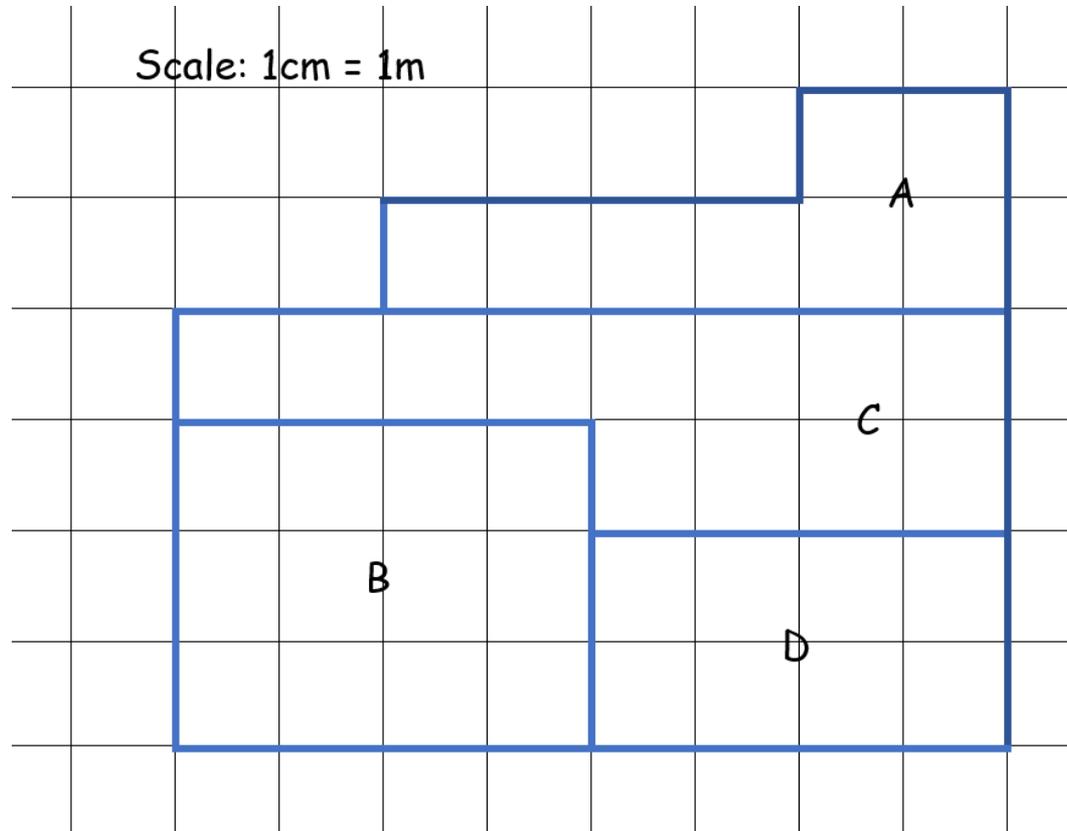
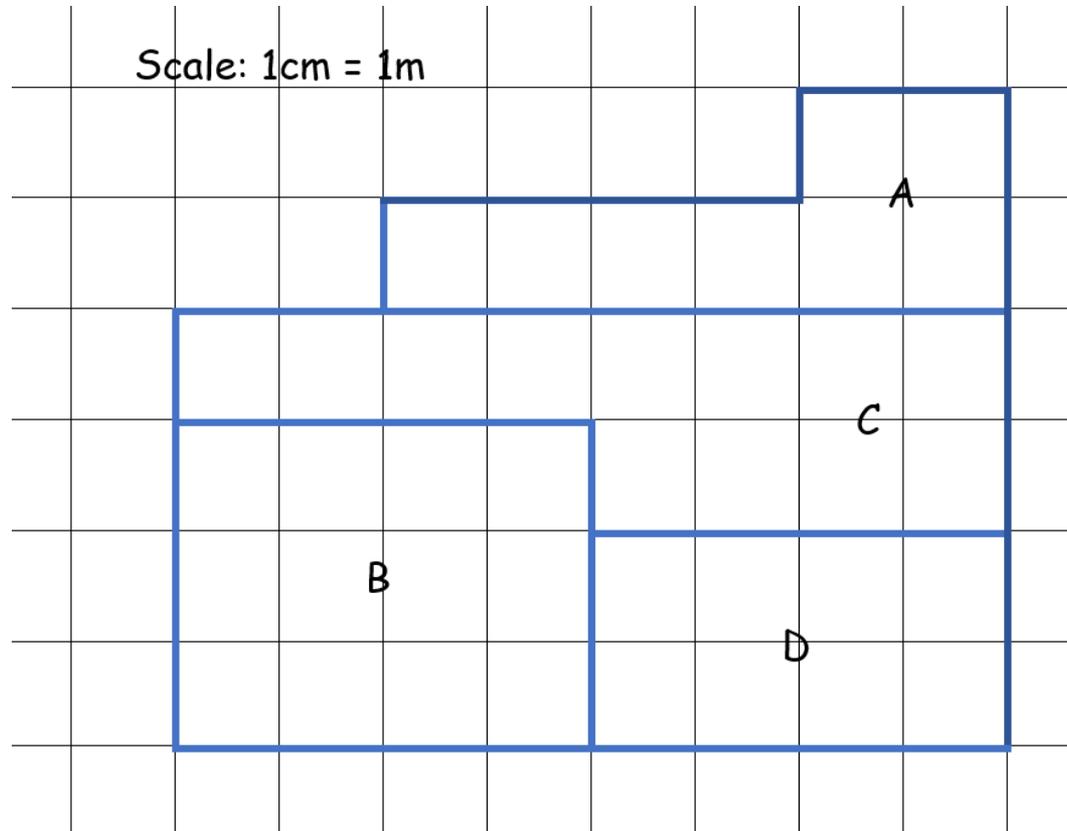


RECALL



1. Can you find the area and perimeter of each shape?
2. How did you do it?

RECALL ANSWERS

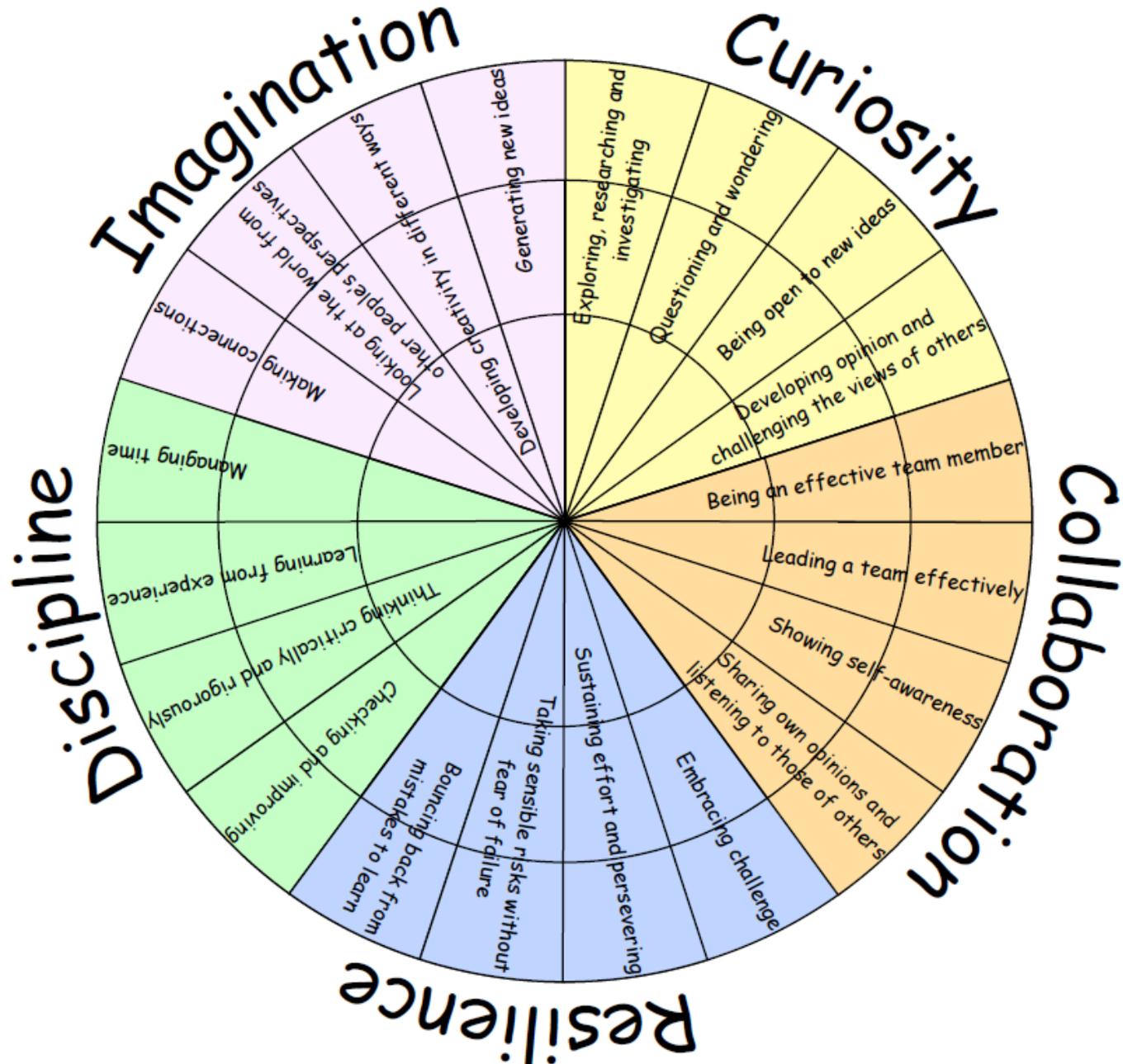


Shape	Area	Perimeter
A	8	16
B	12	14
C	12	20
D	8	12

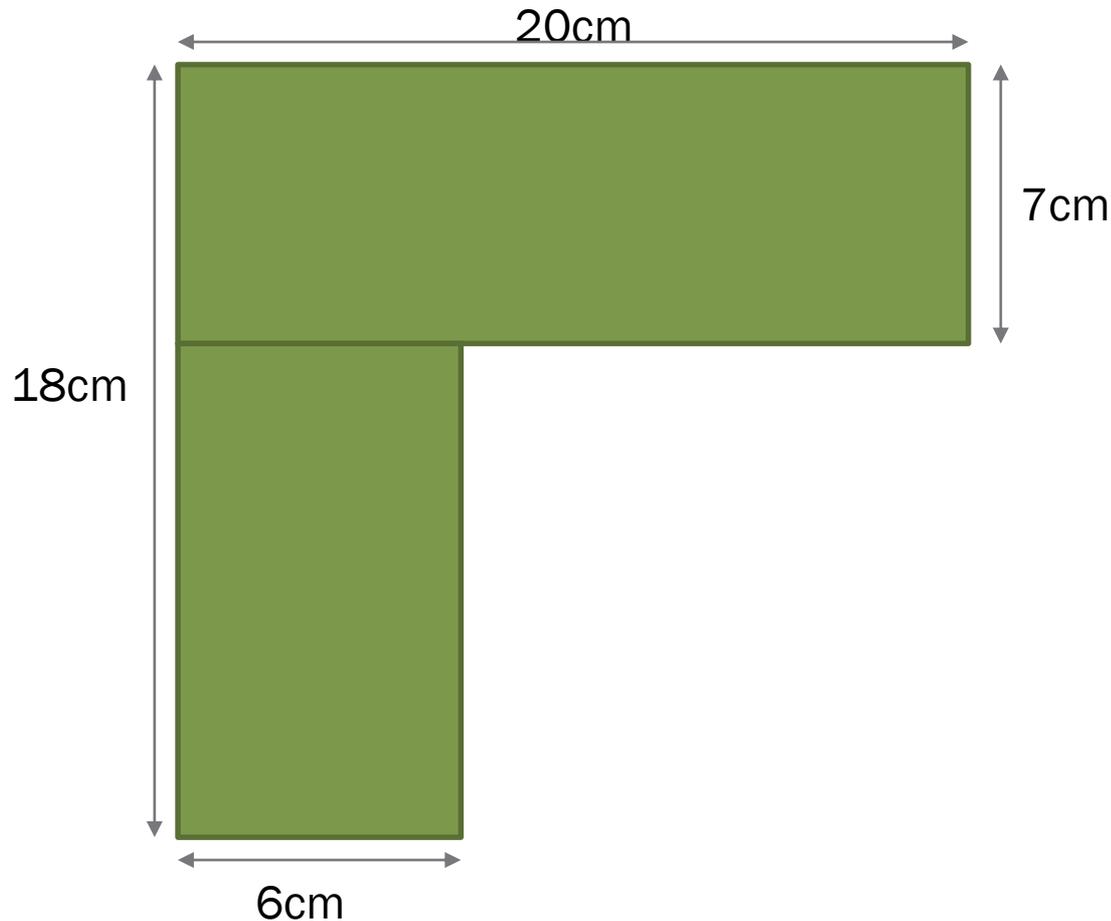
I CAN INVESTIGATE
RELATIONSHIPS BETWEEN
AREA AND PERIMETER

PERIMETER AND AREA (29I)

LEARNING HABITS?



GUIDED PRACTICE



1. How can you find the missing measurements?
2. Why do you need them?
3. What is the area of this rectilinear shape?
4. What is the perimeter?

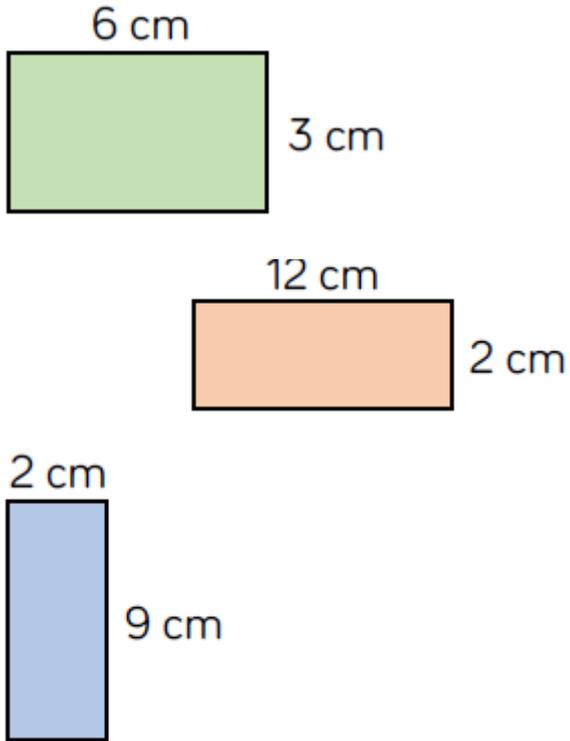


I challenge YOU to do it!





Look at the shapes below:

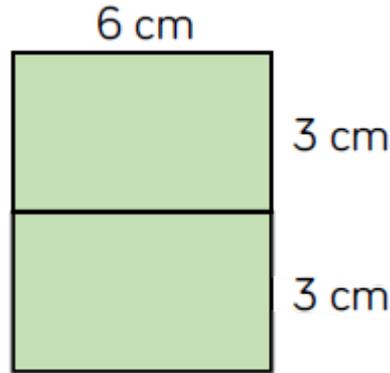


Do any of the shapes have the same area as each other?

Do any of the shapes have the same perimeter?



Look at the shapes below:



What is the area now?

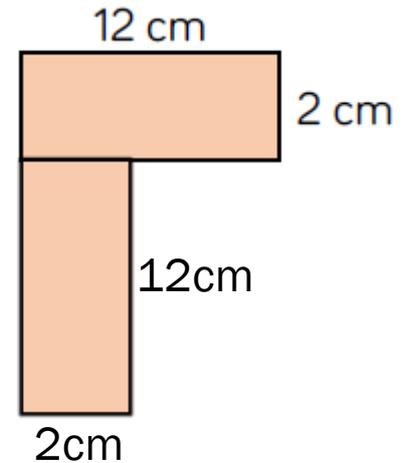
What is the perimeter now?

What do you notice?

The area has
 The perimeter has



This is an example of a rectilinear shape:



What is the area now?

What about the perimeter?

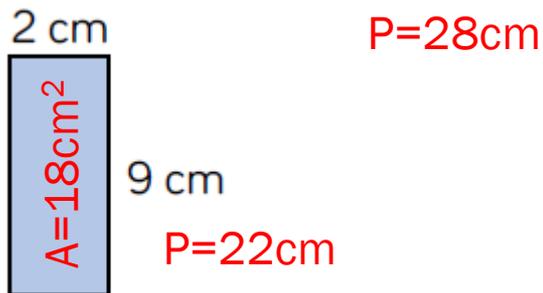
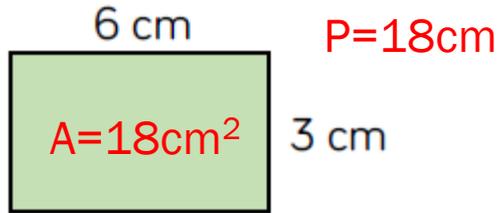
What do you notice?

The area has
 The perimeter has

IP ANSWERS



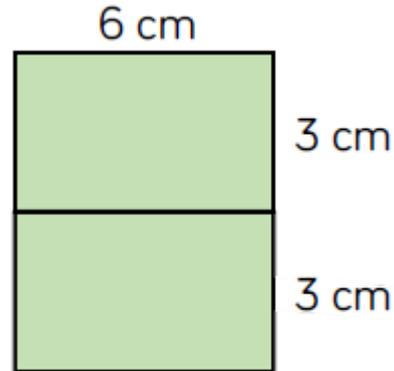
Look at the shapes below:



Do any of the shapes have the same area as each other? **Yes (blue rectangle and green rectangle)**

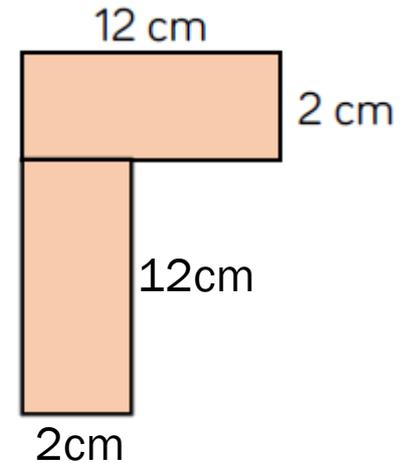
Do any of the shapes have the same perimeter? **No**

Look at the shapes below:



What is the area now?
 $18\text{cm}^2 + 18\text{cm}^2 = 36\text{cm}^2$
What is the perimeter now? **24cm**
What do you notice?
The perimeter hasn't doubled.
The area has **doubled**.
The perimeter has **not doubled**.

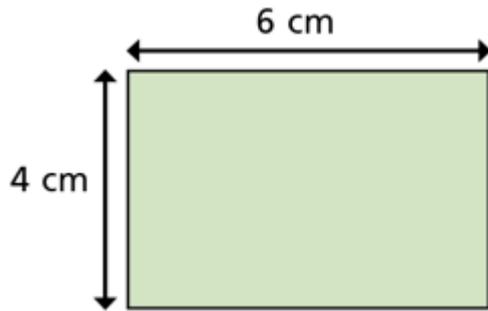
This is an example of a rectilinear shape:



What is the area now?
48cm²
What about the perimeter? **50cm**
What do you notice?
The perimeter hasn't doubled.
The area has **doubled**.
The perimeter has **not doubled**.

DIVE DEEPER 1

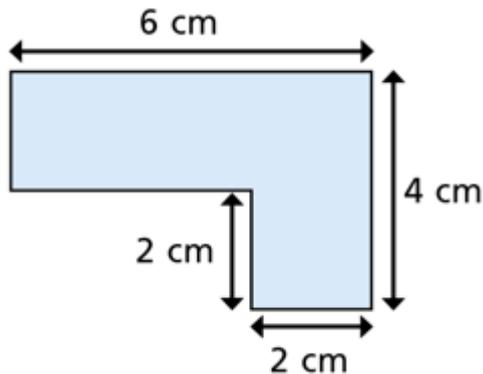
1) Work out the areas and perimeters of these shapes:



a) Perimeter = cm

b) Area = cm²

2) Think carefully about the area and perimeter of this shape:

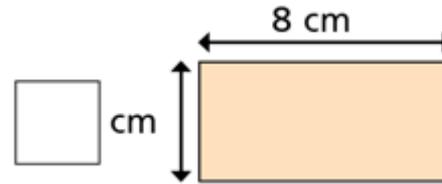


a) Perimeter = cm

b) Area = cm²

3) Work out the missing values:

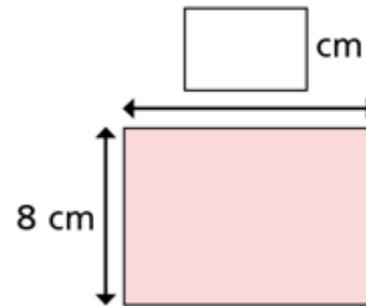
a)



Area = 32cm²

Perimeter = cm

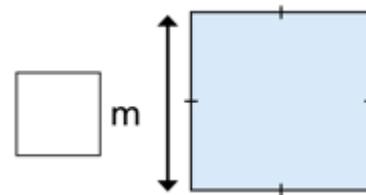
b)



Area = cm²

Perimeter = 40cm

c)

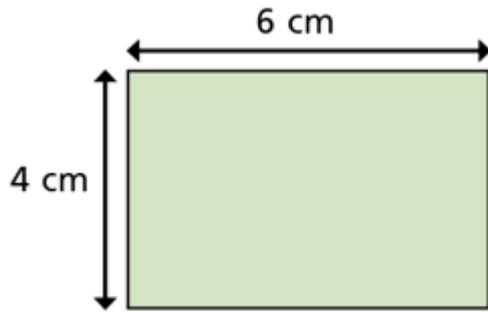


Area = m²

Perimeter = 36m

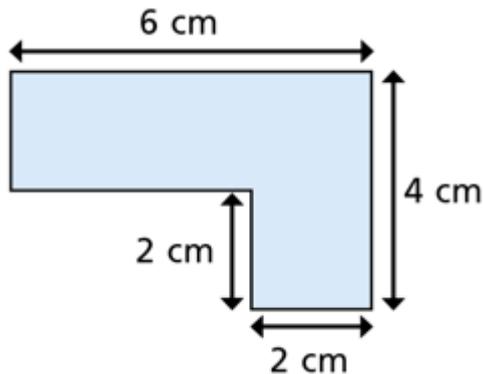
DIVE DEEPER 1 ANSWERS

1) Work out the areas and perimeters of these shapes:



- a) Perimeter = 20 cm
b) Area = 24 cm²

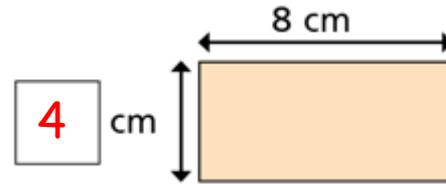
2) Think carefully about the area and perimeter of this shape:



- a) Perimeter = 20 cm
b) Area = 16 cm²

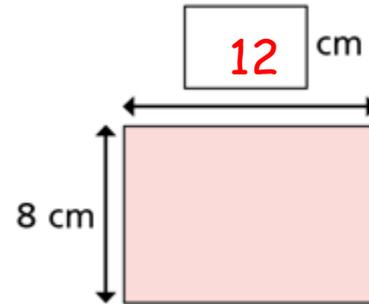
3) Work out the missing values:

a)



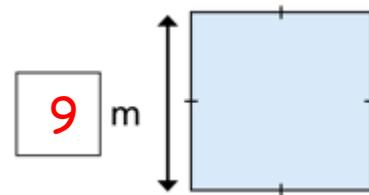
Area = 32cm²
Perimeter = 24 cm

b)



Area = 96 cm²
Perimeter = 40cm

c)

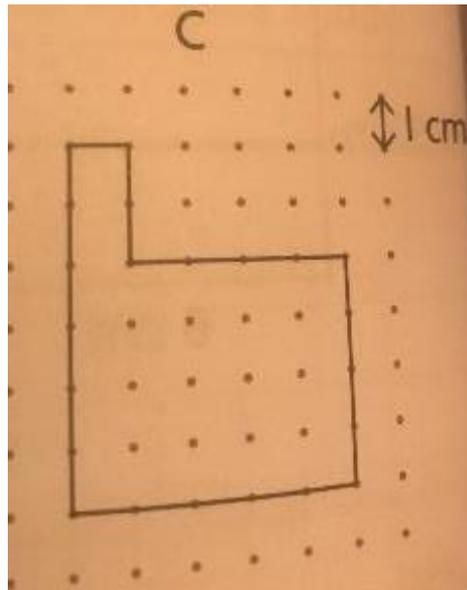
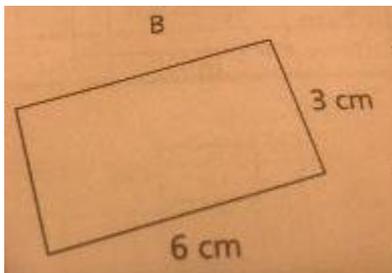
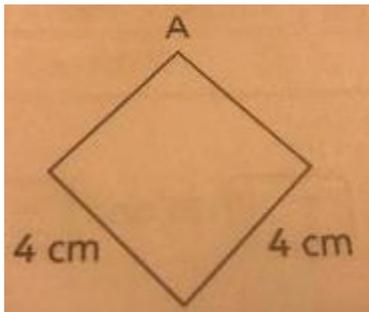


Area = 81 m²
Perimeter = 36m

DIVE DEEPER 2

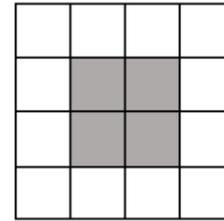
4a) Calculate the perimeter and the area of shapes A, B and C. Complete the table:

Shape	Perimeter (cm)	Area (cm ²)
A		
B		
C		



b) What do shapes A, B and C have in common?

5) Copy the shaded square into your book:



- Draw a different shape with the same area as the shaded square.
- Draw a different shape with the same perimeter as the shaded square.
- Draw a different shape with the same area but a greater perimeter.

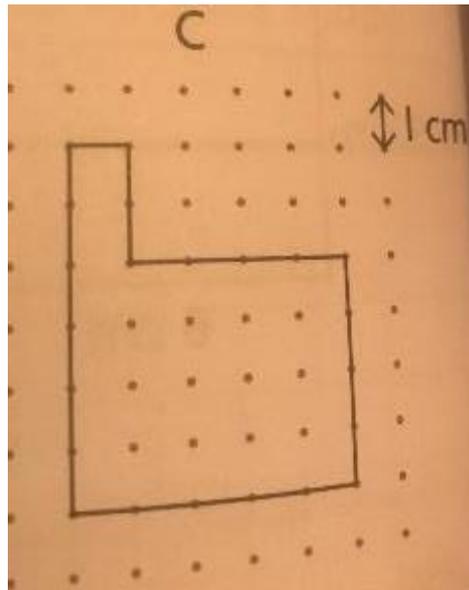
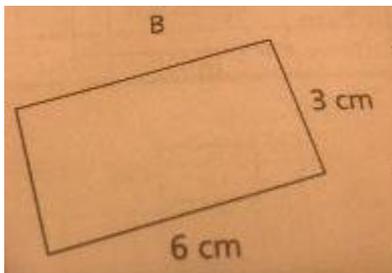
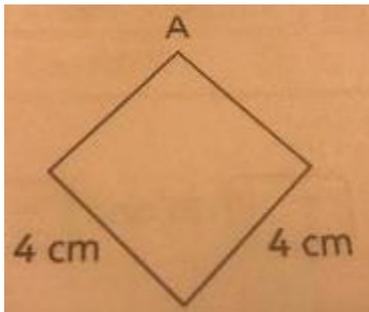
5) Andy says: 'If two shapes have the same area, then they must have the same perimeter.'

Do you agree?

DIVE DEEPER 2 ANSWERS

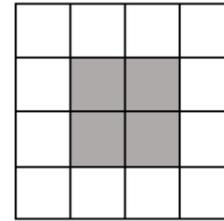
4a) Calculate the perimeter and the area of shapes A, B and C. Complete the table:

Shape	Perimeter (cm)	Area (cm ²)
A	16cm	16cm ²
B	18cm	18cm ²
C	22cm	22cm ²



b) What do shapes A, B and C have in common? **Their areas = perimeters**

5) Copy the shaded square into your book:



- Draw a different shape with the same area as the shaded square.
- Draw a different shape with the same perimeter as the shaded square.
- Draw a different shape with the same area but a greater perimeter.

Various possible answers

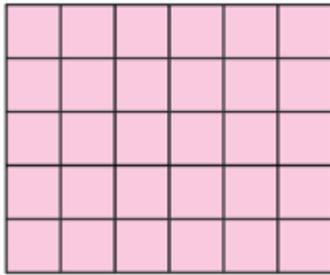
5) Andy says: 'If two shapes have the same area, then they must have the same perimeter.'

Do you agree? **No. They can have the same perimeters but they don't have to.**

DIVE DEEPER 3

7) Work out the perimeters and areas of the shapes:

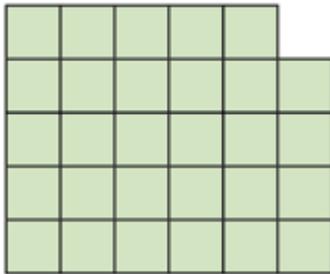
Shape A



Area = cm^2

Perimeter = cm

Shape B



Area = cm^2

Perimeter = cm

What do you notice?

8) Who do you agree with?



Tommy

If you start with a rectilinear shape, when you increase the area, the perimeter will increase.

Amir



It depends on the shape.

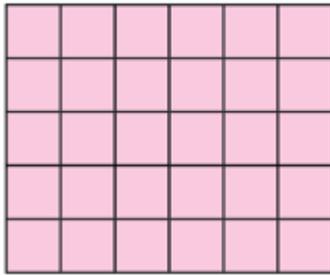
9) Mr Jones has 50m of fencing. He wants to make a recti-linear enclosure using all the fencing.

- Draw an example of a shape he could make. Give units on your diagram.
- What is the greatest possible area of the enclosure?
- What is the smallest possible area of the enclosure?

DIVE DEEPER 3 ANSWERS

7) Work out the perimeters and areas of the shapes:

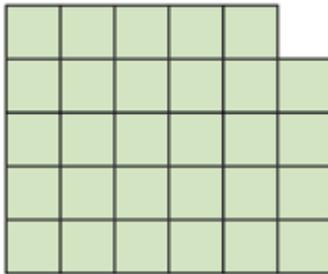
Shape A



Area = 30 cm²

Perimeter = 22 cm

Shape B



Area = 29 cm²

Perimeter = 22 cm

What do you notice? **Perimeter is still the same while the area has changed!**

8) Who do you agree with?

Amir. Increasing area doesn't mean the perimeter will increase.



Tommy

If you start with a rectilinear shape, when you increase the area, the perimeter will increase.

Amir

It depends on the shape.



9) Mr Jones has 50m of fencing. He wants to make a recti-linear enclosure using all the fencing.

- Draw an example of a shape he could make. Give units on your diagram.
- What is the greatest possible area of the enclosure? **156m² (I think).**
- What is the smallest possible area of the enclosure? **25m²**

SELF-ASSESSMENT

- Some will even see how to find the largest area for a given perimeter or vice versa
 - Some will be able to work systematically to find all possible perimeters for a given area or vice versa
 - Most will understand shapes can have the same area but different perimeters
 - All will explain the difference between area and perimeter
- 