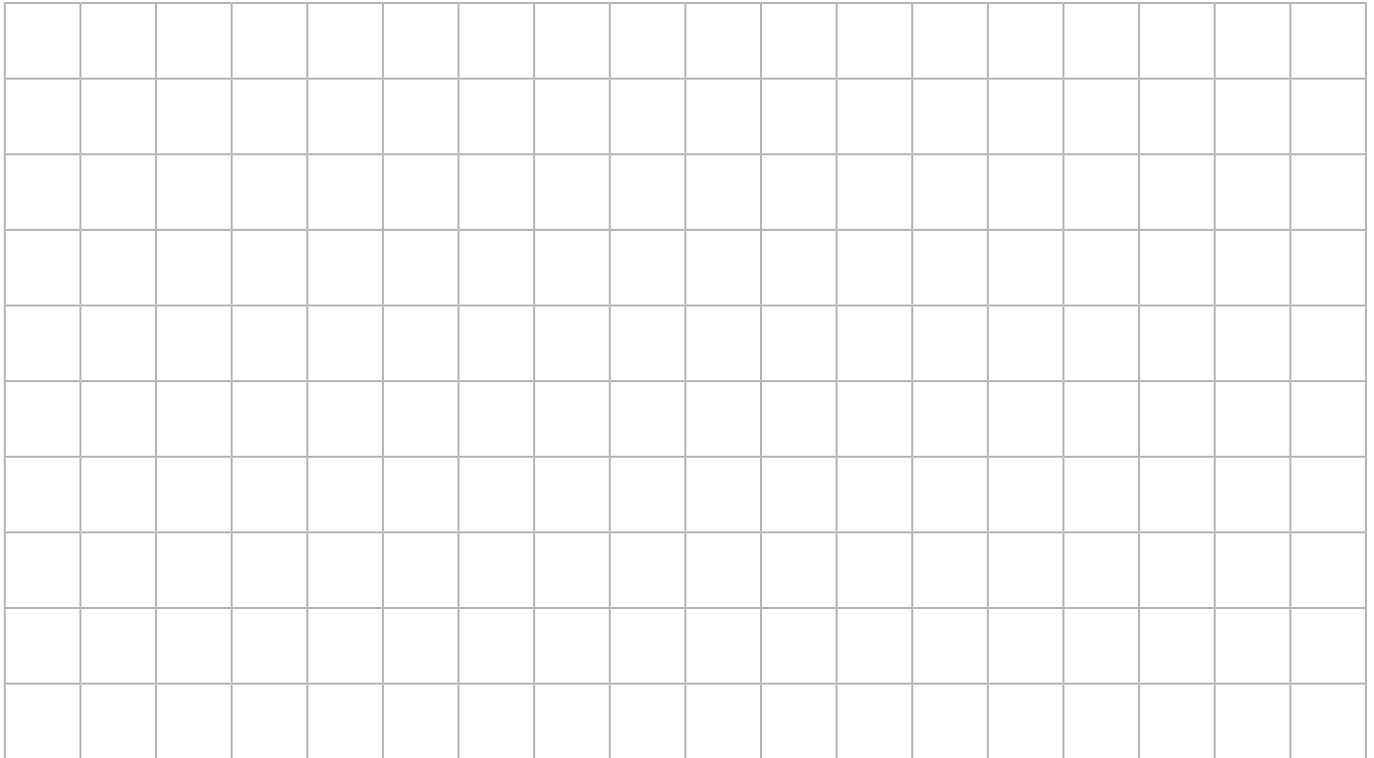


Area and Perimeter Investigation

On the square grid below, draw 3 different rectangles with an area of 12cm^2 and label each A, B and C.



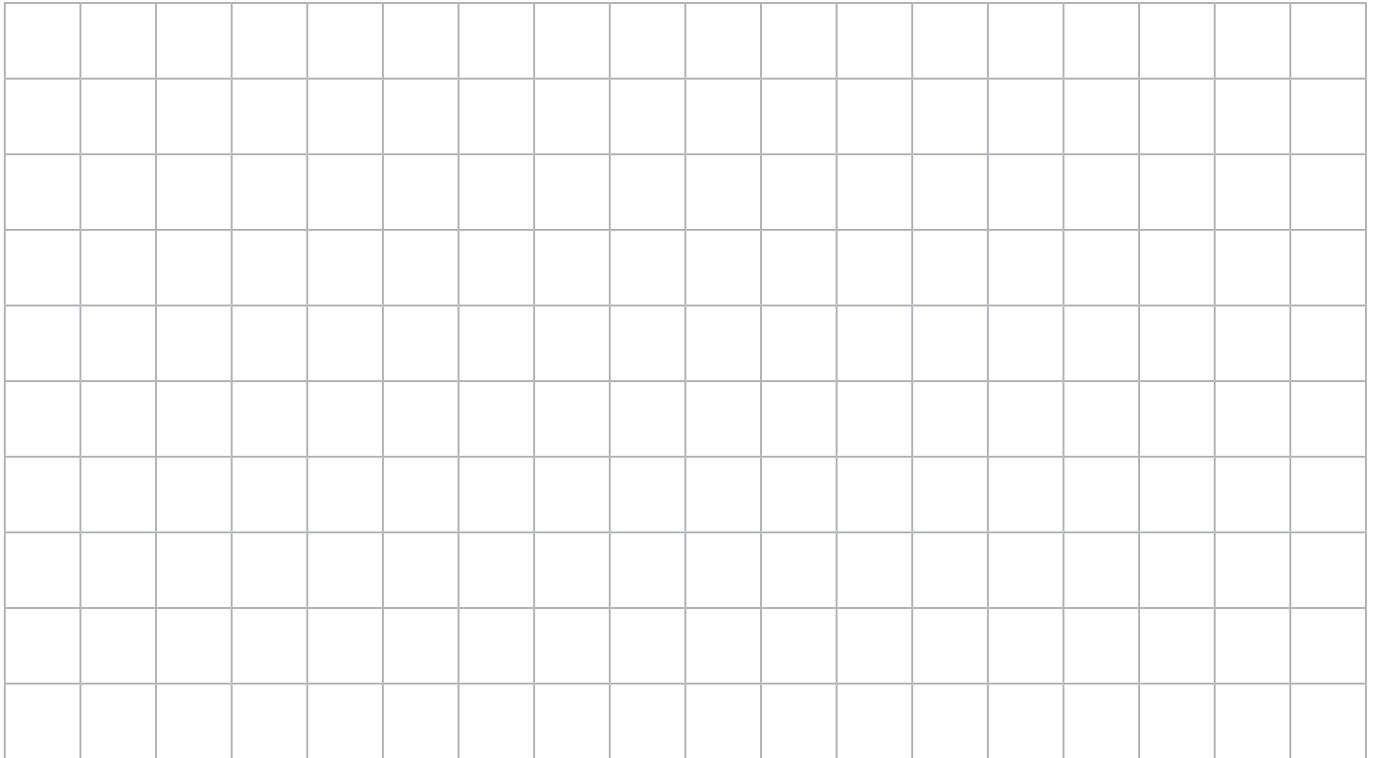
Complete this table:

Rectangle	Area	Length	Width	Perimeter
A	12cm^2			
B	12cm^2			
C	12cm^2			

What do you notice about the area and perimeter?

Area and Perimeter Investigation

On the squared grid below, draw 5 different rectangles with a perimeter of 20cm and label each D, E, F, G and H.



Complete this table:

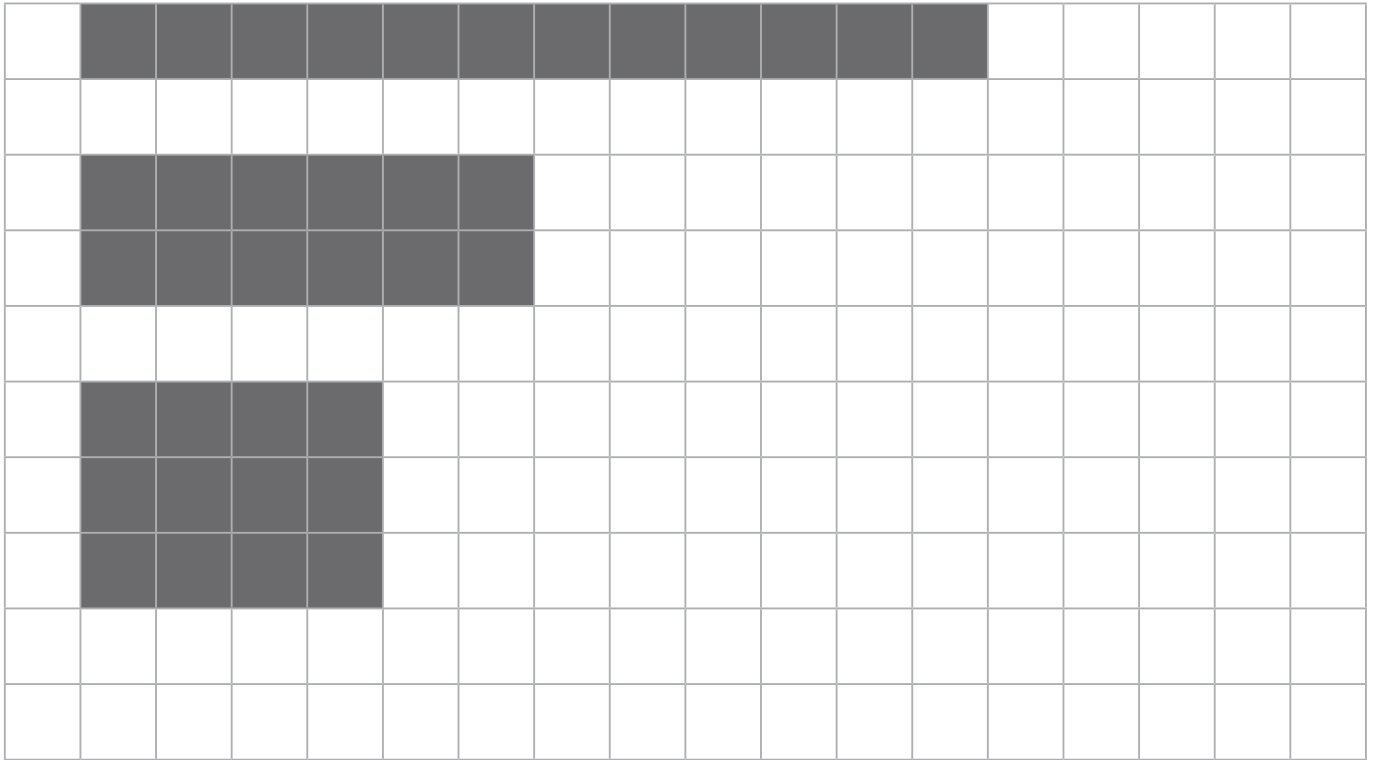
Rectangle	Length	Width	Perimeter	Area
D			20cm	
E			20cm	
F			20cm	
G			20cm	
H			20cm	

What do you notice about the area and perimeter?

Area and Perimeter Investigation

Answers

On the square grid below, draw 3 different rectangles with an area of 12cm^2 and label each A, B and C.



Complete this table:

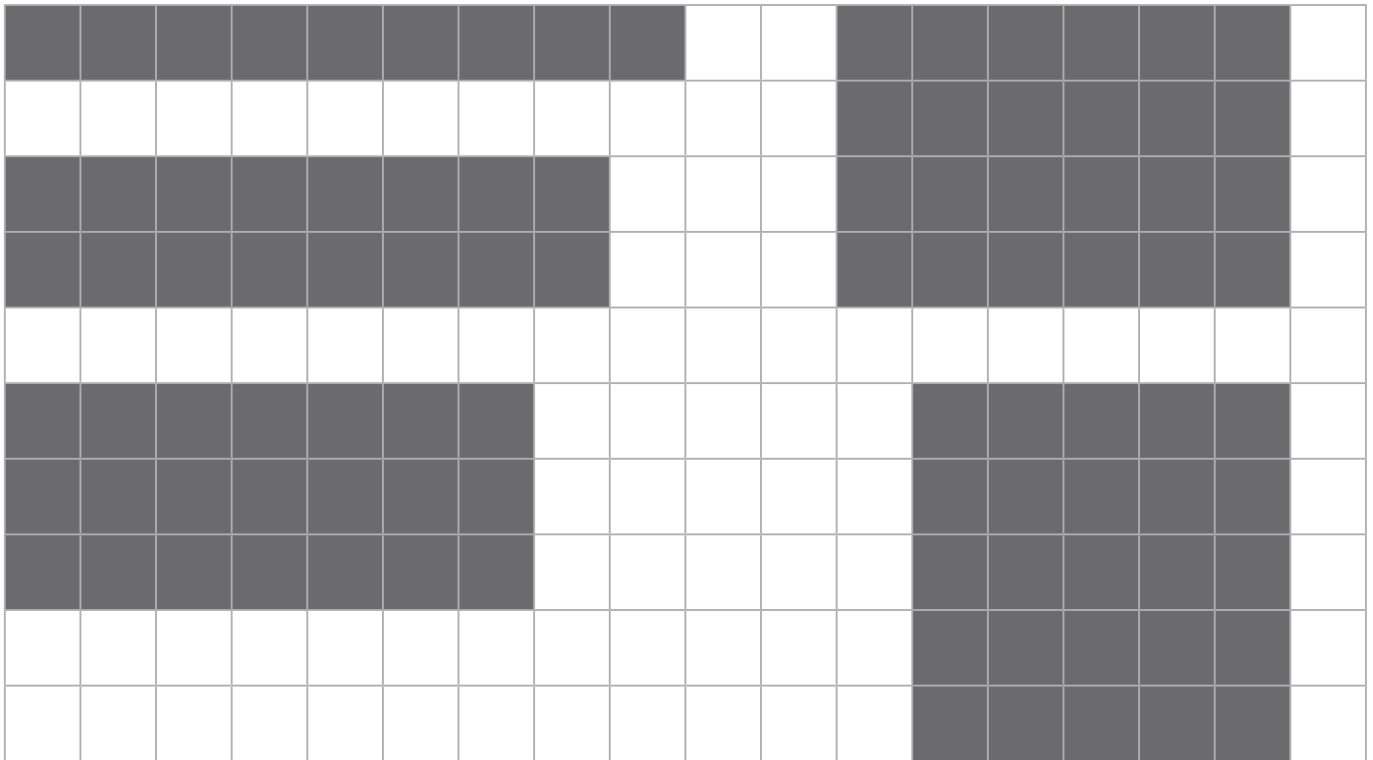
Answers given are likely answers, but not necessarily in that order.

Rectangle	Area	Length	Width	Perimeter
A	12cm^2	12cm	1cm	26cm
B	12cm^2	6cm	2cm	16cm
C	12cm^2	4cm	3cm	14cm

What do you notice about the area and perimeter?

Area and Perimeter Investigation **Answers**

On the squared grid below, draw 5 different rectangles with a perimeter of 20cm and label each D, E, F, G and H.



Complete this table:

Answers given are likely answers, but not necessarily in that order.

Rectangle	Length	Width	Perimeter	Area
D	9cm	1cm	20cm	9cm²
E	8cm	2cm	20cm	16cm²
F	7cm	3cm	20cm	21cm²
G	6cm	4cm	20cm	24cm²
H	5cm	5cm	20cm	25cm²

What do you notice about the area and perimeter?

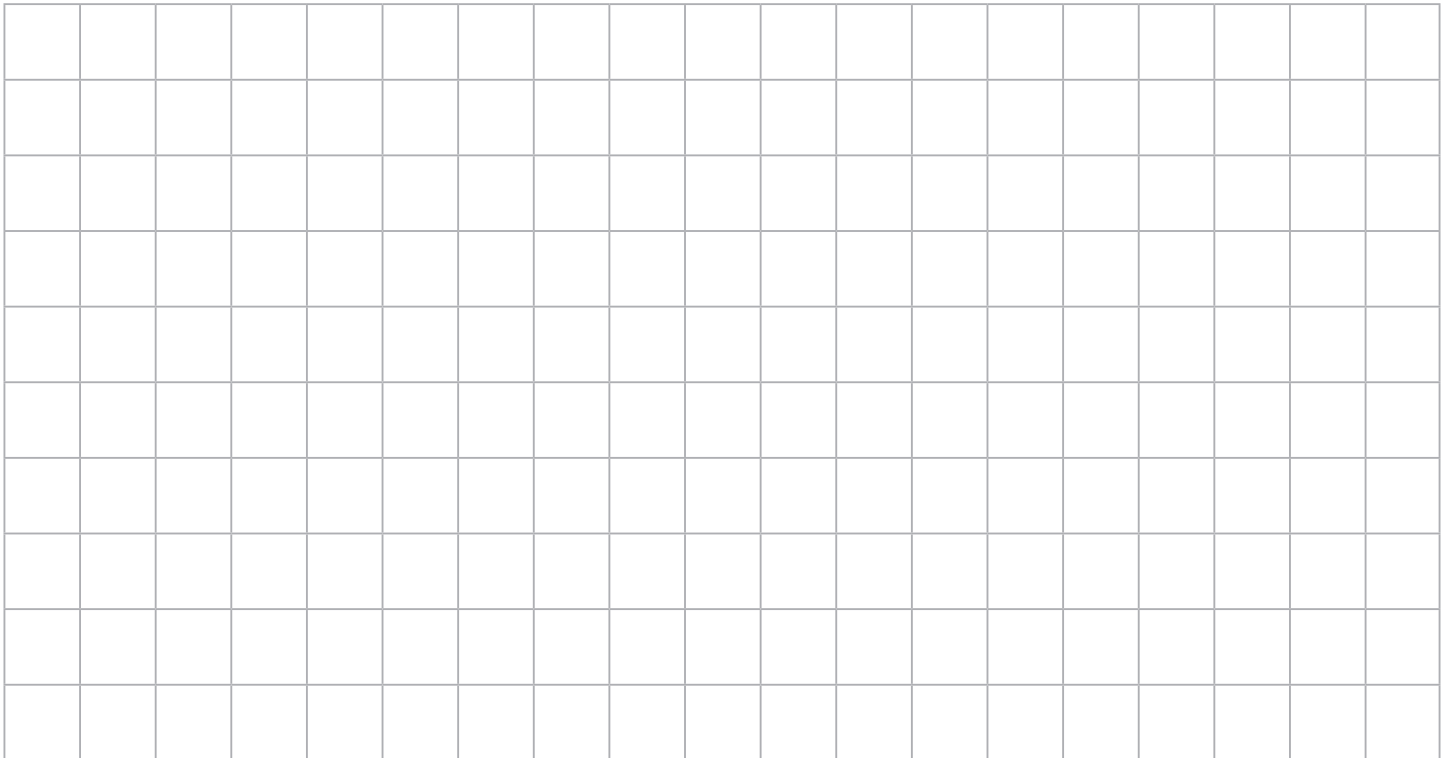
Area and Perimeter Investigation

Same Area

On squared paper, draw 5 different rectangles with the same area and label each. You will need to plan carefully which area you will use. The length and width do not have to be whole centimetres.

Draw a table in which you can record the length, width, perimeter and area of each rectangle.

Rectangle	Area	Length	Width	Perimeter



What do you notice about the perimeter of the shapes with the same area?

Which shapes with the same area have the longest and shortest perimeter? Can you explain why?

Area and Perimeter Investigation

Answers

Same Area

Possible answers

Rectangle	Area	Length	Width	Perimeter
A	36cm^2	36cm	1cm	74cm
B	36cm^2	18cm	2cm	40cm
C	36cm^2	12cm	3cm	30cm
D	36cm^2	9cm	4cm	26cm
E	36cm^2	7.2cm	5cm	24.4cm
F	36cm^2	6cm	6cm	24cm

What do you notice about the perimeter of the shapes with the same area?

The perimeters of rectangles with the same area are not equal.

Which shapes with the same area have the longest and shortest perimeter? Can you explain why?

A square has the shortest perimeter, and as the difference between the length and width increase, the perimeter increases.

Same Perimeter

Possible answers

Rectangle	Length	Width	Perimeter	Area
R	9cm	1cm	20cm	9cm^2
S	8cm	2cm	20cm	16cm^2
T	7.5cm	2.5cm	20cm	18.75cm^2
U	7cm	3cm	20cm	21cm^2
V	6cm	4cm	20cm	24cm^2
W	5cm	5cm	20cm	25cm^2

What do you notice about the area of the shapes with the same perimeter?

The perimeters of rectangles with the same perimeter are not equal.

Which shapes with the same perimeter have the largest and smallest area? Can you explain why?

A square has the largest area, and as the difference between the length and width increase, the area decreases.

Area and Perimeter Investigation

Answers

Right-Angled Triangles

Possible answers

Rectangle	Base	Height	Hypotenuse	Area	Perimeter
A	36cm	1cm	36.01cm	18cm ²	73.01cm
B	18cm	2cm	18.11cm	18cm ²	38.11cm
C	12cm	3cm	12.37cm	18cm ²	27.37cm
D	9cm	4cm	9.85cm	18cm ²	22.85cm
E	7.2cm	5cm	8.77cm	18cm ²	20.97cm
F	6cm	6cm	8.49cm	18cm ²	20.49cm

What do you notice about the area of the shapes with the same perimeter?

The perimeters of a parallelogram with the same area are not equal.

Parallelograms

Possible answers

Rectangle	Base	Height	Distance between ends of base and top	Diagonal side	Area	Perimeter
R	10cm	3cm	1cm	3.16cm	30cm ²	26.32cm
S	10cm	3cm	2cm	3.61cm	30cm ²	27.22cm
T	10cm	3cm	3cm	4.24cm	30cm ²	28.49cm
U	10cm	3cm	4cm	5.00cm	30cm ²	30.00cm
V	10cm	3cm	5cm	5.83cm	30cm ²	31.66cm
W	10cm	3cm	6cm	6.71cm	30cm ²	33.42cm

What do you notice about the perimeter of the shapes with the same area?

The perimeters of a parallelogram with the same area are not equal.

The excel spreadsheet in the pack will enable teachers to enter pupil measurements and get accurate answers for the hypotenuse and perimeter.