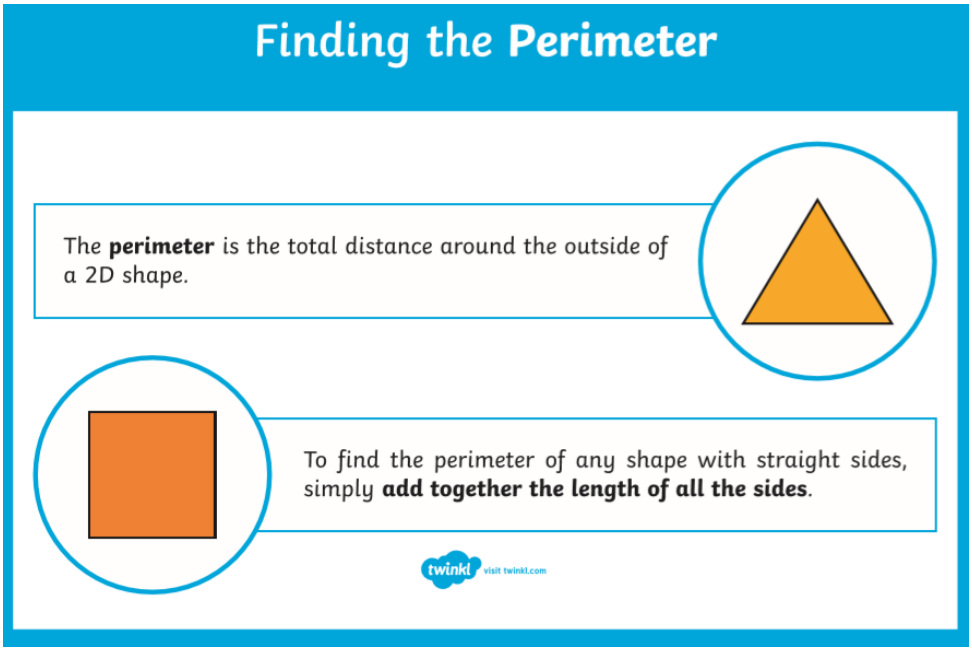
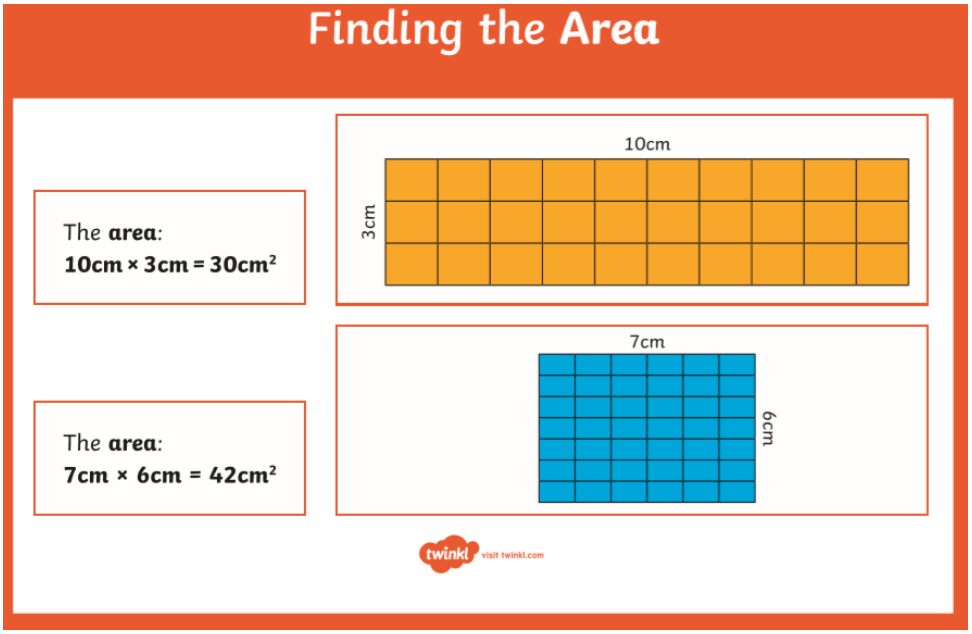
Maths Task
Week 1 - 23.03.2020

Area and Perimeter

Work through the challenges starting at the beginning. Each challenge gets more difficult. For lots of the questions, they are **investigations** which may not have a correct answer. This a chance for you to experiment and test out your ideas.





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	$12cm^2$			

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	

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?

Same Perimeter

On squared paper, draw 5 different rectangles with the same perimeter and label each. You will need to plan carefully which perimeter 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	Length	Width	Perimeter	Area

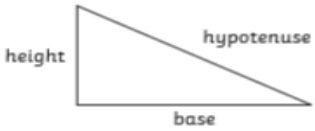
What do you notice about the area of the shapes with the same perimeter?

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

Area and Perimeter Investigation

Right-Angled Triangles

On squared paper, draw 5 different right-angled triangles with the same area and label each. You will need to plan carefully which area you will use. The dimensions do not have to be whole centimetres.



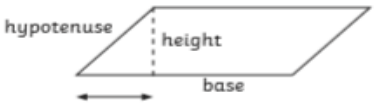
Draw a table in which you can record the length, width, perimeter and area of each triangle.

Rectangle	Base	Height	Hypotenuse	Area	Perimeter

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

Parallelograms

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



Distance between ends of base and top.

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

Rectangle	Base	Height	Distance between ends of base and top	Diagonal side	Area	Perimeter

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

Beat the Challenge:

Can you come up with a formula to calculate the areas of these shapes?
Investigate how height affects the area of a parallelogram.