

# Reasoning and Problem Solving

## Perimeter and Area Consolidation – Year 5

### National Curriculum Objectives:

Mathematics Year 5: (5M7a) [Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres](#)

Mathematics Year 5: (5M7b) [Calculate and compare the area of rectangles \(including squares\), and including using standard units, square centimetres \(cm<sup>2</sup>\) and square metres \(m<sup>2</sup>\) and estimate the area of irregular shapes](#)

### About This Resource:

This resource is aimed at Year 5 Expected and has been designed to give children the opportunity to consolidate the skills they have learned in Autumn Block 5 – Geometry Perimeter and Area.

The questions are based on a selection of the same ‘small steps’ that are addressed in the block, but are presented in a different way so children can work through the pack independently and demonstrate their understanding and skills.

### Small Steps:

Calculate Perimeter

Area of rectangles

Area of compound shapes

More [Year 5 Perimeter and Area](#) resources

Did you like this resource? Don't forget to [review](#) it on our website.



Your friend has invited you to play on a live stream computer game where you can split the screen and compare activity.

The aim of the game is to gain points through creative use of shapes.

PRESS START

## LEVEL ONE

1. Your friend has created this square and gains 1 point per cm in the perimeter. What's the score to beat?

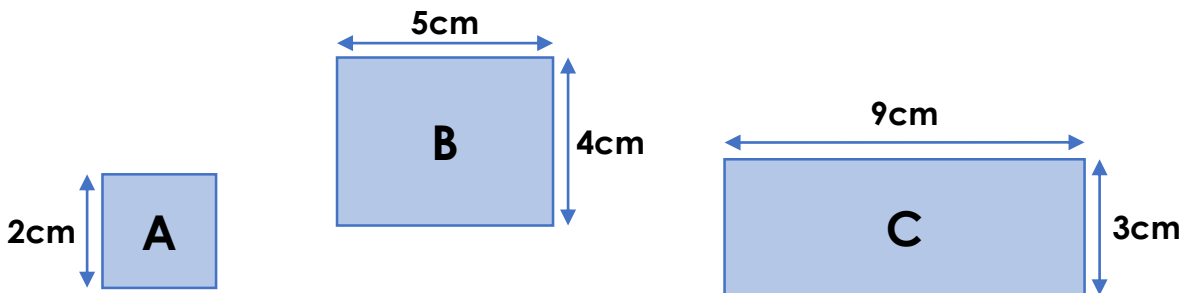


5cm

2. You are given a rectangle with one short side set at 3cm. How long will you need to make the long side to beat your friend's score?

## LEVEL TWO

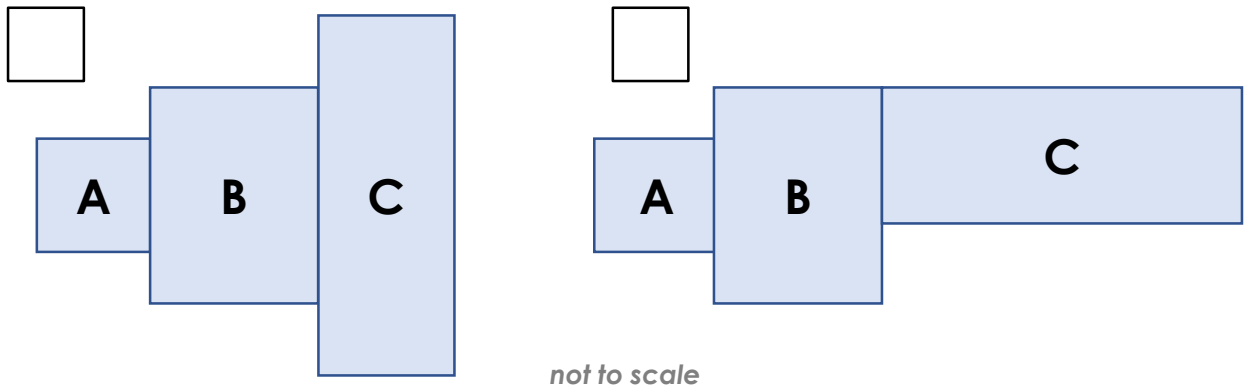
Next up is compound shapes. This is trickier as you are both given the same shapes.



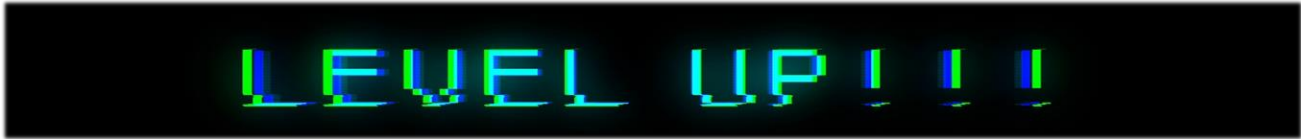
*not to scale*

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3. Which configuration will give you the largest perimeter and win you the most points? Tick a box to show your choice.



To level up, use the measurements to calculate the perimeter of your chosen shape.



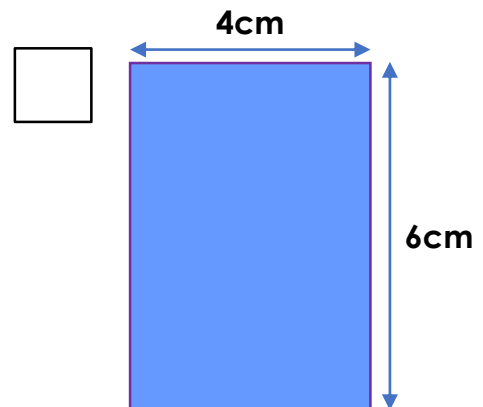
### LEVEL THREE

You've reached the penultimate level! The rules change, and area is your next challenge.

4. Below is the split screen with you on the left. Tick who has won.



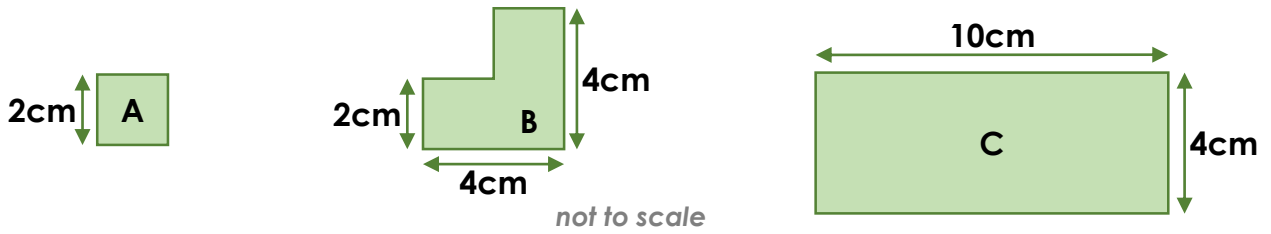
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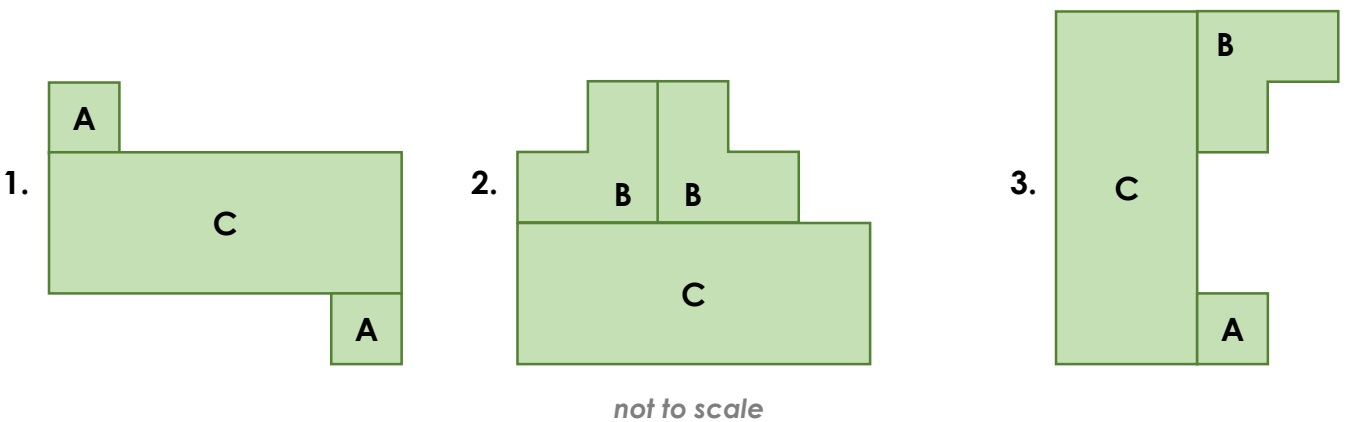
What was the winning score?

## LEVEL FOUR

It's down to the final task: area of compound shapes!  
 You have been given the following shapes:



5. You can use a maximum of three shapes.  
 Which configuration below will give you the highest score?



Area of 1 =

Area of 2 =

Area of 3 =

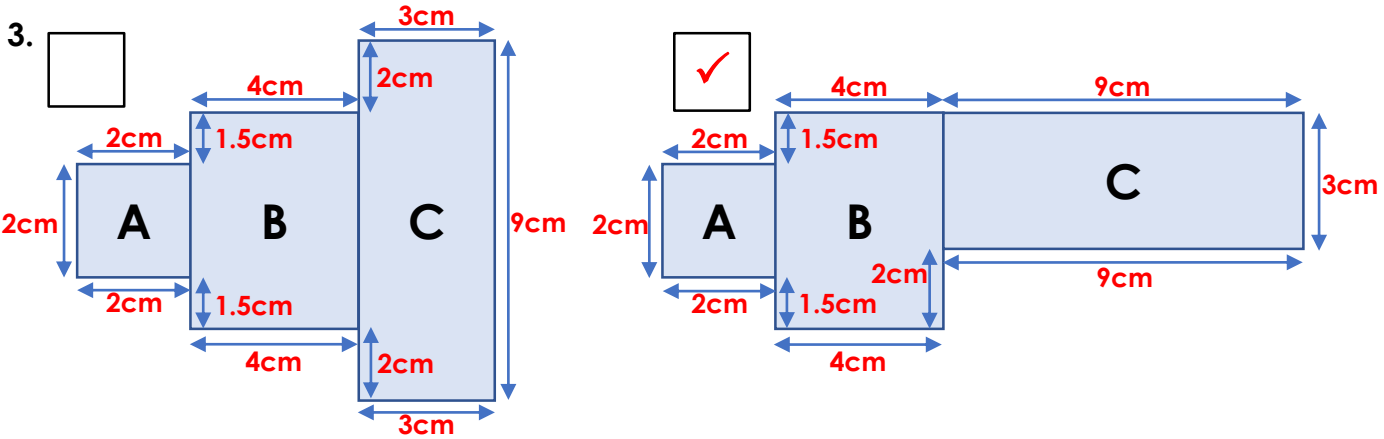
Highest Score =



You did it! Master of perimeter and area... who will YOU challenge next?

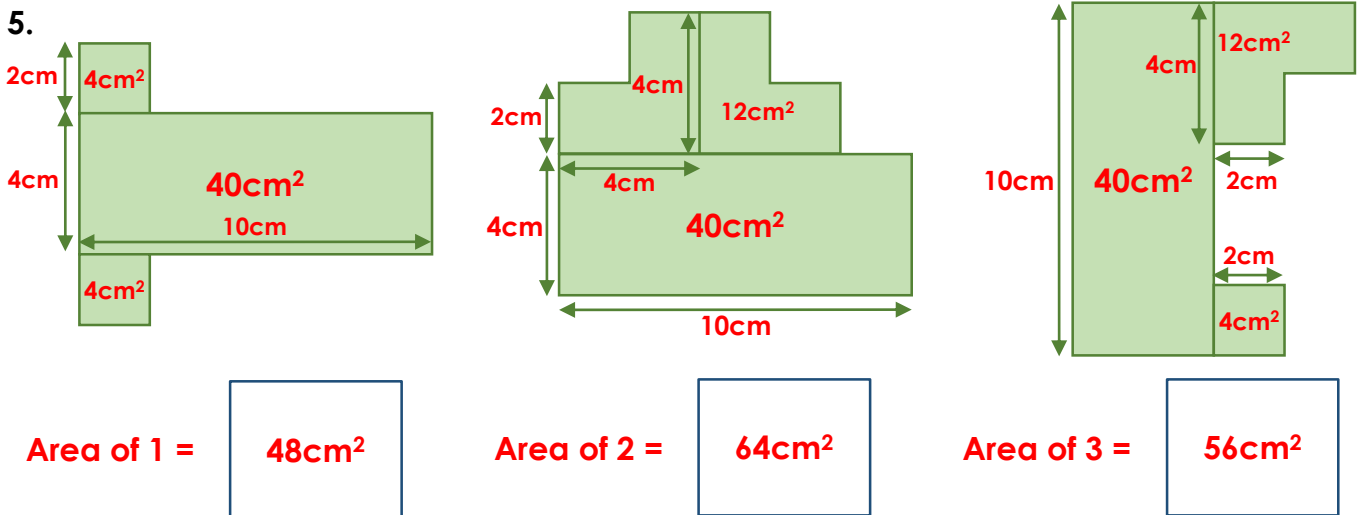
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1. Need to beat 20 points ( $5\text{cm} + 5\text{cm} + 5\text{cm} + 5\text{cm} = 20\text{cm}$ )
2. A rectangle with 2 sides of 3cm will need the other two lengths to be 7.5cm to get points of 21 ( $3\text{cm} + 3\text{cm} + 7.5\text{cm} + 7.5\text{cm} = 21\text{cm}$ )



The first shape's perimeter = 36cm. The second shape's perimeter = 40cm.

4. The first shape has won because it is larger with an area of  $30\text{cm}^2$  ( $15 \times 2$ ). The second shape's area is  $24\text{cm}^2$  ( $4 \times 6$ ).



Shape 2 will give you the highest score with an area of  $64\text{cm}^2$ .