

## Max's Geometric Garden Design

*Learning objective: To identify, describe, and classify 2D shapes based on their properties, including parallel and perpendicular lines, and calculate perimeters of composite shapes.*

Max the monkey is designing a new garden for the BookFlik friends. He has sketched out different flowerbeds using 2D shapes. Look at the shapes Max has drawn and complete the tasks below by identifying the properties of each shape.

*Word bank: Parallel · Perpendicular · Polygon · Vertex · Composite · Right angle · Acute · Obtuse*

**1. Max has designed a flowerbed in the shape of a regular hexagon. How many vertices does it have, and how many lines of symmetry can you draw on it? (2 marks)**

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**2. A rectangular pond has a length of 8m and a width of 4m. What is the total perimeter of the pond? Show your calculation. (2 marks)**

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**3. Max draws a shape with two pairs of parallel sides and four right angles. Name this shape and explain how you know it is not a square. (2 marks)**

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**4. If a triangular flowerbed has one angle that is 100 degrees, what type of triangle is it? Explain your reasoning. (2 marks)**

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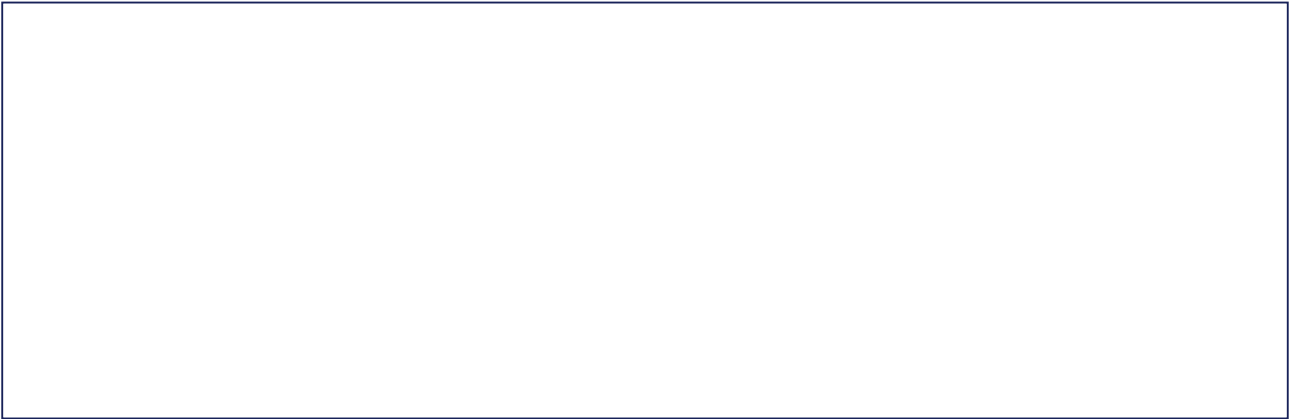
**5. Max creates a composite shape by joining a square with a side length of 3m to a rectangle with a length of 5m and a width of 3m. What is the total perimeter of this new shape? (2 marks)**

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**Draw:** Draw a composite shape made of one square and one triangle joined together. Label all the internal and external angles as either acute, obtuse, or right angles.



*Extension challenge: Max wants to add a decorative fence around his garden. If the total perimeter is 24m and each meter of fencing costs £5.50, calculate the total cost of the fence. Show your working out.*