Max’s Garden Geometry Challenge

Learning objective: To calculate the area and perimeter of rectangles and composite shapes, and solve problems involving missing side lengths.

Read each question carefully. Show your working out clearly to earn full marks. Remember to include the correct units (cm, m, cm^2, or m^2) in your final answers.

Max the monkey is designing a series of rectangular vegetable patches for the community garden. He needs your help to calculate the exact measurements for his planting plans.

Word bank: perimeter · area · composite · centimetres · metres · squared · formula · dimension

1. Max has a rectangular patch that measures 8m long and 5m wide. Calculate the total perimeter of this patch. (2 marks)

2. What is the total area of the same rectangular patch (8m by 5m)? (2 marks)

3. Max builds an L-shaped flower bed. One section is 4m by 3m, and a second rectangular section attached to it is 2m by 2m. Calculate the total area of this composite shape. (3 marks)

4. A rectangular wooden frame has a perimeter of 24cm. If the length of the frame is 7cm, what is the width of the frame? (3 marks)

5. Max wants to buy fencing that costs £4 per metre. If a new square patch has a side length of 6m, how much will it cost Max to fence the entire perimeter? (3 marks)

Draw: Draw a composite shape made of two rectangles that has a total area of 20cm². Label the side lengths clearly.

Extension challenge: Max has a rectangular garden with an area of 48m². If the length and width are both whole numbers, list all the possible pairs of dimensions (length and width) that could create this area.