

Max's Garden Geometry

Learning objective: To calculate the area and perimeter of rectilinear shapes.

Read about Max's garden project below and use your knowledge of measurements to solve the problems. Remember to include the correct units (cm, m, cm², or m²).

Max the monkey is planning a new vegetable patch in the forest garden. He has designed a rectilinear shape for his patch so he can fit it perfectly between the trees. The main patch is 6 metres long and 4 metres wide. He also wants to build a small wooden fence around the outside to keep the local rabbits away. He has also decided to create a special square section in the corner for his favourite carrots, which measures 2 metres by 2 metres.

Word bank: perimeter · area · rectilinear · length · width · square centimetres · metres

1. Calculate the perimeter of Max's main vegetable patch (6m by 4m). Show your working out. (2 marks)

2. What is the total area of the main vegetable patch in square metres? (1 mark)

3. Max decides to add a shed that is 3m long and 2m wide. What is the area of the shed? (1 mark)

4. If fencing costs £5 per metre, how much will it cost Max to put a fence around the entire perimeter of his 6m by 4m vegetable patch? (2 marks)

5. Explain the difference between perimeter and area in your own words. (2 marks)

Draw: Draw a scale plan of Max's vegetable patch on squared paper. Let one square on your paper represent 1 metre. Label the lengths of all the sides.



Extension challenge: Max wants to double the area of his carrot patch. If the original carrot patch was a square of $2\text{m} \times 2\text{m}$, what would the new dimensions be if it remained a square? Calculate the new area.