

Max's Garden Geometry Adventure

Learning objective: To calculate the perimeter and area of rectilinear shapes by counting squares and using multiplication.

Read the story below and help Max the monkey solve his gardening math puzzles. Remember to use the correct units: cm for perimeter and cm² for area.

Max the monkey is helping his friends design a vegetable patch. He loves solving math puzzles in the garden! He has drawn a plan on squared paper. Each square on the paper represents 1cm by 1cm. The tomato patch is a rectangle that is 4cm long and 3cm wide. The carrot patch is an L-shaped (rectilinear) plot where the total length is 5cm and the width is 4cm, with a small 2cm by 2cm corner removed. Max needs to calculate the distance around the edge (perimeter) and the amount of soil needed to cover the ground (area) to make sure everything fits perfectly.

Word bank: perimeter · area · rectilinear · square centimetres · length · width · total distance

1. The tomato patch is a rectangle measuring 4cm by 3cm. What is the total perimeter of the tomato patch? (2 marks)

2. Calculate the area of the tomato patch in square centimetres (cm²). (2 marks)

3. If Max adds a new strawberry bed that is 2cm by 5cm, what will the area of this new bed be? (2 marks)

4. Look at the carrot patch (L-shape). If the perimeter is 14cm, explain how you found this by adding up all the sides. (3 marks)

5. Max wants to buy fencing that costs £2 per centimetre. How much will it cost to put a fence around the 4cm by 3cm tomato patch? (3 marks)

Draw: Draw a rectilinear shape on a grid that has an area of 10cm^2 . Label the length and width of each side.



Extension challenge: Max has a rectangular plot with an area of 24cm^2 . What could the length and width of his plot be? Try to find three different pairs of measurements.