Max’s Garden Design Challenge

Learning objective: To calculate the area and perimeter of rectilinear shapes and solve multi-step problems involving measurements.

Max the monkey is helping his friends design their garden plots at the community allotment. Each square on the grid represents 1m x 1m. Use the dimensions provided to calculate the perimeter and area for each plot. Remember: Perimeter is the distance around the edge (m), and Area is the total space inside (m^2).

Word bank: rectilinear · perimeter · area · metres · squared · dimensions · calculation

1. Pip the caterpillar wants a rectangular vegetable patch that is 4m long and 3m wide. What is the perimeter and the area of Pip's patch? (2 marks)

2. Zara the zebra has a square flower bed with a side length of 5m. If she wants to put a wooden fence around the edge, how many metres of fencing does she need? What is the total area of her flower bed? (2 marks)

3. Kit the fox has a rectilinear plot shaped like an 'L'. The shape is made of two rectangles: one is 6m by 2m, and the other is 3m by 2m attached to the side. Calculate the total area of Kit’s plot. (2 marks)

4. Max wants to buy topsoil for his 4m x 4m square plot. The soil costs £2 per square meter. How much will it cost Max to cover his entire plot in soil? (2 marks)

5. Nova the owl has a rectangular plot with an area of $24m^2$. If the length of the plot is 8m, what is the width of the plot? (2 marks)

Draw: Draw a rectilinear shape on a 10x10 grid that has a total area of exactly 12m². Label the length of each side to prove your calculation.

Extension challenge: Design your own dream garden layout on squared paper. Include at least three different rectangular zones (e.g., a pond, a lawn, and a patio). Calculate the total area of all three zones combined and the perimeter of the entire garden boundary.