

Max the Monkey's Geometric Garden

Learning objective: To identify, describe, and classify 2D and 3D shapes, including regular and irregular polygons and the properties of prisms and pyramids.

Read Max the Monkey's notes about his jungle garden shapes. Use your knowledge of geometry to answer the questions below. Remember to look for parallel lines and vertices!

Max the Monkey is designing a new garden for his friends. He has planted flowers in the shape of a regular heptagon because he loves the seven petals. He is building a wooden shed shaped like a triangular prism to store his tools. To keep the garden safe, he has placed a fence made of square panels. Max is very careful to ensure that the fence posts are perfectly parallel to each other. He also has a stone sculpture shaped like a square-based pyramid that sits in the centre of the garden.

Word bank: polygon · vertex · parallel · prism · pyramid · quadrilateral · perpendicular

1. Max describes his flower bed as a 'regular heptagon'. How many sides does this shape have, and what does the word 'regular' tell us about its properties? (2 marks)

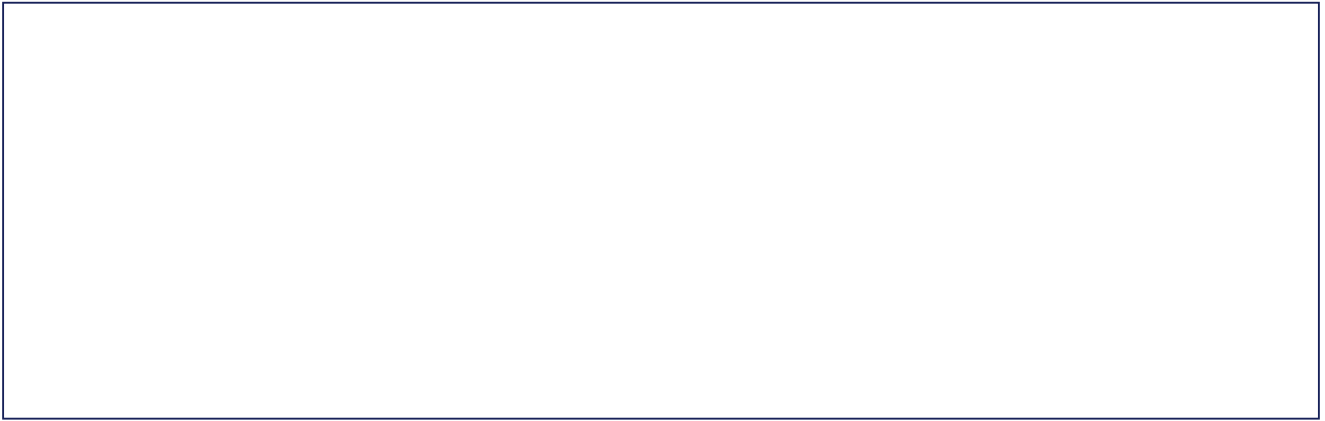
2. Look at the shed, which is a triangular prism. How many faces, edges, and vertices does this 3D shape have? (3 marks)

3. Max says his fence posts are 'parallel'. Explain what this means in your own words, and draw a quick example of two parallel lines. (2 marks)

4. The stone sculpture is a square-based pyramid. How does a pyramid differ from a prism in terms of its faces? (2 marks)

5. If Max replaces one of his square fence panels with a rhombus, how many lines of symmetry does a rhombus have compared to a square? (2 marks)

Draw: Draw Max's garden shed (a triangular prism) and label one of its vertices and one of its triangular faces.



Extension challenge: Max wants to build a new path using only shapes that have at least one pair of parallel lines. List three different shapes he could use and explain why they fit his criteria.