

Max's Geometric Garden Design

Learning objective: To identify, describe, and represent the properties of 2D shapes, including regular and irregular polygons, and calculate angles within a geometric composition.

Max the monkey is designing a new garden for his friends. Use your ruler and protractor to draw the garden plan based on the instructions below. Ensure your lines are precise and your angles are measured accurately.

Draw: Create a top-down view of a garden on plain paper. Use a sharp pencil and ruler. Include: 1) A square sunflower bed (side length 5cm). 2) A right-angled triangle carrot patch. 3) A series of parallel lines representing a wooden fence. 4) An irregular hexagon feature pond. Use a protractor to ensure your angles are accurately drawn to the nearest degree.



Label words: Acute angle · Obtuse angle · Reflex angle · Parallel lines · Perpendicular lines · Irregular polygon · Vertex · Interior angle

Steps:

1. Draw a regular pentagon flowerbed. Measure and label one interior angle. Explain why the sum of the interior angles of a pentagon is 540 degrees.
2. Draw two parallel lines representing a garden path. Draw a transversal line crossing them. Label one pair

of corresponding angles.

3. Draw an irregular hexagon. Label one reflex angle found at a vertex of your hexagon.
4. Compare and contrast a regular quadrilateral and an irregular quadrilateral. What are the key differences in their side lengths and interior angles?
5. Justify why a shape with four equal sides but no right angles is classified as a rhombus rather than a square.
6. What might happen to the internal angles of a garden fence if one side of a parallelogram is extended whilst keeping the other sides parallel?