

Max's Geometric Garden Design

Learning objective: To identify, compare, and order angles by size, and recognise that two right angles make a half-turn and four make a whole turn.

Max the monkey is designing a symmetrical garden for his friends. Use the provided definitions to help Max classify the angles found in his garden paths and flowerbeds. For each question, decide whether the angle is acute, obtuse, or a right angle, and justify your mathematical reasoning.

Word bank: Acute · Obtuse · Right angle · Degrees · Vertex · Perpendicular · Rotation

1. Max has designed a flowerbed shaped like a triangle. Each corner angle is less than 90 degrees. What type of angles are these, and how do you know? (2 marks)

2. The garden gate swings open to form an angle of 135 degrees. Compare this to a right angle. Is it greater or smaller? Explain your thinking. (2 marks)

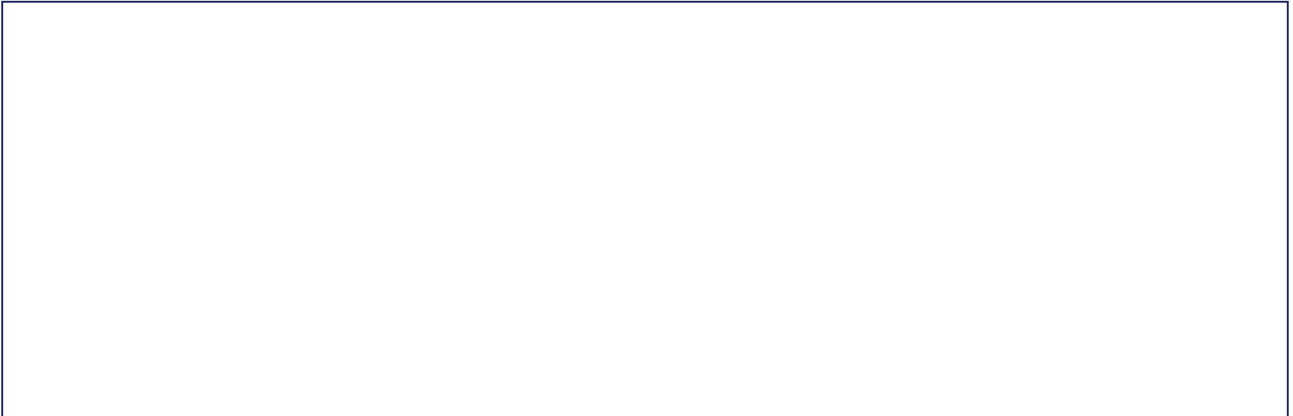
3. Max places a square paving slab in the centre. Identify the size of the corners of this square. If Max rotates the square by one full turn, how many degrees has it moved? (2 marks)

4. Look at the corner of a rectangular pond. If you combined two of these corner angles, what is the total measurement in degrees? (2 marks)

5. Justify why an angle that measures 95 degrees cannot be classified as a right angle. (2 marks)

6. What might happen to the shape of a triangle if all three of its angles were obtuse? Explain why this is impossible in geometry. (2 marks)

Draw: Draw a bird's-eye view of Max's garden. Include at least one acute angle (like a _____ triangular path), one right angle (like a square pond), and one obtuse angle (like a crooked fence). Label each angle correctly.



Extension challenge: Design a 'Geometric Treasure Map' for your friends. Your map must include a path that involves a 90-degree turn, a 180-degree turn, and a sharp acute turn. Write a set of instructions using precise mathematical vocabulary to guide someone from the 'Start' to the 'Treasure'.