

Max's Geometry Garden: The Angle Investigation

Learning objective: To identify, measure, and calculate missing angles around a point, on a straight line, and within triangles and quadrilaterals.

Max the monkey is designing a new flowerbed for his garden. He needs your help to work out the missing angles in his geometric patterns. Use your knowledge of angle properties to solve these calculations. Remember: angles on a straight line add up to 180° , angles around a point add up to 360° , and angles in a triangle add up to 180° .

Word bank: Acute · Obtuse · Reflex · Straight line · Sum · Degrees · Protractor · Parallel

1. Max has a triangular garden bed. Two of the angles are 45° and 65° . What is the size of the third angle? Show your working. (2 marks)

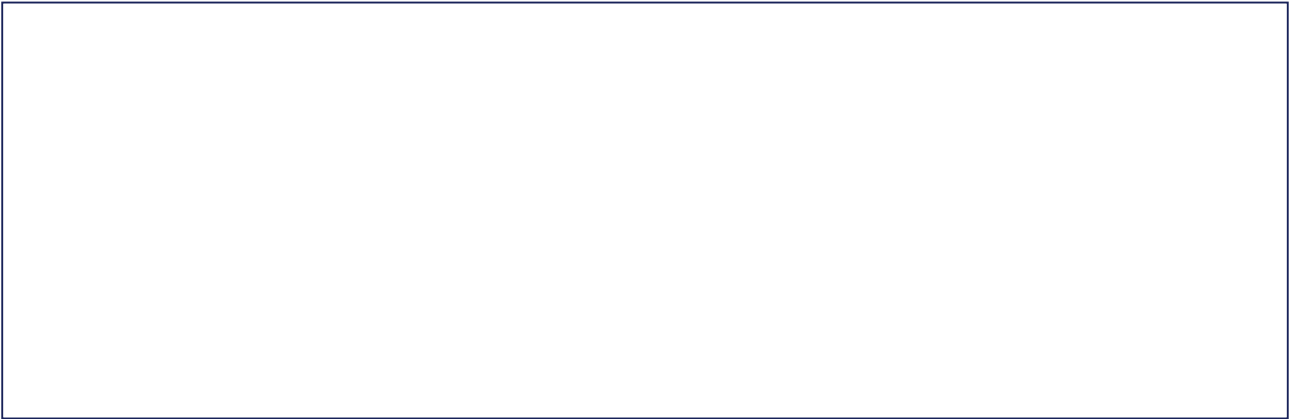
2. A gate in the garden swings open on a straight line. If the angle it has opened is 135° , what is the size of the remaining angle on the straight line? (2 marks)

3. Max is looking at a circular flowerpot. Three angles around the centre point are 120° , 100° , and 80° . What is the size of the fourth angle? (2 marks)

4. Explain why it is impossible for a triangle to have two obtuse angles. (2 marks)

5. Max cuts a piece of wood for a fence. It is a quadrilateral with three angles of 90° , 90° , and 75° . What is the size of the final interior angle? (2 marks)

Draw: Draw a sketch of Max's triangular garden bed, clearly labelling the three angles you calculated in Question 1.



Extension challenge: Design a 'Geometry Path' for Max. Create a pattern using at least four different angles that meet at a single vertex point. Label each angle and ensure their total sum is exactly 360° .