

Max's Geometric Garden Adventure

Learning objective: To identify, estimate, and calculate missing angles around a point and on a straight line, and to distinguish between acute, obtuse, and reflex angles.

Max the monkey is designing a symmetrical garden. Help him complete his blueprints by calculating the missing angles. Remember: angles on a straight line total 180° , and angles around a point total 360° . Use your protractor or your knowledge of angle properties to solve the puzzles below.

Word bank: Acute · Obtuse · Reflex · Right angle · Straight line · Degrees · Protractor · Vertex

1. Max has placed a flowerbed at an angle of 45° . If he wants to create a straight-line path next to it, what must the adjacent angle be to reach 180° ? Explain your calculation. (2 marks)

2. A birdbath sits at the centre of a circular patio. Three stones are placed around it. If the first two angles are 120° and 110° , calculate the third angle. Justify your answer. (2 marks)

3. Compare and contrast an obtuse angle and a reflex angle. How do their properties differ in terms of their measurement in degrees? (2 marks)

4. Max draws an angle of 95° . Is this an acute or obtuse angle? Justify your classification. (2 marks)

5. If two identical angles are placed together on a straight line to make a total of 180° , what is the size of each individual angle? Show your working. (2 marks)

6. What might happen to the layout of Max's garden if all the angles around the central birdbath were equal? Calculate the size of each angle. (2 marks)

Draw: Draw a 'Geometric Garden' plan. Include at least one straight line with two adjacent angles, and a point where at least three angles meet. Label each angle with its approximate measurement and classification (e.g., Acute, Obtuse).



Extension challenge: Design a complex garden feature using only acute and reflex angles. Write a paragraph justifying why your design is structurally sound, using the vocabulary from the word bank to describe your shapes.