Grade 5 Math Assessment: Area and Perimeter

Learning objective: To calculate the area and perimeter of rectilinear shapes, triangles, and parallelograms, and to solve problems involving scaling and complex shapes.

Read each question carefully. Show your working out clearly, as marks are awarded for your method. Use a ruler for any drawings. Good luck!

Max the monkey is helping his friends organize the community garden. He needs to calculate the space for new vegetable patches and the length of fencing required to keep the garden safe.

Word bank: rectilinear · parallelogram · base · perpendicular height · square centimetres · formula · dimension

1. Max has a rectangular vegetable patch measuring 8 metres in length and 5 metres in width. Calculate the area and the perimeter of the patch. (2 marks)

2. A triangular patch of flowers has a base of 6 metres and a perpendicular height of 4 metres. Use the formula (base × height) ÷ 2 to calculate the area. Show your working. (3 marks)

3. Zara is designing a path in the shape of a parallelogram. The base is 7 metres and the perpendicular height is 3 metres. What is the total area of the path? (2 marks)

4. Max decides to build a fence around a complex rectilinear shape. The shape has sides of 4m, 3m, 2m, 2m, 6m, and 5m. Calculate the total perimeter. If the fencing costs £12 per meter, how much will the total fence cost? (4 marks)

5. Explain the difference between perimeter and area. Why can two different shapes have the same area but different perimeters? Use a small example to support your answer. (4 marks)

6. Max wants to create a new rectangular garden area with an area of exactly 40 square metres. List three different possible pairs of whole-number dimensions for this garden, and calculate the perimeter for each one. (5 marks)

7. If a square has a perimeter of 36cm, what is the length of one side and what is the total area of the square? (5 marks)

Draw: Draw a rectilinear shape on squared paper that has an area of 12 square centimetres. Label the side lengths.

Extension challenge: Total: /25