

Year 5 Measurement Mastery: The Great Market Challenge

Learning objective: To convert between different units of metric measurement, calculate perimeter and area, and solve multi-step problems involving money and measures.

Read each question carefully. Show your working out clearly, as marks are awarded for your method even if the final answer is incorrect. Use a ruler where necessary.

Max the monkey is organising a fruit market. He has 4.5kg of apples, 2,800g of pears, and 1,200g of plums. He is selling apple juice in 500ml cartons. He also needs to fence off a rectangular area for his stall that measures 6 metres by 4 metres.

Word bank: millimetres · centimetres · metres · kilometres · millilitres · litres · grams · kilograms · perimeter · area · conversion

1. Max has 4.5kg of apples. How many grams of apples does he have in total? Show your conversion. (2 marks)

2. What is the total mass of all the fruit (apples, pears, and plums) in kilograms? (2 marks)

3. Max sells his apple juice for £1.25 per carton. If a customer buys 4 cartons, how much change should they receive from a £10 note? (3 marks)

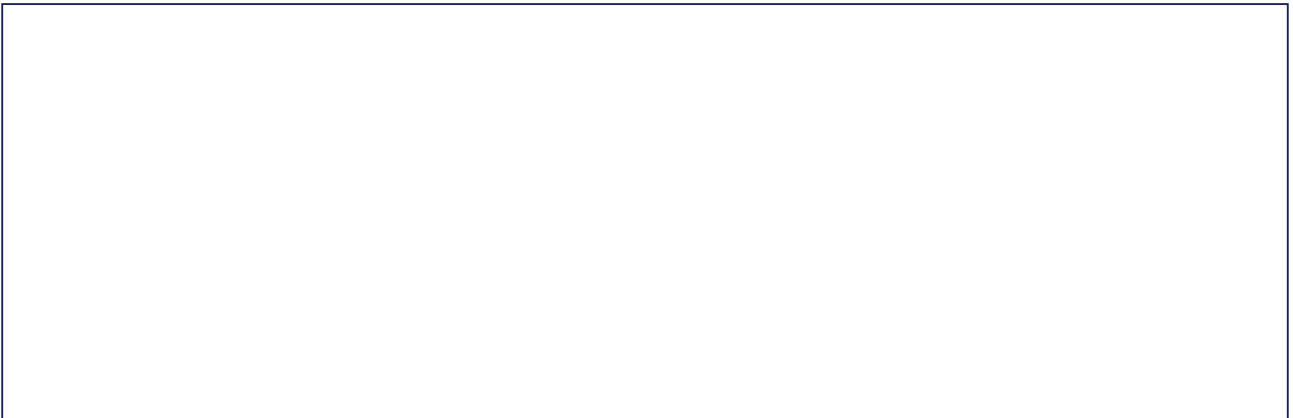
4. Calculate the perimeter of the rectangular stall (6m by 4m). If Max wants to double the length of the stall but keep the width the same, what will the new perimeter be? (3 marks)

5. Explain why it is important to ensure all units are the same before adding measurements together. Provide an example. (4 marks)

6. Max finds a rectangular plot of land with an area of 36m^2 . If one side is 9m long, what is the length of the other side? Justify your answer using the formula for area. (3 marks)

7. Extended Writing: Max wants to design a new, larger stall. The stall must have an area of at least 50m^2 but no more than 80m^2 . Describe the dimensions of your stall design. Explain how you calculated the area and perimeter, and justify why your design is practical for a busy market. (8 marks)

Draw: Draw a scale diagram of Max's stall using a scale of $1\text{cm} = 1\text{m}$. Label the length and width of the 6m x 4m rectangle clearly.



Extension challenge: What might happen if Max accidentally measured his stall in centimetres instead of metres when ordering fencing? Calculate the difference in perimeter if he used 6cm x 4cm instead of 6m x 4m. Total: /25