

Max's Mathematical Market Challenge

Learning objective: To apply formal written methods of multiplication to solve multi-step problems involving money and measures.

Help Max the monkey organise his market stall. You will need to use your knowledge of multiplication (2-digit by 1-digit and 3-digit by 1-digit) to calculate costs, totals, and change. Read each scenario carefully, show your working out in the space provided, and justify your mathematical reasoning.

Word bank: product · multiply · total · exchange · calculate · partitioning · factor · estimate

1. Max is selling 14 baskets of apples. Each basket costs £6. Calculate the total cost of all the baskets. Explain how you partitioned the 14 to reach your final answer. (3 marks)

2. Each jar of honey costs £24. A customer wants to buy 7 jars. Use the formal written method (column multiplication) to find the total. Show your full calculation. (3 marks)

3. Max has 125 bundles of dried lavender. If he sells each bundle for £4, what is the total value of his stock? Explain why you chose your specific multiplication strategy. (4 marks)

4. Compare and contrast the methods of partitioning and column multiplication. When is it more efficient to use one over the other? (3 marks)

5. Justify your answer: If Max doubles the price of his £9 items and halves the number of items he sells, will his total profit remain the same? Use calculations to support your reasoning. (4 marks)

6. What might happen to Max's total earnings if he accidentally calculated his multiplication using an estimate instead of the formal method? Describe the potential risks. (3 marks)

Extension challenge: Design your own 'Market Price List' with five different items. Create a complex word problem that requires a customer to buy at least two different quantities of items and calculate the total change from a £100 note. Present this to a partner to solve.