

Max's Market Stall: Advanced Fractions Challenge

Learning objective: To compare, order, and solve complex problems involving fractions, decimals, and percentages with differing denominators.

Read the scenario below and use your knowledge of equivalent fractions to help Max manage his market stall. Show your working out clearly for each calculation.

Max the monkey is running a fruit stall at the forest market to raise money for new library books. He has a crate of 60 organic apples. By midday, he has sold $\frac{3}{5}$ of his stock. A customer asks to buy 20% of the remaining apples, and another customer buys 0.25 of the original crate. Max needs to calculate exactly how many apples he has left to sell before the market closes at sunset. He also has a jar of honey priced at £4.50; he decides to offer a 'fractional discount' where customers pay $\frac{4}{5}$ of the original price.

Word bank: numerator · denominator · equivalent · fraction · percentage · decimal · simplify · proportion

1. Calculate the total number of apples Max sold by midday. Show your method. (2 marks)

2. After the two customers make their purchases (20% of the remainder and 0.25 of the original), how many apples does Max have left? Justify your answer. (3 marks)

3. What is the new discounted price of the honey in pounds and pence? Show your calculation. (2 marks)

4. Compare $\frac{3}{5}$, 20%, and 0.25. Which is the largest value and which is the smallest? Explain your reasoning using equivalent fractions. (3 marks)

5. If Max wanted to sell the remaining apples in bags of 3, what fraction of the original 60 apples would each bag represent? (2 marks)

6. Explain why it is useful for a stallholder to understand how to convert between fractions, decimals, and percentages when setting prices. (3 marks)

Draw: Draw a bar model or a pie chart that represents the distribution of Max's 60 apples: the $\frac{3}{5}$ sold by midday, the portion sold to the two afternoon customers, and the remaining apples.



Extension challenge: Imagine Max decides to change his pricing strategy. He wants to sell a basket of mixed fruit for £12.00 but offers a 'buy one, get the second at $\frac{3}{4}$ off' deal. Create a persuasive poster for his stall that uses these fractions and explains the total saving a customer would make if they bought two baskets.