

Max's Mathematical Market Stalls

Learning objective: To identify common factors, common multiples, and prime numbers up to 100.

Help Max the monkey organise his market stall items by using your knowledge of factors and multiples. Read the information below and show your working out for each question.

Max is busy setting up his fruit and vegetable stall for the village fair. He has 24 crunchy apples and 36 sweet pears. To make his stall look neat, he wants to pack them into equal bags so that every bag has the same number of items, with no fruit left over. Max knows that to do this, he needs to find the common factors of 24 and 36. Meanwhile, he is also stocking bags of walnuts. He sells walnuts in packs of 6, and his friend Zara sells almonds in packs of 8. They want to find the first number of nuts where they would have sold the exact same total amount, which involves finding the lowest common multiple.

Word bank: factor · multiple · prime number · composite number · common factor · product

1. List all the factors of 24 and all the factors of 36. What are the common factors of 24 and 36? (2 marks)

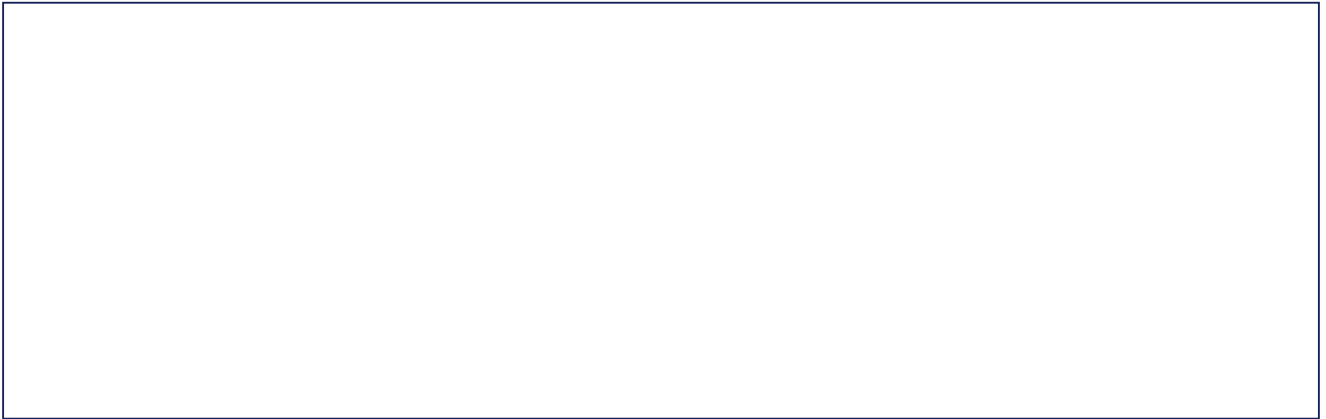
2. Max wants to put his 24 apples into equal bags. What is the largest number of apples he can put in each bag if he wants more than one bag? (1 mark)

3. Find the lowest common multiple (LCM) of 6 and 8 to help Max and Zara find their target sales number. (2 marks)

4. Max has a special box of 13 exotic berries. Explain why 13 is a prime number. (2 marks)

5. If Max sells a bag of fruit for £3, how many bags does he need to sell to reach a total of £45? (1 mark)

Draw: Draw a display of 24 apples arranged in a rectangular array (for example, 4 rows of 6) to show how Max could organise his stall.



Extension challenge: Max finds a crate of 48 oranges. Can you find all the factor pairs for 48? Are there any prime numbers between 40 and 50? List them.