

Max's Mathematical Mystery: Factors and Multiples

Learning objective: To identify, find, and write factor pairs of a number, and use knowledge of multiples to solve problems.

Max the monkey has found a collection of numbered jungle tokens! Help him sort them by using your knowledge of factors and multiples. Show your working out clearly.

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

1. Max has 24 jungle tokens. List all the factor pairs of 24. How do you know you have found them all? (3 marks)

2. Identify the first five common multiples of 4 and 6. Explain the strategy you used to find these. (3 marks)

3. Max claims that all even numbers are composite numbers. Is he correct? Justify your answer using the number 2 as a reference. (2 marks)

4. A box of exotic fruit costs £12. If Max buys a certain number of boxes, the total cost is a multiple of 12. List three possible total costs between £50 and £100. (2 marks)

5. Compare and contrast the properties of factors and multiples. Why is a factor always less than or equal to the original number, whereas a multiple is usually greater? (4 marks)

**6. What might happen if you tried to find the common factors of two prime numbers?
Provide an example to support your hypothesis. (3 marks)**

Draw: Draw a 'Factor Tree' for the number 36, showing how it branches out into its prime factors, decorated with Max the monkey's favourite jungle leaves.



Extension challenge: Design a 'Factor Challenge' game for a friend. Create a set of 5 clues based on factors and multiples (e.g., 'I am a multiple of 7, less than 50, and have 4 as a factor. What number am I?'). Write the answers on a separate sheet.