Grade 5 Math Assessment: Factors and Multiples

Learning objective: To identify common factors, common multiples, and prime numbers, and to use these to solve mathematical problems.

Read each question carefully. Show all your working out to gain full marks. Max the monkey is watching over your progress, so make sure your calculations are clear and accurate!

Max the monkey is organising his fruit collection. He has 24 bananas and 18 apples. He wants to arrange them into equal groups so that every group has the same number of bananas and every group has the same number of apples, with no fruit left over.

Word bank: Factor · Multiple · Prime Number · Composite Number · Highest Common Factor (HCF) · Lowest Common Multiple (LCM) · Product

1. List all the factors of 24. (2 marks)

2. Identify the Highest Common Factor (HCF) of 24 and 18. Explain how you found your answer. (3 marks)

3. Write down the first five multiples of 7. (2 marks)

4. Circle the prime numbers in this list: 7, 9, 13, 15, 21, 23. (3 marks)

5. Max finds a box of 30 stickers. He wants to share them equally between himself and his friends. If he has between 3 and 7 friends, how many ways can he share the stickers equally so that no stickers are left over? Show your working. (4 marks)

6. Explain the difference between a factor and a multiple. Use an example with the number 12 to support your answer. (5 marks)

7. If Max buys bags of nuts that cost £4 each and bags of dried fruit that cost £6 each, what is the lowest total amount of money he could spend to buy an equal number of pounds worth of each item? (Hint: Think about the Lowest Common Multiple). (6 marks)

Draw: Draw a small array or diagram showing how Max could arrange 12 items into equal rows and columns.

Extension challenge: Total: /25