

Max's Factor and Multiple Math Challenge

Learning objective: To identify, describe and represent factors and multiples, including finding all factor pairs of a number, and common factors of two numbers.

Read each question carefully. Show your working out clearly, as Max the monkey loves to see how you solved the puzzle! Remember to use your times tables knowledge.

Max the monkey is organising his fruit collection. He has 24 bananas, 12 apples, and 8 pears. He needs to pack them into equal groups to share with his friends in the jungle, so he is using his knowledge of factors and multiples to make sure every basket is the same.

Word bank: Factor · Multiple · Product · Common · Pair · Divide · Multiply

1. Max has 12 apples. List all the factor pairs of 12. (Remember, a factor pair is two numbers that multiply together to make the product). (2 marks)

2. Is 36 a multiple of 6? Explain how you know using your times tables. (2 marks)

3. Find the common factors of 8 and 12. Show the factors of each number first. (3 marks)

4. Max finds a pile of 20 coconuts. Write down four multiples of 5 that are less than 30. (2 marks)

5. Max says, 'The number 7 is a factor of 21.' Is he correct? Explain your reasoning. (2 marks)

6. Max has 24 bananas. He wants to arrange them into equal groups. List all the possible number of bananas he could put in each group so that there are no bananas left over (all factors of 24). (4 marks)

7. Max is planning a fruit stall. He has 18 oranges and 27 plums. He wants to put them into bags so that every bag has the same number of oranges and the same number of plums, with no fruit left over. What is the largest number of bags he can make? Explain your steps for finding this solution. (5 marks)

8. If Max buys 3 bags of nuts for £4 each, calculate the total cost. Is this total cost a multiple of 3? Prove it. (5 marks)

Draw: Draw a set of 12 apples grouped into two different factor arrangements (e.g., two groups of six, or three groups of four) to help Max organize his fruit.



Extension challenge: Total: /25