

Max's Mathematical Challenge: Times Tables Mastery

Learning objective: To demonstrate fluency in multiplication and division facts up to 12x12 and apply these skills to solve multi-step problems involving scaling and area.

Read each question carefully. Show your working out clearly, as marks are awarded for your method even if you make a minor calculation error. Max the monkey is counting on your accuracy!

Max the monkey is organising a feast for his friends in the forest. He has 12 baskets, and each basket holds 9 pieces of fruit. He also has a rectangular patch of land for planting, which measures 8 metres by 7 metres. Max needs to calculate his supplies carefully to ensure every friend has enough to eat.

Word bank: Product · Factor · Multiple · Scaling · Commutative · Inverse · Area · Perimeter

1. Max has 12 baskets with 9 pieces of fruit in each. Calculate the total number of pieces of fruit. Show your calculation. (2 marks)

2. Explain the commutative law of multiplication using 7×8 as your example. Why does this rule help us when checking our answers? (3 marks)

3. If Max shares 108 pieces of fruit equally among 9 friends, how many pieces does each friend receive? Write the inverse division calculation. (2 marks)

4. Max's fruit patch is 8 metres long and 7 metres wide. Calculate the area of the patch. If each square metre costs £6 to maintain, what is the total cost? (4 marks)

5. Compare and contrast the relationship between factors and multiples. Use the number 24 to justify your answer. (4 marks)

6. Max wants to buy 15 bags of seeds. Each bag costs £4.50. If he pays with a £100 note, how much change should he receive? Explain the steps of your calculation. (5 marks)

7. What might happen to the total area of the garden if Max doubles the length and doubles the width? Justify your answer using your knowledge of multiplication. (5 marks)

Draw: Draw a diagram of Max's rectangular garden patch. Label the sides with their lengths and divide the interior into an array that represents the 8×7 multiplication fact.



*Extension challenge: Imagine Max discovers a new type of fruit that grows in groups of 13. Create a word problem involving scaling that requires multiplying by 13 and solving for a total cost in pounds and pence.
Total: /25*