

Max's Mathematical Division Challenge

Learning objective: To demonstrate proficiency in formal written methods of division, including remainders, multi-step problems, and interpreting remainders in context.

Read each question carefully. Show your full working out, as marks are awarded for your method even if the final answer is incorrect. You have 45 minutes to complete this assessment.

Max the monkey is organising a jungle banquet for his friends. He has 432 delicious mangoes to share equally among 8 different animal groups. He also has a budget of £150 to spend on decorations, which he needs to split across 6 display areas.

Word bank: Quotient · Remainder · Dividend · Divisor · Partition · Inverse · Estimate · Factor

1. Using the bus stop method, calculate the quotient of $432 \div 8$. Show your working clearly. (2 marks)

2. Max has 567 gold coins to distribute amongst 4 treasure chests. How many coins will be in each chest, and how many coins will be left over as a remainder? (2 marks)

3. If Max spends an equal amount of his £150 budget across 6 display areas, how much money is allocated to each area? Provide your answer in pounds and pence. (2 marks)

4. Explain why the inverse operation of multiplication is a useful tool when checking your answers for long division. (3 marks)

5. A group of 145 explorers needs to be transported across a river. Each boat can hold 9 people. How many boats are required to ensure every explorer crosses the river? Justify your answer by explaining what you did with the remainder. (4 marks)

6. Compare and contrast the methods used for dividing a 3-digit number by a 1-digit number versus dividing a 3-digit number by a 2-digit number. What makes the latter more complex? (4 marks)

7. Max has 892 stickers to share between 12 friends. Calculate how many stickers each friend receives. If Max decides to keep the remaining stickers for himself, how many does he get? Write a short paragraph describing the process you followed to reach this conclusion. (8 marks)

Draw: Draw a visual representation of $15 \div 4$ using a 'grouping' strategy to show how many groups of 4 can be made and how many are left over.



Extension challenge: Imagine a scenario where the divisor is larger than the dividend. What would the result be? Write a creative word problem involving Max the monkey that requires a remainder to be rounded up to the nearest whole number. Total: /25