

Max's Mental Marathon: Mastering Mathematical Fluency

Learning objective: To apply mental strategies to solve multi-step calculations, including rounding, place value, and the four operations.

Help Max the monkey solve these number puzzles. Read each challenge carefully and use your mental maths toolkit—such as partitioning, compensating, or using known number bonds—to find the solutions. Show your working out where possible.

Max the monkey is preparing for the Great Jungle Jumble, a series of mathematical challenges that require speed and precision. Today, he is visiting the local market to buy fruit for his friends. A bunch of bananas costs £1.45, a crate of mangoes costs £3.20, and a basket of berries costs £2.55. Max has a £10 note. He needs to calculate his total spend mentally to ensure he has enough money left for his bus fare home, which costs £1.80.

Word bank: partitioning · commutative · place value · inverse · estimate · calculation · factor

1. Using the prices in the passage, calculate the total cost of the bananas, mangoes, and berries. Explain the mental strategy you used to group these numbers efficiently. (2 marks)

2. If Max pays with a £10 note, what is his total change? Justify your answer by showing the mental steps taken to subtract the total cost from £10. (2 marks)

3. Max finds a discount voucher that reduces the total price of his fruit by £1.15. What is the new total? Explain why rounding to the nearest pound might help you estimate this before calculating the exact amount. (2 marks)

4. Compare and contrast the result of $(12 \times 5) + 8$ and $12 \times (5 + 8)$. Why does the placement of brackets change the final answer? (2 marks)

5. Max wants to buy 6 identical notebooks for his friends. Each notebook costs £1.99. What is the most efficient mental method to calculate the total cost? (Hint: Think about multiplying by 2 and then adjusting). (2 marks)

Draw: Draw a diagram showing how Max could partition the number 4,582 into thousands, hundreds, tens, and ones to help him add it to 2,349 mentally.



Extension challenge: Challenge: What might happen if the price of the berries increased by 45p and the bananas decreased by 20p? Create your own multi-step mental maths word problem involving three items and a budget of £20.00, then provide the solution and the strategy used to solve it.