

Max's Mathematical Multiplication Challenge

Learning objective: To multiply numbers up to 4 digits by a 1-digit or 2-digit number using a formal written method, including solving multi-step word problems.

Read each problem carefully. Use formal written multiplication methods (long or short multiplication) to calculate your answers. Show your working out clearly to gain full marks.

Word bank: multiplicand · multiplier · product · partitioning · regrouping · estimate · calculate · formal method

1. Max is organising a charity bake sale. He has 14 trays of cupcakes, and each tray holds 26 cakes. How many cupcakes does he have in total? Show your formal written method. (2 marks)

2. The local library is buying new bookshelves. Each shelf costs £128. If they buy 15 shelves, what is the total cost? (2 marks)

3. Explain why it is important to place a zero in the ones column when multiplying by the tens digit in a two-digit multiplication calculation. Use an example to justify your answer. (3 marks)

4. Max calculates $4,209 \times 7$. He claims the product is 29,463. Is he correct? Prove your answer using a written method or an estimation check. (3 marks)

5. Compare and contrast the methods of short multiplication and long multiplication. Under what circumstances would you choose one over the other? (3 marks)

6. A stadium has 2,540 seats. If all seats are sold at £12 per ticket, what is the total revenue? If they only sell 1,890 tickets, what is the difference in revenue? (4 marks)

Draw: Draw a diagram showing how you would partition the number 43 into tens and ones to help solve the multiplication 43×12 .



Extension challenge: Max has 4 digits: 2, 4, 6, and 8. Using each digit only once, create two 2-digit numbers that produce the largest possible product. Justify your selection process and explain what might happen to the product if you swapped the tens digits.