Multiplication of 4-digit number by a 2-digit number

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It means multiplying a four-digit number like 1234 by a two-digit number like 12. We solve this using the long multiplication method, which involves multiplying in steps and adding the results.

Steps to Multiply

Step 1: Write the 4-digit number on top and the 2-digit number below it

Step 2: Multiply the top number by the ones digit of the 2-digit number

Step 3: Multiply the top number by the tens digit, and write the product starting from the tens place

Step 4: Add the two partial products to get the final answer

Properties Used

Commutative Property: $a \times b = b \times a$

Distributive Property: $a \times (b + c) = a \times b + a \times c$

Zero Property: $a \times 0 = 0$

Identity Property: $a \times 1 = a$

Example 1:

Question: Multiply 1,234 by 12

Solution:

    Step 1: $1234 \times 2 = 2468$

    Step 2: $1234 \times 10 = 12340$

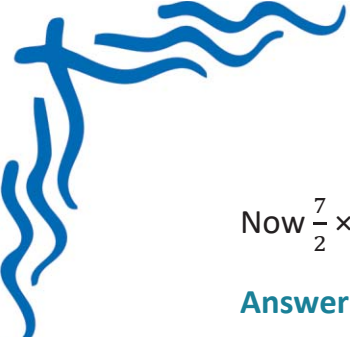   **Step 3:** Add $2468 + 12340 = 14808$

    Answer: $1234 \times 12 = 14,808$

Example 2:

Question: Multiply $3\frac{1}{2}$ by 14

Solution:

    First change $3\frac{1}{2}$ to improper fraction $= \frac{7}{2}$

Now $\frac{7}{2} \times 14 = \frac{7 \times 14}{2} = \frac{98}{2} = 49$

Answer: $3\frac{1}{2} \times 14 = 49$

Summary Points

- To multiply a 4-digit number by a 2-digit number, multiply in steps using the long multiplication method

- Start with the ones digit, then multiply with the tens digit

- Add both partial products to find the final answer

- Use multiplication properties to simplify or check answers

- Mixed numbers can be changed to improper fractions before multiplying with whole numbers