

## Multiply a 2-digit number by a 1-digit number – no exchange

### Notes and guidance

In this small step, children explore multiplying 2-digit numbers by 1-digit numbers. At this stage, none of the multiplication calculations require exchanges.

Children apply their understanding of partitioning to represent and solve calculations using the expanded method. The 2-digit number is partitioned into tens and ones, both are multiplied by the 1-digit number and then the partial products are added to find the total product. This is explored through a progression of representations from base 10 to place value counters and part-whole models, alongside number sentences.

The expanded method allows children to gain a deep understanding of the structure of the calculation before progressing to formal short multiplication in Year 4

### Things to look out for

- Children may partition a 2-digit number into single digits rather than tens and ones, for example  $48 \times 8 = 4 \times 8 + 8 \times 8$
- Errors may occur if partial products are lined up incorrectly.

### Key questions

- How can you partition a 2-digit number into tens and ones?
- What is the product of the tens and the single digit?
- What is the product of the ones and the single digit?
- What do you need to do to find the final answer?

### Possible sentence stems

- \_\_\_\_\_ tens and \_\_\_\_\_ ones multiplied by \_\_\_\_\_ is equal to \_\_\_\_\_ tens multiplied by \_\_\_\_\_ and \_\_\_\_\_ ones multiplied by \_\_\_\_\_
- \_\_\_\_\_ tens multiplied by \_\_\_\_\_ is equal to \_\_\_\_\_  
\_\_\_\_\_ ones multiplied by \_\_\_\_\_ is equal to \_\_\_\_\_  
\_\_\_\_\_ multiplied by \_\_\_\_\_ is equal to \_\_\_\_\_
- \_\_\_\_\_  $\times$  \_\_\_\_\_ = \_\_\_\_\_ tens  $\times$  \_\_\_\_\_ + \_\_\_\_\_  $\times$  \_\_\_\_\_

### National Curriculum links

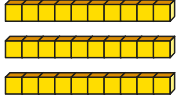

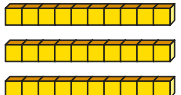

- Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods

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## Key learning

- Complete the number sentences.

Use the place value chart to help you.

Tens	Ones
	
	

$$3 \text{ tens} \times 2 = \underline{\quad} \text{ tens}$$

$$2 \text{ ones} \times 2 = \underline{\quad} \text{ ones}$$







$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$32 \times 2 = \underline{\quad}$$

- A minibus has space for 21 people.

How many people can fit on 3 minibuses?

Use a place value chart and base 10 to help you.

Tens	Ones
	
	
	
	

$$2 \text{ tens} \times 4 = \underline{\quad} \text{ tens}$$

$$1 \text{ one} \times 4 = \underline{\quad} \text{ ones}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$21 \times 4 = \underline{\quad}$$

- Work out the multiplications.

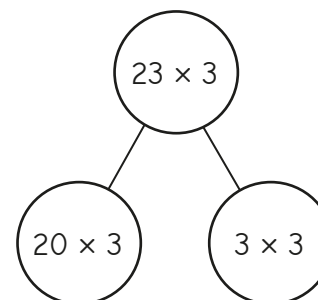
$$32 \times 3$$

$$23 \times 2$$

$$12 \times 4$$

$$41 \times 2$$

- Ron has used a part-whole model to multiply 23 by 3



$$20 \times 3 = 60$$

$$3 \times 3 = 9$$

$$23 \times 3 = 69$$

Use a part-whole model to help you work out the multiplications.

$$21 \times 5$$

$$42 \times 2$$

$$52 \times 2$$

$$21 \times 6$$

- Complete the number sentences.

▶  $32 \times 4$

$$= \underline{\quad} \text{ tens} \times 4 + \underline{\quad} \text{ ones} \times 4$$

$$= \underline{\quad} + \underline{\quad}$$

$$= \underline{\quad}$$

▶  $42 \times 3$

$$= \underline{\quad} \text{ tens} \times 3 + \underline{\quad} \text{ ones} \times 3$$

$$= \underline{\quad} + \underline{\quad}$$

$$= \underline{\quad}$$

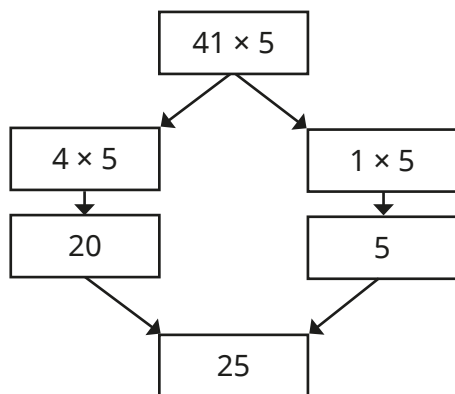
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## Reasoning and problem solving

Tiny is working out  $41 \times 5$



I can partition 41 into 4 and 1 to help me.



What has Tiny done wrong?  
Work out the correct answer.



205

Whitney is comparing calculations.



$$4 \times 21 = 2 \times 42$$

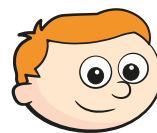
Yes

Is Whitney correct?

How does she know this?



Ron multiplies a 2-digit number by a 1-digit number.



The answer is 48

48 and 1  
24 and 2  
12 and 4

What might Ron's numbers be?

