

# Multiply by 100

## Notes and guidance

Building on the previous step, children learn to multiply whole numbers by 100, understanding that this is the same as multiplying by 10 and then multiplying by 10 again. They need to be able to visualise making a number 100 times the size and understand that “100 times the size” is the same as “multiply by 100”.

Children use a place value chart, counters and base 10 to explore what happens to the values of the digits when multiplying by 100. Encourage children to recognise that when multiplying whole numbers by 100, the digits move two place value columns to the left and zeros are needed as placeholders in the now blank columns. As with multiplying by 10 in the previous step, it is important that they do not develop the misconception that they just add two zeros to multiply by 100, as this will cause confusion when multiplying decimals by 100

## Things to look out for

- Children may move only some of the digits and misplace the placeholder, for example  $45 \times 100 = 4,005$
- Children may need support to recognise that multiplying by 100 is the same as multiplying by 10 and multiplying by 10 again.

## Key questions

- What do you notice when multiplying by 100?
- How can you use multiplying by 10 to help you multiply by 100?
- What happens to the digits when you multiply by 100?
- How can you use a place value chart to show multiplying \_\_\_\_\_ by 100?
- What is \_\_\_\_\_ multiplied by 100?
- What is 100 lots of \_\_\_\_\_?

## Possible sentence stems

- \_\_\_\_\_  $\times$  100 = \_\_\_\_\_  $\times$  10  $\times$  10 = \_\_\_\_\_  $\times$  10 = \_\_\_\_\_
- \_\_\_\_\_  $\times$  100 = \_\_\_\_\_, so  $100 \times$  \_\_\_\_\_ = \_\_\_\_\_
- \_\_\_\_\_ is 100 times the size of \_\_\_\_\_

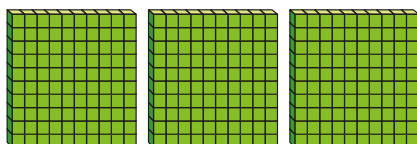
## National Curriculum links

- Recall multiplication and division facts for multiplication tables up to  $12 \times 12$
- Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000 (Y5)

# Multiply by 100

## Key learning

- Use the base 10 to complete the number sentences.



$3 \times 1 \text{ hundred} = \underline{\hspace{2cm}}$  hundreds

$3 \times 100 = \underline{\hspace{2cm}}$

- Complete the number sentences.

▶  $2 \times 100 = \underline{\hspace{2cm}}$

▶  $\underline{\hspace{2cm}} = 4 \times 100$

▶  $100 \times 6 = \underline{\hspace{2cm}}$

▶  $\underline{\hspace{2cm}} = 100 \times 7$

- There are 8 jars.

Each jar contains 100 drawing pins.

How many drawing pins are there altogether?



- Work out the multiplications.

▶  $7 \times 1$        $7 \times 10$        $70 \times 10$        $7 \times 100$

▶  $3 \times 1$        $3 \times 10$        $30 \times 10$        $3 \times 100$

▶  $8 \times 1$        $8 \times 10$        $80 \times 10$        $8 \times 100$

What do you notice?

- Dora uses a place value chart to work out  $23 \times 100$

| Th | H | T  | O   |
|----|---|----|-----|
|    |   | ●● | ●●● |

$\times 100$

| Th | H   | T | O |
|----|-----|---|---|
| ●● | ●●● |   |   |

I can see that when I multiply by 100, all the counters move two places to the left on a place value chart.

$23 \times 100 = 2,300$

Use Dora's method to work out the multiplications.

$41 \times 100$

$94 \times 100$

$83 \times 100$

- Write  $<$ ,  $>$  or  $=$  to compare the multiplications.

$75 \times 100$  ○  $75 \times 10$

$460 \times 10$  ○  $100 \times 47$

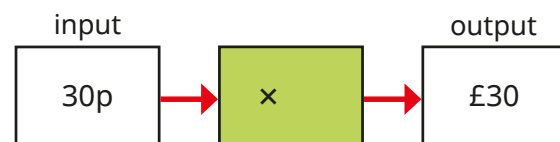
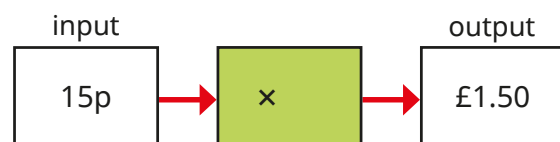
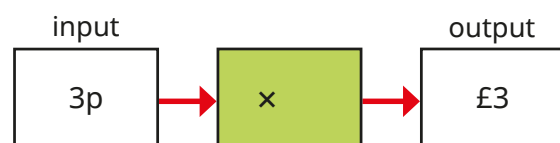
$39 \times 100$  ○  $39 \times 10 \times 10$

$10 \times 420$  ○  $42 \times 100$

# Multiply by 100

## Reasoning and problem solving

Which function machine does **not** multiply by 100?

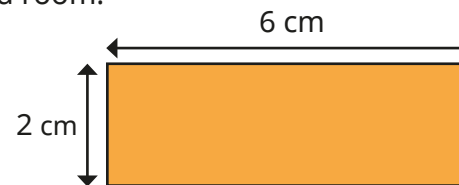


Explain your answer.



$$15p \times 10 = £1.50$$

A designer draws a plan of a room.



The length and width of the actual room are 100 times the size of the plan.

What is the length and width of the room?

Give your answer in metres.

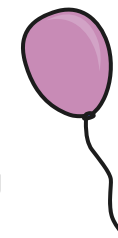
length: 6 m  
width: 2 m

Huan has 4 balloons.

Brett has 10 times as many balloons as Huan.

Nijah has 100 times as many balloons as Huan.

How many balloons do they have altogether?



444 balloons