

Reasoning and Problem Solving

Step 2: Multiply by 100

National Curriculum Objectives:

Mathematics Year 4: (4C6a) [Recall multiplication and division facts for multiplication tables up to \$12 \times 12\$](#)

Mathematics Year 4: (4C6b) [Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Add digits to complete a multiplication by 100 calculation. Includes blank PV chart.

Expected Add digits to complete multiplication by 100 calculations. Numerals only.

Greater Depth Add digits to complete multiplication by 100 calculations. Calculation presented by multiplying 10 then 10 again with inequality signs.

Questions 2, 5 and 8 (Reasoning)

Developing Explain if the multiplication calculation is correct. Includes PV chart and counters.

Expected Explain if the multiplication calculation is correct. Numerals only.

Greater Depth Explain if the multiplication calculation is correct. Presented in context i.e. money with a two-step problem of multiplying by 100.

Questions 3, 6 and 9 (Reasoning)

Developing Explain if the place value chart and calculation have been completed correctly. Identify and correct any mistakes.

Expected Explain if the calculation has been completed correctly. Identify and correct any mistakes.

Greater Depth Explain if the calculation has been completed correctly. Identify and correct any mistakes. Calculation written with unconventional partitioning and multiplying by 100 and/or 10 then 10 again.

More [Year 4 Multiplication and Division](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Multiply by 100

1a. Complete the calculation below and draw matching counters on the place value chart.

Th	H	T	O

$$4 \square \times 100 = 4 \square 0 0$$



PS

Multiply by 100

1b. Complete the calculation below and draw matching counters on the place value chart.

Th	H	T	O

$$6 \square \times 100 = 6 \square 0 0$$



PS

2a. Julia needs 1,781 pens for her company. They come in boxes of 100. She has used a place value chart for support.



I need to order 17 boxes.

Th	H	T	O
•	•••••		

Is Julia correct? Explain your answer.



R

2b. Will needs 2,549 bricks to build a new shed. They come in packs of 100. He has used a place value chart for support.



I need to order 25 boxes.

Th	H	T	O
••	••••		

Is Will correct? Explain your answer.



R

3a. Peter has used a place value chart to display the following statement.

Th	H	T	O
•	•••••		

>

Th	H	T	O
•••	•		

$$17 \times 100 > 41 \times 100$$

Is he correct? Explain your reasoning. Find and correct any errors.



R

3b. Tessa has used a place value chart to display the following statement.

Th	H	T	O
•••••	••••		

=

Th	H	T	O
••••	••••		

$$64 \times 100 = 65 \times 100$$

Is she correct? Explain your reasoning. Find and correct any errors.



R

Multiply by 100

Multiply by 100

4a. Use the digit cards to complete the calculations. You can use each card more than once.



$$6 \square \times 100 = 6 \square 0 0$$

$$\square 2 \times 100 = \square \square \square 0$$

Investigate the possible calculations.



PS

4b. Use the digit cards to complete the calculations. You can use each card more than once.



$$5 \square \times 100 = 5 \square 0 0$$

$$\square 1 \times 100 = \square \square \square 0$$

Investigate the possible calculations.



PS

5a. Emily is going to order some pencils in boxes of 100. There are 1,850 pupils in the whole school.



I need to order 18 boxes.

Is Emily correct? Explain your answer.



R

5b. Josh is going to order some mugs in boxes of 100. There are 2,405 workers in his factory.



I need to order 24 boxes.

Is Josh correct? Explain your answer.



R

6a. Ruby has completed the statement below.

$$53 \times 100 < 51 \times 100$$

Is she correct? Explain your reasoning. Find and correct any errors.



R

6b. Qasim has completed the statement below.

$$89 \times 100 > 91 \times 100$$

Is he correct? Explain your reasoning. Find and correct any errors.



R

Multiply by 100

Multiply by 100

7a. Use the digit cards to complete the calculations. You can use each card more than once.



$$\square \times 8 \times 100 > 4 \times \square \square \times 100$$

$$\square \times 6 \times 10 \times 10 < 3 \times \square \square \times 100$$

Investigate the possible calculations.



PS

7b. Use the digit cards to complete the calculations. You can use each card more than once.



$$\square \times 8 \times 100 > 5 \times \square \square \times 100$$

$$\square \times 7 \times 10 \times 10 < 2 \times \square \square \times 100$$

Investigate the possible calculations.



PS

8a. Theresa is going to order rulers for the whole school. Each ruler costs 10p and they come in packs of 10.



I need 793 rulers so I will spend 800p.

Is Theresa correct? Explain your answer.



R

8b. Adam is going to order exercise books for the whole school. Each book costs 10p and they come in packs of 10.



I need 598 books so I will spend 598p.

Is Adam correct? Explain your answer.



R

9a. Naila has completed the statement below.

7 tens and 5 ones $\times 10 \times 10 >$
6 tens and 18 ones $\times 100$

Is she correct? Explain your reasoning.
Find and correct any errors.



R

9b. Leo has completed the statement below.

4 tens and 47 ones $\times 100 = 3$
tens and 61 ones $\times 10 \times 10$

Is he correct? Explain your reasoning.
Find and correct any errors.



R

Reasoning and Problem Solving Multiply by 100

Developing

- 1a. Various answers, for example:
 $43 \times 100 = 4,300$ with correct drawings.
- 2a. No, Julia is incorrect because she needs 18 boxes. $18 \times 100 = 1,800$ which will be enough for her company.
- 3a. The statement is incorrect as the wrong symbol has been used. The correct statement is: $17 \times 100 < 41 \times 100$.

Expected

- 4a. Various answers, for example:
 $63 \times 100 = 6,300$; $42 \times 100 = 4,200$
- 5a. No, Emily is incorrect because she needs 19 boxes. $19 \times 100 = 1,900$ which will be enough for all the pupils at her school.
- 6a. Ruby has not completed the statement correctly because 5,300 is not less than 5,100. The wrong symbol has been used. The correct statement is: $53 \times 100 > 51 \times 100$.

Greater Depth

- 7a. Various answers, for example:
 $7 \times 8 \times 100 > 4 \times 12 \times 100$;
 $5 \times 6 \times 10 \times 10 < 3 \times 15 \times 100$
- 8a. No, Theresa is incorrect because she will need to buy 80 packs as they come in packs of 10. $10 \times 10 \times 80 = 8,000\text{p}$ (or £80).
- 9a. Naila has not completed the statement correctly because 7,500 is not greater than 7,800. The correct statement is: 7 tens and 5 ones $\times 10 \times 10 < 6$ tens and 18 ones $\times 100$.

Reasoning and Problem Solving Multiply by 100

Developing

- 1b. Various answers, for example:
 $60 \times 100 = 6,000$ with correct drawings.
- 2b. No, Will is not correct because he needs 26 boxes. $26 \times 100 = 2,600$ which will be enough for his shed.
- 3b. The statement is incorrect as the wrong symbol has been used. The correct statement is: $64 \times 100 < 65 \times 100$.

Expected

- 4b. Various answers, for example: $58 \times 100 = 5,800$; $71 \times 100 = 7,100$.
- 5b. No, Josh is incorrect because he needs 25 boxes. $25 \times 100 = 2,500$ which will be enough for everyone at his factory.
- 6b. Qasim has not completed the statement correctly because 8,900 is not greater than 9,100. The wrong symbol has been used. The correct statement is: $89 \times 100 < 91 \times 100$.

Greater Depth

- 7b. Various answers, for example:
 $9 \times 8 \times 100 > 5 \times 13 \times 100$;
 $3 \times 7 \times 10 \times 10 < 2 \times 14 \times 100$
- 8b. No, Adam is incorrect because he will need to buy 60 packs as they come in packs of 10. $10 \times 10 \times 60 = 6,000\text{p}$ (or £60).
- 9b. Leo has not completed the statement correctly because 8,700 is not equal to 9,100. The correct statement is: 4 tens and 47 ones $\times 100 < 3$ tens and 61 ones $\times 10 \times 10$.