

Reasoning and Problem Solving

Multiply up to a 4-Digit Number by a 1-Digit Number

National Curriculum Objectives:

Mathematics Year 5: (5C7a) Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Identify and correct a mistake when multiplying a 4-digit number by a 1-digit number with no exchanges and no use of zero as a placeholder. Formal written method with pictorial support.

Expected Identify and correct a mistake when multiplying a 4-digit number by a 1-digit number with exchanges and some use of zero as a placeholder. Formal written method with pictorial support.

Greater Depth Identify and correct a mistake when multiplying a 4-digit number by a 1-digit number with exchanges and the use of zero as a placeholder. Formal written method with some pictorial support.

Questions 2, 5 and 8 (Problem Solving)

Developing Find the missing digits in a calculation. No use of zero as a place holder and no exchanges. Pictorial support given with values shown within place value counters. Formal written method with pictorial support.

Expected Find the missing digits in a calculation. Some use of zero as a place holder and including exchanges. Formal written method with pictorial support.

Greater Depth Find the missing digits in a calculation. Use of zero as a place holder and including exchanges. Formal written method with some pictorial support.

Questions 3, 6 and 9 (Reasoning)

Developing Use knowledge of multiplying a 4-digit number by a 1-digit number to answer a word problem. No use of zero as a place holder and no exchanges. Formal written method with pictorial support.

Expected Use knowledge of multiplying a 4-digit number by a 1-digit number to answer a word problem. Some use of zero as a place holder and including exchanges. Formal written method with pictorial support.

Greater Depth Use knowledge of multiplying a 4-digit number by a 1-digit number to answer a word problem. Use of zero as a place holder and including exchanges. Formal written method with some pictorial support.

Multiply up to a 4-Digit Number by a 1-Digit Number

1a. George solved the calculation below and thinks the answer is 7,642.

	4	3	2	1
x				2
<hr/>				



Identify his mistake.

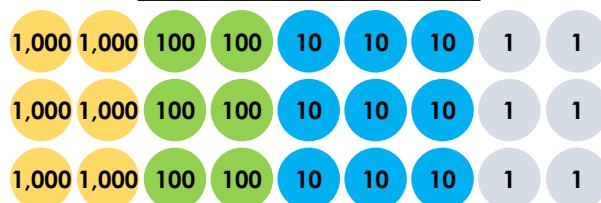


PS

Multiply up to a 4-Digit Number by a 1-Digit Number

1b. Deb solved the calculation below and thinks the answer is 6,693.

	2	2	3	2
x				3
<hr/>				



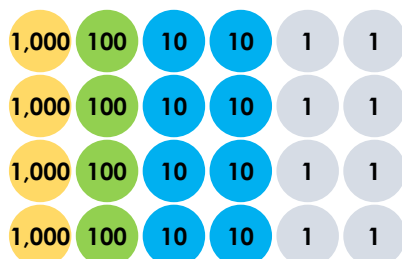
Identify her mistake.



PS

2a. Work out the missing numbers. Use the place value counters to help you.

	1		2	2
x				4
<hr/>				



PS

2b. Work out the missing numbers. Use the place value counters to help you.

		2	1	
x				2
<hr/>				



PS

3a. A PC costs £1,321. Mr Costo buys 3 for his business. He says the total cost is £3,963.



x				
<hr/>				

Is he correct? Prove it by completing the representation and the calculation.



R

3b. A family holiday costs £2,431. Mrs Juarez says the total cost for 2 families is £2,861.



x				
<hr/>				

Is she correct? Prove it by completing the representation and the calculation.



R

Multiply up to a 4-Digit Number by a 1-Digit Number

Multiply up to a 4-Digit Number by a 1-Digit Number

4a. Aslaan solved the calculation below and thinks the answer is 21,323.
 $7,141 \times 3$

Th	H	T	O

Complete the calculation using a formal method to identify his mistake.

★ E

PS

4b. Chara solved the calculation below and thinks the answer is 3,254.
 $8,126 \times 4$

Th	H	T	O

Complete the calculation using a formal method to identify her mistake.

★ E

PS

5a. Work out the missing numbers. Use the place value chart to help you.

Th	H	T	O

2

4

6

x

3

2

4

1

1

5b. Work out the missing numbers. Use the place value chart to help you.

Th	H	T	O

7

0

8

x

2

4

6

8

1

6a. A set of desks costs £2,705. Mrs Rouse buys 4 sets for her school. She says the total cost is £10,820.

Th	H	T	O

Is she correct? Complete the chart and use a formal method to prove it.

★ E

R

6b. A new driveway costs £4,862. Mr North is asked to pave 3 driveways. He says the total cost is £14,486.

Th	H	T	O

Is he correct? Complete the chart and use a formal method to prove it.

★ E

R

Multiply up to a 4-Digit Number by a 1-Digit Number

Multiply up to a 4-Digit Number by a 1-Digit Number

7a. Cassie solved the calculation below and thinks the answer is 10,808.

$5,207 \times 4$

Th	H	T	O
			

Complete the calculation using a formal method to identify her mistake.



PS

7b. Sanjay solved the calculation below and thinks the answer is 72,134.

$8,126 \times 9$

Th	H	T	O
			

Complete the calculation using a formal method to identify his mistake.



PS

8a. Work out the missing numbers. Use the place value chart to help you.

Th	H	T	O

	7	1	<input type="text"/>	8
x				<input type="text"/>
<input type="text"/>	2	6	4	8
			4	



PS

8b. Work out the missing numbers. Use the place value chart to help you.

Th	H	T	O

	<input type="text"/>	7	8	<input type="text"/>
x				7
1	9	4	<input type="text"/>	0
	5	5		



PS

9a. A family car costs £4,174. Mr Jones says the total cost of 4 family cars will be £16,696.

Th	H	T	O

x				

Is he correct? Prove it.



R

9b. A TV package costs £1,991. Mrs Sajjad says the total cost of 6 packages will be £11,446.

Th	H	T	O

x				

Is she correct? Prove it.



R

Reasoning and Problem Solving

Multiply up to a 4-Digit Number by a 1-Digit Number

Developing

1a. $4,321 \times 2 = 8,642$. George has not multiplied 4,000 by 2 correctly.

2a.

	1	1	2	2
x				4
<hr/>				
	4	4	8	8

3a. Yes, Mr Costa is correct because $\pounds 1,321 \times 3 = \pounds 3,963$.

Expected

4a. $7,141 \times 3 = 21,423$. Aslaan has not correctly added up the tens when exchanging.

5a.

	2	4	1	6
x				3
<hr/>				
	7	2	4	8
<hr/>				
	1		1	

6a. Yes, Mrs Rouse is correct because $\pounds 2,705 \times 4 = \pounds 10,820$.

Greater Depth

7a. $5,207 \times 4 = 10,828$. Cassie has not added the tens when exchanging.

8a.

	7	1	0	8
x				6
<hr/>				
	4	2	6	4
<hr/>				
			4	

9a. Yes, Mr Jones is correct because $\pounds 4,174 \times 4 = \pounds 16,696$.

Reasoning and Problem Solving

Multiply up to a 4-Digit Number by a 1-Digit Number

Developing

1b. $2,232 \times 3 = 6,696$. Deb has not multiplied 2 by 3 correctly.

2b.

	1	2	1	4
x				2
<hr/>				
	2	4	2	8

3b. No, Mrs Juarez is not correct because $\pounds 2,431 \times 2 = \pounds 4,862$, not $\pounds 2,861$.

Expected

4b. $8,126 \times 4 = 32,504$. Chara has not used 0 as a place holder.

5b.

	7	0	8	4
x				2
<hr/>				
	1	4	1	6
<hr/>				
		1		

6b. No, Mr North is not correct because $\pounds 4,862 \times 3 = \pounds 14,586$, not $\pounds 14,486$.

Greater Depth

7b. $8,126 \times 9 = 73,134$. Sanjay has not added the hundreds when exchanging.

8b.

	2	7	8	0
x				7
<hr/>				
	1	9	4	6
<hr/>				
	5	5		

9b. No, Mrs Sajjad is not correct because $\pounds 1,991 \times 6 = \pounds 11,946$, not $\pounds 11,446$.