Reasoning and Problem Solving
Step 7: Multiply 3 Digits by 1 Digit

National Curriculum Objectives:

Mathematics Year 4: (4C6a) Recall multiplication and division facts for multiplication tables up to 12 × 12
Mathematics Year 4: (4C7) Multiply two-digit and three-digit numbers by a one-digit number using formal written layout

Differentiation:

Questions 1, 4 and 7 (Problem Solving)
Developing Solve the calculations (in expanded form) to identify which one has a given digit sum. Includes up to one exchange and no zeros in the tens or ones column.
Expected Solve the calculations (in short written form) to identify which one has a given digit sum. Includes up to two exchanges and some use of zeros in the tens or ones column.
Greater Depth Match the numbers to make a given product and identify the numbers which cannot be used. Includes up to three exchanges and some use of zeros in the tens or ones column.

Questions 2, 5 and 8 (Problem Solving)
Developing Add the missing digit to the multiplication calculation. Includes up to one exchange and no zeros in the tens or ones column. Partially completed place value chart given to support.
Expected Add the missing digits to the multiplication calculation. Includes up to two exchanges and some use of zeros in the tens or ones column.
Greater Depth Add the missing digits to the multiplication calculation. Includes up to three exchanges and some use of zeros in the tens or ones column.

Questions 3, 6 and 9 (Reasoning)
Developing Prove if a statement is correct by multiplying a 3-digit number by a 1-digit number. Includes up to one exchange and no zeros in the tens or ones column.
Expected Prove if a statement is correct by multiplying a 3-digit number by a 1-digit number. Includes up to two exchanges and some use of zeros in the tens or ones column.
Greater Depth Prove if a statement is correct by multiplying a 3-digit number by a 1-digit number. Includes up to three exchanges and some use of zeros in the tens or ones column.

More Year 4 Multiplication and Division resources.

Did you like this resource? Don't forget to review it on our website.

Multiply 3 Digits by 1 Digit

Multiply 3 Digits by 1 Digit

1a. Which calculation has an answer with a digit sum of 14.

A.

	1	3	8
x			2
			0
		0	0

B.

	1	1	6
x			4
			0
		0	0

D PS

1b. Which calculation has an answer with a digit sum of 12.

A.

	2	1	7
x			3
			0
		0	0

B.

	1	1	5
x			5
			0
		0	0

D PS

2a. Add the missing digit to the calculation below. Complete the place value chart to help you.

Hundreds	Tens	Ones
●●	●●●	

	2	3	□
x			2
			8
		6	0
	4	0	0
	4	6	8

D PS

2b. Add the missing digit to the calculation below. Complete the place value chart to help you.

Hundreds	Tens	Ones
●●●●●	●●	

	5	2	□
x			3
			3
		6	0
1	5	0	0
1	5	6	3

D PS

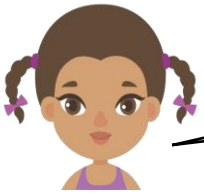
3a. Imran says,

The answer to 117 x 5 will have a 3 in the ones column because 7 x 5 = 35.

Is Imran correct? Prove it.

D R

3b. Sadia says,



The answer to 281 x 3 will have a 6 in the hundreds column because 3 x 200 = 600.

Is Sadia correct? Prove it.

D R

Multiply 3 Digits by 1 Digit

Multiply 3 Digits by 1 Digit

4a. Which calculation has an answer with a digit sum of 12.

A.

	4	0	9
x			3

B.

	6	2	2
x			4

E PS

4b. Which calculation has an answer with a digit sum of 15.

A.

	5	3	0
x			6

B.

	3	1	8
x			5

E PS

5a. Add the missing digits to the calculation below.

4	1	8	9	6

	2	2	☐
x			4
	☐	9	6
		☐	

E PS

5b. Add the missing digits to the calculation below.

1	7	3	5	2

	4	☐	6
x			6
☐	8	5	6
	4	☐	

E PS

6a. Jack says,

> The answer to 504 x 7 will have a 2 in the tens column because 7 x 4 = 28.

Is Jack correct? Prove it.

E R

6b. Inaaya says,

> 430 x 8 have a 2 in the hundreds column because 8 x 400 = 3,200.

Is Inaaya correct? Prove it.

E R

Multiply 3 Digits by 1 Digit

7a. Match the numbers which have an answer of 3,456.

908	3
735	8
864	6
432	4

Which numbers cannot be used?

GD PS

8a. Add the missing digits to the calculation below so that all exchanges are even.

	□	5	□
x			9
8	5	7	7
	□	□	

GD PS

9a. Marvin says,

When I multiply a 3-digit number by a 1-digit number, I can not get an answer more than 9,000.

Is Marvin correct? Prove it.

GD R

Multiply 3 Digits by 1 Digit

7b. Match the numbers which have an answer of 2,274.

542	3
379	7
680	5
758	6

Which numbers cannot be used?

GD PS

8b. Add the missing digits to the calculation below so that all exchanges are even.

	6	□	4
x			7
□	4	3	□
	□	2	

GD PS

9b. Lian says,

When multiplying a 3- and 1-digit number, I can only make an answer of 1,000 if there is a zero in the ones column.

Is Lian correct? Prove it.

GD R

Reasoning and Problem Solving
Multiply 3 Digits by 1 Digit

Developing

1a. B

2a. 234 x 2 = 468

3a. Imran is incorrect. 7 x 5 is 35 but he has placed the 3 in the wrong column. It will be used in the tens column, rather than the ones. The correct answer is 585.

Expected

4a. A

5a.

	2	2	4
x			4
	8	9	6
		1	

6a. Jack is correct. Because 7 x 0 = 0 and 7 x 4 = 28, there will be two tens in the tens column. 507 x 4 = 228.

Greater Depth

7a. 864 x 4 = 3,456 and 432 x 8 = 3,456. The numbers 3, 6, 735 and 908 cannot be used.

8a.

	9	5	3
x			9
8	5	7	7
	4	2	

9a. Marvin is correct. There are no 3-digit and 1-digit numbers that can be multiplied together to get 9,000. The largest answer that can be achieved is 999 x 9 = 8,991.

Reasoning and Problem Solving
Multiply 3 Digits by 1 Digit

Developing

1b. A

2b. 521 x 3 = 1,563

3b. Sadia is incorrect. 3 x 200 does equal 600, but she also needs to add the 200 from 80 x 3 = 240. Therefore, 281 x 3 = 843.

Expected

4b. B

5b.

	4	7	6
x			6
2	8	5	6
	4	3	

6b. Innaya is incorrect. 8 x 400 does equal 3,200 but she has forgotten to add the 200 from 30 x 8 to the hundreds column. The correct answer is 430 x 8 = 3,440 so there is a 4 in the hundreds column.

Greater Depth

7b. 758 x 3 = 2,274 and 379 x 6 = 2,274. The numbers 5, 7, 542 and 680 cannot be used.

8b.

	6	3	4
x			7
4	4	3	8
	2	2	

9b. Lian is correct. To make 1,000, Lian can multiply 200 by 5, 250 by 4 or 500 by 2.