<u>Reasoning and Problem Solving</u> <u>Step 3: Multiply 2 Digits by 2 Digits</u>

Teaching note: We have included grids for column multiplication and recommend that this resource is printed in colour or greyscale.

National Curriculum Objectives:

Mathematics Year 5: (5C6a) <u>Multiply and divide numbers mentally drawing upon</u> known facts

Mathematics Year 5: (5C6b) <u>Multiply and divide whole numbers and those involving</u> decimals by 10, 100 and 1,000

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

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Create possible multiplications using numbers using the fully expanded method with no exchanges.

Expected Create possible multiplications using formal multiplication method including exchanges.

Greater Depth Create possible multiplications using formal multiplication method including exchanges where the numbers in the questions are incomplete.

Questions 2, 5 and 8 (Problem Solving)

Developing Find the possible numbers using the given statements. Will require use of the fully expanded method with no exchanges.

Expected Find the possible numbers using the given statements. Will require use of formal multiplication method. Use of zero as a place holder and including exchanges.

Greater Depth Find the possible numbers using the given statements. Will require use of formal multiplication method including exchanges where the numbers in the questions are incomplete.

Questions 3, 6 and 9 (Reasoning)

Developing Explain whether a multiplication calculation is correct, using the fully expanded method with no exchanges.

Expected Explain whether a multiplication calculation is correct, using formal multiplication method including exchanges.

Greater Depth Explain whether a multiplication calculation is correct, using formal multiplication method including exchanges where the numbers in the questions are incomplete.

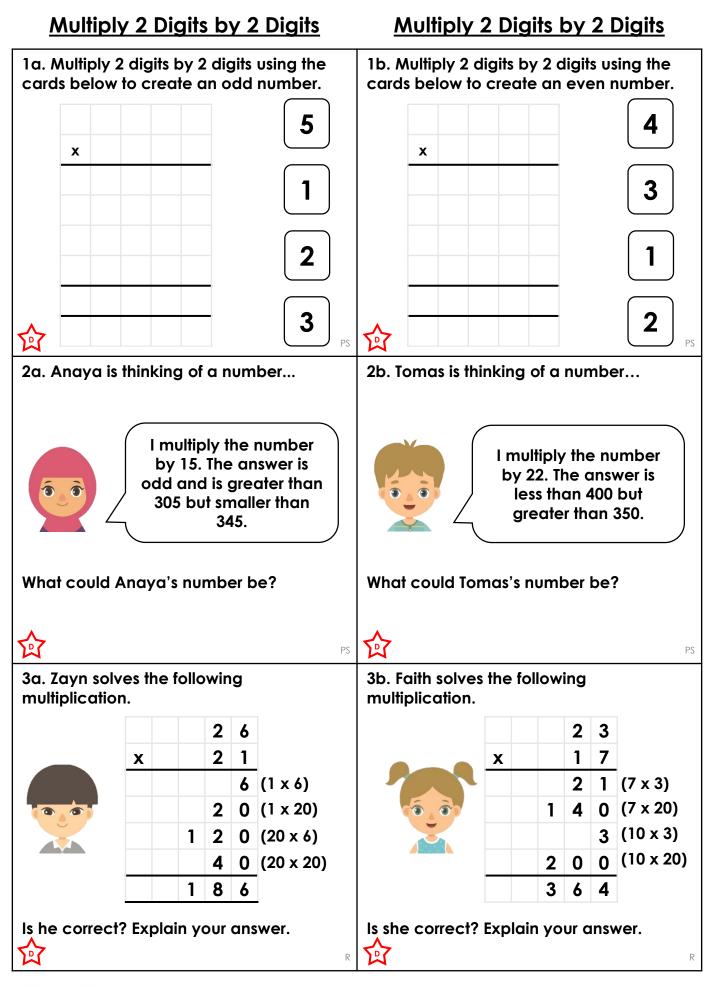
More Year 5 Multiplication and Division resources.

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



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Reasoning and Problem Solving – Multiply 2 Digits by 2 Digits – Teaching Information

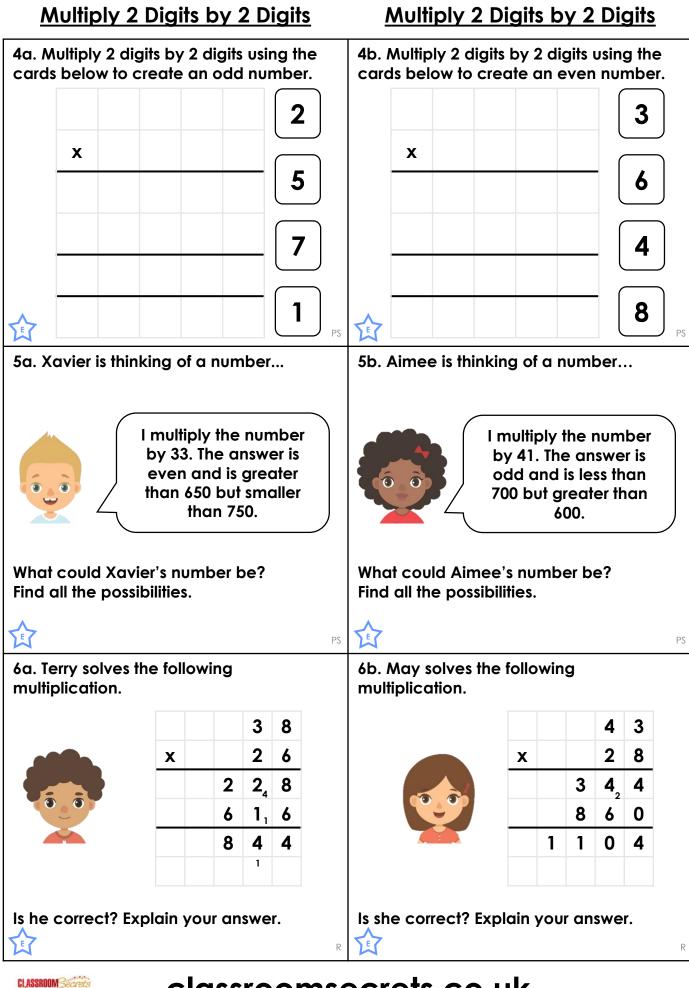


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Reasoning and Problem Solving – Multiply 2 Digits by 2 Digits – Year 5 Developing

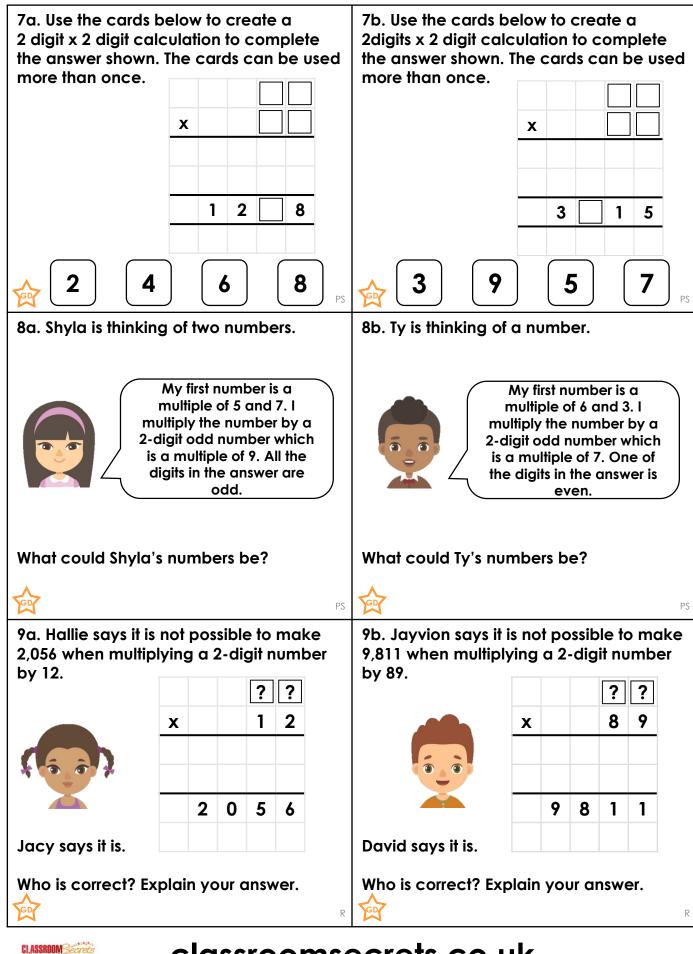


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Reasoning and Problem Solving – Multiply 2 Digits by 2 Digits – Year 5 Expected

Multiply 2 Digits by 2 Digits



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Reasoning and Problem Solving – Multiply 2 Digits by 2 Digits – Year 5 Greater Depth

Reasoning and Problem Solving Multiply 2 Digits by 2 Digits

Developing

1a. Various answers, for example:
15 x 23 = 345; 51 x 23 = 1,173
2a. Various answers, for example:
21; because 21 x 15 = 315
3a. No, because he has worked out that
20 x 20 = 40. The correct answer is 400, making the final answer 546.

Expected

4a. Various answers, for example: $25 \times 71 = 1,775$; $51 \times 27 = 1,377$ 5a. The number could be 20 or 22: $33 \times 20 = 660$ or $33 \times 22 = 726$ 6a. No, because the second part of the calculation is incorrect. $20 \times 38 = 760$ and the final answer should be 988.

Greater Depth

7a.	x			2 4	6 8
			2	04	8
		1	02	4	0
		1	2	4	8

8a. Various answers, for example: 35 x 45 = 1,575

9a. Hallie is correct, because the highest
2-digit number she can make is 99, which when multiplied by 12 gives the answer
1,188 which is less than 2,000.

<u>Reasoning and Problem Solving</u> <u>Multiply 2 Digits by 2 Digits</u>

<u>Developing</u>

1b. Various answers, for example:
32 x 14 = 448; 41 x 32 = 1,312;
13 x 42 = 546
2b. Various answers, for example:
16; because 22 x 16 = 352
3b. No, because she has worked out that
10 x 3 = 3. The correct answer is 30, making the final answer 391.

Expected

4b. Various answers, for example: $36 \times 48 = 1,728; 64 \times 38 = 2,432;$ $43 \times 68 = 2,924; 63 \times 48 = 3,024$ 5b. The number could be 15 or 17. $41 \times 15 = 615$ or $41 \times 17 = 697$ 6b. No. May has not written down the exchange when adding the tens in the answer. It should be 1,204.

Greater Depth

7b.

			9	5
x			3	7
		6	6 ₃	5
	2	8 ₁	5	0
	3	5	1	5
		1		

8b. Various answers, for example: 18 x 21 = 378

9b. Jayvion is correct, because the highest 2-digit number he can make is 99, which when multiplied by 89 gives the answer 8,811 which is less than 9,000.



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