Reasoning and Problem Solving
Step 6: Divide 4 Digits by 1 Digit

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

National Curriculum Objectives:

Mathematics Year 5: (5C7b) Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context

Differentiation:

Questions 1, 4 and 7 (Reasoning)
Developing Identify whether a statement is correct when comparing calculations and explain why. No use of zero as a place holder and no exchanges. Supported with place value counters.
Expected Identify whether a statement is correct when comparing calculations and explain why. Includes some use of zero as a place holder and up to two exchanges.
Greater Depth Identify whether a statement is correct when comparing calculations and explain why. Include use of zero as a place holder and up to three exchanges.

Questions 2, 5 and 8 (Reasoning)
Developing Explain errors in a calculation method. No use of zero as a place holder and no exchanges. Supported with place value counters.
Expected Explain errors in a calculation method. Includes some use of zero as a place holder and up to two exchanges.
Greater Depth Explain errors in a calculation method. Include use of zero as a place holder and up to three exchanges.

Questions 3, 6 and 9 (Problem Solving)
Developing Find where the missing counter should be in the place value grid. No use of zero as a place holder and no exchanges. Short method of division supported with place value grid.
Expected Find where the missing counter should be in the place value grid. Includes some use of zero as a place holder and up to two exchanges. Short method of division supported by place value grid.
Greater Depth Use the number of counters given to create a division calculation. Include use of zero as a place holder and up to three exchanges.
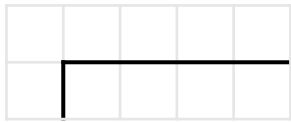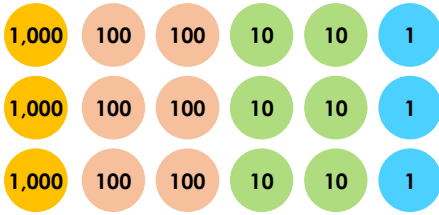
More Year 5 Multiplication and Division resources.

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

1a. Isabel has written a comparison statement.

$$3,663 \div 3 \quad > \quad 1,202$$

1,000	100	100	10	10	1
1,000	100	100	10	10	1
1,000	100	100	10	10	1

Is she correct? Explain how you know.

D

R

1b. Kelly has written a comparison statement.

$$4,664 \div 2 \quad < \quad 1,120$$

| 1,000 | 1,000 | 100 | 100 | 100 | 10 | 10 | 10 | 1 | 1 |
| 1,000 | 1,000 | 100 | 100 | 100 | 10 | 10 | 10 | 1 | 1 |

Is she correct? Explain how you know.

D
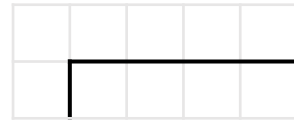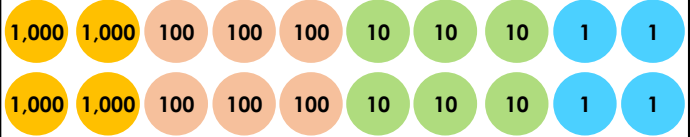
R

2a. Kate completes the following calculation.

	3	2	1	3
3	9	6	3	0

1,000	1,000	1,000	100	100	10
1,000	1,000	1,000	100	100	10
1,000	1,000	1,000	100	100	10
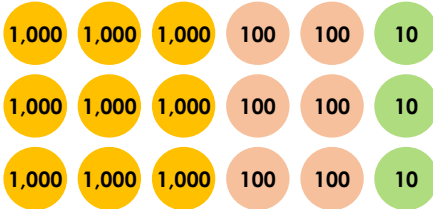
Explain her mistake.
Calculate the correct answer.

D

R

2b. Johnny completes the following calculation.

	3	2	2	0
2	6	8	4	0

| 1,000 | 1,000 | 1,000 | 100 | 100 | 100 | 100 | 10 | 10 |
| 1,000 | 1,000 | 1,000 | 100 | 100 | 100 | 100 | 10 | 10 |

Explain his mistake.
Calculate the correct answer.

D

R

3a. Shazaib dropped a counter from his place value grid but can't remember where it fell from! What calculation could Shazaib have completed if he was dividing by 2 and had no remainders?

Thousands	Hundreds	Tens	Ones
1,000 1,000	100	10	1 1
1,000 1,000	100	10	1 1
1,000 1,000		10	1 1
1,000 1,000			

D

PS

3b. Martha dropped a counter from her place value grid but can't remember where it fell from! What calculation could Martha have completed if she was dividing by 3 and had no remainders?

Thousands	Hundreds	Tens	Ones
1,000 1,000	100	10	1 1
1,000 1,000	100	10	1 1
1,000 1,000	100	10	1

D

PS

4a. Belle has written a comparison statement.

$$2,160 \div 8 \quad > \quad 2,526 \div 6$$

Is she correct? Explain how you know.

☆(E)   R

4b. Alice has written a comparison statement.

$$2,405 \div 5 \quad > \quad 2,979 \div 9$$

Is she correct? Explain how you know.

☆(E)   R

5a. Ben completes the following calculation.

	2	0	1	1
4	8	2	4	4

Explain his mistake.
Calculate the correct answer.

☆(E)   R

5b. Josh completes the following calculation.

	1	9	1	0
5	9	⁴5	8	0

Explain his mistake.
Calculate the correct answer.

☆(E)   R

6a. Moa dropped a counter from his place value grid but can't remember where it fell from! What calculation could Moa have completed if he was dividing by 6 and had no remainders?

Thousands	Hundreds	Tens	Ones
1,000 1,000	100 100	10 10	1 1
	100 100	10 10	1
		10 10	
		10 10	

☆(E)   PS

6b. Taia dropped a counter from her place value grid but can't remember where it fell from! What calculation could Taia have completed if she was dividing by 7 and had no remainders?

Thousands	Hundreds	Tens	Ones
1,000 1,000	100	10	1 1
1,000 1,000	100		1 1
1,000 1,000	100		1 1
1,000 1,000	100		1 1

☆(E)   PS

classroomsecrets.co.uk
Reasoning and Problem Solving – Divide 4 Digits by 1 Digit – Year 5 Expected

7a. Lucy has written a comparison statement.

$$2,214 \div 9 > 2,247 \div 7 < 2,496 \div 8$$

Is she correct? Explain how you know.

☆GD

R

7b. Sinead has written a comparison statement.

$$3,435 \div 5 > 6,795 \div 3 < 5,848 \div 8$$

Is she correct? Explain how you know.

☆GD

R

8a. Freddie completes the following calculation.

$$9,468 \div 9 = 1,011$$

Find and explain any mistakes. Calculate the correct answer.

☆GD

R

8b. Theo completes the following calculation.

$$8,547 \div 7 = 1,001$$

Find and explain any mistakes. Calculate the correct answer.

☆GD

R

9a. Casey has got 12 counters to place in the place value grid to create a calculation.
The ones column has half the counters.
What calculation can Casey complete if she is dividing by 8 and has no remainders?

Thousands	Hundreds	Tens	Ones

☆GD

PS

9b. Shahab has got 6 counters to place in the place value grid to create a calculation.
The ones column has no counters.
What calculation can Shahab complete if he is dividing by 6 and has no remainders?

Thousands	Hundreds	Tens	Ones

☆GD

PS

classroomsecrets.co.uk

Reasoning and Problem Solving
Divide 4 Digits by 1 Digit

Developing

1a. Isabel is correct because 3,663 ÷ 3 = 1,221 and 1,221 > 1,202.

2a. Kate did not divide 0 by 3 correctly. 0 ÷ 3 = 0, so the answer should be 3,210.

3a. The counter fell from the tens column; 8,246 ÷ 2 = 4,123

Expected

4a. Belle is incorrect because 2,160 ÷ 8 = 270, 2,526 ÷ 6 = 421 and 270 < 421.

5a. Ben did not exchange the 2 hundreds into 20 tens. The correct answer is 2,061.

6a. The counter fell from the ones column; 2,484 ÷ 6 = 414

Greater Depth

7a. Lucy is incorrect because 2,214 ÷ 9 = 246, 2,247 ÷ 7 = 321 and 2,496 ÷ 8 = 312. Her statement should say 246 < 321 > 312.

8a. Freddie did not exchange the 4 hundreds into 40 tens or exchange the remaining 1 ten into 10 ones. The correct answer is 1,052.

9a. 3,216 ÷ 8 = 402

Reasoning and Problem Solving
Divide 4 Digits by 1 Digit

Developing

1b. Kelly is incorrect because 4,664 ÷ 2 = 2,332 and 2,332 > 1,120.

2b. Johnny did not divide 800 by 2 correctly. 800 ÷ 2 = 400 so the answer should be 3,420.

3b. The counter fell from the ones column; 6,336 ÷ 3 = 2,112

Expected

4b. Alice is correct because 2,405 ÷ 5 = 481, 2,979 ÷ 9 = 331 and 481 > 331.

5b. Josh forgot to exchange 3 tens. The correct answer is 1,916.

6b. The counter fell from the tens column; 8,428 ÷ 7 = 1,204

Greater Depth

7b. Sinead is incorrect because 3,435 ÷ 5 = 687, 6,795 ÷ 3 = 2,265 and 5,848 ÷ 8 = 731. Her statement should say 687 < 2,265 > 731.

8b. Theo did not exchange the remaining 1 thousand into 10 hundreds or exchange the remaining 1 hundred to 10 tens. The correct answer is 1,221.

9b. Various answers, for example: 1,230 ÷ 6 = 205; 6,000 ÷ 6 = 1,000; 3,030 ÷ 6 = 505

classroomsecrets.co.uk