Reasoning and Problem Solving
Step 11: Divide 1 or 2-Digits by 100

National Curriculum Objectives:

Mathematics Year 4: (4F9) Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths

Differentiation:

Questions 1, 4 and 7 (Problem Solving)
Developing Using up to 8 single counters on a place value grid, create and solve 4 possible calculations where the original number is made on the grid (1-digit divided by 100).
Expected Using 6/7 counters to arrange on a place value grid, create and solve 5 possible calculations where the original number is made on the grid (2-digits divided by 100).
Greater Depth Using 8/9 counters to arrange on a place value grid, create and solve 6 possible calculations where the answer is made on the grid (2-digits divided by 100).

Questions 2, 5 and 8 (Reasoning)
Developing From the number given on the Gattegno chart (one counter placed), work out the answer and explain how you know.
Expected From the number given on the Gattegno chart (two counters placed), work out the answer and explain how you know.
Greater Depth From the answer given on the Gattegno chart (two counters placed), work out the original number and explain how you know thereby the inverse calculation is required.

Questions 3, 6 and 9 (Reasoning)
Developing Explain whether the calculations (1-digit divided by 100) are true or false.
Expected Explain whether the statements (1 or 2-digit divided by 100) are true or false.
Greater Depth Explain whether the statements using the inverse (2-digit divided by 100) are true or false.

More Year 4 and 5 Decimals resources.

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

Divide 1 or 2-Digits by 100

Divide 1 or 2-Digits by 100

1a. Tom makes a 1-digit number on the place value chart using <u>up to</u> 4 counters and divides it by 100.

10	1	0.1	0.01

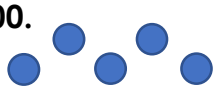
What could his calculation have be?

Write down 4 possible calculations including the answer.

D

4 PS

1b. Eleni makes a 1-digit number on the place value chart using <u>between</u> 5 and 8 counters and divides it by 100.



10	1	0.1	0.01

What could her calculation have be?

Write down 4 possible calculations including the answer.

D

4 PS

2a. Romana has used the chart below to make a number. She has covered her number with a counter.
She divides it by 100.

10	20	30	40	50	60	70	80	90
1	2	3	4	5	●	7	8	9
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

What will Romana's answer be?
Explain how you know.

D

4 R

2b. Nial has used the chart below to make a number. He has covered his number with a counter.
He divides it by 100.

10	20	30	40	50	60	70	80	90
1	2	●	4	5	6	7	8	9
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

What will Nial's answer be?
Explain how you know.

D

4 R

3a. True or false? Jacob and Malia's statements are correct.

Jacob: 4 ÷ 100 = 0.4

Malia: 0.04 = 4 ÷ 100

Convince me!

D

4 R

3b. True or false? Inigo and Mae's statements are correct.

Inigo: 9.0 = 9 ÷ 100

Mae: 9 ÷ 100 = 0.09

Convince me!

D

4 R

Divide 1 or 2-Digits by 100

Divide 1 or 2-Digits by 100

4a. Sam makes a 2-digit number on the place value chart using 6 counters and divides it by 100.

10	1	0.1	0.01

What could his calculation have be?

Write down 5 possible calculations including the answer.

E

4 PS

4b. Una makes a 2-digit number on the place value chart using 7 counters and divides it by 100.

10	1	0.1	0.01

What could her calculation have be?

Write down 5 possible calculations including the answer.

E

4 PS

5a. James has used the chart below to make a number. He has covered his number with counters.
He divides it by 100.

10	20	30		50	60	70	80	90
	2	3	4	5	6	7	8	9
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

What will James's answer be?
Explain how you know.

E

4 R

5b. Zaynab has used the chart below to make a number. She has covered her number with counters.
She divides it by 100.

10	20	30	40	50	60	70		90
1	2	3	4	5		7	8	9
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

What will Zaynab's answer be?
Explain how you know.

E

4 R

6a. True or false? Raj and Ffion's statements are correct.

Raj: 7.5 = 75 ÷ 100

Ffion: 0.75 is 100 times smaller than 75.

Convince me!

E

4 R

6b. True or false? Affan and Jude's statements are correct.

Affan: 0.39 is 100 times smaller than 39.

Jude: 39 ÷ 100 = 3900

Convince me!

E

4 R

Divide 1 or 2-Digits by 100

Divide 1 or 2-Digits by 100

7a. Cam has divided a 2-digit number by 100. He has made his answer on the place value grid below using 8 counters.

10	1	0.1	0.01

What could his calculation have be?

Write down 6 possible calculations including the answer.

GD

4 PS

7b. Asa makes a 2-digit number on the place value chart using 9 counters and divides it by 100.

10	1	0.1	0.01

What could her calculation have be?

Write down 6 possible calculations including the answer.

GD

4 PS

8a. Hassan has used the chart below to divide a 2-digit number by 100.
He has put counters over the numbers in his answer.

10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9
●	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	●

What was Hassan's original number?
Explain how you know.

GD

4 R

8b. Livia has used the chart below to divide a 2-digit number by 100.
She has put counters over the numbers in her answer.

10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9
0.1	0.2	0.3	0.4	0.5	0.6	●	0.8	0.9
0.01	●	0.03	0.04	0.05	0.06	0.07	0.08	0.09

What was Livia's original number?
Explain how you know.

GD

4 R

9a. True or false? Salim and Eloise's statements are correct.

Salim

I divided my number by 100 and my answer was 0.96 so my original number was a hundreds number.

96.0 is 100 times greater than 0.96.

Eloise

Convince me!

GD

4 R

9b. True or false? Tyler and Samina's statements are correct.

Tyler

Seventy eight is 100 times bigger than seven hundred and eighty.

0.78 is one hundred times bigger than 78.0.

Samina

Convince me!

GD

4 R

Reasoning and Problem Solving
Divide 1 or 2-Digits by 100

Developing

1a. 1 ÷ 100 = 0.01, 2 ÷ 100 = 0.02, 3 ÷ 100 = 0.03, 4 ÷ 100 = 0.04

2a. 0.06 because she can move the counter down two places to divide by 100.

3a. Jacob's statement is false because he has only moved the 4 one place right instead of two places. So he has divided by 10 instead of 100.
Malia's statement is correct because she has moved the 4 two places right to divide by 100.

Expected

4a. Accept any 5 of the following answers: 15 ÷ 100 = 0.15, 51 ÷ 100 = 0.51, 24 ÷ 100 = 0.24, 42 ÷ 100 = 0.42, 33 ÷ 100 = 0.33, 60 ÷ 100 = 0.6, 6 ÷ 100 = 0.06

5a. 0.41 because you can move each counter down two places to divide by 100.

6a. Raj's statement is false because he has only moved the digits one place to the right instead of 2 places. He has divided by 10 instead of 100.
Ffion's statement is true because she has moved the digits two places right to divide by 100 and make the number 100 times smaller.

Greater Depth

7a. Accept any 6 of the following answers: 17 ÷ 100 = 0.17, 71 ÷ 100 = 0.71, 26 ÷ 100 = 0.26, 62 ÷ 100 = 0.62, 35 ÷ 100 = 0.35, 53 ÷ 100 = 0.53, 44 ÷ 100 = 0.44, 80 ÷ 100 = 0.8, 8 ÷ 100 = 0.08

8a. 19 because you can move each counter up two places to multiply by 100 which is the inverse to dividing by 100.

9a. Salim's statement is false because if you calculate the inverse then 0.96 x 100 = 96 which is a tens number.
Eloise's statement is true because 0.96 x 100 = 96.0. Both digits move two places left to make the number 100 times greater.

Reasoning and Problem Solving
Divide 1 or 2-Digits by 100

Developing

1b. 5 ÷ 100 = 0.05, 6 ÷ 100 = 0.06, 7 ÷ 100 = 0.07, 8 ÷ 100 = 0.08

2b. 0.03 because he can move the counter down two places to divide by 100.

3b. Inigo's statement is false because he hasn't moved the 9 two places right.
Mae's statement is true because she has moved the 9 two places right to divide by 100.

Expected

4b. Accept any 5 of the following answers: 16 ÷ 100 = 0.16, 61 ÷ 100 = 0.61, 25 ÷ 100 = 0.25, 52 ÷ 100 = 0.52, 34 ÷ 100 = 0.34, 43 ÷ 100 = 0.43, 70 ÷ 100 = 0.7, 7 ÷ 100 = 0.07

5b. 0.86 because you can move each counter down two places to divide by 100.

6b. Affan's statement is true because he has moved the digits two places right to divide by 100 and make the number 100 times smaller.
Jude's statement is false because she has multiplied by 100 rather than dividing by 100.

Greater Depth

7b. Accept any 6 of the following answers: 18 ÷ 100 = 0.18, 81 ÷ 100 = 0.81, 27 ÷ 100 = 0.27, 72 ÷ 100 = 0.72, 36 ÷ 100 = 0.36, 63 ÷ 100 = 0.63, 45 ÷ 100 = 0.45, 54 ÷ 100 = 0.54, 90 ÷ 100 = 0.9, 9 ÷ 100 = 0.09

8b. 72 because you can move each counter up two places to multiply by 100 which is the inverse to dividing by 100.

9b. Tyler's statement is false because 78 is 100 times bigger than 0.78 as 0.78 x 100 = 78.
Samina's statement is false because 78.0 ÷ 100 = 0.78. So 0.78 is 100 times smaller than 78.0.