

Reasoning and Problem Solving

Step 7: Divide 1-Digit by 10

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 (Reasoning)

Developing Find and explain the mistake when using a place value grid to divide a 1-digit number by 10.

Expected Find and explain the mistake when using a Gattegno chart to divide a 1-digit number by 10.

Greater Depth Find and explain the mistake when using an incomplete Gattegno chart to divide a 1-digit number by 10.

Questions 2, 5 and 8 (Problem Solving)

Developing Use clues provided to solve a riddle and find a number, 3 clues lead to one possible answer.

Expected Use clues provided to solve a riddle and find a number, 4 clues lead to one possible answer.

Greater Depth Use clues provided to solve a riddle and find a number, 4 clues lead to multiple possible answers.

Questions 3, 6 and 9 (Problem Solving)

Developing Use the digit cards to make the statement correct. Only 1 missing number, give 2 possible answers.

Expected Use the digit cards to make the statement correct. There are 2 missing numbers, give 5 possible answers.

Greater Depth Use the digit cards to make the statement correct. There are 3 missing numbers, multiple step question with more than 5 possible answers.

More [Year 3 and Year 4 Fractions and Decimals](#) resources.

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Divide 1-Digit by 10

1a. Lena is dividing 1-digit numbers by 10 and showing the answer on the place value grid below.

$$5 \div 10 = 0.5$$

Tens	Ones	Tenths	Hundredths
	●	●● ●●	

What mistake has she made?



4 R

Divide 1-Digit by 10

1b. Ali is dividing 1-digit numbers by 10 and showing the answer on the place value grid below.

$$4 \div 10 = 0.4$$

Tens	Ones	Tenths	Hundredths
●● ●●			

What mistake has he made?



4 R

2a. I'm thinking of a 1-digit number.

My number is between 5 and 8.

When divided by 10, my number is less than 0.7.

What number am I thinking of?



4 PS

2b. I'm thinking of a 1-digit number.

My number is between 1 and 4.

When divided by 10, my number is greater than 0.2.

What number am I thinking of?



4 PS

3a. Use the digit cards to make the following statement correct. Give 2 possible answers.

$$\square \div 10 > 0.5$$



4 PS

3b. Use the digit cards to make the following statement correct. Give 2 possible answers.

$$\square \div 10 > 0.6$$



4 PS

Divide 1-Digit by 10

Divide 1-Digit by 10

4a. Nathan is dividing 1-digit numbers by 10 and circling the answer on the Gattegno chart.

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	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

What mistake has he made?



4 R

4b. Fozia is dividing 1-digit numbers by 10 and circling the answer on the Gattegno chart.

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	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

What mistake has she made?



4 R

5a. I'm thinking of a 1-digit number.

My number is an even number.

When doubled, my number is between 2 and 9.

When divided by 10, my number is greater than 0.3.

What number am I thinking of?



4 PS

5b. I'm thinking of a 1-digit number.

My number is an even number.

When doubled, my number is between 1 and 5.

When divided by 10, my number is less than 0.4.

What number am I thinking of?



4 PS

6a. Use the digit cards to make the following statement correct. Give 5 possible answers.

$$\square \div 10 > \square \div 10$$



4 PS

6b. Use the digit cards to make the following statement correct. Give 5 possible answers.

$$\square \div 10 > \square \div 10$$

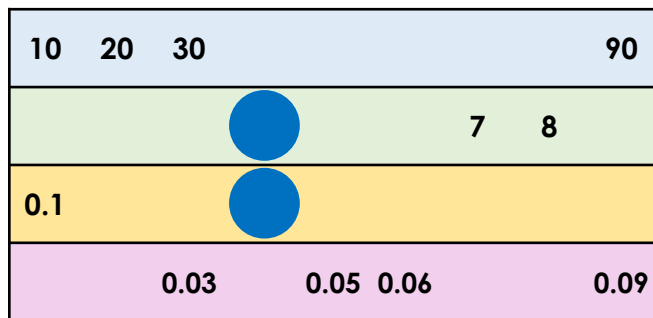


4 PS

Divide 1-Digit by 10

Divide 1-Digit by 10

7a. Annabel is dividing a 1-digit number by 10 using a Gattegno chart. She has circled the numbers used in her equation.



What calculation did Annabel solve?



4 R

7b. Jakub is dividing a 1-digit number by 10 using a Gattegno chart. He has circled the numbers used in his equation.



What calculation did Jakub solve?



4 R

8a. I'm thinking of a 1-digit number.

My number is an even number.

When halved, my number is between 3 and 9.

When divided by 10, my number is less than 0.9.

What number am I thinking of?



4 PS

8b. I'm thinking of a 1-digit number.

My number is an even number.

When doubled, my number is between 1 and 9.

When divided by 10, my number is greater than 0.1.

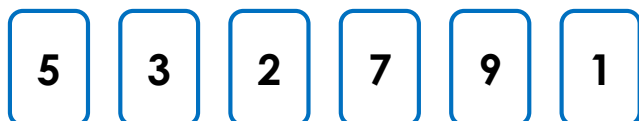
What number am I thinking of?



4 PS

9a. Use the digit cards to make the following statement correct. Give 5 possible answers.

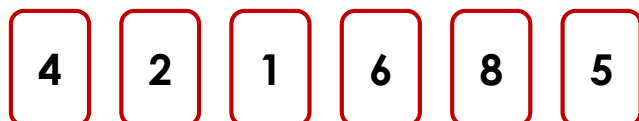
$$\square \div 10 > \square \div 10 < \square \div 10$$



4 PS

9b. Use the digit cards to make the following statement correct. Give 5 possible answers.

$$\square \div 10 > \square \div 10 < \square \div 10$$



4 PS

Reasoning and Problem Solving Divide 1-Digit by 10

Developing

1a. Her place value chart shows 1.4. One counter is in the ones column. It should be in the tenths.

2a. 6

3a. $6 \div 10 > 0.5$, $7 \div 10 > 0.5$

Expected

4a. He circled 6 instead of 0.6.

5a. 4

6a. Various possible answers, for example:

$7 \div 10 > 3 \div 10$, $3 \div 10 > 1 \div 10$,

$8 \div 10 > 7 \div 10$, $8 \div 10 > 1 \div 10$,

$7 \div 10 > 1 \div 10$

Greater Depth

7a. $4 \div 10 = 0.4$

8a. 6 or 8

9a. Various possible answers, for example:

$9 \div 10 > 2 \div 10 < 5 \div 10$,

$7 \div 10 > 1 \div 10 < 3 \div 10$,

$5 \div 10 > 1 \div 10 < 2 \div 10$,

$3 \div 10 > 2 \div 10 < 9 \div 10$,

$2 \div 10 > 1 \div 10 < 7 \div 10$

Reasoning and Problem Solving Divide 1-Digit by 10

Developing

1b. His place value chart shows 50. The counters are in the tens column, not the tenths.

2b. 3

3b. $8 \div 10 > 0.6$, $9 \div 10 > 0.6$

Expected

4b. She circled the hundredths number instead of 0.3.

5b. 2

6b. Various possible answers, for example:

$9 \div 10 > 6 \div 10$, $9 \div 10 > 5 \div 10$,

$6 \div 10 > 5 \div 10$, $6 \div 10 > 2 \div 10$,

$5 \div 10 > 2 \div 10$

Greater Depth

7b. $7 \div 10 = 0.7$

8b. 2 or 4

9b. Various possible answers, for example:

$8 \div 10 > 4 \div 10 < 6 \div 10$,

$6 \div 10 > 1 \div 10 < 2 \div 10$,

$4 \div 10 > 1 \div 10 < 2 \div 10$,

$8 \div 10 > 1 \div 10 < 6 \div 10$,

$6 \div 10 > 2 \div 10 < 4 \div 10$