Reasoning and Problem Solving
Step 6: Division to Solve Problems

National Curriculum Objectives:

Mathematics Year 6: (6C8) Solve problems involving addition, subtraction, multiplication and division
Mathematics Year 6: (6F9c) Use written division methods in cases where the answer has up to two decimal places

Differentiation:

Questions 1, 4 and 7 (Problem Solving)
Developing Find a number (from a choice of two) which divides to give an answer with one decimal place. The divisor is any number up to and including 12.
Expected Find multiple numbers (from a choice of three) which divide to give answers with two decimal places. The divisor is any number up to and including 12 and dividend is within known times tables.
Greater Depth Find multiple numbers (from a choice of three) which divide to give answers with two decimal places. The divisor is any number up to and including twelve. Dividend has one decimal place and may be outside of known times tables, so children may apply knowledge of partitioning.

Questions 2, 5 and 8 (Reasoning)
Developing Identify and explain errors in two comparison statements where the answer has one decimal place. The divisor is any number up to and including 12, and leaves no remainder. The solution remains within the place value of the original number unless dividing by 10.
Expected Identify and explain errors in three comparison statements where the answer has up to two decimal places and the divisor is a number up to and including 12. The remainders may create an additional decimal place and the solution has up to two decimal places.
Greater Depth Identify and explain errors in three comparison statements where the answer has up to three decimal places and the divisor maybe any 2-digit number or multiple of 10. The remainders create an additional decimal place.

Questions 3, 6 and 9 (Problem Solving)
Developing Complete the number sentence with three given digits where the divisor is provided. The divisor is a number up to and including 12 and the solution has one decimal place.
Expected Choose the correct digits to complete the number sentence where the divisor is provided. The divisor is a number up to and including 12 and the solution has two decimal places.
Greater Depth Choose the correct digits to complete the number sentence where the divisor is not provided. The solution has two decimal places.

More resources which follow the same small steps as White Rose.

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

Division to Solve Problems

Division to Solve Problems

1a. Which of these numbers when divided by 10 give an answer with one decimal place?

975   **970**

Find two more numbers.

⭐D   PS

1b. Which of these numbers when divided by 2 give an answer with one decimal place?

3   **12.8**

Find two more numbers.

⭐D   PS

2a. Tom has written the following comparisons.

A $165 \div 10 = 16.5 \div 5$

B $3.9 \div 3 > 39 \div 10$

Is he correct?
Find and explain any errors.

⭐D   R

2b. Amy has written the following comparisons.

A $24.8 \div 2 = 36.6 \div 3$

B $50.5 \div 5 > 101 \div 10$

Is she correct?
Find and explain any errors.

⭐D   R

3a. Use the digit cards to complete the calculation.

9   **1**   **9**

$\boxed{}\boxed{} \div 2 = \boxed{} . 5$

⭐D   PS

3b. Use the digit cards to complete the calculation.

7   **6**   **2**

$3\boxed{} \div 5 = \boxed{} . \boxed{}$

⭐D   PS

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Reasoning and Problem Solving – Division to Solve Problems – Year 6 Expected

Division to Solve Problems

Division to Solve Problems

4a. Which of these numbers when divided by 5 give an answer with two decimal places?

| 35.7 | 57 | 5.8 |

Find two more numbers.

☆ E   PS

4b. Which of these numbers when divided by 8 give an answer with two decimal places?

| 10 | 40 | 70 |

Find two more numbers.

☆ E   PS

5a. Dara has written the following comparisons.

A   165 ÷ 100 = 126 ÷ 3

B   93.5 ÷ 5 > 8.4 ÷ 10

C   182 ÷ 8 < 22.75 ÷ 5

Is he correct?
Find and explain any errors.

☆ E   R

5b. Amelie has written the following comparisons.

A   42 ÷ 12 = 15 ÷ 4

B   9.09 ÷ 9 > 40.4 ÷ 2

C   2.8 ÷ 5 < 281 ÷ 100

Is she correct?
Find and explain any errors.

☆ E   R

6a. Use the digit cards to complete the calculation.

| 5 | 9 | 1 | 4 |

☐☐ ÷ 4 = 4 . 7 ☐

☆ E   PS

6b. Use the digit cards to complete the calculation.

| 3 | 1 | 8 | 6 |

☐ . ☐ ÷ 5 = ☐ . 3 6

☆ E   PS

Reasoning and Problem Solving – Division to Solve Problems – Year 6 Expected

Division to Solve Problems

7a. Which of these numbers when divided by 10 give an answer with two decimal places?

| 7.05 | 1.2 | 10.5 |

Find two more numbers.

☆GD

PS

Division to Solve Problems

7b. Which of these numbers when divided by 4 give an answer with two decimal places?

| 4.32 | 82.5 | 40.4 |

Find two more numbers.

☆GD

PS

8a. Armani has written the following comparisons.

A   15   ÷   8   =   18.75   ÷   10

B   93.63   ÷   30   >   129   ÷   20

C   108   ÷   8   <   1350   ÷   100

Is he correct?
Find and explain any errors.

☆GD

R

8b. Katie has written the following comparisons.

A   160   ÷   10   =   16   ÷   5

B   13.5   ÷   2   >   8.4   ÷   40

C   27   ÷   4   <   10.25   ÷   25

Is she correct?
Find and explain any errors.

☆GD

R

9a. Use the digit cards to complete the calculation. The divisor is less than 5.

| 9 | 3 | 5 | 7 | 9 | 4 |

$$\square\square \div \square = \square \,.\, \square\square$$

☆GD

PS

9b. Use the digit cards to complete the calculation. The divisor is greater than 6.

| 8 | 4 | 5 | 7 | 8 | 3 |

$$\square\square \div \square = \square \,.\, \square\square$$

☆GD

PS

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Reasoning and Problem Solving
Division to Solve Problems

Developing

1a. 975; children should give 2 further numbers where ÷ 10 gives 1dp.

2a. A is incorrect 16.5 > 3.3
B is incorrect 1.3 < 3.9

3a. 19 ÷ 2 = 9.5

Expected

4a. 35.7, 5.8; children should give 2 further numbers where ÷ 5 gives 2dp.

5a. A is incorrect, 1.65 < 42
B is correct, 18.7 > 0.84
C is incorrect, 22.75 > 4.55

6a. 19 ÷ 4 = 4.75

Greater Depth

7a. 1.2, 10.5; Children should give 2 further numbers where ÷ 10 gives 2dp.

8a. A is correct, 1.875 = 1.875
B is incorrect, 3.121 < 6.45
C is incorrect, 13.5 = 13.5

9a. 39 ÷ 4 = 9.75

Reasoning and Problem Solving
Division to Solve Problems

Developing

1b. Both 3 and 12.8; children should give 2 further numbers where ÷ 10 gives 1dp.

2b. A is incorrect 12.4 > 12.2
B is incorrect 10.1 = 10.1

3b. 36 ÷ 5 = 7.2

Expected

4b. 10, 70; children should give 2 further numbers where ÷ 8 gives 2dp.

5b. A is incorrect, 3.5 < 3.75
B is incorrect, 1.01 < 2.02
C is correct, 0.56 < 2.81

6b. 6.8 ÷ 5 = 1.36

Greater Depth

7b. 4.32; Children should give 2 further numbers where ÷ 4 gives 2dp.

8b. A is incorrect, 16 > 3.2
B is correct, 6.75 > 0.21
C is incorrect, 6.75 > 0.41

9b. 38 ÷ 8 = 4.75