

Reasoning and Problem Solving

Step 7: Add and Subtract Fractions

Teaching note: We have included bar models with shading and recommend that this resource is printed in colour or greyscale.

National Curriculum Objectives:

Mathematics Year 5: (5F4) [Add and subtract fractions with the same denominator and denominators that are multiples of the same number](#)

Mathematics Year 5: (5F2a) [Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements \$> 1\$ as a mixed number \[for example, \$2/5 + 4/5 = 6/5 = 1 \frac{1}{5}\$ \]](#)

Differentiation:

Questions 1, 4 and 7 (Reasoning)

Developing Identify and explain errors when adding and subtracting fractions within one.

Expected Identify and explain errors when adding and subtracting fractions where the answer may be a mixed number.

Greater Depth Identify and explain errors when adding and subtracting fractions where the answer is a mixed number and uses knowledge of equivalent fractions.

Questions 2, 5 and 8 (Problem Solving)

Developing Complete the question to achieve the target answer when adding and subtracting fractions within one.

Expected Complete the question to achieve the target answer when adding and subtracting fractions where the answer may be a mixed number.

Greater Depth Complete the question to achieve the target answer when adding and subtracting fractions where the answer may be a mixed number and uses knowledge of equivalent fractions.

Questions 3, 6 and 9 (Problem Solving)

Developing Use digit cards to make a calculation correct. Includes adding and subtracting fractions within one.

Expected Use digit cards to make a calculation correct. Includes adding and subtracting fractions where the answer is a mixed number.

Greater Depth Use digit cards to make a calculation correct. Includes adding and subtracting fractions where the answer is a mixed number and using knowledge of equivalent fractions.

More [Year 5 Fractions](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Add and Subtract Fractions

Add and Subtract Fractions

1a. Mel is finding the missing numerator in the following calculation:

$$\frac{\square}{7} + \frac{4}{7} = \frac{6}{7}$$



I think the missing numerator must be 10.

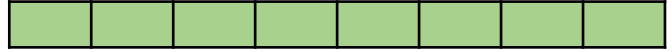
Is she correct? Explain why.



R

1b. Ian is finding the missing numerator in the following calculation:

$$\frac{2}{8} + \frac{\square}{8} = \frac{8}{8}$$



I think the missing numerator must be 6.

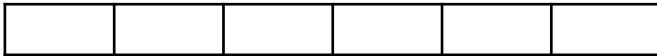
Is he correct? Explain why.



R

2a. Complete the fractions to make the calculation correct.

$$\frac{\square}{\square} + \frac{\square}{\square} = \frac{5}{6}$$



Find two possibilities.
Use the bar model to help you.



PS

2b. Complete the fractions to make the calculation correct.

$$\frac{\square}{\square} - \frac{\square}{\square} = \frac{2}{9}$$



Find two possibilities.
Use the bar model to help you.



PS

3a. Arrange the digit cards to create an addition question.

$$\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$$



You can use the cards more than once.



PS

3b. Arrange the digit cards to create a subtraction question.

$$\frac{\square}{\square} - \frac{\square}{\square} = \frac{\square}{\square}$$



You can use the cards more than once.



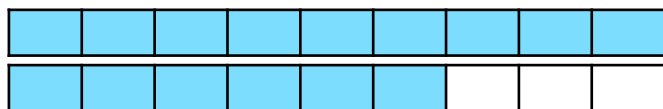
PS

Add and Subtract Fractions

Add and Subtract Fractions

4a. Sara is finding the missing numerator in the following calculation:

$$\frac{15}{9} - \frac{\square}{9} = \frac{5}{9}$$



I think the missing numerator must be 4.

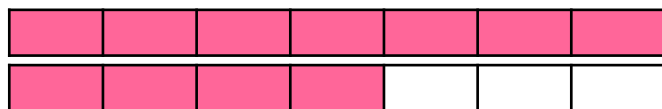
Is she correct? Explain why.



R

4b. Ted is finding the missing numerator in the following calculation:

$$\frac{\square}{7} + \frac{6}{7} = 1 \frac{4}{7}$$



I think the missing numerator must be 8.

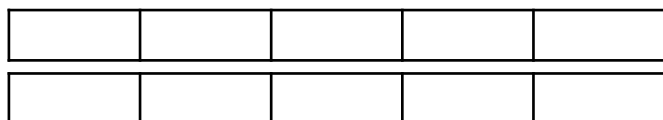
Is he correct? Explain why.



R

5a. Complete the fractions to make the calculation correct.

$$\frac{\square}{\square} - \frac{\square}{\square} = 1 \frac{2}{5}$$



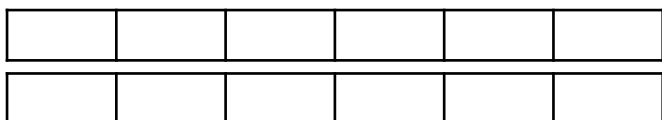
Find two possibilities.
Use the bar model to help you.



PS

5b. Complete the fractions to make the calculation correct.

$$\frac{\square}{\square} + \frac{\square}{\square} = 1 \frac{5}{6}$$



Find two possibilities.
Use the bar model to help you.



PS

6a. Arrange the digit cards to create an addition question.

$$\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$$

2 1 8 9 3

You can use the cards more than once.



PS

6b. Arrange the digit cards to create a subtraction question.

$$\frac{\square}{\square} - \frac{\square}{\square} = \frac{\square}{\square}$$

5 3 1 6 4

You can use the cards more than once.



PS

Add and Subtract Fractions

Add and Subtract Fractions

7a. Asha is finding the missing numerator in the following calculation:

$$\frac{18}{12} - \frac{\square}{12} = 1 \frac{1}{4}$$



I think the missing numerator must be 17.

Is she correct? Explain why.



R

7b. Ivor is finding the missing numerator in the following calculation:

$$\frac{\square}{8} + \frac{7}{8} = 1 \frac{1}{2}$$



I think the missing numerator must be 5.

Is he correct? Explain why.



R

8a. Complete the fractions to make the calculation correct.

$$\frac{\square}{9} + \frac{\square}{\square} = 1 \frac{1}{3}$$

Find two possibilities.



PS

8b. Complete the fractions to make the calculation correct.

$$\frac{\square}{\square} + \frac{\square}{12} = 1 \frac{1}{2}$$

Find two possibilities.



PS

9a. Arrange the digit cards to create an addition question.

$$\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$$

12

1

8

15

3

You can use two cards twice.



PS

9b. Arrange the digit cards to create a subtraction question.

$$\frac{\square}{\square} - \frac{\square}{\square} = \frac{\square}{\square}$$

9

1

8

4

3

You can use two cards twice.



PS

Reasoning and Problem Solving

Add and Subtract Fractions

Developing

1a. Mel is incorrect as the missing numerator is 2.

2a. Various answers where the numerator totals 5, for example: $\frac{2}{6} + \frac{3}{6} = \frac{5}{6}$.

3a. $\frac{3}{8} + \frac{4}{8} = \frac{7}{8}$ or $\frac{4}{8} + \frac{3}{8} = \frac{7}{8}$

Expected

4a. Sara is incorrect as the missing numerator is 10.

5a. Various answers where the numerators give an answer of 7, for example:

$\frac{9}{5} - \frac{2}{5} = 1 \frac{2}{5}$.

6a. $\frac{8}{9} + \frac{3}{9} = 1 \frac{2}{9}$

Greater Depth

7a. Asha is incorrect. The missing numerator is 3 because $\frac{18}{12} - \frac{3}{12} = 1 \frac{3}{12}$ and $1 \frac{3}{12} = 1 \frac{1}{4}$.

8a. Various answers where the numerators total 12, for example: $\frac{5}{9} + \frac{7}{9} = 1 \frac{1}{3}$.

9a. $\frac{12}{15} + \frac{8}{15} = 1 \frac{1}{3}$

Reasoning and Problem Solving

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Developing

1b. Ian is correct because $\frac{2}{8} + \frac{6}{8} = \frac{8}{8}$.

2b. Various answers where the numerators give an answer of 2, for example:

$\frac{4}{9} - \frac{2}{9} = \frac{2}{9}$.

3b. $\frac{5}{6} - \frac{1}{6} = \frac{4}{6}$ or $\frac{5}{6} - \frac{4}{6} = \frac{1}{6}$

Expected

4b. Ted is incorrect as the missing numerator is 5.

5b. Various answers where the numerators total 11, for example: $\frac{4}{6} + \frac{7}{6} = 1 \frac{5}{6}$.

6b. $1 \frac{3}{6} - \frac{4}{6} = \frac{5}{6}$ or $1 \frac{3}{6} - \frac{5}{6} = \frac{4}{6}$

Greater Depth

7b. Ivor is correct. The numerators must total 12 because $\frac{12}{8} = 1 \frac{1}{2}$.

8b. Various answers where the numerators total 18, for example: $\frac{10}{12} + \frac{8}{12} = 1 \frac{1}{2}$.

9b. $1 \frac{3}{8} - \frac{9}{8} = \frac{1}{4}$