

Reasoning and Problem Solving

Step 11: Add Mixed Numbers

National Curriculum Objectives:

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 \[for example, \$2/5 + 4/5 = 6/5 = 1 \frac{1}{5}\$ \]](#)

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

Differentiation:

Questions 1, 4 and 7 (Reasoning)

Developing Identify the odd one out and explain why. Calculations include mixed numbers where the denominators are the same or halves or doubles of each other.

Expected Identify the odd one out and explain why. Calculations include fractions greater than 1 added to a mixed number where the denominators are direct multiples. Answers to be recorded in their simplest form.

Greater Depth Identify the odd one out and explain why. Calculations include fractions greater than 1 added to a mixed number where the denominators are not direct multiples of each other. Answers to be recorded in their simplest form.

Questions 2, 5 and 8 (Reasoning)

Developing Explain why a calculation is true or false when adding mixed numbers where the denominators are the same or halves or doubles of each other.

Expected Explain why a calculation is true or false when adding fractions greater than 1 to a mixed number where the denominators are direct multiples. Answers to be recorded in their simplest form.

Greater Depth Explain why a calculation is true or false when adding fractions greater than 1 to a mixed number where the denominators are not direct multiples of each other. Answers to be recorded in their simplest form.

Questions 3, 6 and 9 (Problem Solving)

Developing Solve a word problem by adding mixed numbers where the denominators are the same or halves or doubles of each other.

Expected Solve a word problem by adding fractions greater than 1 to a mixed number where the denominators are direct multiples. Answers to be recorded in their simplest form.

Greater Depth Solve a word problem by adding fractions greater than 1 to a mixed number where the denominators are not direct multiples of each other. Answers to be recorded in their simplest form.

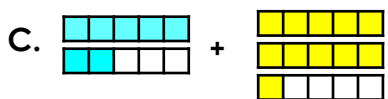
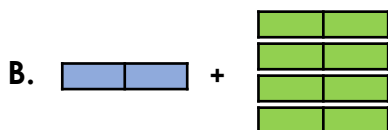
More [Year 5 Fractions](#) resources.

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

Add Mixed Numbers

1a. Circle the odd one out. Explain why.

A. $2\frac{2}{4} + 4\frac{1}{4}$



D. $3\frac{2}{4} + 1\frac{1}{4}$

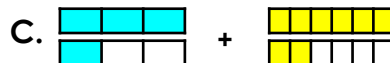


R

Add Mixed Numbers

1b. Circle the odd one out. Explain why.

A. $1\frac{1}{3} + 1\frac{1}{3}$



D. $2\frac{1}{3} + 1\frac{1}{3}$



R

2a. Lola has completed the following calculation.

2	$\frac{2}{5}$	+	2	$\frac{2}{5}$	=	4	$\frac{4}{10}$
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Is she correct?
Explain how you know.



R

2b. Ernie has completed the following calculation.

3	$\frac{2}{10}$	+	3	$\frac{2}{10}$	=	6	$\frac{4}{10}$
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Is he correct?
Explain how you know.



R

3a. I am thinking of a number.
When I add it to the number on the card,
the answer will be a whole number less
than 6.

$3\frac{3}{4}$

The number is a mixed number with a
denominator that is double to that on the
card.

Find 2 possible answers.



PS

3b. I am thinking of a number.
When I add it to the number on the card,
the answer will be a whole number less
than 5.

$2\frac{1}{3}$

The number is a mixed number with a
denominator that is double to that on the
card.

Find 2 possible answers.

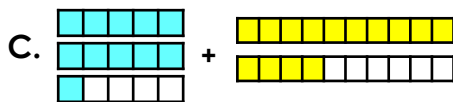


PS

Add Mixed Numbers

4a. Circle the odd one out. Explain why.

A. $1\frac{4}{15} + 3\frac{3}{5}$



D. $2\frac{3}{4} + 2\frac{1}{8}$

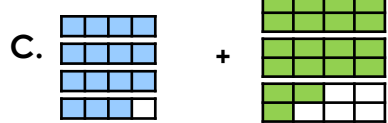
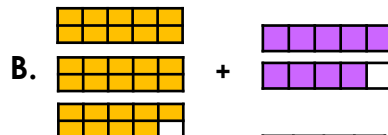


R

Add Mixed Numbers

4b. Circle the odd one out. Explain why.

A. $\frac{7}{3} + 3\frac{1}{6}$



D. $\frac{10}{3} + 2\frac{4}{6}$



R

5a. Libby has completed the following calculation.

2	$\frac{3}{4}$	+	$\frac{14}{12}$	=	3	$\frac{1}{4}$



Is she correct?
Explain how you know.



R

5b. Donna has completed the following calculation.

4	$\frac{3}{5}$	+	$\frac{19}{10}$	=	6	$\frac{1}{2}$



Is she correct?
Explain how you know.



R

6a. I am thinking of a number.
When I add it to the number on the card
the answer will give the whole number of
10.

$6\frac{4}{12}$

The number is either a mixed number or
an improper fraction with a different
denominator.

Find 3 possible answers.



PS

6b. I am thinking of a number.
When I add it to the number on the card
the answer will give the whole number of
12.

$7\frac{4}{6}$

The number is either a mixed number or
an improper fraction with a different
denominator.

Find 3 possible answers.



PS

Add Mixed Numbers

Add Mixed Numbers

7a. Circle the odd one out. Explain why.

A. $3 \frac{1}{8} + \frac{15}{6}$

B. $2 \frac{4}{12} + \frac{24}{9}$

C. $6 \frac{3}{10} + \frac{19}{4}$

D. $12 \frac{2}{6} + \frac{11}{5}$



R

7b. Circle the odd one out. Explain why.

A. $2 \frac{6}{8} + \frac{24}{10}$

B. $3 \frac{2}{5} + \frac{7}{4}$

C. $1 \frac{4}{10} + \frac{15}{4}$

D. $3 \frac{3}{5} + \frac{14}{8}$



R

8a. Annabel has completed the following calculation.

3	$\frac{6}{10}$	+	$\frac{16}{8}$	=	5	$\frac{1}{5}$
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Is she correct?
Explain how you know.



R

8b. Peter has completed the following calculation.

5	$\frac{3}{5}$	+	$\frac{15}{3}$	=	8	$\frac{3}{5}$
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Is he correct?
Explain how you know.



R

9a. I am thinking of a number.
When I add it to the number on the card
the answer will not be a whole number.
It will be greater than 9 but less than 12.

$7 \frac{4}{6}$

The number is either a mixed number or
an improper fraction with a different
denominator that is not a multiple of 6.

Find 4 possible answers.



PS

9b. I am thinking of a number.
When I add it to the number on the card
the answer will not be a whole number.
It will be greater than 9 but less than 11.

$8 \frac{3}{12}$

The number is either a mixed number or
an improper fraction with a different
denominator that is not a multiple of 12.

Find 4 possible answers.



PS

Reasoning and Problem Solving

Add Mixed Numbers

Developing

1a. B is the odd one out as it is the only answer that is equivalent to a whole.

2a. No, the correct answer is $4\frac{4}{5}$. She has added the denominators.

3a. $1\frac{2}{8}$

Expected

4a. C is the odd one out as it is the only answer where the whole is less than 4.

5a. No. The correct answer is $3\frac{11}{12}$. $\frac{14}{12}$ is equivalent to $1\frac{2}{12}$ and $2\frac{3}{4}$ is equivalent to $2\frac{9}{12}$ so $2\frac{9}{12} + 1\frac{2}{12} = 3\frac{11}{12}$.

6a. Various answers, for example:

$3\frac{2}{3}$, $\frac{11}{3}$ or $3\frac{4}{6}$

Greater Depth

7a. B is the odd one out totalling a whole number. The rest give a mixed number total.

8a. No, the correct answer is $5\frac{3}{5}$. $\frac{16}{8}$ is equivalent to 2. $3\frac{6}{10} + 2 = 5\frac{6}{10}$ which is equivalent to $5\frac{3}{5}$.

9a. Various answers, for example:

$\frac{11}{3}$, $3\frac{2}{3}$, $2\frac{6}{9}$, $\frac{6}{2}$

Reasoning and Problem Solving

Add Mixed Numbers

Developing

1b. D is the odd one out as it is the only answer where the whole is greater than 2.

2b. Yes, $3 + 3 = 6$ and $\frac{2}{10} + \frac{2}{10} = \frac{4}{10}$ so $6 + \frac{4}{10} = 6\frac{4}{10}$.

3b. $1\frac{4}{6}$

Expected

4b. D is the odd one out, totalling a whole number. All the rest have a total that is a mixed number.

5b. Yes. $\frac{19}{10}$ is equivalent to $1\frac{9}{10}$ and $4\frac{3}{5}$ is equivalent to $4\frac{6}{10}$ so $1\frac{9}{10} + 4\frac{6}{10} = 5\frac{15}{10}$ which is equivalent to $6\frac{1}{2}$.

6b. Various answers, for example:

$4\frac{1}{3}$, $\frac{13}{3}$ or $4\frac{4}{12}$

Greater Depth

7b. D is the odd one out as it is the only calculation that does not equal $5\frac{3}{20}$.

8b. No, the correct answer is $10\frac{3}{5}$. $\frac{15}{3}$ is equivalent to 5. $5\frac{3}{5} + 5 = 10\frac{3}{5}$

9b. Various answers, for example:

$\frac{23}{10}$, $2\frac{2}{6}$, $\frac{15}{8}$, $\frac{8}{3}$