Reasoning and Problem Solving
Step 13: Subtract Mixed Numbers 1

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 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 whether a calculation is correct and explain any errors. Denominators are the same or halves or doubles of each other.
Expected Identify whether a calculation is correct and explain any errors. Denominators are direct multiples. Answers to be recorded in their simplest form.
Greater Depth Identify whether a calculation is correct and explain any errors. Denominators are not direct multiples. Answers to be recorded in their simplest form.

Questions 2, 5 and 8 (Problem Solving)
Developing Solve a word problem where the denominators are the same or halves or doubles of each other.
Expected Solve a word problem where the denominators are direct multiples. Answers to be recorded in their simplest form.
Greater Depth Solve a word problem where the denominators are not direct multiples. Answers to be recorded in their simplest form.

Questions 3, 6 and 9 (Problem Solving)
Developing Find the route through the grid. Denominators are the same or halves or doubles of each other.
Expected Find the route through the grid. Denominators are direct multiples.
Greater Depth Find the route through the grid. Denominators are not all direct multiples
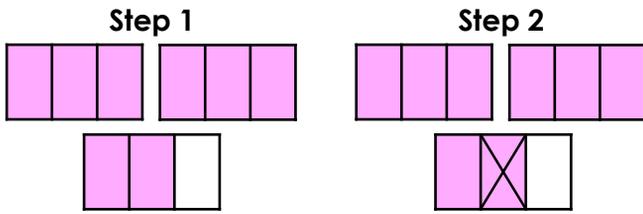
More Year 5 Fractions resources.

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

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1a. Sanjit has used the following model to solve the calculation below.

$$2\frac{2}{3} - \frac{1}{3} = 2\frac{3}{3}$$
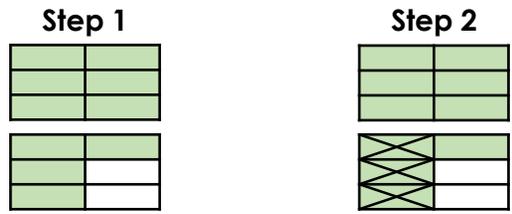
Step 1   **Step 2**

Is he correct?
Explain any errors he has made.

R

1b. Rita has used the following area model to solve the calculation below.

$$1\frac{4}{6} - \frac{3}{6} = 1\frac{3}{6}$$

Step 1   **Step 2**

Is she correct?
Explain any errors she has made.

R

2a. Millie has a pie shop.

She has $3\frac{3}{4}$ pies remaining when she closes the shop on Tuesday. She then eats $\frac{2}{8}$ of a pie for her dinner.

What fraction of the pies are left to sell on Wednesday?

PS

2b. Omar has a bakery.

He has $2\frac{6}{8}$ cakes left at lunchtime on Monday. In the afternoon, he sells $\frac{1}{4}$ cakes.

What fraction of the cakes are left to sell on Tuesday?

PS

3a. Stephanie has a fraction on her number card. Find the route across the grid subtracting $\frac{1}{8}$ every time to reach the card at the end of the grid.

$6\frac{6}{8}$

$6\frac{7}{8}$	$6\frac{1}{4}$	$6\frac{2}{4}$	$6\frac{3}{4}$
$6\frac{3}{4}$	$6\frac{2}{4}$	$6\frac{3}{8}$	$6\frac{4}{8}$
$6\frac{5}{8}$	$6\frac{6}{8}$	$6\frac{5}{8}$	$6\frac{1}{4}$

$6\frac{1}{8}$

PS

3b. Carl has a fraction on his number card. Find the route across the grid subtracting $\frac{1}{6}$ every time to reach the card at the end of the grid.

$2\frac{5}{6}$

$2\frac{6}{6}$	$2\frac{3}{6}$	$2\frac{1}{3}$	$2\frac{4}{6}$
$2\frac{2}{3}$	$2\frac{1}{3}$	$2\frac{5}{6}$	$2\frac{1}{6}$
$2\frac{1}{3}$	$2\frac{1}{6}$	$2\frac{2}{3}$	$2\frac{2}{6}$

2
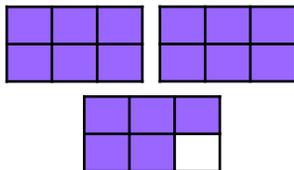
PS

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Reasoning and Problem Solving – Subtract Mixed Numbers 1 – Year 5 Developing
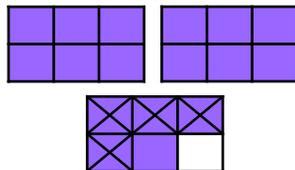
4a. Jason has used the following model to solve the calculation below.

$$2\frac{5}{6} - \frac{2}{3} = 2\frac{3}{6}$$

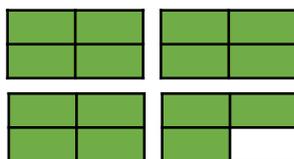Step 1   Step 2

Is he correct?
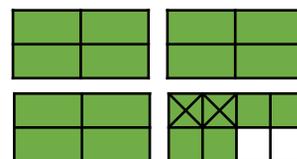Explain any errors he has made.

E   R

4b. Zara has used the following model to solve the calculation below.

$$3\frac{3}{4} - \frac{2}{8} = 3\frac{1}{4}$$

Step 1   Step 2

Is she correct?
Explain any errors she has made.

E   R

5a. Annie's using the watering can to water her garden.

She has $5\frac{2}{4}$ litres in the watering can.

She uses $\frac{5}{12}$ of the watering can when watering her garden.

What fraction of the water is left in the watering can?

E   PS

5b. Jordan is swimming around the edge of the local pool.

The route is $10\frac{4}{5}$ metres.

He has a rest after swimming $\frac{14}{20}$ metres.

What fraction of the route has he got left to swim?

E   PS

6a. Bruce has a fraction on his number card. Find the route across the grid subtracting $\frac{1}{9}$ every time to reach the card at the end of the grid.

$4\frac{8}{9}$

$4\frac{7}{9}$	$4\frac{1}{3}$	$4\frac{4}{9}$	$4\frac{6}{18}$
$4\frac{15}{27}$	$4\frac{2}{3}$	$4\frac{11}{18}$	$4\frac{12}{27}$
$4\frac{2}{3}$	$4\frac{12}{18}$	$4\frac{10}{18}$	$4\frac{5}{9}$

$4\frac{2}{3}$

E   PS

6b. Amy has a fraction on her number card. Find the route across the grid subtracting $\frac{1}{8}$ every time to reach the card at the end of the grid.

$4\frac{7}{8}$

$4\frac{5}{8}$	$4\frac{5}{8}$	$4\frac{9}{16}$	$4\frac{5}{16}$
$4\frac{3}{4}$	$4\frac{3}{8}$	$4\frac{1}{2}$	$4\frac{6}{16}$
$4\frac{2}{4}$	$4\frac{4}{8}$	$4\frac{1}{4}$	$4\frac{7}{16}$

$4\frac{1}{4}$

E   PS

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Reasoning and Problem Solving – Subtract Mixed Numbers 1 – Year 5 Expected
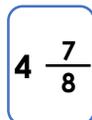
7a. Jane has solved the calculation below.

$$3 \frac{9}{10} - \frac{1}{4} = 3 \frac{8}{10}$$

Is she correct?
Explain any errors she has made.

R

7b. Zack has solved the calculation below.

$$2 \frac{3}{5} - \frac{4}{8} = 2 \frac{1}{13}$$

Is he correct?
Explain any errors he has made.

R

8a. A family have $3 \frac{7}{8}$ pizzas left over from their takeaway on Saturday.

Ruby eats $\frac{4}{6}$ of the left overs on Sunday for her lunch.

What fraction of the pizza is still left over?

PS

8b. Tina is making fresh lemonade for the garden party.

She has made $6 \frac{3}{4}$ litres in total. Before everyone arrives, she drinks $\frac{2}{5}$ of the lemonade.

What fraction of the lemonade is left for her guests?

PS

9a. Find the route across the grid, from left to right, subtracting $\frac{2}{8}$ every time.

$3 \frac{3}{6}$	$3 \frac{2}{3}$	$3 \frac{1}{3}$	$3 \frac{4}{18}$
$3 \frac{5}{6}$	$3 \frac{7}{12}$	$3 \frac{7}{8}$	$3 \frac{1}{12}$
$3 \frac{4}{6}$	$3 \frac{5}{18}$	$3 \frac{8}{12}$	$3 \frac{3}{8}$

PS

9b. Find the route across the grid, from left to right, subtracting $\frac{1}{6}$ every time.

$2 \frac{3}{9}$	$2 \frac{6}{18}$	$2 \frac{5}{12}$	$2 \frac{4}{12}$
$2 \frac{1}{2}$	$2 \frac{7}{12}$	$2 \frac{4}{6}$	$2 \frac{1}{4}$
$2 \frac{3}{4}$	$2 \frac{6}{12}$	$2 \frac{2}{4}$	$2 \frac{5}{9}$

PS

Reasoning and Problem Solving
Subtract Mixed Numbers 1

Developing

1a. He has added the numerators instead of subtracting them. The correct answer is $2\frac{1}{3}$.

2a. $3\frac{2}{4}$ or $3\frac{1}{2}$

3a.

$6\frac{7}{8}$	$6\frac{1}{4}$	$6\frac{2}{4}$	$6\frac{3}{4}$
$6\frac{3}{4}$	$6\frac{2}{4}$	$6\frac{3}{8}$	$6\frac{4}{8}$
$6\frac{5}{8}$	$6\frac{6}{8}$	$6\frac{5}{8}$	$6\frac{1}{4}$

Developing

1b. She has only subtracted $\frac{1}{6}$ rather than $\frac{3}{6}$. The correct answer is $1\frac{1}{6}$.

2b. $2\frac{4}{8}$ or $2\frac{1}{2}$

3b.

$2\frac{6}{6}$	$2\frac{3}{6}$	$2\frac{1}{3}$	$2\frac{4}{6}$
$2\frac{2}{3}$	$2\frac{1}{3}$	$2\frac{5}{6}$	$2\frac{1}{6}$
$2\frac{1}{3}$	$2\frac{1}{6}$	$2\frac{2}{3}$	$2\frac{2}{6}$

Expected

4a. Jason has subtracted $\frac{2}{6}$ rather than $\frac{2}{3}$. The correct answer is $2\frac{1}{6}$.

5a. $5\frac{1}{12}$

6a.

$4\frac{7}{9}$	$4\frac{1}{3}$	$4\frac{4}{9}$	$4\frac{6}{18}$
$4\frac{15}{27}$	$4\frac{2}{3}$	$4\frac{11}{18}$	$4\frac{12}{27}$
$4\frac{2}{3}$	$4\frac{12}{18}$	$4\frac{10}{18}$	$4\frac{5}{9}$

Expected

4b. Zara has subtracted $\frac{2}{4}$ rather than $\frac{2}{8}$. The correct answer is $3\frac{2}{4}$ or $3\frac{1}{2}$.

5b. $10\frac{2}{20}$ or $10\frac{1}{10}$

6b.

$4\frac{5}{8}$	$4\frac{5}{8}$	$4\frac{9}{16}$	$4\frac{5}{16}$
$4\frac{3}{4}$	$4\frac{3}{8}$	$4\frac{1}{2}$	$4\frac{6}{16}$
$4\frac{2}{4}$	$4\frac{4}{8}$	$4\frac{1}{4}$	$4\frac{7}{16}$

Greater Depth

7a. No, she should be left with $3\frac{13}{20}$ but she has subtracted without finding the common denominator.

8a. $3\frac{5}{24}$

9a.

$3\frac{3}{6}$	$3\frac{2}{3}$	$3\frac{1}{3}$	$3\frac{4}{18}$
$3\frac{5}{6}$	$3\frac{7}{12}$	$3\frac{7}{8}$	$3\frac{1}{12}$
$3\frac{4}{6}$	$3\frac{5}{18}$	$3\frac{8}{12}$	$3\frac{3}{8}$

Greater Depth

7b. No, he should be left with $2\frac{1}{10}$ but he has added the denominators instead of finding the common denominator.

8b. $6\frac{7}{20}$

9b.

$2\frac{3}{9}$	$2\frac{6}{18}$	$2\frac{5}{12}$	$2\frac{4}{12}$
$2\frac{1}{2}$	$2\frac{7}{12}$	$2\frac{4}{6}$	$2\frac{1}{4}$
$2\frac{3}{4}$	$2\frac{6}{12}$	$2\frac{2}{4}$	$2\frac{5}{9}$

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Reasoning and Problem Solving – Subtract Mixed Numbers 1 ANSWERS