Reasoning and Problem Solving
Step 8: Add Fractions within 1

National Curriculum Objectives:

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 (Problem Solving)
Developing Identify the calculation from the model shown. Denominators are all double or half of the starting fraction.
Expected Identify the calculation from the model shown. Denominators are all direct multiples of each another.
Greater Depth Identify the calculation from the model shown. Denominators are not all direct multiples of each other. Answers to be recorded using knowledge of equivalent fractions.

Questions 2, 5 and 8 (Reasoning)
Developing Explain whether the fraction calculation is true or false. Denominators are all double or half of the starting fraction.
Expected Explain whether the fraction calculation is true or false. Denominators are all direct multiples of each another.
Greater Depth Explain whether the fraction calculation is true or false. Denominators are not all direct multiples of each other.

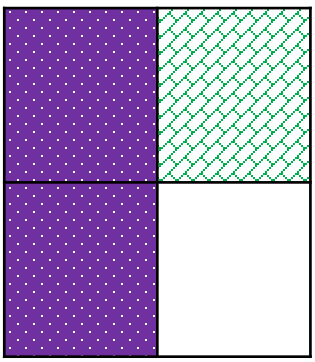
Questions 3, 6 and 9 (Problem Solving)
Developing Solve the word problem. Denominators are all double or half of the starting fraction.
Expected Solve the word problem. Denominators are all direct multiples of each another.
Greater Depth Solve the word problem. Denominators are not all direct multiples of each other.

More Year 5 Fractions resources.

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

Add Fractions within 1

1a. This model shows the addition of two fractions with different denominators.

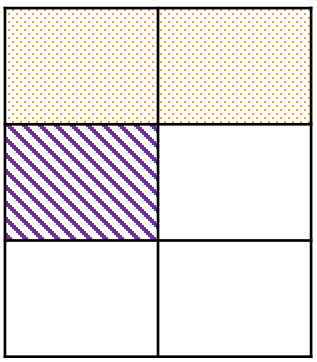


$\square/\square + \square/\square = \square/\square$

What calculation could it show?

D PS

1b. This model shows the addition of two fractions with different denominators.



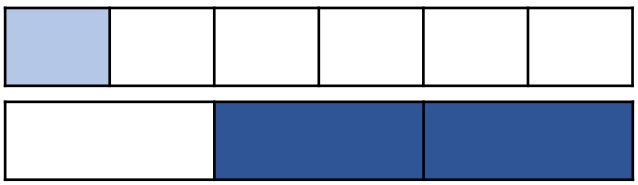
$\square/\square + \square/\square = \square/\square$

What calculation could it show?

D PS

2a. True or false?

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

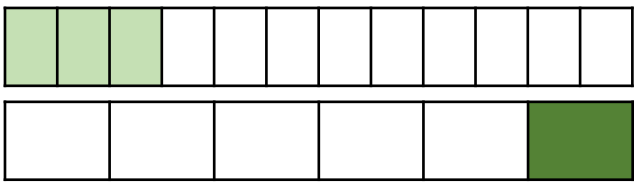


Explain your answer.

D R

2b. True or false?

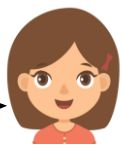
$$\frac{3}{12} + \frac{1}{6} = \frac{7}{12}$$



Explain your answer.

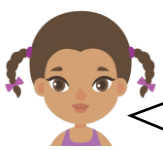
D R

3a. Anya and Fi have eaten part of a pizza.



I ate $\frac{1}{5}$ of the pizza.

Anya



I ate between $\frac{4}{10}$ and $\frac{7}{10}$ of the pizza.

Fi

What fraction of the pizza could they have eaten altogether?
Show your working.

D PS

3b. Titus and Han have eaten part of a chocolate bar.

I ate $\frac{1}{4}$ of the chocolate bar.

Titus

I ate between $\frac{1}{8}$ and $\frac{4}{8}$ of the chocolate bar.

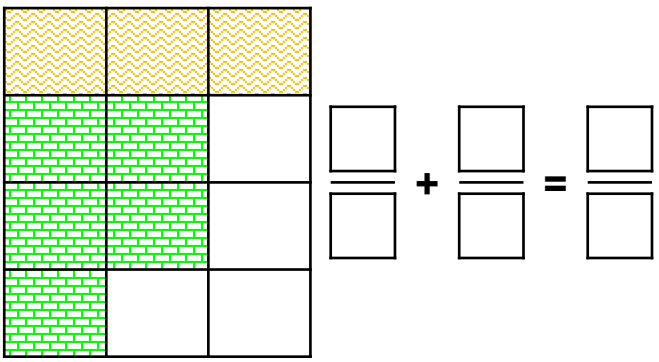
Han

What fraction of the chocolate bar could they have eaten altogether?
Show your working.

D PS

Add Fractions within 1

4a. This model shows the addition of two fractions with different denominators.

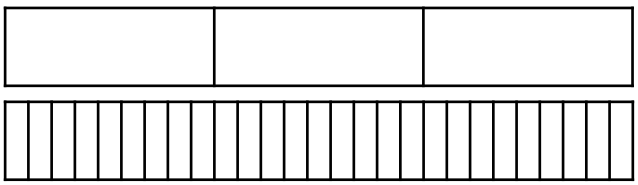


What calculation could it show?

E PS

5a. True or false?

$$\frac{5}{27} + \frac{2}{3} = \frac{11}{27}$$

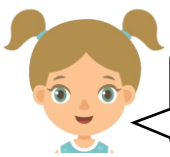


Explain your answer.

E R

6a. Miley and Tegan have eaten part of a pie.

Miley: I ate $\frac{2}{7}$ of the pie.



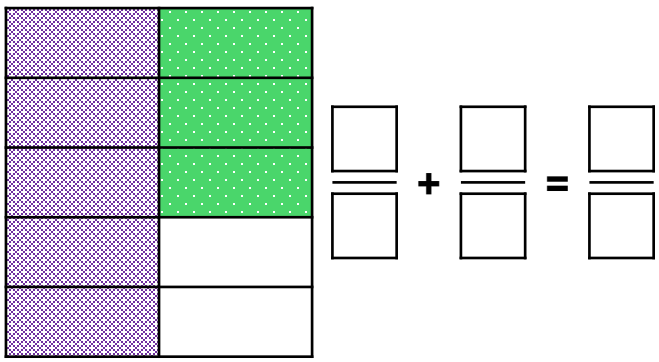
Tegan: I ate between $\frac{9}{21}$ and $\frac{12}{21}$ of the pie.

What fraction of the pie could they have eaten altogether?
Show your working.

E PS

Add Fractions within 1

4b. This model shows the addition of two fractions with different denominators.

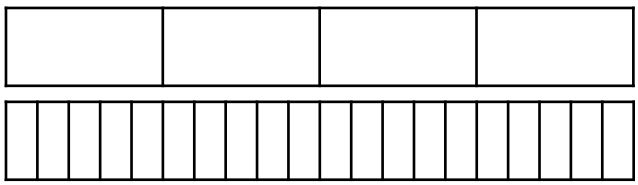


What calculation could it show?

E PS

5b. True or false?

$$\frac{3}{20} + \frac{3}{4} = \frac{15}{20}$$



Explain your answer.

E R

6b. Max and Onua have eaten part of a cake.

Max: I ate $\frac{1}{3}$ of the cake.

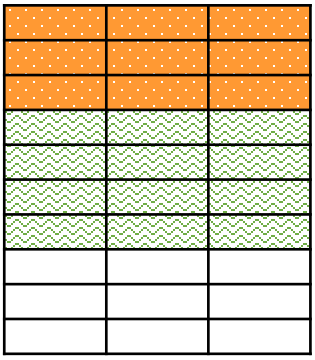
Onua: I ate between $\frac{2}{15}$ and $\frac{5}{15}$ of the cake.

What fraction of the cake could they have eaten altogether?
Show your working.

E PS

Add Fractions within 1

7a. This model shows the addition of two fractions. All the denominators are different.



$\square/\square + \square/\square = \square/\square$

What calculation could it show?

GD PS

8a. True or false?

$$\frac{4}{15} + \frac{7}{12} = \frac{49}{60}$$

Explain your answer.

GD R

9a. Baz and Leo have eaten part of a quiche.

I ate $\frac{5}{12}$ of the quiche.

Baz

I ate between $\frac{1}{9}$ and $\frac{4}{9}$ of the quiche.

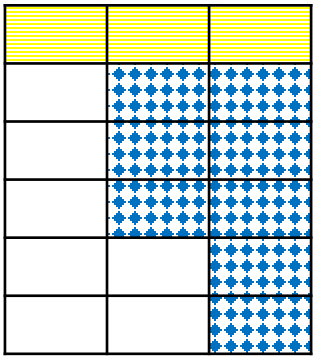
Leo

What fraction of the quiche could they have eaten altogether?
Show your working.

GD PS

Add Fractions within 1

7b. This model shows the addition of two fractions. All the denominators are different.



$\square/\square + \square/\square = \square/\square$

What calculation could it show?

GD PS

8b. True or false?

$$\frac{11}{21} + \frac{5}{14} = \frac{37}{42}$$

Explain your answer.

GD R

9b. Tom and Harper have eaten part of a garlic bread.

I ate $\frac{1}{6}$ of the garlic bread.

Tom

I ate between $\frac{1}{8}$ and $\frac{4}{8}$ of the garlic bread.

Harper

What fraction of the garlic bread could they have eaten altogether?
Show your working.

GD PS

Reasoning and Problem Solving
Add Fractions within 1

Developing

1a. $\frac{1}{2} + \frac{1}{4} = \frac{3}{4}$

2a. True because $\frac{2}{3}$ is equivalent to $\frac{4}{6}$ and $\frac{4}{6} + \frac{1}{6} = \frac{5}{6}$.

3a. Various answers, for example:

$\frac{6}{10}$, $\frac{7}{10}$, $\frac{8}{10}$ or $\frac{9}{10}$

Expected

4a. $\frac{1}{4} + \frac{5}{12} = \frac{8}{12}$

5a. False because $\frac{2}{3}$ is equivalent to $\frac{18}{27}$ and $\frac{18}{27} + \frac{5}{27} = \frac{23}{27}$ not $\frac{11}{27}$.

6a. Various answers, for example:

$\frac{15}{21}$, $\frac{16}{21}$, $\frac{17}{21}$ or $\frac{18}{21}$

Greater Depth

7a. Various answers, for example:

$\frac{3}{10} + \frac{2}{5} = \frac{14}{20}$; $\frac{9}{30} + \frac{4}{10} = \frac{14}{20}$; $\frac{3}{10} + \frac{6}{15} = \frac{21}{30}$

8a. False because $\frac{4}{15} + \frac{7}{12} = \frac{16}{60} + \frac{35}{60} = \frac{51}{60}$.

9a. Various answers, for example:

$\frac{19}{36}$, $\frac{23}{36}$, $\frac{27}{36}$ or $\frac{31}{36}$

Reasoning and Problem Solving
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Developing

1b. $\frac{1}{3} + \frac{1}{6} = \frac{3}{6}$

2b. False because $\frac{1}{6}$ is equivalent to $\frac{2}{12}$ and $\frac{2}{12} + \frac{3}{12} = \frac{5}{12}$ not $\frac{7}{12}$.

3b. Various answers, for example:

$\frac{3}{8}$, $\frac{4}{8}$, $\frac{5}{8}$ or $\frac{6}{8}$

Expected

4b. $\frac{1}{2} + \frac{3}{10} = \frac{8}{10}$

5b. False because $\frac{3}{4}$ is equivalent to $\frac{15}{20}$ and $\frac{3}{20} + \frac{15}{20} = \frac{18}{20}$ not $\frac{15}{20}$.

6b. Various answers, for example:

$\frac{7}{15}$, $\frac{8}{15}$, $\frac{9}{15}$ or $\frac{10}{15}$

Greater Depth

7b. $\frac{1}{6} + \frac{4}{9} = \frac{11}{18}$

8b. True because $\frac{11}{21} + \frac{5}{14} = \frac{22}{42} + \frac{15}{42} = \frac{37}{42}$.

9b. Various answers, for example:

$\frac{7}{24}$, $\frac{10}{24}$, $\frac{13}{24}$ or $\frac{16}{24}$