

Add & Subtract Fractions

Notes and Guidance

Children recap their Year 4 understanding of adding and subtracting fractions with the same denominator.

They use bar models to support understanding of adding and subtracting fractions.

Mathematical Talk

How many equal parts do I need to split my bar into?

Can you convert the improper fraction into a mixed number?

How can a bar model help you balance both sides of the equals sign?

Varied Fluency

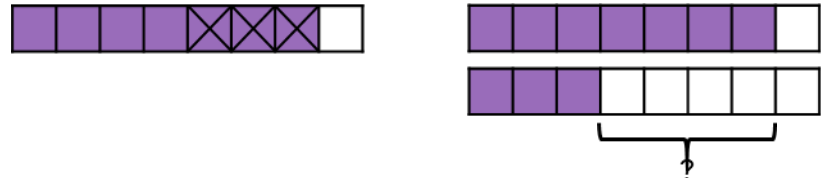
Here is a bar model to calculate $\frac{3}{5} + \frac{4}{5}$



Use a bar model to solve the calculations:

$$\frac{3}{8} + \frac{3}{8} \qquad \frac{5}{6} + \frac{1}{6} \qquad \frac{5}{3} + \frac{5}{3}$$

Here are two bar models to calculate $\frac{7}{8} - \frac{3}{8}$



What is the difference between the two methods?

Use your preferred method to calculate:

$$\frac{5}{8} - \frac{1}{8} \qquad \frac{9}{7} - \frac{4}{7} \qquad \frac{5}{3} - \frac{5}{3} \qquad 1 - \frac{2}{5}$$

Calculate:

$$\frac{3}{7} + \frac{5}{7} = \frac{\square}{\square} + \frac{4}{7} \qquad \frac{9}{5} - \frac{5}{5} = \frac{6}{5} - \frac{\square}{\square} \qquad \frac{2}{3} + \frac{\square}{\square} = \frac{11}{3} - \frac{4}{3}$$

Add & Subtract Fractions

Reasoning and Problem Solving

How many different ways can you balance the equation?

$$\frac{5}{9} + \frac{\square}{9} = \frac{8}{9} + \frac{\square}{9}$$

Possible answers:

$$\frac{5}{9} + \frac{3}{9} = \frac{8}{9} + \frac{0}{9}$$

$$\frac{5}{9} + \frac{4}{9} = \frac{8}{9} + \frac{1}{9}$$

$$\frac{5}{9} + \frac{5}{9} = \frac{8}{9} + \frac{2}{9}$$

Any combination of fractions where the numerators add up to the same total on each side of the equals sign.

A chocolate bar has 12 equal pieces.

Amir eats $\frac{5}{12}$ more of the bar than Whitney.

There is one twelfth of the bar remaining.

What fraction of the bar does Amir eat?

What fraction of the bar does Whitney eat?

Amir eats $\frac{8}{12}$ of the chocolate bar and Whitney eats $\frac{3}{12}$ of the chocolate bar.

Add Fractions within 1

Notes and Guidance

Children add fractions with different denominators for the first time where one denominator is a multiple of the other.

They use pictorial representations to convert the fractions so they have the same denominator.

Ensure children always write their working alongside the pictorial representations so they see the clear links.

Mathematical Talk

Can you find a common denominator? Do you need to convert both fractions or just one?

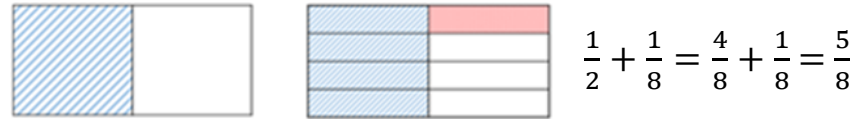
Can you explain Mo and Rosie's methods to a partner? Which method do you prefer?

How do Mo and Rosie's methods support finding a common denominator?

Varied Fluency

Mo is calculating $\frac{1}{2} + \frac{1}{8}$

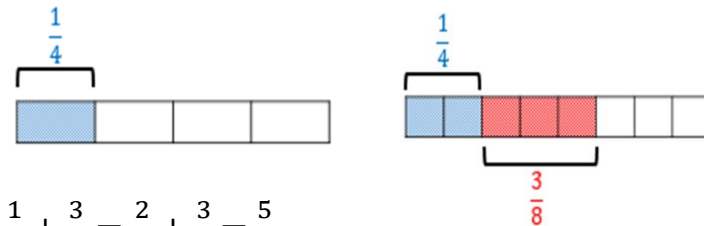
He uses a diagram to represent the sum.



Use Mo's method to solve:

$$\frac{1}{2} + \frac{3}{8} \qquad \frac{1}{4} + \frac{3}{8} \qquad \frac{7}{10} + \frac{1}{5}$$

Rosie is using a bar model to solve $\frac{1}{4} + \frac{3}{8}$



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

Use a bar model to solve:

$$\frac{1}{6} + \frac{5}{12} \qquad \frac{2}{9} + \frac{1}{3} \qquad \frac{1}{3} + \frac{4}{15}$$

Add Fractions within 1

Reasoning and Problem Solving

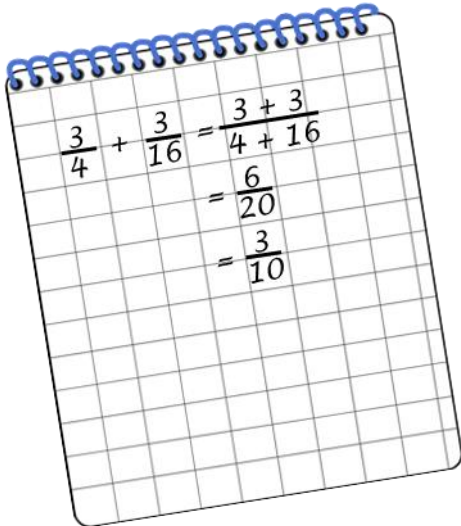
$$\frac{5}{16} + \frac{\square}{8} = \frac{15}{16}$$

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$$\frac{\square}{20} + \frac{7}{10} = \frac{17}{20}$$

3

Annie solved this calculation.



Can you spot and explain her mistake?

Annie is wrong because she has just added the numerators and the denominators. When adding fractions with different denominators you need to find a common denominator.

Two children are solving $\frac{1}{3} + \frac{4}{15}$

Eva starts by drawing this model:



Alex starts by drawing this model:



Can you explain each person's method and how they would complete the question?

Which method do you prefer and why?

Possible answer:
Each child may have started with a different fraction in the calculation. e.g. Eva has started by shading a third. She now needs to divide each third into five equal parts so there are fifteen equal parts altogether. Eva will then shade $\frac{4}{15}$ and will have $\frac{9}{15}$ altogether.