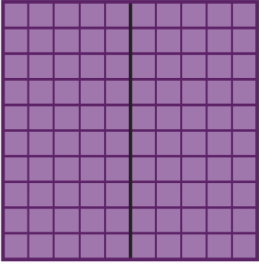


Key Vocabulary

- numerator
- denominator
- unit fraction
- non-unit fraction
- whole

Equivalent Fractions

To find equivalent fractions, we multiply or divide the numerator and denominator by the same number.



$$\frac{1}{2} = \frac{5}{10} = \frac{50}{100}$$

Diagram showing multiplication by 5 and 10, and division by 5 and 10.

Compare and Order Fractions

We can compare and order fractions by using common denominators.

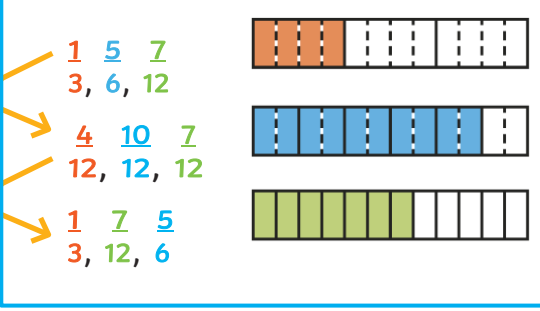


Diagram showing conversion of $\frac{1}{3}$ to $\frac{4}{12}$ and $\frac{1}{2}$ to $\frac{6}{12}$ for comparison.

Diagram showing comparison of $\frac{11}{8} > \frac{5}{4} > \frac{10}{8}$ by converting to a common denominator of 8.

equivalent

Mixed Numbers

Improper Fractions

- mixed number
- improper fraction

Mixed numbers contain a whole number and a fraction.

Diagram showing a mixed number $2\frac{1}{4}$ with 'whole' pointing to 2 and 'fraction' pointing to $\frac{1}{4}$.

An improper fraction has a numerator which is greater than or equal to the denominator.

Diagram showing the improper fraction $\frac{5}{3}$.

Convert an Improper Fraction to a Mixed Number

Diagram showing the conversion of $\frac{9}{4}$ to $2\frac{1}{4}$ using the division $9 \div 4 = 2r1$.

Text: "Divide the numerator by the denominator." and "This shows you the whole number and the fraction."

Convert a Mixed Number to an Improper Fraction

Multiply the whole by the denominator to make an improper fraction.

Diagram showing the conversion of $2\frac{5}{6}$ to $\frac{12}{6} + \frac{5}{6} = \frac{17}{6}$.

Add the fractions together.

common denominator

Adding and Subtracting Fractions

- common numerator

To add or subtract fractions with denominators that are multiples of the same number, we must change one fraction to have the same denominator.

Diagram showing addition of $\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$ using a circle divided into 3 parts.

Diagram showing subtraction of $\frac{4}{5} - \frac{3}{5} = \frac{1}{5}$ using a bar divided into 5 parts.

Diagram showing addition of $\frac{1}{4} + \frac{3}{8} = \frac{2}{8} + \frac{3}{8} = \frac{5}{8}$ using a circle divided into 8 parts.

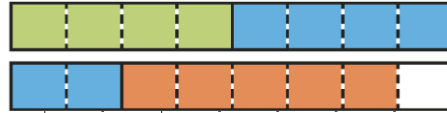
Diagram showing subtraction of $\frac{5}{6} - \frac{2}{3} = \frac{5}{6} - \frac{4}{6} = \frac{1}{6}$ using a circle divided into 6 parts.

Fractions – Year 5

Knowledge Organiser

Add Fractions Where the Total is Greater Than 1

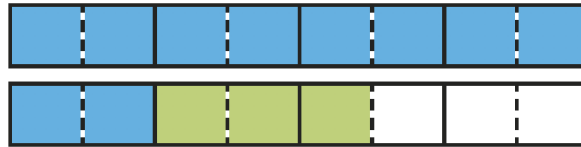
$$\frac{1}{2} + \frac{3}{4} + \frac{5}{8} = \frac{4}{8} + \frac{6}{8} + \frac{5}{8} = \frac{15}{8} = 1\frac{7}{8}$$



Add Mixed Numbers

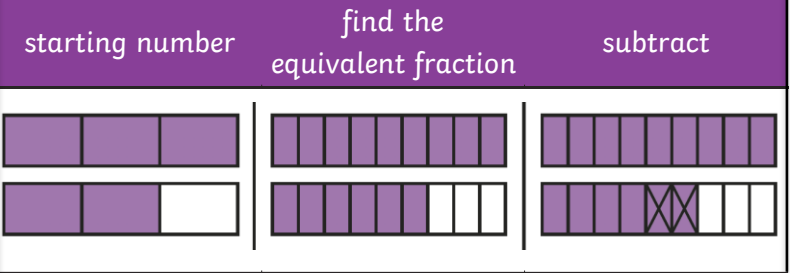
$$1\frac{1}{4} + \frac{3}{8} = 1\frac{2}{8} + \frac{3}{8} = 1 + \frac{5}{8} = 1\frac{5}{8}$$

$$1\frac{1}{4} + \frac{3}{8} = \frac{5}{4} + \frac{3}{8} = \frac{10}{8} + \frac{3}{8} = \frac{13}{8} = 1\frac{5}{8}$$



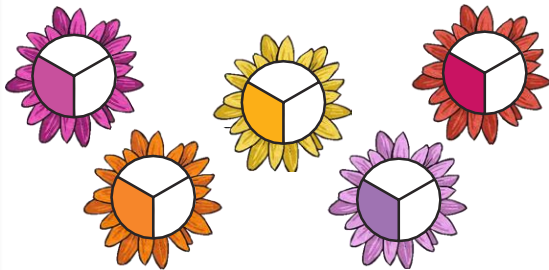
Subtract from a Mixed Number

$$1\frac{2}{3} - \frac{2}{9} = 1\frac{6}{9} - \frac{2}{9} = 1\frac{4}{9}$$



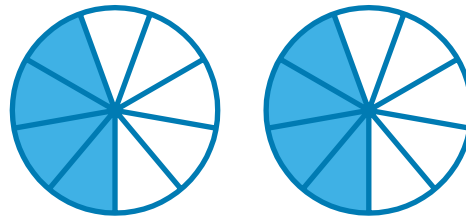
Multiply Unit Fractions by an Integer

$$\frac{1}{3} \times 5 = \frac{5}{3}$$



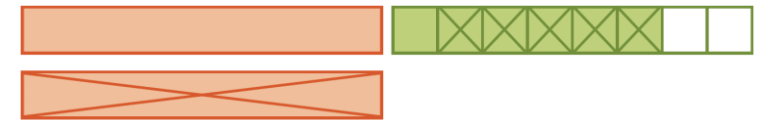
Multiply Non-Unit Fractions by an Integer

$$2 \times \frac{4}{9} = \frac{8}{9}$$



Subtract Two Mixed Numbers

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



$$2 - 1 = 1$$

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

Multiply Mixed Numbers by Integers

Convert to an improper fraction and multiply the numerator by the integer.

$$2\frac{1}{4} \times 2 = \frac{9}{4} \times 2 = \frac{18}{4} = 4\frac{2}{4} = 4\frac{1}{2}$$

Use repeated addition.

$$2\frac{1}{4} \times 2 = 2\frac{1}{4} + 2\frac{1}{4} = 4\frac{2}{4} = 4\frac{1}{2}$$

Subtract from a Mixed Number - Breaking the Whole

$$2\frac{1}{4} - \frac{3}{8} = 2\frac{2}{8} - \frac{3}{8} = 1\frac{10}{8} - \frac{3}{8} = 1\frac{7}{8}$$

