

**Key Vocabulary**      **Equivalent Fractions**      **Compare and Order Fractions**

numerator  
denominator  
unit fraction  
non-unit fraction  
whole

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

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

We can compare and order fractions by using common denominators.

**equivalent**

**Mixed Numbers**

**Improper Fractions**

mixed number

Mixed numbers contain a whole number and a fraction.

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

$$\frac{5}{3}$$

improper fraction

**Convert an Improper Fraction to a Mixed Number**

**Convert a Mixed Number to an Improper Fraction**

simplest form  
multiple

$\frac{9}{4}$

$9 \div 4 = 2r1$        $2\frac{1}{4}$

Divide the numerator by the denominator.

This shows you the whole number and the fraction.

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

$$2\frac{5}{6} = \frac{12}{6} + \frac{5}{6} = \frac{17}{6}$$

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.



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

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

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

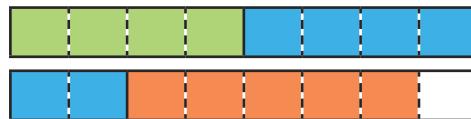
$$\frac{5}{6} - \frac{2}{3} = \frac{5}{6} - \frac{4}{6} = \frac{1}{6}$$

# Fractions

# Knowledge Organiser

## Add Fractions Where the Total is Greater Than 1

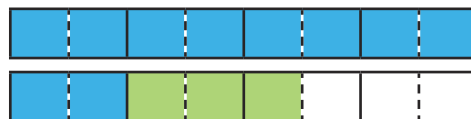
$$\frac{1}{2} + \frac{3}{4} + \frac{5}{8} = \frac{4}{8} + \frac{6}{8} + \frac{5}{8} = \frac{15}{8} = 1\frac{7}{8}$$



## Add Mixed Numbers

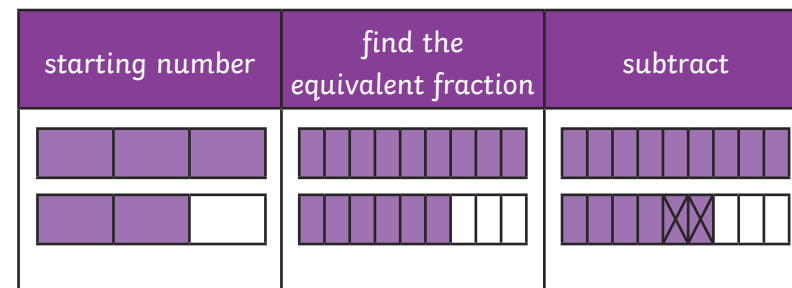
$$1\frac{1}{4} + \frac{3}{8} = 1\frac{2}{8} + \frac{3}{8} = 1 + \frac{5}{8} = 1\frac{5}{8}$$

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



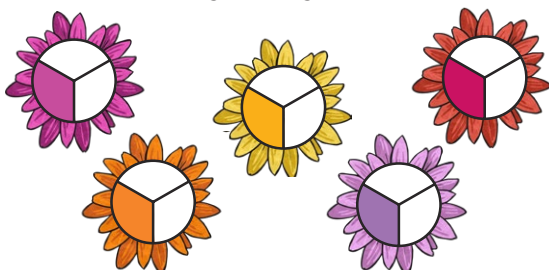
## Subtract from a Mixed Number

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



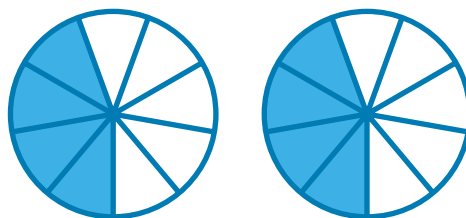
## Multiply Unit Fractions by an Integer

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



## 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

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

