

# Fractions: Simplifying, adding and subtracting fractions Knowledge Organiser

## Key Vocabulary

Compare	To look for similarities and differences.
Denominator	The bottom number of a fraction.
Fraction	A representation of a part of a whole.
Highest Common Factor	The highest factor two numbers have in common.
Integer	A number that is not a fraction, a whole number.
Lowest Common Multiple	The lowest multiples two numbers share.
Numerator	The top number in a fraction.
Order	First, second, third.....
Simplify	Reducing to a simpler form.

## Key Information

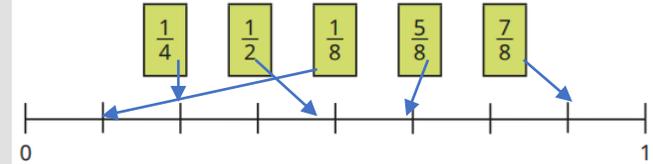
- Common factors are used to simplify fractions using division. You need to find common factors of the numerator and the denominator.
- Simplified fractions are equivalent of each other. They share the same value.
- Improper fractions are where the numerator is bigger than the denominator.
- Mixed numbers are where fractions and integers are used together to represent one whole and a part whole.
- Denominators need to be the same when adding and subtracting fractions.

## Prior Knowledge

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|----|--|
| Y1 | Recognise and name a half and quarter of a shape, object or quantity.  |
| Y2 | Know the fractions $\frac{1}{3}$ $\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$ and their equivalence.                |
| Y3 | Unit fractions have 1 as the numerator and non unit fractions have a number greater than one as their numerator. |
| Y4 | Fractions with the same denominator can be added together by adding the numerators.                              |
| Y5 | Fractions can be compared and ordered depending on their denominator which gives their size value.               |

## Worked Examples

Label the fractions on the number line.



Compare the following fractions:

$$\frac{4}{5} > \frac{3}{4}$$

$$\frac{3}{5} > \frac{4}{7}$$

$$\frac{3}{4} > \frac{7}{10}$$

$$2\frac{2}{5} > 2\frac{3}{8}$$

$$\frac{1}{3} + \frac{1}{12} = \frac{4}{12} + \frac{1}{12} = \frac{5}{12}$$

$$\frac{1}{3} + \frac{7}{12} = \frac{4}{12} + \frac{7}{12} = \frac{11}{12}$$

$$\frac{2}{3} - \frac{5}{9} = \frac{6}{9} - \frac{5}{9} = \frac{1}{9}$$

Kim subtracts  $\frac{3}{5}$  from a fraction.



The answer is  $\frac{8}{45}$

$\frac{7}{9}$

What fraction has Kim subtracted  $\frac{3}{5}$  from?

Give your answer in its simplest form.

## Worked Examples

$$\frac{3}{5} = \frac{9}{15}$$

Diagram showing the simplification process:  $\frac{3}{5}$  is multiplied by 3 to get  $\frac{9}{15}$ . The diagram uses arrows and the number 3 to indicate the multiplication of both numerator and denominator.