Fractions knowledge organiser

Equivalent fractions

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

$$\frac{1}{2} \quad \begin{array}{c} \text{x5} \\ \text{x5} \end{array} \quad \frac{5}{10}$$

You can use the butterfly method to check whether fractions are equivalent.

$$\frac{10}{1} \qquad \frac{10}{5} \qquad \begin{array}{l} 1 \times 10 = 10 \\ 2 \times 5 = 10 \end{array}$$

$$\frac{1}{2} \quad \text{X} \quad \frac{5}{10}$$

Mixed numbers

Mixed numbers contain a whole number and a fraction.

$$2\frac{1}{4}$$

Convert an improper fraction to a mixed number

Divide the numerator by the denominator.

$$\frac{5}{3} \qquad 5 \div 3 = 1 \, r \, 2 \qquad 1\frac{2}{3}$$

Adding and subtracting fractions

To add or subtract fractions, they must all have the same (common) denominators. Then add the numerators.

Compare and order fractions

We can compare and order fractions by using common denominators.

$$\frac{1}{3} \qquad \frac{5}{6} \qquad \frac{7}{12}$$

$$\frac{4}{12} \qquad \frac{10}{12} \qquad \frac{7}{12}$$

$$\frac{1}{3} \qquad \frac{7}{12} \qquad \frac{5}{6}$$

Improper fractions

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

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

Convert a mixed number to an improper fraction

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

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

Multiplying fractions

Multiply the top numbers (numerators). Multiply the bottom numbers (denominators). Simplify.

Dividing fractions

Turn the 2nd fraction (the one you want to divide by) upside down. Multiply the fractions. Simplify

Key Vocabulary

Numerator: The number above the line in a fraction. The numerator tells you how many equal parts you are using.

Denominator: The number below the line in a fraction. It shows how many parts a whole shape or number of items is divided into.

Unit fraction: A unit fraction has a numerator of 1 and any number as the denominator.

Non-unit fraction: A fraction where the numerator is greater than 1.

Whole: A number where no parts are fractions.

Equivalent fraction: A fraction with the same value as another.

Mixed number: A whole number together with a proper fraction.

Improper fraction: A fraction that has a numerator greater than the denominator. Its value is greater than 1.

Simplest form: A fraction that is reduced to its lowest term. Dividing the numerator and denominator by the same number will simplify a fraction.

Multiple: A number made by multiplying together two other numbers.

Lowest common denominator: is the lowest common multiple of all the denominators in a set of fractions.

Common denominator: is when a set of fractions have the same denominator

Integers: Another name for a whole number (including negative numbers).