

Maths Knowledge Organiser

Year 7 Fractions



Fractions

A numerical quantity that is not a whole number, for example $\rightarrow \frac{2}{5}, \frac{7}{2}, 3\frac{5}{7}$

1
2

Numerator – how many equal parts are in the fraction

Denominator – how many equal parts are in **total**

Simplifying fractions

A **fraction** is in simplest form when the top and bottom cannot be any smaller, while still being whole numbers

$$\frac{8}{12} \stackrel{\div 4}{=} \frac{2}{3}$$

Adding and subtract fractions

Make denominator the same

$$\frac{4}{5} + \frac{2}{3} = \frac{12}{15} + \frac{10}{15} = \frac{22}{15} = 1\frac{7}{15}$$

Fraction to decimals

$$\frac{5}{8} \rightarrow 5 \div 8 \rightarrow 8 \overline{) 5.0000} \rightarrow 0.625$$

Fraction of an amount

Divide by the denominator and multiply by the numerator

$$\frac{2}{5} \text{ of } 65 \rightarrow 65 \div 5 = 13 \rightarrow 13 \times 2 = 26$$

Mixed number \leftrightarrow improper fractions

$$2\frac{3}{5} = \frac{2 \times 5 + 3}{5} = \frac{13}{5}$$

$\frac{44}{3}$ how many 3's go into 44? 14

$$\text{So } \frac{44}{3} = 4\frac{2}{3}$$

Adding, subtract, multiplying and dividing mixed number

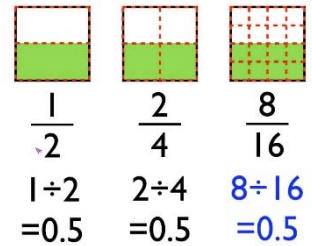
Convert to top heavy fractions and complete as above

$$2\frac{1}{2} + 3\frac{2}{5} = \frac{5}{2} + \frac{17}{5} = \frac{25}{10} + \frac{34}{10} = \frac{59}{10} = 5\frac{9}{10}$$

$$5\frac{2}{3} \div 2\frac{1}{4} = \frac{17}{3} \div \frac{9}{4} = \frac{17}{3} \times \frac{4}{9} = \frac{68}{27} = 2\frac{12}{27} = 2\frac{4}{9}$$

Equivalent fractions

These are fractions which look different but have the same value, we multiply or divide both numerator and denominator by the same number to make new equivalent fractions



Fraction of an amount

Divide by the denominator and multiply by the numerator

$$\frac{2}{5} \text{ of } 65 \rightarrow 65 \div 5 = 13 \rightarrow 13 \times 2 = 26$$

Perimeter

Add all the edges of a 2D shape

Fraction, decimals and percentages

$$32\% \rightarrow \frac{32}{100} \rightarrow \frac{8}{25}$$

$$\frac{5}{8} \rightarrow 5 \div 8 \rightarrow 8 \overline{) 0.625}$$

$$32\% \rightarrow 32 \div 100 = 0.32$$

$$0.6 \rightarrow 0.6 \times 100 = 60\%$$

Multiplying and dividing fractions

When dividing, flip second fractions and multiply
To multiply just multiply top and bottom numbers

$$\frac{5}{6} \times 8 = \frac{5}{6} \times \frac{8}{1} = \frac{40}{6} = 6\frac{4}{6} = 6\frac{2}{3}$$

$$\frac{2}{3} \div \frac{1}{5} = \frac{2}{3} \times \frac{5}{1} = \frac{10}{3} = 3\frac{1}{3}$$