

HIGHER GCSE UNIT SUMMARY: UNIT 4: Fractions, percentages, ratio and proportion

4a) Fractions and percentages

Unit Description	Taught	Revision Priority
Express a given number as a fraction of another;		
Find equivalent fractions and compare the size of fractions;		
Write a fraction in its simplest form, including using it to simplify a calculation, e.g. $50 \div 20 = 5 \div 2 = 2.5$;		
Find a fraction of a quantity or measurement, including within a context;		
Convert a fraction to a decimal to make a calculation easier;		
Convert between mixed numbers and improper fractions;		
Add and subtract fractions, including mixed numbers;		
Multiply and divide fractions, including mixed numbers and whole numbers and vice versa;		
Understand and use unit fractions as multiplicative inverses;		
By writing the denominator in terms of its prime factors, decide whether fractions can be converted to recurring or terminating decimals;		
Convert a fraction to a recurring decimal and vice versa;		
Find the reciprocal of an integer, decimal or fraction;		
Convert between fractions, decimals and percentages;		
Express a given number as a percentage of another number;		
Express one quantity as a percentage of another where the percentage is greater than 100%		
Find a percentage of a quantity;		
Find the new amount after a percentage increase or decrease;		
Work out a percentage increase or decrease, including: simple interest, income tax calculations, value of profit or loss, percentage profit or loss;		
Compare two quantities using percentages, including a range of calculations and contexts such as those involving time or money;		
Find a percentage of a quantity using a multiplier and use a multiplier to increase or decrease by a percentage in any scenario where percentages are used;		
Find the original amount given the final amount after a percentage increase or decrease (reverse percentages), including VAT;		
Use calculators for reverse percentage calculations by doing an appropriate division;		
Use percentages in real-life situations, including percentages greater than 100%;		
Describe percentage increase/decrease with fractions, e.g. 150% increase means $2 \frac{1}{2}$ times as big;		
Understand that fractions are more accurate in calculations than rounded percentage or decimal equivalents, and choose fractions, decimals or percentages appropriately for calculations.		

4b) Representing and interpreting data and scatter graphs

Unit Description	Taught	Revision Priority
Express the division of a quantity into a number parts as a ratio;		
Write ratios in form $1 : m$ or $m : 1$ and to describe a situation;		
Write ratios in their simplest form, including three-part ratios;		
Divide a given quantity into two or more parts in a given part : part or part : whole ratio;		
Use a ratio to find one quantity when the other is known;		
Write a ratio as a fraction and as a linear function;		
Identify direct proportion from a table of values, by comparing ratios of values;		
Use a ratio to compare a scale model to real-life object;		
Use a ratio to convert between measures and currencies, e.g. $\text{£}1.00 = \text{€}1.36$;		
Scale up recipes;		
Convert between currencies.		