



Mathematics (Higher)

KS4 MATHS (FOUNDATION)	Content
Year 11 HT 1	<p>Higher GCSE: Algebraic manipulation and solving equations and inequalities: converting problems to algebra, simplifying terms, factorising to a single bracket and quadratic equations, using rules of indices, simplifying algebraic fractions, completing the square and algebraic proofs of multiples. Solving equations and inequalities: solving equations with the unknown on one or both sides, solving inequalities, solving equations created from real life situations, solving quadratics by factorising, formula and completing the square and simultaneous equations. Probability: sample space diagrams and combinations, understanding that probabilities add up to 1, estimating using probability, using Venn Diagrams for probability, venn diagrams and set notation, using 2 way tables and frequency trees for probability and drawing and using probability trees. Percentages: develop on the percentages skills they have already learned and apply them to problem solving questions. Students will also learn about growth and decay (interest and depreciation) and reverse percentages.</p>
Year 11 HT 2	<p>Higher GCSE: The first topic is 'Ratio and proportion': sharing into a ratio, proportion in the recipes context, calculating the best value for money and unit pricing, conversion graphs and proportion graphs, direct and inverse proportion (algebraically and graphs). 'Place value, rounding, estimating and bounds': rounding to decimal places and significant figures, using place value for multiplication and division, error intervals, standard form and lower/upper bounds. 'Indices, roots and surds': calculating powers and roots using a calculator, working with negative and fractional indices, rules of indices, surds. This topic can be combined with algebra and shapes and we will be practising surds questions in the context of perimeter, area and volume.</p>
Year 11 HT 3	<p>Higher GCSE: 'Formulae': substitution, creating expressions and formulae, rearranging formulae and iteration. 'Sequences and algebraic graphs': using coordinates (including in 3D), midpoints, plotting straight line graphs, recognising and using the gradients and intercepts, plotting and interpreting graphs, functions, equation of a tangent, equation of a circle, calculating and interpreting the area under a graph and completing the square to calculate turning points. The sequences part includes recognising and using special sequences, finding and using the nth term rule of a sequence. 'Fractions': calculating fractions of amounts, operations with fractions (and mixed numbers) and converting between fractions, decimals and percentages (including recurring decimals to fractions). We will also be learning how to simplify algebraic fractions and then practise calculations with algebraic fractions.</p>
Year 11 HT 4	<p>Higher GCSE: 'Compound measures': time/journey graphs, rate of pay and unit pricing, compound measures and other real life graphs. 'Construction and loci': constructing bisectors, loci, plans and elevations. 'Similarity and congruence': scale drawings and maps, proof of congruency and similar shapes. We will also be working with linear/area/volume scale factors.</p>
Year 11 HT 5	<p>Foundation/Higher GCSE: Bespoke topics for each class: topic gaps & papers</p>