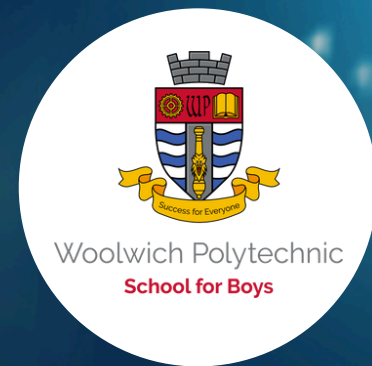


Mathematics

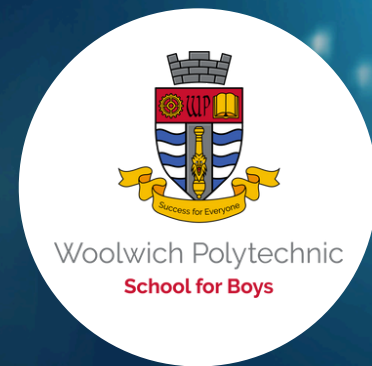
Year 12 Curriculum Map



	Autumn One	Autumn Two	Spring One
TEACHER ONE	<p>Unit: Algebra and functions</p> <p>Key Learning:</p> <ul style="list-style-type: none"> Algebraic expressions – basic algebraic manipulation, indices and surds Quadratic functions – factorising, solving, graphs and the discriminants Equations – quadratic/linear simultaneous Inequalities – linear and quadratic (including graphical solutions) <p>Assessment: Weekly exam questions; end of unit exam</p>	<p>Unit: Differentiation</p> <p>Key Learning:</p> <ul style="list-style-type: none"> Definition, differentiating polynomials Second derivatives Gradients, tangents, normal Maxima and minima <p>Assessment: Weekly exam questions; end of unit exam</p>	<p>Unit: Trigonometry</p> <p>Key Learning:</p> <ul style="list-style-type: none"> Trigonometric ratios Trigonometric graphs Trigonometric identities Trigonometric equations <p>Assessment: Weekly exam questions; end of unit exam</p>
TEACHER TWO	<p>Unit: Coordinate geometry in the (x, y) plane</p> <p>Key Learning:</p> <ul style="list-style-type: none"> Straight-line graphs, parallel/perpendicular, length and area problems Circles – equation of a circle, geometric problems on a grid Graphs – cubic, quartic and reciprocal Transformations – transforming graphs – f(x) notation <p>Assessment: Weekly exam questions; end of unit exam</p>	<p>Unit: Kinematics</p> <p>Key Learning:</p> <ul style="list-style-type: none"> Graphical representation of velocity, acceleration and displacement Motion in a straight line under constant acceleration; suvat formulae for constant acceleration; Vertical motion under gravity Variable force; Calculus to determine rates of change for kinematics Use of integration for kinematics problems i.e. <p>Assessment: Weekly exam questions; end of unit exam</p>	<p>Unit: Forces & Newton's laws</p> <p>Key Learning:</p> <ul style="list-style-type: none"> Newton's first law, force diagrams, equilibrium, Introduction to i, j system Newton's second law, 'F = ma', connected particles (no resolving forces or use of F = μR); Newton's third law: equilibrium, problems involving smooth pulleys <p>Assessment: Weekly exam questions; end of unit exam</p>

Mathematics

Year 12 Curriculum Map



	Spring Two	Summer One	Summer Two
TEACHER ONE	<p>Unit: Further algebra</p> <p>Key Learning:</p> <ul style="list-style-type: none"> Algebraic division Factor theorem Proof The binomial expansion <p>Assessment: Weekly exam questions; end of unit exam</p>	<p>Unit: Vectors (2D)</p> <p>Key Learning:</p> <ul style="list-style-type: none"> Definitions, magnitude/direction, Addition and scalar multiplication Position vectors Distance between two points, geometric problems <p>Assessment: Weekly exam questions; end of unit exam</p>	<p>Unit: Exponentials and logarithms</p> <p>Key Learning:</p> <ul style="list-style-type: none"> Exponential functions Natural logarithms Transformations – transforming graphs Derivatives and integrals <p>Assessment: Weekly exam questions; end of unit exam</p>
TEACHER TWO	<p>Topic: Data presentation and interpretation</p> <p>Key Learning:</p> <ul style="list-style-type: none"> Calculation and interpretation of measures of location; Calculation and interpretation of measures of variation; Understand and use coding Interpret diagrams for single-variable data; Interpret scatter diagrams and regression lines; Recognise and interpret outliers; Draw simple conclusions from statistical problems <p>Assessment: Weekly exam questions; end of unit exam</p>	<p>Topic:</p> <p>Key Learning:</p> <ul style="list-style-type: none"> Use discrete distributions to model real-world situations; Identify the discrete uniform distribution Calculate probabilities using the binomial distribution (calculator use expected) Language of hypothesis testing; Significance levels Carry out hypothesis tests involving the binomial distribution <p>Assessment: Weekly exam questions; end of unit exam</p>	<p>Revision/Exam Preparation</p> <p>Paper 1: Pure Mathematics 62.5%, 2 hours, 100 marks</p> <p>Paper 2: Statistics and Mechanics 37.5%, 1 hour 15 minutes, 60 marks</p>