Mathematics Year 11 Curriculum Overview *Set 2 Higher (Crossover)*

What is the Year 11 Mathematics curriculum aiming to achieve?		
What do we want our Year 11 Mathematicians to be like?	How are we building on prior learning?	How can parents/carers support their child's learning?
• Able to recall facts, vocabulary and formulae across the curriculum • Able to solve problems connecting different strands of mathematics • Able to communicate mathematically with confidence • Able to reason, deduce and conclude • Be ready for the next stage in education	• Using lessons and homework to check on retention of prior learning • Checking students are fluent in key skills by using lessons to review and reinforce where required • Introducing linked concepts that build on prior learning • Helping students master key skills	• Help by testing them on key skills, formulae and vocabulary • Encourage them to complete homework to the best of their ability • Encourage them to revise for tests, making use of online resources • Ensure they are properly equipped, including a scientific calculator

How are we organising the Year 11 Mathematics curriculum?			
	Autumn Units	Spring Units	Summer
Topics, Skills & Threshold Concepts	**Probability:** relative frequency, Venn diagrams & set notation, probability tree diagrams, conditional probability **Further Number Skills:** fractional indices, error intervals, upper & lower bounds **Statistics:** sampling, cumulative frequency, boxplots, histograms **Quadratics:** solving equations, plotting and interpreting quadratic graphs **Simultaneous Equations:** graphical, elimination and substitution method, two linear or linear/quadratic equations **Further Fractions:** rationalise denominators, algebraic fractions, solving equations **Transformation & Vectors:** Symmetry, translation, reflection, rotation, enlargement, vector calculations, vector geometry	**Units & Real Life Graphs:** compound units, rates of change, area under graphs, distance-time & velocity-time graphs **Proportion:** proportionality equations & graphs **Inequalities:** solve linear or quadratic inequalities, graphical solution, use of number lines to show solutions **Shape & Construction:** coordinate problems, plans & elevations, congruence criteria, similarity, constructions, loci **Circle Theorems:** use and apply circle theorems, and proof of circle theorems **Proof:** show algebraic expressions are equivalent, construct proofs, including geometric proofs **Functions & Iteration:** function notation, inverse functions, composite functions, iterative processes & recursive formulae	**Pythagoras & Trigonometry:** Exact values, 3D problems, sine rule, cosine rule, area of a triangle **Further Graphs:** graph of cubic, reciprocal, exponential, trigonometric & circle function Exam preparation and external examinations
Enrichment within the curriculum	Students will continue to have opportunities to develop and practise problem-solving skills in more complex situations, including unfamiliar contexts. They will develop their mathematical communication skills using structured methods and algebraic techniques. Real-world applications of mathematics will be discussed whenever possible, including links to careers.		
Cross curricular links	• Science: graphs, formulas, equations, standard form, percentages, data analysis, averages, charts • Geography: graphs, ratio, scales, averages • Business Studies: percentages, data analysis, charts • Technology: units, ratio, scale factors, area, construction		
Extra-curricular opportunities	Every year, groups of students take part in the Intermediate Mathematical Challenge. Students are able to seek help from their teachers outside lessons at any time, and homework support is always available. Lunchtime or after-school revision sessions will also be available during the year, as well as tutor time interventions for selected students.		

What are the intended outcomes of the Year 11 Mathematics curriculum?			
	Autumn	Spring	Summer
Opportunities to show progress (Assessments)	**Homework** – weekly tasks which alternate between a written task of exam questions and an online task set on Sparx Maths, which follows the curriculum. Tasks are personalised to a student's ability, and Sparx provides targeted practice, consolidation, and booster tasks in addition to compulsory tasks.		
	End of unit quizzes – at the end of every unit, students complete a short quiz in class. The quiz is self-assessed, and results noted on their record sheet at the front of their book, along with any skills identified as needing further practice.		
	Autumn 1 test – 1 hour in class **Autumn 2 Paper 1 & Paper 2** – two exams, 1.5 hours each (non-calc/calc)	**Spring exam** – one calculator paper, which may be split into two shorter exams of 45 minutes each	**External GCSE examinations**
Impact on personal development (SMSC)	Mathematics provides essential skills needed for everyday life. Many jobs require the use of problem-solving skills, and these often involve mathematics as well. Through mathematics, students learn how to analyse, communicate, explain and evaluate. Students will also become better equipped to deal with difficult problems and begin to develop independence, perseverance and resilience.		
Preparation for the next stage of education	During Year 11, students prepare thoroughly for the GCSE examinations, and success in the subject will ensure a smooth transition to post-16 courses. Regular homework and assessments provide students with opportunities to test their understanding and demonstrate their skills.		