Year 11 Maths

Curriculum Leader: Mr James McKenzie-Laverty   Exam Board: Edexcel

The Mathematics Curriculum Team have high expectations and aspirations for all of their students. Our vision is to develop students who have the resilience, adaptability and mathematical skills necessary for modern life and to instil in them an enthusiasm for the subject and a confidence in their own ability.

We want our students to develop an understanding that mathematics is important in everyday life and to provide them with a set of tools that will help them to reach aspirational targets through use of number, problem solving, logical reasoning, thinking in abstract ways and with creativity. We will encourage them to apply these skills across all subjects and to the real world.

Topics to be covered in Year 11

	Term 1	Term 2	Term 3
Topics to be covered	A selection of these topics will be covered throughout the year, as appropriate to the strength of prior learning and progress made, returning to them as necessary to build deeper understanding and use the applications. The topics from previous years will also be revisited.		
	Much of this year is revision based, and will be building upon the topics covered in previous years and extending to new applications, involving problem-solving, reverse calculations, proof and algebraic situations. Calculator skills will be covered in every topic in every year. Each topic will incorporate algebraic problems and reverse problems wherever possible to encourage deeper understanding of the process.		
	Number: Percentages, types of number, iteration		
	Algebra: Harder graphs, plotting and using them, proof, solving equations, rearranging equations, functions, simultaneous equations		
	Ratio: Proportion, scale factors, compound measures		
	Shape: Vectors. Similarity, Area, volume, nets, working in 3D, angle facts, Trigonometry		
	Statistics: Tree diagrams, skew, Probability		
	During year 11 there will be the opportunity to revisit al topics and extend them as required, revising the knowledge and skills learnt previously, and applying them to new and novel situations, combining them together to solve problems and complete questions preparing students for GCSE and their next stages of their Maths career.		
Key vocabulary	Indices, fraction, decimal equivalent, decimal place, significant figure, percentage, compare, order, numerator, denominator, upper and lower bounds, standard form, reciprocal, increase, decrease, surd, repeated change, compound, simple, iteration, integer, rational, irrational, consecutive, sum, product		
	Expression, term, equation, solve, sequence, substitution, plot, variable, inverse operations, gradient, intercept, linear, quadratic, function, rearrange, transpose, flow diagram, numerator, denominator, simultaneous, algebraically, graphically, proof		
	Ratio, share, timetable, unitary, proportion, direct, inverse, constant		
	Parallel, perpendicular, regular, reflection, rotation, translation, enlargement, congruent, similar, vector, hypotenuse, trigonometry, sine, cosine, tangent, adjacent, opposite, theta, invariant, scale factor, net, plan elevation, view		
	Probability, box plot, quartile, interquartile, midpoint, polygon, positive / negative skew, branch		
	Each topic builds upon others and will be developed as far as possible, whilst also revisiting previous topics which are prerequisites for the work.		
	Exam command words: Estimate, explain, work out, simplify, simplest form, calculate, expand, describe fully, solve, factorise, measure, sketch, construct, show your working, diagram not to scale / not accurately drawn		
Skills to be developed	Communication skills, written formal mathematical explanation, verbal explanation, using correct terminology.		
	Team skills through both individual and collaborative work.		
	Resilience, reasoning and problem-solving skills through work which stretches and challenges.		
	Critical thinking.		
	Proof.		
	Planning, analysis and interpretation skills		

	Term 1	Term 2	Term 3
Opportunities for revisiting previous learning	The topics in year 11 build on the work completed in previous years, developing these skills further and deepening understanding. The main focus is on preparing students for the GCSE. Specific skills will be interleaved into the learning at relevant points and in homework and starters. This includes Year 10 topics such as : Percentages – applications, types of number, fraction calculations, Sequences, fractions with letters, simultaneous equations, equations of graphs, real life graphs, inequalities, Proportion, compound measures, Transformations – individual and combined, vectors, angle facts, circle theorems, trigonometry, Tree diagrams and frequency tree calculations, outliers in data.		
When will formal assessment of progress take place?	Students are assessed regularly both informally through questioning in lessons and formally via Mid-Year and End of Year examinations which include topics studied from the scheme of work plus some which may be unknown, in order to allow the students to demonstrate ability to apply their skills in both familiar and unfamiliar situations. Students are NOT expected to be able to complete all questions but are encouraged to "have a go". Each assessment is analysed and feedback given to assist students to be more targeted in their efforts for further improvement. The student is responsible for acting upon the feedback given. Feedback is used continually in lessons in many forms, predominantly modelling, discussion, highlighting misconceptions and suggestions for improvement or extension.		

Year 11 Useful Resources

Website Links:

Vle.mathswatch.co.uk - Mathswatch VLE

https://corbettmaths.com/ - Corbett Maths

https://www.thenational.academy/ - Oak Academy

https://www.drfrostmaths.com/ - Dr Frost Maths

https://www.gcsepod.com/ - GCSE Pod

https://www.mathsgenie.co.uk/ - Maths Genie Revision

https://mathsbot.com/ - Mathsbot GCSE Skills Practice

Marking, Assessment and Feedback

Over the course of an academic year students will complete a number of formal assessments, these will be used to assess where students are in their learning journey.

Information from these assessments could be used when making decisions regarding setting of students, reporting progress home and predicting outcomes. Current guidelines mean that we cannot provide as much detailed written feedback as it typical. As a result of this, we will during lessons, evaluate students' learning through a range of activities including quizzes, class discussions, detailed questioning and other strategies. Through this, students will know where they are in their learning journey and what they need to do next to make further progress.

Teachers will continue to provide planned written feedback on selected pieces of work.

Homework

Year 11 students alternate between completing homework tasks on Sparx Maths and completing practice papers for revision homework in preparation for the Summer Exams.

Homework tasks are designed to prepare students for future learning, consolidate work completed in the classroom, and to prepare students in exam technique. Students are expected to spend an hour a week of time completing Maths homework independently. It will be clear what should be handed in, when it should be handed in and how it should be handed in.