Maths

Year 11

Curriculum Overview

Intent: During year 10, students will continue to build on learning from KS3 and then develop this into the next stages further. Students will embed skills by practise and learn new aspects of maths which they will continue to build upon in key stage 4. Building deeper connections between topics is key and students will begin during year 10 to embed the links between mathematical concepts.

Foundation	**AUTUMN 1**	**AUTUMN 2**	**SPRING 1**	**SPRING 2**	**SUMMER 1**	**SUMMER 2**
	Assessment 1			**Assessment 2**		
Core Course Topic: These topics are taught through the identified terms. They are taught in small bitesize chunks and revisited regularly.	**Shapes and Vectors** • Constructions • Loci • Transformations • Congruence • Pythagoras • Trigonometry • Area and Perimeter • Volume and Surface area Vectors	**Representing and Analysing Data** • Displaying data • Interpreting data from charts • Averages and measures of spread • Scatter Graphs	**Standard Form**	**Ratio and Proportion** [unit may need to be carried on into Y11] • Linking fractions, ratio and proportion • Ratio problems • Direct and indirect proportion	Address gaps from Assessment 1 Content (cumulative). Focus on exam technique and exam practise for this term.	
Additional support links: Here are links to additional resources which will help your child	Sparxmaths is a platform which students use to complete their maths homework. There is also independent practise on there for the students to complete. Here is the GCSE revision list for the assessements with the sparx codes (students need to be logged in to access this) Link					
Knowledge: Included here is the specific knowledge your child will learn in detail	Students will explore Euclidean geometry but learning about 2D and 3D shapes, loci, constructions, trigonometry and Pythagoras' Theorem. Students will explore transformations and vectors too.	Students will focus on representing and interpreting data both from diagrams and from raw data. Students will study bivariate data by exploring scatter diagrams and will understand that correlation does not imply causation.	Students will explore standard form and be able to convert into and out of it. They will calculate with standard form and see the links to the laws of indices and commutativity.	Students will express variables in direct and indirect proportion through tables, formulae and graphs.		
Common Lexicon: These are the key words and terms learnt. These can be found on knowledge organisers.	Area, perimeter, surface area, volume, face, edge, vertex, Pythagoras, trigonometry, similarity, ratio, transformation, translation, rotation, reflection, enlargement	Data, correlation, estimation, infer, outlier, frequency	Base, index, power, commutativity, scale	proportional, inverse, direct		
Ambition Curriculum	This link to wider contexts in construction, engineering and decision maths,	Links to data in the real world. Use of statistical data in predications with the corona virus Video Link				

Maths

Year 11

Curriculum Overview

	History of Trigonometry using early Astronomy Link Astronomy- using Trigonometry to find if the perfect Eclipse can happen on Earth Link	Predicitions with Dr Hannah Fry using statistics Video Link Data in the real world link How accurate is the data we see? Link						

Maths

Year 11

Curriculum Overview

Higher	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
	Assessment 1		Assessment 2			
Core Course Topic: These topics are taught through the identified terms. They are taught in small bitesize chunks and revisited regularly.	**Constructions, Loci and Vectors** • Construction • Transformations • Loci • Vectors	**Iteration and Interpreting Graphs** • Graph transformation • Iteration • Interpreting graphs • Area under a curve • Estimating gradients • Sequences Repeated percentage change	**Numerical powers** • Indices • Standard form • Surds	**Representing and Interpreting Representing and Interpreting Data** Displaying data • Interpreting data and diagrams • Cumulative frequency diagrams • Histograms Scatter diagrams	Address gaps from Assessment 1 Content (cumulative). Focus on exam technique and exam practise for this term.	
Additional support links:	Sparxmaths is a platform which students use to complete their maths homework. There is also independent practise on there for the students to complete. Here is the GCSE revision list for the assessements with the sparx codes (students need to be logged in to access this) Link					
Knowledge: Included here is the specific knowledge your child will learn in detail	Students will review constructions from KS3 including constructions of triangles and compass methods for loci. Students will be able to work with algebraic and geometric proof.	Students will find solutions to an equation by an iterative method • Finding the area under a curve • Estimating the gradient using a tangent	Students will review indices and surds and problem solve with indices and surds. Including: multiplying numbers in index form; dividing numbers in index form; raising a power by a power; negative powers; the power of zero; The power of 1 and calculate with fractional indices. Students will convert numbers to and from standard form & perform calculations involving standard form	Students will learn to produce statistical charts and techniques including box plots; cumulative frequency graphs and histograms. Students will be able to use methods of capture/ recapture to make estimations.		
Common Lexicon: These are the key words and terms learnt. These can be found on knowledge organisers.	Perpendicular, bisector, proof, loci	Iteration, significant figure.	Surds, rationalise, base, indices	Median, cumulative frequency, class width, maximum and minimum		