Maths Curriculum Map KS4

		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 10	Topic	**Percentages:** Students develop their understanding compound interest, growth and depreciation. The building blocks leading to this understanding would be calculations involving fractions and percentages. **Surface Area and Volume:** Students learn to find the volume and surface area of pyramids, cones, spheres, frustums, composite shapes. The building blocks leading to this understanding would be finding the surface area and volume of simple 3D shapes.	**Formulae:** Students to build on their understanding solving equations and learn to change the subject of the given formulae. The building blocks leading to this understanding would be knowing how to solve equations. **Trigonometry:** Students understand the use of sin, cos and tan and use these to find unknown sides and angles in right angles triangles. They will also learn to use exact trigonometric values, find angles of elevation and angle of depression. The building blocks	**Linear graph and Real-life graphs:** Student to learn finding equation of a straight line, parallel lines, perpendicular lines and plot linear graphs. They will also learn to interpret and use real-life linear graphs. The building blocks leading to this understanding would be knowing how to plot coordinates and plotting simple linear graphs. **Set notation and Venn Diagrams:** Students learn and understand the set notation and how to apply these to interpret and draw Venn diagrams. The building blocks leading to this understanding would be a strong knowledge about	**Compound measures:** Students to cover nets, area and compound area of simple shapes, area and circumference of circles, density and pressure calculations and area of sectors and segments. The building blocks leading to this understanding would be knowing how to convert units from one to another. **Ratio:** Students learn to combine ratios, change ratios to simplest form and calculate ratios using algebra. The building blocks leading to this understanding	**Foundation** **Sequences:** Students learn to write the nth term for arithmetic and geometric sequence. They will also learn to write the next few terms of these type of sequences. **Data Handling:** Students will understand about sampling and bias using their previous knowledge of direct proportion **Proportion:** Students will further develop knowledge about direct and inverse proportion, they will learn to interpret these equations and graphs.	**Foundation** **Rounding:** Students will use their previous knowledge of rounding integers and decimals using significant figures to further understand develop their understanding of error intervals. **Indices:** Student will learn index rules and apply these to solve both positive and negative indices. They will further understand how to simplify expressions using index laws. **Brackets:** Students will learn to expand double brackets, factorising quadratic equations

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		Simultaneous Equations: Students further develop their understanding of solving simultaneous equations using elimination, substitution and graphically. The building blocks leading to this understanding would be knowing how to solve simple equations. Exam question practice through the **Very Important Questions** booklet.	leading to this understanding would be knowing how to measure and draw bearings. **Constructions:** Students learn to construct angle bisectors, perpendicular bisectors and develop further on constructing loci. The building blocks leading to this understanding would be knowing how to use a compass and a protractor. Exam question practice through the **Very Important Questions** booklet.	fractions, decimals and percentages and probability. **Tree diagrams:** Students will learn to tree diagrams for independent and dependent events. The building blocks leading to this understanding would be knowing how to multiply and add fractions. Exam question practice through the **Very Important Questions** booklet.	would be knowing how to write simple ratios, use equivalent ratios to find unknown amounts, sharing amounts in a given ratio and converting between fractions, decimals and percentages. **Further Graphs:** Students will develop their understanding about velocity-time graphs, they will learn to plot them and calculate acceleration using these. The building blocks leading to this understanding would be knowing how to interpret distance-time graphs, calculations with speed.	**Transformations:** Students will apply and further deepen their knowledge of reflection, translation, rotation and enlargement by a positive scale factor. Exam question practice through the **Very Important Questions** booklet. **Higher** **Sequences:** Students learn to write the nth term for quadratic and geometric sequence. They will also learn to write the next few terms of these type of sequences and will also explore special sequence types. **Data Handling:** Students will understand about	and solving these. The building blocks leading to this understanding would be knowing how to use algebraic notation, simplify expressions by collecting like terms and expand single brackets. **Handling data and statistical diagrams:** Students will learn to draw and interpret stem and leaf diagrams, line graphs and frequency polygons. The building blocks leading to this understanding would be knowing how to draw and interpret bar charts. Exam question practice through the **Very Important Questions** booklet.

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					Exam question practice through the **Very Important Questions** booklet.	sampling and bias using their previous knowledge of direct proportion. They will also take this further into capture-recapture problems. **Proportion:** Students will further develop knowledge about direct and inverse proportion, they will learn to interpret these equations and graphs and also to construct these equations. They will also look at graphs of reciprocal functions. **Transformations:** Students will apply and further deepen their knowledge of reflection, translation, rotation and enlargement by a positive and negative scale factor.	**Higher** **Rounding:** Students will use their previous knowledge of error intervals to work with bounds **Indices:** Student will use their previous knowledge of index rules and apply these to estimate roots and powers, fractional and negative indices. **Recurring decimals:** Students will learn to convert fractions to recurring decimals and vice versa. The building blocks leading to this understanding would be knowing how to use a written method to divide with decimals.

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						Exam question practice through the **Very Important Questions** booklet.	**Brackets:** Students will learn to expand triple brackets, factorising quadratic equations and solving these. The building blocks leading to this understanding would be knowing how to expand double brackets and simple factorisation. **Handling data and statistical diagrams:** Students will learn to draw and interpret box plots. The building blocks leading to this understanding would be knowing how to calculate median, range and quartiles. Exam question practice through the **Very Important Questions** booklet.
	Assessment	**Half Term 1a Assessment**	**End of Term Assessment**	**Half Term 2a Assessment**	**End of Term Assessment**	**Half Term 3a Assessment**	**Year 10 Maths Pre Mock Examination**

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	PREP	**Sparx Maths** set every week to support classroom learning. **Checkpoints** to be facilitated using SPARX revision booklets, supported by **Very Important Questions** studied in class.	**Sparx Maths** set every week to support classroom learning. **Checkpoints** to be facilitated using SPARX revision booklets, supported by **Very Important Questions** studied in class.	**Sparx Maths** set every week to support classroom learning. **Checkpoints** to be facilitated using SPARX revision booklets, supported by **Very Important Questions** studied in class.	**Sparx Maths** set every week to support classroom learning. **Checkpoints** to be facilitated using SPARX revision booklets, supported by **Very Important Questions** studied in class.	**Sparx Maths** set every week to support classroom learning. **Checkpoints** to be facilitated using SPARX revision booklets, supported by **Very Important Questions** studied in class.	**Sparx Maths** set every week to support classroom learning. **Checkpoints** to be facilitated using SPARX revision booklets, supported by **Very Important Questions** studied in class.
Year 11	Higher Topic	**Number Patterns:** Students to recognise number patterns, find the nth term of both linear and quadratic sequences and to solve problems involving iteration. **Graphs:** Student to draw straight line graphs, find gradients, find the midpoint and equations between two coordinates, understand parallel and perpendicular lines and solve simultaneous	**Loci and Transformations:** Students to reflect, enlarge, rotate and translate objects around a coordinate grid to find the image or describe the transformation. Students to understand and use congruence and similarity in problems. **Variation:** Student to understand direct and inverse proportion, form equations for both	**Inequalities:** Students to show inequalities on a number line, solve inequality equations, quadratic inequalities, graph inequalities and shade inequality regions on graphs. **Using Graphs:** Students to transform graphs of functions, find composite functions, find inverse functions, find the area under a graph and find the gradient of the tangent to a curve.	**3D Geometry:** Students to solve Pythagoras and trigonometry in three dimensions. **Vectors:** Student to understand column vectors, adding and subtraction of vectors and solve problems involving vector geometry. **Revision:** Key topic revision and completion of past papers in class.	**Revision:** Key topic revision and completion of past papers in class.	

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		equations using graphs. **Loci and Transformations:** Students to construct triangles, angle bisector, perpendicular bisector and loci of points.	and represent graphically.	**Revision of Trigonometry:** Students to revise trigonometry and problems involving the ensine and cosine rule.			
	Foundation Topic	**Number Patterns:** Students to recognise number patterns and find the nth term of a linear sequence. **Graphs:** Student to draw straight line graphs, find gradients, find the midpoint and equations between two coordinates. **Loci and Transformations:** Students to construct triangles, angle bisector, perpendicular bisectors.	**Loci and Transformations:** Students to reflect, enlarge, rotate and translate objects around a coordinate grid to find the image or describe the transformation. Students to understand and use congruence and basic similarity in problems. **Variation:** Student to understand direct and inverse proportion problems.	**Inequalities:** Students to show inequalities on a number line and solve inequality equations. **Revision:** Key topic revision and completion of past papers in class.	**Revision:** Key topic revision and completion of past papers in class.	**Revision:** Key topic revision and completion of past papers in class.	

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	Assessment	**Half Term 1a Assessment (H or F)**	**Year 11 Nov/Dec Mock Exam**	**Half Term 2a Assessment (H or F)**	**Year 11 March Mock Exam**	**Summer GCSE Exams Begin**	
	PREP	**Sparx Maths** set every week to support classroom learning. **Checkpoints** CP17 H/F (Number Patterns), CP18 H/F (Graphs) and CP19 H/F (Further Graphs) due every other week, supported by **Very Important Questions** studied in class.	**Sparx Maths** set every week to support classroom learning. **Checkpoints** CP20 H/F (Construction and Loci) and CP21 H/F (Transformations) due every other week, supported by **Very Important Questions** studied in class.	**Sparx Maths** set every week to support classroom learning. **Checkpoints** CP22 H/F (Variation/Proportion), CP23 H/F (Inequalities) and CP24H (Using Graphs) or CP24F (Mixed Revision 1) due every other week, supported by **Very Important Questions** studied in class.	**Sparx Maths** set every week to support classroom learning. **Checkpoints** CP25H (3D Pythagoras and Trig) or CP25F (Mixed Revision 2) due every other week, supported by **Very Important Questions** studied in class. **Set Past Papers**	**Set Past Papers**	