Curriculum Co	ntent Map)	Subject: 1							ubject: Year 11 Maths - Higher				
Mont	ı		September	Term 1 October	November	December	January	February	Te	erm 2 May	May	June	Term 3 July	
	ž		1) Indices and Surds ALGEBRA	More Trigonometry	Equations and Graphs		Circle Theorems	More Algebra	Proportion and Graphs	Vectors and Geometric Proof	REVISION			
	Units of Wor		2) Similarity and Congruence SHAPE	SHAPE	ALGEBRA	Gap filling to take place following AP1	SHAPE Further Statistics DATA	ALGEBRA	RATIO	SHAPE	ALGEBRA DATA NUMBER RATIO SHAPE			
tural Transmission	National Curriculum area – K54		1) "Be able to multiply and divide indices, apply indices with brackets, calculate negative and fractional indices as well as simply algebraic expressions involving indices" "Be able to simplify surds, expand surds with double brackets and rationalise denominators" 2) "compare lengths, areas and volumes using radio netation and/or scale factors, make links to similarity (including trigonometric ratios)" "apply the concepts of congruence and similarity, including the relationships between lengths, (areas and volumes) in similar figures"	"apply Pythagoras' Theorem and trigonometric ratios to find angles and length in right-angled triangles and, where possible, general triangles in two and three dimensiona figures" "know the exact values of sine, cosine and tangent" "know and apply the sine rule, and cosine rule to find unknown lengths and angles" "know and apply to calculate the area, sides or angles of any triangle"	"solve quadratic equations including those to that require rearrangement algebraically by factorising, by completing the square and by laws the quadratic formula, find approximate solutions using a graph" "solve two simultaneous equations in two variables (Inear/Inear or Inear/quadratic) algebraically, find approximate solutions using a graph" "find approximate solutions to equations numerically using iteration" "solve linear inequalities in one or two variables, and quadratic inequalities in one variables, and sudardatic inequalities in one variable; represent the solutions ato a n number line, using set notation and on a graph"	During December students were re-taught content that was identified on Q by Q analysis documents following API assessments. Year group gaps were identified first and then mor personalised gaps in all 3 maths papers.	"identify and apply circle definitions and properties, including: centre, radius, chord, diameter, circumference, tangent, arc, sector e and segment" "apply and prove the standard circle theorem concerning angles; radii, tangents and chords, and use them to prove related results" "Infer properties of populations or distributions from a sample, whils knowing the limitations of sampling" "construct and interpret diagrams for grouped discrete data and continuous data, i.e. histograms with equal and unequal class intervals and continuous data, i.e. histograms with equal and unequal class intervals and continuous data, i.e. histograms with equal and unequal class intervals and continuous data (set) distributions of data sets from univariate empirical distributions through: - appropriate graphical representation involving discrete, continuous and grouped data, including box dot set-tral tendency (including modal class) and spread including quartiles and inter-quartile range"	"Inow the difference between an equation and an identity argue mathematically to show algebraic expressions are equivalent, and use algebra to support and construct arguments and proofs" "recognise, sketch and interpret graphs of linear functions, the reciprocal function, the exponential function, and the trigonometric functions (with arguments in degrees), for angles of any size"	"recognise, sketch and interpret graphs of linear functions, simple cubic functions, the reciprocal function, simple exponential function, and the trigonometric functions (with arguments in degrees) for angles of any size" "sketch translations and reflections of the graph of a given function" "pilot and interpret graphs (including reciprocal graphs and exponential graphs) and graphs of no sitem function" "pilot and interpret graphs (including reciprocal graphs and exponential graphs) and repolems such asimple kinematic problems involving distance, speed and acceleration" "understand that X is inversely proportional to 1/y: construct and interpret equations that describe direct and inverse proportion"	*apply addition and subtraction of vectors, multiplication vectors by a scalar, and diagrammatic and column representations of vectors; use vectors to construct geometric arguments and proofs.*	Consolidation of all K33 and K54 skills			
	Substantive Knowledge	The What!	 Surds and Indices Geometric Proof Similarity, including area, volume and 3D shapes 	Graphs of sine, cosine and tangent Area of a non right-angled triangle Sine rule Cosine rule 30 Trigenometry Transforming graphs	Solving simultaneous equations graphically Represent incoundlikes graphically Solving quadratic equations Cubic Equations Iteration	Topics re-taught to whole cohort doing higher tier: Solving Inequalities Simultaneous Equations Triple Brackets Rearranging Formulae Congruency Parallel and Perpendicular Lines	Circle Theorems, including proof Added in after filling the gaps meant they were not covered in Decmeber: Sampling Cumulative Frequency Box Plots Histograms	Rearranging formulae Algebraic fractions Proof Functions	Direct Proportion Inverse Proportion Exponential Functions Non-Linear Graphs Translating and reflecting graphs of functions	Vector anthemetic Parallel vectors Geometric proof	Consolidation of all K33 and K54 skills			
Cult	Disciplinary knowledge	The How!	 Using index laws, algebra and knowledge of rsquare, cube and rooted numbers Understanding Scale Factors 	Drawing and plotting graphs Using symmetry Using formulae, particularly trigonometric formulae.	Drawing and plotting graphs Understanding inequalities Understanding Trial and Error	Dependent on individuals and what is include in their personalised learning booklet.	d Understanding the Parts of a circle Using Angle rules Drawing and plotting graphs Understanding quartiles Comparing Data	Understanding inverse operations Understanding proof	Using formulae Rearranging formulae Using Inverse operations Drawing and plotting graphs	Understanding movement on a graph (linked to translation)	Review of assessments, end of topic tests and retrieval tasks as well as homework.			
	Sequencing (Flow)	Retrieval & Extension	1) <u>Build from Y10:</u> Simple indices Algebraic expressions 2) <u>Builds from Y10:</u> Congruence Angle Facts / Rules	<u>Builds from Y10:</u> Using and rearnanging formulae Pythagoras Trigonometry (right-angled triangle) Quadratic Graphs	Builds from T1D: Substitution Solving equations Solving inequalities Expand double brackets Factorise quadratics Drawing and plotting graphs	Teaching halted to ensure all gaps in knowledge, identified from AP1 assessments, have been filled. Firstly completed for gaps for whole year group. Secondly for gaps for individuals and personalised learning booklets made.	Builds from TLD: Angle rules, especially triangles and quadrilaterals Pythagoras' Theorem Trigonometry Types of Data Averages, including from a frequency and grouped data table	Builds from T1D: Add and Subtract Fractions Simplify Surds Expand brackets Solve equations Rearrange simple formulae Laws of Indices Factorising	<u>Builds from Y10:</u> Velocity-Time Graphs Sketching graphs Trigonometric graphs	Builds from TLC Geometrical fluency - identifying 20 shapes and properties of 2D shapes - Pythagoras' Theorem - translation	Consolidation of all KS3 and KS4 skills			
	Summative Assessment		Deep Mark 1: End of Topic Test - Surds and Indices Homework J) End of Topic Test - Similarity and Congruency Homework	Deep Mark 2: Homework End of Topic Test - More Trigonometry	Deep Mark 2: Homework End of Topic Test - Equations and Graphs	Deep Mark 1: AP1 Assessment (Mock) - Whol School Data Collection Homework Booklet made for the Christmas Holidays. All preparation for AP2	e Deep Mark 1: AP2 Assessment (Mock) - Whol School Data Collection End of Topic Test - Circle Theorems Homework	e Deep Mark 2: Homework End of Topic Test - More Algebra	Deep Mark 2: Homework End of Topic Test - Proportion and Graphs	Deep Mark 1: AP3 Assessment (Mock) - Whole School Data Collection End of Topic Test - Vectors and Geometric Proof Homework	Mark 1: AP3 Assessment (Mock) - Whole GCSE Maths Exams ol Data Collection of Topic Test - Vectors and Geometric ework			
al nent	Virtue	-	Friendliness & Civility	Justice & Truthfulness	Courage	Generosity	Gratitude	Good Speech	Good Temper & Humour	Self-Mastery		Compassion	Good Sense	
Person	Link to Virtue	reflect, think deeply and critically about an issue.	 Students will look at the friendliness of surds and indices to see how they are applied to real life. Students will demonstrate friendliness and civility to each other as they work together to extend their shape knowledge into similarity in 30 shapes. 	Students will look at the relationship between truthfulness and the use of formulae, specifically related to trigonometric ratios.	 Students will show course as they extend bether knowledge about how to solve quadratic equations both algebraically and graphically. 	Students will be generous in their time and support of each other as they complete their personalised learning booklets.	Students will demonstrate grafitude for the angle and crick knowledge they already have in order to further support their circle theorems learning. They will also look at the generosity of cumulative frequency graphs, box plots and histograms.	Students will use good speech as they explain to each other how to solve algebraic problems and ensuring they can demonstrate algebraic proof.	Students will need to show good temper and good humour as they build their knowledge on non-linear graphs, particularly as they extend onto trigonometric graphs and aim for those higher grades.	Students will spend their final topic mastering vectors, respically vectors involving ratios and fractions. They will show their skills in understanding geometric proofs.	Students will be aiming to master any weaker areas in maths in the build up to the exams.			
Nork	Skill		Listening	Leadership	Problem-Solving	Creativity Students will show creativity as they choose	Staying Positive	Speaking	Staying Positive	Aimi	ng High Students will be aiming high in their Higher	Speaking	Teamwork	
Preparation for ¹	Link to Skill	Transferable skills	they work together to solve increasingly difficult worded problems on surds and indices. This until links to careers in analysis and engineering. 2) Students will need to support and listen to each other to ensure they can make progress in similar shapes, especially in 3D shapes. This until links to careers in architecture and design.	work in groups to problem-solve trigonometri graphs and ratios. This unit links careers in surveyancing, space and physics.	c solve quadratics graphically. They will also problem-solve as they rearrange, factorise and solve equations. This unit links to careers in statistics, research and weather.	which sections of their personalised learning booklet they will do first.	tackle circle theorem questions that involve more than one theorem and, potentially, other angle rules as well. This unit links to careers in astrology and vehicle maintenance.	explain to each other how to solve algebraic problems and ensuring they can demonstrate algebraic proc Bigbraic proc This unit links to careers in biochemistry, engineering and statistics.	understand non-linear graphs. This unit links to careers in banking, analysis and finance.	building their knowledge in maths and developing their overall view of strengths and weaknesses of in maths. This unit links to careers analysis and engineering.	tier exam so will be ensuring they target the Grade 7 to Grade 9 areas of weakness as a focus.			
aration for tizenship	British Values Values	pinions on curent issues	Social Cultural Mutual Respect Students will use their social skills during paired and grouped work, especially when trying to identify congruent shapes. Students will demonstrate mutual respect to	Social Moral Tolerance Students will use their social skills to help eac other learn and progress throughout this topic and specifically the paired and group activities. Students will look at the moral consequences	Social Moral Individual Liberty h Students will need to use their social skills to imake progress, particularly through solving quadratic equations. Students will look at moral repercussions of analysing data.	Social Rule of Law Students will use their social skills and work together to make progress, particularly through identifying the correct answers to questions in their personalised learning booklets	Social Rule of Law Students will need to use their social skills as they work together in group activities. Students will need to understand the rules an processes associated with circle theorems.	Social Democracy Students will use their social skills for paired and group activities. Students will understand demicracy through debate, discussion and decision about which	Social Tolerance Students will use their social skills to support each other in understanding and proving concepts in geometry. Students will need to demonstrate tolerance	Social Moral Mutual Respect Students will use their social skills in paired and group work. Students will look at moral dilemmas involving non-linear graphs.	Social Individual Liberty Students will use their social skills to revise together and support each other in improving. Students will demonstrate individual liberty as Students will demonstrate individual liberty as			
Pre	Link to SMSC &	Developing c	each other through the virtue of friendliness as they work together on tackling worded exam questions.	of manipulating formulae. Students will demonstrate tolerance of each other as it can take some longer than others to understand this topic.	Students will have the individual liberty to be able to choose the appropriate method to solve a quadratic.		including how they relate to their already existing angle and circle facts.	process to follow and links with previous learning.	for themselves as they may struggle to understand the purpose of 'proof'	Students will demonstrate mutual respect for each other as they work together to aim high in their final GCSE grade.	GCSE exam outcome.			