Curriculum Content Map — **Subject: Year 11 Maths - Foundation**

			Term 1					Term 2				Term 3	
Month			September	October	November	December	January	February	March	April	May		
Cultural Transmission	Units of Work		1) Rounding and Error Intervals NUMBER 2) Pythagoras and Trigonometry SHAPE	1) Ratio and Proportion RATIO 2) Quadratic Equations and Graphs ALGEBRA	1) Percentages and compound measure NUMBER	Constructions, Loci and Bearings SHAPE	Probability DATA	Perimeter, Area and Volume 2 SHAPE	Fractions, Indices and Standard Form Direct and inverse proportion NUMBER	Congruence, Similarity and Vectors SHAPE	More Algebra ALGEBRA		
	National Curriculum area – KS4		1) "round to the correct 10's, 100's, 1000's, decimals place, whole number and significant figures" "estimate solution by rounding to one significant figure" 2) "apply Pythagoras' Theorem and trigonometric ratios to find angles and lengths in right-angled triangles in two dimensional figures"	1) "calculate values and identify multiplier based off given ratios" "share value between ratio and solve recipe questions" 2) "factorising quadratic expressions of the form ax2+bx+c, including the difference of two squares" "identify and interpret roots, intercepts and turning points of quadratic functions graphically; deduce roots algebraically" "solve quadratic equations algebraically by factorising; find approximate solutions using a graph" "recognise, sketch and interpret graphs of linear functions, quadratic functions, simplecubic functions, the reciprocal function" "plot and interpret graphs (including reciprocal graphs (and exponential graphs)"	"calculate percentage increase, percentage decreaase, reverse percentages" "calculate simple and compoudn interest" "convert between related compound units (speed, rates of pay, prices, density, pressure) in numerical and algebraic contexts" "set up, solve and interpret the answers in growth and decay problems, including compound interest" "	"compare lengths, areas and volumes using ratio notation and/or scale factors; make links to similarity (including trigonometric ratios)" "construct and interpret plans and elevations of 3D shapes" "interpret and use bearings"	"apply the property that the probabilities of an exhaustive set of mutually exclusive events sum to one" "use a probability model to predict the outcomes of future experiments; understand that empirical unbiased samples tend towards theoretical probability distributions, with increasing sample size" "calculate the probability of independent combined events, including using tree diagrams and other representations, and know the underlying assumptions"	"identify and apply circle definitions and properties, including: centre, radius, chord, diameter, circumference, tangent, arc, sector and segment" "calculate arc lengths, angles and areas of sectors of circles" "calculate surface areas and volumes of spheres, pyramids, cones and composite solids"	"calculate with roots, and with integer indices" "calculate exactly with fractions and multiples of π" "calculate with numbers in standard form A×10^n, where 1 ≤ A < 10 and n is an integer" "interpret equations that describe direct and inverse proportion"	"interpret and use fractional scale factors for enlargements" "apply the concepts of congruence and similarity, including the relationships between lengths, in similar figures" "describe translations as 2D vectors" "apply addition and subtraction of vectors, multiplication of vectors by a scalar, and diagrammatic and column representations of vectors"	"solve two simultaneous equations in two variables (linear/linear) algebraically; find approximate solutions using a graph" "Find the equation of a straight line" "Find equations of perpendicular and parallel lines"	
	Substantive Knowledge	*The What!*	1) Knowledge of rounding 2) Trigonometry	1)Multiplicative skills 2) Expand double brackets, including square single brackets Plotting quadratic graphs Solving quadratic equations using a graph Factorising quadratic expressions Solving quadratic expressions through factorising Cubic & Reciprocal Graphs	Percentage increase/decrease Percentage change Reverse percentage Compound/simple interest Speeed/distance/time	Plans and Elevations Scale Drawings Accurate Drawings Angles Loci	Tree Diagrams	Semi-circles Sectors Pyramids Cones Spheres Composite 3D shapes	Laws of Indices Writing Standard Form Calculating with Standard Form Direct and inverse proportion	Similar Shapes Congruency Vectors	Find the equation of a straight line Solving simultaneous equations graphically and algebraically Rearranging formulae Straight line graphs		
	Disciplinary knowledge	*The How!*	1) Understanding place value 2) Using formulae / formula triangles	Multiplying algebraic terms Drawing a plotting graphs Using Common Factors Solving equations	Understanding multipliers and percentage increase/decrease Understanding Compound Interest, Growth & Decay Understandig Compound Measures	Drawing 2D and 3D shapes Understanding ratio & proportion Using a compass Using a ruler Using a protractor	Drawing & completing diagrams	Using formulae Understanding pi	Understanding powers Understanding how to Multiply and Divide by powers of 10 Using Direct & Inverse Proportion Formulae	Understanding ratio & proportion Understanding co-ordinates and translation	Drawing & Plotting Graphs Substitution Simultaneous equations		
	Sequencing (Flow)	*Retrival & Extension*	1) <u>Builds from KS3:</u> Place value Four operations 2) <u>Builds from Y10:</u> Indices	<u>Builds from Y10</u>: Equations Graphs	<u>Builds from KS3:</u> Multiplicative Reasoning <u>Builds from Y10:</u> Number calculations Fractions Percentages	<u>Builds from KS3:</u> Constructing Triangles <u>Builds from Y10:</u> Transformations Angle Rules	<u>Builds from KS3:</u> Probability Experimental Probability Venn Diagrams	<u>Builds from Y10:</u> Perimeter Area Volume	<u>Builds from KS3:</u> Indices Standard Form <u>Builds from Y10:</u> Indices Fractions	<u>Builds from KS3:</u> Comparing Shapes <u>Builds from Y10:</u> Angles Transformations	<u>Builds from Y10:</u> Algebra Skills		
	Summative Assesment		1) Deep Mark 1: End of Topic Test - Rounding and Estimation Homework 2) End of Topic Test - Right-Angled Triangles Homework	Deep Mark 2: Homework 1) End of Topic Test - Ratio & Proportion Homework 2) End of Topic Test - Algebra and Graphs Homework	Deep Mark 1: AP1 Assessment (Mock) - Whole School Data Collection End of Topic Test - Multiplication Reasoning Homework	Deep Mark 2: Homework End of Topic Test - Constructions, Loci & Bearings	Deep Mark 2: Homework End of Topic Test - Probability Homework	Deep Mark 2: Homework End of Topic Test - Perimeter, Area & Volume 2	Deep Mark 1: AP3 Assessment (Mock) - Whole School Data Collection End of Topic Test - Fractions, Indices & Standard Form Homework	Deep Mark 2: Homework End of Topic Test - Congruence, Similarity & Vectors	Deep Mark 1: Homework End of Topic Test - More Algebra		
Personal Empowerment	Virtue	*The opportunity to reflect, think deeply and critically about an issue.*	Friendliness & Civility	Justice & Truthfulness	Courage	Generosity	Gratitude	Good Speech	Good Temper & Humour	Self-Mastery		Compassion	Good Sense
	Link to Virtue		1) Students will look at the friendliness of estimating correct calculations. 2) Students will demonstrate friendliness by working closely together to support development of problem-solving as they calculate with Pythagoras' Theorem and Trigonometry.	Students will look at the truthfulness behind ratio and proportion and how truthfulness is used in algebra	Students will demonstrate courage as they complete a functional skills task on mortgages. Students will also look at direct and inverse proportion using formulae, which will require courage to persevere.	Students will look at the generosity of shapes and how space can be generous when constructing shapes.	Students will show gratitude for the work they've completed in Year 10 to ensure they understand how probability is applied to real life situations	Students will demonstrate good speech as they discuss the formulae for area and volumes of different shapes, especially as they move onto circles.	Students will need to control their temper and demonstrate good humour as they extend their fractions knowledge, which they can find increasingly difficult.	Students looked at congruency and similarity in Year 10 so this topic is about mastering those skills and extending them into vectors skills.	Students will spend this last topic ensuring they have mastered their algebra skills in preparation for their upcoming exams.		
Preparation for Work	Skill	*Transferable skills*	Listening	Leadership	Problem-Solving	Creativity	Staying Positive	Speaking	Staying Positive	Aiming High		Speaking	Teamwork
	Link to Skill		1&2) Students will have discussions where they listen to each other and then feedback their partner's views rather than their own. Unit 1 links to careers in banking and finance. Unit 2 links to careers in architecture, design and construction.	Students will look at the relationship between algebra and leadership. This unit links to careers in research as well as an analysis	Students will regularly use problem-solving within this topic whilst re-arranging and using formulae and deriving formulae from other methods. This unit links to careers in healthcare, accountancy and supply chains.	The majority of this topic is based on drawing and creativity as students accurately represent pictures and also challenge themselves to draw more difficult shapes using the constructions they have learned. This unit links to careers in art and design as well as navigation.	Students will need to stay positive as they calculate the probability of mutually exclusive events. This unit links to careers in the government.	Students will demonstrate good speaking skills as they discuss the formulae for area and volumes of different shapes, especially as they move onto circles. This unit links to careers in design, planning and construction.	Students often find fractions a difficult topic so will need to stay positive and demonstrate resilience as they work through increasingly difficult problems. This unit links to careers in science.	Vectors are considered a high-grade skill at Foundation tier and so students will need to aim high as they tackle this new skill. Additionally, students will need to aim high as they focus on building their similarity skills to extend to similar area and volume. This unit links to careers in navigation and geography.	Students will be aiming high as they consolidate and extend their algebra skills in final preparations for their exams. This unit links to careers in business, finance and computing.		
Preparation for Citizenship	SMSC & British Values	*Developing opinions on current issues*	Social Mutual Respect	Social Moral Democracy	Social Moral Rule of Law	Social Cultural Tolerance	Social Rule of Law	Social Individual Liberty	Social Tolerance	Social Mutual Respect	Social Moral Rule of Law		
	Link to SMSC & British Values		Students will use their social skills to demonstrate friendliness & civility as they work through paired and group work. Students will show mutual respect for each other as they work, even when they disagree with an answer.	Students will use their social skills as they work on paired and group activities. Students will discuss the way proportion is used in real life. Students will investigate ratio in terms of links between different voting groups	Students will use their social skills to support each other to build on previous learning through paired and group work. Students will look at the moral consequences of interest, particularly pay-day loans. Students will look at the 'rule of law' in terms of the formulae, process and method for calculating proportion and compound measures.	Students will use their social skills to support each other when construction accurate drawings, especially in the use of specialist equipment. Students will look at how different cultures use shape, especially in architecture. Students will be tolerant of others opinions about design when discussing cultural differences.	Students will need to use their social skills as they work together in group activities. Students will need to understand the rules and processes associated with filling in and interpreting tree diagrams	Students will use their social skills to work together in paired and group activities. Students will understand their individual liberty to choose which is the appropriate formula needed for a question.	Students will use their social skills to work together in pairs and groups when working through bigger problems. Students will need to demonstrate tolerance as they are patient enough to allow all students to make progress and develop understanding.	Students will use their social skills to work together in solving similarity problems in paired and group activities. Students will show mutual respect throughout this topic as each progresses at an individual rate - they will support each other rather than get frustrated.	Students will use their social skills to support each other through the final topic as the algebra they tackle gets more difficult. Students will look at the moral repercussions of not helping each other. Students will use the 'rule of laws' in algebra to understand how it all links together.		