Year 11 Foundation Mathematics Curriculum Map				
Half Term	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**
Big Themes	Ratio and Proportion; Factors, powers and roots; Handling data; Graphs	3D Shapes; Calculations 2	Handling data 2; Probability; Constructions and Loci; Graphs 2	Trigonometry Right angled triangles; Units and proportionality
Knowledge and skills covered	- Review of using % and fraction to describe proportions, % change and problem solving with % - Use mathematical language to describe factors, multiples, and primes, Use venn diagrams or factor trees to systematically list the prime factors of a number, Use prime factor decomposition to calculate the HCF and LCM of 2 or more numbers, Write the HCF and LCM using product notation, Calculate positive integer powers and their roots, Recognise powers of 2,3,4 and 5 - Construct and interpret frequency tables and two way tables, Construct and interpret pictograms, bar line charts, and bar charts, Interpret and construct pie charts and know their appropriate use, Compare distributions using median, mean, mode and rage and identify outliers - Work with coordinates in all 4 quadrants, Plot straight line graphs including diagonal, vertical and horizontal lines, Identify gradients and intercepts of straight lines graphically and algebraically, Use the form y=mx+c to identify parallel lines, Use one point and the gradient of a line to find its equation, Use 2 points to find the equation of a line, Interpret the gradient of a straight line graph as a rate of change, Plot and interpret graphs involving distance,speed and acceleration	- Identify the number of face, edges and vertices of 3D shapes, Construct and Interpret plans and elevations of 3D shapes, Calculate the volumes of cuboids, cylinders and other prisms, Calculate the volume and surface areas of spheres, pyramids, cones and composite solids - Calculate with roots and with integer indices, Calculate exactly with roots and multiples of π, Calculate with and interpret numbers written in standard form	- Interpret and construct tables, graphs, and charts for discrete, continuous and grouped data, Histograms, Use median, mean, modal class and range to interpret and compare distributions, Use correlation to describe scatter graphs but know that it does not imply causation, Draw estimated lines of best fit and make predictions but understand their limitations, Interpret and construct line graphs for time series data - Use Venn diagrams to record outcomes and calculate probabilities of events, Construct possibility spaces and use these to calculate probabilities, Understanding that possibility spaces are used for equally likely outcomes, Use tree diagrams to show the frequencies or probabilities of 2 events, Use the tree diagrams to calculate the probability of independent and dependent events - Use the ruler and standard compass for constructions, Solve loci problems, Construct perpendicular bisector, angle bisector, perpendicular line from a point, construct a 60 degree angle, Understanding of loci as set of points that follow one or more rules, or the path followed by a moving point - Draw graphs to identify and interpret roots, intercepts, and turning points of quadratic functions, Solve a quadratic equation by finding approximate solutions using a graph, Recognise, sketch and interpret graphs of linear, quadratic, cubic and reciprocal functions, Plot and interpret real life graphs	- Use trigonometric ratios and apply them to find angles and lengths in right angled triangles, sin, cos and tan, Know the exact values of sin θ and cos θ for θ = 0, 30, 60 and 90 degrees, Know the exact value of tan θ for θ = 0, 30, 45 and 60 degrees, Write column vectors and draw vector diagrams, add, subtract and find multiples of vectors - Calculate with standard and compound units, Compare lengths, areas and volumes of similar shapes, solve direct and inverse proportion problems, Calculate and rearrange formulas for speed, density and pressure, Interpret the gradient of a straight line graph as a rate of change, Interpret graphs that illustrate direct and inverse proportion, Set up, solve and interpret growth and decay problems
Knowledge organisers and more detailed topic resources can be found on all student Google Classrooms				