Year 11 Higher Mathematics Curriculum Map				
Half Term	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**
Big Themes	**Handling data; Graphs; Working in 3D; Handling Data**	**Conditional Probability; Standard form, roots and indices**	**Trigonometry in non right angled triangles; Vectors; Properties of nonlinear graphs**	**Constructions and Loci; Units and proportionality**
Knowledge and skills covered	● Construct and interpret 2 way tables, bar charts and pie charts, calculate the mean, median and mode of a data set, calculate the range and interquartile range of a data set, use averages and measures of spread to compare data sets, use frequency tables to represent grouped data, construct histograms with equal or unequal class widths ● Find and interpret the gradient and y-intercept of a line and relate these to the equation of the line in the form y = mx + c, identify parallel and perpendicular lines using their equations, draw line graphs and quadratic curves, identify roots, intercepts, and turning points of quadratic curves using graphical and algebraic methods ● -Draw and Interpret plans and elevations of 3D shapes, calculate and interpret the volume of cuboids and prisms, calculate the SA and volume of spheres, pyramids, cones and composite shapes, know and apply the relationship between lengths, area, volumes and similar shapes ● Calculate summary statistics from a grouped frequency table, construct and interpret cumulative frequency curves and box plots, plot scatter graphs and recognise correlation, use tables and line graphs to represent time series data	● Using venn diagrams to represent sets for combined events, using possibility spaces for 2 events, use probability trees to show outcomes of 2 experiments, calculating conditional probabilities ● Perform calculations involving roots and indices - including negative and fractional indices, perform exact calculations involving fractions, surds and pi, work with numbers in standard form	● Review of Pythagoras' theorem and trigonometric ratios in right angled triangles ● Use Sine and Cosine rules to find missing length and angles, use the sine formula for the area of a triangle, review of exact values of sin, cos and tan or 0, 30, 45, 60 and 90 degrees ● Understand that scalar has size, but no direction, understand that a vector has size and direction, calculate with vectors and use them in geometric proofs, adding and subtracting vectors, multiplying by a scalar, understanding when points are collinear , understanding when vectors are parallel but with differing magnitudes ● Recognise and draw graphs of reciprocal functions, exponential functions, trigonometric functions, sketch and recognise graph transformations, and reflections, draw and interpret non-standard functions and use them in real life contexts, approximate the gradient of a graph at a given point and the area under a graph, recognise and use simple equations of a circle and find the tangent of a circle at a given point.	● Use standard ruler and compass constructions and solve problems involving loci, understanding that a locus is a set of points that follow one or more rules, understanding a locus as the path that a moving point follows ● Convert between standard units of measure and compound units, use compound measures including speed, density and pressure, compare lengths, areas and volumes of similar shapes, solve direct and Inverse proportion problems, describe direct and inverse proportion relationships using an equation, recognise graphs showing direct and inverse proportion and interpret the gradient of a straight line graph, find the instantaneous and average rate of change of a graph (gradient of curve), solve repeated proportional change problems
Knowledge organisers and more detailed topic resources can be found on all student Google Classrooms				