Year 11 – Maths Foundation						
Curriculum intent	We believe that students deserve a creative and ambitious mathematics curriculum, rich in skills and knowledge, which ignites curiosity and prepares them well for everyday life and future employment. Our mathematics curriculum will give students the opportunity to: • become fluent in the fundamentals of mathematics, through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. • reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language. • can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and preserving in seeking solutions. • can communicate, justify, argue and prove using mathematical vocabulary. • develop their character, including resilience, confidence and independence, so that they contribute positively to the life of the school, their local community and the wider environment.					
Term	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Knowledge	• Circles • Arcs and Sectors • Surface area and Volume • Sampling • Averages • Frequency Diagrams • Scatter Graphs • Time Series • Pie Charts • Coordinate Geometry • Straight line Graphs • Non-Linear Graphs	• Compound Measures • Real Life Graphs • Congruence and Similarity • Transformations • Vectors • Probability • Tree Diagrams • Venn Diagrams • Simultaneous Equations • Pythagoras and trigonometry.	• Individual personalised revision topics identified by the teacher from a range of sources. • ½ exam papers each week to build confidence and boost exam skills.	• Individual personalised revision topics identified by the teacher from a range of sources. • ½ exam papers each week to build confidence and boost exam skills.	Exam Preparation	
Skills	• To calculate areas and circumference of circles including arc lengths and sector areas.	• To know and use the formulae for speed, density and pressure to solve problems • To convert between different	• Individual personalised revision topics identified by the teacher from a range of sources.	• Individual personalised revision topics identified by the teacher from a range of sources.	• To understand the various command words for maths questions.	

	• To calculate surface areas of various 3d shapes. • To calculate volumes of various different 3d prisms and pyramids. • To understand and use different methods of sampling to solve problems. • To be able to calculate the different averages and interpret these in context. • To recognise the different advantages and disadvantages of each average. • To identify different averages/estimates of averages from frequency tables. • To produce and interpret frequency polygons for grouped data. • To draw and interpret scatter graphs and to use the line of best fit to solve problems.	metric speed measures. • To interpret information presented in a range of linear and non-linear graphs. • To draw distance time and velocity time graphs. • To solve angle problems involving congruence. • Identify scale factors and use these to calculate missing lengths, areas or volumes. • To complete/descried single or combinations of transformations on a coordinate grid. • To be able to perform vector arithmetic. • To be able to calculate resultant vectors from diagrams. • To be able to use vectors to solve geometric problems involving ratios. • Know and use that all probability adds up to 1. • To draw and interpret probability trees and use these diagrams to			• To understand how to pick out the key information from the question. • How to check accuracy of answers. • How to use a calculator effectively. • What to write down for working out.	

	• To Construct tables and time series graphs and comment on the trends. • To construct and interpret pie charts in varying contexts. • To solve problems involving coordinates in a variety of contexts including Pythagoras and trigonometry. • To be able to draw, label and scale axis. • To be able to plot the graphs of linear functions. • To be able to interpret the graphs of linear functions to solve problems. • To be able to draw and interpret the functions of non-linear functions. • To calculate roots of quadratic functions.	calculate probabilities. • To draw/interpret Venn diagrams. • To be able to use Venn diagram notation to calculate probabilities. • To be able to solve simultaneous equations • To understand and use Pythagoras Theorem to solve problems. • To understand and use trigonometry to find missing angle sizes or lengths in right angled triangles.				
Assessments	• Baseline • Regular exam practice	• Autumn Assessment (exam paper) • Regular exam practice	• Mock exams • ½ weekly exam papers	• Regular exam practice • ½ weekly exam papers	• Regular exam practice	

					½ weekly exam papers	
Curiosity	• Research the best credit cards, loans and mortgages that are out there. Where do you get the best deal? • Have a go at this interactive activity around rearranging equations. How many levels can you progress through? https://www.transum.org/software/SW/Starter_of_the_day/Students/Changing_The_Subject.asp?Level=6 • What is your average speed? Practice running the same distance and record your speed each time. Use this video to help you calculate your average speed - https://tutors.com/math-tutors/geometry-help/average-speed-formula . Weekly revision sessions	• Apply your loci skills to exact scale drawings in this goat problem https://www.transum.org/Software/SW/Starter_of_the_day/starter_March6.ASP • Test your knowledge of vectors with this interactive activity https://www.transum.org/software/SW/Starter_of_the_day/Students/VectorsB.asp • How good are you at balancing? Can you you're your balancing skills here https://www.transum.org/software/SW/Starter_of_the_day/Students/Equations.asp • How does the recipe change? Here are some online questions to help you - https://www.transum.org/Maths/Exercise/Ratio/Recipe.asp . Alternatively, pick a recipe from a cookbook at home and practice changing the measurements based on how	Weekly revision sessions	Weekly revision sessions	Weekly revision sessions	

		many people you would cook for? • Weekly revision sessions • Black history month • Maths challenge date TBC				