

Year 11

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 persevering 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	• Surds • Algebraic Fractions • Equations • Pythagoras Theorem and Trigonometry. • Circle geometry •	• Statistical diagrams • Probability • Inequalities • Functions • Transformations	• Iteration • Algebraic proof • Similarity • Geometric proof • Graphs	• Revision	• Revision	
Skills	• Calculating with surds – four operations and expanding brackets. • Rationalising surds • Four operations with algebraic fractions • Solve algebraic fractions	• To be able to draw and interpret histograms. • To be able to calculate conditional probability from tree diagrams. • Solve linear and quadratic inequalities. • Substitute values into functions and composite functions. • To find inverse functions. • To find composite functions.	• Find approximate solutions using trigonometry. • To be able to write algebraic proof.	• Individual personalised revision topics identified by the teacher from a range of sources.	• To understand the various command words for maths questions. • To understand how to pick out the key	

	- Solve quadratic equations by factorising. - Solve quadratic equations using the quadratic formula - Solving turning points by completing the square. - Solve simultaneous equations with both elimination and substitution. - Solve quadratic simultaneous equations with substitution and graphically. - Recognise trigonometric graphs. - Know exact trig values. - Use the sine rule, cosine rule and area rule. - Use Trigonometry in a 3D context. - To understand and use circle theorems.	To be able to transform graphs.	- To find the area and volume of similar shapes. - To be able to prove vector pathways and problems. - To write proof using congruency and similarity. - Estimate the area under non linear graphs. - Find the equations of tangents to a circle.		information from the question. - How to check accuracy of answers. - How to use a calculator effectively. - What to write down for working out.	
Assessments	MAT 1 – Surds MAT 2 – Pythagoras and Trig	MAT 3 – Stats and Probability Fortnightly 20 marks in 20 minutes Mocks Begin	Weekly 20 marks in 20 mins MAT – Iteration and Graphs	Weekly exam practice. Second Set of Mocks	Optimisation timetable.	
Curiosity	Try a mini exam paper https://www.onmaths.com/mock_exams/mini-mock-2-higher-calculator/	Try a mini exam paper https://www.onmaths.com/mock_exams/mini-mock-2-higher-calculator/	Weekly revision sessions	Weekly revision sessions	Weekly revision sessions	

	1-higher-calculator/ - Visit the oak national academy website to view lessons and videos of the above topics. Practice your surds skills here: https://www.transum.org/Software/SW/Starter_of_the_day/Students/Surds.asp?Level=1 - 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 - Play around with the fibonacci sequence and see what you can find out https://nrich.maths.org/11164 - How does the recipe change? Here are some online questions to help you - https://www.transum.org/Maths/Exercise/Ratio/Recipe	- Visit the oak national academy website to view lessons and videos of the above topics. - Practice your functions skills here https://www.transum.org/Maths/Exam/Online_Exercises.asp?NaCu=105 - Practice your further trigonometry skills here: https://www.transum.org/Maths/Exercise/Advanced_Trigonometry/ - Histograms practice https://www.mathsisfun.com/data/histograms.html - Here is a series of videos to watch on algebraic fractions: https://www.interactive-maths.com/simplifying-algebraic-fractions-video.html https://www.interactive-maths.com/adding-and-subtracting-algebraic-fractions-video.html https://www.interactive-maths.com/multiplying-and-dividing-algebraic-fractions-video.html Weekly revision sessions Black history month Maths challenge Date TBC				
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	e.asp . Alternatively, pick a recipe from a cookbook at home and practice changing the measurements based on how many people you would cook for? Weekly revision sessions •					
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