



love the journey

Curriculum Implementation 2023-24

Secondary

LCA Strand	Maths
Subject	Further Maths
Key Stage	Key Stage 5 (Chapter 12-13)

<p>What are the key concepts taught?</p>	<ul style="list-style-type: none"> Overarching Themes: <ul style="list-style-type: none"> Mathematical Argument, language and proof Mathematical problem solving Mathematical modelling This is taught via compulsory Pure Maths and our chosen options of Further Statistics and Decision Maths <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>Pure maths</th> <th>Further statistics</th> <th>Decision maths</th> </tr> </thead> <tbody> <tr> <td>Complex numbers</td> <td>Probability and distributions</td> <td>Algorithms</td> </tr> <tr> <td>Further calculus</td> <td>Further hypothesis testing</td> <td>Linear programming</td> </tr> <tr> <td>Differential equations</td> <td></td> <td>Critical path analysis</td> </tr> <tr> <td>Vector geometry</td> <td></td> <td></td> </tr> <tr> <td>Matrices and transformations</td> <td></td> <td></td> </tr> <tr> <td>Polar coordinates</td> <td></td> <td></td> </tr> <tr> <td>Hyperbolic functions</td> <td></td> <td></td> </tr> </tbody> </table> <ul style="list-style-type: none"> Further maths deepens understanding and passion for the subject 	Pure maths	Further statistics	Decision maths	Complex numbers	Probability and distributions	Algorithms	Further calculus	Further hypothesis testing	Linear programming	Differential equations		Critical path analysis	Vector geometry			Matrices and transformations			Polar coordinates			Hyperbolic functions		
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<p>What is the sequencing of units?</p>	<ul style="list-style-type: none"> Pure maths is taught throughout the course, paying attention to the pre-requisite material needed from the maths course
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	<ul style="list-style-type: none"> • Decision maths is taught in year 12 and revisited in year 13 through retrieval practice • Further statistics is taught in year 13 once the statistics elements of maths have been taught • Each sequence of lessons will re-visit the overarching themes.
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<p>How do we encourage pupils to see the links between different units and concepts?</p>	<ul style="list-style-type: none"> • Teachers know the scheme of work and emphasise links between topics covered • Key skills are woven throughout the curriculum so that key concepts are revisited. • Questioning and retrieval starters are used to link back to, and gauge students' understanding of prior learning. • Each unit includes modelling questions, problem solving, and proof questions, used both in class and for independent study. • Future applications of current topics mentioned in class.
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<p>What are the planned opportunities for adaptive teaching, including for SEND, the more and able and disadvantaged pupils?</p>	<ul style="list-style-type: none"> • Teachers highlight where to look for further reinforcement & support • Extension/challenge questions included in resource booklets • Support out of lessons given by the class teacher • Targeted intervention and revision lessons as needed • Academic Support Plans put in place when needed • STEP and MAT sessions for those who need them either in school or through Advanced Maths Support Programme. • Individual and team maths challenges e.g. UKMT • Awareness by staff of pupil profiles and/or EHCP, so as to plan appropriately • Whole school principles of adaptive teaching are followed
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<p>What are the planned opportunities for retrieval and reflection by pupils?</p>	<ul style="list-style-type: none"> • Retrieval starters used in lessons • End of unit homework to enable reflection on success in the unit and areas for further work • Regular assessment tests covering multiple topic areas • Follow up tasks to develop in any weaker areas identified in assessments and/or homework • Class OneNote contains completed booklets and links to other resources
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<p>What are the opportunities for feed forward by the teacher post assessment outcomes?</p>	<ul style="list-style-type: none"> • All assessment answers are modelled by teachers post assessment • Pupils make a note of the main topic areas for review and use resources provided to do this for homework • Similar questions are presented to students to see if they have improved, often as part of the retrieval starters
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<p>What are the planned opportunities for developing Reading?</p>	<ul style="list-style-type: none"> • Literacy: Recognising, understanding and interpreting mathematical words and command words e.g. series, hence, evaluate. Students to develop sixth form glossary of mathematical symbols & words
<p>What are the planned opportunities for developing literacy, numeracy, oracy and SMSC?</p>	<ul style="list-style-type: none"> • The overarching theme of modelling lends itself to literacy, oracy and SMSC applications. • e.g.in modelling using differential equations • e.g.in statistics data chosen from relevant modern world real life situations • Students encouraged to make links with other curriculum areas.