

SUMMER WORK – YEAR 12 FURTHER MATHEMATICS

Head of Department

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Exam Board

Edexcel

Specification

A Level 9FM0

COURSE DETAILS

Examination

The A Level Further Mathematics course is examined as a whole at end of Year 13.

A Level Further Mathematics:

Students will study the compulsory elements of Further Pure Mathematics (proof, complex numbers, matrices, further algebra and functions, further calculus, further vectors, polar co-ordinates, hyperbolic functions and differential equations). In addition to this, students will study units on Further Mechanics (momentum and impulse, collisions in one and two dimensions, work, energy and power, elastic strings and springs and elastic energy) and Decision Mathematics (algorithms, graph theory, algorithms on graphs, critical path analysis and linear programming).

Students will study this course alongside the A Level in Mathematics – please refer to the separate document for course details.

SUMMER WORK FOR INTRODUCTION TO YEAR 12

	Task	Description
1.	Essential work prior to starting the A Level Mathematics course	<p>No additional summer work is required for A Level Further Maths, other than that provided for A Level Maths. However, it is important to remember that classes taking A Level Further Maths will be expected to progress much more quickly through the course, and it is therefore essential to have a strong understanding of the following topics from the GCSE before starting:</p> <ul style="list-style-type: none"> • Surds and Indices • Algebraic manipulation • Quadratic equations • Simultaneous equations • Inequalities • Sketching graphs of functions • Transformations of graphs • Trigonometry, including the sine and cosine rules • Coordinate geometry
2.	Further Revision / Useful Websites	<p>Use the following websites to consolidate any areas you struggled with when completing the summer work, or to further your understanding:</p> <p>https://www.mathsgenie.co.uk/ https://www.dr frostmaths.com/ https://www.mymaths.co.uk/ (username: gordons password: angle) https://corbettmaths.com http://furthermaths.org.uk/gcse https://mei.org.uk/students</p>

SUGGESTED READING:

- A Mathematician's Apology by G.H. Hardy (CUP, 1992)
- Fermat's Last Theorem by Simon Singh (Fourth Estate, 2002)
- The Music of the Primes by Marcus du Sautoy (Harper-Collins, 2003)
- Mathematics: a very short introduction by Timothy Gowers (CUP, 2002)
- Archimedes' Revenge by P. Hoffman (Penguin, 1991)
- Surely You're Joking, Mr. Feynman by R.P. Feynman (Arrow Books, 1992)
- Solving Mathematical Problems by Terence Tao (OUP, 2006)
- The Pleasures of Counting by T.W. Körner (CUP, 1996)

