

SUMMER WORK FURTHER MATHEMATICS

Head of Department

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Exam Board

Edexcel

Specification

A Level Mathematics

9MAO

A Level Further Mathematics

9FMO

COURSE DETAILS

Examination

The A Level Mathematics course is examined at the end of Year 12, and the A Level Further Mathematics course is examined at the end of Year 13.

A Level Mathematics:

Pure Mathematics and Applied Mathematics (Year 12).

Students will study elements of Pure Mathematics (proof, algebra and functions, coordinate geometry, sequences and series, trigonometry, exponentials and logarithms, differentiation, integration, numerical methods and vectors), elements of Statistics (statistical sampling, data presentation and interpretation, probability, statistical distributions, statistical hypothesis testing) and elements of Mechanics (quantities and units, kinematics, forces, Newton's laws and moments).

All students completing the A Level in Mathematics must sit three exams at the end of Year 12, all at A Level standard.

A Level Further Mathematics:

Pure Mathematics and Applied Mathematics (Year 13).

Students will study the compulsory elements of Further Pure Mathematics (proof, complex numbers, matrices, further algebra and functions, further calculus, further vectors, polar coordinates, hyperbolic functions, differential equations). In addition to this, students will study two optional elements in Decision Mathematics and Further Mechanics.

SUMMER WORK FOR INTRODUCTION TO YEAR 12

	Task	Description
1.	Essential Work Prior to A Level Further Mathematics	<p>Complete the booklet over the summer holidays.</p> <p>Guidance:</p> <ol style="list-style-type: none"> 1. Read each question carefully. 2. Attempt every question. 3. Check and mark your answers. 4. Always show your workings. <p>N.B. The booklet (in pdf format) will be available for download from the school's website on Monday 2nd July 2018</p>
2.	Further Revision	<p>Use the following websites to consolidate any areas you struggled with in the 'Essential Work prior to A Level Further Mathematics' booklet;</p> <p>https://www.bbc.com/education/examspecs/z9p3mnb https://www.examsolutions.net/gcse-maths/ https://corbettmaths.com http://furthermaths.org.uk/gcse</p>

WIDER READING TO PREPARE FOR COURSE

- A Mathematician's Apology by G.H. Hardy (CUP, 1992)
- Fermat's Last Theorem by Simon Singh
- 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)
- Advanced Problems in Mathematics by S.T.C. Siklos (1996 and 2003)
- Yet Another Introduction to Analysis by v. Bryant (CUP, 1990)

