SUMMER WORK FURTHER MATHEMATICS

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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	**In addition to the A Level Maths Summer Work (schedule below), students should work on the A Level Further Maths extension questions. While you may not get all of the answers you should engage with all of the questions.** **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 all these topics before starting the course.** Week 1 – a) Index Laws & b) Manipulating Polynomials Week 2 – c) Factorising & d) Surds Week 3 – e) Solving Quadratic Equations & f) Completing the square Week 4 - g) Solving simultaneous equations & h) Solving Inequalities Week 5 – i) Equation of a straight line & j) Trigonometry (sine, cosine & area) Week 6 – k) Mixed exercise questions & l) Further Maths Extension questions
2.	Further Revision / Useful Websites	**Use the following websites to consolidate any areas you feel you need to, or to further your understanding:** https://www.drfrost.org/ https://www.mathsgenie.co.uk/ http://furthermaths.org.uk/gcse https://mei.org.uk/students

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)