

# SUMMER WORK MATHEMATICS – YEAR 12

## Head of Department

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## Exam Board

Edexcel

## Specification

AS Level 8MA0

A Level 9MA0

## COURSE DETAILS

### Examination

The AS Level Mathematics course is examined at the end of Year 12.

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

### AS 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, 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 and Newton's laws).

### A Level Mathematics:

#### Pure Mathematics and Applied Mathematics (Year 13).

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).

## SUMMER WORK FOR INTRODUCTION TO YEAR 12

	Task	Description
1.	Essential work prior to starting the A Level Mathematics course	<b>Complete the 'Essential Work prior to A Level Mathematics' booklet over the summer holidays.</b> <b>Guidance:</b> <ol style="list-style-type: none"><li>1. Read each question carefully.</li><li>2. Attempt every question.</li><li>3. Check and mark your answers.</li><li>4. Always show your workings.</li></ol>
2.	Further Revision / Useful Websites	<b>Use the following websites to consolidate any areas you struggled with when completing the summer work, or to further your understanding:</b> <a href="https://www.mymaths.co.uk/">https://www.mymaths.co.uk/</a> (username: gordons password: angle) <a href="https://www.bbc.com/education/examspecs/z9p3mnb">https://www.bbc.com/education/examspecs/z9p3mnb</a> <a href="https://www.examsolutions.net/gcse-maths/">https://www.examsolutions.net/gcse-maths/</a> <a href="https://corbettmaths.com">https://corbettmaths.com</a> <a href="http://furthermaths.org.uk/gcse">http://furthermaths.org.uk/gcse</a> <a href="https://mei.org.uk/students">https://mei.org.uk/students</a>

## SUGGESTED READING:

- 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)