SUBJECT: A Level Mathematics **YEAR:** 12 and 13

HEAD OF DEPARTMENT: Mr Hatch

GROUPING POLICY: Years 12 and 13 are taught separately

SPECIFICATION:
https://qualifications.pearson.com/en/qualifications/edexcel-a-levels/mathematics-2017.html

CURRICULUM INTENT:
Studying AS/A level Mathematics helps students develop a logical approach to problem-solving, as well as their mathematical knowledge and skills. It is therefore useful preparation for a wide range of degree courses and apprenticeships. For many STEM and economics degree courses, A level Mathematics is an essential prerequisite. Even if a prospective Undergraduate course does not require an A level in Maths, employees who have exceptional skills in mathematics are invaluable to any company.

The step from GCSE to A level might be a big one, but it's a great challenge. Students get the chance to be more of an independent learner at A level. They are introduced to more ideas and are able to build on what was learnt at GCSE. For our most able Mathematicians we also offer A-level Further Mathematics which runs as a separate two year course.

All of the examinations take place at the end of the course, and exam questions may draw on the whole of the content. A level Mathematics is graded A*-E.

COURSE CONTENT:
We follow the two year Edexcel A-level Mathematics course.
The Mathematics course consists of three main areas: Pure Mathematics, Mechanics and Statistics with two thirds weighting to pure and one third to applied (Mechanics and Statistics).
The course covers the following topics:

Pure Mathematics:

Topic 1 – Proof
Topic 2 – Algebra and functions
Topic 3 – Coordinate geometry in the (x, y) plane
Topic 4 – Sequences and series
Topic 5 – Trigonometry
Topic 6 – Exponentials and logarithms
Topic 7 – Differentiation
Topic 8 – Integration
Topic 9 – Numerical methods
Topic 10 – Vectors

Mechanics:

1. Modelling in Mechanics
2. Constant Acceleration
3. Forces and Motion
4. Variable Acceleration

Statistics 7 Topics:

1. Data Collection
2. Measures of Location and Spread
3. Representation of Data 4. Correlation
5. Probability
6. Statistical Distribution
7. Hypothesis Testing

What will homework look like?

Homework set by the class teacher will be most frequently related to further practice of the current topic or a recent topic being studied. This may take the form of set learning tasks, questions from the digital textbook, tasks from Integral website or questions from previous examination papers. Students will be encouraged to explore and evaluate different methods for revision to identify their preferred learning style. There will also be a weekly revision homework covering topics taught at any time in the course.
Students will be given regular assessments (approximately every 4 weeks) that will be made up of past exam questions. Some of these assessments will be sat in class and some will be set as private study. They will be expected to use time out of lessons to prepare for these assessments.

ASSESSMENT

Students will sit written examinations. Calculators can be used on each paper. We recommend the Casio Advanced Scientific Calculator FX-991EX or the Casio CG-50 Graphic Calculator.

Examinations:

There will be 3 two-hour examinations:

- Paper 1 assesses content from Pure Mathematics (100 marks)
- Paper 2 assesses content from Pure Mathematics (100 marks)
- Paper 3 assesses content from Statistics and Mechanics (100 marks)

Students must complete all assessments in May/June in any single year.

ADDITIONAL INFORMATION

How can I support my child in this subject?

It is important that your child is doing work outside the classroom and practising all the topics. If a student misses a lesson, they should make sure that they have caught up with the missed work before the next lesson. All students will have a login for the digital textbook where they will find notes, examples, exercises and review questions. They will also have a login the Integral website which provides additional support material. Encourage your child to use these resources to make notes, review topics and complete plenty of questions.

How can I support my child with exams?

Students have access to a wide range of resources both electronic and also paper versions. Examination practice is essential to succeed at A level and students need to structure their revision so that they have time to practise their skills. In this subject students need to regularly work on practice questions so any revision timetable must be well planned and adhered to. Independent study is very important but students should also be encouraged to seek help whenever necessary.

https://www.examq.co.uk/ is a useful website to find past exam questions and markschemes.