Subject: **Further Mathematics**		Year Group: **13**
Term 1 Key Focus/Topic(s) • FP1U6 – Further Vectors (part 2) • FP1U7 – Coordinate Systems (part 2) • FP1U8 – Inequalities (part 2) • FP1U9 – Further Numerical Methods • D1U6 – Algorithms & Graph Theory (part 2) • D1U7 – Algorithms on Graphs I (part 2) • D1U8 – Algorithms on Graphs II (part 2)	**Term 2 Key Focus/Topic(s)** • FP1U10 – Further Calculus • FP1U11 – Further Differential Equations • D1U9 – Linear Programming (part 2) • D1U10 – Critical Path Analysis (part 2)	**Term 3 Key Focus/Topic(s)** • Revision • CP2U1 – Complex Numbers • CP2U2 – Hyperbolic Functions
Term 1 Assessment Opportunities: • AL FP1U6 Test • AL FP1U7 Test • AL FP1U8 Test • AL FP1U9 Test • AL D1U6 Test • AL D1U7 Test • AL D1U8 Test	**Term 2 Assessment Opportunities:** • AL FP1U10 Test • AL FP1U11 Test • AL D1U9 Test • AL D1U10 Test	**Term 3 Assessment Opportunities:** • Mock Examinations • AL CP2U1 Test • AL CP2U2 Test
Term 4 Key Focus/Topic(s) • CP2U3 – Polar Coordinates • CP2U4 – Further Algebra & Functions (Series) • CP2U5 – Further Calculus	**Term 5 Key Focus/Topic(s)** • CP2U6 – Differential Equations • Revision	**Term 6 Key Focus/Topic(s)** • Revision
Term 4 Assessment Opportunities: • AL CP2U3 Test • AL CP2U4 Test • AL CP2U5 Test	**Term 5 Assessment Opportunities:** • CP1 Examination • CP2 Examination • FP1 Examination	**Term 6 Assessment Opportunities:** • D1 Examination

Aims and objectives:

- Understand mathematics and mathematical processes in ways that promote confidence, foster enjoyment and provide a strong foundation for progress to further study
- Extend their range of mathematical skills and techniques
- understand coherence and progression in mathematics and how different areas of mathematics are connected
- Apply mathematics in other fields of study and be aware of the relevance of mathematics to the world of work and to situations in society in general
- Use their mathematical knowledge to make logical and reasoned decisions in solving problems both within pure mathematics and in a variety of contexts, and communicate the mathematical rationale for these decisions clearly
- Reason logically and recognise incorrect reasoning
- Generalise mathematically
- Construct mathematical proofs
- Use their mathematical skills and techniques to solve challenging problems which require them to decide on the solution strategy
- Recognise when mathematics can be used to analyse and solve a problem in context
- Represent situations mathematically and understand the relationship between problems in context and mathematical models that may be applied to solve them
- Draw diagrams and sketch graphs to help explore mathematical situations and interpret solutions
- Make deductions and inferences and draw conclusions by using mathematical reasoning
- interpret solutions and communicate their interpretation effectively in the context of the problem
- Read and comprehend mathematical arguments, including justifications of methods and formulae, and communicate their understanding
- Read and comprehend articles concerning applications of mathematics and communicate their understanding
- Use technology such as calculators and computers effectively, and recognise when such use may be inappropriate
- Take increasing responsibility for their own learning and the evaluation of their own mathematical development

Rationale:

The overarching themes are:

- Mathematical argument, language and proof
- Mathematical problem solving
- Mathematical modelling

These are to be applied along with associated mathematical thinking and understanding, across the whole of the detailed content in the specification. These overarching themes are inherent throughout the content and students are required to develop skills in working scientifically over the course of the qualification. The skills show teachers which skills need to be included as part of the learning and assessment of the students.

Evaluation:

- Students are expected to self-assess all independent work and aim to correct any errors before submission. Teachers are expected to oversee the pupils' assessment and give guidance/constructive feedback as to how to improve future performance and correct any misconceptions. This should be carried out at least once every fortnight and in line with the school policy.
- End of topic tests are to be done under exam conditions, teacher assessed and marks entered onto the appropriate departmental Google Doc for comparisons, quality assurance that groups are progressing in tandem and as expected and can be monitored by the Head of Department. Periodically, moderation of marking takes place during departmental meetings which further enhances the quality assurance that mark schemes are being applied consistently.
- Opportunities for teacher feedback can be from individual conversations regarding independent work and end of topic tests. With regard to end of topic tests teachers are to feedback using WWW and EBI with students adding their MRI in response.

Assessment:

This qualification consists of four 1 hour 30 minute written examinations of equal weighting:

- Core Pure Mathematics 1
- Core Pure Mathematics 2
- Further Pure Mathematics 1
- Decision Mathematics 1