# CURRICULUM OVERVIEW OF: KS3 MATHEMATICS

The curriculum at Key Stage 3 is intended to support the transition between Key Stage 2 and Keys stage 4. Key Stage 3 is to provide the skills that are the foundation for students at GCSE level. The curriculum has been designed around the Edexcel GCSE specification.

There are 5 main strands in Mathematics these are Number, Algebra, Ratio and Proportion, Statistics and Geometry and Probability. Within each of these areas of Mathematics we will cover the aims of the national curriculum and ensure all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately

- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language

- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.
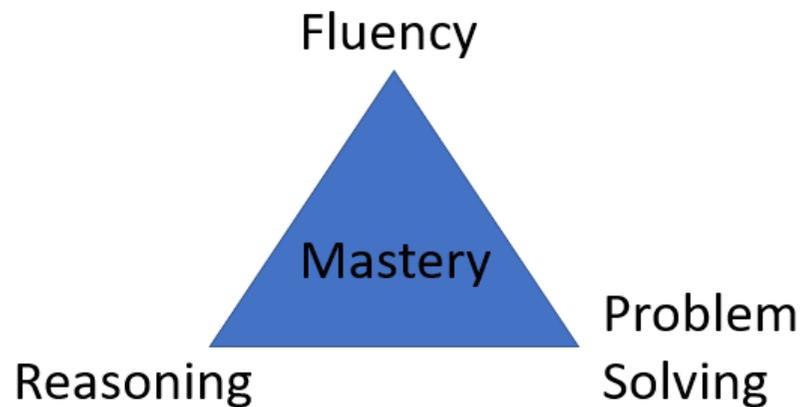
The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

A – Algebra Unit, N – Number Unit, G – Geometry Unit, S – Statistics and Probability Unit, R - Ratio and Proportion Unit.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 7 Topics	A - Transition Unit N - Fractions	**KEY ASSESSMENT 1** A - Sequences N - Rounding	G – Area and Perimeter G – Angles **KEY ASSESSMENT 2**	A – Equations S – Graphs, Charts and Averages	N – HCF/LCM S - Probability	**END OF YEAR ASSESSMENT** R – Ratio and Proportion G – Transformations
Year 7 Rationale	- Consolidation on KS2 number work through problem solving. - Introduction to generalising with algebra. - Ensure that applied Mathematics that is not covered in KS2 has been introduced. - To foster a love of problem solving to become a resilient learner. - To be able to operate a scientific calculator.					
Year 8	A – Formula G – Constructions G – Polygons	**KEY ASSESSMENT 1** S - Sampling G – Pythagoras	S – Charts and Quartiles A – Straight line graphs **KEY ASSESSMENT 2**	N – Laws of Indices N – Index Form R – Compound Measures	S – Correlation N - Bounds	**END OF YEAR ASSESSMENT** Pre-GCSE preparation G – Trigonometry
Year 8 Rationale	- Ensure that all students are familiar with Mathematical language. - Develop algebra as a skill set. - To use different mathematics skills across other strands in the curriculum. - To develop a sequential process to problem solving. - To ensure that all students have been allocated a tier that will both challenge them and ensure that they reach their potential					