Year 10: Maths

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topics	**The Power of Percentages** **Focus**: A look at percentage change with both simple and compound interest, percentage profit and loss, and reverse percentages.	**The Awe of Algebra** **Focus**: From factorising and expanding expressions to quadratic equations, students will gain a deeper understanding of the magic of algebra.	**The Beauty of Angles and Shapes** **Focus**: An insight into the world of shapes, their properties and their impact on everyday life.	**More complex motion in Geometry** **Focus**: An in-depth look into how shapes can be moved and changed through a range of transformations.	**The Driving Force of Data** **Focus**: A delving down into the ways in which data can be analysed, interpreted and displayed.	**Construction and loci** **Focus**: A look at scale drawing and the ways in which it can be used to solve real-life problems.
Assessments	The students will be assessed towards the end of the half term. The assessment will contain 12 questions which will cover the topics that have been studied during the course of the half term.	The students will be assessed towards the end of the half term. The assessment will contain 12 questions which will cover the topics that have been studied during the course of the half term. In addition to this, the students will also sit one GCSE paper which will assess them on a broader range of mathematical knowledge.	The students will be assessed towards the end of the half term. The assessment will contain 12 questions which will cover the topics that have been studied during the course of the half term.	The students will be assessed towards the end of the half term. The assessment will contain 12 questions which will cover the topics that have been studied during the course of the half term. In addition to this, the students will also sit one GCSE paper which will assess them on a broader range of mathematical knowledge.	The students will sit an end-of-year assessment which will consist of three foundation GCSE papers which will test all of the topics that have been covered throughout the year.	The students will be assessed towards the end of the half term. The assessment will contain 12 questions which will cover the topics that have been studied during the course of the half term.

Building on Prior Learning	**Declarative knowledge** - This can be introduced with "I know that" and refers to facts and formulae, and the relationship between facts; Ofsted refer to the latter as conceptual understanding. Throughout Year 10, students will be exposed to a wide range of content which will form the bedrock of their subsequent learning with particular emphasis on the importance of having a strong command of all operations in order to have the confidence and competence to work on more challenging areas of mathematics. **Procedural knowledge** - This can be introduced with "I know how" and refers to methods, and the principles underpinning them. Having been introduced to the key facts, students will then develop a range of strategies and approaches to tackle a problem and will reflect on which of these would be best used in a particular situation, including the use and analysis of data and the ways in which it can be visually represented.
Cultural Capital	Cultural capital will be embedded and regularly encountered throughout the delivery of the maths curriculum. Lessons will emphasise that maths and indeed learning extends well beyond the academic and students will be provided with broader development, enabling them to develop and discover their interests and talents in a wide range of areas. Students will encounter the many ways in which shapes appear in everyday life, including patterns in nature and many aspects of construction and design.
Mastery	Students of all ability and background will acquire a deep, long-term, secure and adaptable understanding of mathematics; achieving this mastery will means that students will acquire a solid enough understanding of the maths that's been taught to enable them to move on to more advanced material. In order to facilitate the development of mastery new content will be broken down into small coherent steps that gradually unfold the concept and will be linked to existing knowledge. Students will have their mathematical thinking challenged throughout the course and frequent retrieval practice will enable students to embed their deeper learning and understanding with increasing fluency. Developing a profound understanding of number will enable students to transfer these skills to a multitude of other areas of mathematics and will provide them with the tools that are necessary to tackle a plethora of complex problems, including those encountered by the construction industry and businesses when determining the costs associated with a given job.
Development of Character	A wide range of virtues are encouraged and developed throughout the teaching of mathematics. In every lesson, teachers will support students to develop their character – including their resilience, confidence and independence – and help them know how to keep physically and mentally healthy.
Extra-Curricular opportunities	**In school** - After-school enhancement offers students the opportunity to revisit recently visited content to address any misconceptions and rehearse and retrieve prior knowledge in order to ensure that it is embedded, thereby providing a solid foundation on which subsequent learning can be built. **Outside of school** - Mathematics has an integral part to play in all aspects of life. Students will be encouraged to apply their mathematical knowledge to areas such as the use of money, percentages with mortgage rates and savings, inflation and the cost of borrowing, including mortgages, credit cards and payday loans.
Metacognitive Learning	In lessons, students will be encouraged to articulate their thought processes, reflect on what strategies work and do not work for a given problem and develop a wide range of knowledge and skills which can they be applied to subsequent new content, enabling the students to build up a cumulative web of coherent and sequenced knowledge.