



The curriculum for this stage of students' education has been designed to:

for this final stage of students' compulsory maths education has been designed to build upon their knowledge of graphs, algebraic techniques, reasoning and communication. Students will revisit linear graphs with a focus on gradients and writing equations from given information. In Half Term 2 there is a great focus on algebraic manipulation, building on KS3. Half Term 3 looks at improving reasoning skills across different contexts such as proportion and geometry. Towards the end of year, students will practise how to communicate their mathematics to "show that" in a variety of contexts with opportunity to revise knowledge from previous years. Each half term, students will focus on one particular area of mathematics, allowing for a greater depth of that topic and allowing regular repetition of skills, as well as allowing students to make links between topics. Throughout the year, students will be exposed to regular exam questions and exam papers to prepare them fully for their mock exams in November and March. Underpinning the curriculum areas, will be the opportunity to explore how the skills they are developing can be used in real life situations and applied to problem solving questions.

Half Term 1 Graphs Students Must know: How to construct a stratified sample (H) How to identify populations and samples How to construct and interpret: • Frequency tables and frequency polygons • Line and bar charts and pie charts • Stem-and-leaf diagrams • Cumulative frequency diagrams (H) • Box plots (H) • Histograms (H) How to find the equation of a straight line: • from a graph • given one point and a gradient • given two points When to recognise when straight lines are perpendicular (H) How to find the equations of perpendicular lines (H)	Half Term 2 Algebra Students Must know: How to plot and read from: • quadratic graphs • cubic graphs • reciprocal graphs • exponential graphs (H) How to find and use the equation of a circle centre (0, 0) (H) How to find the equation of the tangent of any curve (H) How to construct and interpret distance/time graphs How to estimate the area under a curve (H) How to factorise quadratic expressions How to solve quadratic equations by factorisation How to complete the square (H) How to solve quadratic equations using the quadratic formula (H)	Half Term 3 Students Must know: How to change the subject of a known formula How to change the subject of more complex formulae How to change the subject where the subject appears more than once (H) How to solve equations by iteration (H) How to use function notation How to work with: • composite functions (H) • inverse functions (H) How to work with direct proportion How to construct complex direction proportion equations (H) How to calculate with pressure and density How to work with inverse proportion How to construct inverse proportion equations (H)
How this will be assessed: Weekly exam papers	How this will be assessed: Mock Exams	How this will be assessed: Weekly exam papers
Half Term 4 Revision and Communication Students Must know: How to prove geometric facts using: • angles at points • angles in parallel lines • exterior and interior angles of polygons • circle theorems (H) How to simplify complex expressions How to use rules for sequences to solve problems How to make simple proofs using exhaustion or counterexample How to complete a formal algebraic proof (H)	Half Term 5 Revision Students Must know: How to perform and describe a series of transformations of shapes How identify invariant points and lines (H) How to solve loci problems How trigonometrical graphs work (H) How to translate a function (H) How to reflect a function (H) How to work with organised lists How to use the product rule for counting (H)	Half Term 6 STUDENTS MUST REVISE*: STUDENTS MUST REVISE*: • Area • Volume • Circles • Fractions, decimals and percentages • Angles • Pythagoras and Trigonometry • Transformations • Directed number *Not an exhaustive list – also look at topics from QLA
How this will be assessed: All students will sit a mock GCSE in February/March.	How this will be assessed: Formal GCSEs will take place this half term.	How this will be assessed: Formal GCSEs will take place this half term.
Embedding this knowledge can be supported at home by: Embedding this knowledge will be supported at home by using Sparx Maths to consolidate learning that has taken place in class. Additional revision could be: attempting questions found online at www.corbettmaths.com, practising exam papers from the Edexcel website and www.mathsgenie.co.uk.		