The curriculum for this stage of students' education has been designed to build upon their knowledge of straight-line graphs and solving linear equations and inequalities. Students will also have the opportunity to create and test conjectures including number and geometry. Students will have the opportunity to look at shapes in 3D and how to carry out various constructions. Building on this, students will study Pythagoras' Theorem in right-angled triangles. 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 exam at the end of the year. 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: REASONING WITH ALGEBRA
STUDENTS MUST KNOW:
How to work with straight line graphs by recognising:
- $y = mx + c$ as the general form of the equation of a straight line
- m and c in abstract and real-life contexts

How to solve equations and inequalities
How to change the subject
How to test conjectures by using knowledge of:
- Primes, factors and multiples
- Expanding products of two or more binomials

HOW THIS WILL BE ASSESSED:
Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.

HALF TERM 2: CONSTRUCTIONS IN 2 AND 3 DIMENSIONS
STUDENTS MUST KNOW:
How to derive and apply formulae to calculate and solve problems involving:
- Perimeter and area of triangles, parallelograms and trapezia
- Volume of cuboids and other prisms (including cylinders)

How to derive and use standard ruler and compass constructions including:
- Perpendiculars
- Bisecting a given angle

HOW THIS WILL BE ASSESSED:
Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.

HALF TERM 3: REASONING WITH NUMBER
STUDENTS MUST KNOW:
How to solve problems with numbers including
- Integers, real and rational numbers
- Directed numbers
- Surds

How to solve problems involving:
- Percentage change
- Percentage increase and decrease
- Original value

How to solve problems in various financial contexts
HOW THIS WILL BE ASSESSED:
Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.

HALF TERM 4: REASONING WITH GEOMETRY
STUDENTS MUST KNOW:
How to solve angle problems with algebra
How to test conjectures by using knowledge of geometry facts
How to recognise rotational symmetry
How to rotate a shape
How to translate a shape using vectors
How to use Pythagoras' Theorem to find missing sides
HOW THIS WILL BE ASSESSED:
Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.

HALF TERM 5: REASONING WITH PROPORTION
STUDENTS MUST KNOW:
How to enlarge a shape using a positive scale factor
That the object and its image of an enlargement are similar
How to find unknown sides in similar shapes
How to solve problems involving inverse proportion
How inverse proportion relates to speed, distance and time

HOW THIS WILL BE ASSESSED:
Assessments will be completed at the end of each topic. All students will sit a mock GCSE exam in the summer term.

HALF TERM 6: REPRESENTATIONS AND REVISION
STUDENTS MUST KNOW:
How to calculate a probability of a single event from various contexts
How to calculate the relative frequency of an outcome
How to find the probability of independent events
How to plot non-linear graphs
How to find approximate solutions to simultaneous linear equations using graphs
HOW THIS WILL BE ASSESSED:
Assessments will be completed at the end of each topic. All students will sit a mock GCSE exam in the summer term.

Embedding this knowledge will be supported at home by using Mangahigh 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 AQA website and www.mathsgenie.co.uk.