



The curriculum for this stage of students' education has been designed to build upon their knowledge of similarity, algebra, geometry, proportional change, data and number. Students will also have the opportunity to create and test conjectures including number and geometry. Students will look at trigonometry in triangles, which will be new to most. As will be the idea of simultaneous equations and circle theorems. 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.

<p>HALF TERM 1: SIMILARITY STUDENTS MUST KNOW: How to enlarge a shape by:</p> <ul style="list-style-type: none"> • A positive integer scale factor • A fractional scale factor • A negative scale factor (H) <p>How to solve mixed problems involving similar shapes How to prove a pair of triangles are congruent How to use sine, cosine and tangent to find:</p> <ul style="list-style-type: none"> • Missing side lengths • Missing angles <p>How to choose and use the sine and cosine rules (H) How to use the formula $\frac{1}{2}ab\sin C$ to find the area of a triangle (H)</p> <p>HOW THIS WILL BE ASSESSED: Assessments will be completed at the end of each topic.</p>	<p>HALF TERM 2: DEVELOPING ALGEBRA STUDENTS MUST KNOW: How to form and solve equations and inequalities How to represent solutions to inequalities:</p> <ul style="list-style-type: none"> • On a number line • Using set notation (H) • On a graph (H) <p>How to form and solve inequalities with unknowns on both sides How to solve quadratic equations by factorisation (H) How to solve quadratic inequalities in one variable (H)</p> <p>How to form and solve a pair of linear simultaneous equations from given information How to solve a pair of simultaneous equations (one linear, one quadratic) using graphs or algebraically (H)</p> <p>HOW THIS WILL BE ASSESSED: Assessments will be completed at the end of each topic.</p>	<p>HALF TERM 3: GEOMETRY STUDENTS MUST KNOW: How to measure and read bearings How to make scale drawings using bearings How to calculate bearings using:</p> <ul style="list-style-type: none"> • Angle rules • Pythagoras and trigonometry • The sine and cosine rules (H) <p>How to calculate length of an arc and area of a sector How to solve problems involving circle theorems (H) How to calculate volumes and surface areas of cylinders, cones and spheres How to represent and read vector notation How to add and subtract vectors How to construct geometric arguments and proof (H)</p> <p>HOW THIS WILL BE ASSESSED: Assessments will be completed at the end of each topic.</p>
<p>HALF TERM 4: PROPORTIONS AND PROPORTIONAL CHANGE STUDENTS MUST KNOW: How to use and interpret ratios of the form 1 : n and n : 1 How to solve 'best buy' problems How to solve ratio in area or volume problems (H) How to calculate simple and compound interest How to solve problems involving growth and decay How to work with iterative processes (H) How to use experimental data to estimate probabilities How to find probabilities from tables, Venn diagrams and frequency trees How to use tree diagrams for independent and dependent events How to interpret conditional probabilities (H)</p> <p>HOW THIS WILL BE ASSESSED: Assessments will be completed at the end of each topic.</p>	<p>HALF TERM 5: USING NUMBER STUDENTS MUST KNOW: How to work with exact answers How to calculate with surds (H) How to understand and use limits of accuracy How to calculate using upper and lower bounds (H) How to find the HCF and LCM of a set of numbers (R) How to describe and continue arithmetic and geometric sequences How to find the nth term of a:</p> <ul style="list-style-type: none"> • Linear sequence • Quadratic sequence (H) <p>How to work with indices and roots including fractional indices</p> <p>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.</p>	<p>HALF TERM 6: DELVING INTO DATA & EXPRESSIONS STUDENTS MUST KNOW: How to construct a stratified sample (H) How to identify populations and samples How to construct and interpret:</p> <ul style="list-style-type: none"> • Frequency tables and frequency polygons • Line and bar charts and pie charts • Stem-and-leaf diagrams • Cumulative frequency diagrams (H) • Box plots • Histograms (H) <p>How to form and solve equations and inequalities with fractions How to work with algebraic fractions (H)</p> <p>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.</p>

Embedding this knowledge will be supported at home by using HegartyMaths 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.

