



The curriculum for this stage of students' education has been designed to build upon their prior knowledge of number work to include percentage increase and decrease, the use of standard index form and confidence with rounding and converting between metric units. Learners will also develop their knowledge of proportional reasoning. Learners will develop their knowledge of algebraic techniques, building on previous work on sequences, solving increasingly complex equations and plotting graphs of linear functions. Learners will build on their prior knowledge of perimeter and area to include circles, trapezia and compound shapes, they will also be able to solve increasingly complex angles problems including those involving parallel lines or polygons. Learners will study the data handling cycle in depth, drawing and interpreting a range of charts and graphs and also calculating measures of central tendency.

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. 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: PROPORTIONAL REASONING STUDENTS MUST KNOW: How to use scale factors, scale diagrams and maps. How to express a multiplicative relationship as a ratio or a fraction. How to solve problems involving ratio and direct and inverse proportion. How to formulate proportional relationships algebraically. How to move freely between different numerical, algebraic, graphical and diagrammatic representations. How to multiply and divide fractions, with an emphasis on improving understanding of the underlying algorithms. 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.</p>	<p>HALF TERM 2: REPRESENTATIONS STUDENTS MUST KNOW: How to recognise, sketch and produce graphs of linear functions, using equations in x and y and the Cartesian plane. How to describe simple mathematical relationships between two variables and illustrate using scatter graphs. How to generate theoretical sample spaces and use these to calculate theoretical probabilities. 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.</p>	<p>HALF TERM 3: ALGEBRAIC TECHNIQUES STUDENTS MUST KNOW: How to expand over a single bracket and factorise an expression. How to solve equations and inequalities. How to recognise arithmetic, geometric and other sequences. How to find the nth term of an arithmetic sequence. How to use and interpret algebraic notation. How to use language and properties precisely to analyse algebraic expressions. How to model situations mathematically and express the results using a range of formal mathematical representations. 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.</p>
<p>HALF TERM 4: DEVELOPING NUMBER STUDENTS MUST KNOW: How to calculate percentage increase and decrease. How to express one number as a fraction or percentage of another. How to interpret and solve problems, including in financial maths. How to use integer powers and real roots, Powers of 2, 3, 4, 5 How to interpret and compare numbers in standard form. How to convert between metric units How to round numbers and measures to an appropriate degree of accuracy. How to solve problems with time. 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.</p>	<p>HALF TERM 5: DEVELOPING GEOMETRY STUDENTS MUST KNOW: How to solve increasingly complex missing angles problems. How to derive and illustrate properties of plane shapes using appropriate language and technologies. How to apply formulae and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, circles and composite shapes. How to describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively and rotationally symmetric. 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.</p>	<p>HALF TERM 6: REASONING WITH DATA STUDENTS MUST KNOW: How to describe interpret and compare observed distributions of a single variable through: appropriate graphical representation involving discrete, continuous and grouped data; and appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outlier). How to construct and interpret appropriate tables, charts and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) for ungrouped and grouped numerical data. 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.</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.