



The curriculum for this stage of students' education has been designed to build upon their prior knowledge of number work including fractions, decimals and percentages, as well as increase their fluency of solving algebraic problems. Students will also explore geometrical properties and develop the ability to apply these to find missing sides, angles and calculate areas and volumes. Techniques to analyse data will be developed and students will learn how to select the most appropriate techniques for interpreting data given the data set presented. 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 – Algebraic Thinking STUDENTS MUST KNOW: Sequences – How to form and describe sequences given rules and Identify linear and non-linear sequences.</p> <p>How to use algebraic notation- Use correct algebraic notation. Understand function machines, using substitution to find inputs and outputs. Generate sequences from an algebraic rule.</p> <p>Equality and equivalence – Understand fact families numerically and algebraically, solve one step equations and Simplify expressions using like terms.</p> <p>HOW THIS WILL BE ASSESSED: 3 x end of unit tests</p>	<p>HALF TERM 2 – Place Value and Proportion STUDENTS MUST KNOW: Place Value and Ordering Decimals- Recognise place value and use inequalities if necessary to compare and order any number (including decimals) up to one billion. Rounding to powers of ten and given significant figures. Finding the range and median of a set of values.</p> <p>Fraction, Decimal and Percentage Equivalence – How to convert fluently between fractions, decimals and percentages. Use and interpret pie charts.</p> <p>HOW THIS WILL BE ASSESSED: 2 x end of unit tests</p>	<p>HALF TERM 3 – Application of Number STUDENTS MUST KNOW: Solving problems with addition and subtraction - Use formal methods of addition and subtraction to solve problems in a variety of contexts. Solving problems with multiplication and division – factors, multiples, converting metric units, Bidmas. Use formal methods to multiply and divide integers and decimals to solve problems in a variety of contexts. Fractions and percentages of amounts -Find a fraction or percentage of a given amount with and without a calculator.</p> <p>HOW THIS WILL BE ASSESSED: 3 x end of unit tests</p>
<p>HALF TERM 4 – Directed Number and Fractional Thinking STUDENTS MUST KNOW: Operations and equations with directed numbers – Order directed numbers, perform operations with directed numbers, use algebraic expressions with directed numbers, solve two step equations and use Bidmas with directed numbers. Addition and subtraction of fractions- Convert between mixed numbers and fractions. Add and subtract fractions with any denominator, as well as mixed numbers and improper fractions. Use fractions in algebraic contexts.</p> <p>HOW THIS WILL BE ASSESSED: 2 x end of unit tests</p>	<p>HALF TERM 5 – Lines and Angles STUDENTS MUST KNOW: Constructing, measuring and using geometric notation – How to use labelling conventions, classify measure and draw a variety of different angles. Identify different polygons, construct triangles and polygons. Interpret and draw pie charts. Developing geometric reasoning – Understand and apply basic angles facts to solve complex angle problems, including those involving properties of triangles and quadrilaterals.</p> <p>HOW THIS WILL BE ASSESSED: 2 x end of unit tests</p>	<p>HALF TERM 6 – Reasoning with Number STUDENTS MUST KNOW: Developing number sense- know and use mental strategies when dealing with integers, decimals and fractions. Use estimation to check mental strategies. Sets and probability – Identify and represent sets, create Venn diagrams and understand the terms of intersection, union and compliment of sets. Know and use the vocabulary of probability. Prime numbers and proof – Factors, multiples, primes, HCF, LCM and product of prime factors. Make and test conjectures.</p> <p>HOW THIS WILL BE ASSESSED: 3 x end of unit tests</p>

Embedding this knowledge can be supported at home by the frequent revision of topics covered. This is done by completion of homework booklets and the use of related websites for thorough revision and retrieval of knowledge.