

Year 7			
Maths			
1 <b>Number system and calculating</b>	<ul style="list-style-type: none"> <li>Understand place value; use equality and inequality symbols for comparing; and use the number line for rounding.</li> <li>Understand and use formal methods for calculating, including with decimals. Understand the concept of inverse operations.</li> <li>Know and be able to evaluate multi-step calculations, including indices, using the correct order of operations; fluent in the concepts and vocabulary of primes, factors, squares, roots, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Understand the number system, including using equality and inequality symbols for comparing and using the number line to explain and illustrate rounding to different degrees of accuracy.</li> <li>Fluent in all calculation methods and able to select the most efficient formal or informal method for a given calculation. Able to use inverse operations in calculations.</li> <li>Understand and apply the correct order of operations; recognise and calculate integer powers; use concepts of primes, factors, powers, roots, to solve problems.</li> </ul>	<ul style="list-style-type: none"> <li>Understand the number system as a base 10 system. Solve problems using equality and inequality symbols and be able to use different representations to explain rounding and place value.</li> <li>Fluent in all calculation methods and able to select efficient methods to solve worded or complex problems. Deep understanding of relationships between operations and able to use given calculations to find answers to related problems.</li> <li>Solve problems involving order of operations; use knowledge of powers and roots to estimate non-integer roots; solve problems involving primes, factors, powers and roots.</li> </ul>
2 <b>Directed Numbers</b>	<ul style="list-style-type: none"> <li>Fluent in ordering and calculating with negative numbers; understand negative numbers in context.</li> </ul>	<ul style="list-style-type: none"> <li>Order and compare negative and positive numbers using inequality notation; calculate with negative numbers including with intervals across zero; understand and use negative numbers in context.</li> </ul>	<ul style="list-style-type: none"> <li>Solve problems involving calculations with negative numbers, including in context. Be able to explain the effects of various operations with negatives.</li> </ul>
3 <b>Fractions and decimals</b>	<ul style="list-style-type: none"> <li>Understand fractions as quantities and as operations; recognise fractions in various representations; manipulate fractions using principles of equivalence; add and subtract fractions.</li> <li>Fluent in converting between fractions and decimals.</li> </ul>	<ul style="list-style-type: none"> <li>Use fractions as quantities and as operations to solve problems; use various representations to explain equivalence and to manipulate fractions; compare and calculate with fractions.</li> <li>Fluent in converting between fractions and decimals; able to use knowledge of place value and different representations to explain fraction to decimal equivalence.</li> </ul>	<ul style="list-style-type: none"> <li>Solve problems in various contexts using fractions as both quantities and as operators; be able to explain and apply principles of equivalence; understand efficient methods for comparing and calculating with fractions.</li> <li>Able to solve a variety of problems efficiently by fluently converting between fractions and decimals; explain fraction to decimal equivalence and identify instances where fractions or decimals might be preferred.</li> </ul>
4 <b>Algebra</b>	<ul style="list-style-type: none"> <li>Know and use formal algebraic language and notation accurately and confidently; fluent in basic manipulation techniques including simplifying and substitution.</li> <li>Able to use inverse operations to solve equations and understand the principle of balancing an equation.</li> <li>Understand and identify the patterns in various sequences, including non-numerical sequences. Recognise arithmetic sequences and find the nth term.</li> </ul>	<ul style="list-style-type: none"> <li>Use and interpret formal algebraic language and notation accurately and confidently; fluent in basic manipulation techniques including simplifying and substitution, including in a context.</li> <li>Able to use inverse operations to solve equations and set out solutions in a formal way. Explain the principle of balancing an equation and use different representations to illustrate this in practice.</li> <li>Understand and identify the patterns in various sequences, including non-numerical sequences. Find the nth term of an arithmetic sequence and use it to generate and identify terms.</li> </ul>	<ul style="list-style-type: none"> <li>Able to interpret worded scenarios algebraically to form expressions and to use algebra to model a given worded context. Fluent in algebraic manipulation and able to apply those skills to solve problems.</li> <li>Understand and use formal and informal methods to solve equations; identify the most efficient methods for solving equations. Use the principle of balancing to form and solve equations from given scenarios.</li> <li>Be able to identify patterns in a variety of contexts, and use principles of sequences to solve problems. Find the nth term of an arithmetic sequence and use it to generate and identify terms.</li> </ul>
5 <b>Geometry</b>	<ul style="list-style-type: none"> <li>Fluent and accurate in the use of geometric equipment; understand and identify the properties of a number of shapes using correct geometrical language and notation.</li> <li>Know and understand the features of angles at a point, on a line and inside polygons. Use knowledge of angle sums to solve problems.</li> </ul>	<ul style="list-style-type: none"> <li>Fluent and accurate in the use of geometric equipment; use correct geometrical language and notation; understand the line and angle properties of 2D shapes in classification.</li> <li>Understand and interpret the features of angles at various intersections or inside polygons. Use knowledge of angle sums and geometrical properties of shapes to solve problems.</li> </ul>	<ul style="list-style-type: none"> <li>Fluent and accurate in the use of geometric equipment; understand and use correct geometrical language and notation; understand the line and angle properties of 2D shapes and use them to solve problems.</li> <li>Understand and interpret the features of angles at various intersections or inside polygons. Combine knowledge of angles and other properties of shapes to derive geometrical proofs, and apply understanding to solve problems in a variety of contexts.</li> </ul>