



Number	Geometry	Ratio & proportion	Algebra	Statistics
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Topic name	Term	Skills developed	Link to NC subject Content	Prior learning	Next link in curriculum
SEQUENCES	Autumn	<ul style="list-style-type: none"> <li>Begin to reason deductively in geometry, number and algebra, including using geometrical constructions</li> <li>Use algebra to generalise the structure of arithmetic, including to formulate mathematical relationships</li> </ul>	<ul style="list-style-type: none"> <li>Move freely between different numerical, algebraic, graphical and diagrammatic representations</li> <li>Make and test conjectures about patterns and relationships</li> <li>Generate sequences from a term-to-term rule</li> <li>Recognise arithmetic and geometric sequences</li> </ul>	<ul style="list-style-type: none"> <li>Y6 work on ‘finding a rule’ and types of sequences</li> <li>Y6 NC link - generate and describe linear number sequences</li> </ul>	<ul style="list-style-type: none"> <li>Year 7 Autumn - Understand algebraic notation</li> </ul>
UNDERSTAND AND USE ALGEBRAIC NOTATION	Autumn	<ul style="list-style-type: none"> <li>Use algebra to generalise the structure of arithmetic, including to formulate mathematical relationships</li> </ul>	<ul style="list-style-type: none"> <li>Recognise and use relationships between operations including inverse operations</li> <li>Substitute values in expressions, rearrange and simplify expressions</li> <li>Use and interpret algebraic notation</li> </ul>	<ul style="list-style-type: none"> <li>Y6 work on introduction to simple expressions and solving equations using part-whole diagrams and bar models</li> </ul>	<ul style="list-style-type: none"> <li>Year 7 Autumn – Equality and equivalence</li> </ul>
EQUALITY AND EQUIVALENCE	Autumn	<ul style="list-style-type: none"> <li>Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems</li> </ul>	<ul style="list-style-type: none"> <li>Simplify and manipulate algebraic expressions to maintain equivalence by collecting like terms</li> <li>Use algebraic methods to solve linear equations in one variable</li> </ul>	<ul style="list-style-type: none"> <li>Y6 – pupils may have been introduced to equivalent expressions</li> </ul>	<ul style="list-style-type: none"> <li>Year 7 Spring - Directed Number</li> </ul>



PLACE VALUE AND ORDERING INTEGERS AND DECIMALS	Autumn	<ul style="list-style-type: none"> <li>Extend understanding of the number system and place value to include decimals, fractions, powers and roots</li> </ul>	<ul style="list-style-type: none"> <li>Understand and use place value for decimals, measures and integers of any size</li> <li>Round numbers to an appropriate degree of accuracy</li> <li>Interpret and compare numbers in standard form</li> </ul>	<ul style="list-style-type: none"> <li>Y6 NC link - read, write, order and compare numbers up to 10 000 000 and determine the value of each digit</li> <li>Y6 NC link - round any whole number to a required degree of accuracy</li> </ul>	<ul style="list-style-type: none"> <li>Year 7 Autumn - Fraction, Decimal and Percentage Equivalence</li> </ul>
FRACTION, DECIMAL AND PERCENTAGE EQUIVALENCE	Autumn	<ul style="list-style-type: none"> <li>Extend their understanding of the number system; make connections between number relationships, and their algebraic and graphical representations</li> </ul>	<ul style="list-style-type: none"> <li>Move freely between different numerical representations</li> <li>Express one quantity as a fraction of another, where the fraction is less than one and greater than one</li> <li>Compare two quantities using percentages</li> <li>Work with percentages greater than 100%</li> </ul>	<ul style="list-style-type: none"> <li>Y5 NC link - recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal</li> <li>Y6 NC link - use common factors to simplify fractions; use common multiples to express fractions in the same denomination</li> </ul>	<ul style="list-style-type: none"> <li>Year 7 Spring - Fractions and Percentages of Amounts</li> </ul>
SOLVING PROBLEMS WITH ADDITION AND SUBTRACTION	Spring	<ul style="list-style-type: none"> <li>Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems</li> </ul>	<ul style="list-style-type: none"> <li>Derive and apply formulae to calculate and solve problems involving perimeter</li> <li>Construct and interpret appropriate tables, charts and diagrams for ungrouped numerical data</li> </ul>	<ul style="list-style-type: none"> <li>Y6 NC link - solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate</li> <li>Y5 NC link - solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</li> </ul>	<ul style="list-style-type: none"> <li>Year 7 Spring - Solving problems with multiplication and division</li> </ul>
SOLVING PROBLEMS WITH MULTIPLICATION AND DIVISION	Spring	<ul style="list-style-type: none"> <li>Select and use appropriate calculation strategies to solve increasingly complex problems</li> </ul>	<ul style="list-style-type: none"> <li>Derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms and trapezia</li> </ul>	<ul style="list-style-type: none"> <li>Y6 NC link - recognise that shapes with the same areas can have different perimeters and vice versa</li> <li>Y6 NC link - recognise when it is possible to use formulae</li> </ul>	<ul style="list-style-type: none"> <li>Year 7 Summer - Developing Geometric Reasoning</li> </ul>



			<ul style="list-style-type: none"> <li>Substitute numerical values into formulae and expressions, including scientific formulae</li> </ul>	<p>for area and volume of shapes</p> <ul style="list-style-type: none"> <li>Y6 NC link - calculate the area of parallelograms and triangles</li> </ul>	
FRACTIONS AND PERCENTAGES OF AMOUNTS	Spring	<ul style="list-style-type: none"> <li>Select and use appropriate calculation strategies to solve increasingly complex problems</li> </ul>	<ul style="list-style-type: none"> <li>Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions</li> <li>Interpret integers and fractions as operators</li> </ul>	<ul style="list-style-type: none"> <li>Y6 NC link - add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</li> <li>Y6 NC link - multiply simple pairs of proper fractions, writing the answer in its simplest form</li> <li>Y6 NC link - divide proper fractions by whole numbers</li> </ul>	<ul style="list-style-type: none"> <li>Year 8 Spring - Fractions and Percentages</li> </ul>
DIRECTED NUMBER	Spring	<ul style="list-style-type: none"> <li>Extend their understanding of the number system; make connections between number relationships, and their algebraic and graphical representations</li> </ul>	<ul style="list-style-type: none"> <li>Use four operations, including formal written methods, applied to integers both positive and negative</li> <li>Understand and use the concepts of vocabulary of expressions, equations, inequalities, terms and factors</li> <li>Forming and solving linear equations, including two-step equations</li> </ul>	<ul style="list-style-type: none"> <li>Y6 NC link - use negative numbers in context, and calculate intervals across zero</li> </ul>	<ul style="list-style-type: none"> <li>Year 8 Spring - Brackets, equations and inequalities</li> </ul>
FRACTIONAL THINKING	Spring	<ul style="list-style-type: none"> <li>Move freely between different numerical, algebraic, graphical and diagrammatic representations [for example, equivalent fractions, fractions and decimals, and equations and graphs]</li> </ul>	<ul style="list-style-type: none"> <li>Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, &lt;, &gt;</li> <li>Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative</li> </ul>	<ul style="list-style-type: none"> <li>Y6 NC link - use negative numbers in context, and calculate intervals across zero</li> <li>Y6 NC link - recall and use equivalences between simple fractions, decimals and percentages, including in different contexts</li> </ul>	<ul style="list-style-type: none"> <li>Year 8 Spring - Fractions and Percentages</li> </ul>



CONSTRUCTING, MEASURING AND USING GEOMETRIC NOTATION	Summer	<ul style="list-style-type: none"> <li>• Use language and properties precisely to analyse numbers, algebraic expressions, 2-D and 3-D shapes, probability and statistics.</li> </ul>	<ul style="list-style-type: none"> <li>• Begin to reason deductively in geometry including using geometrical constructions</li> <li>• Use the standard conventions for labelling sides and angles</li> <li>• Identify and construct triangles</li> </ul>	<ul style="list-style-type: none"> <li>• Y6 NC link - draw 2-D shapes using given dimensions and angles</li> <li>• Y6 NC link - recognise, describe and build simple 3-D shapes, including making nets</li> </ul>	<ul style="list-style-type: none"> <li>• Year 7 Summer - Geometric Reasoning</li> </ul>
GEOMETRIC REASONING	Summer	<ul style="list-style-type: none"> <li>• Begin to reason deductively in geometry, number and algebra, including using geometrical constructions</li> </ul>	<ul style="list-style-type: none"> <li>• Apply the properties of angles at a point, angles at a point on a straight line and vertically opposite angles</li> <li>• Understand and use the relationship between parallel lines and alternate and corresponding angles</li> </ul>	<ul style="list-style-type: none"> <li>• Y6 NC link - compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons</li> <li>• Y6 NC link - recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles</li> </ul>	<ul style="list-style-type: none"> <li>• Year 8 Summer - Angles in parallel lines and polygons</li> </ul>
DEVELOPING NUMBER SENSE	Summer	<ul style="list-style-type: none"> <li>• Select and use appropriate calculation strategies to solve increasingly complex problems</li> </ul>	<ul style="list-style-type: none"> <li>• Begin to reason deductively in number and algebra</li> </ul>	<ul style="list-style-type: none"> <li>• Y7 Spring term – solving problems involving addition, subtraction, multiplication and division.</li> </ul>	<ul style="list-style-type: none"> <li>• Year 8 Spring - Number Sense</li> </ul>
SETS AND PROBABILITY	Summer	<ul style="list-style-type: none"> <li>• Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems</li> </ul>	<ul style="list-style-type: none"> <li>• Understand that the probabilities of all possible outcomes sum to 1</li> <li>• Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams</li> </ul>	<ul style="list-style-type: none"> <li>• Pupils have not met probability before but can draw upon their understanding of fractions to simplify answers.</li> </ul>	<ul style="list-style-type: none"> <li>• Year 8 Autumn - Tables and Probability</li> </ul>



<p><b>PRIME NUMBERS AND PROOF</b></p>	<p>Summer</p>	<ul style="list-style-type: none"> <li>• Begin to reason deductively in geometry, number and algebra, including using geometrical constructions</li> </ul>	<ul style="list-style-type: none"> <li>• Use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4 and 5</li> <li>• Make and test conjectures about patterns and relationships; look for proofs or counterexamples</li> </ul>	<ul style="list-style-type: none"> <li>• Y7 Autumn term and Spring term – understanding of constructions and using algebra to generalise findings.</li> </ul>	<ul style="list-style-type: none"> <li>• Year 8 Spring - Number Sense</li> </ul>
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\* Throughout the entire curriculum, content and skills are revisited and reused continuously. The colour code refers to the main strand each topic falls under.