

<b>Autumn</b>	<b>Algebra 1</b>	<b>A1a. Sequences 1</b>	<ul style="list-style-type: none"> <li>Describe and continue sequences in diagram and number forms, both linear and non-linear</li> <li>Compare numerical and graphical forms</li> </ul>	<p><b>Key Vocabulary</b></p> <p>Arithmetic     A type of sequence in which the difference between the terms is constant (synonym for linear).</p> <p>Difference     The result of a subtraction.</p> <p>Geometric     A type of sequence in which each term is found by multiplying the previous term by a fixed non zero number.</p> <p>Linear sequence     A sequence with a constant difference (amount added or subtracted each time).</p> <p>Non-linear     The difference between terms is not constant (it may be <math>\times</math>, <math>\div</math> or some other rule).</p> <p>Sequence     An ordered set of numbers, shapes or objects, arranged according to a rule.</p> <p>Term (Sequence)     A number, shape or object in a sequence</p>
		<b>A1b. Algebraic notation 1</b>	<ul style="list-style-type: none"> <li>Use single function machines and series of two function machines with numbers, bar models and letters</li> <li>Use and interpret algebraic notation</li> <li>Understand and use inverse operations</li> <li>Form and substitute into expressions, including to generate sequences</li> <li>Represent functions graphically</li> </ul>	<p><b>Key Vocabulary</b></p> <p>Evaluate     Work out.</p> <p>Expression     A mathematical sentence made up of numbers, variables and operations.</p> <p>Function     A relationship that instructs how to get from an input to an output.</p> <p>Input     The number or variable put into a function.</p> <p>Linear sequence     A sequence with a constant difference (amount added or subtracted each time).</p> <p>Operation     A mathematical process combining two or more values.</p> <p>Output     The number or expression that comes out of a function.</p> <p>Commutative     The order of values within an operation does not affect the result.</p> <p>Inverse     A mathematical opposite.</p> <p>Substitute     Replace a variable with a numerical value.</p> <p>Term (Algebra)     A single number or variable, or the product of several numbers and variables.</p> <p>Variable     A letter than represents an unknown number or changeable quantity.</p>
		<b>A1c. Equality and equivalence</b>	<ul style="list-style-type: none"> <li>Understand equality</li> <li>Use fact families</li> <li>Form and solve one-step equations</li> <li>Understand equivalence of algebraic expressions</li> <li>Collect like terms</li> </ul>	<p><b>Key Vocabulary</b></p> <p>Coefficient     A number that multiplies a variable or bracket.</p> <p>Equality     Two expressions that have the same value.</p> <p>Equation     A mathematical relationship stating two expressions are equal.</p> <p>Expression     A mathematical sentence made up of numbers, variables and operations.</p> <p>Identity     A mathematical relationship that shows two expressions are equivalent.</p> <p>Like     Terms with the same collection of variables with the same power.</p> <p>Multiplicative     Relating to multiplication or division.</p> <p>Inverse     A mathematical opposite.</p> <p>Solution     The set or value that satisfies the mathematical relationship (makes it true).</p> <p>Solve     Find a numerical value that satisfies a mathematical relationship (makes it true).</p>



<b>Number 1</b>	<b>N1a. Place-Value &amp; Ordering</b>	<ul style="list-style-type: none"> <li>Recognise and use integer place-value up to one billion</li> <li>Recognise and use decimal place-value to the thousandths</li> <li>Work out intervals and use number lines</li> <li>Compare and order numbers</li> <li>Use ordered lists to find the range and the median of a set of numbers</li> <li>Round numbers to positive powers of ten</li> <li>Round numbers to one significant figure</li> </ul>	<p><b>Key Vocabulary</b></p> <p>Approximate To estimate a number, amount or total often using rounding of numbers to make them easier to calculate with.</p> <p>Digit A numerical symbol with place-value.</p> <p>Leading digit The left-most non-zero digit in a number.</p> <p>Median A type of average - the middle piece of data in an ordered list.</p> <p>Place-holder A zero that shows that there are none of a particular place-value in a number.</p> <p>Place-value The value of a digit depending on its position in a number.</p> <p>Range The difference between the greatest and least numbers in a set (a measure of spread).</p> <p>Significant figure A digit that gives meaning to a number. The most significant digit is the left-most non-zero digit.</p> <p>Ascending order From least to greatest.</p> <p>Convention A way in which something is usually done.</p> <p>Descending order From greatest to least.</p> <p>Greatest Has the highest value.</p> <p>Integer A whole number that is positive, negative or zero.</p> <p>Interval A range or space between two points or numbers</p> <p>Least Has the lowest value.</p> <p>Negative A value less than zero (written with a minus sign).</p> <p>Number An amount made up of one or more digits.</p>
	<b>N1b. Fraction, decimals &amp; percentage equivalence</b>	<ul style="list-style-type: none"> <li>Represent tenths and hundredths and thousandths on diagrams and number lines</li> <li>Interchange between fractions, decimals and percentages for multiples of one tenth and one quarter</li> <li>Interpret pie charts</li> <li>Equivalent fractions</li> <li>Convert between other fractions, decimals and percentages (fifths, eighths, thousandths, then all)</li> </ul>	<p><b>Key Vocabulary</b></p> <p>Decimal A base ten number with a decimal point used to separate ones, tenths, hundredths etc.</p> <p>Fraction A type of number that represents how many parts of a whole we have. A fraction represents a division.</p> <p>Place-holder A zero that shows that there are none of a particular place-value in a number.</p> <p>Place-value The value of a digit depending on its position in a number.</p> <p>Recurring A decimal that repeats in a given pattern.</p> <p>Sector A part of the circle enclosed by two radii and an arc.</p> <p>Hundredth One whole split into 100 equal parts.</p> <p>Interval A range or space between two points or numbers</p> <p>Percentage symbol. A proportion of a whole represented as a number between 0 and 100 (parts per 100) - written using the % symbol.</p> <p>Tenth One whole split into 10 equal parts.</p>



<b>Spring</b>	<b>Number 2</b>	<b>N2a. Additive Operations with Decimals</b>	<ul style="list-style-type: none"> <li>Use mental and formal written methods of addition and subtraction with integers and decimals, including choosing the most appropriate method.</li> <li>Solve problems in the context of perimeter and money</li> <li>Solve problems in the context of bar charts and line charts</li> </ul>	<p><b>Key Vocabulary</b></p> <p>Credit Money that goes into a bank account</p> <p>Debit Money that leaves a bank account.</p> <p>Partition To split a value into parts.</p> <p>Perimeter The distance around the edge of a 2D object.</p> <p>Additive Relating to addition or subtraction.</p> <p>Associative The grouping of values within an operation does not affect the result.</p> <p>Commutative The order of values within an operation does not affect the result.</p> <p>Inverse A mathematical opposite.</p> <p>Place-holder A zero that shows that there are none of a particular place-value in a number.</p> <p>Polygon A 2D closed shape made with straight lines.</p>
		<b>N2b. Multiplicative Operations with Decimals</b>	<ul style="list-style-type: none"> <li>Use mental and formal written methods of multiplication and division</li> <li>Multiply by 10, 100, 1000, 0.1 and 0.01, and convert metric units</li> <li>Find the HCF and LCM of small numbers</li> <li>Begin to use the order of operations</li> <li>Evaluate areas of triangles, rectangles and parallelograms</li> <li>Find the mean of a set of numbers</li> </ul>	<p><b>Key Vocabulary</b></p> <p>Array An arrangement of objects in complete rows and columns.</p> <p>Centi A prefix meaning one hundredth.</p> <p>Division The process of sharing equally.</p> <p>Even Numbers that are divisible by 2.</p> <p>Kilo Prefix meaning multiply by 1000.</p> <p>Mili A prefix meaning one thousandth.</p> <p>Multiplication The process of repeated addition.</p> <p>Odd Numbers that are not divisible by 2.</p> <p>Unit The standard way of expressing a measurement (e.g. cm, kg, ml).</p> <p>Dividend The number being divided.</p> <p>Divisor The number to divide by.</p> <p>Factor An integer that divides into a number without leaving a remainder, or, integers that multiply to make a specific number.</p> <p>Multiple The result of multiplying a number by a positive integer.</p> <p>Quotient The result of a division</p>
		<b>N2c. Fractions and percentages of amounts</b>	<ul style="list-style-type: none"> <li>Work out simple fractions and percentages of amounts, with and without a calculator</li> </ul>	<p><b>Key Vocabulary</b></p> <p>Convert To change from one form or unit into another.</p> <p>Percentage symbol. A proportion of a whole represented as a number between 0 and 100 (parts per 100) - written using the % symbol.</p> <p>Equivalent Of equal value for all values of a variable.</p> <p>Fraction bar The line in a fraction.</p> <p>Fraction A type of number that represents how many parts of a whole we have. A fraction represents a division.</p> <p>Place-value The value of a digit depending on its position in a number.</p> <p>Whole The full amount - an value without any decimal or fractional parts.</p>



	<b>Number 3</b>	<b>N3. Directed Number</b>	<ul style="list-style-type: none"> <li>• Order directed numbers, both in contextualised and abstract situations</li> <li>• Revisit four operations to include directed number</li> <li>• Use a calculator with directed number</li> <li>• Solve two-step equations (with and without a calculator)</li> <li>• Use the order of operations</li> </ul>	<p><b>Key Vocabulary</b></p> <p>Directed number    A number with both size and direction (positive or negative).          Expression        A mathematical sentence made up of numbers, variables and operations.          Commutative        The order of values within an operation does not affect the result.          Inverse                A mathematical opposite.          Product                The result of a multiplication.          Square                 A number or term multiplied by itself. An exponent /index of 2.          Square root         A number that when multiplied by itself gives the value (symbol <math>\sqrt{\quad}</math> ).          Subtraction         The process of removing the value of a number from another number.</p>
	<b>Number 4</b>	<b>N4. Additive Operations with fractions</b>	<ul style="list-style-type: none"> <li>• Represent tenths and hundredths on diagrams and number lines</li> <li>• Convert mixed numbers and improper fractions</li> <li>• Adding and subtracting fractions with the same denominator</li> <li>• Adding and subtracting fractions with one denominator a multiple of the other</li> <li>• Adding and subtracting fractions with different denominators</li> <li>• Add/subtract fractions with integers</li> <li>• Add/subtract mixed fractions</li> <li>• Add and subtract fractions and decimals</li> </ul>	<p><b>Key Vocabulary</b></p> <p>Additive             Relating to addition or subtraction.          Denominator        The number below the fraction bar. The number represents the total number of parts.          Equivalent            Of equal value for all values of a variable.          Improper fraction    A fraction with a bigger numerator than denominator.          Mixed fraction        A number with an integer and fractional part.          Numerator             The number above the fraction bar - it represents how many parts are taken.          Proper fraction        A fraction with a smaller denominator than numerator.          Place-value            The value of a digit depending on its position in a number.          Scaling                To multiply or divide to create an equivalent value (or equation).          Substitute             Replace a variable with a numerical value.</p>



<b>Summer</b>	<b>Geometry 1</b>	<b>G1a. Geometric Notation</b>	<ul style="list-style-type: none"> <li>• Understand and use letting and labelling notation for lines and angles</li> <li>• Draw and measure lines and angles accurately</li> <li>• Classify angles</li> <li>• Identify and draw parallel and perpendicular lines</li> <li>• Recognise types of triangles, quadrilateral and other polygons</li> <li>• Construct triangles given SSS, SAS, ASA</li> <li>• Interpreting and constructing pie charts</li> </ul>	<p><b>Key Vocabulary</b></p> <p>Frequency                      The number of times a particular data value occurs.</p> <p>Protractor                      A piece of equipment used to measure and draw angles.</p> <p>Rotation                      A transformation that turns an object in a given direction.</p> <p>Compass                      Equipment used to draw arcs and circles.</p> <p>Isosceles triangle              A triangle with two sides the same length and two angles the same size.</p> <p>Polygon                      A 2D closed shape made with straight lines.</p> <p>Right-angled triangle              A triangle with a 90° angle.</p> <p>Scalene triangle              A triangle with all different sides and angles.</p> <p>Sector                      A part of the circle enclosed by two radii and an arc.</p>
	<b>Geometry 1</b>	<b>G1b. Geometric Reasoning</b>	<ul style="list-style-type: none"> <li>• Calculate and use angles at a point, angles on a straight line and vertically opposite angles</li> <li>• Calculate missing angles in triangles and quadrilaterals</li> </ul>	<p><b>Key Vocabulary</b></p> <p>Concave Quadrilateral              A four-sided polygon where one interior angle exceeds 180°</p> <p>Convex Quadrilateral              A four-sided polygon where every interior angle is less than 180°</p> <p>Interior Angles                      Angles inside the shape.</p> <p>Isosceles triangle                      A triangle with two sides the same length and two angles the same size.</p> <p>Polygon                      A 2D closed shape made with straight lines.</p> <p>Right-angled triangle              A triangle with a 90° angle.</p> <p>Scalene triangle                      A triangle with all different sides and angles.</p> <p>Sum                      The result of an addition (the total).</p> <p>Vertically Opposite                      Equal angles formed when two or more straight lines cross at a point.</p>
	<b>Probability &amp; Statistics 1</b>	<b>Probability 1</b>	<ul style="list-style-type: none"> <li>• Understand and use set notation</li> <li>• Draw and interpret Venn diagrams</li> <li>• Understand and use the language of probability</li> <li>• Calculate the probability of a single event</li> </ul>	<p><b>Key Vocabulary</b></p> <p>Bias                      A built-in error that makes all values wrong (unequal) by a certain amount, e.g. a weighted dice.</p> <p>Element                      An item in a set</p> <p>Intersection                      The overlapping part of a Venn diagram (AND <math>\cap</math>).</p> <p>Mutually Exclusive                      Events that cannot occur at the same time</p> <p>Random                      Something happens by chance and is unable to be predicted.</p>



<b>Number 5</b>			<ul style="list-style-type: none"> <li>Use the sum of probabilities of an event is 1</li> </ul>	Set Union Fair likelihood. Probability	A collection of numbers, shapes or objects. Two ellipses that join (OR U). There is zero bias, and all outcomes have an equal likelihood. The likelihood of an event happening.
	<b>N5a. Number Sense</b>		<ul style="list-style-type: none"> <li>Mental arithmetic strategies</li> <li>Use known facts to derive other facts</li> <li>Evaluate an algebraic expression given a related fact</li> <li>Use estimation to check mental calculations</li> </ul>	<b>Key Vocabulary</b> Dividend Divisor Equation Expression Associative Commutative Quotient	The number being divided. The number to divide by. A mathematical relationship stating two expressions are equal. A mathematical sentence made up of numbers, variables and operations. The grouping of values within an operation does not affect the result. The order of values within an operation does not affect the result. The result of a division
	<b>N5b. Prime Numbers and Proof</b>		<ul style="list-style-type: none"> <li>Recognise prime, square and triangle numbers</li> <li>Express a number as a product of prime factors</li> <li>Powers and roots</li> <li>Make and test conjectures</li> <li>Understand and use counterexamples</li> </ul>	<b>Key Vocabulary</b> Expression Factor HCF LCM Multiple Prime Conjecture Counterexample	A mathematical sentence made up of numbers, variables and operations. An integer that divides into a number without leaving a remainder, or, integers that multiply to make a specific number. Highest common factor - the biggest factor that two or more numbers/terms share. Lowest common multiple - the smallest multiple that two or more numbers/terms share. The result of multiplying a number by a positive integer. An integer with exactly 2 factors. A mathematical statement that has not been rigorously proven. An example that disproves a statement