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| **Autumn 1** | **Autumn 2**  |  **Spring 1**  | **Spring 2**  | **Summer 1** | **Summer 2**  |
| Number and Place Value and Decimals Addition, Subtraction, Multiplication and Division | Fractions AFractions BMeasuring- converting units | RatioAlgebraDecimals | Fractions, decimals and percentageArea, perimeter and volumeStatistics | ShapePosition and direction |  Themed projects, consolidation and problem solving |

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| **Topic**  | **End of Year Expectation**  |
| Number and Place Value | * Count forwards or backwards in steps of integers, decimals, powers of 10
* Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit
* Identify the value of each digit to three decimal places
* Order and compare numbers including integers, decimals and negative numbers
* Find 0.001, 0.01, 0.1, 1, 10 and powers of 10 more/less than a given number
* Round any whole number to a required degree of accuracy
* Round decimals with two decimal places to the nearest whole number and to one decimal place
* Round decimals with three decimal places to the nearest whole number e.g. 327.702 rounds to 328
* Round decimals with three decimal places to the nearest tenth e.g. 327.702 rounds to 327.7
* Round decimals with three decimal places to the nearest hundredth e.g. 327.702 rounds to 327.70
* Round decimals with three decimal places to the nearest whole number or one or two decimal places
* Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places
* Use negative numbers in context, and calculate intervals across zero
* Describe and extend number sequences including those with multiplication and division steps, inconsistent steps, alternating steps and those where the step size is a decimal
* Solve number and practical problems that involve all of the above
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| Addition and Subtraction | * Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method)
* Select a mental strategy appropriate for the numbers in the calculation
* Recall and use addition and subtraction facts for 1 (with decimals to two decimal places)
* Perform mental calculations including with mixed operations and large numbers and decimals
* Add and subtract whole numbers and decimals using formal written methods (columnar addition and subtraction)
* Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
* Use knowledge of the order of operations to carry out calculations
* Solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why
* Solve problems involving all four operations, including those with missing numbers
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| Multiplication and Division | * Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method)
* Identify common factors, common multiples and prime numbers
* Use partitioning to double or halve any number
* Perform mental calculations, including with mixed operations and large numbers
* Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
* Multiply one-digit numbers with up to two decimal places by whole numbers
* Divide numbers up to 4 digits by a two-digit whole number using the formal written methods of short or long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
* Use written division methods in cases where the answer has up to two decimal places
* Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
* Use knowledge of the order of operations to carry out calculations
* Solve problems involving all four operations, including those with missing numbers
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| Number – Fractions | * Compare and order fractions, including fractions > 1 (including on a number line)
* Use common factors to simplify fractions; use common multiples to express fractions in the same denomination
* Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts
* Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375 and 𝟑/𝟖 )
* Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
* Multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. 𝟏 /𝟒 x 𝟏/ 𝟐 = 𝟏/ 𝟖 )
* Divide proper fractions by whole numbers (e.g. 𝟏 /𝟑 ÷ 2 = 𝟏 /𝟔 )
* Find simple percentages of amounts
* Solve problems involving fractions
* Solve problems which require answers to be rounded to specified degrees of accuracy
* Solve problems involving the calculation of percentages (e.g. of measures and such as 15% of 260) and the use of percentages for comparison
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| Ration and Proportion  | * Solve problems involving the relative sizes of two quantities where missing values can be found using integer multiplication / division facts
* Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples
* Solve problems involving similar shapes where the scale factor is known or can be found
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| Algebra  | * Use simple formulae
* Generate and describe linear number sequences
* Express missing number problems algebraically
* Find pairs of numbers that satisfy an equation with two unknowns
* Enumerate possibilities of combinations of two variables
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| Geometry – Property of Shapes  | * Compare/classify geometric shapes based on the properties and sizes
* Draw 2-D shapes using given dimensions and angles
* Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
* Recognise, describe and build simple 3-D shapes, including making nets
* Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles
* Find unknown angles in any triangles, quadrilaterals, regular polygons
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| Geometry – Position and Direction  | * Describe positions on the full coordinate grid (all four quadrants)
* Draw and translate simple shapes on the coordinate plane, and reflect them in the axes
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| Statistics  | * Continue to complete and interpret information in a variety of sorting diagrams (including sorting properties of numbers and shapes)
* Interpret and construct pie charts and line graphs and use these to solve problems
* Solve comparison, sum and difference problems using information presented in all types of graph
* Calculate and interpret the mean as an average
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| Measurement  | * Use, read and write standard units of length, mass, volume and time using decimal notation to three decimal places
* Convert between standard units of length, mass, volume and time using decimal notation to three decimal places
* Convert between miles and kilometres
* Recognise that shapes with the same areas can have different perimeters and vice versa
* Calculate the area of parallelograms and triangles
* Recognise when it is possible to use formulae for area and volume of shapes
* Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3 ) and cubic metres (m3 ), and extending to other units (e.g. mm3 and km3 )
* Calculate differences in temperature, including those that involved a positive and negative temperature
* Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
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