Mathematics Curriculum

Term	Autumn A	Spring	Summer
Nursery	**Numerical Pattern / Number** ▪ Begin to compare quantities ▪ Sort, match and label groups ▪ Find the group with more / the same / less ▪ Compare sets of identical objects, then alter one variable e.g. colour/ size, and know the number remains constant. ▪ Notice, identify and talk about patterns around them eg Clothing, autumn – natural resources ▪ Begin to copy / continue and talk about a pattern – ABAB patterns with objects / actions ▪ Begin to recite numbers to 5 in correct order ▪ Explore 1:1 correspondence ▪ Begin to understand that the last number reached when counting a small set of objects tells you how many there are in total (cardinal number) ▪ Begin to say one number for each item to 3 ▪ Join in with number rhymes / songs with props and actions ▪ Use some number names in play **Shape, Space & Measure** ▪ Begin to select shapes for appropriate tasks ▪ Show interest in shapes in the environment ▪ Manipulate and turn shapes ▪ Begin to talk about shapes - circle, triangle, rectangle, square round, pointy, spotty, stripy ▪ Make comparisons between objects using appropriate vocabulary e.g. size - big, small ▪ Understand positional language within daily routine - in, out, on ▪ Begin to understand some language of time within the daily routine - next, later, after, night time	**Numerical Pattern / Number** ▪ Sort and match objects accordingly e.g. size / shape ▪ Begin to compare quantities using - more than, fewer than ▪ Name and talk about patterns ▪ Continue and talk about a pattern – ABAB ▪ Recite numbers to 5 ▪ Join in with number rhymes to 5 using props and fingers ▪ Use fingers to represent numbers with increasing accuracy ▪ Use some number names in play with some accuracy ▪ Fast recognition of objects up to 1 and sometimes 2 – subitising ▪ Begin to count up to sets of 5 objects (1:1 correspondence) ▪ Begin to experiment with their own symbols and marks as well as numerals **Shape, Space & Measure** ▪ Select shapes appropriately in a range of contexts ▪ Begin to combine shapes to make new ones ▪ Talk about shapes using autumn words plus sides, corners, straight, line, bend, curve ▪ Spatial awareness: ⇨ Begin to experience different viewpoints e.g. in context of transport topic ▪ Understand positional language - autumn words + under, behind ▪ Describe a familiar route. ▪ Begin to discuss routes and locations using words like in front of , behind ▪ Begin to make comparisons between objects using appropriate vocabulary - empty, full, more, lots, bigger, smaller ▪ Begin to use some language of time within the daily routine ▪ Begin to describe a familiar route ▪ Begin to describe a sequence of events … first, before	**Numerical Pattern / Number** ▪ Talk about and identify patterns around them. ▪ Extend and create ABAB patterns ▪ Compare quantities using language: 'more than', 'fewer than' ▪ Recite numbers past 5 ▪ Fast recognition of up to 3 objects - subitising ▪ Say one number for each item in order: 1,2,3,4,5. ▪ Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle'). ▪ Show 'finger numbers' up to 5. ▪ Link numerals and amounts up to 5 ▪ Experiment with own symbols and marks as well as numerals. ▪ Solve real world mathematical problems with numbers up to 5 **Shape, Space & Measure** ▪ Talk about and explore 2D and 3D shapes - cube, cylinder, faces ▪ Understand position through words Autumn and Spring words plus top, bottom ▪ Begin to develop spatial awareness ▪ Experience different viewpoints e.g. in context of gardens ▪ Describe a familiar route. Discuss routes and locations using words like - in front of, behind ▪ Make comparisons between objects relating to size, length, weight and capacity spring words, long, short, tall ▪ Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc. ▪ Combine shapes to make new ones ▪ Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then'

Mathematics Curriculum

Term	Autumn A	Spring	Summer
Reception	**Number:** ▪ Continue, copy and create repeating patterns ▪ Continue an ABC/ABB/ABBC pattern ▪ Copy an ABC/ABB/ABBC pattern ▪ Make own ABC/ABB/ABBC patterns ▪ Identify the unit of repeat in a pattern ▪ Continue a pattern which ends mid-unit of repeat ▪ Compare numbers - .more, less, greater, fewer ▪ Count objects, actions and sounds. ...count ▪ Subitise up to 5 ▪ Explore the composition of numbers to 5 ▪ Part–whole: identify smaller numbers within a number (conceptual subitising) - total, altogether, makes, equals ▪ Inverse operations (understand that we can partition a number of things into two groups, and to recognise that those groups can be recombined to make the same total) - set, group, part, whole, total ▪ Understand that a number can be partitioned into different pairs of numbers (number bonds up to 5) ▪ Link the number symbol (numeral) with its cardinal number value. ▪ Begin to count beyond ten ▪ Begin to count on and back from a given number ▪ Solve real world mathematical problems with numbers up to 5 **Numerical patterns:** ▪ Begin to describe properties of 2D and 3D shapes - circle, square, rectangle, triangle, oval, hexagon, semi-circle, sides, corners, cube, cuboid, cylinder, faces, vertices, edges ▪ Begin to compare length, weight and capacity, length, height, weight ▪ Recognise attributes, e.g.. use language of weight, length, height or capacity - heavy / light, short/tall, long large, thick, thin, wide, narrow ▪ Compare and begin to order 2-3 items by length, weight, height and capacity e.g. It is taller / shorter than… taller, tallest, shorter, shortest, longer, longest, heavier, heaviest ▪ Begin to estimate and predict using measurement - some, less, a bit, all, most, both, few, enough, half, whole	**Number:** ▪ Continue, copy and create repeating patterns ▪ Identify errors in an ABC/ABB/ABBC pattern. ▪ Begin to symbolise their patterns and the unit of repeat - pattern, draw, unit of repeat ▪ Make a pattern which continues around a circle. ▪ Count beyond ten □ count on and back from a given number ▪ Understand the 'one more than/one less than' relationship between consecutive numbers ▪ Compare numbers that are far apart, near to and next to each other. …more, less, far apart, close to, next to ▪ Use "more" and "fewer" to explain unfair sharing…more, less, fewer, fair, unfair, same, different ▪ Explore the composition of numbers to 10 ▪ Automatically recall number bonds for numbers 0–10. ▪ Understand that a number can be partitioned into different pairs of numbers (number bonds to 10) ▪ Recognises the relationship between size and number of units - smaller, bigger, more, less, fewer ▪ Understand that a number can be partitioned into more than two numbers. ▪ Solve problems using their knowledge of number bonds to 5 and begin to solve problems using number bonds to 10 **Numerical patterns:** ▪ Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. ▪ Describe properties of 2D and 3D shapes. - plus cone, pyramid, sphere ▪ Select, rotate and manipulate shapes in order to develop spatial reasoning skills. ▪ Compare length, weight and capacity ▪ Order 2-3 items by length, weight, height or capacity ▪ Estimate / predict using measurement language ▪ Begin to use non-standard units to compare things - measure, ▪ Begin to use time to sequence events - first, second, third, then, next, after, later, before ▪ Begin to use tools to measure short lengths of time	**Number**: ▪ Have a deep understanding of number to 10, including the composition of each number ▪ Subitise (recognise quantities without counting) up to 5 confidently ▪ Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. - group, set, part, whole, double ▪ Solve problems using their knowledge of number bonds to 5/10. **Numerical patterns:** ▪ Verbally count beyond 20, recognising the pattern of the counting system ▪ Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity - same as, equal to, more than, greater than, less than, fewer than ▪ Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally - odd, even, double, half, fair, unfair, equal, unequal, greater, more, less, fewer

Mathematics Curriculum

Term	Autumn A	Autumn B	Spring A	Spring B	Summer A	Summer B
Year 1	**Counting:** Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. **Writing to 10:** Read and write numbers from 1 to 10 in numerals and words. **Number Bonds** **Comparing numbers:** Given a number, identify one more and one less. Use the language of: equal to, more than, less than (fewer), most, least.	**Counting:** Count, read and write numbers to 100 in numerals. **Addition within 10** **Subtraction within 10** **Position:** Describe position, direction and movement, including half, quarter and three-quarter turns.	**Number to 20:** Read and write numbers from 1 to 20 in numerals and words. **Addition and subtraction within 20:** Represent and use number bonds and related subtraction facts within 20. Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. **Geometry-Shapes and Patterns:** recognise and name common 2-D and 3-D shapes, including: * 2-D shapes [e.g. rectangles (including squares), circles and triangles] * 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres]. **Length and Height:** Measure and begin to record the following: Measure and begin to record the following: lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half]	**Numbers to 50** **Addition and subtraction word problems:** Add and subtract one-digit and two-digit numbers to 20, including zero. Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ - 9. **Multiplication:** Count in multiples of twos, fives and tens.	**Numbers to 100:** Count, read and write numbers to 100 in numerals. **Division Fractions:** Recognise, find and name a half as one of two equal parts of an object, shape or quantity. Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity **Time:** Sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] **Money:** recognise and know the value of different denominations of coins and notes	**Volume and Capacity, Mass:** Measure and begin to record the following: * mass/weight * capacity and volume

Mathematics Curriculum

	Autumn A	Autumn B	Spring A	Spring B	Summer A	Summer B
Year 2	**Counting to 100:** Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward. **Place value :** Compare and order numbers from 0 up to 100. **Addition and Subtraction:** Recall and use addition and subtraction facts to 2.0 Fluently, and derive and use related facts up to 100. Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: * a two-digit number and ones * a two-digit number and tens * two two-digit numbers * add three one-digit numbers. Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	**Multiplication, Arrays** **Commutativity:** Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward. Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. Show that multiplication of two numbers can be done in any order (commutative). **Division** **Grouping and sharing:** Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.	**Number and place value:** Identify, represent and estimate numbers using different representations, including the number. **Addition and subtraction:** Using recall of addition and subtraction facts and mental calculation strategies * using partitioning and counting on strategies Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: * a two-digit number and ones * a two-digit number and tens * two two-digit numbers * adding three one-digit numbers. **Multiplication and division:** Repeated addition and subtraction, arrays, grouping and using times tables facts. Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. **Fractions:** Count in fractions up to 10, starting from any number and using the1/2 and 2/4 equivalence on the number line. Recognise, find, name and write fractions $^{1}/_{3}$, $^{1}/_{4}$, $^{2}/_{4}$ and $^{3}/_{4}$ of a length, shape, set of objects or quantity.	**Length, Measuring cm and m:** Choose and use appropriate standard units to estimate and measure **length/height** in any direction (m/cm); to the nearest appropriate unit, using rulers. **Mass:** Choose and use appropriate standard units to estimate and measure **mass** (kg/g); to the nearest appropriate unit, using scales. **Temperature:** Choose and use appropriate standard units to estimate and measure **temperature** (°C); to the nearest appropriate unit, using thermometers. **Picture Graphs:** Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. Ask and answer questions about totalling and comparing categorical data.	**Geometry-2D shapes:** Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. **Geometry-3D shapes:** Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]. Compare and sort common 2-D and 3-D shapes and everyday objects.	**Time:** Compare and sequence intervals of time. **Volume:** Choose and use appropriate standard units to estimate and measure **capacity** (litres/ml) to the nearest appropriate unit, using measuring vessels. **Position:** Use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).

Mathematics Curriculum

	Autumn A	Autumn B	Spring A	Spring B	Summer A	Summer B
Year 3	**Counting:** Count from 0 in multiples of 4, 8, 50 and 100; Find 10 or 100 more or less than a given number. Count up and down in tenths **Place Value:** Compare and order numbers up to 1000. Read and write numbers up to 1000 in numerals and in words. Recognise the place value of each digit in a threedigit number (hundreds, tens, ones). **Mental Calculation:** Add and subtract numbers mentally, including: * a three-digit number and ones * a three-digit number and tens * a three-digit number and hundreds. **Written methods for addition and subtraction:** Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction **Multiplication and division:** Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.	**Multiplication and Division word problems:** Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects. **Measures:** measure, compare, add and subtract: **lengths**	**Measures:** Measure, compare, add and subtract: **mass** (kg/g); **volume/capacity** (l/ml).	**Money:** Add and subtract amounts of **money** to give change, using both £ and p in practical contexts. **Time:** Compare durations of events, for example to calculate the time taken by particular events or tasks. Estimate and read time with increasing accuracy to the nearest minute. Record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight. Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks. Know the number of seconds in a minute and the number of days in each month, year and leap year.	**Fractions:** Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators Recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10. Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators **Comparing fractions:** Compare and order unit fractions, and fractions with the same denominators. **Equivalence:** Recognise and show, using diagrams, families of common equivalent fractions. **Addition and subtraction of fractions:** Add and subtract fractions with the same denominator within one whole (e.g. $^{5}/_{7} + {}^{1}/_{7} = {}^{6}/_{7}$). **Statistics:** Interpret and present data using bar charts, pictograms and tables solve one-step and two-step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.	**Geometry:** Draw 2-D shapes and make 3-D shapes using modelling materials. Recognise 3-D shapes in different orientations and describe them. Recognise angles as a property of shape or a description of a turn. Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn. Identify whether angles are greater than or less than a right angle. Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. **Measuring and calculating perimeter:** Measure the **perimeter** of simple 2-D shapes.

Mathematics Curriculum

	Autumn A	Autumn B	Spring A	Spring B	Summer A	Summer B
Year 4	**Counting:** Count backwards through zero to include negative numbers. Find 1000 more or less than a given number Count in multiples of 6, 7, 9, 25 and 100. Count up and down in hundredths. **Place value:** Order and compare numbers beyond 1000. Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones). **Rounding:** Round any number to the nearest 10, 100 or 1 000. Round decimals with one decimal place to the nearest whole number. **Addition and Subtraction to 10000:** Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. **Multiplication and division:** Recall multiplication and division facts for multiplication tables up to 12 × 12. Recognise and use factor pairs and commutativity in mental calculations. Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects. **Properties of number:** Recognise and use factor pairs and commutativity in mental calculations.	**Multiplication and division:** Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers. **Further multiplication and division:** Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. **Statistics:** Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	**Time:** Read, write and convert time between analogue and digital 12 and 24-hour clocks. Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. **Fractions:** Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten add and subtract fractions with the same denominator. **Equivalence:** Recognise and show, using diagrams, families of common equivalent. **Decimals:** Compare numbers with the same number of decimal places up to two decimal places. **Fractions:** Recognise and write decimal equivalents of any number of tenths or hundredths recognise and write decimal equivalents to $^{1}/_{4}$; $^{1}/_{2}$; $^{3}/_{4}$.	**Decimals:** Round decimals with one decimal place to the nearest whole number. **Money:** Estimate, compare and calculate different measures, including money in pounds and pence.	**Measures: Volume and length** Measure and calculate the **perimeter** of a rectilinear figure (including squares) in centimetres and metres. Find the area of rectilinear shapes by counting squares. Convert between different units of measure (e.g. kilometre to metre.	**Geometry:** Identify lines of symmetry in 2-D shapes presented in different orientations. Complete a simple symmetric figure with respect to a specific line of symmetry. Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. Identify acute and obtuse angles and compare and order angles up to two right angles by size. **Position, Direction and Movement:** Describe positions on a 2-D grid as coordinates in the first quadrant. Describe movements between positions as translations of a given unit to the left/right and up/down. Plot specified points and draw sides to complete a given polygon. **Roman numerals:** Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.

Mathematics Curriculum

	Autumn A	Autumn B	Spring A	Spring B	Summer A	Summer B
Year 5	**Counting:** Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero. Count forwards or backwards in steps of powers of 10 for any given number up to 1000 000. **Place value:** Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit. Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. **Rounding:** Round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000. Round decimals with two decimal places to the nearest whole number and to one decimal place. **Mental Calculation:** Add and subtract numbers mentally with increasingly large numbers. **Written methods for addition and subtraction:** Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. **Written methods for multiplication and division:** Multiply and divide numbers mentally drawing upon known facts. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. Multiply numbers up to 4 digits by a one- or two-digit number using a	**Statistics:** Complete, read and interpret information in tables, including timetables. Solve comparison, sum and difference problems using information presented in a line graph. **Fractions:** Compare and order fractions whose denominators are all multiples of the same number. Add and subtract fractions with the same denominator and multiples of the same number. Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. $^2/_5 + ^4/_5 = ^6/_5 = 1^1/_5$). Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. Solve problems which require knowing percentage and decimal equivalents of $^1/_2$, $^1/_4$, $^1/_5$, $^2/_5$, $^4/_5$ and those with a denominator of a multiple of 10 or 25. **Equivalence:** Identify, name and write equivalent fractions of a	**Decimals**: Read, write, order and compare numbers with up to three decimal places. Round decimals with two decimal places to the nearest whole number and to one decimal place.	**Comparing quantities** **Finding percentages** **Geometry:** Identify 3-D shapes, including cubes and other cuboids, from 2-D representations. Draw given angles, and measure them in degrees (^{o}). Use the properties of rectangles to deduce related facts and find missing lengths and angles. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. Know angles are measured in degrees. Estimate and compare acute, obtuse and reflex angles. identify: * angles at a point and one whole turn (total 360^o) * angles at a point on a straight line and ½ a turn (total 180^o) * other multiples of 90^o	**Position, Direction and Movement:** Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed. **Time:** Solve problems involving converting between units of time. **Converting between different units of measure:** Convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre). Understand and use equivalences between metric units and common imperial units such as inches, pounds and pints.	**Measures:** Calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes. **Roman numerals:** Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.

Mathematics Curriculum

	Autumn A	Autumn B	Spring A	Spring B	Summer A	Summer B
Year 5	formal written method, including long multiplication for two-digit numbers. Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context. Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. **Properties of number:** Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}).	given fraction, represented visually, including tenths and hundredths. Read and write decimal numbers as fractions (e.g. 0.71 = $^{71}/_{100}$). Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. 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 as a decimal fraction.				

Mathematics Curriculum

	Autumn A	Autumn B	Spring A	Spring B	Summer A	Summer B
Year 6	**Counting:** Use negative numbers in context, and calculate intervals across zero. **Place value:** Read, write, order and compare numbers up to 10 000000 and determine the value of each digit. **Rounding:** Solve problems which require answers to be rounded to specified degrees of accuracy. Multiplying and dividing by 10, 100, 1000, **Mental Calculation:** Perform mental calculations, including with mixed operations and large numbers. Use their knowledge of the order of operations to carry out calculations involving the four operations. **Addition and Subtraction:** Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. **Multiplication and division:** Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. Divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division. Where appropriate for the context divide	**Multiplication and division of decimals:** Multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places. Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places. Use written division methods in cases where the answer has up to two decimal places. **Fractions:** Compare and order fractions, including fractions >1. 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. $^1/_4 \times {}^1/_2 = {}^1/_8$). Multiply one-digit numbers with up to two decimal places by whole numbers. Divide proper fractions by whole numbers (e.g. $^1/_3 \div 2 = {}^1/_6$). **Equivalence:** Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^3/_8$). 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) for a simple fraction (e.g. $^3/_8$). **Measures:** Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3)	**Measures:** Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places. Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. **Fraction, Decimal Percentage:** Find percentage of amounts **Ratio and proportion:** Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison. Solve problems involving similar shapes where the scale factor is known or can be found. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.	**Algebra:** Express missing number problems algebraically. Find pairs of numbers that satisfy number sentences involving two unknowns. Enumerate all possibilities of combinations of two variables. Use simple formulae. Generate and describe linear number sequences. **Statistics:** Interpret and construct pie charts and line graphs and use these to solve problems. Calculate and interpret the mean as an average. *Co-ordinates; translation; reflection; lines of symmetry* **Ratio and proportion:** Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison. Solve problems involving similar shapes where the scale factor is known or can be found. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.	***Equivalent fractions:*** ordering and comparing fractions; relationship between fractions, decimals, percentages; multiplication and division Solving number problems and puzzles, use and application of number skills Reading, interpreting and drawing line graphs, pie charts; mean, median, mode, range Co-ordinates; translation; reflection; lines of symmetry **Position, Direction and Movement:** 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. **Statistics:** Interpret and construct pie charts and line graphs and use these to solve problems. Calculate and interpret the mean as an average. **Counting:** Use negative numbers in context, and calculate intervals across zero.	*Equivalent fractions; ordering and comparing fractions; relationship between fractions, decimals, percentages; multiplication and division* *Solving number problems and puzzles, use and application of number skills* *Reading, interpreting and drawing line graphs, bar graphs, pie charts; mean, median, mode, range* **Measurement** Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3. Recognise when it is possible to use formulae for area and volume of shapes. **Geometry** Recognise, describe and build simple 3-D shapes, including making nets. Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. Draw 2-D shapes using given dimensions and angles. Compare and classify

Mathematics Curriculum

	Autumn A	Autumn B	Spring A	Spring B	Summer A	Summer B
Year 6	numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. Solve problems involving addition, subtraction, multiplication and division. **Properties of number:** Identify common factors, common multiples and prime numbers.	and cubic metres (m^3), and extending to other units such as mm^3 and km^3. Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. 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. Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places. Convert between miles and kilometres. **Geometry:** Recognise, describe and build simple 3-D shapes, including making nets. Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. Draw 2-D shapes using given dimensions and angles. Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.				**Position, Direction and Movement:** 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. **Statistics – Graphs and Averages:** Interpret line graphs Convert between miles and kilometres.