Maths Subject Overview

Reception	EYFS Mathematics Education Programme (Statutory)
	Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

Key Knowledge and Skills:
- Count objects, actions and sounds.
- Subitise.
- Link the number symbol (numeral) with its cardinal number value.
- Count beyond ten.
- Compare numbers.
- Understand the 'one more than/one less than' relationship between consecutive numbers.
- Automatically recall number bonds for numbers 0–5 and some to 10.
- Select, rotate and manipulate shapes to develop spatial reasoning skills.
- Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.
- Continue, copy and create repeating patterns.
- Compare length, weight and capacity.

ELG: Number (Statutory)
Children at the expected level of development will:
- Have a deep understanding of number to 10, including the composition of each number;
- Subitise (recognise quantities without counting) up to 5;
- 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.

ELG: Numerical Patterns (Statutory)
Children at the expected level of development will:
- 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;
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

	Autumn	Spring	Summer
	Knowledge and Skills • Match and sort • Compare amounts • Compare size, mass and capacity • Explore pattern • Represent, compare and compose numbers 1, 2, 3 • Identify circles and triangles • Use positional language • Represent numbers to 5 • Identify one more and less • Identify shapes with four sides • Begin to recognise time	**Knowledge and Skills** • Introduce zero • Compare numbers to 5 • Composition of 4 and 5 • Compare mass and capacity • Represent, compare and compose numbers 1, 2, 3 • Make pairs • Combine two groups • Explore length, height and time • Represent, compare and compose numbers 9 and 10 • Compare numbers to 10 and recognise number bonds • Explore 3-D shapes and pattern	• Represent, compare and compose numbers 11 to 20 • Compare numbers to 20 and recognise number bonds • Develop understanding of time • Explore patterns • Identify coins and represent amounts of money in different ways. • Consolidate understanding of shape, space and measures
	Topics Getting To Know You Just Like Me It's Me 1, 2, 3! Light and Dark Consolidation	Topics Alive in 5 Growing 6, 7, 8 Building 9 and 10 Consolidation	Topics On the Move Superhero to 20 and Beyond First then Now Find my Pattern Consolidation

	Autumn		Spring		Summer	
	Key Mathematical Concepts	Knowledge and Skills	Key Mathematical Concepts	Knowledge and Skills	Key Mathematical Concepts	Knowledge and Skills
Year 1	➢ Place Value (within 10) ➢ Addition and Subtraction (within 10) ➢ Shape	• Count to ten forwards and backwards, beginning with 0 or 1, or from any given number. • Count, read and write numbers to 10 in numerals and words. • Given a number, identify one more of one less. • Identify and represent numbers using objects and pictorial representations using the number line. • Represent and use number bonds and subtraction facts within 10 • Read, write and interpret mathematical statements involving addition, subtraction, multiplication and division. • Add and subtract one digit numbers to 10 including zero. • Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems. • Recognise and name common 2-D and 3-D shapes.	➢ Place value (within 20) ➢ Addition and Subtraction (within 20) ➢ Place Value (within 50) ➢ Length and Height ➢ Mass and Volume	• Count to 20 forwards and backwards. • Count, read and write numbers to 20. • Given a number, identify one more and one less. • Identify and represent numbers using objects and pictorial representations • Represent and use number bonds and related subtraction facts within 20. • Read, write and interpret mathematical statements involving the four operations. • Add and subtract one-digit and two-digit numbers to 20, including zero. • Solve one step problems that involve addition and subtraction, using concrete and pictorial representations and missing number problems. • Count to 50 forwards and backwards. • Count, read and write to 50 in numerals. • Identify one more or one less than a given number. • Identify and represent numbers using objects and pictorial representations. • Count in multiples of 2, 5, 10 • Measure and begin to record lengths and height. • Compare, describe and solve practical problems for lengths and heights.	➢ Multiplication and Division ➢ Fractions ➢ Position and Direction ➢ Place Value (within 100) ➢ Money ➢ Time	• Solve one step problems involving multiplication and division • Recognise, find and name a half and a quarter as one of two equal parts of an object, shape or quantity • Describe position, direction and movement, including whole, half, quarter and three quarter turns. • Count to and across 100, forwards and backwards from any given number. • Count, read and write numbers to 100 in numerals. • Identify one more or one less than a given number. • Identify and represent numbers using objects and representations including the number line and the language of equal to, more than, less than, most, least. • Recognise and know the value of different denominations of coins and notes • Sequence events in chronological order. • Recognise and use language relating to dates. • Tell the time to the hour and half past and draw the hands. • Measure and begin to record time.

					• Measure and being to record mass/weight, capacity and volume • Compare, describe and solve practical problems for mass/weight, capacity and volume.		
Year 2	➢ Place Value ➢ Addition and Subtraction ➢ Shape	• Read and write numbers to at least 100 in numerals and words. • Recognise the place value of each digit in a two digit number. • Identify, represent and estimate numbers. • Compare and order numbers from 0-100, using <, >, = signs. • Use place value and number facts to solve problems. • Count in steps of 2, 3, 5 from 0 and in 10s from any number forwards and backwards. • Recall and use addition and subtraction facts to 20 and use related facts to 20. • Add and subtract numbers using concrete objects, pictorial representations and mentally. • Show that the addition of two numbers can be done in any order and subtraction cannot. • Solve problems with addition and subtraction. • Recognise and use the inverse relationship. • Identify and describe the properties of 2-D and 3-D shapes. • Identify 2-D shapes on the surface of 3-D shapes, including edges, vertices and faces. • Compare and sort common 2-D and 3-D shapes.	➢ Money ➢ Muiltiplication and division ➢ Length and height ➢ Mass, capacity and temperature	• Recognise and use symbols for pounds and pence. • Find different combinations of coins that equal the same amount. • Solve simple problems in a practical context involving addition and subtraction of money. • Recall and use multiplication and division facts for the 2, 5 and 10 times tables, including recognising odds and evens. • Calculate mathematical statements for multiplication and division within the tables and write them using the correct signs. • Solve problems involving multiplication and division. • Show that the multiplication of two numbers can be done in any order and division cannot. • Choose and use appropriate standard units to estimate and measure length/height/mass/temperature/capacity • Compare and order lengths, mass, volume/capacity and record results using <,> and =	➢ Statistics ➢ Fractions ➢ Position and direction ➢ Problem solving ➢ Time	• Interpret and construct simple pictograms, tally charts, block diagrams and tables. • Ask and answer simple questions by counting the number of objects in each category and sorting by quantity. • Ask and answer questions about totalling and comparing categorical data. • Recognise, find, name and write fractions for a half, third, quarter, two and three quarters. • Write simple fractions and recognise equivalence. • Use mathematical vocabulary to describe position, direction and movement including in a straight line and rotation. • Order and arrange combinations of mathematical objects in patterns and sequences. • Tell and write the time to five minutes, including quarter past/to and draw the hands on the clock face. • Know the number of minutes in an hour and hours in a day • Compare and sequence intervals of time. • Choose and use appropriate standard units to estimate and measure length/height/mass/temperature/capacity. • Compare and order lengths, mass, volume/capacity and record results using <,> and =

Year 3	• Place Value • Addition and Subtraction • Multiplication and Division	• Identify, represent and estimate numbers using different representations. • Find 10 or 100 more or less than a given number. • Recognise the place value of each digit in a three-digit number. • Compare and order numbers up to 1000. • Read and write numbers up to 1000 in numerals and words. • Solve number problems and practical problems. • Count from 0 in multiples of 4, 8 50 and 100. • Add and subtract numbers mentally. • Add and subtract numbers with p to three digits, using formal written methods. • Estimate the answer to a calculation and use inverse operations to check answers. • Solve problems, including missing number problems. • Count from 0 in multiples of 4, 8, 50 and 100. • Recall and use multiplication and division facts for the 3, 4 and 8 tables. • Write and calculate mathematical statements for multiplication and division using tables they know. • Solve problems, including missing number problems, involving multiplication and division.	• Multiplication and Division • Length and perimeter • Fractions • Mass and capacity	• Recall and use multiplication and division facts for the 3,4, 8 tables. • Write and calculate mathematical statements for multiplication and division using the tables they know. • Solve problems, including missing number problems, involving multiplication and division. • Measure the perimeter of simple 2-D shapes. • Count up and down in tenths. • Recognise and use fractions as numbers. • Recognise, find and write fractions of a discrete set of objects. • Measure, compare, add and subtract lengths, mass, volume/capacity.	• Fractions • Money • Time • Properties of Shape • Statistics	• Recognise and show, using diagrams, equivalent fractions • Compare and order unit fractions and fractions with the same denominators. • Add and subtract fractions with the same denominator within one whole. • Add and subtract amounts of money to give change, using £ and p. • Tell and write the time from an analogue clock, using Roman numerals and 12/24 hour clocks. • Estimate and read time to the nearest minute. • Record and compare time in terms of seconds, minutes and hours. • Use vocabulary such as o'clock, am/pm, morning, afternoon, noon, midnight. • Know the number of seconds in a minute and the number of days in each month, year and leap year. • Compare durations of events. • Recognise angles as a property of shape or description of a turn. • Recognise that two right angles make a half-turn, three make three quarters and four make a whole. • Identify whether angles are greater or less than a right angle. • Identify horizontal, vertical, perpendicular and parallel lines. • Draw 2-D shapes and make 3-D shapes using materials. • Recognise 3-D shapes in different orientations. • Interpret and present data using bar charts, pictograms and tables.

						• Solve one and two-step questions using information presented in bar charts, pictograms and tables .
Year 4	➢ Place Value ➢ Addition and Subtraction ➢ Area ➢ Multiplication and Division	• Count in multiples of 6, 7, 9, 25 and 1000. • Find 1000 more or less than a number. • Recognise the place value of each digit in a four-digit number. • Order and compare numbers beyond 1000. • Identify, represent and estimate numbers. • Round any number to the nearest, 10, 100, 1000. • Solve number and practical problems that involve all of the above and with increasingly large positive numbers. • Count backwards through zero to include negative numbers. • Add and subtract numbers with up to 4 digits using the formal written methods. • Estimate and use inverse operations to check answers. • Solve addition and subtraction two step problems in contexts. • Find the area of rectilinear shapes by counting squares. • ==Convert between different units of measure.== • Recall and use multiplication and division facts up to 12 x 12 • Count in multiples of 6, 7, 9, 25 and 1000. • Use place value, known and derived facts to multiply and divide mentally. • Solve problems involving multiplying and adding	➢ Multiplication and Division ➢ Length and perimeter ➢ Fractions ➢ Decimals	• Recall and use multiplication and division facts up to 12 x 12. • Use place value, known and derived facts to multiply and divide mentally. • Recognise and use factor pairs. • Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. • Solve problems involving multiplying and adding including using the distributive law to multiply two-digit numbers by one-digit. • Measure and calculate the perimeter of a rectilinear figure in cm and m. • Recognise and show, using diagrams, families of common equivalent fractions. • Count up and down in hundredths and recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10. • Solve problems involving increasingly harder fractions to calculate quantities and fractions to divide quantities. • Add and subtract fractions with the same denominator. • Recognise and write decimal equivalents of any number of tenths and hundredths. • Find the effect of dividing a one or two digit number by 10 or 100. • Solve simple measure and money problems involving fractions and decimals.	➢ Decimals ➢ Money ➢ Time ➢ Properties of Shape ➢ Statistics ➢ Position and Direction	• Compare numbers with the same number of decimal places. • Round decimals with one decimal place to the nearest whole number. • Recognise and write decimal equivalents to a quarter, a half and three quarters. • Understand the effect of dividing a one or two digit number by 10 or 100. • Estimate, compare and calculate different measures, including money in pounds and pence. • Solve simple measure and money problems involving fractions and decimals to two decimal places. • Read, write and convert time between analogue and digital. • Solve problems involving converting between different units of time. • Identify acute and obtuse angles and compare and order angles. • Compare and classify geometric shapes, including quadrilaterals and triangles. • Identify lines of symmetry in 2-D shapes. • Complete a simple symmetric figure with respect to a specific line of symmetry. • Interpret and present discrete and continuous data. • Solve comparison, sum and difference problems using bar charts, pictograms and tables. • Describe positions and plot coordinates in the first quadrant.

		including using the distributive law to multiply two-digit numbers by one-digit.		• Convert between different units of measure.		• Describe movements between positions as translations of a given unit to the left/right and up/down.
Year 5	➢ Place Value ➢ Addition and Subtraction ➢ Multiplication and Division ➢ Fractions	• Read, write, order and compare numbers to at least 10,000. • Count forwards or backwards in steps of powers of 10. • Interpret negative numbers in context. • Round any number up to one million to the nearest 10, 100, 1000, 10,000, 100,000, • Solve problems that involve knowledge of place value. • Read Roman numerals up to 1000 and recognise years written in Roman numerals. • Add and subtract numbers mentally with increasingly large numbers. • Add and subtract whole numbers with more than 4 digits, including using formal written methods. • Solve addition and subtraction problems in context. • Multiply and divide numbers mentally, including by 10, 100, 1000 • Identify multiples and factors, and find factor pairs of a number. • Recognise and use square and cube numbers. • Solve problems involving multiplication and division. • Recognise prime numbers, prime factors and composite (non-prime) numbers. • Establish whether a number up to 100 is a prime and recall primes to 19. • Compare and order fractions whose denominators are multiples of the same number. • Identify, name and write equivalent fractions of a given fraction.	➢ Multiplication and Division ➢ Fractions ➢ Decimals and Percentages ➢ Perimeter and area ➢ Statistics	• Multiply and divide numbers mentally. • Multiply numbers up to 4 digits by a one or two digit number using a formal written method. • Divide numbers up to 4 digits by a 1-digit number using the formal written method of short division. • Solve problems involving addition and subtraction, multiplication and division. • Compare and order fractions whose denominators are multiples of the same number. • Identify, name and write equivalent fractions of a given fraction. • Recognise mixed numbers and improper fractions and convert. • Add and subtract fractions with the same denominator and those that are multiples of the same number. • Multiply proper fractions and mixed numbers by whole numbers. • Read and write decimal numbers as fractions. • Read, write, order and compare numbers up to 3 decimal places. • Recognise and use thousandths and relate them to tenths and hundredths. • Round decimals with two decimal places to the nearest whole number and one decimal place. • Solve problems involving number up to three decimal places. • Recognise the percent symbol and understand its meaning. • Solve problems which require knowing percentage and decimal	➢ Properties of Shapes ➢ Position and Direction ➢ Decimals ➢ Negative numbers ➢ Converting Units ➢ Volume	• Identify 3-D shapes from 2-D representations. • Use the properties of rectangles to deduce related facts and find missing lengths and angles. • Distinguish between regular and irregular polygons. • Estimate and compare acute, obtuse and reflex angles. • Draw given angles and measure them in degrees. • Identify angles at a point on a whole turn, a straight line and other multiples of 90. • Identify, describe and represent the position of a shape following a reflection or translation. • Recognise and write decimal equivalents of any number of tenths and hundredths. • Find the effect of dividing a one or two digit number by 10 or 100. • Solve simple measure and money problems involving fractions and decimals. • Interpret negative numbers in context. • Convert between different units of measure. • Convert between different units of metric measure. • Understand and use approximate equivalences between metric units and common imperial units. • Solve problems involving converting between units of time. • Estimate volume and capacity.

		• Recognise mixed numbers and improper fractions and convert. • Add and subtract fractions with the same denominator and those that are multiples of the same number.		• equivalents for a half, quarter and fifths. • Measure and calculate perimeter. • Calculate and compare the area of rectangles. • Solve comparison, sum and difference problems using information presented in a line graph. • Complete, read and interpret information in tables. •		• Use all four operations to solve problems involving measure.	
Year 6	➢ Place Value ➢ Four Operations ➢ Fractions ➢ Converting Units	• Read, write, order and compare numbers up to 10 million. • Round any whole number to a required degree of accuracy. • Use negative numbers in context. • Solve problems involving place value. • Solve addition and subtraction multi-step problems. • Multiply by a 2-digit number using long multiplication. • Divide numbers by a 2-digit number using short and long division. • Perform mental calculations with large numbers. • Identify common factors, multiples and prime numbers. • Use knowledge of the order of operations. • Solve problems involving the four operations. • Use estimation to check answers. • Use common factors to simplify fractions. • Compare and order fractions. • Add and subtract fractions with different denominators. • Multiply pairs of fractions. • Divide proper fractions by whole numbers. • Recognise equivalent fractions, decimals and percentages.	➢ Ratio ➢ Algebra ➢ Decimals ➢ Fractions, decimals and percentages ➢ Area, Perimeter and Volume ➢ Statistics	• Solve problems involving the calculation of percentages. • Solve problems involving the relative sizes of two quantities. • Solve problems involving similar shapes where the scale factor can be found. • Solve problems involving unequal sharing and grouping. • Use simple formulae. • Generate and describe linear number sequences. • Express missing number problems algebraically. • Find pairs of numbers to satisfy an equation with two unknowns. • Identify the value of each digit in numbers given to 3 decimal places. • Multiply 1-digit numbers with 2 decimal places by whole numbers • Use written division methods in cases where the answer has up to 2 decimal places. • Solve problems which require answers to be rounded. • Recognise equivalent fractions, decimals and percentages. • Recognise that shapes with the same area can have different perimeters. • Recognise when it is possible to use formulae for area and volume.	➢ Properties of Shapes. ➢ Position and Direction ➢ SATs revision ➢ Problem Solving and Investigations	• Draw 2-D shapes using given dimensions and angles. • Compare and classify geometric shapes based on their properties. • Recognise angles where they meet at a point, on a straight line or are vertically opposite and find missing angles. • Illustrate and names parts of circles. • Describe positions on the full coordinate grid. • Draw and translate simple shapes on the coordinate plane and reflect them in the axes.	

		• Solve problems involving the conversion of units of measure. • Use, read, write and convert between standard units of measure. • Convert between miles and kilometres.		• Calculate the areas of parallelograms and triangles. • Calculate, estimate and compare volume of cubes and cuboids. • Interpret and construct pie charts and line graphs. • Calculate the mean as an average.	