Maths Overview 2023-2024

Year Group	Autumn	Spring	Summer
Nursery	Children will be given opportunities to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. Children will be provided frequent and varied opportunities to build and apply their understanding – such as using manipulatives, including small pebbles and tens frames for organising counting – children will be given opportunities develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, children will be given opportunities for to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. Children will 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.		
Reception	**Numbers to 5** Children will learn to count up to 5 objects reliably They will learn to understand that numbers can be shown in different representations and recognise the numerals 1, 2, 3, 4 and 5. Children will learn to match groups of objects to the correct numeral. **Comparing groups within 5** Children will learn to identify if a group has more or fewer objects. They will learn to compare two groups of non-identical objects and match them in order to find out which group has more, fewer or the same. **Shape (3D and 2D shapes)** Children will learn to build, describe and sort common 3D shapes (sphere, cylinder, cone, cube, cuboid) They will learn to match 3D shapes to their 2D prints and name each of these regular 2D shapes. **Change within 5** Children will learn how to find one more and one less than a number within 5 in the context of a first, then, now story structure. They will use pictures, objects and a five frame to show what is happening. **Number bonds within 5** Children will progress from finding one more and one less within 5 and putting objects into two groups, to using a part-whole model to represent the groups and the bonds to 5. **Space** Children will learn to start using positional and directional language to describe where an object is. They will use 3D shapes to reinforce their learning of properties of shapes.	**Numbers to 10** Children will learn to count numbers up to 10 using one-to-one correspondence. They will learn to represent the numbers 6–10 on a ten frame and start to recognise that they can count on using a ten frame, understanding that a full row is 5. Children will learn to count 6–10 objects out from a larger group. **Comparing numbers within 10** Children will learn to use the words more and fewer to compare groups of up to 10 items. They will start to find the difference between groups by counting on or counting back and represent numbers to 10. **Addition to 10** Children will learn to use the vocabulary of part and whole and accurately identify two parts and their combined whole. They will learn to add two parts to make a whole up to 10 and use a part-whole model to show two parts and the whole, in various orientations. Children will learn to show that they understand that the two parts can be the same size and understand which are the parts and which is the whole in a part-whole model. They will learn to understand altogether as the combined total of all the parts. **Measure (Length, height and weight)** Children will learn to describe the length, height and weight of objects using everyday language and understand the difference between length, height and weight. They will learn to use non-standard units to measure and compare length, height and weight and solve problems involving length, height and weight. **Number bonds to 10** Children will learn to use the vocabulary of number bonds and addition and accurately identify pairs of numbers with a total of 10. They will learn to use a ten frame and a part-whole model to represent bonds to 10 and understand that if 8 and 2, for example, make 10, then so must 2 and 8.	**Counting on and counting back** Children will learn to count forwards and backwards between 1 and 10 confidently and use a 1–10 number track to count on or count back. They will learn to add or take away numbers using a first, then, now story structure and explain how they know what number to start on, how many jumps to make on the number line and how to identify the answer. **Number to 20** Children will learn to count forwards and backwards to 20 and accurately count an irregular set of up to 20 objects or resources. They will learn to identify one more and one less than a given number to 20 and use vocabulary such as more and fewer to compare numbers and quantities. Children will learn to use a range of resources to represent given numbers. **Numerical patterns** Children will learn to use concrete manipulatives to double and halve numbers and show why a number is odd or even. They will learn to identify doubles to double 5 and explain that even numbers can be shared into two equal groups and odd numbers cannot. Children will learn to halve even numbers to 10 by sharing into two equal groups. **Shape (Composing and decomposing shapes)** Children will learn to recognise common 2D shapes (triangles and squares) and recognise that shapes can be put together to build a new shape. They will learn to build and represent a new shape by combining two or more shapes and make a link to how numbers and shapes can be partitioned. **Measure (Volume and capacity)** Children will learn to describe the capacity of objects using everyday language and visually compare capacity using taught vocabulary. They will learn to solve problems involving and capacity.

| | | **Subtraction**
Children will learn to recognise, understand and use the vocabulary linked to number bonds and subtraction and understand the structure of subtraction and finding a missing part. They will learn to identify how many are left when a variety of numbers are subtracted from 10 and begin to see the inverse relationship between addition number bonds to 10 and subtraction number bonds to 10.

Exploring patterns
Children will learn to recognise and describe patterns, for example, yellow, blue, yellow, blue, yellow, blue or big, small, big, small, big, small and continue patterns and make their own patterns. They will learn to translate or copy patterns from one form to another; such as from a colour pattern into an action, sound or shape pattern. | |
| Year 1 | **Numbers to 10**
Children will sort and count objects to 10. They will count and write numbers to 10 and count backwards from 10 to 0. Children will count one more and one less and compare and order numbers. They will learn to use a number line.

Part-whole within 10
Children will use the part whole model and write number sentences. They will find different ways to make a number. Children will make number bonds and compare number bonds.

Addition within 10
Children will add parts to find the whole and find a missing part. They will add more and children will solve problems.

Subtraction within 10
Children will take away to find how many are left and subtract by breaking the whole into parts. They will discover related number facts and children will solve word problems.

2D and 3D shapes
Children will name 3D shapes and name 2D shapes. They will make patterns with shapes. | **Numbers to 20**
Children will count using tens and ones. They will count one more and one less. Children will compare numbers of objects and compare and order numbers.

Addition and Subtraction within 20
Children will add and subtract by counting on or back. They will add and subtract using number bonds. Children will use doubles and near doubles and find a difference. They will solve word problems relating to addition and subtraction.

Numbers to 50
Children will count up to 50 and compare numbers to 50. They will order numbers and count in 2s and 5s. Children will solve word and picture problems.

Introducing length and height
Children will compare lengths and heights of objects. They will use non-standard units to measure objects and measure with a ruler. Children will solve word problems about length.

Introducing mass and capacity
Children will compare the mass of objects and weigh objects. They will compare the capacity of objects and measure capacity. Children will solve word problems about weight and capacity. | **Multiplication and Division**
Children will count in 2s, 5s and 10s. They will make and add equal groups and make arrays. Children will make doubles and solve word problems.

Fractions
Children will find half of a shape or quantity and share equally. They will find a quarter of a shape or quantity and solve word problems about halves and quarters.

Position and direction
Children will describe turns and use words left and right. They will say if something is at the top, middle or bottom.

Numbers to 100
Children will count in tens and learn how to use a 100 square. They will use tens and ones to make larger numbers and say which number is larger and smaller. Children will find numbers which add to 100.

Money
Children will learn about coins and learn about notes. They will count in 1s, 2s, 5s and 10s using coins.

Time
Children will say if things happen before or after and use a calendar. They will tell the time to the hour and the half hour. Children will compare time and solve time word problems. |

Year 2	**Numbers to 100** Children will count numbers to 100. They will use different ways to show numbers to 100. Children will use place value grids to make and compare numbers. They will count in 2s, 5s and 10s. Children will compare and order numbers to 100. **Addition and Subtraction (1)** Children will use related number facts and compare number sentences. They will make numbers bonds to 100. Children will add and subtract ones and tens as well as add 2-digit and a 1-digit number. Children will subtract a 1-digit number from a 2-digit number. **Addition and Subtraction (2)** Children will add two 2-digit numbers and subtract 2-digit numbers. They will add three 1-digit numbers and solve word problems. **Properties of shapes** Children will recognise 2D and 3D shapes. They will count the sides and vertices on 2D shapes and learn about symmetry. Children will count the faces, edges and vertices on 3D shapes. They will sort 2D and 3D shapes.	**Money** Children will count coins and notes and compare different amounts of money. They will find different ways to make the same amount and work out the amount of change. Children will solve two-step problems involving money. **Multiplication and Division (1)** Children will decide if groups are equal and form multiplication sentences. They will use arrays and practise the 2, 5 and 10 times-tables. Children will solve multiplication word problems. **Multiplication and Division (2)** Children will divide by 2 and learn about odd and even numbers. They will divide by 5 and 10. Children will divide by grouping and by sharing. They will use related multiplication facts to solve division problems. **Length and Height** Children will measure objects in centimetres and metres. They will compare two lengths and put lengths into order. Children will solve word problems about length. **Mass, capacity and temperature** Children will compare and measure mass. They will compare and measure volume. Children will measure temperature and read a thermometer.	**Fractions** Children will learn about the whole and equal parts. They will recognise and find a half. Children will also recognise and find a quarter. They will learn about unit fractions and count in halves and quarters. **Time** Children will tell the time to the hour, the half hour and quarter hour. They will tell the time to five minutes and find the start and end times. Children will find out how long something lasts and compare amounts of time. **Problem solving and efficient methods** Children will compare ways of calculating and use mental addition and subtraction. They will look for the most efficient way to solve a problem and to use number facts to solve problems. Children will solve word problems using all four operations. **Position and direction** Children will describe movement and describe turns. They will make patterns by turning shapes. **Statistics** Children will make tally charts. They will use pictograms and block diagrams. Children will solve word problems.
Year 3	**Place value within 1000** Children will count in 100s and partition a number in 100s, 10s and 1s. They will find 100, 10 and 1 more or less and compare and order numbers up to 1,000. Children will count in 50s. **Addition and subtraction (1)** Children will add 1s and 10s to 3-digit numbers and subtract 1s and 10s from 3-digit numbers. They will add and subtract 3-digit and 2-digit numbers. Children will learn when to exchange 1s, 10s and 100s and add and subtract using mental and written methods. **Addition and subtraction (2)** Children will add and subtract 3-digit numbers and decide if they need to exchange. They will exchange across more than one column and learn how to check their answers in different ways. Children will use bar models to solve 1- and 2-step problems. **Multiplication and division (1)**	**Multiplication and division (3)** Children will compare multiplication and division statements using inequality signs. They will use known multiplication facts to solve other multiplication problems and find multiplication and division fact families. Children will learn to multiply and divide by partitioning and solve mixed multiplication and division problems including multi-step problems. **Length and perimeter** Children will measure lengths in millimetres, centimetres and metres and compare lengths. They will add and subtract lengths and measure the perimeter of a shape. Children will learn about equivalent lengths. **Fractions (1)** Children will make a whole with unit and non-unit fractions and explore tenths as fractions. They will	**Fractions (2)** Children will find equivalent fractions and compare fractions. They will add and subtract fractions and solve word problems about fractions and finding fractions of an amount. **Money** Children will record money in £ and p and convert money. They will add and subtract amounts of money and solve problems including ones that involve finding change. **Time** Children will learn about hours, days, months and years and estimate times. They will tell the time to the nearest minute and calculate start and end times. Children will solve time problems. **Angles and properties of shapes** Children will learn about turns and learn what a right angle is. They will understand and draw parallel and perpendicular lines and identify and draw vertical and

		Children will recognise when groups are equal and when they are not. They will understand how an array can show two multiplications and work out multiples of 2, 5, and 10. **Multiplication and division (2)** Children will learn 3, 4 and 8 times-tables and find a simple remainder when a number is divided. Children will use a bar model to solve multiplication and division problems.	understand fractions as numbers and calculate fractions of a set of objects. **Mass** Children will measure mass in kilograms and grams and work out different intervals on a scale. They will add, subtract and compare masses and solve problems involving mass. **Capacity** Children will measure capacity in litres and millilitres and convert between litres and millilitres. They will compare and order capacities and add and subtract capacities. Children will solve word problems involving capacities.	horizontal lines. Children will recognise and describe right angles and parallel and perpendicular lines in 2D shapes. They will recognise, describe and construct 3D shapes. **Statistics** Children will present information in different ways and use pictograms, bar charts and tables. They will answer questions based on information that is presented in different ways.
	Year 4	**Place value – 4-digit numbers (1)** Children will round numbers to the nearest 10 or 100 and count in 1000s. They will represent 4-digit numbers and use number lines. They will learn about Roman numerals. **Place value – 4-digit numbers (2)** Children will find 1000 more or less and compare numbers and order numbers to 10,000. They will round numbers to the nearest 1000 and count in 25s. Children will count back through 0 into negative numbers. **Addition and subtraction** Children will add and subtract 1s, 10s, 100s and 1000s. They will add and subtract two 4-digit numbers using the column method and learn how to find and use equivalent difference and other mental methods. Children will estimate answers to additions and subtractions and learn how to check strategies and apply their knowledge. **Measure – area** Children will learn what 'area' means and find areas of shapes by counting squares. They will draw shapes with different areas and compare the area of different shapes. **Multiplication and division (1)** Children will multiply by and divide multiples of 10 and 100 and multiply and divide by 0 and 1. They will learn all of the times-tables from 1 – 12 and understand	**Multiplication and division (2)** Children will learn how to multiply a number using the written method and learn how to multiply and divide numbers in their heads. They will find the remainder when a number is divided and use bar models and part-whole models to solve multiplication and division problems. **Length and perimeter** Children will convert between kilometres and metres and find perimeters of shapes. They will work out missing lengths and find solutions involving perimeter. **Fractions (1)** Children will find the links between tenths and hundredths and identify equivalent fractions. They will simplify fractions and look at fractions that are greater than 1. **Fractions (2)** Children will learn to add and subtract fractions with the same denominator and learn to subtract a fraction from a whole number. They will understand how to find a fraction of an amount. **Decimals (1)** Children will learn about the decimal point and tenths and hundredth columns and explore tenths and hundredths as decimals. They will understand how to divide 1- and 2-digit numbers by 10 and 100 and complete calculations resulting in a decimal answer.	**Decimals (2)** Children will work out what they need to make a whole and write a decimal and represent it on a place value grid. They will compare and order decimals and round decimals to the nearest whole number. Children will learn the decimal equivalents of fractions such as ½, ¼ and ¾ and convert different units of measurement. **Money** Children will write money in pounds and pence, using a decimal point and order, add and subtract amounts of money. They will round money to the nearest 10p or nearest £1 and find change. Children will solve simple word problems involving money. **Time** Children will convert between units of time and write times in different ways. They will compare times by converting units and solve problems about units of time. **Geometry – angles and 2D shapes** Children will learn to recognise obtuse, acute and right angles and understand regular and irregular shapes. They will name and describe quadrilaterals and triangles and identify lines of symmetry in shapes and patterns. **Statistics** Children will present data in pictograms, bar charts and tables and explore line graphs. They will solve problems based on data.

	related multiplication and division facts. Children will find solutions to multiplication and division word problems.		**Geometry – position and direction** Children will use numbers to say where things are on a grid and plot points on a grid. They will use their knowledge of shapes to complete diagrams and describe movements on a grid.
Year 5	**Place value – within 1,000,000 (1)** Children will find values of each digit in numbers to 1,000,000 and partition numbers in different ways. They will compare and order numbers up to 1,000,000. Children will represent numbers in different ways, including with Roman numerals. **Place value – within1,000,000 (2)** Children will further understand the value of any digit in a number up to 1,000,000 and identify the position of a number on different number lines. They will compare and order numbers to 1,000,000 and round numbers to the nearest 10, 100, 1,000, 10,000 and 100,000. **Addition and subtraction** Children will add and subtract numbers with up to 5 digits and use the column method for addition and subtraction. They will round numbers to estimate answers to problems and add and subtract mentally. Children will solve problems involving addition and subtraction. **Multiplication and division (1)** Children will recognise and find multiples and factors and recognise and identify prime numbers. They will calculate square and cube numbers and use inverse operations. Children will multiply and divide by 10, 100 and 1000 and multiply and divide by multiples of 10, 100 and 1000. **Fractions (1)** Children will find and use equivalent fractions and convert between improper fractions and mixed numbers. They will compare and order fractions and understand fractions as division. Children will use fractions to show remainders **Fractions (2)** Children will add and subtract fractions with the same denominator and add and subtract fractions, including mixed numbers, where one denominator is a multiple of the other. They will solve word problems involving fractions.	**Multiplication and division (2)** Children will multiply a number up to 4 digits by a 1- or 2-digit number and divide a number up to 4 digits by a 1-digit number. They will interpret remainders and solve problems involving multiplication, division and remainders. **Fractions (3)** Children will multiply proper fractions and mixed numbers by whole numbers and find a fraction of an amount. They will understand how fractions can be operations and solve word problems involving fractions. **Decimals and percentages** Children will read and write decimals up to three decimal places, including numbers greater than 1 and round decimals to the nearest whole number and to one decimal place. They will order and compare decimal numbers up to three decimal places and write percentages as fractions and as decimals. **Measure – perimeter and area** Children will measure shapes to find their perimeter and calculate the perimeter of squares, rectangles and other rectilinear shapes. They will use a formula to find the area of squares and rectangles and estimate the area of different shapes. **Graphs and tables** Children will read information from tables and understand and create two-way tables. They will read information from line graphs and answer questions relating to the information in graphs and tables. Children will draw simple line graphs.	**Geometry – properties of shapes** Children will measure angles in degrees and learn to measure angles with a protractor. They will draw lines and angles accurately and calculate missing angles. Children learn about angles in shapes. They will recognise, draw and label parallel and perpendicular lines. Children will accurately identify regular and irregular polygons and will recognise different 3D shapes from different views. **Geometry – position and direction** Children will learn to reflect simple 2D shapes in vertical and horizontal lines and plot and find coordinates of a reflected point on a grid. They will use coordinates to calculate new points of a reflected shape and translate 2D shapes on grid paper. Children will use coordinates to find translations. **Decimals** Children will add and subtract decimals with the same number of digits after the decimal point and add and subtract decimals with a different number of digits after the decimal point. They will add whole numbers to decimals and subtract decimals from whole numbers. Children will solve problems involving addition and subtraction of decimals including money problems and multiply and divide decimals and whole numbers by 10, 100 and 1000. **Negative numbers** Children will learn how to count back past 0 and learn how to read and write negative numbers. They will learn how to place negative numbers on a number line and learn how to read thermometers with sub-zero temperatures. Children will compare and order negative and positive numbers and find the difference between two numbers, including negative numbers. **Measure – converting units** Children will convert between metric units of length, mass and capacity and recognise imperial units and understand how to convert them into metric units. They will convert between units of time and read timetables

			and understand the information they show. Children will solve problems based on measures.
			Measure – volume Children will learn what the volume of a shape is and find volumes of shapes by counting unit cubes. They will draw shapes with different volumes and compare the volume of different shapes. Children will estimate the capacity of different shapes.
Year 6	**Place value within 10,000,000** Children will learn to read and write numbers to 10,000,000 and partition, compare and order numbers up to 10,000,000. They will round numbers and work with negative numbers. **Four operations (1)** Children will use written methods for addition and subtraction and learn to use column multiplication. They will learn different written methods for division and learn checking strategies for their calculations. **Four operations (2)** Children will find common factors and multiples and learn about prime, square and cube numbers. They will learn about the order of operations and solve mental calculations. **Fractions (1)** Children will simplify fractions and compare and order fractions. They will add and subtract fractions including mixed numbers and solve problems involving adding and subtracting fractions. **Fractions (2)** Children will multiply any fraction by a whole number or another fraction and divide a fraction by a whole number. They will solve problems involving all four operations with fractions and solve problems involving a fraction of an amount. **Measure - Imperial and metric measures** Children will choose the most appropriate metric units of measurements to measure different things and convert between metric units, between imperial units and from one to the other. They will solve problems involving metric units and recognise the difference between metric and imperial units of measurement and what they are worth.	**Ratio and proportion** Children will calculate ratios and use ratios to work out amounts. They will enlarge shapes by a scale factor and identify similar shapes. Children will solve problems involving ratio. **Algebra** Children will find and write algebraic rules and write algebraic expressions. They will write algebraic formulae and write and solve algebraic equations. Children will solve equations that have lots of solutions. **Decimals** Children will recognise the value of each digit in a decimal number and multiply and divide decimals by 10, 100 and 1000. They will convert between fractions and decimals and multiply and divide decimals by single digit numbers. **Percentages** Children will develop a deeper understanding of percentages as parts of 100 and understand a range of methods to work out percentages. They will find 1% and multiples of 1% and work out missing values, such as 30% of ? = 60. Children will convert, order and solve problems involving fractions, percentages and decimals. **Measure - perimeter, area and volume** Children will find and draw shapes with the same area or perimeter and explore how the perimeter changes when the area changes and vice versa. They will calculate the area of parallelograms and triangles and calculate and estimate the volume of cubes and cuboids.	**Statistics** Children will learn to calculate the mean of a set of data and use the mean to find missing data. They will read and interpret pie charts using fractions and read and interpret pie charts using percentages. Children will interpret and create line graphs. **Geometry - properties of shapes** Children will measure angles and draw shapes accurately using a ruler and protractor and calculate unknown angles in shapes and on lines using angle facts. They will explore properties of polygons and circles and identify 3D shapes from 2D representations. Children will draw multiple nets for a 3D shape. **Geometry - position and direction** Children will look at how they can use coordinates to describe the position of a point on a grid and look at how coordinates can have positive or negative values. They will explore how they can use their knowledge of properties of shape to help them solve problems on a coordinate grid and explore how they can move and change shapes on a coordinate grid, through translations and reflections. **Problem solving** Children will solve problems about number, including fractions and ratio and use representations to help make sense of problems. They will use the four operations flexibly and reason about problems with a context and without a context. Children will apply understanding of measurement and geometry to solve problems.