Maths Whole School Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery	**Number:** Recite some number names in sequence and use some number names and number language spontaneously. Use some number names accurately in play and show curiosity about numbers by offering comments or asking questions. Select a small number of objects from a group when asked. Shows an interest in numerals in the environment. **Space, Shape & Measure**: Notice simple shapes and patterns in pictures. Begin to use the language of size.		**Number:** Use some number names and number language spontaneously. Know that numbers identify how many objects are in a set. Show curiosity about numbers by offering comments or asking questions. Begin to represent numbers using fingers, marks on paper or pictures. **Space, Shape & Measure**: Use positional language. Show interest in shape by sustained construction activity or by talking about shapes or arrangements		**Number:** Show a curiosity about numbers and show an interest in number problems. Realise that not only objects, but anything can be counted, including steps, claps or jumps. Recognise numbers of personal significance. Count objects to 10, and beginning to count beyond 10. Begin to add and take away. **Space, Shape & Measure**: Begin to use mathematical names for solid 3D shapes and flat 2D shapes. Describe their relative position such as 'behind', 'next to' and 'under'. Begin to use everyday language related to time and money.	
Reception	**Number:** Recognise numerals 1 to 5. Select the correct numeral to represent 1 to 5, then 1 to 10 objects. Shows an interest in representing numbers. Count, estimate and compare numbers to 10. Calculate simple addition problems. **Space, Shape & Measure**: Use shapes appropriately for tasks. Shows and interest in shape and space by playing with shapes or making arrangements with objects and select a particular named shape.		**Number:** Use developing mathematical ideas and methods to solve practical problems. Begin to read, write and count beyond 10 and order number. Add two amounts together by finding the total number of items in two groups. Make sensible estimations of an amount and check by counting accurately. Use ordinal numbers in different contexts. Subtract simple numbers as well as problem solve. **Space, Shape & Measure**: Order two or three items by length or height. Use familiar objects and common shapes to create and recreate patterns and build models. Looking at and talking about the properties of 2d and 3d shapes. Begin to use non-standard measures when looking at height, weight and length.		**Number:** Count reliably with numbers from 1 to 20, place them in order. 1 more and 1 less. Use quantities and objects, to add and subtract two single-digit numbers and count on or back to find the answer. Solve problems, including doubling, halving and sharing. **Space, Shape & Measure**: Use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. Recognise, create and describe patterns. Explore characteristics of everyday objects and shapes and use mathematical language to describe them.	
Books	Ten Little Princesses -Mike Brownlow Ten Little Elves – Mike Brownlow Counting – First Maths		Pete the Cat My Button's Story Six feet long and three feet wide – Jeannie Billington		Taking away with tigers Multiples with meercats	
Year 1	**Number:** (to 30) Count reliably with numbers from 1 to 30. Identify one more and one less. Read and write numbers to 20 in numerals and words, **Addition and subtraction** Adding and subtracting 2 one-digit numbers using quantities and objects, counting on or back to find the answer. Represent and use number bonds and related to subtraction facts within 20 Add and subtract one-digit and two-digit numbers to 20. Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = [ ] – 9 **Measures** Use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. Recognise and use language relating to dates, including days of the week, weeks, months and years **Geometry** Use everyday language to talk about position to compare objects Use mathematical language to describe shapes. Recognise and name common 2-D shapes [e.g. rectangles (including squares), circles and triangles]. Recognise and name common 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres]		**Number** Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Count in multiples of twos, fives and tens Count, read and write numbers to 100 in numerals **Operations** Represent and use number bonds and related subtraction facts within 20. Add and subtract one-digit and two-digit numbers to 20, including zero. Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs. Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = [ ] – 9 **Fractions** Recognise, find and name a half as one of two equal parts of an object, shape or quantity **Measures** Use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. Compare, describe and solve practical problems for: • capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter] .		**Number** Count in multiples of twos, fives and tens. Count, read and write numbers to 100 in numerals. Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least **Operations** Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = [ ] – 9 Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. **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. **Measures** Measure and begin to record the following: • lengths and heights • mass/weight • capacity and volume • time (hours, minutes, seconds) Recognise and know the value of different denominations of coins and notes	

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		Measure and begin to record the following: • lengths and heights. Recognise and use language **Geometry** Recognise and name common 2-D shapes [e.g. rectangles (including squares), circles and triangles] Recognise and name common 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres]	Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times Recognise and use language **Geometry** Recognise and name common 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres] Describe position, directions and movement, including half, quarter and three quarter turns
Year 2	**Number:** - Count, read and write numbers in numerals and words - Count in multiples of 2,3 and 5 from 0 - Count in tens from any number forwards and backwards - Represent numbers in different ways (e.g. plotting number lines or using dienes, Lego, ten frame). - recognising the value of each digit in a 2-digit number - Number in place value charts - Compare numbers to 100 - order numbers to 100 - Odd and Even Numbers **Addition & Subtraction:** - Number bonds to 10 and 20 - Addition of 3 one-digit numbers - Addition of two digit to one digit - Adding 10s **Statistics:** - Interpret and construct simple pictograms, tally charts, block diagrams and tables - Answer simple questions from the charts and tables - Ask and answer questions about totalling and comparing categorical data **Multiplication & Division:** - Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. - Doubling - Begin counting in 3s. **Fractions:** - Recognise, find and name ½ and ¼ of a shape, set of objects or quantity. - Recognise, name and write ¼, ½ and ¾. - Know that 2/4 and ½ mean the same	**Number:** - Plotting number lines - Compare numbers from 0 up to 100; using <, > and = signs - Order numbers from 0 up to 100. - Use place value and number facts to solve problems **Addition & Subtraction:** - Add and subtract numbers using concrete objects, pictorial representations, and mentally (up to 100), - Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. - Add and subtract numbers using pictorial representations and mentally, including adding three one-digit numbers. - Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems. - Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures. - applying their increasing knowledge of mental and written methods. **Measures (Money):** - Recognise and use symbols for pounds (£) and pence (p). - Make an amount using different coins. - Find coins that add to a certain amount (grab or circle the coins). - Subtract coins from an amount to give change. **Multiplication & Division:** - Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs. **Measures (Shape):** - Recognise and name common 3-D shapes (cuboids, cubes, pyramids and spheres) - Identify and describe the properties of 2-D shapes (sides and vertices) - Identify line of symmetry from 2-D shapes. - Identify 2-D shapes on the surface of 3-D shapes (e.g. circle on cylinder and triangle on pyramid) - Recognise and sort common 2D and 3D shapes according to their features. **Statistics:** - Find the thing that has been chosen most or least within data Finding the difference between 2 sets of data.	**Geometry (Position and Direction):** - Describe position, direction and movement, including whole, half, quarter and three-quarter turns. **Number:** - Place Value. **Geometry (Time):** **Addition & Subtraction:** - Recognise and use the inverse relationship between addition and subtraction - use this to check calculations and solve missing number problems. **Multiplication & Division:** - Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables. - Counting in 3s - Solve one-step problems involving multiplication and division. **Measures:** - Measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit.

Year 3	**Number and Place Value**
	• count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number
	• recognise the place value of each digit in a 3-digit number (100s, 10s, 1s)
	• compare and order numbers up to 1,000
	• identify, represent and estimate numbers using different representations
	• read and write numbers up to 1,000 in numerals and in words
	• solve number problems and practical problems involving these ideas
	
	Addition and subtraction
	• add and subtract numbers mentally, including:
	  • a three-digit number and 1s
	  • a three-digit number and 10s
		Fractions
		• count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10
		• recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
		• recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators
		• recognise and show, using diagrams, equivalent fractions with small denominators
		• add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]
		• compare and order unit fractions, and fractions with the same denominators
			Measurement
			• tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks
			• estimate and read time with increasing accuracy 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 and 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 [for example, to calculate the time taken by particular events or tasks]
			
			• add and subtract amounts of money to give change, using both £ and p in practical contexts

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	• a three-digit number and 100s • add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction • estimate the answer to a calculation and use inverse operations to check answers • 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 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	• solve problems that involve all of the above **Measurement** • measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) • measure the perimeter of simple 2-D shapes **Geometry** • draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them (spaghetti and playdough) • recognise angles as a property of shape or a description of a turn • identify right angles, recognise that 2 right angles make a half-turn, 3 make three-quarters of a turn and 4 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	**Statistics** • interpret and present data using bar charts, pictograms and tables • solve one-step and two-step questions [for example 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables
Year 4	**Number and Place Value:** • Revise 3-digit place value – representing and partitioning 3-digit numbers practically and written • recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s) • find 1,000 more or less than a given number • order and compare numbers beyond 1,000 • identify, represent and estimate numbers using different representations • round any number to the nearest 10, 100 or 1,000 • solve number and practical problems that involve all of the above and with increasingly large positive numbers (in every lesson) • revise counting in 50s • *count in multiples of 6, 7, 9, 25 and 1,000* **Addition and subtraction:** • revise column addition of up to 3 digits without exchanging. • column addition of up to 3 digits with one exchange at a time. • revise column subtraction of up to 3 digits without exchanging. • column subtraction of up to 3 digits with one exchange at a time. • Use written methods to add and subtract numbers with up to 4 digits. • Solve 2 step problems involving addition and subtraction. **Multiplication and division:** • revise tables from 2, 3, 4, 5, 8 & 10. • Introduce 6, 7, 9, 11, 12 • Multiply together 3 numbers (for example, 2 x 6 x 5 = 10 x 6 = 60). • distributive law 39 × 7 = 30 × 7 + 9 × 7 • associative law 2 × 3 × 4 = 2 × 3 × 4 (HA)	**Fractions and decimals:** • revise fractions of shapes up to 8/8 – revise language of part, whole, fraction. • recognise and show, using diagrams, families of common equivalent fractions • count up and down in hundredths; 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, including non-unit fractions where the answer is a whole number • add and subtract fractions with the same denominator • recognise and write decimal equivalents of any number of tenths or hundreds • recognise and write decimal equivalents to 1/4 , 1/2 , 3/4 • find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths • round decimals with 1 decimal place to the nearest whole number • compare numbers with the same number of decimal places up to 2 decimal places • solve simple measure and money problems involving fractions and decimals to 2 decimal places **Measurement:** Length/Area/Perimeter • convert between different units of measure (mm/cm/m/km) • revise perimeter by counting squares • measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • measure area by counting squares and multiplication if ready Weight • convert between different units of measure (g/kg) Capacity • estimate, compare and calculate different measures • convert between different units of measure (ml/l) Time • recap analogue time to the nearest minute • recap converting analogue to 12-hr digital • convert analogue to 24-hr digital • convert between different units of measure (seconds/hours/minutes)	Geometry • revise classifying geometric shapes • revise comparing geometric shapes • identify different triangles: isosceles, equilateral, scalene, right angled • introduce different quadrilaterals: parallelogram, rhombus, trapezium • revise acute and obtuse angles • compare and order angles up to 2 right angles by size • 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 Position and Direction • revise turns – clockwise, anti-clockwise, quarter, half, three-quarter turns • 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 Statistics • 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

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	• recognise and use factor pairs and commutativity in mental calculations • 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 1 digit	• solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days Money • estimate, compare and calculate money in pounds and pence introduce decimal point when representing money – moving on from £x and xx p to £x.xx. Convert between metric units km to m, kg to g	
Year 5	**Number and Place Value:** • Read, write and represent numbers up to 1,000,000 • Recognise relationships between 10, 100, 1000 by exploring the power of 10. • Apply place value knowledge to estimate and plot numbers on a number line • To compare and order numbers up to 100,000 • Negative numbers **Addition and Subtraction:** • Mental strategies • Addition of two 5-digit numbers with more than one exchange • Subtract two 5-digit numbers with more than one exchange • Inverse operations • Multi-step addition and subtraction problems **Factors and Multiples:** • Identify multiples and common multiples • Identify factors and factor pairs • Prime numbers • Identify and recognise squared and cubed numbers **Multiplication and division:** • Multiply 3/4-digit by 1 digit • Multiply numbers up to 4-digit by 2 digits • Divide by 3/4-digits by1 digit • Divide with remainders • Multiply and divide by 10, 100, 1000 **Fractions:** • Find fractions of quantities including weight and money. • Find and recognise fractions equivalent to a unit fraction and a non-unit fraction • Convert improper fractions to mixed numbers • Compare and order fractions • Add and subtract fractions with different denominators • Add and subtract mixed number fractions	**Fraction, Decimals and Percentages:** • Multiply fractions by an integer • Calculate a fraction of a quantity and of an amount • Find the whole • Recognise the place value of decimals up to 2 decimal places • Order and compare any decimals with up to 3 decimal places • Round to the nearest whole number • Round to 1 decimal place • Equivalent fractions and decimals (tenths, hundredths, thousandths) • Understand percentages • Equivalent fractions, decimals and percentages **Measurement:** • Perimeter of rectangles, rectilinear shapes and polygons • Area of rectangles and compound shapes • Cubic centimetres • Estimate volume and capacity • Converting between units of measurement (grams, kilograms, metres and kilometres, centimetres and metres, millimetres and centimetres, millilitres and litres) • Convert between metric and imperial units • Convert units of time • Calculate with timetables **Statistics:** • Complete line graphs • Read and interpret line graphs • Read and interpret tables, including two-way tables • Read and interpret timetables	**Measurement** Money **Geometry:** Angles Identify differences between regular and irregular polygons.
Year 6	**Place Value:** Read, Write, Order and compare numbers up to 10,000,000 and determine the value of each digit. Ordering and sequencing. Use negative numbers in context and calculate intervals across 0. **Addition and Subtraction :** Add and subtract whole numbers with more than 5 digits, including using formal written methods. **Multiplication and division:** Multiply multi-digit numbers up to 4 digits by a 2-digit number using a formal written methods and identify common multiples, common factors & prime numbers. Divide numbers up to 4 digits by a two-digit number using the formal written method of short and long division where appropriate.	**Addition and Subtraction:** Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. **Multiplication and division:** Solve multiplication and division multi-step problems in contexts, deciding which operations and methods to use and why. **Fractions:** Recall and use equivalences between simple fractions, decimals and percentages.	**Number and Place Value**: Solve increasingly complex number problems. **Addition and Subtraction:** Use estimation and rounding to check answers and make estimates. **Multiplication and division:** Interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. **Fractions:** Recall and use equivalences between simple fractions, decimals and percentages.

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	Fractions: Use common factors to simplify fractions. Compare and order. Add and subtract fractions with different denominators and mixed numbers including conversion. Multiply/divide fractions. Fractions of an amount. **Decimals:** rounding, adding, subtracting, multiplying and dividing decimals. Multiply/divide by 10s, 100s, 1000s including decimals. **Coordinates:** Four quadrants.	**Measurement:** Calculate the area of parallelograms and triangles. Use, read, write and convert between standard units. **Geometry:** Draw, translate, and reflect simple shapes on the coordinate plane. Draw 2D shapes using given dimensions and angles. **Statistics**: Interpret and construct pie charts and line graphs and use these to solve problems	**Measurement:** Calculate, estimate and compare volume of cubes and cuboids using standard units. **Geometry**: Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius **Statistics:** Calculate and interpret the mean as an average