Our Maths Curriculum

Intent

The world we live in is full of mathematics and humans are born mathematical. Mathematics is an essential skill in everyday life. Skills such as logical reasoning, problem solving and the ability to think in abstract ways are necessary.

We want children to develop a positive and enthusiastic attitude towards maths, which as far as possible has a focus on the 'real world' and their daily lives. Through real life opportunities we aim to ensure children understand the purpose, relevance and meaning of mathematics

By the end of KS1 children will

- have a well-developed sense of the size of a number and where it fits into the number system
- mastered number facts such as number bonds, multiplication tables, doubles and halves
- use the mathematics they know by heart to calculate mentally
- calculate accurately and efficiently, both mentally and to record in writing, drawing on a range of calculation strategies
- make sense of mathematical problems and investigations and identify the operations and strategies needed to solve them
- explain their methods and reasoning, using correct mathematical terms
- suggest suitable units for measuring and make sensible estimates of measurements
- develop spatial awareness and an understanding of the properties of 2D and 3D shapes
- understand that they can apply their mathematical skills across a range of contexts, and how they can do this meaningfully

Implementation

- Pupils are provided with a variety of opportunities to develop and extend their mathematical skills, including: Group work, interventions, paired work, whole class teaching and small group support.
- In KS1 children follow the National Curriculum and this is delivered using the White Rose scheme of maths.
- Pupils engage in the development of mental strategies, written methods, practical work, investigational work, problem solving and mathematical discussion.
- Children are given the opportunity to practise their mathematics in real life contexts and across curriculum subjects. For example, children use watches as part of the 'Time Team' to learn the time in a practical way. Children pay for their morning snack.
- Problem solving is planned into the maths teaching and happens on a weekly basis.

.	• A typical maths lesson may include both teaching input and pupil activities, a balance between whole class, guided grouped and independent work, (groups, pairs and individual work) and effectively differentiated activities/objectives and appropriate challenge. Lessons may focus on new learning, practice (fluency) or problems solving and reasoning and all lessons give children the chance to develop skills and understanding of the concepts being taught. • In EYFS we follow the Early Years Foundation Stage Statutory Framework. We understand that mathematics does not depend on specific mathematical resources, but on children having opportunities to develop mathematical concepts and understanding, with adults who can identify the mathematics embedded in everyday activities.. We ensure children develop a curiosity about number and an understanding of number, shape and measure in a daily practical context. Real life opportunities and play are used to support children's learning and understanding. Routines, including registration and snack are used to help children develop mathematical concepts and understanding. Cooking and the careful use of the environment,

			indoors and outside, enables children to discover, revisit and consolidate concepts.	
Our children will experience: Whole school maths challenges. YN, YR, Y1, Y2. Maths enrichments days - Maths Monkey's birthday. Maths Monkey - class mascot for each child to enrich their home maths learning. **Cross curricular opportunities:** Apple Store - Coding workshop. **Maths Cafes** **Visits/Visitors:** Maths visitors - The Puzzle Company.	**Nursery** Learning themes: Growing, measuring, cooking (throughout the year and linked to key events e.g. Pancake Day), counting, singing (use of nursery rhymes and number songs) Continuous provision is developed to support mathematical learning throughout the school day across multiple indoor and outdoor areas. See EYFS continuous provision plans.	**Reception** Learning themes: Bi-weekly cooking; (Diwali - coconut ladoo; stir-fry for Chinese New Year; pancakes on Pancake day, bread making linked with The Little Red Hen, gingerbread men linked with The Gingerbread Man etc.); measuring in context (Construction area, home corner, creative area etc.), outdoor environment, songs, regular Maths Cafes; daily routines (e.g. how many children are here today, date, sequencing days of the week); Growing - measuring height, sequencing time, seasons; songs and rhymes; Continuous provision is developed to support mathematical learning throughout the school day across multiple indoor and outdoor areas. See EYFS continuous provision plans.	**Year 1** Learning themes: Week of Inspirational Maths. Time team. Review/revisit Problem solving Fridays. Maths Cafes. Daily snack shop. Cooking. Science - plant growth, nocturnal habitat models.	**Year 2** Learning themes: Daily snack shop. Time team. Week of Inspirational Maths. Weekly maths challenges to take home. Review/revisit Problem solving Fridays. Maths Cafes. Weather stations. Cooking. Topic linked maths challenges, Great Fire of London, science links, ICT coding, 3D map making.

	Nursery	Reception	Year One	Year Two
Progression	**Place Value: Counting** Learning how to count using one to one principle (tagging each item counted with a finger). -Can count listing the numbers in the correct order. -Recognise some numerals of personal significance. -Recites numbers in order to 10 and can count up to four objects. - Counts with 1:1 correspondence a set of 10 objects Begin a fascination with number through the rich environment. **Vocabulary -**	**Place Value: Counting** -Count confidently beyond 20, recognising the pattern of the counting system; place numbers them in order, and say one more and one less than a given number. -Estimates how many objects they can see and then counts them. Subitising (recognise quantities without counting) numbers up to 5. -Counts an irregular arrangement of objects. -Selects correct numeral for 1-20 objects -Begins to identify own mathematical problems based on own fascinations **Vocabulary -**	**Place Value: Counting** - count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens. given a number, identify one more and one less	**Place Value: Counting** count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward.

	How many? **Place Value- Represent;** Begin to create graphic representations to record numbers. **Place Value- Compare -**	Altogether, How many?, total, equals, add, number **Place Value- Represent;** -Selects correct numeral for 1-20 objects -Uses graphic representations to record number explorations in pictures and mark making that they can explain. -Understands the relationship between a group of objects and the corresponding number (0-10). - Have a deep understanding of number to 10, including the composition of each number. **Place Value- Compare -**	**Vocabulary -** How many? Altogether, Equals, sum, total, part-part-whole. **Place Value- Represent;** identify and represent numbers using objects and pictorial representations. Read and write numbers to 100 in numerals. read and write numbers from 1 to 20 in numerals and words. **Place Value- Compare -** Two-digit numbers.	**Vocabulary -** How many? Altogether, Equals, sum, total, quantity, amount, part-part -whole. **Place Value- Represent;** read and write numbers to at least 100 in numerals and words. Identify, represent and estimate numbers using different representations including the number line. **Place Value- Compare –** recognise the place value of each digit in a two digit number (tens/ones) compare and order numbers from 0 up to 100, use >< and = signs.

				Place Value – Problem solving and Reasoning. Use place value and number facts to solve problems.
	Vocabulary - Numbers 0 - 10,	**Vocabulary -** -Numbers 0 - 20, more than, less than, -Compare sets of objects up to 10 in different contexts, considering size and difference;-Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.	**Vocabulary -** Numbers 0 - 100, tens, ones, hundreds,	**Vocabulary -** Numbers 0 - 100, tens, ones, hundreds, place value, partitioning, greater than > less than <.
	Addition and Subtraction: recall, represent, use. Only explore if children have a real sense of early number. Exposed through songs, rhymes, use of the environment. Finds totals by counting and combines groups	**Addition and Subtraction: recall, represent, use.** -Uses vocabulary involved with addition and subtraction -Finds totals by counting and combining groups of objects -Solves problems involving doubling, halving and sharing.	**Addition and Subtraction: recall, represent, use.** read, write, and interpret mathematical statements involving addition, subtraction and equals signs.	**Addition and Subtraction: recall, represent, use.** recall and use addition and subtraction facts to 20 fluently and derive and use related facts up to 100.

	of objects. **Addition and Subtraction: calculations** Maths language used throughout the day; story time; group time; singing and rhymes; snack time; cooking; continuous provision environment. **Addition and Subtraction: Solve problems** Uses the environment to solve problems with counting.	- Automatically recall (without reference to rhymes, counting or other aides) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts **Addition and Subtraction: calculations** -Uses the language of more and fewer to compare 2 sets of objects -solves problems involving: doubling; halving and sharing **Addition and Subtraction: Solve problems** -Finds the total number of 2 sets of objects by counting them all -can add and subtract single digit numbers in their play by counting on and back to find the answer	represent and use number bonds and related subtraction facts within 20. **Addition and Subtraction: calculations** add and subtract one digit and two digit numbers to 20 including zero. **Addition and Subtraction:Solve problems** -solve one step problems that involve addition and subtraction using concrete objects and pictorial representations and missing number problems such	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. **Addition and Subtraction: calculations** add and subtract numbers using concrete objects, pictorial representations and mentally including:n a two digit number and ones a two digit number and tens two two digit numbers adding three one digit numbers. **Addition and Subtraction: Solve problems** solve problems with addition and subtraction. using concrete objects and pictorial representations including numbers, quantaties and measures.

		-Place numbers in order -Says one more and one less than a given number **Vocabulary -** Add, plus, more than, minus, subtract, take away, how many?, less than, **Multiplication and Division: Recall, represent, use.** Once children have a secure understanding of addition and subtraction. -Begin to solve problems involving doubling, halving and sharing -Record using marks they can explain **Multiplication and Division: calculations** -informal subitising of amounts;	as 7 = ? – 9 **Vocabulary -** Add, take away, how many? subtract, equals, find the difference, count on, sum, total, plus, minus **Multiplication and Division: Recall, represent, use.** N/A **Multiplication and Division:**	applying their increasing knowledge of mental and written methods. **Vocabulary -** Add, take away, how many? find the difference, count on, sum, total, plus. subtract, minus, equals, calculation, **Multiplication and Division: Recall, represent, use.** recall and use multiplication and division facts for the 2, 5, 10 multiplication tables, including recognising odd and even numbers. show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. **Multiplication and Division: calculations**
	Vocabulary - Add, take away, how many? More, less, many, few, lots. **Multiplication and Division: Recall, represent, use.** Informally through snack time, cooking, environment, sharing. **Multiplication and Division: calculations**			

	N/A **Multiplication and Division: Problem solving.** **Vocabulary -** Sharing. **Fractions: Recognise and Write.**	-estimates a number of objects and checks quantities up to 20. -contextualised calculations e.g. how many blocks do you need to make a bridge from here to there; how many blocks to build a tower etc. -counting songs: in 2s, 5s, 10s **Multiplication and Division: Problem solving.** **Vocabulary -** Sharing, groups of, grouping, whole, double, half, share, more, less, same again, **Fractions: Recognise and Write.** - using Word Aware teach children meaning of whole and half in context	**calculations** N/A **Multiplication and Division: Problem solving.** 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. **Vocabulary -** Sharing, groups of, grouping, repeated addition, arrays, double, halve, equally, lots of, multiply by, divide by. **Fractions: Recognise and Write.** recognise, find and name a half	calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication, division and equals signs. **Multiplication and Division: Problem solving.** Solve problems involving multiplication and division using materials, arrays, repeated addition, mental methods and multiplication and division facts including problems in contexts. **Vocabulary -** Sharing, groups of, grouping, repeated addition, arrays, double, halve, equally, lots of, multiply by, multiplication, multiples,divide by. division, inverse, fraction of, half. **Fractions: Recognise and Write.** recognise, find, name and write fractions 1/3, ¼ 2/4 ½ and ¾ of a

	Fractions: compare. **Vocabulary -** Whole, half. **Algebra** **Vocabulary -**	-strengthen their understanding during breakfast club, snack time, cooking experiences, playdough in home corner e.g. whole amounts, half etc. **Fractions: compare.** -discuss comparisons between size and shape -big, large, small, tiny, bigger, smaller etc. **Vocabulary -** Whole, half, same, different, all, complete, **Algebra** **Vocabulary -**	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. **Fractions: compare.** **Vocabulary -** Whole, half, quarter, third, part. **Algebra**: solve one step problems that involve addition and subtraction using concrete objects and pictorial ? representations and missing number problems such as 7 = ?- 9	length, shape set of objects or quantity. **Fractions: compare.** recognise the equivalence of 2/4 and ½. **Fractions: calculations.** write simple fractions for example ½ of 6 = 3. **Vocabulary -** Whole, half,quarter, third, three quarters, equivalent. **Algebra** recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. **Vocabulary -**

			Vocabulary - addition, subtraction,	Inverse, addition, subtraction, multiplication, division.
	Measurement: using measures. Uses everyday and comparative vocabulary to describe measures (size, weight, capacity and time).	**Measurement: using measures.** -Orders 2 or 3 items by length, height, weight or capacity -Uses everyday language to talk about size, weight, capacity, distance, time and money to solve problems -Uses comparative and everyday language of measures **-**Orders and sequences familiar events (days of the week; sequencing	**Measurement: using measures.** -compare, describe and solve practical problems for: lengths and heights (eg long/short, longer/shorter, tall/short, double/half) mass/weight (eg heavy/light, heavier than,lighter than) capacity and volume (eg full/empty, more than, less than, half full, quarter) -Time (eg, quicker, slower, earlier, later) -measure and begin to record the following: lengths and heights, mass/weight, capacity and volume, time (hours, minutes, seconds).	**Measurement: using measures.** choose and use appropriate standard units to estimate and measure length/height (m/cm) mass (kg/g) temperature (C) capacity (l/ml) using rulers, scales, thermometers and measuring vessels. Compare and order lengths, mass, volume capacity and record the results using < > and =.
	Measurement : Money Acts out exchange of objects, cards, money or goods when in role play, in games or rhymes.	**Measurement : Money** -Uses everyday language to talk about size, weight, capacity, distance, time and money to solve problems -exchanges money/goods for snack (1ps, 2ps) -play games on IWB and iPads involving money exchange and becoming more familiar with	**Measurement : Money** recognise and know the value of different denominations of coins and notes.	**Measurement : Money** recognise and use symbols for pounds £ and pence p.Combine amounts to make a particular value. find different combinations of coins that equal the same amounts of

		the value of coins e.g. 2p is worth 2. **Measurement : Time** -Uses everyday language to talk about size, weight, capacity, distance, time and money to solve problems -Orders and sequences familiar events -Social games involving time e.g. What's the time Mr Wolf? -Time referred to in context, e.g. lunchtime; time of events; -Modelling o'clock timings -Puzzles **Vocabulary -** -long, short, taller, smaller, highest, longest, heavy, light, heaviest, lightest, -coin names, -time, day, yesterday, tomorrow, morning, evening, o'clock, breakfast, snack time, lunch time, home time, tea time, bed time,		money. solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.
	Measurement : Time Events in the day are referred to; snack time, lunch time, bed time, songs and stories are used. **Vocabulary -** breakfast, snack time, lunch time, home time, bed time, long, short, tall, longer, shorter, taller, heavy, full, first, last.		**Measurement : Time** sequence events in chronological order using language (eg before, after, next, first, today, yesterday , tomorrow, morning, afternoon, evening) recognise and use language relating to dates, including days of the week, weeks, months and years. Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. **Vocabulary -** coin names, pounds, pence, time, o'clock, day, yesterday, tomorrow, morning, evening, o'clock, half past, quarter past, hours,minutes, seconds days of the week, months of the year,,	**Measurement : Time** compare and sequence intervals of time. tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. know the number of minutes in an hour and the number of hours in a day. **Vocabulary -** coin names, time, o'clock, day, yesterday, tomorrow, morning, evening, o'clock, hours, half past, quarter past, quarter to, five minutes, minutes, seconds days of the week,

	Geometry: 2D shapes Shapes are present in the environment and are talked about by adults. Children name simple geometric shapes in their play. **Geometry: 3D shapes** Shapes are present in the environment and are talked about by adults. **Geometry: Position and**	**Geometry: 2D shapes** -Uses everyday names for 'flat' 2D shapes -Explores the characteristics of everyday objects, 2D shapes and can use mathematical language to describe them -Uses everyday language to describe the properties of shapes/objects -Can recognise, create and describe patterns **Geometry: 3D shapes** -Beginning to use everyday names for 'solid' 3D shapes -Explores the characteristics of everyday objects and 3D shapes and uses mathematical language to describe them. **-**Can identify and select a particular named shape **Geometry: Position and Direction** -Children understand and use simple positional language.	long, short, heavy, light, centimetres, measure. **Geometry: 2D shapes** recognise and name common 2D shapes (eg rectangles, squares, circles and triangles). **Geometry: 3D shapes** recognise and name 3D shapes (eg cuboids, cubes, pyramids, spheres) **Geometry: Position and Direction**	months of the year,, long, short, heavy, light, centimetres, metres, measure, length. l,ml, g, kg, < >. **Geometry: 2D shapes** Identify and describe the properties of 2D shapes including the number sides and lines of symmetry. identify 2D shapes on the surface of 3D shapes Compare and sort common 2D shapes and everyday objects. **Geometry: 3D shapes** recognise and name common 3D shapes (eg cuboids, cubes, pyramids, spheres). compare and sort common 3D shapes and everyday objects. **Geometry: Position and Direction**

	Direction Children understand and use simple positional language. **Vocabulary -** Positional language: on, under, in, through, behind, in front. Circle, square, triangle.	**Vocabulary -** -Positional language: on, under, above, behind, in front of, in, next to, beside, inbetween. -Circle, square, triangle, rectangle. -Cube, cuboid, sphere, cylinder, pyramid -Edge, straight, corner, side, curved, round,	describe position, direction and movement, including whole, half, quarter and three quarter turns. **Vocabulary -** on, under, above, behind, in front of, in, next to, beside, inbetween. Circle, square, triangle, rectangle, cube, cylinder, sphere, cone, cuboid, sides, faces, corners, 2D, 3D, left, right, ½ turn, ¼ turn, vertices,	order and arrange combinations of mathematical objects in patterns and sequences. 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 quarters turns (clockwise and anti clockwise). **Vocabulary -** on, under, above, behind, in front of, in, next to, beside, inbetween. Circle, square, triangle, rectangle, pentagon, hexagon, cube, cylinder, sphere, cone, cuboid, pyramid, sides, edges, faces, corners, vertices, 2D, 3D,regular, irregular, lines of symmetry, left, right, ½ turn, ¼ turn, ¾ turn, clockwise, ani-clockwise,

Progression				
Key Vocabulary				