Maths Curriculum
Progression of Skills and Knowledge

At Westfields Infant School, we want children to develop the knowledge, skills and competencies to access the next stage in their learning. In addition to this, we actively encourage and motivate the children to develop positive attitudes, skills and habits so that they are well equipped for the future.

At Westfields Infant School, we recognise that maths is an essential part of everyday life. It is a crucial part of science, technology and engineering, and necessary for financial literacy and most forms of employment. We provide the children with a rich mathematical foundation on which to build their learning. Children develop fluency, reasoning and problem solving across the strands of maths; number (place value), the four operations of addition, subtraction, multiplication and division, fractions, measure, geometry and statistics. We believe that all children should have a positive attitude towards maths so they are able to develop their skills and have a sense of achievement. We want children to have the confidence and resilience to solve a range of mathematical problems reflecting everyday situations.

At Westfields Infant School, our maths curriculum has been developed based on the area of learning of Mathematics within Statutory Framework for the Early Years Foundation Stage and the National Curriculum for Mathematics

Early Learning Goals – Mathematics

Number ELG

- 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.

Numerical Patterns ELG

- 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.

The National Curriculum for Mathematics – Years 1 and 2

The National Curriculum for Mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately;
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language;
- can solve problems by applying their mathematics to a variety of routine and nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

	Maths Curriculum Progression		
	Reception	**Year 1**	**Year 2**
Mental Fluency	• Be able to count to 10. • Be able to count back from 10. • Be able to count to 20 (ensuring children say 'teen' not 'ty'). • Be able to count back from 20 (ensuring children say 'teen' not 'ty'). • Be able to count on from any number within 20 (e.g. start on 7). • Recognise numbers to 20 in random order. • Know one more than and one less than a number up to 20.	• Count read and write numbers to and through 100. • Know number bonds for 10. • Know number bonds for all numbers to 10. • Know some number bonds for 20. • Solve addition and subtraction number sentences within 20 recalling known facts. E.g. doubles, 10 + ?, 18 - ? = 10. • Begin to use bridging when adding two numbers mentally within 20 e.g. 8 + 3 can be solved as 8 + 2 = 10 then 10 + 1 = 11.	• Count read and write numbers to and through 100. • Count in tens from any given number e.g. 2, 12, 22, 32, 42 … • Know number bonds for all numbers to 10. • Know numbers bonds for 20. • Solve addition and subtraction number sentences within 20 recalling known facts. • Bridge through tens to add and subtract within 100.
Place Value	• Be able to order numbers to 10 consecutively. • Be able to order numbers to 20 consecutively. • Be able to recognise numbers to 20 in random order (and know they end in 'teen' except from 'twenty'). • Be able to order a group of random numbers within 10. • Subitise small numbers and apply to larger numbers e.g. see two dice with 5 and know they are 5 and that 5 + 5 = 10. • Recognise the arrangement of numbers on Numicon, 10 frames, dice… • Know that if numbers are moved (not taken away) that there is still the same number. • Be able to use the language of more than, less than (fewer) in relation to groups of objects.	• Read and write numerals from 1 to 20 in numerals and words. • Be able to order numbers to 100 consecutively. • Say a number between two given numbers e.g. tell me a number between 40 and 50 and explain how they know. • Explain where a number might be on a number line and give reasons. • Use the language: less than, more than, fewer, equal to, lower, higher, most, least.	• Order consecutive and random numbers to 100. • Use the language less than, more than, fewer, equal to, lower, higher, most, least to describe numbers and groups of objects. • Use the signs <, > and = to compare numbers within 100. • Recognise the place value of each digit in a two-digit number (tens and ones). • Partition two-digit numbers in different ways – variation of ones and of tens – e.g. 34 could be 33 + 1, 32 + 2, 31 + 3 or 34 could be partitioned as 30 + 4, 20 + 14, 10 + 24.
Addition and Subtraction	• Count sets of objects up to 10 and start to count beyond. • Combine groups of objects to add within 10, using a range of resources such as everyday objects (seasonal or topic related), Numicon, counters, dice, bears etc… • Remove objects from a given set within 10 to subtract a number, using a range of resources such as everyday objects (seasonal or topic related), Numicon, counters, dice, bears etc… • Match addition and subtraction within 10 to a tens frame or number line using real objects. • Match addition and subtraction within 10 to a tens frame or number line using drawings.	• Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. • Solve one-step problems that involve addition and subtraction, using concrete objects, pictorial representations as well as mathematical signs. • Partition numbers within 10 and then 20. • Represent and use number bonds and related subtraction facts within 20. • Understand that addition is the inverse of subtraction (within 20).	• Solve problems with addition and subtraction: using concrete objects, pictorial representations and symbols. • Solve problems including number, quantities and measures. • Apply their increasing knowledge of mental methods e.g. number bonds, doubles and multiples to solve addition and subtraction problems. • Recall and use addition and subtraction facts to 20 fluently and derive and use related facts up to 100.

	• Start to become familiar with the language associated with addition and subtraction e.g. add, plus, more, take away, less, through real life scenarios.	• Solve missing number problems such as 7 = ? – 9 through various representations such as practical tasks, 'part, part whole' models, bar models and known facts. • Use near facts to solve addition and subtraction problems within 20 e.g. If I know 10 + 5 = 15, then can this help me solve 11 + 5.	• Use various written methods to show their working of addition and subtraction problems e.g. pictorial, unstructured number lines, drawing dienes, part, part, whole diagrams and bar models. • Use the language associated with addition and subtraction confidently as well as words such as sum, difference and how many more. • Use efficient methods to add and subtract e.g. when adding on a number line jump in multiples of tens or ones: when solving 32 + 24, add 20 rather than two lots of 10. • Add and subtract using representations as well as mentally, using a 2 digit number and ones, a 2 digit numbers and tens, two 2 digit numbers and add 3 one digit numbers. • Add and subtract using bridging when using a 2 digit number and ones, a 2 digit numbers and tens and two 2 digit numbers.
Multiplication and Division	• Solve problems, including doubling, halving and sharing through practical contexts.	• Count in 2s, 5s and 10s using real life contexts, money, number lines (skip counting), Numicon, hands, feet, fingers, toes, ears… • Solve one step problems involving multiplication and division by calculating the answer using concrete objects, pictorial representations and arrays.	• Count in steps of 2, 3, 5 and 10 from 0 and in tens from any number forwards and backwards. • Recall and use multiplication tables and division facts for the 2, 5 and 10 multiplication tables. • Know the language associated with multiplication and division, such as groups of, sharing and multiples. • Solve problems using multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts. • Understand the relationship between multiplication and division when solving problems.
Fractions	• Develop an awareness of halving through practical experiences.	• 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.	• Recognise, find, name and write fractions ⅓ and ¼. • Recognise, find, name and write fractions 2/4 and 3/4 of a length, shape, set of objects or quantity. • Write simple fractions e.g. ½ of 6 = 3 and recognise the equivalence of 2/4 and ½. • Recognise, find, name and write fractions ½ ¼ ⅓ 2/4 and ¾ of a length, shape and quantity.

Measurement	• Develop an awareness of measure through practical experiences (e.g. length, weight/mass, capacity, distance, height) in readiness for more precise measuring in KS1 • Develop an awareness of time passing, in preparation for telling the time. • Begin to use the language of time (next, before) to sequence personal events • Develop their use and understanding of positional language.	• Compare, describe and solve practical problems for lengths and heights (e.g. long/short, longer/shorter, tall/short, double/half), and time (quicker, slower, earlier, later). • Measure and begin to record lengths and heights. • Recognise and know the value of different denominations of coins and notes. • Sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and 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 hour (hours, o'clock and half past).	• Recognise and use symbols for pounds (£) and pence (p). • Find different combinations of coins that equal the same amounts of money. • Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm), mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using scales thermometers and measuring vessels. • Compare and order lengths, weights, capacity and measurements using >, < and =. • Compare and sequence intervals of time. • Tell and write the time including quarter past/to the hour and draw the hands on a clock face to show these times. • Tell and write the time to 5 minutes. • Know the number of minutes in an hour and the number of hours in a day.
Geometry	• Explore 2-D and 3-D shape (e.g. through constructions and patterns)	• Recognise and name common 2-D shapes including squares, circles, rectangles, hexagons and triangles. • Recognise and name common 3-D shapes including cuboids, cubes, pyramids and spheres. • Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another. • Describe position, directions, and movements.	• Identify and describe the properties of 2-D shapes, including the number of sides and symmetry in a vertical line. • Identify 2-D shapes on the surface of 3-D shapes, for example a circle on a cylinder and a triangle on a pyramid. • Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. • Compare and sort common 2-D and 3-D shapes and everyday objects. • Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties. • Order and arrange combinations of mathematical objects in patterns. • Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line.

			• Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise).
Statistics			• Ask and answer simple questions by counting the number of objects in each category, sorting the categories by quantity and comparing categorical data. • Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.