

Langley Primary School

Mathematics Curriculum

	0-3 Preschool	3-4 EYFS 1	4-5 EYFS 2	Links to KS1 Curriculum
EYFS Area of Learning	Understanding the world: Past and Present			
Fundamental Knowledge: Number	<p>Developing natural interest in quantities including:</p> <ul style="list-style-type: none"> - Taking part in finger rhymes with numbers - Developing counting like behaviours such as making sounds, pointing or saying some numbers in sequence - Counting in everyday context, sometimes skipping numbers - Sometimes responding accurately when asked to give one or two items - Comparing amounts using language: lots, more, same. <p>Reacts to changes of amount when those amounts are significant (more than double)</p> <p>Begins to notice numerals in the environment.</p>	<p>Deep understanding of number to 5 including:</p> <ul style="list-style-type: none"> - Using number names in in rhymes and songs and to identify how many - Counting a set of objects (regular or irregular) by saying one number name for each object in order(the one-to-one principle) - Knowing that the last number said is the sets total (the cardinal principle) - Linking numerals and amounts to 5 - Compare quantities using language: more than, fewer than <p>Fast recognition of up to 3 objects without counting</p> <p>Experiments with their own symbols and marks as well as numerals up to 5.</p> <p>Solves real world mathematical problems with numbers up to 5.</p>	<p>Deep understanding of number to 10 including:</p> <ul style="list-style-type: none"> - Counting actions and sounds or objects which cannot be moved - Counting out up to 10 objects from a large group - Linking numerals and amounts to 10 - Estimating how many and checking by counting - Shows awareness that numbers are composed of smaller numbers, exploring partitioning in different ways - Adding and taking away single digit numbers and counting two groups to find the total - Using the correct mathematical language when adding and taking away - Automatically recalling number bonds to 5 (including subtraction facts) and some number bonds to 10, including double facts. <p>Fast recognition of up to 5 objects without counting</p> <p>Explores and work out mathematical problems, using signs and strategies of their own choice, including (when</p>	<p>Number and Place Value</p> <ul style="list-style-type: none"> - 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. - 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. - Read and write numbers from 1 to 20 in numerals and words. <p>Addition and Subtraction</p> <ul style="list-style-type: none"> - Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. - Represent and use number bonds and related subtraction facts within 20. - Add and subtract one-digit and two-digit numbers to 20, including zero. - Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial

			appropriate) standard numerals, tallies and “+” or “-” Uses number facts to solve mathematical problems	representations, and missing number problems such as $7 = [] - 9$. Multiplication and Division 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.
Fundamental Knowledge: Numerical patterns	Notices patterns and arranges things in patterns Completes inset puzzles	Counts beyond 5, forwards and backwards Recognises numerals to 5 and recites numbers beyond 5 Compares amounts, recognising when there is more, less or the same	Counts beyond 10 (on and back) spotting patterns, talking about them and representing them Reads, sequences and forms numerals correctly Uses mathematical language to compare two sets of objects, identifying how many more/less there are when comparing amounts Identifies odd and even numbers, double facts and can split a group in half and share a set of objects.	
Fundamental Knowledge: Spatial awareness, pattern, shape, space and measure	Spatial Awareness - Responds to some spatial and positional language - Begins to remember their way around familiar environments - Explores how things look from different viewpoints including things that are near or far away Shape - Chooses puzzle pieces and tries to fit them in - Recognises that two objects have the same shape - Makes simple constructions Pattern	Spatial Awareness - Responds to and uses language of position and direction - Predicts, moves and rotates objects to fit the space or create the shape they would like Shape - Responds to both informal language and common shape names, showing awareness of their similarities and differences - Partitions and combines shapes to make new shapes with 2D and 3D shapes	Spatial Awareness - Uses spatial language (directions, relative terms and viewpoints) - Turns and flips objects in order to make shapes fit and create models; predicting and visualising how they will look - Makes simple maps of familiar and imaginative environments, with landmarks Shape - Uses informal language and analogies as well as	Position and Direction - Describe position, directions and movements, including half, quarter and three-quarter turns. Shape - Recognise and name common 2D and 3D shapes, including circles, triangles, rectangles ((including squares), pyramids, spheres and cuboids (including cubes). Measurement Compare, describe and solve practical problems for:

	<ul style="list-style-type: none"> - Joins in and anticipates repeated sound and action patterns - Is interested in what happens next using the pattern of everyday routines Measures - Explores differences in size, length, weight and capacity - Understands some talk about immediate past and future and anticipates times of the day such as mealtimes or home time 	<ul style="list-style-type: none"> - Chooses items based on their shape which are appropriate for the purpose Pattern - Explores and adds to simple linear patterns of two or three repeating items. - Creates their own spatial patterns showing some organisation or regularity Measures - In meaningful contexts, finds the longer or shorter, heavier or lighter and more/less full of two items Recalls a sequence of events in everyday life and stories 	<ul style="list-style-type: none"> mathematical terms to describe shapes - Composes and decomposes shapes, learning which shapes combine to make other shapes - Makes models of increasing complexity, selecting blocks needed, solving problems and visualising what they will build Pattern - Spots patterns in the environment, beginning to identify the pattern “rule” - Chooses familiar objects to create and recreate repeating patterns beyond AB patterns and begins to identify the unit of repeat Measures - Solves problems involving prediction and discussion of comparisons of length, weight or capacity using measuring tools Orders and 	<ul style="list-style-type: none"> - lengths and heights (long/short, longer/shorter, tall/short, double/half) - mass or weight (heavy/light, heavier than, lighter than) - capacity/volume (full/empty, more than, less than, quarter) - time (quicker, slower, earlier, later) Measure and begin to record: - lengths and heights - mass/weight - capacity and volume - time (hours, minutes, seconds) - 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 past the hour and draw the hands on a clock face to show these times.
<p>Early Learning Goal</p>	<p>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. 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.</p> <p>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.</p>			

	AUT 1	AUT 2	SPR 1	SPR 2	SUM 1	SUM 2
Year 1	Number: Place value within 10 Number: Addition and subtraction within 10	Number: Addition and subtraction within 10 Geometry: Shape Number: Place Value within 20	Number: Addition and subtraction within 20 Number: Place Value within 50	Measurement: Length and Height Measurement: Weight and Volume	Number: Multiplication and division Number: Fractions Geometry: Position and direction	Number: Place Value within 100 Measurement: Money Measurement: Time
Fundamental Knowledge	Count, sort and order objects up to 10. Compare and order numbers using $<$, $>$ and $=$ Using a number line	Using a part-whole model and the addition symbol. Number bonds within and to 10. Finding parts Using a number line and parts for subtraction. Recognise and name 3D and 2D shapes including patterns.	Finding the difference Comparing addition and subtraction statements: $A + B < C$ Recognise, represent and compare numbers up to 50 Count in 2's and 5's	Compare and measure lengths and heights. Measure and compare mass. Measure and compare capacity.	Make and add equal groups. Use arrays and groups including sharing and grouping. Make doubles. Find a half and quarter. Describe turns and positions.	Count forwards and backwards within 100. Partition and compare numbers. Find one more and one less within 100. Recognise and count coins. Before and after. Dates Time to the hour and half hour.
	AUT 1	AUT 2	SPR 1	SPR 2	SUM 1	SUM 2
Year 2	<i>Number: Place value Number: Addition and subtraction</i>	<i>Number: Addition and subtraction Measurement: Money Number: Multiplication and division</i>	<i>Number: Multiplication and division Statistics</i>	Geometry: Properties of shape Number: Fractions	Measurement: Length and Height Geometry: Position and direction Consolidation and Problem Solving	Measurement: Capacity and Temperature Measurement: Time

<p>Fundamental Knowledge</p>	<p>Count forwards and backwards within 100. Represent tens and ones to 100 including part-whole models and addition. Compare and objects and numbers to 100 using place value charts. Use fact families for addition and subtraction to 20 and 100. Compare and check calculations.</p>	<p>10 more and 10 less. Add and subtract 10's. Add by making 10. Add a 2-digit and 1-digit and 2-digit and 2-digit number crossing ten. Subtract a 2-digit and 1-digit and 2-digit and 2-digit number crossing ten. Number bonds to 100. Recognise coins and notes. Count, add, subtract and compare money including 2 step problems. Make equal groups and add equal groups.</p>	<p>Make arrays Multiplication sentences using the x symbol including pictures. 2, 5 and 10 times tables. Make equal groups – sharing and grouping. Divide by 2, 5 and 10. Odd and even numbers. Make tally charts, pictograms and block diagrams. Draw and interpret tables/charts.</p>	<p>Recognise 2D and 3D shapes. Count sides and vertices. Lines of symmetry. Sort 3D shapes by counting vertices, edges and faces. Making patterns. Make equal parts. Recognise and find a half, quarter and third. (three quarters) Unit and non-unit fractions. Equivalence of $\frac{1}{2}$ and $\frac{2}{4}$.</p>	<p>Compare lengths and heights. Measure and order lengths. Describe position, movement and turns. Make patterns with shapes. Application of prior learning to problem solving.</p>	<p>Tell the time to the nearest hour, half hour, quarter to and quarter past. Tell the time to the nearest 5 minutes. Hours and days. Duration of time. Introduce weight and mass. Measure and compare mass in grams and kilograms. Measure capacity and volume using millilitres and litres. Measure temperature.</p>
-------------------------------------	---	---	---	--	--	--

	AUT 1	AUT 2	SPR 1	SPR 2	SUM 1	SUM 2
<p>Year 3</p>	<p>Number: Place value Number: Addition and subtraction</p>	<p>Number: Addition and subtraction Number: Multiplication and division</p>	<p>Number: Multiplication and division Measurement: Money Statistics</p>	<p>Measurement: Length and perimeter Number: Fractions</p>	<p>Number: Fractions Measurement: Time Geometry: Properties of shape</p>	<p>Geometry: Properties of shape Measurement: Mass and Capacity</p>

<p>Fundamental Knowledge</p>	<p>Represent numbers to 1,000 using hundreds, tens and ones. Use tens and ones for addition. Use a number line to 1,000. Find 1, 10, 100 more or less than a given number. Compare and order objects and numbers up to 1,000. Count in 50's. Add and subtract multiples of 100. Add and subtract up to 3 - digits and 3-digits including crossing 10 and 100.</p>	<p>Subtract up to 3-digit and 3-digit numbers including crossing 10 and 100. Estimate answers to calculations. Checking answers. Multiplication using the x symbol. Using equal groups. 2, 5, 10 times table consolidation. Multiply and divide by 2, 5, 10 and 3. Multipliy and divide by 4 and 8. The 4 and 8 times table.</p>	<p>Multiply 2 digit by 1 digit. Divide 2 digits by 1 digit. Scaling. How many ways? Count money in pence and pounds. Convert pounds and pence. Add and subtract money including giving change. Make tally charts, bar charts and pictograms. Using tables.</p>	<p>Measure length using m and cm. Equivalent lengths (mm, cm and M) Add and compare lengths. Measure and calculate perimeter. Consolidation: Make equal parts. Recognise and find a half, quarter and third. (three quarters) Unit and non-unit fractions. Equivalence of $\frac{1}{2}$ and $\frac{2}{4}$.</p>	<p>Making the whole. Recognise and count in tenths including decimals. Fractions on a number line. Fractions of a set of objects. Equivalent fractions. Compare and order fractions. Add and subtract fractions. Consolidate: Time to the hour, half past and quarter past/to. Telling time to the minute. Use a.m and p.m and the 24 hour clock. Compare and find durations including measuring time in seconds.</p>	<p>Turns and angles. Right angles in shapes. Compare and draw angles accurately. Horizontal. Vertical, perpendicular and parallel. Recognise, describe and make 2D and 3D shapes. Compare and measure mass. Add and subtract mass. Compare volume. Measure and compare capacity. Add and subtract capacity. Temperature recap.</p>
-------------------------------------	---	--	--	---	---	--

	AUT 1	AUT 2	SPR 1	SPR 2	SUM 1	SUM 2
<p>Year 4</p>	<p>Number: Place value Number: Addition and subtraction</p>	<p>Measurement: Length and Perimeter Number: Multiplication and Division</p>	<p>Number: Multiplication and Division Measurement: Area Fractions</p>	<p>Fractions Decimals</p>	<p>Decimals Measurement: Money Measurement: Time</p>	<p>Statistics Geometry: Properties of shape Geometry: Position and Direction</p>

<p>Fundamental Knowledge</p>	<p>Count in multiples of 6, 7, 9. 25 and 1000. Find 1000 more or less than a given number. Count backwards through zero to include negative numbers. Recognise the place value of each digit in a four digit number (thousands, hundreds, tens and ones) Order and compare numbers beyond 1000. Identify, represent and estimate numbers using different representations. Round any number to the nearest 10, 100 or 1000.</p>	<p>Equivalent lengths m and cm, mm and cm. Kilometres Add lengths Subtract lengths Measure perimeter Perimeter on a grid Perimeter of a rectangle and other rectilinear shapes. . Multiply and divide by 10 and 100 Multiply and divide by 1 and 0 Multiply and divide by 3, 6, 9 and 7.</p>	<p>11 and 12 times table Multiply 3 numbers Factor pairs Efficient multiplication Written methods Multiply 2 and 3 digits by 1 digit Divide 2 digits by 1 digit Divide 3 digits by 1 digit What is area? Counting squares Making shapes Comparing area Unit and non unit fractions</p>	<p>Add 2 or more fractions Subtract fractions Subtract 2 or more fractions Subtract from whole amounts Fraction of a set of objects Calculate fractions of a quantity Recognise tenths and hundredths Tenths as decimals Tenths on a place value grid Tenths on a number line. Divide 1 and 2 digits by 10 and 100 Hundredths as decimals</p>	<p>Bonds to 10 and 100 Make a whole Write decimals Compare and order decimals Round decimals Halves and quarters Pounds and pence Ordering money Estimating money Convert pounds and pence Add and subtract money Find change Four operations Telling time to nearest 5 and 1 minute intervals Using a.m. and p.m. 24 hour clock Hours minutes and seconds Years, months, weeks and days Analogue to digital time</p>	<p>Interpret charts Comparison, sum and difference Introducing line graphs Line graphs Turns and angles Right angles in shapes Compare and identify angles Compare and order angles Recognise and describe 2d shapes Triangles Quadrilaterals Horizontal and vertical lines of symmetry Complete a symmetrical figure Describe a position Draw on a grid Move on a grid Describe movement on a grid.</p>
-------------------------------------	--	--	--	---	---	--

	AUT 1	AUT 2	SPR 1	SPR 2	SUM 1	SUM 2
<p>Year 5</p>	<p>Number: Place value Number: Addition and subtraction Statistics</p>	<p>Number: Multiplication and Division Perimeter and Area</p>	<p>Number: Multiplication and Division Fractions</p>	<p>Fractions Number: Decimals and Percentages</p>	<p>Number: Decimals Geometry: Properties of shape Angles</p>	<p>Geometry: Position and Direction Measurements: Converting Units Measurement: Volume</p>

<p>Fundamental Knowledge</p>	<p>Count forwards or backwards in steps of 10 up to 1,000,000 Count forwards and backwards in whole numbers including through negative numbers Read, write, compare and order numbers up to 1,000,000 Read and write Roman Numerals up to 1,000 and recognise years written in Roman numerals Interpret negative numbers in context and round numbers to the nearest 10, 100, 1000, 10,000 and 100,000 Add and subtract 4 digit numbers using formal written methods Add and subtract numbers mentally including increasingly bigger numbers Solve addition and subtraction problems including complex word problems. Complete, read and interpret information from tables including timetables Solve comparison, sum and</p>	<p>Subtract up to 3-digit and 3-digit numbers including crossing 10 and 100. Estimate answers to calculations. Checking answers. Identify factors and multiples including finding all factors of a number as well as common factors Know and use the vocabulary of prime and composite numbers Recognise and use square and cubed numbers Measure and calculate the perimeter of rectilinear shapes in centimetres and metres Calculate and compare the area of rectangles (including squares) and by using standard units</p>	<p>Multiply up to 4 digits by 1 or 2 digits using a formal written method Including long multiplication for 2 digits Divide up to 4 digit numbers using a formal written method Multiply and divide numbers including decimals by 10, 100 and 1000 Solve multiplication and division problems including scaling by simple fractions Identify and name equivalent fractions of a given fraction, represented visually, including tenths and hundredths Recognise mixed numbers and improper fractions and convert from one form to another Compare and order fractions where the denominators are all multiples of the same number</p>	<p>Add and subtract fractions with the same denominators and denominators that are multiples of the same number Multiply proper fractions and mixed numbers by whole numbers Read and write decimals as fractions Recognise and use thousandths and relate these to tenths and hundredths Round decimals with 2 decimal places to the nearest whole number and 1 decimal place Recognise the % symbol and understand that cent relates to the number of parts per 100 Solve problems which require knowing percentage and decimal equivalents of fractions</p>	<p>Solve decimal problems involving number up to three decimal places. Solve problems involving money using all four operations Identify between regular and irregular polygons based upon reasoning of properties Use the properties of rectangle to deduce information about missing lengths and angles Identify 3-D shapes from 2-D representations Know angles are measured in degrees, estimate, compare and order acute, obtuse and reflex angles Draw given angles and measure them in degrees Identify and measure angles at a point including on a straight line</p>	<p>Identify, describe and represent the position of shape following a reflection or translation using the appropriate language and know that the shape has not changed Convert between units of measurement including centimetres, metres, pounds, pence, grams, kilograms, litres and millilitres Use all four operations to solve problems involving measurement Estimate volume using blocks to build cuboids and capacity</p>
-------------------------------------	--	---	--	--	--	--

	difference problems using graphs and tables					
	AUT 1	AUT 2	SPR 1	SPR 2	SUM 1	SUM 2
Year 6	Number: Place value Number: Addition, Subtraction, Multiplication and Division	Fractions Geometry: Position and Direction	Number: Decimals Number: Percentages Number: Algebra	Measurement: Converting Units Measurement: Perimeter, Area and Volume Number: Ratio	Geometry: Properties of Shapes Problem solving Statistics	Investigations

<p>Fundamental Knowledge</p>	<p>Read, write and compare numbers up to 10,000,000 and determine the value of each digit Round any whole number to a required degree of accuracy Use negative numbers in context and calculate intervals across zero Use the knowledge of order of operations to carry out calculations using the four operations Solve multi-step problems in context deciding which operations and which methods to use and why Identify common factors, multiples and prime numbers Use estimations to check answers to problems Multiply multi-digit numbers by up to 4 digits by a 2 digit whole number using the formal written method Divide numbers up to 4 digits by a 2 digit whole number using a formal written method Perform mental calculations</p>	<p>Use common factors to simplify fractions and use common multiples to express fractions in the same denomination Compare and order fractions including fractions less than 1 Add and subtract fraction with different denominators and mixed numbers using the concept of equivalent fractions Multiply simple pairs of fractions writing answers in the simplest form Divide proper fractions by whole numbers</p>	<p>Identify the value of each digit in numbers up to three decimal places Multiply and divide by 10, 100 and 1000 giving answers up to 3 decimal places Multiply one-digit numbers with up to 2 decimal places by whole numbers Use written division methods where the answer has 2 decimal places Associate a fraction with division and calculate decimal equivalence Recall and use decimal, fraction and percentage equivalents Find a rule using one or two steps. Form expressions. Use substitution within equations. Use formulae to solve simple one and two step equations. Find pairs of values. Enumerate possibilities.</p>	<p>Metric measures Convert and calculate with metric measures Miles and kilometres Imperial measures Shapes with the same area Area and perimeter Area of triangles Area of parallelograms Volume using cubes Volume of a cuboid Using ratio language Ratio and fractions Ratio symbols Calculating ratio Using scale factors Calculating scale factors Ratio and proportion problems.</p>	<p>Measure with a protractor Draw lines and angles accurately Angles on a straight line Angles around a point Calculate angles Vertically opposite angles Angles in a triangle Angles in special quadrilaterals Angles in regular polygons Draw nets of 3d shapes Read and interpret line graphs Draw line graphs Circles Read and interpret pie charts including percentages Draw pie charts The mean</p>	
-------------------------------------	---	---	--	--	--	--

	including with mixed operations					
--	---------------------------------	--	--	--	--	--