

Maths Progression Document

The Horsell Village School



	Reception	Year 1	Year 2
Number – number and place value			
Knowledge			
	<ul style="list-style-type: none"> Saying number words in sequence forwards and backwards (including crossing the tens barrier) 1:1 correspondence - tagging each object with one word -counting things of different size -counting things that cannot be moved e.g. pictures -counting things that cannot be seen e.g. sounds, actions Knowing the last number counted gives the total so far Subitising – recognising a small number of things without needing to count Numeral meanings – matching number to quantity Counting on from a given number (within 20) Count in 2s for different purposes in context Ordering numbers 	<ul style="list-style-type: none"> Counting on and back from a given number (within 100) – one more/one less explaining what one more and one less means (+1/-1) Counting 1, 2, 3... and ordinal numbers first, second, third... Count in 2s – identify odd/even numbers and the pattern for identifying them (groups of two) Read and write numbers from 1-20 in numerals and words Identify and represent numbers using objects and pictorial representations Identify tens and ones (within 20 and extend to 100 by end of year) Use the language of: equal to, more than, less than (fewer), most, least proving it using place value knowledge Compare and order numbers using symbols. Use tens and ones language to explain. Count in multiples of 10. Understand what this means (repeated addition) Count in multiples of 5 (explain what this means – repeated 	<ul style="list-style-type: none"> Count in steps of 2, 3, 5 and 10 from 0 Count in 10s from any number, on and back Identify tens and ones (within 100 and extend by the end of the year) Represent numbers in different ways Estimate Compare and order numbers up to 100 using symbols Read and write numbers to at least 100 in numerals and words Partition numbers in different ways (secure knowledge of place value) Understand 0 as a place holder

		addition)	
Skills			
			<ul style="list-style-type: none"> Use place value and number facts to solve problems
Number – addition and subtraction			
Knowledge			
	<ul style="list-style-type: none"> Conservation – knowing that a number doesn't change (as long as nothing has been added or taken away) Compare different amounts objects using language of 'more than', 'less than' Recognise one more than/one less than Add two groups of objects together (count on from larger number) Partition a number into different pairs e.g. $2 + 3 = 5$ Partition a number into more than 2 numbers e.g. plant 10 seeds in 3 pots Recognise which number pairs make a given total e.g. $2 + ? = 5$ In practical activities and discussion, beginning to use the vocabulary involved in adding and subtracting. Using quantities and objects, add and subtract two single-digit numbers and count on or back to find the answer. 	<ul style="list-style-type: none"> Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods) Represent and use number bonds and related subtraction facts within 20. Identify patterns and relationships. Add and subtract one-digit and two-digit numbers to 20, including zero using place value knowledge of tens and ones Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot 	<ul style="list-style-type: none"> Recall and use addition and subtraction facts to 20 fluently, understanding and identifying number patterns. Derive and use related facts up to 100. Add and subtract numbers, using knowledge of place value, employing concrete resources, pictorial representations, and mentally, including: <ul style="list-style-type: none"> a two-digit number and ones a two-digit number and tens two two-digit numbers adding three one-digit numbers Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot

Skills			
		<ul style="list-style-type: none"> • Solve one-step problems that involve addition and subtraction, using concrete objects, pictorial representations and missing box problems e.g. $7 = ? - 9$ • Memorise and reason with number bond knowledge, understanding patterns and relationships, e.g. $2 + 8 = 10$ $12 + 8 = 20$ 	<ul style="list-style-type: none"> • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve 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
Number – multiplication and division			
Knowledge			
	<ul style="list-style-type: none"> • Compare different amounts objects using language of 'more than', 'less than' • Make 2 uneven groups equal e.g. plate has 2 objects, plate has 6 objects. Child will place 4 on each plate so that it is 'equal'/'fair' 	<ul style="list-style-type: none"> • Count in multiples of 2, 10 and 5 understanding what this means (repeated addition) • Doubling and halving numbers within 20 • Find simple fractions of numbers understanding the concept of the whole and parts of the whole. 	<ul style="list-style-type: none"> • Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward understanding the process involved (repeated addition) • Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot • Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs •

Skills	<ul style="list-style-type: none"> Children can compare numbers that are far apart, near to and next to each other. For example, 8 is a lot bigger than 2 but 3 is only a little bit bigger than 2. Look for the reasoning in the response they give, i.e. 'I would pick the 5 box because 5 is more than 3 and I want more.' Solve problems, including doubling, halving and sharing. 	<ul style="list-style-type: none"> Through grouping and sharing small quantities, begin to understand concept of multiplication and division, in context 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 	<ul style="list-style-type: none"> Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts
Number - fractions			
Knowledge	<ul style="list-style-type: none"> Use language of half in everyday activities e.g art, cooking etc. 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> <i>Pupils should count in fractions up to 10, starting from any number and using the 1/2 and 2/4 equivalence on the number line (Non-Statutory Guidance)</i> Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity Write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.
Skills	<ul style="list-style-type: none"> Solve problems, including doubling, halving and sharing. 	<ul style="list-style-type: none"> Solve problems involving halves and quarters recognising the relationships between the two 	<ul style="list-style-type: none"> Solve problems involving halves, quarters, three-quarters and thirds
Measurement			

<p>Knowledge</p>	<ul style="list-style-type: none"> Use language of measure in everyday activities: Lengths and heights Mass/weight Capacity/volume Time 	<ul style="list-style-type: none"> Compare, describe and solve practical problems for: Lengths and heights Mass/weight Capacity/volume Time Measure and begin to record: Lengths and heights Mass/weight Capacity/volume Time Recognise and know the value of different denominations of coins and notes Sequence events in chronological order Days of the week, weeks, months and years Tell the time to the hour and half past the hour (draw hands on clock face) 	<ul style="list-style-type: none"> Compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$ Compare and sequence intervals of time Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}\text{C}$); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels 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 money 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. Know the number of minutes in an hour and the number of hours in a day.
<p>Skills</p>			<ul style="list-style-type: none"> Solve simple problems in a practical context involving

			addition and subtraction of money of the same unit, including giving change
Geometry – properties of shape			
Knowledge			
	<ul style="list-style-type: none"> Begin to recognise and name common 2-D and 3-D shapes, including: 2-D shapes [e.g. rectangles/oblongs (including squares), circles and triangles] 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres]. 	<ul style="list-style-type: none"> Recognise and name common 2-D and 3-D shapes, including: 2-D shapes [e.g. rectangles/oblongs (including squares), circles and triangles] 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres]. Recognise common 2-D and 3-D shapes in different orientations Recognise the shapes of everyday objects 	<ul style="list-style-type: none"> Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] Read and write names for shapes
Skills			
			<ul style="list-style-type: none"> Compare and sort common 2-D and 3-D shapes and everyday objects
Geometry – position and direction			
Knowledge			
	<ul style="list-style-type: none"> Continuing an AB pattern Copying an AB pattern Continuing an ABC pattern Continuing a pattern which ends mid-unit Pattern-spotting around us 	<ul style="list-style-type: none"> Describe position, direction and movement, including half, quarter and three-quarter turns. 	<ul style="list-style-type: none"> 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 anti-clockwise)

Skills			
	<ul style="list-style-type: none"> • Make own AB pattern • Spotting an error in an AB pattern • Identifying the unit of repeat • Make their own ABB, ABBC patterns • Spotting an error in an ABB pattern • Symbolising the unit structure e.g. Initially this might be straightforward representations, but over time these recordings may become more iconic, e.g. a red dot representing the red dinosaur, a squiggle or the letter R for red dinosaur. As this progresses, encourage the children to symbolise their patterns in a range of ways, and to use these symbols to continue the pattern to demonstrate their understanding of the pattern. Children may, with adult direction, pick up on the coding of patterns as AB, ABB, ABBC, etc. • Generalising structures to another context or mode • Making a pattern which repeats around a circle • Making a pattern around a border with a fixed number of spaces 	<ul style="list-style-type: none"> • Order and arrange combinations of mathematical objects in simple patterns and sequences 	<ul style="list-style-type: none"> • Order and arrange combinations of mathematical objects in patterns and sequences
Statistics			
Knowledge			
		<ul style="list-style-type: none"> • Construct simple 	<ul style="list-style-type: none"> • Interpret and construct simple

		pictograms, block diagrams using information gathered as a class. Cross curricular learning/book week opportunities	pictograms, tally charts, block diagrams and simple tables <ul style="list-style-type: none"> • Ask and answer questions by counting the number of objects in each category and sorting the categories by quantity • Ask and answer questions about totalling and comparing categorical data
Skills			