Maths Progression in Skills

	Nursery	Reception	Year One	Year Two
Place Value **Counting**	Recite numbers past 5 Fast recognition of up to 3 objects without having to count them individually (subitising). Know that the last number said matches the set. (cardinal principle)	Know number names, initially to five, then ten, and extending to larger numbers, including boundaries 19/20 and 29/30. Count objects, numbers and sounds. Counting irregular arrangements. To know last number said matches the set. (cardinal principle)	count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number	count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
Place Value **Represent**	Show finger numbers up to 5 Show the right number of objects to match the numeral u to 5. Experiment with their own symbols and marks as well as numerals.	Matching the number symbol with a number of things. Know that amounts can be arranged in different ways and if nothing has been added or taken away, then the amount is the same. Subitising, recognising small amounts without needing to count them all. Identify smaller numbers within a number- conceptual subitising. (seeing groups and combining to a total)	count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward

Place Value Number Facts	Say one number name for each item in order: 1,2 ,3 ,4 5.	To begin to see, reason and generalise the 'one more than/ one less than' relationship between sequential numbers.	given a number, identify one more and one less	Given a number identify ten more/ ten less.
Place Value: Comparing	Compare quantities using language: more than, fewer than	Focus on language or more/ less than (numerosity) i.e the number of things, not the size of them).	use the language of: equal to, more than, less than (fewer), most, least	compare and order numbers from 0 up to 100; use and = signs
Identify, represent and estimate	Children to have experience of guessing an amount up to five,	Children need to be able to estimate a sensible number for an amount up to 20.	identify and represent numbers using objects and pictorial representations including the number line	identify, represent and estimate numbers using different representations, including the number line
Read and write numbers	Experiment with their own symbols and marks as well as numerals.	Recognise and write numbers 1-10	Read and write numbers from 1 to 20 in numerals and words.	read and write numbers to at least 100 in numerals and in words
Understanding PV	To be able to order number 0-5 and talk about 5 being bigger than 1.	To be able to order numbers to 10. Be able to talk about 8 being a lot bigger than 2 but 3 is only a little bit bigger than 3.	To know that the 2 in 23 means 2 tens and that numbers can be ordered by their tens value.	recognise the place value of each digit in a two-digit number (tens, ones)
Problem solving	Solve real world mathematical problems with numbers up to 5.	Solve real world mathematical problems with numbers up to 10.	Solve real world mathematical problems with numbers up to 20.	use place value and number facts to solve problems
Addition and Subtraction: Number Bonds	Begin to talk about pairs of number that make 3.	Know number bonds to 5- Knowing which pairs of number makes five. Begin to have experience of related subtraction facts orally part whole.	represent and use number bonds and related subtraction facts within 20	recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
Addition & Subtraction:	Begin to partition the number 3 in different ways and see that it can be recombined to make the whole.	Partition a number of things into two groups, and recognise the two groups can be recombined to make a whole. The parts make	add and subtract one digit and two-digit numbers to 20, including zero	add and subtract numbers using concrete objects, pictorial representations, and mentally, including: * a two-digit number

Mental Calculations		the whole number.		and ones * a two-digit number and tens * two two-digit numbers * adding three one-digit numbers
Addition and subtraction:	Orally practise the pairs of numbers that make three using fingers and practically in the environment.	A number can be partitioned into different pairs of numbers – emphasis on the pairs of numbers that make a total. Physically separating a group or constructing a group of 2 parts.	read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods)	show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
	Begin to see a number can be partitioned in more than two ways. Eg 3 = 1+ 1 + 1 One shell, one cup, one bucket equals three items.	A number can be partitioned into more than 2 parts e.g 4 = 1 + 1 + 1 + 1	read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation)	add and subtract numbers with up to two digits, beginning to use formal written methods of columnar addition and subtraction
Inverse, estimating and checking	To begin to understand that 3- 1 leaves 2.	To have opportunities using the part-whole model to see the subtraction facts for numbers up to 10.	To know the number families for the bonds to ten and to be able to talk about the inverse relationship of the numbers using the part – whole model.	Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.
Problem solving	To have opportunities to say how many are hidden in a known number of things. Eg – If 3 sweets are in a bag and one is eaten how many sweets are still in the bag?	To have opportunities to say how many are hidden in a known number of things. Eg – If five toys go into a tent, then 2 come out how many are still in the tent?	solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = * - 9	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
	Nursery	**Reception**	**Year One**	**Year Two**
Multiplication & Division:	To sort objects into groups eg. groups of 2, groups of 3.	See that numbers can consist of equal groups of things. Children to check groups are equal on a 1:1 basis. Eg, groups of 2, groups	count in multiples of twos, fives and tens (copied from Number and Place Value)	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward (copied from Number and Place Value)

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Facts		of 3 and that groups of 1 are also equal groups.		
	To make 2 groups of the same amount up to 3.	Doubling and halving facts within ten. practical Recognise odd and even numbers to 10.	Doubling and halving facts within 20 Recognise odd and even numbers to 20.	recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
Multiplication and Division: **calculations**	To share objects to 5 equally between 2 groups. Or fairly to a larger group of up to 5.	To share objects to 10 equally between 2 groups.	To begin to see division as sharing equally.	show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
Multiplication and Division: **Solve problems**	Solve real world mathematical problems with numbers up to 5. Eg If each bear has 2 sweets how many altogether = 4 Share the 4 sweets between 2 bears how many would each bear get? 2	Solve real world mathematical problems with numbers up to 10. Eg If each 4 bears have 2 sweets each how many altogether = 8 Share the 8 sweets between 4 bears how many would each bear get? 2 practical	Solve real world mathematical problems with numbers up to 20. Eg If each 6 bears have 2 sweets each how many altogether = 12 Share the 12 sweets between 6 bears how many would each bear get? 2 practical	calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs
	Nursery	**Reception**	**Year One**	**Year Two**
Fractions: Counting in fractional steps	To begin to experience the language of half and whole.	Begin to experience that 2 halves make a whole	Count in quarters, halves and whole numbers – eg pizzas, cakes	Pupils should count in fractions up to 10, starting from any number and using the1/2 and 2/4 equivalence on the number line (Non Statutory Guidance)
Fractions: recognising fractions	Begin to experience the language of half in real life contexts, playdough shapes, fruit, cakes, children	Begin to half and quarter real objects eg- shapes, fruit, playdough, cakes, children	recognise, find and name a half as one of two equal parts of an object, shape or quantity recognise, find and name a	recognise, find, name and write fractions 1 / 3 , 1 / 4 , 2 / 4 and 3 / 4 of a length, shape, set of objects or quantity

			quarter as one of four equal parts of an object, shape or quantity	
Fractions: equivalence	To learn that 1 cake is a whole cake. 1 apple is a whole apple.	To learn that 2 halves make one whole- practical To practically see that 4 quarters make 1 whole.	To begin to see that 2 halves is the same as 1 whole and 4 quarters the same as 1 whole.	Write simple fractions e.g. 1 / 2 of 6 = 3 and recognise the equivalence of 2 / 4 and 1 / 2.
Algebra **equations**	To know which number symbol or quantity might be missing from a number pattern in order. Eg. 1,2,3,--, 5 Orally and symbols when ready	To begin to understand what number might be missing in a part- whole model by knowing that the missing circle is a number to make the whole.	solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = * - 9 (copied from Addition and Subtraction) represent and use number bonds and related subtraction facts within 20 (copied from Addition and Subtraction)	Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems. (copied from Addition and Subtraction) recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 (copied from Addition and Subtraction)
Sequences	Begin to describe a sequence of events, real or fictional, using words such as 'first, then'	Begin to describe a sequence of events, real or fictional, using words such as 'first, then' Today , yesterday, tomorrow, Morning, afternoon, evening.	sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening (copied from Measurement)	compare and sequence intervals of time (copied from Measurement) order and arrange combinations of mathematical objects in patterns (copied from Geometry: position and direction)

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Measurement: **Compare and estimate**	Make comparisons between objects relating to size, length, weight and capacity. Sort objects from biggest to smallest	Compare length, weight and capacity.	compare, describe and solve practical problems for: * lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half] * mass/weight [e.g. heavy/light, heavier than, lighter than] * capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter] * time [e.g. quicker, slower, earlier, later]	compare and order lengths, mass, volume/capacity and record the results using >, < and =
Measurement:	Begin to describe a sequence of events, real or fictional, using words such as 'first, then'	Begin to describe a sequence of events, real or fictional, using words such as 'first, then' Today , yesterday, tomorrow, Morning, afternoon, evening.	sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]	compare and sequence intervals of time
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Measurement: **Measuring and calculating**	Experience measuring with feet and hands or blocks. Feel which is heavier, lighter. Experience filling and pouring full and empty.	Experience practically measuring the following using non-standard units: * lengths and heights * mass/weight * capacity and volume * time (hours, minutes, seconds)	measure and begin to record the following using standard units * lengths and heights * mass/weight * capacity and volume * time (hours, minutes, seconds)	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 rulers, scales, thermometers and

				measuring vessels
Money	Experience and begin to recognise 1p and 2 p coins	Recognise 1p, 2p, 5p and 10p coins. Recognise £5 and £10 notes	recognise and know the value of different denominations of coins and notes	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 solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change
Telling the Time	To practically experience time keeping equipment and to know that clocks and watches tell the time. Talk about O'Clock	Begin to tell the time to O' Clock. Know the big hand pointing to twelve means O' Clock	Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	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.
	To begin to know the days of the week – today is Monday	To know the days of the week in order if one is missing. To know there are seven days in a week	recognise and use language relating to dates, including days of the week, weeks, months and years	Know the number of minutes in an hour and the number of hours in a day. (appears also in Converting)
Converting	To experience sitting for a length of time eg 60 seconds or 1 minute	To experience counting to 60 for a minute.	To know there are 60 seconds in a minute.	Know the number of minutes in an hour and the number of hours in a day. (appears also in Telling the Time)

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Geometry: **Identifying shapes and their properties**	Talk about and explore 2D and 3D shapes. (e.g. circles, rectangles, triangles, and cuboids) using informal and mathematical language: 'sides', 'corners',, 'straight', 'flat', 'round'	Recognise and name common 2-D and 3-D shapes, including: * 2-D shapes [e.g. rectangles (including squares), circles and triangles] * 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres].	Recognise and name common 2-D and 3-D shapes, including: * 2-D shapes [e.g. rectangles (including squares), circles and triangles] * 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres]. Name the face shape on a 3D shape. Talk about corners and edges.	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]
Geometry: **Comparing and classifying**	Select shapes appropriately: flat surfaces for a building, a triangular prism for a roof etc. Combine shapes to make new ones – an arch, a bigger triangle.	Select, rotate and manipulate shapes in order to develop spatial reasoning skills. Compose and decompose shapes so that children recognise a shape can have other shapes within it just as numbers can.	Begin to sort practically shapes relating to common features of them. Or to a rule that they ca explain eg straight or curved.	compare and sort common 2-D and 3-D shapes and everyday objects
Geometry: **Positon and Direction**	Understanding position through words alone. (under the table- no pointing) Describe a familiar route and	Be able to describe position of an object using preposition language. Eg- teddy is under the chair. To begin to explore left and right, forwards and backwards in	describe position, direction and movement, including half, quarter and three-quarter turns	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

	location. Eg infront, behind.	practical situations.		(clockwise and anti-clockwise)
Pattern	Talk about and identify patterns in the environment. Eg. spots , stripes, designs on rugs. Extend and create ABAB patterns, eg leaf, stick, leaf, stick. Notice and correct an error in a repeated pattern.	Continue, copy and create repeating patterns. Continue and ABC pattern Have experience and reason about ABB, ABBC, AABB patterns Make their own ABB, ABBC Spot an error in a pattern Make a pattern which repeats around a circle. Make a pattern around a border with a fixed number of spaces.	Have experience and reason about ABB, ABBC, AABB patterns Continue patterns practically	order and arrange combinations of mathematical objects in patterns and sequences
	Nursery	**Reception**	**Year One**	**Year 2**
Statistics: Interpret, construct and present	Making a picture to show how many bugs in the garden. Practical pictogram with real life objects eg. red cars and blue cars	Interpret and construct simple pictograms. Ask and answer questions by counting- eg Which is most popular? It's the tallest or most	Interpret and construct simple pictograms, tally charts and block diagrams. Knowing which is the most and the least popular by counting object in the group.	interpret and construct simple pictograms, tally charts, block diagrams and simple tables ask and answer simple 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

Statistics: Solve Problems	Which is more red cars or blue cars?	Which eye colour is the most? Which has non ?	Ask questions like- How many more children would be needed to be the same as the blue eyes. If green is 6 and blue is 9?	Solve one-step and two step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables. (Year 3)