Progression in Mathematics

National Curriculum	The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools]. At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.					
	Year 1			**Year 2**		
	Autumn	**Spring**	**Summer**	**Autumn**	**Spring**	**Summer**
	Number - Place Value (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 – Mass and Volume**	**Number – Multiplication and Division** **Number – Fractions** **Geometry – Position and Direction** **Number – Place Value (within 100)** **Measurement – Money** **Measurement - Time**	**Number – Place Value** **Number – Addition and Subtraction** **Geometry – Shape**	**Measurement – Money** **Number – Multiplication and Division** **Measurement – Length and Height** **Measurement – Mass, Capacity and Temperature**	**Number – Fractions** **Measurement – Time** **Statistics** **Geometry – Position and Direction**
Number - Place Value	- Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number - Count numbers to 100 in numerals; count in multiples of twos, fives and tens - 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 - Given a number, identify one more and one less	- Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number - Count numbers to 100 in numerals; count in multiples of twos, fives and tens - 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 - Given a number, identify one more and one less	- Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number - Count numbers to 100 in numerals; count in multiples of twos, fives and tens - 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 - Given a number, identify one more and one less	- Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward - Read and write numbers to at least 100 in numerals and in words - Identify, represent and estimate numbers using different representations, including the number line - 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 - Use place value and number facts to solve problems		
Number - Addition and Subtraction	- 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 representations, and missing number problems such as 7 = ? – 9	- 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 representations, and missing number problems such as 7 = ? – 9		- Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: ➢ a two-digit number and ones ➢ a two-digit number and tens ➢ two two-digit numbers ➢ adding three one-digit numbers - 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 - Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems		
Number – 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	-	- Recall and use multiplication and division facts for the 2, 5 and 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 - Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs - Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	
Number – Fractions, Decimals and Percentages			- 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 1/3 , ¼ , 2/4 and ¾ of a length, shape, set of objects or quantity - Recognise the equivalence of 2/4 and ½ - Write simple fractions for example, ½ of 6 = 3
Geometry	- Recognise and name common 2- D shapes [for example, rectangles (including squares), circles and triangles] - Recognise and name common 3- D shapes [for example, cuboids (including cubes), pyramids and spheres]		- Describe position, direction and movement, including whole, half, quarter and three-quarter turns	- Identify and describe the properties of 2-D shapes, including the number of sides and line 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]		- 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

				- Compare and sort common 2-D shapes and everyday objects - Recognise and name common 3- D shapes [for example, cuboids (including cubes), pyramids and spheres] - Compare and sort common 3-D shapes and everyday objects		and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)
Measurement		- Compare, describe and solve practical problems for: ➢ lengths and heights ➢ mass/weight ➢ capacity and volume ➢ time - Measure and begin to record the following: ➢ lengths and heights ➢ mass/weight ➢ capacity and volume ➢ time (hours, minutes, seconds)	- Compare, describe and solve practical problems for: ➢ lengths and heights ➢ mass/weight ➢ capacity and volume ➢ time - Measure and begin to record the following: ➢ 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 [for example, 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		- Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (℃); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels - Compare and order lengths, mass, volume/capacity and record the results using >, < and = - 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	- 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

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Statistics						- 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
Vocabulary	Sort, count, object(s), number(s), more / less / greater, equal, numberline, order, match, same, symbol, addition, takeaway, part, whole, sentence, bond, ten frame, shape, cube, cuboids, pyramid, sphere, cone, cylinder, circle, triangle & square	Difference, subtract, double(s) / near double(s), missing number, number bond, pattern, length, height, measure, centimetre, heavier, lighter, full, empty, volume, capacity, mass & estimate.	2s, 5s, 10s, arrays, groups / grouping, sharing, multiplication, division, column, row, half, quarter, fraction, quantity, turn, left, right, forwards, backwards, above, below, ordinal numbers, above, below, top, bottom, partition, compare, efficient, value, note, coin, day(s), week, months, year, time, hand, hour, minutes, seconds & clock.	Place value chart, partition, count in 2s, 5s, 10s, 3s, numerals, arrow, interval, fact families, plus, multiple, hundred square, exchange, sides, vertices, vertex, symmetry, faces, edges, straight, curved, regular, irregular, ,	Pounds, pence, amount, spend, change, difference, item, equal, multiplication / divide symbol, odd, even, times-table, divide, array, row, column, centimetres, metres, length, height, order, millilitres, mass, volume, capacity, litres, grams, kilograms, temperature, centigrade,	Whole, half, quarter, third, equivalence, denominator, numerator, fraction, o'clock, half past, quarter past, quarter to, 5 minutes, hand, tally, chart, table, pictogram, key, symbol, movement, turns, left, right, clockwise, anticlockwise, full / half / quarter turn, facing
Key Questions	• What is the same / different? • Can you find an object that does / doesn't belong to this set? Why does doesn't it not belong? • Can you think of a different way to sort the objects? • How do you know_____? • How can you show _____? • What does _____ mean? • How can you label the number line? • How do you know where to put the numbers? • What is _____? • What does "=" mean? • Can you write any of the bonds another way? • How do you know that you have found them all?	• What number comes after __? • What number comes before __? • How do you know____? • Can you show me _____ using ____? • How many ones are there in ____? • How many tens are there in ___? • What is the same / different about ____ and ___? • How many spaces are left on the tens frame? • If you have ___ and ___ what have you got? • Which digit has changed? • How many more do you need to make 20? • How does knowing the number bonds to 10 help you to work out the number bonds to 20?	• When you count in ____ what numbers will you / will not say? • How many equal groups of __ are there? • What do you notice? • When you count in __ what number comes before / after __? • How can you write ___ as a number sentence? • How many groups are you sharing __ into? • Are there any left over? • What is the whole? • How many parts are there? • How can you find half / quarter? • How can you work out where __ is? • Is there always a first and last? Why? • Which numbers sound similar?	• How many ___ are there? • How many groups are there? • What number is made up of __ tens and __ ones? • What do you do if there are no ones? • What does the __ digit represent? • How many ones are there in each ten? • What do you notice? • What is the numberline counting in? How do you know? • What is each interval worth? • What number is the arrow pointing to? • How do you know? • Can you show the answer using____? • Can you / do you need to make an exchange?	• What is this___ worth? • What is the total value? • Which did you count first? • Which is worth more / less? • Can you find another way? • Does swapping __ for ___ change the amount? • Is ___ equal to ___? • Are the groups equal or unequal? How do you know? • If we know that ___ divided by is ___, what is __ divided by__? • How can you use jottings / arrays to help you? • What does ___ mean? • How is doubling / halving linked to the two times table?	What does 'equal' / 'unequal' mean? Do equal parts always look the same? Has the shape been split into equal parts? How do you know? Which is the 'denominator' / 'numerator'? How do you find ½ / ¼ of a number? How do you find 1/3 of a number? What is the same? What is different? Is 1/3 greater than or less than ½ / ¼? Why? Where does the hour / minute hand have to be for __? If the minute hand is on __ how many minutes past the hour is it? What is the same / different about noon and midnight? How do you know and item is most / least popular? What is a 'key'? What does the symbol represent?

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		• What is the same and what is different about 4 + 6 = 10 and 14 + 6 = 20? • What pattern can you see? • Is there an easier way?	• What is the most efficient way to count the objects? • How can you use ___ to compare numbers? • How can you show me __ o'clock / half past __? • What is the value of this note / c	• Is the question an addition or subtraction? • How can you check your answer? • How do you know a shape is symmetrical? • How many sides / vertices / edges does a ___ have? • Which 2D faces are on the 3D shape?	• What do you notice about? • What do you notice? What patterns do you spot? • What do the numbers on a ruler mean? • What is 'cm' / 'm' short for? • What do you need to do first? How do you know? • What type of objects would you measure in __? • What is the difference between volume and capacity? • How can you read the scale efficiently? • What mistakes might people make reading this scale? • How will you find out__? • What does '°C' stand for?	Which way will you be facing? Which direction is___? How is this pattern repeating? What comes next? What different patterns can you make?
Key resources	Tens frames, double sided counters, base 10 equipment, Numicon, whiteboards, White Rose Powerpoints, number cards, different objects / natural resources, 2D and 3D shapes.	Tens frames, double sided counters, base 10 equipment, numicon, whiteboards, White Rose Powerpoints, number cards, different objects / natural resources.	Tens frames, double sided counters, base 10 equipment, numicon, whiteboards, White Rose Powerpoints, number cards, different objects / natural resources & clocks.	Tens frames, double sided counters, base 10 equipment, numicon, whiteboards, White Rose Powerpoints, number cards, hundred square, different objects, range of 2d and 3d shapes.	Tens frames, double sided counters, base 10 equipment, numicon, whiteboards, White Rose Powerpoints, number cards, hundred square, different objects, balance and weighing scales, containers with scales & weights.	Tens frames, double sided counters, base 10 equipment, numicon, whiteboards, White Rose Powerpoints, number cards, hundred square, different objects, PE equipment & clocks.
Visits and Visitors						
Whole School Projects (assemblies)	Maths Week – w/c 14th November - Assembly - Parent Workshop to understand how Maths is taught			Maths Week – w/c 14th November - Assembly - Parent Workshop to understand how Maths is taught		

	- Parents in to work with their children			- Parents in to work with their children		

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	Nursery			Reception		
	Autumn	**Spring**	**Summer**	**Autumn**	**Spring**	**Summer**
				Getting to Know You **Just Like Me!** **It's Me 1 2 3!** **Light and Dark**	**Alive in 5!** **Growing 6, 7, 8** **Building 9 and 10**	**To 20 and Beyond** **First Then Now** **Find My Pattern** **On the Move**
Nursery Year A and B	**Number** Grasping the counting principles Comparing amounts of objects **Measure, Shape and Spatial Thinking** Using the language of size Recognising, naming and matching colours Sorting by various attributes Continuing AB patterns	**Number** Understanding number 1 Understanding number 2 Understanding number 3 Understanding number 4 Understanding number 5 Understanding number 6	**Measure, Shape and Spatial Thinking** Shapes Ordering the events of our day Length and height Weight Capacity Positional language	**Number** Match and sort Compare amounts Representing 1, 2 and 3 Comparing 1, 2 and 3 Composition of 1, 2 and 3 Representing numbers to 5 One more or less **Measure, Shape and Spatial Thinking** Compare size, mass and capacity Exploring pattern Circles and triangles Positional language Shapes with 4 sides Time	**Number** Introducing zero Comparing numbers to 5 Composition of 4 and 5 6, 7 and 8 Combining 2 amounts Making pairs Counting to 9 and 10 Comparing numbers to 10 Bonds to 10 **Measure, Shape and Spatial Thinking** Compare mass (2) Compare capacity (2) Length and height Time (2) 3D shapes Spatial awareness Patterns	**Number** Building numbers beyond 10 Counting patterns beyond 10 Adding more Taking away Doubling Sharing and grouping Even and odd Deepening understanding Patterns and relationships **Measure, Shape and Spatial Thinking** Spatial reasoning (1) Match, rotate, manipulate Spatial reasoning (2) Compose and decompose Spatial reasoning (3) Visualise and build Spatial reasoning (4) Mapping
Nursery Skills Progression Linked to Development Matters (3&4 Year olds)						
Reception Skills Progression (Linked to Development Matters)				To subitise to 4. To discuss composition of numbers to 4, showing some automatic recall of number facts.	To discuss composition of numbers to 5, showing some automatic recall of number facts.	(See ELG's)

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				To begin to recognise parts within numbers. E.g. Look at 4 buttons and say “I can see a group of 2 and another group of 2” To demonstrate understanding of the cardinal principle when counting objects. To show accuracy when counting a group of up to 5/10 objects. To use and understand the terms more and fewer/less in practical contexts. To understand the term equal when comparing two groups of objects. **Time** - To understand *yesterday/today/tomorrow.* Recite days of the week. **Shape** – To identify and name some 2D shapes. Use shapes to make pictures/models. **Measure** – To use and understand the terms short/tall, large/small. Sequence 4 items according to these criteria.	To confidently subitise rather than count small groups of objects. To subitise to 5 using familiar concept images (e.g. a tens frame, with Numicon and using fingers) To count on from a given number to 20 and back from a given number 0 - 10. To show accuracy when counting a group of objects, showing 1 to 1 correspondence & confident application of the cardinal principle. To say the number one more/less than a given number 1 - 10. To explore sharing into equal groups in practical contexts, commenting on what they notice. **Shape** – To identify and name some 3D shapes. To use some mathematical language to describe the shapes. To use shapes to make pictures/models. To demonstrate understanding of everyday prepositions - in, on, under, beside, in front, behind. **Time** – To use and understand *before/after.* **Pattern** - To continue a simple AB, ABC pattern.	
Reception ELGs				**Number ELG** Children at the expected level of development will: - 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** Children at the expected level of development will: - Verbally count beyond 20, recognising the pattern of the counting system;		

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				- 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.