Maths Progression & Coverage Document

Curriculum Objectives	
EYFS	**KS1**
Development matters: **<u>Birth to three:</u>** • Combine objects like stacking blocks and cups. Put objects inside others and take them out again. • Take part in finger rhymes with numbers. • React to changes of amount in a group of up to three items. • Compare amounts, saying 'lots', 'more' or 'same'. • Develop counting-like behaviour, such as making sounds, pointing or saying some numbers in sequence. • Count in everyday contexts, sometimes skipping numbers – '1-2-3-5'. • Climb and squeeze themselves into different types of spaces. • Build with a range of resources. • Complete inset puzzles. • Compare sizes, weights etc. using gesture and language - 'bigger/little/smaller', 'high/low', 'tall', 'heavy'. • Notice patterns and arrange things in patterns. **<u>3 and 4 year olds:</u>** • Develop fast recognition of up to 3 objects, without having to count them individually ('subitising'). • Recite numbers past 5. • Say one number for each item in order: 1,2,3,4,5. • Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle'). • Show 'finger numbers' up to 5. • Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. • Experiment with their own symbols and marks as well as numerals. • Solve real world mathematical problems with numbers up to 5. • Compare quantities using language: 'more than', 'fewer than'.	**National Curriculum:** **<u>Y1:</u>** **<u>Number and place value:</u>** **Pupils should be taught about:** • 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. **<u>Number - addition and subtraction:</u>** • 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 representations, and missing number problems such as 7 = – 9. **<u>Number - multiplication and division:</u>** • 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. **<u>Number - fractions:</u>** • recognise, find and name a half as one of two equal parts of an object, shape or quantity

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• Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'. • Understand position through words alone – for example, "The bag is under the table," – with no pointing. • Describe a familiar route. • Discuss routes and locations, using words like 'in front of' and 'behind'. • Make comparisons between objects relating to size, length, weight and capacity. • Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc. • Combine shapes to make new ones – an arch, a bigger triangle, etc. • Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc. • Extend and create ABAB patterns – stick, leaf, stick, leaf. • Notice and correct an error in a repeating pattern. • Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...' **Reception:** • Count objects, actions and sounds. • Subitise. • Link the number symbol (numeral) with its cardinal number value. • Count beyond ten. • Compare numbers • Understand the 'one more than/one less than' relationship between consecutive numbers. • Explore the composition of numbers to 10. • Automatically recall number bonds for numbers 0–5 and some to 10. • Select, rotate and manipulate shapes to develop spatial reasoning skills.	• recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. **Measurement:** **- compare, describe and solve practical problems for:** • lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] • mass/weight [for example, heavy/light, heavier than, lighter than] • capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] • time [for example, quicker, slower, earlier, later] **- 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. **Geometry - properties of shapes:** • recognise and name common 2-D and 3-D shapes, including: • 2-D shapes [for example, rectangles (including squares), circles and triangles] • 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]. **Geometry - position and direction:**

- Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.
- Continue, copy and create repeating patterns.
- Compare length, weight and capacity

ELG

Past and Present Children at the expected level of development will:

Number:

- 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:

- 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.

- describe position, direction and movement, including whole, half, quarter and three-quarter turns.

Y2:

Number and place value:

Pupils should be taught about:

- count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward
- recognise the place value of each digit in a two-digit number (tens, ones) identify, represent and estimate numbers using different representations, including the number line
- compare and order numbers from 0 up to 100; use and = signs
- read and write numbers to at least 100 in numerals and in words
- use place value and number facts to solve problems.

Number - addition and subtraction:

- 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
- recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
- 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
- show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
- 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: • recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers • calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs • show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot • solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. **Number - fractions:** • recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity • write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2. **Measurement:** • 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 • 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 **Geometry - properties of shapes:** • 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] • compare and sort common 2-D and 3-D shapes and everyday objects. **Geometry - position and direction:** • 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 and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise). **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.

Objectives				
	YN **As a mathematician …**	**YR** **As a mathematician …**	**Y1** **As a mathematician …**	**Y2** **As a mathematician …**
Number: **Number and Place Value**	**Autumn Term:** • Take part in finger rhymes with numbers.	**Autumn Term:** • Count objects, actions and sounds.	**Autumn Term:** • given a number, identify one more and one less	**Autumn Term:** • Identify, represent and estimate numbers using

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	• React to changes of amount in a group of up to three items. • Count in everyday contexts, sometimes skipping numbers – '1-2-3-4-5'. • Develop fast recognition of up to 3 objects, without having to count them individually ('subitising'). • Recite numbers past 5. • Say one number for each item in order: 1,2,3,4,5. • Show 'finger numbers' up to 5. • Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc. **Spring Term:** • Say one number for each item in order • Show 'finger numbers' up to 5 **Summer Term:** • Link numerals and amounts, showing the right number of objects	• Subitise. • Link the number symbol (numeral) with its cardinal number value. • Compare numbers • Understand the 'one more than/one less than' relationship between consecutive numbers. • Explore the composition of numbers to 10. **Spring Term:** • Have a deep understanding of number to 10 including the composition of each number. • Subitise. • Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. **Summer Term:** • Have a deep understanding of number to 10 including the composition of each number.	• 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. **Spring & Summer Term:** • 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,	di□erent representations, including the number line • Recognise the place value of each digit in a 2-digit number (10s, 1s) • Identify, represent and estimate numbers using different representations, including the number line • Compare and order numbers from 0 up to 100; use and = signs • Count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward **Summer Term:** • Use place value and number facts to solve problems • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems

	to match the numeral, up to 5 • Number facts within 5 • Experiment with their own symbols and marks as well as numerals • Compare quantities using language 'more', 'fewer than'.	• Subitise. • Verbally count beyond 20 recognising the pattern of the counting system. • Explore and represent patterns with numbers up to 10 including evens and odds, double facts and how quantities can be distributed equally	more than, less than (fewer), most, least	
Number: Addition and Subtraction	**Autumn Term:** • Solve real world mathematical problems with numbers up to 5. **Spring Term:** • Know that the last number reached when counting a small set of objects tells you how many are in total ('cardinal principle')	**Spring Term:** • Automatically recall number bonds up to 5 and some to 10 including double facts. **Summer Term:** • Automatically recall number bonds up to 5 and some to 10 including double facts.	**Autumn Term:** • 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 representations, and missing number	**Autumn Term:** • Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems • Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot

			problems such as 7 = – 9.	• Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures • Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a 2-digit number and 1s **Spring Term:** • Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures **Summer Term:** • Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and

				multiplication and division facts, including problems in contexts • Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot • Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures
Number: Multiplication and Division			**Spring Term:** • 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.	**Autumn Term:** • 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 • Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers **Spring Term:** • Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts • Calculate mathematical statements for multiplication and division within the

				multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs • Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
Number: Fractions			**Spring Term:** • 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.	**Spring Term:** • Recognise, find, name and write fractions 1 3, 1 4, 2 4 and 3 4 of a length, shape, set of objects or quantity • Write simple fractions for example, 1 2 of 6 = 3 and recognise the equivalence of 2 4 and 1 2 • Non-statutory guidelines: Pupils should count in fractions up to 10, starting from any number
Measurement	**Spring Term:** • Make comparisons between objects	**Autumn Term - Time** • Begin to describe a sequence of events, real	**Length and Height - Spring Term:** • to measure and record lengths and heights [for	**Autumn Term:** • recognise and use symbols for pounds (£) and pence (p); combine

	relating to size and length **Summer Term:** • Make comparisons between objects relating to weight and capacity • Begin to describe a sequel of events, real or fictional	or fictional, using words such as 'first', 'then...' **Summer Term:** • Compare length, weight and capacity	example, long/short, longer/shorter, tall/short, double/half] **Time - Summer Term:** • time [for example, quicker, slower, earlier, later] • 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. **Money - Summer Term:** • recognise and know the value of different denominations of coins and notes **Weight and Volume - Summer Term:**	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 **Spring Term:** • 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 • Compare and order lengths, mass, volume/ capacity and record the results using >, < and = **Summer Term:** • Tell and write the time to five minutes,

			• mass/weight [for example, heavy/light, heavier than, lighter than] • capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]	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 • Compare and sequence intervals of time • Compare and order lengths, mass, volume/ capacity and record the results using >, < and = • 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 • Compare and order lengths, mass, volume/ capacity and record the results using >, < and =
Geometry:	**Spring Term:**	**Spring Term:**	**Spring Term:**	**Spring Term:**

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Properties of Shapes	• Talk about and explore 2D shapes using mathematical language • Extend and create ABAB patterns **Summer Term:** • Notice and correct an error in a repeating pattern • Talk about and explore 3D shapes using mathematical language	• Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'. • Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc. • Combine shapes to make new ones – an arch, a bigger triangle, etc. • Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc.	• recognise and name common 2-D and 3-D shapes, including: • 2-D shapes [for example, rectangles (including squares), circles and triangles] • 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].	• Compare and sort common 2D and 3D shapes and everyday objects • Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line • Order and arrange combinations of mathematical objects in patterns and sequences
Geometry: **Position and Direction**	**Autumn Term** • Understand position through words alone – for example, "The bag is under the table," – with no pointing.		**Summer Term:** • describe position, direction and movement, including whole, half, quarter and three-quarter turns.	**Summer Term:** • Use mathematical vocabulary to describe position, direction and movement, including movement in a straight

	• Describe a familiar route. • Discuss routes and locations, using words like 'in front of' and 'behind'. **Spring Term:** • Discuss routes and locations using words like 'in front of' and 'behind' **Summer Term:** • Understand positional language – beside, between, next to			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) • Order and arrange combinations of mathematical objects in patterns and sequences
Statistics				**Spring Term:** • 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.

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