Subject Intent Statement

Maths

Our intent for the teaching of mathematics at Brockholes Wood Primary School is to develop fluency, reasoning and problem solving in a creative, enjoyable way to promote curiosity, independence and creativity. We ensure pupils have access to concrete, pictorial and abstract representations of mathematical ideas to provide a deeper understanding of mathematical ideas, closely matching the White Rose Education scheme of learning that we have adopted throughout school in each class from EYFS to Year 6. We support pupils to make rich connections in mathematics and gain competence in solving increasingly sophisticated problems which in hand enables them to apply their mathematical knowledge in and through science and other subjects.

Brockholes Wood Community Primary School & Nursery

'Learning together… Growing together!'

Subject Implementation Content

Maths

3-4 Year olds	
- 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'	- 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...'
EYFS Reception	

- Count objects, actions and sounds.
- Count beyond ten.
- 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.
- Automatically recall number bonds for numbers 0–5 and some to 10.
- Select, rotate and manipulate shapes 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.
- Continue, copy and create repeating patterns.
- Compare length, weight and capacity.

	Autumn	Spring	Summer
EYFS	Geometry - Match, sort and compare – Matching objects and pictures, identifying sets, sorting objects to a type, expoloring sorting techniques, creating sorting rules and comparing amounts. Number - 1, 2 and 3 – finding the numerals, subitising, representing, 1 more and 1 less and the composition of 1,2 and 3. Geometry - Circles and triangles – identifying and finding shapes in the environment. Number - 1 – 5 – subitising, composition and representation.	Number – Introducing zero. 0 – 5 subitising, representing and composition. Measurement – compare mass, find a balance, explore and compare capacity. Number – 6,7,8 finding the numerals, subitising, representing, 1 more and 1 less and the composition of 6, 7 and 8. Making pairs – odd and even. Doubles to 8. Measurement – exploring and comparing length. Exploring and comparing height. Talk about time. Order and sequence time. Number – Building 9 and 10. Finding the numerals, subitising, representing, 1 more and 1 less and the composition of 9 and 10. Number bonds to 10. Making arrangements to 10. Explore odd and even. Geometry – recognise and name 3D shapes. Find 2D shapes within 3D shapes.	Number – to 20 and beyond. Build patterns from 10 -20. Verbal counting beyond 20. Addition and subtraction – how many did I add? How many did I take away? Geometry – manipulate, compose and decompose. Select shapes for a purpose. Rotate shapes. Manipulate shapes. Explain shape arrangements. Compose and decompose shapes. Copy 2D shape pictures. Find 2D shapes within 3D shapes. Number – sharing and grouping. Explore sharing and grouping. Even and odd sharing. Play with and build doubles. Patterns, repeating patterns. Geometry – position and direction. Replicate and build scenes and constructions.

		Identify more complex patterns. Copy and continue patterns. Patterns in the environment.	Visualise from different positions. Describe positions. Give instructions to build. Explore mapping. Represent maps with models. Create own maps and plans from story situations.
Year 1	Number - Place Value (within 10). Counting and sorting objects. Representing objects. Recognising numbers as words. Count on from any number. 1 more. Count backwards within 10. 1 less. Compare groups by matching. Less than, greater than, equal to. The number line.

Number - Addition and Subtraction (within 10). Parts and wholes. Part-whole model. Write number sentences. Fact families- addition facts. Number bonds within 10 and to 10. Addition – add together and add more. Addition problems. Find a part. Fact families – the eight facts. Subtraction – take away/cross out. How many left? Subtraction on a number line. Add or subtract 1 or 2. | Number - Place Value (within 20). Count within 20. Understand 10 -20. 1 more and 1 less. The number line to 20. Compare and order numbers to 20.

Number - Addition and Subtraction (within 20) Add by counting on within 20. Add ones using number bonds. Find and make number bonds to 20. Doubles. Near doubles. Subtract ones using number bonds. Counting back and finding the difference. Related facts and missing number problems.

Number - Place Value (within 50) count from 20 to 50. Count by making groups of tens. Groups of tens and ones. Partition into tens and ones. The number line to 50. | Number - Multiplication and Division. Count in 2s, 5s and 10s. recognise equal groups. Add equal groups. Make arrays. Make doubles. Make equal groups by grouping and sharing.

Number – Fractions. Recognise a half of an object or a shape. Find half. Recognise and find a quarter of an object or shape. Recognise and find a quarter of a quantity.

Geometry - Position and Direction. Describe turns and position. Left and right. Forwards and backwards. Above and |

	Geometry – Shape. Recognise and name 3D and 2D shapes. Sort 3D and 2D shapes. Patterns with 2D and 3D shapes.	1 more and 1 less. Measurement - Length and Height. Compare and measure lengths and heights using objects and in centimetres. Measurement - Mass and Volume. Heavier and lighter. Measure and compare mass. Full and empty. Compare volume. Measure and compare capacity.	below. Ordinal numbers. Number - Place Value (within 100). Count from 50 to 100. Tens to 100. Partition into tens and ones. The number line to 100. 1 more and 1 less. Compare numbers with the same number of tens. Compare any two numbers. Measurement – Money. Unitising. Recognising coins and notes. Count in coins. Measurement – Time. Before and after. Days of the week. Months of the year. Hours, minutes and seconds. Tell the time to the hour. Tell the time to the half hour.

| Year 2 | Number - Place Value. Numbers to 20. Count objects to 100 by making 10s. Recognise tens and ones. Use a place value chart. Partition numbers to 100. Write number to 100 in words. Flexibly partition numbers to 100. Write numbers to 100 in expanded form. 10s and 1s on the number line to 100. Estimate numbers on a number line. Compare and order objects and numbers. Count in 2s, 5s and 10s. count in 3s.

Number - Addition and Subtraction. Bonds to 10. Fact families – addition and subtraction bonds. Related facts. Bonds to 100 (tens) add and subtract 1s. add by making 10. Add 3 1-digit numbers. Add to the next 10. Add across a 10. Subtract across 10 and subtract from a 10. Subtract a 1-digit number from a 2-digit number. 10 more, 10 less. Add and subtract 10s. add and subtract 2-digit numbers both not across a 10 and across a 10. Compare number sentences. Missing number problems.

Geometry - Shape. Recognise 2D and 3D shapes. Count sides and vertices on 2D shapes. Draw and sort 2D shapes. Count faces, vertices and edges on 3D shapes. Use lines of symmetry on shapes. Make patterns with 2D and 3D shapes. | Measurement – Money. Count money: pounds, pence (notes and coins). Calculate with money. Compare amounts of money. Make a pound. Find change.

Number - Multiplication and Division. Recognise equal groups. Make and add equal groups. Introduce the multiplication symbol. Multiplication sentences. Use arrays. Make equal groups – sharing and grouping. The 2 times table. Divide by 2. Doubling and halving. Odd and even numbers. The 10 times table. Divide by 10. The 5 times table. Divide by 5.

Measurement - Length and Height. Measure in centimetres and metres. Compare and order lengths and heights. The four operations with lengths and heights.

Measurement - Mass, Capacity and Temperature. Compare mass. Measure in grams and kilograms. Four operations with | Number – Fractions. Parts and whole. Equal and unequal pats. Recognise a half and quarter. Find a half and quarter. Recognise a third and find a third. Find the whole. Unit and non-unit fractions. Recognise the equivalence of a half and two quarters. Recognise three quarters. Count in fractions up to a whole.

Measurement – Time. O'clock, half past, quarter past and quarter to. Tell time past the hour and to the hour. Tell the time to 5 minutes. Minutes in an hour. Hours in a day.

Statistics. Make tally charts. Tables. Block diagrams. Draw pictograms and interpret them.

Geometry - Position and Direction. Language of position. Describe movement and turns. Shape patterns with turns. |

		mass. Compare volume and capacity. Measure in millilitres and litres. Four operations with colume and capacity. Temperature.	
Year 3	Number - Place Value. Represent and partition numbers to 100. Number line to 100. Hundreds, tens and ones. Represent and partition numbers to 1000. Find 1, 10 or 100 more or less. Number line to 1000. Compare and order numbers to 1000. Count in 50s.

Number - Addition and Subtraction. Apply number bonds within 10. Add and subtract 1s, 10s, 100s. Spot the pattern. Add 1s across a 10. Add 10s across a 100. Subtract 1s across a 10. Subtract 1s across a 10. Subtract 10s across a 100. Add and subtract two numbers (no exchange). Add two numbers across a 10 and across a 100. Add 2 digit and 3 digit numbers. Subtract a 2 digit number from a 3 digit number. Complements to 100. Inverse operations. | Number - Multiplication and Division B. Multiples of 10. Multiply a 2 digit number by a 1 digit number both with and without exchange. Link multiplication and division. Divide a 2 digit number by a 1 digit number – no exchange, flexible partitioning and with remainders. Scaling.

Measurement - Length and Perimeter. Measure in metres, centimetres and millimetres. Equivalent lengths. Compare, add and subtract lengths. Calculate and measure perimeter.

Number - Fractions A. Understand the denominators of unit fractions and non-unit fractions. Compare and order unit and non-unit fractions. Understand the whole. Fractions and scales. Fractions on a number line. Equivalent fractions on a number line and as bar models. | Number - Fractions B. add and subtract fractions. Partition the whole. Unit and non-unit fractions of a set object. Reasoning with fractions of an amount.

Measurement – Money. Pounds and pence – converting, adding and subtracting. Find change.

Measurement – Time. Roman numerals to 12. Tell the time to a minute and to 5 minutes. Read time on a digital clock. Use AM and PM. Years, months, days, hours, minutes and seconds. Units of time. Solve problems with time.

Geometry – Shape. Turns and |

		Number - Multiplication and Division A. Multiplication – equal groups. Use arrays. Multiples of 2, 5 and 10. Sharinig and grouping. Multiply and divide by 3, 4 and 8.	Measurement - Mass and Capacity. Use scales. Easure mass in grams and kilograms. Compare, add and subtract mass. Measure capacity and volume in millilitres and litres. Compare and measure capacity and volume.	angles. Right angles. Compare, measure and draw angles. Horizontal and vertical. Parallel and perpendicular. Recognise and describe 2D and 3D shapes. Draw polygons. Make 3D shapes. Statistics. Interpret and draw pictograms and bar charts. Collect and represent data. Two-way tables.
	Year 4	Number - Place Value. Represent and partition numbers to 1000 and 10000. Flexible partitioning of numbers to 10000. Find 1, 10, 100, 1000 more or less. Number line to 10000. Estimate, compare and order numbers to 10000. Roman numerals. Round to the nearest 10, 100 and 1000. Number - Addition and Subtraction. Add and subtract 10s, 100s and 1000s. Add and subtract up to two 4 digit numbers with and without exchanging. Efficient subtraction. Estimate answers. Checking strategies. Measurement – Area. What is area? Count squares. Make shapes. Compare areas.	Number - Multiplication and Division B. Factor pairs. Multiply and divide by 10 and 100. Informal written methods for multiplication. Multiply and divide a 2 and 3 digit number by a 1 digit number. Correspondence problems. Efficient multiplication. Measurement - Length and Perimeter. Measure in kilometres and metres. Perimeter on a grid. Perimeter of a rectangle. Perimeter of rectilinear shapes. Find missing lengths in rectilinear shapes. Perimeter of regular polygons and irregular polygons.	Number - Decimals B. Make a whole with tenths and hundredths. Partition and flexibly partition decimals. Compare and order decimals. Round to the nearest whole number. Halves and quarters as decimals. Measurement – Money. Write money using decimals. Convert between pounds and pence. Compare amounts of money. Estimate, calculate and problem solve with money.

	Number - Multiplication and Division A. Multiply and divide by 3, 6, 9, 12, 7 and 11 and the times tables and division facts of these numbers. Multiply by 1 and 0. Divide a number by 1 and itself. Multiply 3 numbers.	Number – Fractions. Understand the whole. Count beyond 1. Partition a mixed number. Number lines with mixed numbers. Compare and order mixed numbers. Understand improper fractions. Convert mixed numbers to improper fractions and vice-versa. Equivalent fractions on a number line. Equivalent fraction families. Add and subtract two or more fractions and mixed numbers.

Number - Decimals A. Tenths as fractions, decimals, on a place value chart and on a number line. Divide a 1 digit number by 10 and a 2 digit number by 10. Hundredths as fractions, decimals and on a place value chart. Divide a 1 or 2 digit number by 100. | Measurement – Time. Years, months, weeks, days, hours, minutes and seconds. Convert between analogue and digital times. Convert to and from the 24 hour clock.

Geometry – Shape. Understand angles as turns. Identify, compare and order angles. Triangles, quadrilaterals and polygons. Lines of symmetry. Complete a symmetric figure.

Statistics. Interpret charts and line graphs. Draw line graphs. Coparison, sum and difference.

Geometry - Position and Direction. Describe position using coordinates. Plot coordinates. Draw 2D shapes on a grid. Translate and describe translation on a grid. |

Year 5			
	Number - Place Value. Roman numberals to 1000. Numbers to 10000, 100000 and 100000. Read and write numbers to 1000000. Powers of 10. 10, 100, 1000, 10000, 100000 more or less. Number line and partition numbers to 1000000. Compare and order numbers to 100000 and 1000000. Round to the nearest 10, 100 and 1000 within 100000 and 1000000.	Number - Multiplication and Division B. multiply up to a 4 digit number by a 1 digit number. Multiply a 2 digit, 3 digit and 4 digit number by a 2 digit number. Solve problems with multiplication. Short division. Divide a 4 digit number by a 1 digit number. Divide with remainders. Efficient division. Solve problems with multiplication and division.	Geometry – Shape. Understand and use degresses. Classify and estimate angles. Measure angles up to 180. Draw lines and angles accurately. Calculate angles around a point and on a straight line. Lengths and angles in shapes. Regular and irregular polygons. 3D shapes.
	Number - Addition and Subtraction. Mental strategies. Add and subtract whole numbers with more than four digits. Round to check answers. Inverse operations. Multi-step addition and subtraction problems. Compare calculations. Find missing numbers.	Number - Fractions B. multiply a unit and non-unit fraction by an integer. Multiply a mixed number by an integer. Calculate a fraction of a quantity and fraction of an amount. Find the whole. Use fractions as operators.	Geometry - Position and Direction. Read and plot coordinates. Problem solving with coordinates. Translation with coordinates. Lines of symmetry. Reflection in horizontal and vertical lines.
	Number - Multiplication and Division A. Multiples and factors. Common multiples and common factors. Prime, square and cube numbers. Multiply and divide by 10, 100 and 1000. Multiples of 10, 100 and 1000.	Number - Decimals and Percentages. Decimals up to 2 decimal places. Equivalent fractions and decimals (tenths and hundredths). Thousandths as fractions and decimals and on a place value chart. Order and compare decimals. Round to the nearest whole number. Round to 1 decimal place. Understand percentages as fractions	Number – Decimals. Use known facts to add and subtract decimals within 1. Complements to 1. Add and subtract decimals across 1. Add and subtract decimals with the same number and different number of decimal places. Efficient strategies for
	Number - Fractions A. find fractions equivalent to a unit fraction and non-unit fraction. Recognise equivalent fractions. Convert improper fractions t omixed numbers and vice-versa. Compare and order fractions less than 1 and greater than 1. Add		

and subtract fractions with the same denominator. Add fractions within 1 and total greater than 1. Add to a mixed number. Add two mixed numbers. Subtract fractions and subtract from a mixed number – breaking the whole. Subtract two mixed numbers.

and decimals. Equivalent fractions, decimals and percentages.

Measurement - Perimeter and Area. Perimeter of rectangles, rectilinear shapes and polygons. Area of rectangles and compound shapes. Estimate area.

Statistics. Draw, read and interpret line graphs and tables. Read and interpret timetables. Two-way tables.

adding and subtracting decimals. Decimal sequences. Multiply and divide by 10, 100 and 1000. Multiply and divide decimals – missing values.

Number - Negative Numbers. Understand negative numbers. Count through zero in 1s and in multiples. Compare and order negative numbers. Find the difference.

Measurement - Converting Units. Kilograms, kilometres, millimetres and millilitres. Convert units of length. Convert between metric and imperial units. Convert units of time. Calculate with timetables.

Measurement – Volume. Cubic centimetres. Compare and estimate volume. Estimate capacity.

| Year 6 | Number - Place Value. Numbers to 1000000 and 10000000. Read and write numbers to 10000000. Powers of 10. Number line to 10000000. Compare and order any integers. Round any integer. Negative numbers.

Number - Addition, Subtraction, Multiplication and Division. Add and subtract integers. Common factors and multiples. Rules of divisibility. Primes to 100. Square and cube numbers. Multiply a 4 digit by a 2 digit number. Solve problems with multiplication. Short division. Division using factors. Long division. Order of operations. Mental calculations and estimation. Reason from known facts.

Number - Fractions A. Equivalent fractions: simplifying and on a number line. Compare and order (denominator and numerator). Add and subtract simple fractions and any two fractions. Add and subtract mixed numbers. Multi-step problems.

Number - Fractions B. Multiply and divide fractions by fractions and integers. Mixed questions with fractions. Fraction of an amount – find the whole. | Number – Ratio. Add or multiply? Use ration language. Introduction to the ratio symbol. Ratio and fractions. Scale drawing. Use scale factors. Similar shapes. Ration problems. Proportion problems. Recipes.

Number – Algebra. 1 and 2 step function machines. Form expressions. Substitution. Formulae. Form equations. Solve 1 and 2 step equations. Find pairs of values. Solve problems with two unknowns.

Number – Decimals. Place value within 1, integers and decimals. Round, add and subtract decimals. Multiply and divide by 10, 100 and 1000. Multiply and divide decimals by integers. Multiply and divide decimals in context.

Number - Fractions, Decimals and Percentages. Decimal and fraction equivalents. Fractions as division. Understand percentages. Fractions to percentages. Equivalent fractions, decimals and percentages. Order fractions, decimals and percentages. Percentage of an amount; one and multi-step. Percentages – | Geometry - Shape. Measure, calculate and classify angles. Vertically opposite angles. Angres in a triangle – special cases and missing angles. Angles in quadrilaterals and polygons. Circles. Draw shapes accurately. Nets of 3D shapes.

Geometry - Position and Direction. The first quadrant. Read and plot points in four quadrants. Solve problems with coordinates. Translations. Reflections.

Consolidation (where the specific cohort needs it most) |
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	Measurement - Converting Units. Metric measures. Convert metric measures. Calculate with metric measures. Miles and kilometres. Imperial measures.	missing values. Measurement - Area, Perimeter and Volume. Shapes – same area. Area and perimeter. Area of a trainge (counting squares) area of a right-angled triangle. Area of any triangle. Area of a parallelogram. Volume – counting cubes. Volume of a cuboid. Statistics. Line graphs. Dual bar charts. Read, draw and interpret pie charts. Pie charts with percentages. The mean.	