PARKSIDE COMMUNITY PRIMARY SCHOOL

Curriculum Ambitions for Maths at Parkside Community Primary School

At Parkside Community Primary teaching for mastery approach is used throughout the school, based on the National Centre for Excellence in the Teaching of Mathematics (NCETM) "Five Big Ideas", first published in 2017. Further information about the Five Big Ideas (coherence, variation, fluency, mathematical thinking and representation and structure)

Planning: At Parkside Community Primary, planning in mathematics is in line with the National Curriculum Programmes of Study for Mathematics. These set out what should be taught in each year group from Year 1 to Year 6. Each year group maps out how many weeks will be spent on each different aspect of mathematics; within each of these units of learning, a clear sequence of learning objectives is established. Each learning objective may be the learning focus for one or several sessions. Each daily session is planned carefully following the Essential Maths medium-term planning sequence directly into PPTs/Smartboard and incorporates a coherent journey with small progressive steps in order for all children to secure their learning. Teachers draw on a number of high-quality resources to support planning. These include the National Centre for Excellence in the Teaching of Mathematics (NCETM), Essential Maths and White Rose premium resources.

Resources: One of the key aspects of effective mathematical pedagogy is the use of both physical resources (manipulatives) and pictorial representations alongside abstract mathematical recording. Concrete and pictorial representations are chosen carefully to reveal the underlying structures, patterns and relationships of the mathematics. It is important that links between the three stages (concrete – pictorial – abstract) are explicitly made during teaching and that all children, regardless of attainment or age, are exposed to a variety of different representations as a result of the planned conceptual variation. Manipulatives are removed at an appropriate stage when conceptual understanding is secure so they are not used procedurally during calculations.

Maths curriculum ambitions are-	To develop fluency in mental and written calculations for addition, subtraction, multiplication, and division, including working with fractions and decimals.	To develop pupils' understanding of place value, including larger numbers and decimals, and apply this knowledge to solve problems. •	To use a range of measuring instruments to develop their understanding of length, mass, volume, and time and use these skills to solve problems.	To develop pupils' understanding of geometry, including properties of shapes, position, direction, and movement.	To interpret and present data using a range of graphs and charts and use this information to draw conclusions and make predictions.	In addition to the National Curriculum, strive to develop pupils' problem-solving skills and mathematical reasoning abilities. To ensure that all pupils develop the essential mathematical skills and understanding they need to succeed in later life.	To provide opportunities for pupils to work collaboratively and discuss mathematical ideas and strategies. To encourage pupils to explore and investigate mathematical concepts and ideas through practical activities and real-life contexts.
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Curriculum Ambitions	**Number:** ● Counting reliably up to 10 objects and recognising numerals up to 10 ● Comparing and ordering numbers up to 10 ● Exploring and recognising patterns and relationships in numbers and counting ● Using mathematical language to describe and compare quantities and measures, such as 'more', 'less', 'big', 'small', 'long', and 'short' ● Understanding the concept of one more and one less **Shape, space and measure:** ● Exploring and recognising 2D and 3D shapes in the environment and in pictures ● Using mathematical	● Counting to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number ● Counting in multiples of twos, fives and tens ● Understanding and using place value up to 20 ● Recognising and naming common 2D and 3D shapes ● Telling the time to the hour and half past the hour ● Recognising and using symbols for addition, subtraction, and equals ● Solving simple one-step problems involving addition and subtraction	● Counting in steps of 2, 3, and 5 from 0, and in 10s from any number ● Understanding and using place value up to 100 ● Using a range of strategies to add and subtract two-digit numbers ● Recognising and using fractions of shapes, objects, and quantities ● Measuring and comparing lengths, mass, capacity and temperature ● Describing properties of common 2D and 3D shapes ● Solving simple problems involving multiplication and division	● Counting from 0 in multiples of 4, 8, 50 and 100 ● Understanding and using place value up to 1,000 ● Adding and subtracting numbers mentally with increasingly large numbers ● Recognising and finding fractions of a set of objects or quantities ● Telling and writing the time to the nearest minute ● Measuring, comparing and adding lengths, mass, capacity, and time ● Describing and comparing 2D and 3D shapes ● Using multiplication and division facts to solve problems	● Counting in multiples of 6, 7, 9, and 25 ● Using place value to solve problems with larger numbers ● Using written methods for addition and subtraction with increasingly large numbers ● Comparing and ordering fractions with the same denominator ● Converting between different units of measurement ● Describing the properties of angles, including acute, obtuse, and right angles ● Identifying lines of	● Counting forwards and backwards in steps of powers of 10 ● Using place value to solve problems with larger and decimal numbers ● Adding and subtracting numbers with up to four digits using formal written methods ● Recognising equivalent fractions and simplifying fractions ● Adding and subtracting fractions with the same denominator ● Converting between units of time ● Identifying and classifying shapes based on their properties and symmetry ● Using multiplication	● Understanding and using negative numbers in context ● Solving problems with increasingly complex numbers and operations ● Multiplying and dividing numbers with up to four digits using formal written methods ● Understanding and using fractions, decimals, and percentages ● Calculating and comparing ratios and proportions ● Drawing and interpreting line graphs and timetables ● Calculating and estimating measures, including area and volume ● Solving problems involving all four operations, including fractions and decimals.

	language to describe shapes, such as 'circle', 'square', 'triangle', and 'rectangle' ● Understanding and using positional language, such as 'behind', 'next to', 'above', and 'below' ● Comparing and ordering objects by length, height, weight, and capacity ● Understanding and using vocabulary related to time, such as 'morning', 'afternoon', 'evening', 'yesterday', 'today', and 'tomorrow' **<u>Pattern:</u>** ● Recognising, creating and continuing repeating patterns, such as red-blue-red-blue ● Recognising and creating simple				symmetry in 2D shapes ● Solving problems involving multiplication and division, including using the formal written methods	and division to solve problems, including using factors and multiples	

	sequences of sounds, actions or objects, such as clapping, jumping, hopping ● Understanding and recognising symmetry in shapes and patterns						
Reasoning	In the EYFS maths curriculum, reasoning is an important aspect of developing mathematical skills and understanding. The curriculum aims to provide children with opportunities to develop their reasoning skills through exploration and play. Reasoning in EYFS maths involves children using their understanding of mathematical concepts to solve problems, make connections and explain their thinking. It involves children thinking logically, making decisions, and drawing conclusions based on their observations and experiences. In the KS1 and KS2 Primary Maths curriculum, reasoning continues to be a vital component of developing children's mathematical skills and understanding. It involves children using their knowledge of mathematical concepts and applying it to solve problems, make connections, and explain their thinking. Through reasoning activities, children are encouraged to think critically, creatively and logically. They develop their problem-solving and decision-making skills, which are important in maths as well as other areas of learning and in everyday life. They also develop their communication and language skills as they explain their thinking and reasoning to others. By the end of Year 6, children are expected to be able to use reasoning skills to solve problems and to explain their thinking using mathematical language. This will help them prepare for the more complex mathematical concepts and problems they will encounter in secondary school.						
Reasoning activities	Reasoning activities in the EYFS maths curriculum include: Exploring and predicting what will happen when objects of different shapes and sizes are placed on a balance scale Using everyday objects, such as blocks or toys, to create patterns and explaining the pattern to a friend	Reasoning activities in the Year 1 maths curriculum include: Using objects or pictures to solve simple addition and subtraction problems, and explaining how they found their answer Comparing and ordering numbers up to 20, and explaining their reasoning for their choices Recognizing and extending repeating patterns, and	Reasoning activities in the Year 2 maths curriculum include: Using mental and written methods to solve addition and subtraction problems, and explaining how they found their answer Recognizing and extending repeating and growing patterns, and explaining how they know the pattern continues or changes Investigating and comparing the properties of 2D and 3D	Reasoning activities in the Year 3 maths curriculum include: Using mental and written methods to solve addition, subtraction, multiplication and division problems, and explaining how they found their answer Understanding and using fractions, and explaining how they know fractions are equivalent or not Using different methods to solve problems involving money, time and measurement, and	Reasoning activities in the Year 4 maths curriculum include: Using mental and written methods to solve problems involving addition, subtraction, multiplication and division with larger numbers, and explaining how they found their answer	Reasoning activities in the Year 5 maths curriculum include: Using mental and written methods to solve problems involving addition, subtraction, multiplication and division with larger and more complex numbers, and explaining how they found their answer Understanding and using fractions, decimals, and	Reasoning activities in the Year 6 maths curriculum include: Using mental and written methods to solve problems involving addition, subtraction, multiplication and division with large numbers and decimals, and explaining how they found their answer Understanding and using fractions, decimals, and percentages, and

	Exploring and comparing the weight and capacity of different objects Investigating the properties of different shapes and identifying similarities and differences between them Estimating and measuring the length of objects using non-standard units, such as blocks or hands Sorting objects by different criteria, such as shape, size, and colour, and explaining their reasoning to a friend Solving simple number problems, such as sharing objects equally between friends or finding one more or one less than a given number	explaining how they know the pattern continues Investigating and describing the properties of 2D and 3D shapes, and explaining their reasoning for classifying shapes in certain ways Using non-standard units to measure length, weight, and capacity, and explaining their reasoning for their measurements Using mathematical language to describe position and direction, and explaining how they know an object has moved from one position to another Interpreting simple data and graphs, and explaining their reasoning for their interpretations	shapes, and explaining their reasoning for classifying shapes in certain ways Using standard units to measure length, weight, and capacity, and explaining their reasoning for their measurements Using mathematical language to describe position, direction and turns, and explaining how they know an object has moved from one position to another Interpreting simple data and graphs, and explaining their reasoning for their interpretations Solving simple multiplication and division problems, and explaining their reasoning for their methods and answers	explaining their reasoning for their chosen method Recognizing and describing the properties of 2D and 3D shapes, and explaining their reasoning for classifying shapes in certain ways Using mathematical language to describe position, direction and turns on a grid, and explaining how they know an object has moved from one position to another Interpreting and presenting data in tables, graphs and charts, and explaining their reasoning for their interpretations and choices Solving multi-step problems that involve several mathematical concepts, and explaining their reasoning for each step	Understanding and using fractions, decimals, and percentages, and explaining their reasoning for equivalent fractions, decimals and percentages Converting between different units of measure, and explaining their reasoning for their chosen conversion Recognizing and describing the properties of 2D and 3D shapes, and explaining their reasoning for classifying shapes in certain ways Identifying and describing number patterns, and explaining how they know the pattern continues or changes Interpreting and presenting data in tables, graphs, and charts, and explaining their reasoning for their	percentages, and explaining their reasoning for comparing and ordering fractions, decimals and percentages Solving problems that involve area, perimeter, and volume, and explaining their reasoning for their chosen formula and calculation Recognizing and describing the properties of 2D and 3D shapes, and explaining their reasoning for classifying shapes in certain ways Identifying and describing number patterns, and explaining how they know the pattern continues or changes Interpreting and presenting data in tables, graphs, and charts, and explaining their reasoning for their interpretations and choices Solving problems that involve multiple steps and require the	explaining their reasoning for solving problems involving ratio and proportion Solving problems that involve area, perimeter, and volume, and explaining their reasoning for their chosen formula and calculation Recognizing and describing the properties of 2D and 3D shapes, and explaining their reasoning for classifying shapes in certain ways Identifying and describing number patterns, and explaining how they know the pattern continues or changes Interpreting and presenting data in tables, graphs, and charts, and explaining their reasoning for their interpretations and choices Solving problems that involve multiple steps and require the application of different mathematical concepts, and explaining their

					interpretations and choices Solving problems that involve multiple steps and require the application of different mathematical concepts, and explaining their reasoning for each step	application of different mathematical concepts, and explaining their reasoning for each step	reasoning for each step
Progression of Skills	Kindly click the link below to find the progression of skills: Progression: Number and place value Progression: Addition and subtraction Progression: Multiplication and Division Progression: Fractions Progression: Geometry: position and direction Progression: Measurement Progression: Statistics Year 6 – Ratio and proportion and algebra						
Experiences we could offer	Through the primary maths curriculum, there are many experiences that we could offer children to help them develop their mathematical skills and understanding, such as: 1. **Real-life problem-solving**: Provide children with opportunities to solve real-life problems that involve maths, such as measuring ingredients when cooking, calculating change when shopping, or designing a garden with specific dimensions. 2. **Group work and collaboration**: Encourage children to work together in groups to solve mathematical problems and to discuss their reasoning and strategies. This can help to develop their communication and teamwork skills. 3. **Interactive technology**: Use interactive technology such as tablets, laptops or interactive whiteboards to support and enhance children's learning, providing interactive resources and tools to help them explore and understand mathematical concepts.						

	4. **Outdoor learning**: Take children outside to explore and investigate mathematical concepts in the environment, such as measuring the perimeter of the playground or counting the number of trees in the school grounds. 5. **Cross-curricular links**: Make connections between maths and other subjects, such as using data and statistics in science or measuring and comparing distances and sizes in geography. 6. **Practical resources**: Provide children with practical resources such as number lines, counters, and cubes to help them develop their understanding of mathematical concepts and to support their reasoning. 7. **Enrichment activities**: Offer enrichment activities such as maths games, puzzles, and challenges to help children develop their problem-solving and reasoning skills in a fun and engaging way. By providing a range of experiences, we can help children to develop a deep and broad understanding of mathematical concepts and to apply their skills and knowledge to solve problems in a range of contexts.