

**MANOR ROAD PRIMARY SCHOOL**



# **MATHEMATICS POLICY**

**July 2021**





## Manor Road Primary School Mathematics Policy

Mathematics is a creative and highly interconnected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality Mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of Mathematics, and a sense of enjoyment and curiosity about the subject.

### **Intent**

At Manor Road, we intend on delivering a curriculum which:

- Is in line with the expectations in the National Curriculum 2014.
- Allows children to be a part of creative and engaging lessons that will give them a range of opportunities to explore mathematics following a mastery curriculum approach (Maths No Problem!)
- Gives each pupil a chance to believe in themselves as mathematicians and develop the power of resilience and perseverance when faced with mathematical challenges.
- Recognises that mathematics underpins much of our daily lives and therefore is of paramount importance in order that children aspire and become successful in the next stages of their learning.
- Engages all children and entitles them to the same quality of teaching and learning opportunities, striving to achieve their potential and challenge them.
- Makes rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.
- Provides equal opportunities for children to apply their mathematical knowledge to other subjects.

### **Implementation**

Our mastery approach to the curriculum is designed to develop children's knowledge and understanding of mathematical concepts from the Early Years through to the end of Year 6. We follow the National Curriculum and use the Maths No Problem! scheme from Year 1 to Year 6. The content and principles underpinning the maths curriculum that we follow reflect those found in high performing education systems internationally, particularly those of east and south-east Asian countries such as Singapore, Japan and China.

We intend on implementing our curriculum in the following ways:

- The calculation policy is used within school to ensure a consistent approach to teaching the four operations over time.
- At the start of each new topic, key vocabulary is introduced and revisited regularly to develop language acquisition, embedding as the topic progresses.

- Children are taught through clear modelling and have the opportunity to develop their knowledge and understanding of mathematical concepts. The mastery approach incorporates using concrete objects, pictures, words and numbers to help children explore and demonstrate mathematical ideas, enrich their learning experience and deepen understanding at all levels.
- All children work on the objective at whatever entry stage they are assessed as being at. Children can acquire the skill, apply the skill or deepen the skill within the lesson, depending on their level of understanding.
- Children move through the different stages of their learning at their own pace.
- Children who have shown their understanding at a deep level within the unit, will have opportunities to apply these skills through engaging challenges.
- Reasoning and problem solving are integral to the activities children are given to develop their mathematical thinking.
- Resources are readily available to assist demonstration of securing a conceptual understanding of the different skills appropriate for each year group.
- Children are encouraged to explore, apply and evaluate their mathematical approach during investigations to develop a deeper understanding when solving different problems / puzzles.
- A love of maths is encouraged throughout school via links with others subjects, applying an ever growing range of skills with growing independence.
- Children with additional needs are included in whole class lessons and teachers provide scaffolding and relevant support as necessary. For those children who are working outside of the year group curriculum, individual learning activities are provided to ensure their progress.
- Children have the opportunity to demonstrate their progress through appropriate assessments.
- Children have the opportunity to rapidly recall number bonds as well as multiplication and division facts through engaging platforms and time to practise.

## **Impact**

- All children understand and appreciate the importance of maths within the wider world.
- All children are confident with mental arithmetic and demonstrate a quick recall of facts and calculation strategies, including the recollection of times tables.
- Children believe that they can achieve, having the confidence to try and solve tricky problems as well as the perseverance to continue when they find things difficult.
- All children reach their full potential, whilst working on the objectives for their year group.
- All children have the flexibility and fluidity to move between different contexts and representations of maths, having the chance to develop the ability to recognise relationships and make connections in maths lessons.
- Mathematical concepts or skills are mastered when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations.
- Children show a high level of pride in the presentation and understanding of the work.

## **Pupil support and differentiation**

Taking a mastery approach, differentiation occurs in the support and intervention provided to different pupils, not in the topics taught, particularly at earlier stages. There is no differentiation in content taught, but the questioning and scaffolding individual pupils receive in class as they work through problems will differ, with higher attainers challenged through more demanding problems which deepen their knowledge of the same content. Pupils' difficulties and misconceptions are identified through immediate formative assessment and addressed with intervention. This may take place alongside the teacher within the classroom or through targeted sessions in a smaller group setting. Pupils are taught Mathematics in their class group; the school does not teach children by ability groupings.

## **Marking**

Each child has their own workbook and maths journal. The maths journal is used during lessons for children to record methods, thoughts, ideas and as each teacher sees fit. This journal is a personal record for each child and is not formally marked. Teachers regularly look at each child's journal and use it for assessment purposes. See below for our school's journaling policy. The workbook is marked in accordance with the school marking policy. The workbook can be peer marked, self-marked or teacher marked.

Policy written by: Katy Elford

Policy written: July 2021

Policy to be reviewed: As required



## Manor Road Primary School Maths Journaling Policy



Journals are an important part of our Maths No Problem teaching sequence. It leads to flexible thinking and encourages the use of precise mathematical vocabulary. It plays a part in improving children's attainment, progress and independence. Journaling helps children focus and take ownership of their learning; gaining a deep understanding of concepts by recording their own thought process. An essential factor of journaling is freedom: children should feel free to use models and images, and openly reflect on their own struggles, mistakes and successes.

### Non-negotiables

Children will set out journals following the same format. This may be given to children and the amount of modelling needed is at the teachers' discretion.

- Underline the last piece of work (or start a new page)
- Short Date
- Short Title: (this may be given by the teacher or decided by the children)
- Children will record in pencil
- Children will correct or respond in red pen
- Children will ensure there is a cover page to signify a new chapter

### Marking

Teachers are continually assessing the children's understanding throughout the maths lesson therefore journals will be very lightly marked by either a tick or VF (when verbal feedback has been given).

This will allow teachers to make an assessment at this stage of the lesson where children are in their understanding.

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	<b>Autumn</b>	<b>Spring</b>	<b>Summer</b>
<b>EYFS</b>	<p style="text-align: center;"><u>Number</u></p> <p>Match , sort and compare amounts Representing, comparing composition of numbers 1,2,3 Representing numbers to 5 1 more and 1 less</p> <p style="text-align: center;"><u>Numerical, Patterns/Measures/, Shape/Spatial Awareness</u></p> <p>Compare size Exploring pattern Circles, triangles and positional language Shapes with 4 sides and time</p>	<p style="text-align: center;"><u>Number</u></p> <p>Introducing zero Comparing numbers to 5 Composition of 4 and 5. Growing to 6, 7, 8 Making pairs Combining groups Growing to 9 and 10 Comparing numbers to 10 Number bonds to 10</p> <p style="text-align: center;"><u>Numerical, Patterns/Measures/, Shape/Spatial Awareness</u></p> <p>Comparing mass and capacity Length, height and time 3D shape pattern</p>	<p style="text-align: center;"><u>Number</u></p> <p>Building numbers beyond 10. Counting patterns beyond 10. Adding more and taking away. Doubling, sharing and grouping Odd and Even. Deepening understanding Patterns and relationships</p> <p style="text-align: center;"><u>Numerical, Patterns/Measures/, Shape/Spatial Awareness</u></p> <p>Spatial reasoning 1 (match, rotate, manipulate) Spatial reasoning 2 (compose, decompose) Spatial reasoning 3 (visualise and build) Spatial reasoning 4 (mapping)</p>
<b>Year 1</b>	<p>Numbers to 10 Number bonds Addition within 10 Subtraction within 10 Max's Marvellous maths (Year 1 catch up programme alongside) TTRS Tuesdays Y1 Maths passport objectives daily Positions Numbers to 20 Addition and subtraction within 20 TTRS Tuesdays Y1 Maths passport objectives daily</p>	<p>Shapes and patterns Length and Height Numbers to 40 Addition and subtraction word problems Multiplication Division Fractions Numbers to 100 Y1 Maths passport objectives daily</p>	<p>Time Money Volume and Capacity Mass Space CATCH UP and consolidate on previous topics Plug gaps and teach Year 2 preparation Y1 Maths passport objectives daily</p>
<b>Year 2</b>	<p>Place value Addition and subtraction Mental maths (ongoing every term) Multiplication and division</p>	<p>2 &amp; 3D shapes Fractions Money Revision</p>	<p>Measures including time Data-handling</p>
<b>Year 3</b>	<p>Numbers to 1000 Addition &amp; subtraction Multiplication &amp; division</p>	<p>Further multiplication &amp; division Length Mass</p>	<p>Angles Lines &amp; shapes Perimeter</p>

		Volume Fractions	Money Time Graphs
<b>Year 4</b>	Number to 10,000 Addition and Subtraction within 10,000 Multiplication and Division Further Multiplication and Division	Graphs Fractions Time Decimals Money Mass, Volume and Length Area of Figures	Position and Movement Geometry Roman Numerals Revision / Assessment
<b>Year 5</b>	Number and Place Value: Numbers to 1 000 000 Calculations: Addition and Subtraction Calculations: Multiplication and Division Calculations: Word Problems Statistics: Graphs	Fractions, Decimals and Percentages: Fractions Fractions, Decimals and Percentages: Decimals Fractions, Decimals and Percentages: Percentages Geometry – Properties of Shapes: Geometry	Geometry – Position and Direction: Position and Movement Measurement: Measurements Measurement: Area and Perimeter Measurement: Volume Number and Place Value: Roman Numerals
<b>Year 6</b>	Numbers to 10 Million Four Operations on Whole Numbers Fractions Decimals Measurements	Word Problems Percentages Ratio Algebra Area and Perimeter Volume Geometry	Position and Movement Graphs and Averages Negative Numbers Revision Theme Park Maths