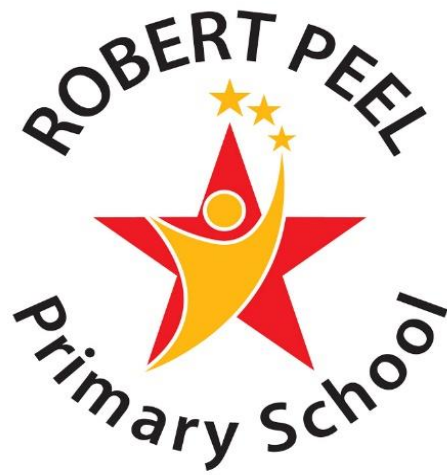


# Robert Peel Primary School

## Maths Policy 2025



Signed by:

\_\_\_\_\_ Headteacher                      Date: \_\_\_\_\_

\_\_\_\_\_ Chair of Governors                      Date: \_\_\_\_\_

## Maths Intention

### 1. School Vision

At Robert Peel Primary School, our vision is to develop resilient and independent learners, who aspire to be the best they can be. Our aim is for the children to be happy in all aspects of school life, be able to communicate effectively and show empathy and understanding to others.

We will achieve this through the teaching of a rich and diverse curriculum, focusing on their immediate locality and the wider world, with an emphasis on deep and sustained learning. The learning will focus on building up the children's knowledge and skills over time and engaging them in real-life experiences. Children will have the opportunity to lead their own learning, question their understanding, develop their vocabulary and gain fluency through practise and rehearsing key skills. Our intent is that children gain a passion for learning and take the skills, knowledge and learning behaviours they have gained at Robert Peel into their next phase of education and adult life as a member of a global community.

### 2. Maths Vision

We intend that all children become fluent in the fundamentals of mathematics, through varied and frequent practice with increasingly challenging problems, so that they develop a conceptual understanding with the ability to recall and apply knowledge confidently and accurately.

A 'Teaching for Mastery' approach ensures that all children can access learning by developing their mathematical understanding and knowledge in small, coherent steps. We aspire that all children will make progress relative to their starting points and will leave Robert Peel with a confident, resilient and happy attitude towards Maths. Children will work alongside their peers and will demonstrate empathy.

Teachers will break learning into manageable steps and use STEM sentences to support the verbal rehearsal of key learning. To ensure that children gain a secure understanding of key mathematical concepts, teachers will support children by using concrete resources and pictorial representations, before introducing abstract methods. All children will be given the opportunity to apply their learning to reasoning and problem solving tasks, both in the context of lessons and real-life examples.

### 3. Maths Implementation

#### **Curriculum Design & Coverage**

	<b>Aut 1</b>	<b>Aut 2</b>	<b>Spr 1</b>	<b>Spr 2</b>	<b>Sum 1</b>	<b>Sum 2</b>
<b>Nursery</b>	More than, fewer than, same Explore and build with shapes and objects Explore repeats Hear and say number names	Begin to order number names I see 1, 2, 3 Join in with repeats Explore position and space	Show me 1, 2, 3 Move and label 1, 2, 3 Explore position and routes Explore patterns	Take and give 1, 2, 3 Match, talk, push and pull Talk about dots Compare and sorts collections	Lead on own repeats Start to puzzle Making patterns together Make games and actions	Show me 5 My own pattern Stop at 1, 2, 3, 4, 5 Match sort and compare
<b>Reception</b>	Match, sort and compare		Alive in 5 Mass and capacity		To 20 and beyond How many now?	

	<p>Talk about measure and patterns</p> <p>It's me 1, 2, 3</p> <p>Circles and triangles</p> <p>1, 2, 3, 4, 5</p> <p>Shapes with 4 sides</p>	<p>Growing 6, 7, 8</p> <p>Length, height and time</p> <p>Building 9 and 10</p> <p>Explore 3-D shapes</p>	<p>Manipulate, compose and decompose</p> <p>Sharing and grouping</p> <p>Visualise, build and map</p> <p>Make connections</p>
<b>Year 1</b>	<p>Place value (within 10)</p> <p>Addition and subtraction (within 10)</p> <p>Shape</p>	<p>Place value (within 20)</p> <p>Addition and subtraction (within 20)</p> <p>Place value (within 50)</p> <p>Length and height</p> <p>Mass and volume</p>	<p>Multiplication and division</p> <p>Fractions</p> <p>Position and direction</p> <p>Place value (within 100)</p> <p>Money</p> <p>Time</p>
<b>Year 2</b>	<p>Place value</p> <p>Addition and subtraction</p> <p>Shape</p>	<p>Money</p> <p>Multiplication and division</p> <p>Length and height</p> <p>Mass, capacity and temperature</p>	<p>Fractions</p> <p>Time</p> <p>Statistics</p> <p>Position and direction</p>
<b>Year 3</b>	<p>Place value</p> <p>Addition and subtraction</p> <p>Multiplication and division A</p>	<p>Multiplication and division B</p> <p>Length and perimeter</p> <p>Fractions A</p> <p>Mass and capacity</p>	<p>Fractions B</p> <p>Money</p> <p>Time</p> <p>Shape</p> <p>Statistics</p>
<b>Year 4</b>	<p>Place value</p> <p>Addition and subtraction</p> <p>Area</p> <p>Multiplication and division A</p>	<p>Multiplication and division B</p> <p>Length and perimeter</p> <p>Fractions</p> <p>Decimals A</p>	<p>Decimals B</p> <p>Money</p> <p>Time</p> <p>Shape</p> <p>Statistics</p> <p>Position and direction</p>
<b>Year 5</b>	<p>Place value</p> <p>Addition and subtraction</p> <p>Multiplication and division A</p> <p>Fractions A</p>	<p>Multiplication and division B</p> <p>Fractions B</p> <p>Decimals and percentages</p> <p>Perimeter and area</p> <p>Statistics</p>	<p>Shape</p> <p>Position and direction</p> <p>Decimals</p> <p>Negative numbers</p> <p>Converting units</p> <p>Volume</p>
<b>Year 6</b>	<p>Place value</p> <p>Addition, subtraction, multiplication and division</p> <p>Fractions A and B</p> <p>Converting units</p>	<p>Ratio</p> <p>Algebra</p> <p>Decimals</p> <p>Fractions, decimals and percentages</p>	<p>Shape</p> <p>Position and direction</p> <p>Themed projects</p>

		Area, perimeter and volume Statistics	
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### ***Teaching & Learning of Maths***

In EYFS, the key principles of Mastery for Maths are adopted. Children will be introduced to key concepts, ideas and strategies to enable them to reach their Early Learning Goals by the end of the Reception year. The maths will be very practical, with both direct teaching and independent activities available for children to access. As in KS1 and KS2, children will be encouraged to use the correct mathematical language and to speak using STEM sentences. Throughout the school, teachers use White Rose to support their planning and resourcing for the lesson. Early Years and KS1 follow the 'Mastering Number' programme to secure firm foundations in the development of good number sense for all children.

Throughout KS1 and 2, all children will participate in a daily maths lesson. Each lesson will be a 'small step' through the area of maths that they are learning about. Children will get the chance to explore their new learning, practice concepts and develop their understanding before moving on to independent work. In maths lessons at Robert Peel, the following practices will be observed in every Maths lesson:

- Whole class teaching – We teach maths to a whole class and children are encouraged to believe that by working hard, they can succeed. At the planning stage, teachers consider what scaffolding may be required for some children who may struggle with the concepts being demonstrated and also suitable challenges for children who may grasp the concept quickly.
- Longer and deeper – Our plans allow for longer to be spent on topics and a slow pace moving through the curriculum. Teachers make use of White Rose Maths resources when designing lessons. Each lesson focuses on one key conceptual idea and connections are made across the curriculum. This may appear that the pace of the lesson is slower, but progress and understanding are enhanced.
- Use of CPA – Children need to understand the mathematical concept they are practising. Using manipulatives initially helps children to develop this understanding; though the move to pictorial representations should be fairly rapid. The use of both of these approaches could also be for the child to be able to 'prove' their answer. Whenever a new concept is introduced, teachers should ensure they understand how to model and teach the steps using concrete and pictorial representations. The CPA model is clearly shown in the calculation policy that we follow (Appendix 1).
- Talk partners – Teachers will pair children with a partner of mixed ability; this is of benefit to both children. There will be ample time in the lesson for children to discuss their ideas and explore concepts together. Children may use a shared maths books during partner work to work collaboratively to solve problems and practise presenting their work. Children will be able to refer back to their calculations to support them during independent work.
- Modelling – Teachers should make use of a teacher's maths book and visualiser to model not only the procedure the children will be using, but also the expectation for the presentation of their work.
- Questioning - Children's understanding will be probed by a range of questions. This will support teachers to assess in the moment to ensure that the children understand they key learning concepts of the lessons.
- Marking – When children are completing their work, staff will mark the learning in line with the school's marking and feedback policy. Should staff feel that intervention is needed during the lesson, this will be annotated accordingly and acted upon in when appropriate.

As fluency is one of the three main aims of the National Curriculum, each year group also has time tabled Maths Fluency sessions. These sessions will be based around both factual and procedural fluency – key

skills that children need to secure. Each child will have a book for their fluency work to be completed in. When planning these sessions, teachers should consider the following:

- Revising known facts and strategies for them
- Pre-teaching of concepts that are due to be taught soon
- Revising procedures for mathematical operations
- Revisiting concrete and pictorial representations to secure understanding
- Problem solving sessions based on fluency.

The weekly maths plan will show the objectives for the fluency sessions, teaching points and resources to be used.

The long term planning for maths at Robert Peel is based on the units from White Rose. This is followed by all year groups; with some flexibility for Year 6 to ensure coverage before SATS. Teachers need to consider the journey the children will make through each topic area and individual lessons as part of their planning procedure.

To ensure consistency throughout school, each maths lesson is broken down into 5 parts:

1. Explore - In Focus – A problem is presented to explore - children try to solve it (using manipulatives where necessary) with their talk partners.
2. Structure - Let's Learn - Teacher models children's methods on the board and helps to organise their ideas. The teacher will then model the new learning for that day, discussing connections and using mathematical language.
3. Reflect - Guided Practice - Reflection supported by teacher. Children practise skills, with talk their partner, while work through examples to move from concrete/pictorial to abstract.
4. Practise –Independently - Children complete independent work in their books. There is an emphasis on children being able to apply their learning in a variety of ways, rather than doing pages and pages of the same style of question.
5. Applying Learning – This is completed in two parts. First, a reasoning and problem solving is presented to the class. The teacher will model how to unpick the question in order to solve it correctly. Children will then have a similar problem for them to solve independently.

Throughout the lesson, there should be opportunities planned in for children to go 'deeper' if they are grasping the new learning rapidly. These challenges should be easily identifiable in the children's books.

### ***School Vision Promoted Through Maths***

In Maths, we promote empathy by supporting children to be patient with each other. We help children to see that we all have different strengths and, that by working together, we can support each other to achieve.

In Maths, we promote aspiration by ensuring that all children can access challenge during the lessons. We praise hard work, not attainment.

In Maths, we promote independence by equipping children with the skills and knowledge needed to achieve in lessons. We encourage children to use a range of resources and 'have a go', before seeking adult support.

In Maths, we promote happiness by promoting a love of Maths and number. Teachers will model positive attitudes towards Maths and will incorporate Maths across the school day.

In Maths, we promote communication by encouraging children to answer in full sentences (with the scaffold of STEM sentences) and allowing children to work with their talk partners.

In Maths, we promote resilience by ensuring that all children understand that mistakes are part of the learning process. We support children to overcome challenges and develop a resilient attitude, which they can apply to all areas of their life.

### ***Curriculum Connections in Maths***

Maths is linked to several areas of our curriculum. In Science, children are able to apply their mathematical knowledge to real-life examples during investigations. Children will need to accurately measure and record their results and may need to plot their findings in a graph. Further up the school, children may improve the reliability of their results by repeating their test and finding an average.

Maths is also linked with Computing. Maths learning is reinforced in several units including: Grouping and Sorting, Pictograms and Spreadsheets.

Children will also use ICT to prepare them for the Multiplication Tables Check in Year 4.

### ***Enrichment Experiences in Maths***

Children have the chance to embed their mathematical knowledge in several clubs that school offer. This includes TT Rockstars Club and Board Games Club.

In lessons, children are challenged to develop mathematical thinking and problem solving using tasks, when they completed all of the learning from the lesson.

### ***Maths Language Development***

This table shows how vocabulary is progressed throughout the school. It states where the vocabulary should be explicitly taught, but it is expected that it will be revisited multiple times throughout primary school. Children will be expected to explain the meaning of a word and use it within a STEM sentence.

	EFYS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Number and Place Value</b>	count, subitise, order, compare, forwards, backwards, digit, more, less, equal to	numerals, sort, represent, partition, ones, tens, compare	count in multiples, place value, estimate	ascending, descending, hundreds	negative numbers, Roman numerals, thousands, round	ten thousands, one hundred thousands, powers of, integer	millions, ten millions
<b>Addition and Subtraction</b>	add, plus, altogether, total, takeaway/subtract, number bonds, part, whole	addition, subtraction, different, equals, inverse	sum, commutative, exchange, column addition	estimate	operations, methods		
<b>Multiplication and Division</b>	double, half, equal, unequal, share, group, odd, even	multiplication, division, arrays	commutative, repeated addition	exchange, derived facts	factor pairs, distributive law, remainders	multiples, factors, prime numbers, square numbers, cube numbers, short division, product, dividend, divisor	long division
<b>Fractions and Decimals</b>		whole, half, quarter, equal parts	three quarters, third, equivalent fractions, unit fractions, non-unit fractions, numerator, denominator	tenths	equivalence, hundredths, convert, proper fractions, improper fractions, decimal point	fifth, thousandths, mixed numbers, percent %, complements	
<b>Ratio and Proportion and Algebra</b>							relative size, scale factor, formulae, linear number sequences, algebraically, equation, combinations, variables
<b>Measurement</b>	measure, wide(er), narrow(er), compare, long(er)(est), short(er)(est), length, weight, capacity, heavy/light, full/empty, more than, less than, earlier, later, quicker, slower, today, yesterday, tomorrow, morning, afternoon, evening, day, week, hour, minutes	compare, mass, volume, chronological order, days of the week, months of the year, o'clock, half past, second, money, coins, notes, pounds £, pence p	standard units, estimate, order, centimetre (cm), metre (m), kilogram (kg), gram (g), litres (l), millilitres (ml), temperature, Celsius, quarter past/to, duration, value, change	millimetre (mm), perimeter, analogue clock, Roman numerals, digital clock, 12-hour clock, 24-hour clock, a.m./p.m., noon, midnight, leap year	kilometres (km), rectilinear figure, area, convert	scaling, metric units, imperial units, inches, compound shape, irregular shapes, square cm, square m, cubic cm, pounds, pints	Conversion, miles, cubic (m, mm and km), gallons, stones, ounces
<b>Geometry</b>	2-D shapes, 3-D shapes, rectangle, square, circle,	sides, corners, faces,	pentagon, hexagon, line of symmetry,	right-angle triangle, heptagon,	isosceles, equilateral, scalene,	regular polygon, irregular	radius, diameter, circumference,

	triangle, cuboid, cube, cone, sphere, curved, straight, flat, over, under, between, around, next to, begin, pattern, solid	cylinder, pyramid, position, direction, whole turn, quarter turn, half turn, three-quarter turn	properties, edges, vertices, vertex, clockwise, anti-clockwise, rotation, sequence	octagon, polygon, prism, angle, acute, obtuse, right angle, horizontal lines, vertical lines, perpendicular, parallel	trapezium, rhombus, parallelogram, kite, quadrilaterals, co-ordinates, first quadrant, grid, translation, plot, polygon, axis	polygon, reflex angles, degrees, protractor, reflection	dimensions, four quadrants, co-ordinate plane
<b>Statistics</b>			Pictograms, tally chart, block diagram, horizontal, vertical	table, bar chart	time graph, discrete data, continuous data, line graph	time table, two-way table	pie chart, mean

### ***Community, Cultural & Global Learning through Maths***

Maths is a global subject, which has developed over time through the contributions of thinkers across the globe. Maths helps us to understand the world and shows connections to all areas of life. It is a universal language that children can take with them wherever they venture to.

#### **4. Impact**

##### ***Children's Development***

Through their time at Robert Peel, children build upon previous knowledge to become confident and competent mathematicians. Children develop their language through rich, concrete experiences in EYFS and begin to apply their knowledge in KS1 to reasoning and problem solving questions. By the end of KS2, we aspire that all children have positive attitudes towards maths and have a plethora of strategies to demonstrate their deep and secure learning. Children regularly revisit their learning and, by taking small, coherent steps in lessons, children are able to grasp new concepts by making connections in their learning.

##### ***Monitoring Impact of Curriculum Design and Teaching & Learning***

##### ***Role of Subject Leader & Monitoring***

Monitoring the impact of teaching and learning is carried out regularly by the Subject Leader. This consists of:

- Learning walks and lesson observations
- Team teaching and example lessons
- Monitoring and scrutiny of weekly plans
- Monitoring and scrutiny of all Maths based books
- INSETs and Staff training sessions for teachers and support staff
- Collection and analysis of assessment data
- Discussions with children about their experiences and learning in Maths
- Reporting to the Governing Body regularly
- Supporting new staff and providing guidance and training, when necessary

#### **5. Resources in Maths**

Each classroom has a range of concrete resources relevant to that year that children can access at any point. More topic specific Maths resources are stored centrally in the Maths cupboard.

## **6. Health & Safety in Maths**

Children will be taught how to use materials, tools and equipment correctly and safely in accordance with the schools overall Health and Safety policy.

## **7. Assessment, Recording & Reporting of Maths**

- Formative assessment takes place in every classroom during every lesson. Through questioning and marking of books, staff are able to identify which children need extra support or challenge in that lesson. With books being marked during lessons, it provides time for immediate feedback to a child.
- To develop factual fluency within the school, children in Years 2-6 will complete TT Rockstars papers at least once per week.
- In preparation for the Multiplication Tables Check, Year 4 will use computing equipment to familiarise children with the process.
- To develop procedural fluency within the school, children in Year 6 will complete an arithmetic test weekly, when an appropriate amount of the curriculum has been covered.
- At the end of each term, there are assessments available from White Rose that are linked to the objectives covered that term. Children's performance in these will give a good indication of which objectives are secure and which might need revisiting. Performance in these will also be used as a basis for the planning of maths intervention sessions that will take place in the afternoons.

Twice a year, children will complete NTS assessments, which mimic KS2 assessments.

## **8. Provision in Maths**

The overriding belief at Robert Peel is that children all work together to master one objective at a time, there are some children who will find various aspects of maths a challenge. Whilst staff will try to support these children within the normal maths lessons along with their peers, it may be necessary to make adjustments for those children. This can be done in various ways:

- Clearly defined support on plans – adult to work with selected children
- Task differentiated in some way for that child
- Resources prepared for that child to help support them
- Pre-teaching the day before

Where it is felt that children need more support than this, teachers will identify children to attend pre-teaching sessions to give children an introduction to the next small step to equip children with the knowledge and skills to give them the confidence to take part in the next lesson.