# Rishton Methodist Primary School

## Maths Policy

**School Mission Statement**

*As a Methodist school, our values lie at the heart of all we are and do. Within our caring Christian community, where all are welcome, everyone is encouraged to be the best that they can possibly be. We promote respect, compassion and resilience to prepare our children for the challenges of an ever-changing world.*

**Rise up ……..take courage and do it"**
**Ezra 10:4**

### Introduction

Mathematics 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, the skill of analysing and communicating information, and a sense of enjoyment and curiosity about the subject.

The national curriculum for mathematics aims to ensure that all pupils:

- ✓ become fluent in the fundamentals of mathematics;
- ✓ reason mathematically;
- ✓ can solve problems by applying their mathematics.

(National Curriculum 2014)

### Our curriculum

At Rishton Methodist Primary School we are committed to providing a challenging and rigorous maths curriculum for all of our children. The content and principles underpinning the 2014 mathematics curriculum and the maths curriculum at Rishton Methodist reflect those found in high-performing education systems internationally, particularly those of east and south-east Asian countries such as Singapore, Japan, South Korea and China. Research suggests that by age 15 students from these countries are on average up to three years ahead in maths compared to children 15 in England. Learning from these education systems, we have adopted a 'mastery approach' to teaching, which is commonly followed in these countries. These principles and features characterise our approach:

- ✓ Teachers reinforce an expectation that all pupils are capable of achieving high standards in mathematics;
- ✓ The large majority of pupils progress through the curriculum content at the same pace. Differentiation is achieved by emphasising deep knowledge and through individual support and intervention.
- ✓ Teaching is underpinned by methodical curriculum design and supported by carefully crafted lessons and resources to foster deep conceptual and procedural knowledge;

- ✓ Practice and consolidation play a central role. Carefully designed variation within this builds fluency and understanding of underlying mathematical concepts;
- ✓ Teachers use precise questioning in class to test conceptual and procedural knowledge, and assess pupils regularly to identify those requiring intervention so that all pupils keep up.

The intention of these approaches is to provide all children with full access to the curriculum, enabling them to achieve confidence and competence – 'mastery' – in mathematics.

**The Foundation Stage**

In the Early Years Foundation Stage (EYFS), we relate the mathematical aspects of the children's work to the Development Matters statements and the Early Learning Goals (ELG), as set out in the EYFS profile document. Mathematics development involves providing children with opportunities to practise and improve their skills in counting numbers, calculating simple addition and subtraction problems, and to describe shapes, spaces, and measures. The profile for Mathematics areas of learning are Number (ELG 11) and shape, space and measures (ELG 12). We continually observe and assess children against these areas using their age-related objectives, and plan the next steps in their mathematical development through a topic-based curriculum.

- ✓ There are opportunities for children to participate in Maths activities throughout the EYFS (both inside and outside) – through both planned activities and the use of easily accessible quality maths resources which children can self-select.
- ✓ Whenever possible, children's interests are used to centre the curriculum. For instance, an interest in cars would allow children to sort, count and record the number of cars in small world play.
- ✓ Staff support children's learning through planned activities but are also constantly observing self-initiated mathematical learning.
- ✓ Towards the end of the Reception year, staff will being to model more formal daily mathematic lessons together so that by the time children move into Year 1 they are familiar with the structure of the lesson and the types of activity that they will be working on.

**Key Stage 1 & 2 Approach to Teaching Maths**

Throughout school, we use 'Maths – No Problem!' textbooks and workbooks, which are based on the principles of how Mathematics is taught in Singapore and aligned with the National Curriculum 2014, to support the planning and delivery of Mathematics teaching.

The 'Maths - No Problem!' textbooks and workbooks are arranged in chapters and, over the course of the academic year, all units of the National Curriculum 2014 are covered. The short term planning is done weekly, with teachers planning the delivery of the lessons based on their individual classes, identifying possible misconceptions, key vocabulary and ways to challenge pupils. This provides our children with a coherent programme of high-quality materials and exercises, which are structured with great care to build deep conceptual knowledge alongside developing procedural fluency.

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Working with a talk partner is a key focus of learning; this gives children the opportunity to share their ideas and test theories and methods with a peer before committing to an answer in front of a wider audience.

If any child requires an alternative plan for learning, the class teacher will discuss with the subject leader and SENCO to decide on the best way forward for the individual child.

In all classes, textbooks are available for the children – whether on screen or as the book itself – and each child has a personal workbook. Boxes of resources are available for children who require the use of manipulatives and to support specific calculation methods.

**Year 1**

In Year 1, the children have access to the textbook on the interactive white board, as a class as they sit on the carpet together, working with a talk partner. This is to introduce the children to the layout of the textbook and ensures that the children are not distracted by having an extra book on their table. During the Summer term, we gradually introduce the textbooks to the children in order to prepare them for maths lessons in Year 2. The children work independently in their workbooks, although there may be adult support when reading written problems.

Resources are provided daily for the children, depending on what manipulatives are required for each lesson.

**Year 2 – 6**

All children work with a talk partner, sharing a text book and have access to boxes of resources with which to support their learning. Children work independently in their workbooks. These lessons are structured as a typical Maths – No Problem! lesson.

**A Typical Lesson – Maths – No Problem!**

Lessons last approximately 1 hour and are taught daily. Pupils start the lesson with an 'In Focus' problem, which they discuss in partners. This is a problem solving activity, which prompts discussion and reasoning. In Key Stage One, these problems are almost always presented with objects (concrete manipulatives) for children to use. Pupils may also use manipulatives in Key Stage Two. Teachers use careful questions to draw out pupils' discussions and their reasoning.

The class teacher then leads pupils through strategies for solving the problem, including those already discussed. The strategies may be displayed on the working walls in the classroom.

Targeted input from the teacher or teaching assistant for children who have found a concept difficult to understand, is provided during the lesson. This provides these children with the extra support that they need to succeed in their independent work.

As a class, the children then work on some questions in 'Guided Practice'. These questions are carefully designed with variation which builds fluency and deep understanding. When they are ready to apply their learning independently, the children answer questions in their own workbook. If some pupils are advanced in this area of mathematics and have completed the questions independently, they will be given extra tasks to consolidate and deepen their learning, which they will complete in an additional maths book.

After the end of the lesson, children, who have not fully understood the concepts taught in that lesson so far, and with a view to the activities in the next stage of the lesson, work with the class teacher in an intervention session, outside of the classroom, for an intensive session to revisit the areas which they had difficulties with in the main teaching session or independent work.

**TIMES TABLES**

In Years 3 and 4, 15 minutes of each day are dedicated to learning times tables facts. Years 5 and 6 consolidate times tables facts as part of their daily arithmetic session of 15 minutes. In Key Stage 1, children are taught, and practice, times tables facts regularly. Times tables tests are carried out regularly in class, to inform class teachers of the learning needs of their children.

To provide challenge for those children who know their times tables, staff have discussed and agreed a whole school challenge approach, designed to increase mental agility when recalling times tables facts. Timed challenges are being implemented in Years 2-6, focusing on age related expectations for times tables knowledge. Children will have four levels of challenges to work towards, with the level of challenge increasing throughout the levels. These challenges will include knowledge of times tables, related facts, division questions and those with missing numbers, reflecting the year group expectations of the National Curriculum.

**DIFFERENTIATION & SPECIAL EDUCATIONAL NEEDS**

All children access the main teaching in Maths – No Problem! lessons at age group expectations, with the focus on developing learning through discussion, practical work and targeted questioning. At this stage in our work using Maths – No Problem!, some children are working at a lower year group expectation in their independent work. They have been identified on the school's SEN register and their IEPs also include targets which focus on the level at which they are currently working.

Children who are struggling with the concepts and children who have grasped the concept are provided with additional support or challenge through activities displayed in the classroom in each lesson. We are focusing on increasing the opportunities for challenge throughout school, focusing on developing reasoning skills. This is an integral part of the In Focus task at the beginning of each new lesson in the Maths – No Problem! textbooks and we aim to develop this further through independent activities throughout the year.

**MARKING**

Children work in Maths – No Problem! work books which are marked on task by the class teacher and teaching assistant. A key principle of Maths – No Problem! is the verbal feedback given to children as are they are working, including in the intervention group. A tick is given for each correct answer, with a clearly visible dot next to an answer which the child needs to revisit. Any place value errors are underlined. This is reflected in the school's marking policy.

The onus is on the quality of talk in the classroom, through questioning and verbal feedback for children to fully understand where and why they have made errors.

**ASSESSMENT AND RECORD KEEPING**

Teachers are expected to make regular assessment of each child's progress and to record these systematically. The following is the school policy for assessment in mathematics:

**Termly Evaluation**

Teachers use the statements of Target Tracker to assess the children throughout each half term, highlighting what they have achieved and identifying what they still need to work on. At the end of each half term, an assessment is made from these statements.

Following from the assessments, pupil progress meetings are held with the Head teacher to identify any pupils who need extra support or intervention in Mathematics.

**Formal Assessment**

In February and July, the children in Years 2 – 6 complete Testbase assessments. Year 1 complete Maths – No Problem! assessments, which focus on the areas of study that they have covered.

In the summer term, pupils in Year 2 and 6 complete statutory end of Key Stage assessments in both arithmetic and mathematical reasoning. The pupils in the remaining classes throughout the school are formally assessed using teacher assessment as part of the School's Assessment Policy.

Times tables tests are regularly completed in each class, with a focus on specific, age related multiplication facts.

**REPORTING TO PARENTS**

Reports are completed before the end of the summer term and parents are given opportunity to discuss their child's progress on two separate occasions

Teachers use the evidence in maths books and information gathered from their half termly assessments to help them comment on individual children's progress.

**PARENTAL INVOLVEMENT**

- ✓ Parents are invited to parents evening twice yearly to look at their children's work and discuss their progress and attainment with the class teacher.
- ✓ When significant changes have been/are made to the mathematics curriculum parents are invited to a meeting or sent information via the half termly newsletter.
- ✓ A face to face meeting with parents is scheduled for each half term, if the child has an IEP with mathematics targets to discuss the targets and ways to support them at home.

**MONITORING AND EVALUATION**

The mathematics leader has time allocated to be released from the classroom in order to work alongside other teachers and to monitor and evaluate the quality and standards of mathematics throughout the school. Opportunities for teachers to discuss the scheme, policy and published materials are given on a regular basis during staff meetings.

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**PROBLEM SOLVING**

Problem solving is at the heart of mathematics and opportunities should be sought frequently, to enable the pupils to learn strategies, for solving problems and applying their mathematics skills in a range of contexts. The 'In Focus' activity at the beginning of each new lesson introduces a problem for the children to Teachers should include problem solving activities as part of their weekly teaching in order to cover objectives they need to teach, but also to provide discrete problem solving opportunities for problem solving sake. Teachers need to be aware of the statutory expectations, in reasoning at the end of both key stages and to build the skills the pupils will require in order to complete them to the best of their ability.

**STAFFING AND RESOURCES**

All classrooms have boxes of mathematics resources for the children to access when they require them, the content of which are specifically designed to support the implementation of Maths – No Problem! They are also used to support specific learning in whole class teaching, supporting the transition from concrete objects, to pictorial representations and further on to abstract concepts.

Resources which are not used or required regularly are stored centrally, in cupboards, in the middle room between KS1 and KS2 corridors.

**HOMEWORK**

It is our school policy to provide parents and carers with opportunities to work with their children at home. These activities may only be brief, but are valuable in promoting children's learning in mathematics. A whole school focus on times tables is underpinned by the times tables which are learnt in class each week.
Activities are sent home on a regular basis (see the separate school Homework Policy).

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| Signature from Governors: Date: |
| Signature of Head teacher: Date: |
| Date of next review: January 2022 |