



# Mill Lane Primary School

## Maths Policy

### March 2017

Updated by: Ricky Lee
Date adopted by Governors and Staff: March 2017
Review Date: March 2019

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## Vision

Our vision is to produce confident mathematicians who know and understand the purpose, relevance and importance of maths in everyday life. Children will be number confident to make a valued contribution for themselves, community and world.

## Mission

Our mission is to provide quality first teaching in mathematics which sets high expectations for all pupils. We will support all pupils to ensure that they are able, where possible, to master an age-appropriate curriculum.

## Overview

Mathematics at our school is based on the National Curriculum for Mathematics (Department for Education, 2014) for year groups 1 to 6.

The Early Years Foundation Stage Framework (DfE, 2014) informs mathematical learning in the Early Years Foundation Stage.

The programmes of study are used to give a balanced and broad curriculum to all of our pupils; this includes the statutory and non-statutory aspects of the curriculum and EYFS framework.

## Aims

Three aims of teaching mathematics at Mill Lane Primary School are the same as those of the National Curriculum for Mathematics (DfE, 2014). We aim to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Through fluency, reasoning and problem solving, we believe that children can access a mastery curriculum.

In the Early Years Foundation Stage, Mathematics is one of the four specific areas which providers must support children with. At Mill Lane Primary School, we support the same aims as in the Early Years Foundation Stage Framework (DfE, 2014).

“Mathematics involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shapes, spaces, and measures.”

In addition to these aims, we also strive for children to develop

- A positive and enthusiastic attitude towards mathematics.
- A deep and lasting interest in mathematics.

## **Planning**

Fluency, reasoning and problem solving are at the heart of planning mathematics in Mill Lane Primary School. Each lesson should provide an opportunity for children to deepen their mathematical understanding.

Our approach to planning is based on a thorough understanding of children's needs, gleaned through effective and rigorous assessment and tracking.

Medium term planning will outline the areas of mathematics that will be taught during the term to ensure coverage of the National Curriculum.

Within short term planning, clear success criteria for each learning objective taught should be created – demonstrating the progression needed to reach and exceed the objective. This will enable the class teacher to follow a clear and systematic teaching sequence, where input and activities are differentiated by outcome through the progression of fluency, reasoning and problem solving.

Planning will always, where possible, involve real-life contexts and work through the progression of fluency, reasoning and problem solving in each lesson.

Where children are working above the objective which the majority of the class need to work towards, they will work with problems of greater depth.

## **Teaching and Learning**

### Concrete, Pictorial, Abstract

Children are encouraged to use many representations to develop a deep conceptual understanding of mathematical ideas. Throughout the entire school, concrete, pictorial and abstract resources are used to provide a route to understanding. The school's calculation policy provides more information about the resources that are used.

### Foundation Stage

Teaching and learning promotes social skills and develops the mathematical understanding of young children through stories, songs, rhymes and games. Both imaginative play and outdoor play allow opportunities to develop many skills by using a range of resources, which enables children to learn about shape, space and measure. Practical equipment, such as Numicon, provides children with opportunities to develop and improve their skills in counting, understanding and using numbers and calculating simple addition and subtraction problems. By the end of Reception, the children should be prepared for the dedicated maths lesson of about 45 minutes.

### KS1 and 2

Children are taught mathematics through daily lessons which offer whole class or differentiated group activities. During these lessons we encourage children to ask as well as answer mathematical questions. Children and teachers use ICT in mathematics lessons where it will enhance their learning, and to assist with modelling ideas and methods. Wherever possible, we encourage children to use and apply their learning in everyday situations. Teaching assistants are deployed to support identified children and Numicon is used.

### Five-a-day

Children are expected to complete five 'fluency' questions a day in fifteen minutes during the registration period. Over a full week, the questions should cover all aspects of the age-appropriate curriculum to ensure frequent and consistent coverage of all mathematical concepts. These five questions are then self-marked and tracked by the children.

By regularly revisiting and consolidating previously taught concepts, this ensures that children maintain an understanding of basic arithmetic at an age-appropriate level. By tracking their own work, children are able to see concepts that they may need to revisit.

### Times Tables

From Year 2 onwards, children are expected to learn times tables by heart. In order to support this, children are rewarded with a certificate for each table they can recall by heart.

- A bronze certificate is received for recalling times tables in order.
- A silver certificate is received for recalling mixed up times tables.
- A gold certificate is received for recalling corresponding division facts.

### **Assessment**

Assessment for learning should occur throughout the entire maths lesson, enabling teachers and teaching assistants to adapt their teaching/input to meet the children's needs. This feedback should be incisive and regular.

On a daily basis, children should self-assess against learning objectives and success criteria, giving them a sense of success. Children should know when they are meeting their targets and be self-assessing against those too.

Pupil's work should be marked in line with the Marking Policy and teachers should model how corrections should be made, giving children a chance to learn from their misconceptions or incorrect methods.

Each half term, teachers update an assessment tracker using evidence from pupil work, summative assessments and teacher judgement. This provides further understanding of the level that a child is working at and to inform a more rounded judgement of their abilities.

This tracking is used to identify children who are not making good progress. Half termly pupil progress meetings ensure that pupils can be targeted for support. What that support will be and how intensive, depends upon the child's need and it may be a simple strategy within whole class teaching that is needed. Where further support is deemed necessary, children can access interventions.

## Homework

We recognise the importance of making links between home and school and encourage parental involvement with the learning of mathematics. Homework provides opportunities for children to:

- Practise and consolidate their skills and knowledge,
- Develop and extend their techniques and strategies,
- Share their mathematical work with their family,
- To prepare them for their future learning.

Many parents and carers find that mathematics is taught differently from their experiences at school. With that in mind, we offer homework clubs for parents/carers along with their children at various points throughout the year. These clubs help families support their children.

## Inclusion

### Intervention Programmes

At pupil progress meetings, targeted interventions may be planned for in-class delivery or for withdrawal support. Two full-time teaching assistants are employed to work with small targeted groups on afternoons to bridge gaps in learning.

In order to support key marginal children at the end of Key Stage 2, we offer a focused programme to support teaching and learning of mathematics in Year 6. During afternoons, a range of resources are used to support diagnosis, therapy and testing to help improve outcomes at the end of Key Stage 2.

### Equal opportunities

All children have equal access to mathematical activities. We pay particular attention to ensuring there is no gender bias in materials or in access to resources, including ICT. Teachers should pay attention to the equal distribution of their questions across all groups. Any displays and references to mathematics in society, should show positive role models of gender, race, ethnicity and disabilities.

### Children with SEN and/or learning difficulties or disabilities

Where possible, through the use of appropriate support and differentiation, children with SEN will be working towards the same learning objectives as their peers. From time to time, those working well below the level of the whole class may be working towards related objectives chosen from the relevant progression strand from an earlier year. Those children with SEN may have specific targets relating to mathematics where appropriate. They may be given additional support or extra teaching in small groups to help them achieve these targets. The lower attaining pupils should have access to a wide range of practical resources to help develop mathematical thinking and understanding.

### Gifted and talented

Children who are working well above the overall level of the class will be given a range of experiences designed to deepen their learning while working on the same learning objectives as their peers. This may be done by providing more demanding questions and investigations, further reasoning and problem solving opportunities, and open-ended approaches to maths.

### English as an Additional Language

Children learning English as an additional language may need support in developing mathematical language and concepts. Care is taken to ensure that pupils are grouped according to their mathematical ability and not on their stage of language acquisition.

Through the use of appropriate support and differentiation, EAL pupils experience the same level of cognitive challenge as their peers.

### **Reporting to parents**

All parents receive an annual written report on which there is a summary of their child's efforts and progress in maths over the year.

At the end of Key Stage 1 and Key Stage 2, each pupil's level of achievement against national standards is included as part of their annual written report.

Parents are invited to parent/teacher interviews in the Autumn and Spring terms to discuss their child's progress.

### **Signed and dated:**

Head Teacher .....

Chair of Governors .....

