

FARMILO PRIMARY SCHOOL MATHS POLICY SEPTEMBER 2022

Completed by V.Blore Maths Co-ordinator

Farmilo Primary School and Nursery

Mathematics Policy

Intent

Heather Fearn (OFSTED Inspector) said ...

"INTENT is all the curriculum planning that happens before a Teacher teaches the knowledge that the pupils need, to learn the next thing in the curriculum."

The national curriculum for mathematics aims 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 nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

At Farmilo Primary School and Nursery we intend our Mathematics Curriculum to be ambitious for ALL pupils. It will be coherently planned and sequenced to enable our children to become confident, lifelong Mathematicians. ALL children will be given the opportunity to reach their own potential in the above core skills, and our curriculum designed so that there is never a "lid on any child's learning" Children will be exposed to their year groups curriculum and it will be our job to strengthen their **mastery** of this knowledge by using a range of concrete, pictorial and abstract resources.

Farmilo's approach to the teaching of Mathematics is one based heavily on using assessment to inform next steps and planning. Teaching for Mastery is embedded and the principle of Shanghai Maths to spend more time deepening understanding on key concepts adhered to. If our robust assessments show that a class needs to spend more time consolidating a particular topic then they have the flexibility to do this. We trust our practitioners to decide what their children really need rather than rushing on when a scheme might be telling us to do so.

It is our intent that Farmilo children will be able to make links between their Mathematical knowledge to a range of subjects and topics including Science and Technology.

Department For Education England/China Teacher Exchange Program 2014

Being part of the Minster School alliance presented an unmissable opportunity in November 2014 to be an integral part of the DFE England/China Teacher Exchange Program for Mathematics. This involved our Maths Co-coordinator travelling to Shanghai to observe how Primary Mathematics is planned and taught. The second stage of the project, was for Farmilo to host a Maths teacher from Shanghai. This visit and the opportunity to learn from our Chinese colleague, had an unprecedented impact on the way that we teach Mathematics at Farmilo, it inspired us to re-shape our Whole School Curriculum and follow a "Mastery Approach." 7 Years on and this is now embedded and highly effective and undoubtedly enables Mathematics to be a strength here at farmilo.

Aims of the Policy

The following aims apply specifically to the teaching of Mathematics at Farmilo Primary School.

- ❖ To raise standards in the teaching, learning and attainment of mathematics
- ❖ To enable children to make sufficient and in some cases accelerated progress
- ❖ To improve children's *factual, procedural, and conceptual* knowledge of number
- ❖ To develop children's skills in mental calculation
- ❖ To teach children the skills required for problem solving, mathematical reasoning and fluency.
- ❖ To encourage positive attitudes and enjoyment of mathematics and to understand its relevance to life.
- ❖ To ensure that ALL children are given the opportunity to "Master" their Year Groups Age Related curriculum.

Teaching for Mastery and Age Related Expectations in Mathematics

At Farmilo we strive for **all** children to "Master" their age related curriculum in Mathematics. To achieve this, we ensure that our children are given equal time with the Class Teacher, who plans from **their** Year Groups Curriculum. "Rapid Graspers" (High Attainers) are carefully challenged through tasks that deepen their understanding and allow them to explore Mathematical concepts at greater depth. Children who find their Age Related Curriculum difficult have same day interventions with the Class Teacher to address misconceptions and enable them to "stay with the rest of the class" and be ready for the next lesson.

We understand that some children will not be working at ARE due to specific needs and therefore these children have their own specialised learning programme.

This approach enables a more bespoke curriculum with the core purpose of enabling as many children as possible to secure understanding of their age related curriculum and some to study Mathematics at greater depth.

It is important for all children to complete the age-related task, as even the high attainers will sometimes have gaps in their knowledge which will then become apparent.

Marking and Feedback

- If a child has displayed a sound understanding of the concept at age related expectation, they are given a task to challenge them further and **Deepen their Understanding**. This will be shown in books as a "DU" task.
- If a child requires more support, then the teacher will record a **Requires Intervention "RI"** and an **Immediate Intervention** will be planned. This will be shown in books as an "II" task.
- For children who excel in Mathematics and require more challenge than is presented in the DU task, a higher DU task will be provided.
- A complete weekly sequence should be evident in each child's book with a clear progression from Concrete to Pictorial then to Abstract.
- Reasoning Speech Bubbles are used throughout school to evidence the children's understanding and explanation of their thought process.

Teaching for Greater Depth "Deeper Understanding"

"A Deeper Understanding Task is an extension of the AR objective to challenge and deepen the understanding of the more able or those who have understood the AR task. This is not extending into the next year group objectives but embedding greater depth in their current curriculum "

For Example

Missing Numbers eg $27 = 14 + ?$ True

or False questions

Word Problems

Odd one Out
Greater than and Less than questions
Always, Sometimes, Never questions
Variation "showing in different ways "

Teaching Sequence

Mathematics should be taught 5 times per week, with number blast sessions as often as the timetable allows.

The Daily Maths Lesson For the first part of the session the teacher delivers "New Maths concepts" in Shanghai style eg 1 Age Related Objective and task for all with the expectation that "All children can achieve".

The children are then given an ARE activity so that the Teacher and Teaching Assistant can observe whether they need more support/intervention (RI and II) or alternatively more challenge (DU Task) The second part of the lesson then involves children either working through a "Deeper Learning" task or an "Immediate Intervention" activity. The key focus being challenge, clarification of misconceptions and support.

How Teaching Assistants will support the Teaching of Mathematics at Farmilo.

During the first part of the Maths Lesson when teachers are delivering new concepts the Teaching Assistant will stay in the classroom. No children are to be removed during this time as they will miss their Age Related Curriculum, (apart from in some cases children who are working pre- key stage and have a personalised learning program)

The TA's role is to make observations of children's mis-conceptions and progress, support children who require more explanation and record any evidence of reasoning in our "**reasoning speech bubbles**". Teaching Assistants are then required, at the end of the lesson, to feedback assessments and useful information to the Class Teacher.

Immediate Intervention and Deeper Understanding in MathsDuring the second part of the Maths session Teachers and Teaching Assistants will work with children who either require an Intervention or an activity to challenge their thinking and embed deeper understanding.

Oral Work and Mental Calculation

Whole class work to rehearse, sharpen and develop mental and oral skills is essential. An oral/ mental starter should feature at the start of the lesson with the purpose of either reviewing learning from the previous lesson or practices skills required for a new sequence of learning.

Sometimes this may involve focusing on the skills which will be needed in the main part of the lesson. There are a number of ways these mental skills are developed...

- ❖ Counting in steps of different sizes
- ❖ Practicing mental calculations and rapid recall of mental number facts
- ❖ Figuring out new facts from known facts and explaining strategies used
- ❖ Building on a previous strategy, then developing it
- ❖ Identifying facts that children can learn by heart and discussing ways of doing it

Home Learning

Home Learning is a method of providing children with opportunities to practice and consolidate skills and knowledge, to develop and extend their techniques and strategies and prepare for future learning. Children in all year groups are given Maths home learning, of differing amounts, as stated in the schools home learning policy. Not all home learning is written work but may involve, for example, playing a game or learning a multiplication table by heart.

Foundation Stage

In the Foundation Stage children are provided with daily opportunities to investigate and explore using numbers and shapes. Directed activities are planned weekly with an emphasis on developing their understanding of number facts. The Mastery approach is at the core of our Early Years Maths provision, with Deeper Understanding and Immediate Intervention activities planned weekly.

ICT

The use of ICT within Mathematics is important. ICT is used in various ways to support teaching and motivate children's learning. Each class has an interactive whiteboard and a visualizer which are used by the Teacher to demonstrate and model within the daily Maths lesson. These can also be used by the children during group activity time. ICT is only used within Mathematics if it is regarded as an efficient and effective way of meeting the lessons objectives.

The Role of the Governors

At Farmilo Primary School the governors are actively involved in agreeing the policy which the school will follow. The Governor responsible for Maths regularly comes in to school to support with Lesson Observations and other Monitoring Activities. The monitoring and evaluation of mathematics is organised through coordinator/governor meetings and governors are kept well informed of standards within mathematics through the Foundation Stage Profile and SATs data. From these results, clear, realistic targets can be set and a manageable plan for achieving them is organised.

The Mathematics Co-ordinators

It is the role of the Co-ordinator to carry out the tasks identified in the School Development Plan for Mathematics and to provide support for teachers in all aspects of planning, teaching, assessment and the use of resources.

The Co-ordinator works alongside the Head Teacher in order to monitor and evaluate progress throughout school. This monitoring includes; data analysis, lesson observation, and planning and work scrutiny. From each monitoring exercise next steps are planned and inputs given during Staff Meetings. The Headteacher also leads a Maths group for Year 6 children who are working at greater depth.

Resources and NCETM National Centre for Excellence in the Teaching of Mathematics

All classes have access to a wide variety of concrete materials in their classes. Teaching staff are confident when using the NCETM website to support and inform their planning and regularly use :

The Curriculum Prioritisation Materials

Mastery Professional Development Spines

Ready to Progress Criteria

Long Term Plans

Progression Plans

Teachers also " dip " into White Rose Resources and design their own PPT's and Smart Notebook Files to support and challenge their children.

SEN

The SENCO works alongside the Maths co-ordinators to plan provision for children with SEN. However, as already emphasized, the daily Maths lesson is aimed at ALL children in the class unless they are on a personalized learning program.

The role of support staff has already been outlined earlier in the policy.

Monitoring and Evaluation

Mathematics within the school will be continually updated and brought in line with changes nationally and from the LA.

Monitoring classroom practice will take place annually with specifically targeted objectives. These observations may be made by the Head teacher or the Deputy Headteacher or Maths Lead.

The Co-ordinators are responsible for reviewing the policy and its effectiveness within school. This policy will be reviewed in September 2022.

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Farmilo Primary School and Nursery

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Updated January 2017

by V.Blore

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