



*Inspire Learning, Ignite Curiosity*

## **Marlow C of E Infant School Maths Policy 2020**

***Then God said, "Let us make mankind in our image, in our likeness"***

***Genesis 1:26***

### **Rationale**

At Marlow Church of England Infant School our vision is to inspire learning and ignite curiosity, within a welcoming Christian and spiritual community. We embrace the uniqueness of everybody and are inclusive of all. Our values of helpfulness, respect, kindness, perseverance, forgiveness, thankfulness and service guide all that we do and our aim is for every child to feel nurtured, supported and safe.

Our belief is that every individual is created in God's image and therefore is precious and valuable. We believe in treating everybody with respect and dignity because we acknowledge everyone's God given value and unique identity.

As a school we support the rights of children and these rights are encompassed in UN Convention of the Rights of the Child. This policy focuses on helping to realise Article 28 *All children have the right to a quality education.*

### **School Mission**

We aim to provide all children with the opportunity to develop towards their full potential by:

- Embracing the uniqueness of everybody and be inclusive of all
- Empowering all to be enthusiastic learners
- Ensuring that every child feels nurtured, supported and safe
- Enriching learning through progressive teaching methods and technology
- Being responsible to and for society
- Being good citizens of the planet

### **Maths Intent**

At Marlow Church of England Infant School, we endeavour to deliver a mastery approach in our maths curriculum. Fluency is taught alongside our problem-solving activities and is encouraged in children's home lives. Skills are built on as children progress throughout the school and their understanding is deepened before they are exposed to new concepts. We provide plenty of opportunities for problem solving and reasoning, which questions their conceptual understanding and transfers skills to different contexts.

We encourage the children to

- persevere and remain patient when faced with a problem that proves more difficult to solve or has many different solutions
- learn to solve problems in many different ways e.g. concrete, pictorial and abstract
- practise voicing their opinions and sharing their approaches
- listen to each other's ideas and acknowledge the different approaches that can be taken, reflecting on which approach was most suitable
- question what they are being told, applying their own knowledge and skills to draw conclusions

Robert Bjork's work on desirable difficulty illustrates the importance of problem solving in order for learning to be embedded. In addition to teaching mathematic skills, it is our intention for the children to learn about themselves as learners and develop their personal qualities. They will have the confidence to approach problems, the ability, perseverance and resilience to solve problems, good communication skills to work with others, the curiosity to question what they are told and the honesty to reflect on their own and others' approaches. In doing so, they will be well equipped moving forwards in their education and future lives.

We aim:

- To stimulate and challenge each pupil to extend their attainment in Maths.
- To create an atmosphere of exploration and excitement starting in the Foundation Stage, so that a genuine love for maths and a desire to learn and find out more is developed.
- To maintain a high level of interest and motivation through enthusiastic teaching and creative teaching strategies.
- To promote independent learning through initial direct teaching of the whole class and groups, progressing on to group, pair and individual problem solving and investigations.
- To encourage co-operative learning in order to promote social and leadership skills.
- To develop mathematical knowledge and understanding so the pupils can explain and reason about mathematics and apply their knowledge practically to everyday experiences.
- To teach the skills and knowledge required in the National Curriculum through careful planning and use of modern and innovative resources.
- To give equal opportunities to all, by using data analysis from the Learning Ladders, that are appropriate and relevant to each individual and build on their previous experiences.
- To ensure that maths begins with a practical focus and an exploratory approach is taken to learning, allowing the children to understand the meaning behind the mathematical concepts they learn.
- To develop mathematical skills and concepts and use a creative approach to apply them across the whole curriculum.

### **Statutory Requirements**

Statutory requirements for the teaching and learning of Maths are laid out in the National Curriculum (2014)

<https://www.gov.uk/government/publications/national-curriculum-in-england-mathematics-programmes-of-study>

and in the Maths sections of Development Matters (EYFS)

<https://www.gov.uk/government/publications/early-years-foundation-stage-framework--2>

### **EYFS**

The Early Years curriculum is founded on the principles and practice laid out in the Development Matters document (2012)

<https://www.foundationyears.org.uk/files/2012/03/Development-Matters-FINAL-PRINT-AMENDED.pdf>

Maths covers 2 strands:

- Number
- Shape, Space and Measure

### **KS1**

The KS1 curriculum is planned around the 8 strands of the National Curriculum 2014 ():

- Using and applying
- Number and place value
- Addition and subtraction
- Multiplication and division
- Fractions
- Measurement
- Geometry (properties of shapes and position and direction)
- Statistics (Year 2 only)

## **Organisation of teaching and learning**

Maths is taught throughout the school in line with the relevant curriculum (EYFS/National Curriculum). Cross curricular links with maths are developed wherever possible. Pupils are therefore given opportunities to communicate and discuss ideas and apply their skills in a variety of contexts and subjects.

**Year 2:** Maths is taught 5 times a week.

**Year 1:** In the transition to year 1 maths is taught twice a week and this builds up to 5 times a week by the end of the first term. In addition to the taught lessons during the transition period, there is a variety of maths activities provided for the children as part of play learning.

**EYFS:** Each week there are 2 maths lessons which serve as the focus for an entire morning's learning. Once the main teaching has been delivered, each child has an adult focused activity as part of a group during the morning. In addition to this there are daily maths activities which form part of the provision which the children can choose as part of their play learning.

As a school, we aim to make maths lessons as engaging and practical as possible. Most lessons will include mental and oral starters, exploration or problem-solving based discussions, teaching activities and a plenary either within or at the end of the lesson. Children are given the opportunity to develop their conceptual understanding before they are shown strategies which are outlined in the school's Calculation Policy. Modelling and demonstrating strategies contained in the Calculation Policy are key methods used by teachers.

To support teaching and learning within the classroom a wide variety of resources is used, including ICT. Scaffolded activities enable pupils to experience success in their learning and give them the confidence to progress independently.

Collaborative learning is encouraged through work in pairs and small and large groups and collaborative talk is used to support the development of ideas for problem solving. Independent learning is also encouraged through the use of differentiated tasks and independent recording.

There are many planned opportunities for pupils to use a problem-solving approach, which allows them to discover for themselves and learn from one another.

## **Differentiation**

In Key Stage 1, teachers plan for differentiation so that pupil's interest is maintained, their individual needs are met and to ensure that all pupils are challenged and achieve success. Children may require extra support, time or resources to enable them to access the Maths curriculum fully.

During maths lessons pupils work within mixed attainment groups. They are given 2 or 3 challenges and are usually able to choose which challenge they would like to complete independently. Where a teacher feels that a child is able to complete a particular level of challenge, they will be asked to do so.

The children are encouraged to reflect on their learning throughout a maths lesson and to move themselves onto the next level of challenge if they identify that their work is not hard enough. This allows the children to learn from each other and means that there is no 'lid' put on their progress and attainment in maths. When the children's fluency in an area of maths is evident, the teacher will plan opportunities for the children to master the curriculum and then to work at a greater depth within the curriculum. The NCETM (National Centre for Excellence in the Teaching of Mathematics) 'Teaching for Mastery' and White Rose documents are used to support planning for this.

## **Special Educational Needs**

Careful attention is given to meeting the needs of SEN children at the planning stage.

When planning, the teachers take the following into account:

- the importance of relating the activities to the pupils' own experiences;
- emphasis on learning through the visual, aural and tactile, and expressions of that learning through non-verbal and creative media;
- the use of practical activities and learning through first-hand experiences;
- opportunities for response and reflection and the use of self-evaluation and assessment
- the use of classroom support and the learning spaces of the children.

### **Higher Attaining Children**

Children who are attaining highly in maths are given many opportunities to show that they are working at a greater depth within elements of the curriculum. These children are then encouraged to show this level of maths across a breadth of subjects and contexts.

### **Supporting pupils' learning English as an Additional Language (EAL)**

Teachers recognise the need to provide extra support for pupils that speak a language other than English at home, where necessary, to maximise their access to the maths curriculum and to develop their skills.

### **Maximising access to the maths curriculum**

This is done by:

- ensuring pupils learning English as an additional language spend most of their time in their mainstream class.
- using learning activities which involve practical activity and discussion;
- supporting understanding with concrete items, pictures, etc. so that understanding does not depend on oral language alone;
- ensuring the maths curriculum and resources are not Euro-centric and are relevant and interesting to every child in the class.

### **Planning**

Progression, coverage and continuity in maths is planned for by:

- following the objectives outlined in the National Curriculum 2014 in Key stage 1;
- following the objectives outlined in the Development Matters in EYFS;
- producing long term plans, which group the objectives from the National Curriculum into strands and show links to other areas of mathematics;
- producing medium term plans, which show opportunities for cross-curricular work and identify teaching activities where the children can show evidence of mastery of the curriculum or working at a greater depth within the year group curriculum;
- producing weekly maths plans which detail progression across the week. Differentiated, learning tasks, the deployment of extra adult support and the focus for the plenary are also identified;
- the learning objectives, outcomes and success criteria for each lesson are clearly identified on planning and are shared with the children as part of the 'learning culture' created within our school;
- regular monitoring/reviewing/revising of weekly and medium-term plans takes place, led by senior staff and the Maths subject leader.

### **ICT and Maths**

Children use ICT in Maths where appropriate.

ICT enhances the children's opportunities in the subject as follows:

- Use of CD-ROMs and the internet to gain additional information;
- Use of the RM maths programme which enables children to work at their own individual level both in a before school club and at home;
- Use of Interactive Essentials;
- Use of IWB resources;
- Use of the Learnpads.

### **Assessment**

Assessment is an integral part of the planning process. Evidence for assessment is gathered through planned opportunities for observation, peer and self-assessment and teacher-led activities.

Teachers use the Learning Ladders platform to assess the children against the objectives from the National Curriculum.

When planning, the gap analysis from the Learning Ladders is used to identify gaps in the children's knowledge.

Both formative and summative assessments are used to inform planning and target setting for individuals and groups.

Further detail is contained in the school's Assessment Policy.

### **Record Keeping and Tracking**

Records are kept on all children in each year group these include:

- Learning Ladders
- Statutory assessments (Year 2)
- Teacher assessment against Development Matters (Reception)
- Individual annual reports to parents

Teachers and SLT regularly monitor pupil progress and identify any concerns. These are shared with the teaching team during pupil progress meetings.

### **Equal Opportunities**

Please refer to the school's Equalities Policy

### **Staff development and training**

Staff development and training is provided in the following ways:

- school based INSET;
- liaison with appropriate county and national services;
- working alongside other teachers or visiting other classrooms as an observer to share good practice.

### **The role of the maths subject lead:**

The role of the subject lead is to:

- take the lead in policy development.
- ensure the implementation of the curriculum.
- monitor the coverage of the National Curriculum and Development Matters objectives
- support colleagues in their implementation of the curriculum.
- support colleagues in the use of the Learning Ladders to assess and monitor the progress of pupils.
- monitor progress in maths and advise the Headteacher of action needed.
- take responsibility for the purchase and organisation of subject resources.
- keep up-to-date with developments in maths education and disseminate information to colleagues as appropriate.

### **Monitoring and Evaluation of the Maths Policy**

The effectiveness of the policy will be monitored during the year through:

- monitoring of teaching and learning by the Maths subject lead and SLT;
- visits from the inspectorate or advisory team;
- consultation with staff;
- sampling of pupil's work and target setting across year groups;
- visits from the Maths governor to discuss the implementation and effectiveness of the policy with the subject lead.

#### **The following criteria can be used as a measure of success**

- Have the learning targets been achieved?
- Have standards improved?
- Is there whole-school consistency?
- Has any part of the policy been difficult / impossible to achieve?

Date Reviewed February 2020

Review Date: February 2023