Meadowside Primary School

Mathematics Policy

Reviewed: January 2023

Next Review: September 2024

Introduction

At Meadowside Primary School, we recognise that Mathematics is a core subject within the National Curriculum and a key area of knowledge for all our pupils. It is our aim that all pupils will develop a positive and resilient attitude to mathematics and learn to use it with confidence.

This policy outlines what we are aiming to achieve in respect of pupils' mathematical education. It also describes our agreed approach to the planning, delivery and assessment of the mathematics' curriculum. The mathematics taught and the methods used reflect the recommendations outlined in the DfE guidance contained in the documents:

(A) Development Matters 2021
(B) National Curriculum 2014

It provides information and guidance for teachers, governors and other interested persons.

We have produced this statement on policy and practice in Maths to ensure that:

- Children's needs are effectively met across the curriculum.
- The requirements of the National Curriculum are fully covered.
- The practice within school is consistent and clear.
- There is a smooth transition for pupils between EYFS, KS1 and KS2
- School policy on maths is communicated to parents and other interested parties.

This policy should be read in conjunction with our Calculation Policy and 'Maths at Meadowside' document.

Aims

Mathematics helps children to make sense of the world around them through developing their ability to calculate, to reason and to solve problems. It enables children to understand and appreciate relationships and pattern in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics.

At Meadowside Primary School we aim to:

1. develop children's fluency, reasoning and problem-solving skills, promoting the need to think clearly and logically with independence of thought;
2. develop a positive and resilient attitude to maths as an interesting and attractive subject in which all children are challenged, gain success and pleasure;
3. develop mathematical understanding, skills and knowledge through well-paced and systematic direct teaching of appropriate learning objectives based on high expectations;
4. develop curiosity, confidence and enjoyment when using and applying knowledge and skills in real life problems and investigations;
5. encourage the effective use of maths as a tool in a wide range of creative activities promoting active and reactive learning within school and, subsequently, adult life;
6. develop an ability in the children to express themselves fluently, to talk about the subject with assurance, using correct mathematical language and vocabulary;
7. develop an appreciation of relationships within maths and ability to explore problems using the appropriate strategies, predictions and deductions;

8. develop the use of computing skills in a technologically advancing world.

Organisation

The school uses a variety of teaching styles and approaches to deliver mathematics lessons. Our principal aim is to develop children's knowledge, skills, understanding, fluency and reasoning in mathematics. In the main, this takes the form of a daily lesson that follows the teaching for mastery principles. Mathematics learning in EYFS and Year 1 takes account of the age of the children and organisation of the classes. (see *Mathematics at Meadowside* document for more detail)

During these lessons, we encourage children to ask as well as answer mathematical questions. Children use technology in mathematics lessons where it will enhance their learning, as in modelling ideas and methods. The school's medium-term planning ensures that Using and Applying mathematics is integrated into planning and teaching.

We use teaching assistants to provide appropriate support to individuals or to groups of pupils. Teaching assistants within Meadowside School are viewed as an important 'asset' to the school and, as such, are appropriately involved in the delivery of the mathematics curriculum. Their knowledge, skills and understanding is constantly updated through involvement in school-based Inset informed by the Gloucester Schools Partnership and subject leader network meetings.

How we cater for pupils who grasp concepts at different rates

Children are taught within their own class and provided with appropriate challenge that allows them to deepen their understanding of mathematics principles, group work and extra challenges. These tasks encourage them to synthesise and evaluate.

The daily mathematics lesson is appropriate for all pupils. Necessary support is provided for less rapid graspers through resources, manipulatives (e.g. a blank number line or counters) and adult guidance. Rapid interventions are put in place to prevent the gap.

Teachers will aim to include all pupils fully in their daily mathematics lessons. All children benefit from the emphasis on oral and mental work and participating with other children/ adults when demonstrating and explaining their methods. However, a pupil whose difficulties are severe, or complex may need to be supported with an individualised programme in the main part of the lesson. Pupil progress meetings and assessment enable identification of pupils who may benefit from early 'intervention' at an appropriate level.

C.S.I (Challenge, Solve, Investigate) Maths

These sessions allow for greater focus on problem solving and reasoning and are designed to give children the opportunity to delve deeper into mathematics tasks and make stronger connections with other areas of their learning. The purpose is to promote perseverance, resilience and independence with appropriate levels of challenge for all.

How we work in the Foundation stage

In the Foundation Stage the cohort will be organised to promote social skills and the development of mathematical language and understanding. Most maths is practical and is not recorded individually. Teaching is based on the NCETM Mastering Number Project and the White Rose scheme which is in line with Development Matters 2021. This will prepare the children for starting the National Curriculum in Year 1.

By providing frequent and varied opportunities to build and apply this understanding...children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built... It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes. Development Matters 2021

The organisation will be planned as follows;

- An introduction with the whole class usually involving subitising, with finger games, number rhymes and songs.
- Some teaching of the whole class on the main mathematics topic for the day.
- Group activities (Occasionally for everyone in small groups simultaneously; or one or more activities, linked to theme of the lesson. These can be supported by an adult or child initiated. Sometimes, a variety of challenges are set for the children to choose from. These may involve more problem-solving techniques.)
- A plenary with the whole class after the group activities are ended, to consolidate and extend through discussion and questioning what they been learning and identify next steps.
- Learning is recorded in a whole class floor book available for the children to look at in the classroom.
- Some observations of learning will be shared via Tapestry
- Mastering Number sessions are taught discretely in addition to this.

There is a maths area in the classroom, and in the outside area, where activities are available for children in free play time. These activities may have been used previously in lessons and allow for extending children's learning. Maths equipment is always freely available for children in their play.

At the start of Year 1, there is a transition period where children who are not yet able to access Level 1 of the National Curriculum continue to follow the EYFS framework with additional support to allow accelerated progress.

Mathematics Curriculum Planning

Mathematics is a core subject in the National Curriculum. We use the *Can Do Maths Club* as the basis for our medium-term planning and support this with resources such as those from NCETM (particularly the *Ready to Progress* documents for each year group), Abacus Evolve, nrich, White Rose Maths Hub, Times Table Rock Stars, Numbots and the Glos Maths Toolkit. The Mastering Number Project is used to provide number sense sessions in Key Stage 1 classes. Our weekly planning or maths classroom presentations give details of how the lessons are to be taught.

The SLT and mathematics team are responsible for monitoring the mathematics planning within our school.

Assessment and Target setting

Assessment has two main purposes:

- assessment of learning (also known as summative assessment);
- assessment for learning (also known as formative assessment).

Assessment of learning (AoL) – summative assessment
Assessment of learning is any assessment that summarises where learners are at a given point in time – it provides a snapshot of what has been learned. Within Meadowside school AoL is used appropriately:

- Termly Assessments
- Teacher assessment
- EYFS baseline assessment and e profile end of year data
- End of year attainment tests
- End of Key Stage National Curriculum tests.

Assessment for learning (AfL) – formative assessment
At Meadowside School we recognise that AfL lies at the heart of promoting learning and in raising standards of attainment. We further recognise that effective AfL depends crucially on actually using the information gained.

The assessment procedures within our school encompass:

- Making ongoing assessments and responding appropriately to pupils during 'day-to-day' teaching. These 'immediate' responses are mainly verbal and are not normally recorded;
- Challenges, next steps and responses to marking. (See the marking code for further information);
- Quick quizzes and *Can you still?* sessions during maths meets;
- Using knowledge of pupils drawn from ongoing pupil tracking records;
- Adjusting planning and teaching within units in response to pupils' performance;
- Use of key questions to check learning against objectives at the end of each unit of work. If necessary, future planning is adapted in response to assessment outcomes;
- Using documents such as the Meadowside Termly Assessment statements, Can Do Ready to Progress tests and The NCETM national assessment materials
- Use of information gained from statutory and optional tests. Analysis is done at both a quantitative and qualitative level. Information gained is used to set focused curricular targets (what to teach) and also to determine which strategies or methods are particularly effective in respect of specific areas of mathematics (the how and why).
- Sharing learning objectives and success criteria, ensuring that pupils know what they are going to learn and what their next steps are;
- Involving the children at all levels to enable them to reflect on learning, self-assess and identify their personal learning goals.

Links To Other Curriculum Areas

English
Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. We have a strong focus on vocabulary; both specific mathematical terms and the more general vocabulary associated with asking and answering questions.

Computing
The effective use of technology can enhance the teaching and learning of mathematics when used appropriately. Any decision about using technology in a particular mathematics lesson or sequence of lessons must be directly related to the teaching and learning objectives for those lessons.

Science
Almost every scientific investigation or experiment is likely to require one or more of the mathematical skills of classifying, counting, measuring, calculating, estimating and recording in tables and graphs.

Art, Design and Technology
Measurements are often needed in art and design and technology. Many patterns and constructions are based on spatial ideas and properties of shapes, including symmetry. When food is prepared a great deal of measurement occurs, including working out times and calculating cost.

History, Geography and Religious Education
Children will collect data by counting and make use of measurements of many kinds. The study of maps includes the use of co-ordinates and ideas of angle, direction, position, scale and ratio. The pattern of the days of the week, the calendar and recurring annual festivals, and an understanding of the passage of time, all have a mathematical basis.

Physical Education and Music
Athletic activities require measurement of height, distance and time, while ideas of counting, time, symmetry, movement, position and direction are used extensively in music, dance, gymnastics and ball games.

Resources

There is a range of practical resources to support the teaching of mathematics across the school. We have resources to support outdoor mathematics activities and Numicon apparatus for all age ranges. All classrooms have a wide range of appropriate small apparatus. Mathematical dictionaries and calculators are available in some classrooms. A range of software is available to support maths work.

Staff development

Staff receive onsite support from the Maths Team in the form of INSET, team teaching, planning support, lesson observation and national developments

Areas for CPD are identified and appropriate Inset and staff meetings are planned.

Parents and governors

A designated maths governor attends maths team meetings and other in school monitoring activities.

Homework is provided for all children. Knowledge organisers are sent home each term so key learning can be reinforced and children have a login for Numbots or Times Table Rockstars to support their learning. Practice relating to the fundamentals of calculation are sent home if needed.

We run sessions to inform parents of mathematical strategies and content, and ways of supporting their child at home. We try to encourage a love of maths through family events and challenge days/activities.

Pre-school mathematical links will be part of the role of our reception team.

The Year 6 team will develop secondary links.

Our Curriculum Committee will be supplied with all relevant school documentation.

Monitoring and Review

The implementation of this policy is the responsibility of all staff.

Monitoring of the standards of children's work and of quality of teaching in mathematics is the responsibility of the SLT supported by the Maths Team.

The work of the maths team also involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school.

The Curriculum Committee and SLT will monitor the subject through the Maths School Development Plan.

Our mathematics policy review will be carried out by the Maths Team.