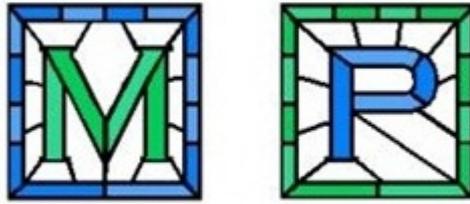


Monkfield Park



**Primary School and
Care & Learning Centre**

Mathematics Policy

Approved by the Governing Body in:
Autumn 2022

Mathematics Policy

Introduction

This policy outlines the purpose, value and management of mathematics at Monkfield Park and sets out the agreed whole school approach to the teaching and learning of mathematics. It clearly defines the role of staff, children, parents, carers, governors and other agencies in this, recognises the essential part mathematics plays in the education of our pupils and the importance of a positive attitude towards mathematics in fostering self-confidence and a sense of achievement. The policy facilitates how we, as a school, meet the legal requirements of recent education legislation and the requirements of the statutory 2014 National Curriculum.

This policy reflects the consensus of opinion of the whole teaching staff and has the support and agreement of the Governing Body.

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

A review of mathematics will be carried out in line with the School Improvement Plan.

General Aims

Mathematics is a creative and highly inter-connected discipline that has been developed over many centuries. It is essential to everyday life, is integral to all aspects of science, technology and engineering and necessary for financial literacy and most forms of employment.

The teaching of mathematics is given a high priority at Monkfield Park as we believe it equips pupils with a uniquely powerful set of tools to understand and change the world. We believe that development of mathematical thinking empowers children and enables them to reason, generalise, think in abstract ways and make mathematical connections. In addition it gives children an appreciation of the beauty and power of mathematics and a sense of enjoyment and curiosity about the subject.

This policy aims to clearly set out the beliefs and ethos of the school, regarding the teaching and learning of mathematics, in relation to the 2014 National Curriculum.

Specific Aims

Our overriding objective is that all children should be enabled to work to their full potential. To achieve this objective we will aim for all children to::

- become fluent in the fundamentals of mathematics through frequent practice;
- have a deep conceptual understanding enabling them to recall and apply their knowledge with increased accuracy in a range of contexts;
- develop mathematical thinking skills which enable them to reason, conjecture, generalise and justify or prove a line of enquiry;
- develop competency in solving increasingly sophisticated problems from a range of familiar and unfamiliar contexts by applying their knowledge;
- develop a wide mathematical vocabulary to promote mathematical reasoning and discussion;
- develop the mathematical skills necessary for everyday life;
- develop a thirst for learning and enjoyment of mathematics;
- develop a positive and confident attitude to mathematics;
- develop perseverance when solving problems;
- have access to a range of computing resources to assist their learning;
- are given differentiated support through practical and pictorial representation which allow them to complete tasks which challenge them to deepen their understanding and develop mastery;
- are given the opportunity to complete online differentiated mathematical tasks at home;
- have regular and supportive feedback which indicates next steps in their learning.

(These aims are not in any set order and should not be read as a list defining importance. All aims have equal value.)

The Mathematics Curriculum

At Monkfield Park it is the responsibility of the Mathematics Coordinator and all teaching staff to ensure the curriculum gives full coverage of the statutory programmes of study and attainment targets as stipulated for each key stage by the 2014 National Curriculum. This ensures continuity and progression in the teaching of mathematics. In early years the curriculum is guided by the Early Years Foundation Stage curriculum. It is the responsibility of the Mathematics Coordinator and Senior Leadership Team to track coverage of the National Curriculum programmes of study across the school.

Provision

Through careful planning and preparation, pupils at Monkfield Park are provided with a variety of opportunities to develop and extend their mathematical skills in and across each phase of education with the aim of achieving mastery. We believe in the importance of establishing a secure foundation in mental calculation and recall of number facts before standard written methods are introduced. Children are introduced to appropriate terminology at the beginning of each unit of work and are expected to use this terminology in their verbal and written explanations. We endeavour at all times to set work that has high expectations for all, is challenging, motivating and encourages pupils to talk about what they have been doing. All pupils engage in self-reflection and are given frequent opportunities to make self-assessments of their progress.

The teaching of mathematics provides opportunities for:

- group work
- guided work
- paired work
- whole class teaching
- individual (independent) work

Pupils engage in:

- the development of mental strategies
- a range of written calculation methods
- practical activities and mathematical games
- open-ended investigational work
- problem solving and reasoning tasks
- open and closed tasks
- mathematical discussion – in pairs, groups and whole class
- the consolidation of basic skills and number facts
- the appropriate use of computing to support learning
- opportunities to rehearse skills in cross-curricular contexts

Entitlement

All of the pupils at Monkfield Park are entitled to have equal access to the learning objectives for mathematics as laid out in the 2014 National Curriculum Programme of Study for Mathematics. Children may be taught mathematics in either mixed ability or ability groups. These groupings are the responsibility of the class teachers and are defined by their assessments and on-going records.

At times it may be relevant for children with Special Educational Needs and Disabilities (SEND) to work within the lesson on targets from their Individual Support Plan (ISP). Intervention programmes are also in place to support children, identified through teacher assessments, outside of the mathematics lesson. This includes working with the pupil premium champion and online tutoring (at school and within normal school hours) through external agencies.

Following Government guidelines and in accordance with the school's Homework Policy, children in KS1 are expected to complete 10-15 minutes of learning per week using an online platform that sets tasks at their current level. For children in KS2 the expectation is 20-30 minutes. Whilst homework is completed using an online platform, we encourage children to write down jottings and/or calculation as appropriate in their homework book to support their learning. In the event children cannot access the online platform at home, the children will be given an opportunity to do so at school. Where appropriate, written mathematics homework tasks may be set for some children either in addition or as an alternative to online tasks.

We recognise that parents can make a significant difference to their child's success and that parental support is essential for homework to be an effective tool. Parents should raise any concerns about mathematics homework with their child's teacher, who will be able to explain how the particular part of the curriculum is taught in the year group. Parents can also view the school's calculation policy on the school's website.

Number Fluency

Children's number fluency and number sense is paramount in mathematics and is developed in a variety of ways at Monkfield Park, including:

- Regular 'Number Talk' sessions that support the children to justify and reason about their chosen calculation strategies for solving number problems;
- Regular fluency activities which could form starters to mathematics lessons using resources shared by the maths coordinator and saved on the staff drive and any other effective resources;
- The use of online platforms (such as times tables rockstars) for children to practice and develop number fact recall in a fun and engaging way. This can be done in school and at home, in addition to the mathematics homework detailed in the previous section (Entitlement);
- EYFS and KS1 complete regular (multiple times a week) NCETM Mastering Number sessions, either as part of their mathematics lessons or as short (10-15 minute) stand alone sessions. The aim of the programme is for children to secure firm foundations in the development of good number sense;
- A range of practical resources accessible for each child either in their 'Mathematics Pack' (Years 1-3 - as detailed below under the heading 'Resources) or in the designated area for mathematics resources in the classroom (Years 4-6) to support their concrete understanding of the calculations they are performing;

- Regular songs and chants at the start of mathematics sessions to support recall of number facts (number bonds and times table facts);
- A range of pictorial and visual forms of representations providing varied fluency as instructed by the 'Mastery' approach to ensure children have a comprehensive understanding of mathematical concepts. Details of these are available in the 'Mathematics Calculation Policy'.

Inclusion

Monkfield Park aims to be responsive to all aspects of diversity and to increase the learning and participation of all pupils within the school and its locality. We have developed inclusive values which are shared between all staff, pupils, governors, parents/carers and the wider community, in a secure, accepting, collaborative and stimulating environment. Everyone is valued and diversity is seen as a rich resource to enhance and support the learning of all.

This inclusive culture is reflected in all school policies and practices. We ensure that classroom and extra-curricular activities encourage the participation of all pupils, drawing on their knowledge and experience outside school. Teaching and support are integrated together, enabling all pupils to overcome barriers to learning and participate fully in school life.

Equality and inclusion will be achieved through analysis and assessment of children's needs, by monitoring the quality of teaching and the standards of pupils' achievements and by setting targets for improvement. Learning for all children is given equal priority and available resources are used to maximum effect.

Monkfield Park meets the specific duties of the Race Relations Amendment Act (2000) by considering the implications for race equality and cultural diversity in planning and developing all policies. For further details refer to the Equality and Diversity policy.

Children with SEND will be given support to access the curriculum at an appropriate level to enable them to reach their full potential including through the use of support staff.

Resources

The school follows the 2014 National Curriculum programme of study for mathematics and is resourced accordingly. In years 1-6 we have adopted the whole-class mastery programme Power Maths produced by Pearson, which provides the spine of our mathematics planning and teaching and is supplemented with other resources (detailed below). Whilst it is intended as a whole-class programme, for children who are not able to access Power Maths resources from their year group, alternative provision is provided to enable them to progress to their potential.

In addition to Power Maths and in order to enhance the teaching of mathematics and provide a rich and varied curriculum, we incorporate resources from elsewhere, including:

- Maths Whizz
- NRICH
- NCETM
- White Rose
- iseemaths
- Third Space Learning

Core resources are kept in each classroom and children are actively encouraged to select appropriate materials to support their work in lessons. Specific resources and support materials will be kept centrally.

Children are all issued with a 'Mathematics Pack' that can be used for every mathematics lesson. The resources contained in the pack are tailored to each year group and support the children to work independently, giving them instant access to practical resources to support their learning. Teachers may tailor these packs for individual children or groups of children based on their specific needs.

In addition, we support the teaching of mathematics through purchasing access to online resources to enable children to explore mathematics through a different medium. Children are encouraged to use appropriate online resources to enhance and consolidate their learning both at school and at home.

Implementation

Mathematics is taught on a daily basis throughout the school and lasts for 20-30 minutes per day in Foundation Stage and 50-70 minutes per day in Key Stage 1 & 2. Teachers of the Reception classes base their teaching on objectives that they are working towards from the 'Early Learning Goals For Mathematical Development'. Towards the end of Reception, teachers aim to draw the elements of a daily mathematics lesson together so that by the time children move into Year 1 they are familiar with a longer lesson.

The mathematics lesson should usually begin with a short starter activity (which could be oral, mental, written, or a combination of these). This could also take the form of a 'Number Talk'. These starters should allow the children to consolidate a previously learnt skill and explain and justify their understanding. This could also be an opportunity for children to be exposed to a new concept (pre-teaching).

The starter is followed by the main lesson, which will normally include a plenary. Mini-plenaries are likely to be used throughout the lesson to deal with any common misconceptions that arise..

In every lesson children should be challenged to conjecture, generalise and convince when discussing and solving problems.

Planning of mathematics lessons is carried out on a weekly basis by the teachers within each year group. A suggested format for planning has been provided to teachers by the Mathematics Co-ordinator, which includes all the key information the weekly plan needs, however planning can take any appropriate written format that the teachers within the year group agree and that includes the required information for the lessons to be taught successfully, including: all differentiated activities; success criteria for each activity; key questions; key vocabulary; where adult support is to be deployed during the lesson; and resources required..

Health & Safety

Please refer to the following:-

- Monkfield Park Health and Safety Policy
- Cambridgeshire County Council Health and Safety Management in Schools (always use updated version on the Cambridgeshire Portal)
- Monkfield Park Off-site Activities Policy
- Cambridgeshire County Council Guidance for Off-site Visits and Adventure Activities Folder.

Monitoring and Assessment

Assessment is regarded as an integral part of teaching and learning and is a continuous process. It is the responsibility of the class teacher to assess all pupils in their class and we are continually assessing our pupils and recording their progress. We see assessment as an integral part of the teaching process, which the children are very much a part of, including by self and peer-assessment of their learning including end of unit checks. This enables children to identify errors and misconceptions in the moment and provides a more immediate opportunity for them to be addressed.

We strive to make our assessment purposeful, allowing the teaching and learning to be differentiated in order to maximise pupil progress.

At the beginning of each unit of work, if the class teacher sees it as necessary, they will carry out a review of the children's existing knowledge, skills and understanding. These assessments will inform the planning and teaching priorities for the start of the unit. To enable the teacher to make sure that children have understood the taught concepts and strategies, Power Maths end of unit checks are used.

Information for assessment will be gathered in various ways: by talking to the children; observing their work; marking their work; end of unit checks; etc. Teachers will use these assessments to plan future work.

Summative assessments in mathematics are carried out at three points throughout the year. Following these, data analysis is completed by the Director for Pupil Attainment and pupil progress meetings are held with each class teacher to discuss children who have not made the expected progress and those who are working towards the expected standard. The discussion results in an action plan detailing the provision required for the class in order to maximise future progress.

Statutory assessments are carried out on an annual basis for the Foundation Stage, Year 2 and Year 6 children. Foundation Stage and Year 2 pupils have their work graded and this information will be sent to the appropriate bodies. Year 6 children complete the end of KS2 Standard Assessment Tests (SATs), which are graded externally. Children in Years 1, 3, 4 and 5 have termly assessments in mathematics as detailed above

Role of the Subject Leader

The mathematics subject leader is responsible for co-ordinating mathematics through the school. This includes:

- ensuring continuity and progression from year group to year group;
- formulating the development plan for mathematics;
- providing all members of staff with guidelines and a scheme of work to show how aims are to be achieved and how the variety of all aspects of mathematics is to be taught;
- developing the subject knowledge and pedagogical skills of all teaching staff;
- implementing improvements in the teaching and learning of mathematics;
- advising on in-service training to staff where appropriate. This will be in line with the needs identified in the School Development Plan and within the confines of the school budget;
- advising and supporting colleagues in the implementation and assessment of mathematics throughout the school;
- ordering and maintenance of resources required for the teaching of mathematics;
- responsibility for the mathematics budget;
- promoting mathematics within the school community and the parent body.

Review

The Headteacher and staff will review this policy in accordance with the School Improvement Plan.