



## **MICKLEOVER PRIMARY SCHOOL**

**Name of Policy:** Mathematics

**Date of Policy:** September 2019

**Member of Staff responsible:** Millie Harrison/Sonia Sharpe.

**Review date:** July 2021

**Signature:** \_\_\_\_\_ **Chair of Governors**

**Date Approved:** \_\_\_\_\_

### **At Mickleover Primary School**

**We are:**

**Motivated to learn**

**Proud of our achievements**

**Successful and skilled for life**



## Mathematics Policy

### INTRODUCTION

This policy outlines the teaching, organisation and management of the mathematics taught and learnt at Mickleover Primary school. The school's policy for mathematics is based on The National Curriculum 2014. The policy has been drawn up as result of staff discussion and has full agreement of the Governing Body. The implementation of this policy is the responsibility of all the teaching staff.

### AIMS

Mathematics is a tool for everyday life. It is a whole network of concepts and relationships which provide a way of viewing and making sense of the world. It is used to analyse and communicate information and ideas and to tackle a range of practical tasks and real life problems.

The aims of the New National Curriculum for mathematics are to ensure that all pupils:

- i. 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.
- ii. **Reason** mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- iii. 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

Using a variety of curriculum resources, following the National Curriculum Programs of Study; White Rose Maths Hub schemes of work; Nrich; and NCETM (National Centre for Excellence in the Teaching of Mathematics) resources, it is our aim to follow a Mastery approach to foster:

- A deep understanding of mathematics concepts.
- An enjoyment and enthusiasm for learning through practical activity, exploration and discussion.
- A positive 'can do' attitude towards mathematics and an awareness of the fascination of mathematics; a belief that all children can achieve in mathematics.
- Competence and confidence in mathematical knowledge, concepts and skills.
- A fluency in the fundamentals of mathematics, so pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly.
- An ability to solve problems, to reason, to think logically and to work systematically and accurately with resilience.
- Initiative and an ability to work both independently and in cooperation with others.
- An ability to communicate mathematics confidently using a wide mathematical vocabulary.
- An ability to use and apply mathematics across the curriculum and in real life.
- An understanding of mathematics through a process of enquiry and experiment.



## **INCLUSION**

The daily mathematics lesson is appropriate for all pupils (with the exception of a small number of children with SEND)\*. It follows a mastery approach and all children will work on the same objective and will be taught through a Concrete, Pictorial and Abstract approach to ensure deep conceptual understanding. Teachers will involve all pupils through guided and independent activities.

In the daily mathematics lesson, we support children with English as an additional language in a variety of ways; (e.g. repeating instructions, speaking clearly, emphasising key words, using picture cues, playing mathematical games, encouraging children to join in counting, chanting, finger games, rhymes etc...)

## **GIFTED AND TALENTED**

More able pupils will be taught within their own class and stretched through work involving additional reasoning and greater depth challenges in order to deepen their knowledge rather than move them on to new concepts. Staff will ensure that there are adequate opportunities for Gifted and Talented children and these should be noted within planning where appropriate. When working with the whole class, teachers will direct specific questions towards the more able (at their ability level) to maintain their involvement. Where possible, outside agencies, e.g. secondary schools, will be involved with such children.

## **SPECIAL EDUCATIONAL NEEDS & DISABILITIES (SEND)**

\*Within the daily mathematics lesson, teachers aim to provide activities to support children who have difficulty in understanding mathematical concepts. Most children with SEND are taught within the daily mathematics lesson and are encouraged to take part when and where possible. Some SEND children may be taught separate to their peers depending on their specific needs.

Where applicable, children's Provision Plans incorporate suitable objectives from the National Curriculum and teachers keep these objectives in mind when planning work.

When additional adults are available to support groups or individual children, they work collaboratively with the class teacher. The supporting adult feeds back to the class teacher when appropriate to inform evaluations, assessment and future planning.

IWBs (Interactive whiteboard) and ICT are used to support children with additional needs.

## **EQUAL OPPORTUNITIES**

It is the policy of Mickleover Primary School to ensure that every child receives an equal opportunity within Mathematics activities, regardless of race, gender, ability or Special Educational Needs or Disabilities.

## **I.C.T.**

ICT will be used in various ways to support teaching and motivate children's learning. ICT will involve the computer, calculator, tablets and audio-visual aids. They will however only be used in the daily mathematics lesson when it is the most efficient and effective way of meeting the lesson objective.



Teachers and children will have access to Mymaths as a teaching and learning tool. Children also have access to TT Rockstars (from Year 2) to aid the learning of times tables at home and school. Children who do not have access to any form of technology at home will not be disadvantaged as they will have access in school.

## **TEACHING AND LEARNING**

### **Teaching time**

To provide adequate time for developing numeracy skills, each class teacher will provide daily mathematics lessons. Additional mathematics may be taught within other subject lessons when appropriate.

Teachers of the Foundation Stage children, base their teaching on objectives in the Early Years Foundation Stage framework; this ensures that they are working towards the 'Early Learning Goals for Mathematical Development'.

### **In a typical maths lesson at Mickleover Primary School you can expect to see:**

- Games, oral work and mental calculation to rehearse and develop fluency.
- Teacher modelling and guided practice using anchor tasks, with a balance between whole class, grouped, paired and individual work.
- Careful questioning to develop reasoning and opportunities to 'Prove it'.
- A summary or mini plenary within the lesson or at the end of the lesson. This will involve work with the whole class to clarify misconceptions, identify progress, to summarise key facts and ideas, to make links to other work and to discuss next steps.
- Opportunities for children to talk and discuss their thinking and reasoning using correct mathematical vocabulary within pairs or small groups.
- Use of a concrete, pictorial and abstract approach.
- Confidence, enthusiasm and a positive 'can do' attitude from both teachers and pupils.

Staff at Mickleover Primary School strive to maintain a good subject knowledge, and an understanding of the structure of mathematical concepts. They deliver well planned and coherent lessons so that students develop a deep understanding and become 'masters' of maths. Staff will use questioning to develop reasoning and will use misconceptions to drive learning forwards. Staff will identify students who need immediate intervention to ensure that pupils can progress with their learning.

Pupils at Mickleover Primary School display a positive approach to learning maths and are engaged and motivated within the lesson. They are able to select manipulatives to support and explain their learning and can communicate their ideas confidently both orally and by using a variety of written representations. They will have a good fluency and strategies to help them solve problems.



## **CROSS-CURRICULAR LINKS**

Mathematics contributes to many subjects within the primary curriculum and opportunities will be sought to draw mathematical experience out of a wide range of activities. This will allow children to begin to use and apply mathematics in real contexts.

## **CALCULATIONS POLICY**

This Maths policy should be read in conjunction with the school's Calculation Policy. The Calculation Policy (2019) is adapted from the White Rose Calculation Policy and has been agreed by Staff and Governors so that there is consistency in the teaching of written calculations across the school, based on a Concrete, Pictorial and Abstract approach.

## **RECORDING**

Children are taught a variety of methods for recording their work and they are encouraged and helped to use the most appropriate and convenient method of recording following MPS' calculation policy. Children are encouraged to use mental strategies before using a written algorithm.

Recording work may involve children making rough jottings first followed by recording actual answers for the teacher's attention. All children are encouraged to work neatly when recording their actual answers, but jottings may take any form and are important evidence for the teacher. Learning objectives or titles and dates will be written on all pieces of work.

Where appropriate photographs may be used as evidence of learning.

## **MARKING**

It is not always necessary to write verbal comments on Maths work. When appropriate, work will be marked by the class teacher alongside individual children or with the whole class. Children in KS2 are encouraged to self-mark at work stations and self-assess their work at the end of each session using the traffic light system. Where appropriate, children in KS2 are encouraged to check computational exercises with a calculator. This can foster independence in the children, who can seek help if they are unable to locate and correct their errors.

## **TARGET SETTING**

The Aims of the National Curriculum require children to have good fluency of number which will be taught daily within the maths lesson and other opportunities within the day. Each child will be set targets to develop fluency and recall number facts based on the School Maths Target Track. Such targets will be shared with parents through the 'Home/School Diary'. Children will be expected to practise these targets as part of homework and tested regularly.

## **ASSESSMENT AND REPORTING.**

Assessment will take place at three connected levels: short-term, medium-term and long-term. These assessments will be used to inform teaching in a continuous cycle of planning, teaching and assessment.

Short-term (formative) assessment will be an informal part of every lesson. The objectives will be shared with the children during the lesson. This is a necessary part of assessment for learning and helps the children take ownership for their own learning. The short term assessment will also involve the teacher checking the children's understanding at the end of the session to inform future planning and lessons. Children will be encouraged to self- assess their



understanding by using the traffic light system, or with younger children thumbs up/down. Traffic lights may be added at the end of a lesson. Older children will be encouraged to explain their choice of traffic light.

Medium-term assessment will take place on a termly basis and will cover the objectives from the National Curriculum Maths programmes of study as highlighted in the White Rose Scheme of Learning covered during the term. Teachers will update the MPS Maths Grids at least once per term. The outcomes of the assessments will be recorded by the class teacher and used to inform the updating of the School Pupil Tracker every term.

Long-term assessment will take place once during the year. This assessment will take place towards the end of the school year to assess and review pupils' progress and attainment. These will be made through compulsory National Curriculum mathematics tests for pupils in Year 2 and 6 and supplemented by the optional NFER tests in other years. Teachers will also draw upon their class record of attainment against key objectives, supplementary notes and knowledge about their class to produce a summative record. Accurate information will then be reported to parents and the child's next teacher.

Progress will be reported to parents, through two parents' evenings, two written interim and one final school year report.

## **RESOURCES**

Long term teaching will be based on the White Rose scheme of work following a mastery teaching approach. However, at Mickleover Primary School, we do not believe that one particular published 'scheme' offers sufficient variety and flexibility to suit all children. We therefore aim to draw upon a wide variety of resources and are constantly striving to ensure that these are challenging, relevant and appealing to the children. Each class has access to manipulatives to support a concrete, pictorial and abstract teaching approach.

## **ROLE OF THE CURRICULUM LEADER**

The Coordinator will:

- Prioritise improvements for the teaching and learning of mathematics across the school and contribute to the school improvement plan, in consultation with the Head Teacher and Governing Body, driving forward the improvement of mathematics teaching and progress and achievement of learners.
- Keep updated in Mathematical developments through appropriate in-service training
- Audit provision for mathematics across the school in terms of teaching and learning, resources, standards on a regular basis.
- Prepare, organise and lead INSET and CPD activities, with the support of the Head Teacher, to support staff in developing areas of mathematics where they feel less confident.
- Work co-operatively with the SENCO;
- Ensure that appropriate resources are available to allow children to learn using a CPA approach.
- Read widely around pedagogy relating to the learning and teaching of mathematics.
- Lead by example in the way they teach in their own classroom;
- Observe colleagues with a view to identifying the support they need and monitoring the quality of teaching and learning in the classroom;
- Attend INSET provided by LA Mathematics consultants; attend termly Subject Leader Network meetings.
- Inform parents.



The Headteacher will:

- Lead, manage and monitor the implementation of the Mathematics National Curriculum, including monitoring teaching plans and the quality of teaching in the classrooms;
- Keep the governing body informed about the progress of the framework;
- Ensure that mathematics remains a high profile in the school's development work;
- Deploy support staff to maximise support for the framework.