



## Maths Policy

Date of issue	Next review	Version	To be read in conjunction with in house documents	Updated information
Feb 2018	Feb 2021	2	Mathematics Policy Maths Scheme of work Teaching and Learning Policy Fractions Policy	
Signed: Chair of Governors				
Signed: Headteacher				

**This document is a statement of the principles, aims and strategies for the teaching of mathematics at Mundella Primary School**

Our policy reflects the values and philosophy of Mundella Primary School in relation to teaching and learning of mathematics and we believe that mathematics is critical to all. The aim for our children is that they become powerful citizens with full control over their lives therefore they need to be able to reason mathematically – to think logically, compare numbers, analyse evidence and reason with numbers. Our aim is to bring real maths into classrooms and children’s lives. We encourage them to solve problems, to ask many forms of questions, to draw and visualise maths and to use, adapt and apply methods. It is critical to us that the children develop self confidence in maths.

## The new mathematics curriculum:

*Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday lives. It is critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.*

## Aims

*Our aims have been taken directly from the New National Curriculum to be implemented from September 2014*

We aim to ensure that all pupils:

1. become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems
2. **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
3. 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.

We aim to do this by promoting enjoyment, enthusiasm and a positive attitude for learning, whatever the needs, talents or cultural backgrounds of the pupils.

Each individual's full potential in mathematics will be developed through investigational, practical activity, exploration and discussion leading to independent, confident and logical thinkers with the flexibility of mind to solve problems through decision making and reasoning.

We aim to develop confidence and competence with numbers and the number system through learning mathematical skills and knowledge accompanied by quick recall of basic facts.

We aim to develop the importance of using accurate mathematical language as a means of communicating ideas and concepts.

We will also ensure an awareness of mathematics beyond the classroom with the ability to apply skills in a changing world.

## **The purpose of study**

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains but pupils should make rich connections across mathematical ideas. They should also apply their mathematical knowledge to science and other subjects.

## **Organisation**

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace.

However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. These stages are clearly presented in the Mundella Calculation Policy and the Mundella Fraction Policy which facilitate progression in skills and knowledge in a logical and progressive way, building on prior learning.

Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content.

Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice and/or intervention groups, before moving on. We achieve this through a range of strategies, such as the use of differentiated work, the use of peer-support pairs and guided or targeted input from the teacher and teaching assistant. Quality first teaching, including appropriate use of manipulatives for all ages, will be offered in every lesson.

## **Teaching and learning style**

The school understands that children learn in different ways, and so uses a variety of teaching styles in mathematics, adapting to the needs of the children as necessary and appropriate. During our daily lessons we encourage children to ask as well as answer mathematical questions. We develop their ability to independently select and use appropriate concrete apparatus to support their conceptual understanding and build procedural fluency. They have the opportunity to independently access and use a wide range of resources, such as bead frames, bead strings, number lines, Dienes/ Base 10 apparatus, place value counters, Numicon, multilink, place value cards, Cuisenaire rods and other small apparatus to support their work. We develop the children's ability to represent problems using visualisation skills, jottings and pictorial representations such as empty number lines, the 'Singapore Bar Model' and their own ideas. Mathematical dictionaries are used where appropriate. ICT is used in mathematics lessons for modelling ideas and methods. Wherever possible, we provide meaningful contexts and encourage the children to apply their learning to everyday situations. At all times the policy aims are the drivers behind the planning and delivery of lessons.

## **Planning**

The programmes of study are set out year-by-year for key stages 1 and 2. Schools are, however, only required to teach the relevant programmes of study by the end of the key stage (KS1- Y1 and 2; lower KS2 – Y3 and 4; upper KS2 – Y5 and 6). Therefore, within each key stage schools have the flexibility to introduce content earlier or later than set out in the programme of study. In addition, schools can introduce key stage content during an earlier key stage, if appropriate.

## **Maths Timetable**

The new National Curriculum places a great emphasis on mental recall. At Mundella, we use Schofield and Sims and similar material daily (for approx. 10 minutes) to ensure these skills are constantly being revisited through fluency exercises. This is in addition to the main maths lessons that are planned using the White Rose Hub.

## **Long Term Plan**

Mathematics is a core subject in the National Curriculum, and we use the new Mathematics Programmes of Study: Key stages 1 and 2 (dated September 2013) as the basis for our school curriculum, ensuring we teach the relevant statutory content. This, along with the non-statutory guidance from the National Curriculum and other useful resources such as ‘White Rose Hub’ planning and resources, KLZ planning and NCETM website resources will inform our school curriculum. The school’s Calculation Policy details the approach and learning progression in the main operations of addition, subtraction, multiplication and division, and is a working document that all staff are expected to apply. This also applies to the recently introduced Fraction policy.

## **Medium Term Plans**

Our medium-term mathematics plans give details of the main teaching objectives for that theme or topic and provide the structure of the ‘mastery’ approach to our curriculum design and organisation. This means that areas of maths will be taught in longer ‘blocks’. For Number, Addition and Subtraction, Multiplication and Division and Fractions these blocks will be taught in a progressive manner across the year. Blocks relating to other areas of Maths may only be taught once and not re-visited until the following year. However, there is an expectation that at least three out of five lessons each week will still contain some content relating to the four operations.

## **Short term plans**

The short-term plans contain the specific learning objectives and expected outcomes for each lesson, and give details of how the lessons are to be taught. The class teacher keeps these individual plans as well as uploading them onto the school server. The subject leader and class teacher may discuss them on an informal basis

as part of the curriculum leader's monitoring, as well as when more formal monitoring takes place.

### **Early Years Foundation Stage**

We teach mathematics in our Foundation Stage where we relate the mathematical aspects of the children's work to the objectives set out in the Early Learning Goals, which underpin the curriculum planning for children during the Early Years Foundation Stage. We give all the children ample opportunity to develop their understanding of number, measurement, pattern, shape and space, through varied activities that allow them to enjoy, explore, practise and talk confidently about mathematics.

### **Links with other curriculum areas**

Our school runs a flexible, creative theme-based curriculum, and although much of the mathematics is taught during a daily maths lesson, we constantly seek to make meaningful cross-curricular links through our themes in order to embed maths into the bigger picture of each child's learning, and to provide real life relevance to the concepts and skills that they are acquiring. This is a two-way process, so sometimes the maths objectives may be taught as part of another topic, and other times the other curricular objectives may be taught as part of the maths. Opportunities to do this may be identified at either the long-term, medium-term or short-term planning stage.

SMSC - In addition, there are opportunities to use maths across the school for themed events eg Number Day, enterprise projects and fund raising events.

### **Mathematics and Computing:**

Information and communication technology enhances the teaching of mathematics significantly. It also offers ways of impacting on learning which may not be possible with conventional methods. Teachers can use Mathematics, other software and i-pad apps to present information visually, dynamically and interactively, so that children understand concepts more quickly. Children may use ICT (including i-pad apps) in order to learn or apply mathematical concepts and skills either within maths lessons or in other curriculum areas.

Calculators should only be introduced near the end of KS2 to support conceptual understanding and exploration of more complex number problems if written and mental arithmetic are secure.

### **Presentation of Maths Work**

Each lesson must include the short date (e.g. 3.11.14) on the left-hand side of the page with the Learning Objective (L.O.) written on the next line directly underneath. Both must be underlined with a ruler. Children are encouraged to present their written calculations in pencil as neatly as possible by putting one digit in a square. A ruler must be used for the drawing all lines. The emphasis of neatly produced work is important as poor presentation and careless setting out can lead to incorrect calculations.

## **Marking of Work**

The marking of the children's work must be kept in line with the school's Feedback and Marking Policy. The purpose of marking in maths is primarily diagnostic. It communicates to a child whether they have been successful, being motivational, and serves to inform a teacher's planning in terms of any misconceptions.

Written comments must be focused on moving learning forwards and encourage risk taking, perseverance and the often open-ended nature of maths. Responding to marking and corrections should be carried out at the start of the next lesson (or within the lesson) using a green pen. The process of correcting work is encouraged to establish the importance of self-checking work by the child and to avoid making similar errors in the future.

## **Maths Learning Environment**

We aim to create a rich and stimulating maths environment that promotes learning and independence through maths displays in each classroom. These and the resource areas in the classroom will:

- Support the children with their maths.
- Contain information relevant to current teaching (key vocabulary, models/images, success criteria, targets).
- Include maths resources clearly labelled and accessible for the children to encourage independent learning and exploration
- Be clear/large enough for children to read.

## **Home/school links**

We aim to raise the profile and understanding of our approach to Maths with parents, and they are encouraged to be actively involved in supporting children's learning in school. There are links to maths websites eg Mathletics and other useful documents and resources on the school website.

Home learning will be sent home as appropriate in order to reinforce concepts and skills being learned in school. (See Home Learning Policy).

## **Assessment**

### **Assessment for learning**

Assessment for learning is embedded into each lesson and teachers use assessment for learning techniques and strategies on a daily basis in order to identify pupils' strengths and difficulties, inform the next steps for each child's learning and improve the learning outcomes for each child. Short-term planning is constantly reviewed and modified on the basis of these assessments.

During 2015/16 we will be developing and moving towards a new system of assessing without levels in line with the new curriculum, as is the national requirement.

### **Tracking pupils' progress**

Assessment is tracked half termly using the school's 'Target Tracker' tracking system and pupils' progress is discussed in Pupil Progress Meetings. Children who haven't made progress will become a focus in teacher's planning. By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study. We pass all assessment and tracking information on to the next teacher at the end of the year, so that s/he can plan for the new school year.

There will be new National Curriculum tests for Year 2 and Year 6 for the 2015/16 academic year.

We give parents the opportunity to discuss their child's progress and attainment each term in a teacher/parent meeting. We also provide a summary of each child's progress and achievement in the Annual Report for parents.

## **The role of the Subject Leader**

### **The Head teacher will:**

- Provide support by encouraging staff and praising good practice.
- Monitor learning and teaching through lesson observations.
- Monitor planning and reviews.
- Give feedback to teachers following lesson observations.
- Support staff development through in service training and provision of resources.

### **The Mathematics Leader will:**

- Provide a strategic lead and direction for Mathematics in the school;
- Provide support and advice to staff in the delivery of the Mathematics programme of study;
- Remain informed about current developments in the subject by attending INSET sessions and being involved in independent research and reading;
- Disseminate relevant information to staff;
- Deliver INSET sessions to staff, to support staff development;
- Monitor and evaluate teaching and learning of Maths;

- Monitor standards in the subject, through planning and work scrutiny, statistics, quality of teaching and pupil assessments;
- Order and maintain resources to enhance effectiveness of Maths teaching within the school;
- Consider with staff and work with SMT members in the evaluation and planning of actions included within the School Development Plan.

**The Class teacher will:**

- Be responsible for the teaching of Maths as set out in the policy.
- Provide planning and reviews for the Head Teacher and Maths leader to have access to.
- Provide samples of maths work to the Maths leader when required.
- Assess children's work in order to detail future planning.

**Equal Opportunities**

Please refer to the school's Equal Opportunities Policy.