

*A nurturing inclusive learning community that enables everyone to be their best*



**CALTON**  
PRIMARY SCHOOL



**CALTON**  
PLAYGROUP

## **CALTON PRIMARY SCHOOL AND PLAYGROUP** **MATHS**

**Approved by Committee Name**  
**(LMP/TLA/BSW) Committee**

**Next renewal date: (LMP/TLA/BSW) Term 2 22/23**



## **Calton Primary School – Mathematics Policy**

**Date: March 2020   Review date: March 2022**

### **1. Introduction**

#### **1.1 Purpose of the Policy**

#### **1.2 Nature of the Mathematics Curriculum**

Mathematics teaches us to make sense of the world around us through developing a child's ability to calculate, to communicate, 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 that mathematics can be an exciting and stimulating subject to learn which has relevance to their own everyday lives

### **2. What we want the children at Calton Primary School to achieve**

#### **2.1 Aims**

- To promote enjoyment, enthusiasm and motivation for learning through practical activity, exploration and discussion;
- To promote confidence and competence with numbers and the number system;
- To promote decision making through the selection of appropriate strategies;
- To develop the ability to solve problems in a logical way through decision making and reasoning in a range of contexts;
- To develop a practical understanding of the ways in which information is gathered and presented;
- To explore features of shape and space, and develop measuring skills in a range of contexts;
- To be aware of the patterns and relationships in the structure of mathematics and to appreciate its creative aspects and aesthetic appeal;
- To understand the importance of mathematics in everyday life and its links with other areas of the curriculum;

- To develop a positive attitude towards mathematics.

## **2.2 Objectives**

## **3. Implementation**

### **3.1 Curriculum Equal Opportunities**

The school uses a variety of teaching and learning styles in mathematics lessons. Our principle aim is to develop children's knowledge, skill and understanding in mathematics. This is achieved through a daily lesson that has a high proportion of whole-class and group directed teaching.

During these lessons we use modelling and demonstration in order to engage the children in asking and answering mathematical questions. We ensure that children have the opportunity to learn in a variety of ways using and developing their visual, auditory and kinaesthetic skills. They have the opportunity to use a wide range of resources such as number lines, number squares, digit cards, individual white boards and small apparatus to support their work.

Children use ICT in mathematics lessons when it will enhance their learning, as in modelling ideas and methods. Wherever possible, we encourage the children to use and apply their learning in everyday situations in order to make it relevant to their experiences.

The lesson structure is made up of the following components: do it, secure it and deepen it. Through the 'secure it' and 'deepen it' aspects of the lessons the children have the opportunity to go 'deeper' with their learning.

### **3.2 Key Issues**

### **3.3 The core concepts, skills and attitudes**

The planning is based on the White Rose Hub scheme of work and we use the mastery model of learning. We follow the S.T.O.P.S (sequenced teaching of problem solving) and our Inter rail schemes of work.

The S.T.O.P.S programme teaches the children a range of methods for solving problems; act it out, trial and error, trial by improvement, list or table, pattern, simplify, working backwards and algebra.

We also use a range of investigations linked to the topic of study where possible.

Inter rail tickets begin with the very first steps in counting in the Early Years and move all the way through to cube numbers and powers of 10 in Key Stage 2. Each key mental maths objective from the 2014 UK National Curriculum has been identified and made into a target. These targets have then been grouped and put into tickets. Every child has a ticket and they have teaching dedicated to their target.

Maths teaching happens between 9:30am and 10:30am every day in school and lessons follow the mastery model of learning. This means spending greater time going in to depth about a subject as opposed to racing through the concepts and knowledge pupils are expected to know by the end of each year group. Previously accelerating through the content led to some children having large gaps in their knowledge because the concept they had learnt was either too big or learnt too quickly. As a Primary School, it is our duty to ensure that children have an absolutely solid, concrete understanding of subject knowledge and skills as well as being emotionally resilient for the next year of their education.

Our intention is to take learning at a measured pace. This will better ensure that no child is left behind as well as providing deeper and richer experiences for children who are above the national expectation for their age. We focus on the majority of children achieving what is expected of their age group. Evidence shows that children need to be able to understand a concept, apply it in a range of situations and then be creative with it to really understand (or master) it. Simply going beyond the requirements of their age group does not guarantee that they have understood something.

At our school, the majority of the children will be taught the content from their year group only. They will spend time becoming true masters of content, applying and being creative with new knowledge in multiple ways.

In essence, this means working towards:

- Teach less, learn more – focussed content and more evidencing learning and progress
- No child left behind – the majority of children are able to keep up every day, with focus group interventions helping to close the gap
- Space and time – to experience and apply, with all children entitled to additional support to ensure they do not fall behind or to go deeper with their learning
- Understanding real life applications – wherever possible to learning relevant and not abstract, to teach with a clear purpose.

### **3.4 Cross curricular themes to include ICT**

#### **Information and Communication Technology (ICT)**

Children use their ICT skills when covering Key Objectives through the use of ICT programmes such as Doodle Maths. They use and apply mathematics in a variety of ways when problem solving using ICT. Bee-Bots are used to learn about distance and direction. Digital cameras and

video cameras are used as a method for recording. Interactive whiteboards are present in all classrooms.

### **Personal, Social and Health Education (PHSE) and Citizenship**

Mathematics contributes to the teaching of personal, social and health education, and citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together and respect each other's views. Where possible, we provide the children with real-life situations in their work, for example the spending of money.

### **Spiritual, Moral, Social and Cultural Development**

The teaching of mathematics supports the social development of our children through collaborative working experiences. Central to this is the ability to share ideas and opinions, appreciating the views of others and adapting one's own views as a result.

## **3.5 Progression, continuity, differentiation and Special Educational Needs**

### **Planning**

Planning follows the White Rose Hub, the content of which is supported by GlosMaths toolkit and in house resources. Lessons are differentiated by depth and children with SEND are planned for accordingly so that work is carefully matched to all abilities of the children.

### **Foundation Stage**

In the Foundation Stage we relate the mathematical aspects of the children's work to the objectives set out in the Early Years Foundation Stage (EYFS) Framework, which underpin the curriculum planning. We provide all the children with a wide range of opportunities to develop their understanding of number, calculating, shape, space, measurement and pattern through varied activities that allow them to enjoy, explore, practise and talk confidently about mathematics.

Children's mathematical development is carefully planned for through adult directed focus activities. Throughout the Foundation Stage, children are also encouraged to use and develop mathematics through play in all areas of provision. A range of mathematical resources are available such as number lines and Numicon. Concepts of shape, space, direction, and size, length, capacity and mass are developed through sand, water and tactile play, outdoor provision, small world play, storytelling, nursery rhymes and songs.

### **Key Stage 1 and Key Stage 2**

The termly plans for each year group are completed ensuring the coverage of every objective in the relevant yearly programme.

Planning is on a PowerPoint – these are consistent across the school.

The PowerPoints should contain:

- Objectives in the form of WALT which will be shared with the class and stuck into their books with the date.
- Success criteria.
- Key questions.
- Opportunities for Talk Partner work
- Vocabulary.

### **Lesson Structure**

The following lesson structure will be utilised for most maths lessons; however teacher assessment will dictate when changes need to be made.

- Mini Maths: 15 mins
- Introduce WALT and link to bigger picture
- Elicitation task
- Whole class teaching of the 'do it'
- Consolidation task as a class (usually on whiteboards)
- Teaching/addressing misconceptions
- Teaching of the 'secure it and deepen it'
- Independent tasks
- Plenary marking 'secure it and deepen it'
- Completion of Success criteria
- Each week there will be 3 x teaching Inter Rail session and 2 x testing Inter Rail session additional to the Maths lesson – each of these will last for approximately 20 minutes.

Learning Partners are used to support children and to ensure that work is matched to the needs of individuals. They 'helicopter' around during sessions after engaging with the delivery so that they are well equipped to support children.

Work is matched carefully to the needs of individual children offering a challenge so that they can reach their potential whether they are children with SEN or Gifted and Talented.

### **Questioning**

There should be a balance of open and closed questions to probe understanding and uncover errors or misconceptions. Using a range of questions will aid development of a child's thinking and reasoning, for example: 'convince me ...' odd one out; what is the same/different; sometimes/always/never. Appropriate time should be given for the child to respond. Children will be selected using lolly-sticks, teacher choice, Talk Partners, thumbs up, white boards, digit cards.

### **Development of Mathematical Talk and Correct use of Vocabulary**

This has close links with the questioning above. Questions and activities need to be carefully chosen to provide opportunities for development of pupil's explanation of their mathematical reasoning and thinking. These activities may be pre-prepared or present themselves within the lesson.

Children should be encouraged to use correct mathematical vocabulary and be able to explain it, with support from the class teacher or teaching assistant.

Vocabulary activities and flashcards are available on the GlosMaths Toolkit.

## **Assessment**

### Marking

- Teacher marking should be responsive to the learning objective and where corrections are necessary children should be allowed enough time to respond to marking comments, where a teacher deems that more input and explanation is necessary then an intervention will be used.
- Peer marking to success criteria using blue pens.

### Assessment for Learning (AfL formative)

- On-going assessment (daily to inform planning and annotated on plans), through guided group work, discussion, questioning, marking and plenaries.
- Online Tracker, teacher assessment three times a year. White Rose hub end of unit assessments 6 x per year and PUMA assessment in the summer term.
- Inter Rail assessment tracker completed 3 x per year.

### Assessment for Learning (summative)

- Online Tracker used to level children three times a year (towards the end of each long term)
- White Rose hub end of unit assessments 6 x per year
- PUMA assessment in the summer term.
- KS1 and KS2 SATs
- The information is used to track pupil progress and to identify target groups of children for future support.
- Inter Rail data

### Maths Classroom Learning Environment

- An expectation list for maths display and resources available for classroom has been developed and shared with staff. This is progressive and is also monitored.

## **3.6 Safety to include Child Protection**

Please refer to Child Protection Policy

### **3.7 Recording and reporting procedures**

#### **Recording**

##### **Foundation Stage**

“Post it” note observations are also used along with formal observations of the children play.

The online tracker.

##### **Key Stage One and Key Stage Two**

Assessing Pupil Progress materials are used to record pupils progress and are completed as an ongoing document.

SATS are administered to Year 2 children in the Spring Term, Year 6 sit KS2 SATs in May of each year.

White Rose Hub end of unit tests 6 x per year

PUMA tests are administered 1 x per year in the summer term

#### **Reporting**

Progress and areas of development are shared formally with parents three times a year through written reports.

Two formal parents consultation evening are held though out the year, the first during the Autumn Term and the second during the Spring Term where the children's interim reports are discussed

There is also an opportunity at the end of the year for parents to discuss their child's final written report if necessary.

#### **Monitoring and Review**

Monitoring of the standards of children's work and the quality of teaching in mathematics is the responsibility of the STEM leader in consultation with the Senior Leadership Team and the Head Teacher. The work of the STEM leader 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 school. Over the school year the STEM leader gives the Head Teacher and Governors regular updates relating to progress in mathematics including data and monitoring and evaluation activities carried out.

The STEM leader gives the Head Teacher an annual summary in which they evaluate strengths and weaknesses in the subject from a variety of sources and indicates areas of further improvement. This forms the basis of the annual mathematics action plan. The Head Teacher allocates regular management time to the STEM leader so that they can review samples of work and undertake lesson observations of mathematics teaching across the school. The Governors meet regularly with the subject leader to review progress.



### **3.8 Resources**

The Mathematics resources will be displayed and kept in the corridor leading from Gems Hall to Alloy building. KS1 resources can also be found in Rainbow Hall.

### **3.9 Roles and Responsibilities**

#### **The Governing Body**

Implement funding to ensure up to date and appropriate training and resources are in place.

To have an overview of mathematics teaching and learning across the school.

To review data.

#### **The Head Teacher**

Monitor and observe the effectiveness of planning, teaching and learning and assessment.

#### **The Subject Leader**

- Keep up to date with national and local development and disseminate relevant information to the rest of the staff
- Devise an annual action plan for the improvement of standards and resourcing of the subject, which reflects the whole school aims, policies and targets
- Ensure that record keeping and assessment is sustained to a high standard
- Advise colleagues and help to develop expertise and monitor the teaching of mathematics throughout the school
- Support the use of ICT in mathematics lessons
- Discuss and report to the Head Teacher and governors on the standards of mathematics within the school
- Manage a budget to purchase appropriate resources and equipment
- Oversee the upkeep of resources and their accessibility
- Contribute and lead INSET training and staff meetings
- Consult staff regarding professional development opportunities.