



ST MICHAEL-AT-BOWES C.E. JUNIOR SCHOOL

## **Mathematics Policy**

### **Headteacher**

Debbie Butcher

### **Subject Leader**

Maroulla Georgiou

### **Maths Team:**

Lindsay Miller, Corey Cooke, Bridget Lennon, Oliver Bryce

Reviewed: Spring 2023

To be Reviewed: As required and formally every 3 years

## **Mathematics Policy**

### **1 Aims and objectives**

- 1.1 Mathematics teaches children how to make sense of the world around them through developing their ability to calculate, reason and solve problems. It enables children to understand relationships and patterns 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. (Article 28, right to a Good Quality Education Article 29, Your Education should help you to develop your talent and abilities)
- 1.2 Our objectives in the teaching of mathematics are:
- to promote enjoyment of learning through practical activity, exploration, investigation and discussion;
  - to promote confidence and competence with numbers and the number system;
  - to develop the ability to solve problems 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 help children understand the importance of mathematics in everyday life.

### **2 Teaching and learning style**

- 2.1 The school uses a variety of teaching and learning styles in mathematics. Our principal aim is to develop children's knowledge, skills and understanding to enable learners to apply this in context. During our daily lessons, we encourage children to ask as well as answer mathematical questions. They have the opportunity to use a wide range of resources, such as number lines, numicon, Cuisenaire rods, digit cards and small apparatus to support their work. Mathematical dictionaries are also available in all classrooms. ICT is used in mathematics lessons for modelling ideas and methods. Wherever possible, we encourage the children to apply their learning to everyday situations.
- 2.2 In all classes, children have a wide range of mathematical abilities. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies – in some lessons through scaffolded group work, and in other lessons by organising the children to work in pairs on open-ended problems or games. We use teaching assistants to support some children, and to ensure that work is matched to the needs of individuals.

### **3 Mathematics curriculum planning**

- 3.1 Mathematics is a core subject in the National Curriculum. We continue to use a number of different resources in supporting the delivery of the Maths Curriculum, including: NCETM spine materials and Whiterose.
- 3.2 We carry out the curriculum planning in mathematics in accordance with coverage of concepts. Curriculum maps give a detailed outline of the main teaching objectives for each term, defining what we teach. They ensure an appropriate balance and distribution of work across each term. These plans are kept on 'Teams' and are reviewed by the: Subject Leader; year team and Curriculum Lead.
- 3.4 It is the class teacher who completes the weekly slides and resources for the teaching of mathematics. These slides outline the learning objectives and expected outcomes for each lesson. Teachers also follow the current calculation policy which demonstrates the strategies in steps and

stages of how they should be taught to children to enable progression. All members of staff have access to planning, and as a result ongoing planning discussions with staff and Maths subject lead are carried out.

- 3.5 We plan the activities in mathematics so that they build on the children's prior learning. At the start of each lesson, children complete a series of questions assessing knowledge from previous concepts. A minimum of three starters a week are focused on fluency questions and a minimum of two additional 10minute sessions are dedicated to teaching timestables. While we give children of all abilities the opportunity to develop their skills, knowledge and understanding, we also plan progression into the scheme of work, so that there is an increasing challenge for the children as they move up through the school.

## **5 Contribution of mathematics to teaching in other curriculum areas**

### **5.1 English**

The teaching of mathematics contributes significantly to children's understanding of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, in mathematics lessons, we expect children to read and interpret problems, in order to identify the mathematics involved. They are also improving their command of English when they explain and present their work to others during plenary sessions and Maths Week. Each class has displayed the NCETM sentence stems both on their working walls and lessons slides. In addition to this, children are provided with opportunities to reason regularly during all lessons across the Maths cycle. In English lessons, too, maths can contribute: younger children enjoy stories and rhyme that rely on counting and sequencing, while older children encounter mathematical vocabulary, graphs and charts when reading non-fiction texts.

### **5.2 Personal, social and health education (PSHE) and citizenship**

Mathematics contributes to the teaching of PSHE 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. We present children with real-life situations in their mathematics work on the spending of money.

### **5.3 Spiritual, moral, social and cultural development**

The teaching of mathematics supports the social development of our children through the way we expect them to work with each other in lessons. We group children so that they work together, and we give them the chance to discuss their ideas and results.

### **5.4 Science**

Data Handling is taught through Science and children can represent and interpret their results from the investigations they have carried out.

- 5.5 An annual whole school maths focus week boosts maths across the school, gives us an in-depth focus on a specific maths area to consolidate, use and apply throughout. Visitors are also invited to enthuse, motivate and challenge the children.

## **6 Mathematics and ICT**

- 6.1 Information and communication technology enhances the teaching of mathematics significantly, because ICT is particularly useful for mathematical tasks. Freckle is used as an adaptive platform to support our students in maths skills. The maths platform coordinates with the state standards to measure and meet the adaptive needs of students. Freckle and Star Assessments connect to ensure students are working on their appropriate level. Freckle offers a variety of resources to help identify areas for improvement, progress, as well as growth on both platforms. We actively use Freckle each day with

student choice options, as well as teacher-created assignments. Freckle offers feedback, collaboration, and motivation to ensure continued student involvement.

Teachers can use software to present information visually, dynamically and interactively, so that children understand concepts more quickly. Younger children use ICT to communicate results with appropriate mathematical symbols. Older children use it to produce graphs and tables when explaining their results, or when creating repeating patterns, such as tessellations. When working on control, children can use both standard and non-standard measures for distance and angle. They can also use simulations to identify patterns and relationships.

## **7 Mathematics and inclusion**

- 7.1 At our school, we teach mathematics to all children, whatever their ability and individual needs. Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our mathematics teaching, we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those working at Greater Depth and those learning English as an additional language, and we take all reasonable steps to achieve this. For further details, see separate policies: Special Educational Needs; Single Equality and English as an Additional Language (EAL).
- 7.2 When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, scaffolding– so that we can take some additional or different action to enable the child to learn more effectively. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels. This ensures that our teaching is matched to the child's needs.
- 7.3 The creation of an Individual Education Plan (IEP) for children with special educational needs, may include, as appropriate, specific targets relating to mathematics.
- 7.4 We enable all pupils to have access to the full range of activities involved in learning mathematics. Where children are to participate in activities outside the classroom (a 'maths trail', for example), we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

## **8 Assessment for learning**

- 8.1 Children are required to work routinely on the exemplar questions given in the White Rose resource pack. These not only give the teacher on-going information about a child's current position in relation to the curriculum, thereby informing the teacher's lesson planning and providing a basis from which teachers can set next-steps, these SATs-type problems provide invaluable test practice and give the children wonderful opportunities to reason. Children also complete a half termly multiplication check and as a result focus children are identified.
- 8.2 In line with the school's faster feedback policy, all staff are required to build-in dedicated lesson time for children to self-assess their work and make the necessary corrections. Class teachers should then as a result address any misconceptions as a class or through 1:1 conferencing.
- 8.3 The school now charts carefully children's starting point in Maths at the beginning of Y3, thereby establishing a baseline against which to measure end-of-year outcomes as well as those at the end of KS2 (SATs). Data from termly formal assessments is recorded and progress is measured against the beginning of phase baseline as well as the start of year baseline.
- 8.4 The school keeps samples of children's workbooks. This demonstrates the expected level of achievement in mathematics in each year of the school.

## **9 Resources**

- 9.1 All classrooms have access to the maths resources cupboard, which includes number lines and a wide range of appropriate small apparatus. Mathematical dictionaries are available in all classrooms. In addition, each class has their own designated mathematics area with easy to access equipment for children to use within the lessons if they so choose to.

## **10 Monitoring and review**

- 10.1 The coordination and planning of the mathematics curriculum are the responsibility of the subject leader and the maths team. The subject leader also:
- supports colleagues in their teaching, by keeping them informed about current developments in mathematics, and by providing a strategic lead and direction for this subject;
  - gives the headteacher a termly summary report in which she evaluates the strengths and weaknesses in mathematics, and indicates areas for further improvement;
  - uses specially allocated regular management time to review evidence of the children's work, and to observe mathematics lessons across the school.
  - routinely supports the planning of all the year teams, observes Maths lessons across the school and supports individual teachers as required.
- 10.2 A named member of the school's governing body is briefed to oversee the teaching of Maths. The Maths governor meets regularly with the subject leader to review progress.
- 10.3 This policy will be reviewed at least every two years.

**Signed:**

**Date: Spring 2023**

## **APPENDIX A**

Calculation Policy used by all teaching Staff

All resources can be accessed on Teams