



# Maths Policy

Member of staff responsible: Tom Crook  
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Review cycle: Two years

## Introduction

This policy outlines the teaching, learning, organisation and management of mathematics at Bush Hill Park Primary School. The policy is based on the expectations and aims of the 2014 National Curriculum for Mathematics and the Early Years Development Matters document.

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solutions to some of history's most intriguing problems. It is essential to everyday life, 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. (National Curriculum 2014)

## Aims:

Maths teaching should contribute to the acquisition of life-long skills and promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion.

We aim to develop lively, enquiring minds, encouraging pupils to become self-motivated, confident and able to solve problems.

The National Curriculum for Mathematics aims that all pupils:

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

## Objectives:

During their time at Bush Hill Park Primary School we want children to see how mathematics can help them become better equipped for future life. As a result of their learning in mathematics and problem solving across the curriculum, children will be better prepared for applying their skills effectively in everyday situations, in their future learning and in the work place.

## CURRICULUM PROVISION

### Nursery:

The programme of study for the Foundation stage is set out in the Statutory framework for the Early Years foundation stage (EYFS). Children are provided with daily opportunities to develop their understanding of number, measurement, pattern, shape and space through play and practical activities that allow them to enjoy, explore, practise and talk confidently

about mathematics. In addition to group activities, whole class learning takes place allowing the teacher to introduce and develop mathematical concepts.

### **Reception and Year 1:**

In order to shape learning and ensure progress and attainment in Mathematics, children in Reception and Year 1 are taught using a Maths Mastery and Teaching for Mastery approach. We work closely with Maths Mastery and the NCETM, in providing a high-quality, forward-thinking approach to planning and delivering the teaching and learning for this subject. Furthermore, we realise the importance of reducing the cognitive load and breaking down key concepts into more purposeful segments of teaching and learning. We also realise the importance of adapting the way we approach our planning in Early Years; we use 'S' planning so that the specific unit of work can be tailored to the needs of the class and the individuals therein. Throughout the school and in particular Year 1, we have facilitated the changes and worked collaboratively with staff to consolidate the vision moving forward. In summary, we have refined the way we plan and reflect on our quality-first teaching; this involves going deeper into a concept rather than moving on too quickly from surface level understanding.

### **Years 2 – 6:**

The Programmes of study for mathematics are set out year by year for Key Stages 1 and 2 in the new National Curriculum (2014). Pupils should make connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. Learning is organised into blocks and teachers plan using Maths Mastery, White-Rose Hub, Classroom Secrets and NCETM resources, whilst maintaining the principles of Maths Mastery and Teaching for Mastery. In September 2019, Maths Mastery reached Year 5. Once it reaches Year 6 in September 2020, the programme will be taught across the school. From September 2018, the school phased out the Busy Ants Maths Scheme as it did not sufficiently meet the needs of our pupils. As of September 2019, we embarked on a working partnership with the NCETM, with support from a working hub we have been able to implement and measure the impact of adapted principles and approaches (*as outlined in the BHP maths mantra*). As we will be driving forward with Maths Mastery in Year 6 from September 2020, we acknowledge that careful planning and consideration will be required in order that we best meet the needs of our children, whilst preparing them for statutory tests in the best way possible.

### **The Key features of our programme are:**

#### **Representation and structure:**

Children use concrete manipulatives (objects) and pictorial representations (pictures), before moving to abstract symbols (numbers and signs). All lessons are structured around 6 parts (can vary depending on need in EYFS) and must include: fluency, problem-solving and reasoning, the principles of Maths Mastery and elements of Teaching for Mastery as outlined by the NCETM and adapted for our school by the Mathematics lead.

### **Language development & communication:**

The way that children speak and write about mathematics has been shown to have an impact on their success. We use a carefully sequenced, structured approach to introduce and reinforce mathematical vocabulary. Every lesson includes opportunities for children to explain or justify their mathematical reasoning using full sentences that include relevant mathematical vocabulary; this aims to develop fluency and deepen their mathematical understanding.

### **Fluency:**

Fluency and recalling mathematical facts is an integral part to our teaching and learning. Each lesson and maths meeting will contain carefully designed fluency practice; this enables learners of all abilities to access and understand specific mathematical patterns, sequences and rules. Recalling with confidence and making connections shows a deeper understanding of the concept being taught. This level of retained fluency is what we aim for and build upon- through differentiation, scaffolding and targeted support we are able to provide this opportunity to all learners. Speed and competency are assessed formatively (fast feedback) and through summative means during assessment week (arithmetic and reasoning tests). MyMaths and TTRockstars learning platforms also enable both pupils to practice their fluency skills, and for teachers to assess the pupils' understanding and competency of these proficiencies.

### **Problem solving:**

Mathematical problem solving is at the heart of our approach – it is both how children learn mathematics, and the reason why they learn mathematics. By accumulating knowledge of mathematical concepts, children can develop and test their problem-solving skills within a wide range of contexts.

### **Reasoning:**

Mathematical reasoning is a skill at the very core of our teaching and learning at Bush Hill Park Primary School. We recognise that confident reasoning can come in many forms including through pictorial, concrete, abstract or verbal means. We aim to promote accomplished reasoning during daily maths lessons, maths meetings and soft-starts. Alongside this, we also arrange yearly maths themed weeks that give opportunities for children to practice these skills within familiar and unfamiliar contexts. Reasoning at our school is linked in accordance with Teaching for Mastery and the NCETM. The mastery strands of 'mathematical thinking' and 'variation' are areas of particular focus, as we aim to create competent communicators and pupils who can make connections and links to prior learning confidently.

### **Teaching and Learning:**

The approach to the teaching of mathematics within the school is based upon a daily mathematics lesson. In all classes there are children of a wide range of mathematical abilities. We recognise this and provide suitable learning opportunities and challenge for all children. Where it is deemed appropriate, some year groups may be set by ability for some or all of their mathematics lessons. This may be organised into a higher ability group and parallel mixed ability groups and should not include a group consisting of lower attaining children only (this adheres to principles outlined by Maths Mastery). We aim to work in partnership with parents/carers and termly maths workshops are held with pupils and

parents of Early Years and KS1. During these workshops, children have the opportunity to work alongside their parents by playing maths games which they can then, in turn, play at home to reinforce understanding. There are further opportunities for children to hone and consolidate their mathematical knowledge and skills during Maths Meetings and daily soft-start activities.

### **Planning:**

Planning for mathematics begins from a thorough understanding of children's needs which comes through effective and rigorous assessment, tracking and monitoring; combined with high expectations for all children to achieve. Our medium-term mathematics plans outline the main teaching objectives for each half term and are organised into one, two and three week units. These units are meticulously planned in line with our approach to initial 'S' planning as a team. The units of work ensure an appropriate balance and distribution of work across each term and ensure coverage of the National Curriculum. The Calculation Policy adheres to the new National Curriculum and is used to support planning and ensure consistency in teaching calculation methods. Year group planning meetings are used to discuss the curriculum, expectations, pedagogy, differentiation, assessment and to ensure a consistency of approach and standards as per the professional standards for teachers document. Within short term planning, clear success criteria are outlined, as are unit learning objectives, assessment opportunities, opportunities for fast feedback and provision for stretch and challenge. Where possible, planning for mathematics, should include real life contexts and problems solving as well as clear consideration for fluency, reasoning and collaborative learning opportunities. In response to our most recent OFSTED report (December 2017) we will be focussing heavily on raising the standard of teaching and learning to ensure the more-able mathematician is stretched, challenged and has the opportunity to deepen their conceptual understanding in all areas of the mathematics curriculum. As of March 2020, this still remains a subject-based priority for school improvement.

### **Assessment:**

Assessment for Learning (AFL) is regarded as an essential part of teaching and learning and is a continuous process which is shared with all learners. All class teachers are committed to raising standards of attainment through AFL and are responsible for the assessment of all pupils in their class. This is achieved through questioning, fast feedback, plenaries, online summative data (Times Table Rock Stars and My Maths homework) and end of unit/term testing. Learning objectives and individual targets are shared and discussed with the children during fast feedback, assessment week and parents' evenings. Children are provided with opportunities for self/peer-assessment and improvement. Feedback is developmental and children are provided with immediate encouragement through teacher-pupil conferencing and fast feedback. Teachers monitor the acquisition of skills, knowledge and understanding through appropriate teacher intervention, observations and discussions with groups and individuals, and records of achievement in the key skills in mathematics for each year group are updated half-termly. Each pupil has a copy of their personalised targets, these are referred to consistently during lessons as well as to inform teacher planning, gap analysis and next steps. These targets are updated half-termly in accordance with National Curriculum Objectives, medium term planning, pupil progress and gap analysis. The personalised targets are tailored to meet the developing needs of the individual pupil.

*For further details of our current assessment procedures please refer to our Assessment Policy.*

### **Monitoring and Review:**

The Mathematics Lead works as part of a Standards Team who are responsible for monitoring the standard of pupils' work and the quality of teaching alongside this. This is done as part of a monitoring cycle and includes lesson observation, book scrutiny, learning walks and pupil conferencing. The subject leaders support colleagues in the teaching of mathematics by delivering INSET and staff meetings, alongside year group and 1:1 support with planning, accredited pedagogical knowledge and by providing a strategic lead and direction for the subject within the school. All teaching staff are responsible for tracking pupil progress half-termly; against age related expectations and reporting this at half-termly Pupil Progress Meetings. Class teachers are given data targets and this data is analysed in order to identify underachieving individuals or groups and to plan for focussed support and intervention. It is the responsibility of the Mathematics Lead to analyse the data following half-termly submission, in order to; track progress, ensure targets are being met, pupils are being stretched and children are fulfilling their potential. Subsequently, putting in place any interventions such as booster groups for those focus groups that may not yet be meeting expectations. Furthermore, it is the role of the Mathematics Lead to ensure that specific points (weaknesses) from the school's data dashboard are tackled and impact of these initiatives can be seen through qualitative and quantitative data. As of September 2018, the subject leader has worked closely in collaboration with Achievement Leaders in order to gain a broader sense of academic need within a given year group as well as monitoring the progress and attainment of specific children with a contextual focus. It is the role and responsibility of the Achievement Leader in this instance to own accountability and ensure best practice in accordance with the aforementioned content of this policy.

