

# Newington Community Primary School



## MATHS POLICY

### 2023-2024

<b>Amended:</b>	Term 1 2023
<b>Updated by:</b>	Kayleigh Stanley and Jo Jarman
<b>Approved by the Governing Body:</b>	
<b>Signed:</b>	(Chair of Governors)
<b>Review:</b>	Term 1 2024

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# Intent

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## **The Rationale**

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 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)

The purpose of mathematics in our school is for children to develop:

- a mastery of maths, conceptual understanding, procedural fluency and reasoning skills
- a positive attitude towards mathematics and an awareness of the relevance of mathematics in the real world
- competence and confidence in mathematical knowledge, concepts and skills
- an ability to solve problems, to reason, to think logically and to work systematically and accurately
- initiative and an ability to work both independently and in cooperation with other
- an ability to communicate mathematics
- 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.

## **Core Aims:**

To ensure every child achieves his or her potential as a result of expert teaching by well-trained and supported teachers; to help teachers become skilled maths teachers; to foster teacher's interest in maths; to enable teachers to enjoy teaching maths.

## **Aims of New National Curriculum**

The National Curriculum for mathematics aims to ensure that all pupils:

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, to 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. (New National Curriculum July 2014)

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## Implementation

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### Planning

Planning is undertaken at three levels:

- **Long/Medium term** planning is based on the subject leader's yearly overview which is divided into different topics. This is informed by the National Curriculum for Mathematics (2014), Mathematics Mastery in KS1 and 2 as well as Development Matters (2012) in EYFS.
- **Short term** planning is carried out weekly by the class teachers. These include key performance indicators, resources which will be used, differentiation materials, vocabulary and questions. Short term planning also includes opportunities for regular recapping to ensure all the fundamentals are kept 'on the boil'.

### Cross-curricular links

Every effort is made to link maths with other areas of the curriculum. We try and identify the mathematical possibilities across the curriculum. We also draw children's attention to the links between maths and other curricular work so children see that maths is not an isolated subject.

In the Early Years, these links are more evident because of the less formal timetable.

### Teaching methods and approaches

The maths leaders have worked together to develop a calculation policy that takes into account the criteria of the new National Curriculum, and is based on a Maths Mastery approach.

Lessons have a flexible approach to ensure the pitch and pace suits the children. Teachers use their own judgement in how to approach teaching a concept and will incorporate paired and individual work as appropriate. Maths lessons are underpinned by short teacher inputs and meaningful partner practice activities which follow the model of concrete, pictorial and abstract approach. (Further teaching guidance is contained in the Calculation Policy).

On a daily basis in the EYFS the children work in groups for up to 20 minutes, this is dependent on the focus for the week. Maths activities are accessible at all times during child initiated learning.

All pupils engage in:

- the development of mental strategies
- written methods
- practical work
- investigational work
- problem-solving
- mathematical discussions using precise mathematical language
- consolidation of basic skills and routine.

The expectations of independent and recorded work are to follow the six-part lesson structure which links with the Mathematics Mastery programme. This builds on the concrete, pictorial and abstract approach of the lesson. At the heart of Mathematics Mastery is ensuring that there is depth and variation for the children to showcase their procedural fluency, conceptual understanding and mathematical reasoning. Challenge is provided through the ideas of depth exploring different concepts, which in turn, deepen understanding.

### **Teaching Methods for Mental Strategies**

Alongside conceptual understanding fluency is a key priority in maths, therefore dedicated time is spent on this in every lesson. This is through two key areas: Mental agility (arithmetic), NumBots and Times Tables RockStars.

Within daily Mental Agility sessions, children get daily practise of arithmetic to enhance mental strategies. NumBots is an online programme that encourages number sense and addition and subtraction facts; Times Tables Rockstars is an online programme that encourages fluency through repeated mental recall of multiplication and division facts.

### **Display**

We recognise the importance of displays in the teaching and learning of mathematics. Every class displays relevant mathematical and place value information which is consistent throughout the school. This is appropriate to the age of the class. These may include number lines, number grids, vocabulary and other display materials that provide a visual support for the children's mental processes. Every display includes a topic overview and examples of children's work. We acknowledge the importance of having 'room to teach'; meaning that teachers ensure the teaching whiteboard has sufficient space so that mathematical processes can be clearly modelled.

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## **Impact**

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### **Assessment**

We aim to provide feedback to children through Live marking so that they have specific advice about improvements to their work. Children self-assess their understanding through Success Criteria.

Teachers make regular assessments of each child's progress and record this systematically using SmartGrade, which aligns with the order of the taught curriculum.

### **Short term**

Children's class work is assessed frequently through

- regular marking
- analysing errors
- questioning
- discussion
- plenaries
- Pre and post unit quizzes

This is used to inform future planning and teaching.

### **Medium term**

Summative assessments are carried out through Mathematics Mastery assessments, conducted before and after each new topic with a focus on pre and post requisite knowledge. These assessments are used to inform future planning. In addition, standardised assessments, which are aligned with the order of the taught curriculum are carried three times in an academic year which analyses the progress against the national curriculum.

### **Long term**

Y2 and Y6 to complete SATs assessments every May. At the end of reception, children are assessed against the Early Learning Goals.

### **Resources**

Resources for the delivery of the maths curriculum are stored in every classroom. Resource updates are carried out on a termly basis to ensure that all classrooms are fully equipped with the appropriate resources. Resources are readily available to all in our maths resource area.

### **Monitoring and Evaluation**

The maths subject leader monitors and evaluates the teaching of maths by undertaking regular book scrutinies, learning walks, data monitoring, moderations and observations during impact weeks. Any observations are undertaken in line with the school improvement plan. Opportunities for teachers to review the scheme, policy and published materials are given during staff meetings.

### **Staff Development**

The maths leader delivers staff training through masterclasses and staff meetings, which are responsive to the needs of the school, such as those which have been highlighted during monitoring and evaluation activities. All new members of staff are provided with an intensive programme of subject knowledge and pedagogy training. Staff are encouraged to seek guidance from the maths leader and experienced colleagues to clarify any misconceptions. Teaching Assistants are also provided with relevant training. Parental involvement at home and through school based workshop is encouraged. The maths leader provides parents with three workshops a year, as well as an additional workshop during maths week.