

# BENFIELDSIDE PRIMARY SCHOOL



## Policy for Mathematics November 2022

Leader: Mr Wright

## 1. Introduction

At Benfieldside Primary, we believe that mathematics is a vital skill to succeed in everyday life. With this in mind, we endeavour to build a culture of fluency, deep understanding and competence in all areas of mathematics. Equally as important, we want the children in our school to develop a healthy and enthusiastic attitude towards mathematics that will stay with them for the rest of their lives.

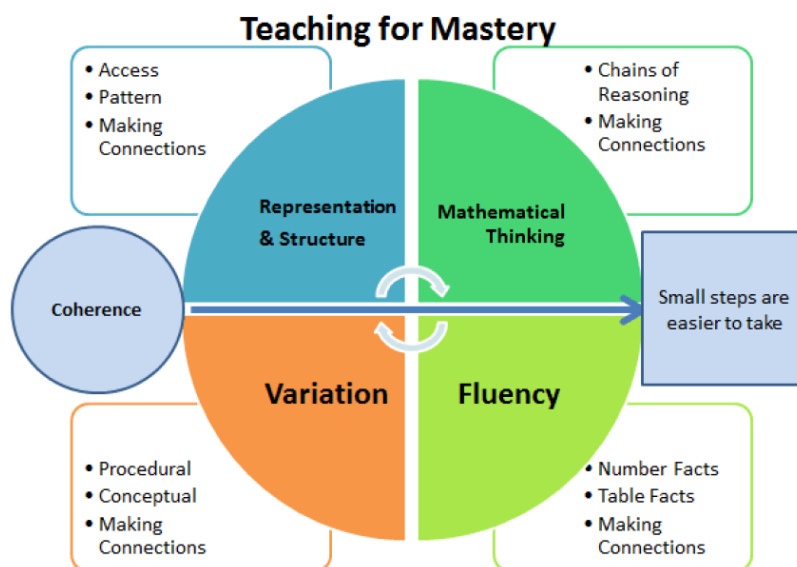
The 2014 National Curriculum for mathematics aims to ensure that all children:

- Become fluent in mathematical fundamentals
- Are able to reason mathematically
- Can solve problems by applying their knowledge of mathematics

At Benfieldside Primary, our lessons are planned and taught to ensure these skills are embedded and developed consistently over time.

## 2. Principles of mastery

At Benfieldside Primary, we incorporate a teaching for mastery approach, incorporating elements first developed by the NCETM, to encourage every pupil to have the belief that if they persevere they can succeed.



Pupils are introduced to concepts with concrete resources or pictorial representations with the aim of them developing a deeper understanding, which can be applied without the resources or representations as their mathematical ability develops over time.

Lessons are broken down into connected steps that develop concepts, for all children, and the ability to apply knowledge in a conceptual way to other areas of mathematics and the wider curriculum.

Teachers will encourage and provide opportunities to practise quick and efficient recall of facts and procedures in all areas of the mathematical curriculum with a particular focus on number whilst demonstrating how this knowledge can have contextual links to other areas.

Concepts and facts will be presented in a variety of ways to draw attention to critical aspects and to develop deep and holistic understanding. At the same time, concepts and sessions will be sequenced in a way that draws attention to mathematical relationships and structures.

By following the mastery approach, we believe it will help our children make accelerated progress from their lowing starting points because they will have mastered the fundamentals of mathematics enabling them to apply their knowledge across all areas of the mathematical curriculum.

### **3. Aims**

By the time they leave KS2, our pupils should:

- have a sense of the size of a number and where it fits into the number system
- have good fluency with facts such as: number bonds, multiplication tables, doubles and halves
- be able to apply their knowledge of number to calculate mentally
- use standard methods to calculate efficiently in writing for all four number operations
- recognise when it is appropriate to use mental and written calculations and to do so effectively
- have a good understanding of fractions and their relationship with decimals and percentages
- Understand equivalents of fractions and perform calculations involving fractions
- solve problems, including multi-step and conceptual problems, and recognise the operations and steps needed to solve them
- explain their methods and reasoning using correct mathematical vocabulary
- judge whether their answers are reasonable and have strategies for checking them
- suggest suitable units for measuring and make sensible estimates of measurements
- explain and make predictions based on a range of diagrams, charts and tables
- develop spatial awareness and an understanding of the properties of 2d and 3d shapes.

## 4. Lesson Content

In the EYFS a bespoke content was developed incorporating elements of the DFE non-statutory guidance documents: Birth to 5 matters and Development matters, the ELG goals for number and numerical patterns from the EFYS framework, content from the NCETM mastering number programme and the EYFS White Rose planning document.

EYFS teachers ensure that the pupils are taught through a mixture of adult led activities and child-initiated activities both inside and outside of the classroom.

In Key Stage 1, the pupils have a daily mathematics lesson lasting approximately 1 hour. Each lesson starts with a 10 minute activity connected to the NCETM mastering number programme which aims to improve the key stage 1 pupils fluency with number facts. The remaining 50 minutes of the session is broadly based on version 3 of the White Rose scheme of learning – some content is adapted to match the school's written and mental calculation policies. Flashback 4 and modelled problem solving activities are incorporated within the daily sessions.

In Key Stage 2, the pupils have a daily mathematical lesson lasting approximately 1 hour. The session are broadly based on version 3 of the White Rose scheme of learning – some content is adapted to match the school's written and calculation policy and the needs and ability of pupils in mixed age classes. Sessions on Monday – Thursday start with a 'Flashback 4' activity to help the children revisit concepts with the aim of improving the children's long term memory of mathematical concepts. Friday's session starts with a modelled problem solving activity, with the aim of improving conceptual and systematic thinking.

Differentiation – The national curriculum (2014) stated that pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problem solving activities rather than by being shown new content. It is for this reason, that the majority of pupils in Benfieldside Primary will be provided access to the same learning objectives within sessions but pupils will either be extended by being offered access to problem solving or applying knowledge challenges or offered support from their teacher or a teaching assistant. In some cases, pupils may need to access a bespoke curriculum due to their academic ability or other SEND areas of need. In these incidents, content should be linked as closely as possible to the main lesson learning objective and should still build on prior learning.

Other documentation – Long term and medium term planning documents can be accessed via staff documents or the numeracy coordinator. These documents will be amended as required at the end of each term during the academic year of 2022/23 as new materials are released and the impact of the sessions are reviewed by the coordinator in conjunction with class teachers.

The coordinator reviews written and mental calculation policies and arithmetic guidance documents annually. These are then shared with staff, to ensure a consistent and progressive approach is utilised across the school.

Progression documents for each area of mathematics were shared with staff during CPD sessions in September 2022 and are available for staff to access in staff documents.

## **5. Assessment**

At Benfieldside, we are continually assessing our pupils and recording their progress and attainment through AFL activities and both summative and formative assessments.

We see assessment as an integral part of the teaching process and strive to make our assessment purposeful, allowing us to match the correct level of work and support to the needs of the pupils, thus benefiting the pupils and ensuring both progress and high levels of attainment.

Information for assessment will be gathered by teachers in a variety of ways, including: conversations with the children in class, observing their paired and independent work and marking their written work. These assessments will influence teachers' completion of highlighted sheets and termly data entry on ITRACK.

On a formal level, as well as the statutory assessments carried out in different year groups. Teachers will carry out block assessments at the end of each block of work and at the end of each term teachers carry out formal arithmetic and reasoning assessments using the new White Rose assessments. These assessments will be analysed by teachers to gauge areas of strength and weakness from that term to be covered in subsequent 'Flashback 4' sessions. Teachers in years 3 and 4 will also carry out assessments each half term to monitor pupils' attainment and progress in relation to times tables knowledge.

Teachers will use all assessments to set class and group targets, plan further work and inform future teachers.

## **6. Intervention / Support**

Teachers, in conjunction with the coordinator, will identify the bottom 20% of pupils in each year group based on teacher assessments. These pupils will receive additional support within lessons from the class teacher or teaching assistant. Where appropriate, additional sessions, outside of the numeracy lesson, will be made available to these students to help narrow the gap with their peers and to ensure all pupils make suitable progress.

Where appropriate, 'short term' immediate interventions will be offered to individual or groups of pupils outside of the numeracy lesson to overcome any areas of weakness identified by class teachers during discussions or marking of pupils books.

## **7. Role of the co-ordinator**

The mathematics co-ordinator is responsible for co-ordinating mathematics through the school. This includes:

- developing planning which aids progression from year group to year group
- provide all members of staff with guidance, schemes of work and policies to show how all aspects of mathematics are to be taught and offering mentorship where appropriate
- attend a range of CPD to keep up to date with latest local and national developments and theories and then cascade relevant information to all staff
- identify and make suggestions to staff about external CPD which can develop the staffs' knowledge and whole school teaching
- advise and supporting colleagues in the implementation and assessment of mathematics throughout the school
- within the constraints of the school budget, ensure all resources required for the effective teaching of mathematics are available
- monitor planning and teaching to aid all members of staff with maintaining an excellent standard of numeracy teaching

## **8. Role of the governing body**

At Benfieldside Primary School, we have an identified governor for numeracy: Mrs Victoria Knapp.

The numeracy governor is invited into the school on a regular basis to observe numeracy sessions and discuss the latest developments and implementations with the co-ordinator.