Approved by Governors: Spring 2024

Review Date: Spring 2027

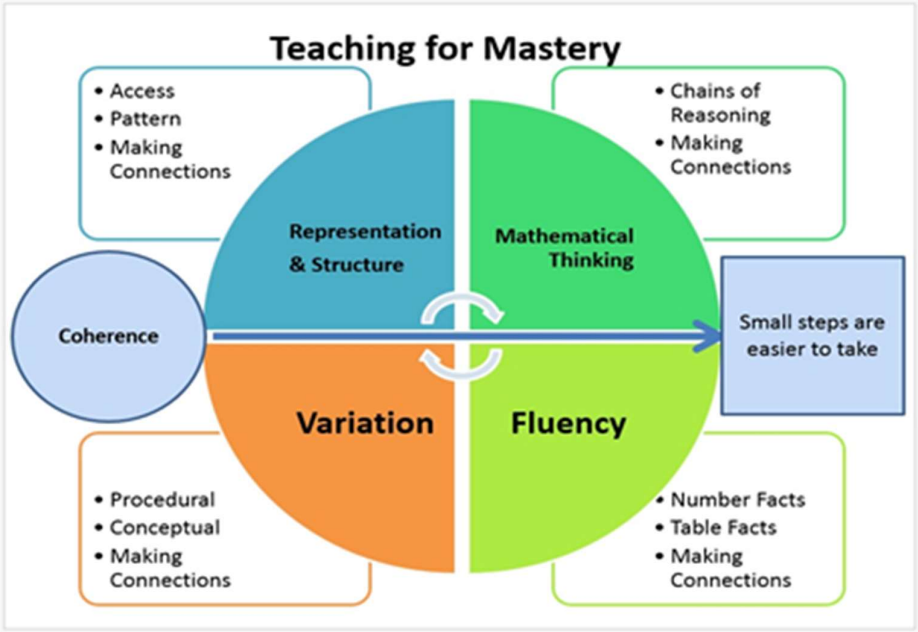
Maths Policy

Introduction

Intent

By the time children leave Norwood, they will know that maths is something which everyone can achieve in and we will provide individuals with the skills to be fluent in their mathematical thinking and proficient in reasoning and problem solving. We are committed to ensuring that children are able to recognise the importance of Maths in the wider world and that they are also able to use their mathematical skills and knowledge confidently in their lives in a range of different contexts. With the support of the DFE funded Maths Hubs programme, our maths curriculum is building towards a Teaching for Mastery Approach. Following this approach will immerse the children into a mathematical world of images, structures, representations, variety and success, that will develop the children's curiosity about the subject, as well as an appreciation of the beauty and power of Mathematics.

The Principles of Teaching for Mastery are:



Coherence	Representation and Structure	Mathematical Thinking	Fluency
Lessons are broken down into small connected steps that gradually unfold the concept, providing access for all children and leading to a generalisation of the concept and the ability to apply the concept to a range of contexts.	Representations used in lessons expose the mathematical structure being taught, the aim being that students can do the maths without recourse to the representation in time.	If taught ideas are to be understood deeply, they must not merely be passively received but must be worked on by the student: thought about, reasoned and discussed with others.	Quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics.

Variation
Variation is twofold. It is firstly about how the teacher represents the concept being taught, often in more than one way, to draw attention to critical aspects, and to develop deep and holistic understanding. It is also about the sequencing of the episodes, activities and exercises used within a lesson and follow up practice, paying attention to what is kept the same and what changes, to connect the mathematics and draw attention to mathematical relationships and structure.

The National Curriculum (2014) for Maths aims to ensure that all children:

- 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.
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- 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.

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should deepen their understanding through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

Implementation

Organisation

Children in Year 2 and Key Stage 2 have a daily Mathematics lesson, counting is incorporated into this session. In EYFS children experience maths daily through a mixture of teacher-led directed tasks and maths focussed opportunities in continuous provision. For transition between EYFS and Year 1, children will experience maths daily through a mixture of teacher-led directed tasks and maths focussed opportunities in continuous provision initially, but when appropriate, this will move towards a more formal whole class daily maths lesson.
Children in KS1 will complete a daily Mastering Number session of 10 minutes where the children focus on number facts and recall.
Children in Year 2 and KS2 complete a 4-A-Day calculation session of approximately fifteen minutes up to 3 times per week, with Year 1 beginning this when it is appropriate for the cohort to do so. Year 3 and 4 will have up to 4 times tables sessions per week. Within these there will be a teaching sequence of times tables and one of these sessions will be time spent using Times Tables Rockstar to aid the rehearsal of times tables under a set time. Each term, KS2 year groups complete weekly arithmetic tests.

Teaching strategies

To ensure the children have active and stimulating learning experiences, a variety of teaching and learning opportunities are adopted:

- Lessons are adapted to provide all learners with the opportunity to meet expectations.
- Children may work individually on a task, in pairs or in a small group, depending on the nature of the activity.
- Opportunities to transfer skills learnt, to real situations, are used whenever possible.
- Activities are planned to encourage the full and active participation of all pupils eg my turn your turn; talk partners.
- Teachers use carefully planned questions throughout the lesson in order to meet the needs of all abilities.
- A CPA approach is utilised in all year groups, all classes have access to a range of mathematical manipulatives, visuals and representations to support learning and understanding. The White Rose CPA calculation policy is followed by all year groups, which ties directly with the maths MTP.
- Teachers place a strong emphasis on correct use of mathematical language; this is supported by key vocabulary being displayed. Stem sentences are used and modelled where appropriate.
- Teachers value pupils' oral contributions and create an ethos in which all children feel they can contribute.
- Throughout the school, children learn number facts and times tables through discrete sessions, alongside NumBots and TTRs.
- Reasoning and problem solving skills are taught explicitly by teachers as part of maths lessons in order to model the use of correct strategies, mathematical vocabulary and written reasoning.

Curriculum Planning

Early Years Foundation Stage

Maths in the Early Years Foundation Stage is about discovery and exploration of what maths is. Beginning with numbers up to and including 10, learning happens through the use of concrete objects and careful, mathematical minded planning. Children are

introduced to numbers at a steady pace, with masses of time spent understanding the value, how it is represented and facts about each one. Within this learning, non-number concepts are strategically interlinked so children see mathematical concepts as a whole, rather than separate entities - thus introducing them to the magic of the mathematical world.

Long Term Planning
Norwood follows the planning set out by White Rose Maths. Teachers will follow the sequence of blocks planned out by White Rose Maths as their long-term planning. For each year group this comprises of three terms worth of blocks (units), that have been sequenced to ensure each year covers the year group specific National Curriculum content. The mathematics subject leaders will monitor the learning in each year group to track coverage.

Medium Term Planning
Teachers will use the Scheme of Learning for each planned block from White Rose Maths as their medium-term planning. In these documents are all the small steps of learning that will happen throughout each block and these will be used to structure the short-term planning. Each block is complemented with a sequence of daily Flashback 4 tasks, which can be, if needed, as a way of recalling previously learnt concepts and supporting children with making links and relationships with old and new learning.

Short Term Planning
Norwood sees small steps of learning as a crucial part to long term success in mathematics and teachers know this will contribute hugely to the children's mathematical fluency. Once children become fluent in a small step, teachers will further children's learning of each concept with problem solving and reasoning and deepening tasks. Each White Rose block is complemented with a sequence of daily Flashback 4 tasks, which will be used daily as a way of recalling previously learnt concepts and supporting children with making links and relationships with old and new learning. These will be used at the start of each daily Maths lesson. The planning will be adapted prior to the lessons, considering the start point and prior knowledge so that all children can achieve.
See **Maths Expectations** for more detail

Times Tables
KS1 and KS2 will follow a whole school times tables termly planner, which identifies when counting in multiples and times tables are to be introduced throughout the years. Years 2 to 5 teach times tables following a specific teaching sequence, that begins with the introduction of each times table through images and counting in multiples, and then leads on to multiplication and division followed by time spent on the inverse link between the two calculations.

Subject Knowledge
Teachers will receive continuous support via the White Rose Premium subscription Norwood has. All members of staff that teach and plan mathematics lessons will have an account that enables them to access teaching guidance for each small step being taught, as well as a video demonstration on how to model concepts when teaching. In addition to this resource, teachers have access to the NCETM, with particular use of the SPINE materials.

Throughout the year, Maths leaders will provide training and support to teachers and teaching assistants through staff meetings. Guidance and coaching will be available

to all teaching staff from the maths leads and Norwood is well resourced with books that detail the pedagogy behind the teaching of maths, which are accessible to all.

In September 2019, Norwood embarked on a Maths Hub programme that focuses on 'Teaching for Mastery' in Primary Maths lessons. This support has continued since then. From this, the mathematics subject leaders receive guidance and further subject knowledge on the most up to date teaching approaches and thoughts on mathematics teaching and use this to improve mathematics at Norwood, as well as furthering all teachers' subject knowledge through holding regular CPD mathematics staff meetings.

Impact

Assessment, recording and reporting (please see Assessment policy) Assessment takes place at three connected levels: short-term, medium-term and long-term. These assessments are used to inform teaching in a continuous cycle of planning, teaching and assessment. After termly summative assessments, teachers add assessments to Arbor.

Day-to-day assessments

Although the above tests can provide important information, they are only a snapshot of a child's progress, taken at a moment in time. Therefore, at Norwood, we also use an on-going process known as Assessment for Learning. It is part of the ongoing teaching and learning process and teachers will assess children's understanding, achievement and progress in mathematics continuously. Formative assessments, which inform day to day teaching and learning, are based on observation, questioning, informal testing and the marking and evaluation of work. This will also enable appropriate feedback to children and planning for the following day, as well as, inform reteach groups, where year group staffing makes this possible.

See **Feedback and Marking** policy for further details.

Learners will also be taught to assess and evaluate their own achievements by recognising successes, learning from their own mistakes and identifying areas for improvement.

Summative Assessment

In order to assess and review pupils' progress and attainment, teachers will administer termly summative assessments. An arithmetic and a problem solving and reasoning paper will be used from White Rose. Teachers will analyse these papers once marked to inform their assessment decisions as well as the next term's planning.

Statutory assessments take place in KS2 SATs and in the Year 4 Multiplication Check.

Intervention

Reading and Writing is currently the school's focus, so there are no maths interventions put in place. However, teachers do use reteaching when needed as a keep up strategy.

Greater Depth

Children identified as working at Greater Depth, will be challenged through tasks that deepen their understanding. Their work will challenge their skills in varied fluency, efficiency and accuracy, whilst requiring them to explain their mathematical thinking.

Equal Opps

All pupils have equal opportunity to reach their full potential across the mathematics curriculum regardless of their race, gender, cultural background, ability or physical disability.

Inclusion
The school's equal opportunities policy applies to the teaching of mathematics, just as it does to all other subjects too.

Environment
Classrooms should display maths in an impactful way, with the use of working walls that contain maths vocabulary and WAGOLLS of specific and current learning focus. These should reflect the lessons and teaching and will change as new learning is commenced. Relevant prompts for each year group should be clearly visible around the classroom, e.g., digit formation, numbers to 20, number lines, 1-100 grids, days of the week / months, examples of work etc. Number lines should be at a useable height and reflective of the year group's learning. Time displays around the clock are used to aid continuous learning.

Homework
Norwood Primary School recognises the importance of making links between home and school and ensures that parents are able to gain support from teachers with their understanding of homework via 'Class Dojo' messaging whenever it is needed. By providing children with homework, it gives them the opportunity to practise and consolidate their skills and knowledge of basic number work and times tables. In Year 6, children are being prepared for their future learning by having homework that links directly to their daily lessons, similar to what they will experience at secondary school.
See the **Homework policy** for further details.