Enderby Road Infant and Nursery School

Maths Policy

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APPROVED: GOVERNING BODY	**DATE:** December 2023
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Teaching for Mastery

This document is a statement of the aims, principles and strategies for the teaching and learning of mathematics at Enderby Road Infant School in accordance with the National Curriculum 2014.

At Enderby Road Infants, we are embedding teaching for mastery. We value the importance of teaching approaches that give pupils the best chance of securing both deep understanding of mathematical concepts and a varied fluency in applying them.

Our teachers strive to deliver both depth and breadth and ensure that pupils grasp the fundamental concepts that unlock the door to mastery. We also want pupils to have a growth mindset 'can do' attitude, by being resilient, determined in the face of a challenge, and most importantly, having a positive attitude to the subject of mathematics.

Concrete, Pictorial and abstract approach

CPA approach: planning has a concrete, pictorial and abstract approach because we believe that all pupils, when introduced to a key new concept need the opportunity to build competency in this area by taking this approach. The conceptual understanding and fluency of pupils is strengthened if they experience concrete, pictorial and abstract representations of a concept. Moving between these approaches enables pupils to connect abstract symbols with familiar contexts, which supports pupils in making sense of maths.

Concrete – children should have the opportunity to use concrete objects and manipulatives to help them understand what they are doing.

Pictorial – alongside this children should use pictorial representations. These representations can then be used to help reason and solve problems.

Abstract – both concrete and pictorial representations should support children's understanding of abstract methods.

Planning

To ensure continuity and progression, teachers plan for mathematics using the White Rose Maths yearly planning overview. This is not a scheme and must be adapted to the needs of the class. Teachers may tweak the order of units, in consultation with the Maths lead (be aware of mixed age planning) but should consider the children's prior knowledge and pitch and expectations.

• Teachers should use the White Rose activities to support planning but may supplement this with quality resources provided by NCETM/NRich and others.

• Teachers should follow the concrete/pictorial/abstract format to planning as appropriate. This does not need to be a linear approach but starting units of work with concrete apparatus and representations is good practise and well as continuing to use these to support throughout the unit.

- Our primary concrete resource is Numicon and teachers are to use this to support learning in Maths. This should be alongside other manipulatives with teachers selecting the most appropriate for the objective being taught. There should also be the opportunity for children to select their preferred concrete apparatus.
- All maths sessions should begin with counting in all year groups. This is a fundamental skill which children need to learn and practise. The counting should relate to current

learning and children's stage of development. Confidence in counting forwards, backwards and in multiples is an essential prerequisite for effective mental calculation. This is also central to developing understanding of place value.

- To ensure children are able to fulfil their potential within our mastery curriculum planning should highlight **stretch** and **support** for children who require this.

• Where possible maths should have the equivalent of 45 minutes per day minimum in time allocation. Maths should be taught daily, although in EYFS session times may be blocked.
• We have adopted the calculation policies produced by White Rose Maths as these sit alongside our planning. These provide guidance on when and how to teach the four calculation operations and work in conjunction with this policy.
- Children in Early Years will also use White Rose materials to support their number/shape space and measure strands. This can be used to support direct teaching as well as continuous provision alongside NCETM support for Number Blocks. (see Early Years policy)

Assessment:

• Children's attainment will be recorded termly onto OTrack.

- KS1 children will complete the White Rose end of term tests to help teachers to assess their current attainment.
- End of block tests/activities can be used to enable teachers to identify underachievement and gaps in knowledge and understanding.
- As objectives/blocks are completed teachers should rag rate children's attainment in key objectives using OTrack.
- Despite the end of statutory testing at the end of KS1 children will continue to take the optional Sats test in order to benchmark achievement and provide valuable transitional data to Year 3 teachers.

- Early Years will undertake their assessment (See Early Years policy)

Marking

- All work will have a sticker at the top with the date and objective on.
- Photographs can provide evidence of concrete work children have participated in. These must be large and clear enough to see in detail what pupils are doing. Written comments should accompany photographs.
- Marking should follow the school's marking policy – 'yippee yellow' to celebrate what pupils have done well with the use of teacher's stamps when objectives have been achieved and 'growth green' to highlight any errors. Where possible marking should be done alongside the child to be most effective. When children correct their errors this should be done next to the original and using purple pen.
- Writing in maths books should follow the school's handwriting policy and 1 digit/symbol per square is our agreed presentation in maths.
- There is an expectation of a minimum of 2 recorded pieces of work per week (evidence must be gathered for Key Performance Indicators (KPIs). There is no requirement for a recorded piece of work for every lesson as time should be given to using concrete resources to secure understabding.

What do we mean by Mastery?

The following is what we believe to be the definition of mastery.

What do we mean by mastery? (Referenced from the NCETM)

The essential idea behind mastery is that all children need a deep understanding of the mathematics they are learning so that:

• future mathematical learning is built on solid foundations which do not need to be re-taught;

• there is no need for separate catch-up programmes due to some children falling behind;

• children who, under other teaching approaches, can often fall a long way behind, are better able to keep up with their peers, so that gaps in attainment are narrowed whilst the attainment of all is raised.

There are generally four ways in which the term mastery is being used in the current debate about raising standards in mathematics:

1. A mastery approach: a set of principles and beliefs. This includes a belief that all pupils are capable of understanding and doing mathematics, given sufficient time. Pupils are neither 'born with the maths gene' nor 'just no good at maths'. With good teaching, appropriate resources, effort and a 'can do' attitude all children can achieve in and enjoy mathematics.

2. A mastery curriculum: one set of mathematical concepts and big ideas for all. All pupils need access to these concepts and ideas and to the rich connections between them. There is no such thing as 'special needs mathematics' or 'gifted and talented mathematics'. Mathematics is mathematics and the key ideas and building blocks are important for everyone.

3. Teaching for mastery: a set of pedagogic practices that keep the class working together on the same topic, whilst at the same time addressing the need for all pupils to master the curriculum and for some to gain greater depth of proficiency and understanding. Challenge is provided by going deeper rather than accelerating into new mathematical content. Teaching is focused, rigorous and thorough, to ensure that learning is sufficiently embedded and sustainable over time.

Long term gaps in learning are prevented through speedy teacher intervention. More time is spent on teaching topics to allow for the development of depth and sufficient practice to embed learning. Carefully crafted lesson design provides a scaffolded, conceptual journey through the mathematics, engaging pupils in reasoning and then development of mathematical thinking.

4. Achieving mastery of particular topics and areas of mathematics.

Mastery is not just being able to memorise key facts and procedures and answer test questions accurately and quickly. It involves knowing 'why' as well as knowing 'that' and knowing 'how'. It means being able to use one's knowledge appropriately, flexibly and creatively and to apply it in new and unfamiliar situations.3 The materials provided seek to exemplify the types of skills, knowledge and understanding necessary for pupils to make good and sustainable progress in mastering the primary mathematics curriculum.