ELSTON HALL Learning Trust

Maths Mastery Policy

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Mathematics Rationale

Overarching Vision

Our aim across Elston Hall Learning Trust (EHLT) is for all children to enjoy mathematics and have a secure and deep understanding of fundamental mathematical concepts and procedures when they leave us to go to secondary school. We want children to see the mathematics that surrounds them every day and enjoy developing vital life skills in this subject.

Aims for our pupils

- **To develop a growth mindset and positive attitude towards mathematics.**
- **To become confident and proficient with number, including fluency with mental calculation and look for connections between numbers.**
- **To become problem solvers, who can reason, think logically, work systematically and apply their knowledge of mathematics.**
- **To develop their use of mathematical language.**
- **To become independent learners and to work co-operatively with others.**
- **To appreciate real life contexts to learning in mathematics.**

Introduction

EHLT adopted a mastery approach to the teaching and learning of mathematics in 2023 across two year groups. The rationale behind adopting our approach to teaching mathematics lay within the NCETM Maths Hub Programme as well as the 2014 National Curriculum, which states:

- **The expectation is that most pupils will move through the programmes of study at broadly the same pace.**
- **Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems.**
- **Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.**

***EHLT decided on a phased introduction of the mastery approach in mathematics within two year groups in line with recommendations from the NCETM and Shaw Maths Hub. After three academic years, all year groups will be following the mastery approach in mathematics.**

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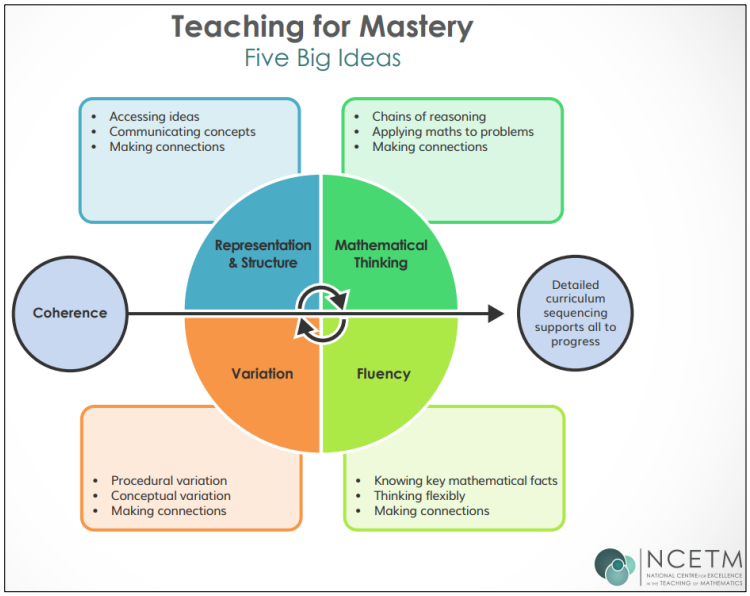
Five Big Ideas for Teaching Mastery



Our teaching for mastery is underpinned by the NCETM's 5 Big Ideas.

- **Opportunities for Mathematical Thinking allow children to make chains of reasoning connected with the other areas of their mathematics.**
- **A focus on Representation and Structure ensures concepts are explored using concrete, pictorial and abstract representations, the children actively look for patterns and generalise whilst problem solving.**
- **Coherence is achieved through the planning of small, connected steps to link every question and lesson within a topic.**
- **Teachers use both procedural and conceptual Variation within their lessons and there remains an emphasis on Fluency with a relentless focus on number and times table facts.**

The three key aims of the National Curriculum should be addressed in each sequence of learning.

- **Fluency**
- **Reasoning**
- **Problem Solving**

10 Classroom Norms to Establish

Our ethos in mathematics across the school is underpinned through 10 classroom statements we aim to ensure all learners are aware of. These values are important in allowing all children to feel valued and enjoy their maths learning by developing a positive mindset.

1. Everyone can learn mathematics to the highest levels.
2. If you 'can't do it', you 'can't do it yet'.
3. Mistakes are valuable.
4. Questions are important.
5. Mathematics is about creativity and problem solving.
6. Mathematics is about making connections and communicating what we think.
7. Depth is much more important than speed.
8. Mathematics lessons are about learning, not performing.
9. Subitising is crucial – don't count, see the amount.
10. The answer is only the beginning.

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Teaching for Mastery Principles

A little progress each day adds up to BIG results.

• It is achievable for all – we have high expectations and encourage a positive 'can do' mindset towards mathematics in all pupils, creating learning experiences which develop children's resilience in the face of a challenge and carefully scaffolding learning so everyone can make progress.
• Deep and sustainable learning – lessons are designed with careful small steps, questions and tasks in place to ensure the learning is not superficial.
• The ability to build on something that has already been sufficiently mastered – pupils' learning of concepts is seen a continuum across the school.
• The ability to reason about a concept and make connections – pupils are encouraged to make connections and spot patterns between different concepts (E.g. the link between ratio, division and fractions) and use precise mathematical language, which frees up working memory and deepens conceptual understanding.
• Conceptual and procedural fluency – teachers move mathematics from one context to another (using objects, pictorial representations, equations and word problems). There are high expectations for pupils to learn times tables, key number facts (so they are automatic) and have a true sense of number. Pupils are also encouraged to think whether their method for tackling a given calculation or problem is Appropriate, Reliable and Efficient (A.R.E).
• Problem solving is central – this develops pupils' understanding of why something works so that they truly have an appreciation of what they are doing rather than just learning to repeat routines without grasping what is happening.
• Challenge through greater depth - rather than accelerated content, (moving onto next year's concepts) teachers set tasks to deepen knowledge and improve reasoning skills within the objectives of their year group.

Curriculum design and planning

• Staff use NCETM Maths Mastery documents as a starting point in order to develop a coherent and comprehensive conceptual pathway through the mathematics. The focus is on the whole class progressing together. Collaborative planning with year group colleagues is encouraged to ensure consistency and across the Trust.
• Learning is broken down into small, connected steps, building from what pupils already know. The lesson journey should be detailed and evident on electronic presentations (Smart Notebook or PowerPoint) as there is no requirement for teachers to produce detailed paper plans.
• Difficult points and potential misconceptions are identified in advance and strategies to address them planned.
• Key questions are planned, to challenge thinking and develop learning for all pupils.
• Contexts and representations are carefully chosen to develop reasoning skills and to help pupils link concrete ideas to abstract mathematical concepts.
• The use of high quality NCETM Mastery materials and tasks to support learning and provide access to the mathematics, is integrated into lessons.
• Opportunities for extra fluency practice (instant recall of key facts, such as number bonds, times tables, division facts, addition and subtraction facts) should be provided outside mathematics lessons (morning starters or post lunch).

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Lesson Structure

Lesson Structure EYFS

1. Retrieval (Spring Term onwards) – the lesson starts with a review and practice of something that the children looked at in the last lesson. Also, children will have the opportunity to recall prior learning during planned child-initiated activities.
2. Teach (Mastering Number) – teaching and group discussion to draw attention of the maths using the NCETM Mastering Number materials.
3. Teach and Independent – most lessons, where appropriate, children are split into two groups. Half stay on the carpet and deepen their learning with the teacher, and the other group using the learning environment (indoors/outdoors) to complete an independent task that links to the teaching.
4. Recall – During day-to-day child-initiated activities, children will be exposed to maths concepts they have been introduced to. Also, staff will facilitate discussion to draw out mathematical thinking.

Lesson Structure KS1 and KS2

1. Recall Slide – Each lesson begins with a walk into learning opportunity with a mixture of questions on previously taught concepts.
2. Teach – teachers use the 'ping pong' approach to teach each small step explicitly using NCETM materials. Teachers may introduce stem sentences for children to be able to explain their learning. Children are given the opportunity to practise using the:
I do, we do, you do format.
3. Collaborative – pupils will practise and embed their learning through working alongside 'shoulder partners' during collaborative learning.
4. Independent – Children will apply what they have been taught in an independent activity. All children will begin from the same starting point with lessons designed to be low threshold, high ceiling so it is accessible for all. (Some adaptations will be made where necessary including SEND.)
5. Assessment
– Teachers will assess learning using live marking for instant feedback and to act upon it within the lesson.
– Children will assess their own learning using RAG rating.