Maths Policy

Trinity St Stephen Church of England

First School

2024

Subject Leader: Mrs Helen Wakeman

Vision

At Trinity St Stephen Church of England First School we want all children to develop positive attitudes towards mathematics. All children will become enthusiastic, resilient mathematical learners who can use their mathematics confidently to solve real life problems.

Aims

• 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.

A Mastery Approach

In September 2021, Trinity St Stephen Church of England First School began transitioning towards a mastery approach to the teaching and learning of mathematics. We are in an early stage and understand that this will be a gradual process and will take several years to become fully embedded across the entire school. The rationale behind changing our approach to teaching mathematics lies 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 before any acceleration through new content.

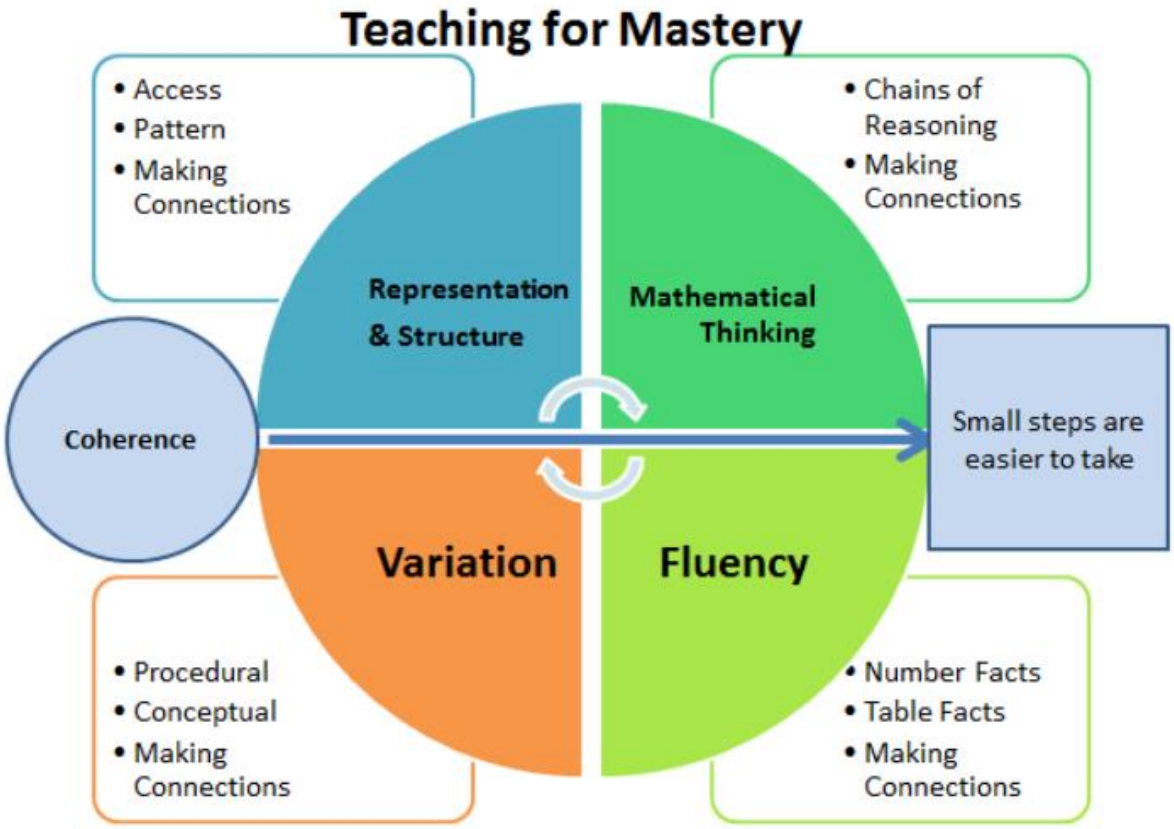
• Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

<u>What is Mastery?</u>

Children are deemed to have 'mastered' a particular objective when they are able to build on it to develop understanding of new mathematics. For each objective, children must have enough conceptual and procedural fluency to enable them to solve non-routine problems in unfamiliar contexts without relying on memorised procedures.

<u>Key elements of teaching for Mastery</u>

Our teaching for Mastery is underpinned by the NCETM's 5 Big Ideas as follows:



Coherence - 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.

Representation and Structure - Representations used in lessons expose the mathematical structure being taught, the aim being that students can do the maths without recourse to the representation

Mathematical Thinking - 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 with and discussed with others

Fluency - 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.

Source: https://www.ncetm.org.uk/teaching-for-mastery/mastery-explained/five-big-ideas-inteaching-for-mastery/Teaching for Mastery Principles

<u>Whole-Class Teaching</u>

All children are taught as a whole class, and each child is given access to the same lesson content. All children will attempt the same, core task. Appropriate scaffolding and support is available for any child who might need it, and there are opportunities to deepen learning even further through the provision of more challenging questions and activities.

Longer Units of Work

Children no longer revisit maths topics each term. Instead, units of work are extended over several weeks, giving children plenty of time to grasp and rehearse every concept. Each topic is broken down into key skills which are then carefully mapped out into a coherent, logical sequence. These longer units of work allow children time to master each skill before they move onto the next. The longest time is dedicated to key mathematical topics and concepts. Regular retrieval practice takes place; that is, opportunities to revisit and apply content from previous units of work.

Years 1-4

Planning

The National Curriculum for England: Mathematics programmes of study (2014) provides the basis for all mathematics planning. Staff use White Rose Maths Scheme of Learning as a starting point in order to develop a coherent and comprehensive conceptual pathway through the mathematics. All calculation methods taught follow the guidance given in the White Rose calculation policy.

Teachers in Years 1 to 4 follow the White Rose yearly overview for their year group. The overviews set out the order in which topics should be taught and how much time should be dedicated to each one. On occasion, teachers may identify that a particular cohort requires additional time to achieve mastery of a certain topic or group of objectives. Likewise, it may occasionally be possible for a cohort to develop a deep understanding of a particular topic in less time than is allowed for on the yearly overview. Teachers therefore exercise their professional judgement when deciding when to move onto the next unit of learning. We recognise that some adaptations may be necessary to the order in which topics are taught in the first year of adopting the White Rose overviews. Topics may be moved within the overview if teachers' assessments show there is gap in children's learning that needs to be addressed before moving onto a new unit of work.

Teachers plan using the national curriculum, knowledge of their classes and guidance provided by the White Rose Scheme. They may also refer to NCETM materials. Each unit is broken down into small, connected steps (or key points), building from what the children already know. In most cases this will follow the sequence suggested by the White Rose scheme of learning. Difficult points and potential misconceptions are identified in advance and strategies to address them planned. Contexts and representations are carefully chosen to develop reasoning skills and to help pupils link concrete ideas to abstract mathematical concepts. They consider how they will provide extra support and challenge throughout the unit, supporting children to overcome anticipated misconceptions and enabling them to go deeper in their understanding of the ideas. Fluency questions are portrayed in a variety of different ways and reasoning and problem-solving skills are built within the learning in each lesson. High-quality materials and tasks that support the learning include White Rose Maths Schemes of Learning and Assessment Materials, NCETM Mastery Assessment materials, NRICH and other appropriate visual images and concrete resources.

Marking

Marking of mathematics books should be completed in line with Trinity St Stephen Church of England First School marking policy. Where possible children will be asked to mark their work in the lessons to gain instant feedback. This enables rapid targeted support and an opportunity to identify and act on misconceptions. Next steps are generally not necessary as the next lesson is normally the next step in learning. However, it is essential that all marking picks up and addresses any misconceptions/mistakes and thorough questioning ensures children have clarified their thinking clearly.

Assessment

In addition to formative assessment undertaken in lessons, teachers will make termly summative judgements (during Assessment Week) informed by class work, White Rose Assessment materials and PUMA tests. Assessment tasks and materials provide further opportunities to identify gaps in pupil learning and tailor future lessons. Teacher judgements are recorded and teachers talk through the progress of their pupils at termly tracking progress meetings. This ensures targeted support can be given to those who need it.

At the end of year 2, children are assessed against the National Curriculum requirements through SATs. SATs performance is used alongside teacher assessment to reach a final summative assessment for the year.

In the Summer Term, pupils in Year 4 complete the national online multiplication tables check (MTC). The test consists of 25 questions on the 2-12 times tables. The purpose of the MTC is to make sure that pupils' times tables knowledge is at the expected level.

Early Years Foundation Stage

Children in EYFS explore mathematical concepts through active exploration and their everyday play-based learning. Children are taught key concepts and develop number sense using a hands-on practical approach. EYFS practitioners provide opportunities for children to manipulate a variety of objects which supports their comprehension of quantity and number. The emphasis is on building a solid foundation for further learning with a deep understanding of numbers to 10. The Concrete -Pictorial -Abstract approach is used when teaching children key mathematical skills and all representations are consistent with those used in later years. Practitioners allow children time for exploration and the use of concrete objects helps to support children's mathematical understanding. Mathematics in the early years provides children with a solid foundation that will enable them to develop skills as they progress through their schooling and ensures children are ready for the National Curriculum.

Planning

Teachers in EYFS follow the Early Years Foundation Framework and Development Matters underpinned by mastery principles. They use their professional judgement to decide the length of time on each area of learning.

Children have a daily maths lesson where all children are taught by the class teacher. This whole-class input is then consolidated through small group, focus activities led by teachers and Teaching Assistants and lasting approximately ten to fifteen minutes. Independent activities at the maths table link to the focus for the week. In addition to these planned independent activities, children also have the opportunity to self-select resources to consolidate their maths learning during child-initiated activities. We recognise the importance of play-based learning and, therefore, encourage children to develop their understanding of different areas of maths during their inside and outside play.

Assessment

The assessment of mathematics is part of the overall assessment of the complete child and should be seen alongside all the other areas of development. All reception children are assessed within their first two weeks at Trinity St Stephen. This is a school-based assessment. The Government baseline is completed by half term. Regular observations and assessments are a mix of child and adult led activities. They help to ensure that children who need additional intervention to consolidate their mathematical understanding are identified and supported by appropriate interventions. At the end of every term, teachers refer to Development Matters and

identify at which stage pupils are currently working. Pupils who are struggling with specific concepts are picked up through continuous assessments and given additional support. Evidence towards these assessments is collected throughout the year and parents are kept updated about their child's progress through parents' evening meetings and informal chats with advice on strategies to support at home. Towards the end of the academic year, teachers in Reception also make a judgement as to whether or not each child has met the level of development expected at the end of the EYFS for each Early Learning Goal.

Inclusion/special Needs

Trinity St Stephen aims to meet the needs of all, considering gender, ethnicity, culture, religion, language, disability, age and social circumstances. The provision for children with special needs is detailed in the SEND Policy. SEN pupils may be supported by additional adults, different resources and differentiated activities if appropriate. They may also complete additional activities outside of the mathematics lesson. Trinity St Stephen has high expectations of all children and strongly believes that all children are able to achieve in mathematics. Some may take longer to grasp concepts and may need careful scaffolding or extra time/support.

British Values

The maths curriculum promotes the British Values of tolerance and resilience through problem solving and understanding of complex concepts. Children are required to persevere to solve problems. Teamwork is central to maths through group activities, mentoring and sharing of resources. Mutual respect is developed as children work together and build confidence in one another. Children can feel safe to make mistakes and take risks in problem solving, thus developing self-confidence and esteem. Children are encouraged to become life-long learners alongside developing their mathematical skills across the curriculum through enterprising and problem solving.

Role of subject Leader

• Ensures teachers understand the requirements of the National Curriculum and supports them to plan lessons. Leads by example by setting high standards in their own teaching.

• Leads continuing professional development; facilitates joint professional development; provides coaching and feedback for teachers to improve pupil learning.

• Leads the whole-school monitoring and evaluation of teaching and learning in mathematics through learning walks; analysing assessment data in order to plan whole school improvement in mathematics; conducting work scrutiny to inform evaluation of progress; conducting pupil interviews.

• Takes responsibility for managing own professional development by participating in external training, independent private study, and keeping up-to-date with Teaching for Mastery developments.

• Keeps parents informed about mathematics issues.

• Ensures that the school's senior leaders and governors are kept informed about the quality of teaching and learning in mathematics.

• Works in close partnership with the school's senior leaders to ensure the learning needs of all pupils in mathematics are met effectively.

• Keeps the school's policy for mathematics under regular review.

• Audits resources and ensures all classrooms are appropriately resourced.

Transition to teaching for mastery

2021-22 academic year

o Two members of staff participated in NCETM local hub mastery program – Development phase

o These teachers explored mastery ideas and materials in their respective classrooms.

2022-23 academic year

o Two members of staff continue in NCETM local hub mastery program collaborating and developing practice with other local schools and a mastery specialist.

o From Spring term launch of teaching for mastery in years 1 to 4 with the White Rose Mastery scheme a starting point for planning.

o From Summer term, Reception staff explore some mastery representations in the Reception class.

o NCETM Local Mastery Hub Lead providing bespoke training opportunities and support.

2023-24 academic year and beyond

o A full mastery approach is adopted in the Reception from the beginning of the 23- 24 academic year.

o To further develop and embed mastery principles the school continues to participate in and be supported through the NCETM Mastery sustaining schools programme.

o The school continues to participate in training to develop expertise in specific areas. In 2023 -24 this included training in maths oracy and maths mastery in early years classrooms.

To be reviewed: September 2027