St Augustine of Canterbury
Roman Catholic Primary School
Christus Heri, Hodie, Semper

Teaching for Mastery: Mathematics Policy 2023-2024

Vision

Our aim at St Augustine's 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. Our goal is for all children to think mathematically, enabling them to reason, solve problems and assess risk in a range of contexts. The basic skills of mathematics are essential for the life opportunities of our children. Therefore, we encourage pupils to see the mathematics that surrounds them every day and enjoy developing vital life skills in this subject.

At St Augustine's, our Mathematics Master curriculum is continuously developing to ensure every child can achieve excellence in mathematics. It provides pupils with a deep understanding of the subject through a concrete, pictorial and abstract approach.

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.

Curriculum Statement

Intent	We aim for children to be proficient in their use of maths vocabulary and become fluent in the fundamentals of mathematics. We strive for children to reason mathematically by following a line of enquiry, recognising relationships and generalisations, and developing an argument, justification or proof using mathematical language. As a result, we hope children solve problems by applying their mathematics knowledge to a variety of problems across the curriculum with increasing confidence, including breaking down problems into a series of simpler steps and persevering in seeking solutions. How will we do this? ✓ High expectations – All children are expected to succeed and make progress from their individual starting points. ✓ Modelling – Teachers will model the skills needed to succeed in Maths providing examples of good practice and high expectations for all. ✓ Fluency – Number facts will be taught explicitly and opportunities to practise will be provided regularly. ✓ Vocabulary - Mathematical vocabulary is taught explicitly, displayed in the classroom and modelled within sessions

Romero Catholic Academy Trust

Member of staff responsible: Miss A. Payne
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Date approved by the full Governing body:
Date to be reviewed: Summer term 2022

Implementation	✓ Assessment – Our live marking and assessment strategies ensure that children are being exposed to suitably challenging learning. ✓ Lesson Structure – Maths sessions will include varied fluency, guided practice and independent practice. ✓ Representation - Concrete manipulatives and pictorial representations are used to support conceptual understanding and to make links across topics. ✓ Vocabulary – Mathematical vocabulary and stem sentences are modelled throughout lessons to encourage children to explain their ideas with mathematical precision.
Impact	➢ Pupil voice – Through discussion and feedback, children will talk enthusiastically about Mathematics and will understand the importance of the subject. ➢ Evidence in knowledge – Children can confidently explain their understanding of mathematical concepts, communicating their ideas verbally, visually and in writing. ➢ Evidence in skills – Children are taught skills linked to National Curriculum objectives, which are progressive and meet the individual needs of each child. ➢ Outcomes – Assessments during pupil progress meetings, moderation, end of Key Stage data and analysis of the key learning documents will provide evidence of standards across school and areas for development.

Teaching for Mastery

St Augustine's follow the mastery approach to the teaching and learning of mathematics. The rationale behind this approach to teaching mathematics are presented within the NCETM Maths Hub Programme as well as the National Curriculum, which states:

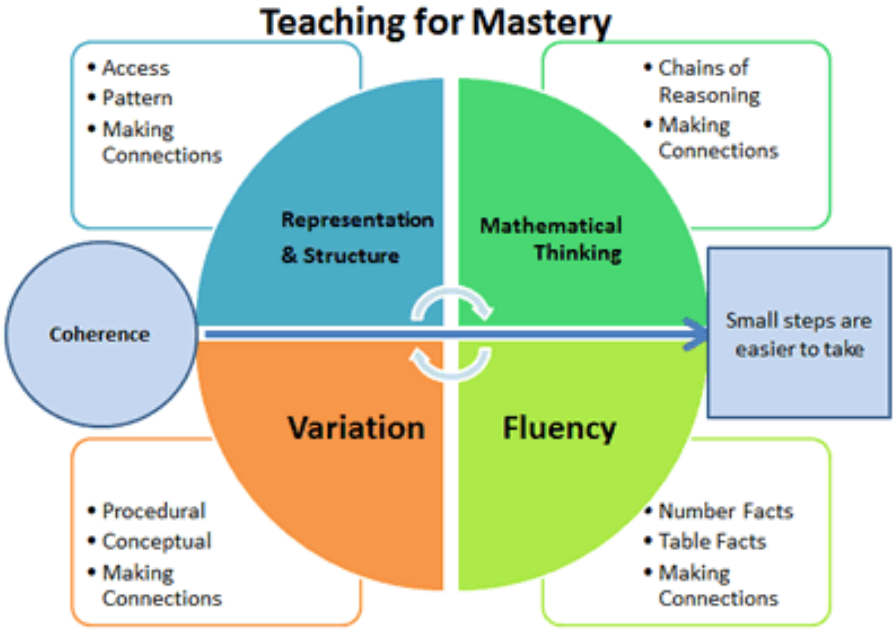
- The expectation is that most pupils will move through the programmes of study at broadly the same pace.
- Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content.
- Those who do not grasp a concept should consolidate their understanding, including through additional practice, before moving on.

5 Big Ideas of 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.



Teaching for Mastery Principles

- 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.
- 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.
- 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 White Rose Maths Schemes of Learning as a starting point to develop a coherent and comprehensive conceptual pathway through the mathematics. The focus is on the whole class progressing together.
- Learning is broken down into small, connected steps, building from what pupils already know. The lesson journey should be detailed and evident on flipcharts (Active Inspire 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 materials and tasks to support learning and provide access to the mathematics, is integrated into lessons. These may include White Rose Maths Schemes of Learning and Assessment Materials, NCETM Mastery materials, NRICH, visual images and concrete resources.
- 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 or post-lunch activities).

Number Facts

Fluency in number is key to accessing all areas of Mathematics confidently and securely. Knowing number facts 'off by heart' frees up space in a child's working memory when they complete more complex calculations and allows children to reason and problem solve with greater depth, which alongside fluency, are the key elements of the Mathematics curriculum.

In Key Stage 1, we explicitly teach number bonds and have practice books for children to systematically work through to ensure they are fluent and confident in their basic addition skills. Children should aim to have all of the facts completed by the end of Year 2; however, it may be that they are completed further up the school so each child is secure and fluent with basic addition by the time they leave our school.

In Key Stage 2, we explicitly teach times tables and have practice books for children to systematically work through to ensure they are fluent and confident with their times tables. These follow the age-related multiplication expectations. Children also use Times Tables Rock Stars as a tool to build fluency and speed. Children should aim to have all of the facts completed by the end of Year 4; however, they are also completed further up the school so each child is secure and fluent in multiplication by the time they leave our school.

- Children should practise these number facts at home and it will form part of their daily maths lessons.
- The aim is to be able to recall the each fact in the set within 3 seconds.

Statutory Requirement and Curriculum Entitlement

The structure of Maths teaching at St Augustine of Canterbury is based upon the Mathematics National Curriculum and the Early Years Framework guidelines and covers all the recommended objectives to ensure that children have access to a broad and balanced Mathematics curriculum.

Aims and Approaches

EYFS	➢ The White Rose Maths Scheme of Learning and the Mastering Number Programme (NCETM) are used to plan and deliver high quality, well-structured lessons that build on prior learning. ➢ Composition of number is explored in groups and through continuous provision. ➢ Children are encouraged to recognise patterns within numbers to 10. ➢ Children are regularly exposed to counting activities. ➢ Children are encouraged to subitise up to 5. ➢ Children are exposed to a range of mathematical equipment within continuous provision. ➢ Staff deliver same day interventions to address misconceptions.
KS1	➢ The White Rose Maths Scheme of Learning and the Mastering Number Programme (NCETM) are used to plan and deliver high quality, well-structured lessons that build on prior learning. ➢ Lessons follow the same structure (Varied Fluency, Guided Practice, Independent Practice), allowing children to practice, apply, and explain their newly learned skills. ➢ Children are exposed to a range of mathematical equipment within lessons and continuous provision. ➢ Children are exposed to a range of representations of number within Maths lessons. ➢ A Ping pong approach is used to develop Maths talk, using appropriate vocabulary and reasoning. ➢ Children are explicitly taught number facts and are encouraged to learn these at home.
KS2	➢ The White Rose Maths Scheme of Learning is used to plan and deliver high quality, well-structured lessons that build on prior learning. ➢ Lessons follow the same structure (Varied Fluency, Guided Practice, Independent Practice), allowing children to practice, apply, and explain their newly learned skills. ➢ Children are exposed to a range of mathematical equipment within lessons. ➢ Children are exposed to a range of representations of number within Maths lessons. ➢ A Ping pong approach is used to develop Maths talk, using appropriate vocabulary and reasoning. ➢ Children are explicitly taught times tables and are encouraged to learn these at home. Children use Times Table Rock Stars to improve their recall speed.

Assessment

Assessment is an essential part of developing the children's knowledge and understanding in Mathematics. It allows us to analyse the impact teaching has had on the children's progress, informs future planning and identifies ways we can further improve children's outcomes.

EYFS	Children in EYFS have their attainment on entry assessed by observations and their progress is tracked and monitored using continuous observation and assessment of individual children using

	Tapestry and data being logged termly onto the Lancashire Tracker. ➢ In EYFS, children are assessed in their early mathematical development against the Early Learning Goals.
KS1 **KS2**	In Key Stage 1 and Key stage 2, children are assessed against the key learning objectives for their year group, work produced, observations and discussions. Targets are set with children based on independent work and White Rose termly assessments to ensure they understand how to improve their skills. Interventions are planned to close gaps and challenge children to ensure they reach their full potential. The marking and feedback policy outlines how it is used in school for maximum impact on children's outcomes. ➢ Children in Year 2 and Year 6 take end of year Key Stage national tests. ➢ Children in Year 4 complete the national Multiplication Tables Check. ➢ White Rose End of Unit assessments are completed at the end of a unit and reported to identify gaps in learning. ➢ White Rose assessments are used termly. ➢ KLIPS are used to assess all children Y1-Y6.

Marking and Feedback

- Live marking and verbal feedback is promoted within Maths sessions.
- The marking and feedback policy outlines how teachers can give feedback and assess children to have maximum impact on attainment.

Partnerships

- Teachers support each other to develop strategies and provision for Maths.
- The subject leader provides support with planning, assessing and moderating standards within Maths. The subject leader will oversee the Maths curriculum and monitor using a range of strategies.
- External resources are used where appropriate to enhance the teaching within school.
- The subject leader works with other subject leaders within the Romero Academy to develop the Maths curriculum.
- Links with local high schools support the transition to KS3.
- All stakeholders are involved in developing the curriculum.
- Parents are encouraged to support their children's learning at home through number bonds and times tables practice.

Equal opportunities and Inclusion

- All children are given access to a broad and balanced Maths curriculum regardless of gender, ability, race of religion.
- Provision will be made for individual needs within POPs and personalised interventions are planned to close gaps.
- Equal opportunities are provided for all children including those with special educational needs or gifted and talented children.
- Children with EAL will be given additional resources and teaching to support their learning.
- A feeling of self-worth will be engendered throughout the activities.

SEND

Our Maths curriculum is designed for everyone to progress at the same rate. Children with special educational needs will be exposed to the same learning as their peers. Learning will be scaffolded with resources and support. Children working significantly below age-related expectations will access the whole-class teaching and guided practice alongside their peers but may work independently on tasks from previous year groups. This independent practice will be related to the mathematical concept being taught in class.

This policy is in line with other school polices and, therefore, should be read in conjunction with other school policies found on our website

Update to Policy Record Sheet

Date	Reference / aspect of policy to update	Suggested amendments to consider at next review.
September 2023	SEND	