Mathematics Policy

St Cuthbert's Catholic Primary

Approved by:	Governing Body	**Date:**	April 2024
Last reviewed on:	July 2022		
Next review due by:	July 2025		

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1. Introduction

You are unique, talented and loved by God

Every child has the right to an education. (Article 28 UNCRC)

Education must develop every child's personality, talents & abilities to the full. (Article 29 UNCRC)

This policy is written with consideration for the Gospel values of our Catholic school and for our ongoing commitment to the Rights of the Child which underpins our day-to-day practice and ethos. Although direct reference to these considerations are not continuously made, the policy has been written with full awareness of our responsibility and commitment to the faith and rights of our pupils.

As part of the Bishop Chadwick Catholic Education Trust (BCCET), we are committed to upholding the key values of our family of schools in the teaching of mathematics:

- **Excellence**: mathematics is planned, taught and monitored to enable staff and pupils to achieve excellence.
- **Respect**: all of our school family are created in the image of Christ and are treated with equity and fairness. We are committed to providing support, high expectations and challenge for our staff and pupils, no matter their starting point, to help them develop their mathematical ability to the full.
- **Community**: we work as a community to achieve our aims and teach our pupils the value of collaboration and team work through mathematics.
- **Gifts**: we support all staff and pupils to enable them to fulfil their potential.
- **Aspiration:** staff and pupils are supported to be the best they can be and we ensure the needs of every individual are met.
- **Celebration**: we recognise and celebrate success, resilience and positivity in mathematics.

Our pupils are all unique individuals with their own strengths, aptitudes, interests and dreams. As a Catholic school community, we support each child to make the most of every opportunity we offer.

2. Vision

At St. Cuthbert's our mathematics curriculum has been developed to ensure every child can reach their potential in maths and that an enthusiasm for and confidence in maths is engineered in each child. Our well sequenced curriculum enables children to recall key facts, concepts and methods and teaches resilience when reasoning and problem solving. Staff are ambitious for all children and responsive to their learning to ensure a deep understanding. We link maths to the world around us in creative and engaging ways so our pupils develop a mathematical curiosity about the world and can apply their knowledge and skills purposefully.

3. Purpose of study

Mathematics is a creative and highly interconnected discipline that has been developed over centuries providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering and necessary for financial literacy and most forms of employment. A high-quality mathematical education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the power and beauty of mathematics, and a sense of enjoyment and curiosity about the subject.

(DfE 2013)

4. Aims & Intent

The National Curriculum for mathematics (detailed below in *italics*) aims to ensure that all pupils:

- *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.*
- *can 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.*

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

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 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.

At St Cuthbert's we also aim for our pupils to:

- develop a growth mindset and positive attitude towards mathematics
- become confident and proficient with number, including fluency with mental calculation and written methods of arithmetic
- develop their use of mathematical language
- become independent learners and to work cooperatively with others
- appreciate and experience real life contexts in mathematics.

5. School Curriculum Intent

5.1 Early Years

The DfE identifies three areas that are particularly important for *building a foundation for igniting children's curiosity and enthusiasm for learning, forming relationships and thriving. These are the prime areas:*

- *communication and language*
- *physical development*
- *personal, social and emotional development*

Providers must also support children in four specific areas, through which the three prime areas are strengthened and applied. The specific areas are:

- *literacy*
- *mathematics*
- *understanding the world*
- *expressive arts and design*

Within mathematics, expectations are that a curriculum will adhere to these principles:

*Developing a **strong grounding in number** is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to **count confidently**, develop a **deep understanding of the numbers to 10**, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as **using manipulatives**, including small pebbles and tens frames for organising counting - children will develop a **secure base of knowledge and vocabulary** from which mastery of mathematics is built.*

*In addition, it is important that the curriculum includes rich opportunities for children to develop their **spatial reasoning skills** across all areas of mathematics including **shape, space and measures**. It is important that children develop **positive attitudes and interests in mathematics, look for patterns and relationships, spot connections**, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.*

Our EYFS curriculum is built around the Development Matters non-statutory guidance and is assessed using Early Learning Goals. Mathematics is taught daily and links are made across the curriculum so that the three prime areas of learning are strengthened. The EYFS teacher has worked with Archimedes Maths Hub to follow the Mastering Number programme. This has been planned across the curriculum with White Rose Maths materials used to supplement and extend the mathematics taught in class and the continuous provision.

5.2 National Curriculum for Y1 to Y6

We follow the programmes of study as laid out by the National Curriculum:
The programmes of study for mathematics are set out year-by-year for key stages 1 and 2. Schools are, however, only required to teach the relevant programme of study by the end of the key stage. Within each key stage, schools therefore have the flexibility to introduce content earlier or later than set out in the programme of study. In addition, schools can introduce key stage content during an earlier key stage, if appropriate. All schools are also required to set out their school curriculum for mathematics on a year-by-year basis and make this information available online.

Programmes of study for Years 1 to 6 can be found here.

5.3 Inclusion

Teaching maths for mastery offers all pupils access to the full maths curriculum. This inclusive approach, and its emphasis on promoting multiple methods of solving a problem, builds self-confidence and resilience in pupils.
Although the whole class goes through the same content at the same pace, there is still plenty of opportunity for support and challenge. Taking a mastery approach, this occurs in the support and intervention provided to different pupils, not in the topics taught, particularly at earlier stages. There is no differentiation in content taught, but the questioning and scaffolding individual pupils receive in class as they work through problems will differ. Pupils who grasp concepts quickly can be challenged through more demanding problems and varied fluency which deepen their knowledge of the same content. Those children who are not sufficiently fluent are provided additional support to consolidate their understanding before moving on. Pupils' difficulties and misconceptions are identified through immediate formative assessment and addressed with intervention – commonly through individual or small group support later the same day where possible.

Where children make less than expected progress, efforts are made to ensure relevant support is put in place to help support the child. No child will be denied a full curriculum however and concepts will be revisited throughout the year during challenge times or intervention times to help with long term understanding.

We recognise that some SEND pupils may have an identified need linked to mathematical concepts and understanding. Where this is the case, individual SEND Support Plans will detail necessary support and if necessary, a bespoke curriculum created for those children.

6. Implementation

Working alongside Archimedes Maths Hubs, we have introduced and are continuously developing a mastery curriculum in mathematics. Teachers create sequences of learning based on small steps to ensure fluency and a deeper understanding.

6.1 Sequences of Learning

Our sequences are resourced using White Rose Maths and NCETM and our long term and medium-term plans are adapted according to the needs of the class from the sequence outlined in White Rose Maths

- Long Term Planning is broadly in line with White Rose Maths and maps out 35 curriculum weeks with some space in the year for assessment and consolidation
- Medium Term Plans follow the sequence of learning from White Rose Maths but are adapted according to priorities and the particular needs of the cohort; we regularly use smaller steps from NCETM particularly around explaining concepts.
- Our sequences are resourced using White Rose Maths and NCETM and our long term and medium-term plans are adapted according to the needs of the class from the sequence outlined in White Rose Maths
- Our Calculations Guidance and Modelling Guidance maps out progression in year groups

6.2 Timetabling

- All children are taught a daily maths lesson
- Timetabling includes additional time beyond the mathematics lesson to support consolidation, practise and challenge so that pupils are keeping up and progressing
- Pupils are taught and given opportunities to reason about mathematics and solve problems
- Fluency and recall with number facts and calculations are embedded into the curriculum each week
- A long term timetable of introducing and learning multiplication facts begins in Year 2.
- Homework consolidates learning

6.3 Classroom Environment

- Classes have displays that reflect the current mathematical unit of work and may contain key vocabulary, sentence stems, apparatus, models and algorithms
- Classes have a range of accessible concrete apparatus to support learning which supports our adapted schemes of work.

6.4 Maths Lessons

- Each lesson focuses on one clear objective or small step which all children are expected to master.
- Each lesson can include elements of: **fluency**, to practise skills; **reasoning**, to deepen understanding; and **problem solving**, to apply skills depending on the objective being taught and the understanding of the children.
- Staff use sentence stems and questioning effectively to deepen understanding

6.5 Staff Development

We are committed to the ongoing development of mathematics.

- Each year, we identify a focus area for improvement which is included in our School Improvement Plan.
- We dedicate a minimum of one training session each term to develop staff knowledge and pedagogy in maths teaching.
- We facilitate time for staff to observe one another teaching mathematics to get a good understanding of how mastery works and share good practice.
- All staff have taken part in White Rose online training, the maths lead has been involved with Archimedes' maths hub since September 2021 and EYFS / KS1 teachers have taken part in Mastering Number in the academic year 2023/4

7. Impact

Senior Leaders, maths lead, teachers & teaching assistants are all responsible for monitoring the impact of the maths curriculum to ensure pupils have a positive experience of maths, retain knowledge & apply their mathematical learning in their work.

- Teachers and Teaching Assistants use questioning, support and challenge effectively to gauge understanding in lessons and ensure the vast majority of pupils keep up
- At the end of each block of learning, pupils are assessed and teachers will make a judgement about any consolidation that needs to take place
- Termly assessments are used to inform future planning and address misconceptions
- Timetabling includes additional time beyond the mathematics lesson to support consolidation, practise and challenge informed by identified needs in lessons
- Teaching & Learning is monitored through the Five Strand approach in line with BCCET which includes:
    a. Checking of planning by subject lead / SLT to ensure thorough and timely coverage
    b. Lesson observations

c. Shared monitoring of books with opportunities for discussion and shared practice to monitor impact collectively
d. Monitoring of assessment data
e. Pupil Voice

8. Review

This policy links to

- Calculation Guidance
- Modelling Guidance
- Marking & Feedback Policy
- SEND Policy

This policy will be reviewed annually by:

- Maths co-ordinator
- SLT
- Link governor or whole governing body