St Edmund's Catholic Primary School

Mathematics Policy

September 2023

ST EDMUNDS CATHOLIC PRIMARY SCHOOL

MATHEMATICS POLICY

Contents:

Introduction and Aims:

At St Edmund's Catholic Primary School we believe that a strong foundation in mathematics is essential for all our students. We have chosen to adopt the White Rose Maths scheme as the basis for our mathematics curriculum. White Rose Maths provides a well-structured, coherent, and progressive approach to teaching mathematics, ensuring that all children develop a deep understanding of mathematical concepts.

This policy outlines the teaching, organisation and management of mathematics at St Edmunds Catholic Primary School.

Aims:

The purpose of mathematics in our school is to develop:

- a positive attitude towards mathematics and an awareness of the relevance of mathematics in the real world
- a growth mindset where students believe in their ability to succeed.
- a rich and varied mathematical curriculum that is accessible to all students, allowing them to reach their full potential.
- students' fluency in mathematical procedures and their ability to apply mathematical knowledge in a range of problem-solving contexts
- confidence and competence in mathematical knowledge, concepts and skills
- an ability to solve problems, to reason, to think logically and work systematically and accurately
- initiative and an ability to work both independently and in cooperation with others
- an ability to communicate mathematics
- an ability to use and apply mathematics across the curriculum and in real life
- an understanding of mathematics through a process of enquiry and experiment
- a deep conceptual understanding and long-term retention of the concepts taught, using the CPA (concrete, pictorial, abstract) approach to teaching and learning

Legislative requirements and non-statutory guidance

This policy is written with reference to:

The National Curriculum Primary programmes of Study for KS1 and KS2.

The White Rose Maths Programme of Study.

Roles and responsibilities

Subject Leaders

The mathematics subject leaders will be expected to

- ensure the White Rose Maths programme and concrete, pictorial, abstract approach (CPA) is embedded throughout the school
- prepare, organise and provide school based INSET meetings, workshops and staff meetings
- assist with the monitoring of teaching and planning and analysis of SATs results and other assessment data
- liaise with staff in school – working alongside them giving guidance and support
- introduce, organise and maintain the school's mathematics resources
- take responsibility for own professional development by attending courses and keeping up-to-date with current developments within mathematics education
- liaise with mathematics subject leaders in other schools through attendance at local network meetings
- to provide an example to the school by taking a lead in teaching mathematics
- ensuring equality of opportunity for all pupils
- maintaining contacts beyond school with numeracy consultants, advisory staff and other outside agencies
- Be aware of strengths and weaknesses within mathematics in the school. Liaise with Head and Deputy to address issues and identify training needs
- Report, as required, to the Governing Body Curriculum Committee on standards and developments in mathematics
- Review and update the policy and teaching guidelines as required
- Demonstrate expertise in mathematics and be familiar with sources of guidance and information to support colleagues

The Head teacher and Senior Leadership Team (SLT)

The Head teacher and SLT will review all curriculum policies every two years and through monitoring and assessment procedures will look at the strategic overview of how this policy is being implemented.

The governing board

Curriculum governors will review this mathematics policy in conjunction with the Head teacher and monitor the policy's effectiveness.

Teachers

Teachers will ensure that their planning and teaching reflects the practice and procedures outlined within this policy, having regard also to the progression of skills map.

Curriculum planning

1. White Rose Maths Scheme: We will follow the White Rose Maths scheme as the core structure for our curriculum. This scheme provides a spiral approach to learning, revisiting concepts to ensure deep understanding and mastery.

2. Progression and Differentiation: The curriculum will be structured to ensure progression from one year to the next, building on prior knowledge. Lessons will be differentiated to cater to the needs of all learners, providing support and challenge as necessary.

3. Mastery Approach: We will adopt a mastery approach to mathematics, where all students have the opportunity to acquire a deep understanding of mathematical concepts. Lessons will focus on the development of fluency, reasoning, and problem-solving skills.

4. Concrete, Pictorial, Abstract (CPA) Approach: The CPA approach will be used to introduce new concepts, allowing students to build concrete understanding through manipulatives, followed by visual representations and finally abstract symbols.

5. Real-life Contexts: Mathematical concepts will be linked to real-life situations, making learning meaningful and relevant to students' lives.

6. Timetable Allocation: Sufficient time will be allocated each week for mathematics, ensuring that there is adequate coverage of all strands of the curriculum.

Teaching and Learning

1. Whole-Class Teaching: The majority of mathematics lessons will be taught as whole-class sessions, promoting discussion, collaboration, and the sharing of strategies and solutions.

2. Assessment for Learning: Formative assessment strategies will be used to assess students' understanding and inform future planning. Regular feedback and opportunities for reflection will be provided to support students' progress.

3. Problem-Solving: Problem-solving activities will be integrated into lessons to develop students' ability to apply mathematical knowledge and skills in real-life contexts.

4. Mathematical Vocabulary: The use of mathematical vocabulary will be encouraged and explicitly taught, enabling students to communicate effectively about mathematics.

5. Resources and Technology: A range of concrete manipulatives, visual representations, and digital tools will be used to enhance learning experiences and support students' understanding. Each classroom has its own maths resources, suitable for concrete experiences. In addition to these, there are many centrally stored resources available for use across the whole school. There should also be a working wall area within every classroom that the children can access.

Each class teacher is responsible for the mathematics in their class in consultation with, and guidance from, the mathematics subject leader. Each class teacher will provide 5 dedicated mathematics lessons each week, which may vary in length but will usually last for 45 minutes in Key Stage One and 50 to 60 minutes in Key Stage Two. Teachers of EYFS ensure the children learn through a mixture of adult led activities and child initiated activities both inside and outside of the classroom.

Planning

Early Years Foundation Stage

Development Matters and the Early Learning Goals (Number, Shape Space & Measure) provide the longer term planning for mathematics taught in reception, with planning being taken from the White Rose Maths EYFS online materials where possible, The *Numicon Firm Foundations* starter pack is used to support teaching, learning, and the planning of free-flow activities.

Children are encouraged to relate their number skills to real-life objects and the world around them. This is done through the handling of practical and concrete materials as much as possible.
There are designated outdoor and indoor mathematic areas however, adults respond to children's observations and encourage children's maths talk which is embedded across all areas of EYFS.

Homework

To practice number skills and fluency recall, children use the Numbots online platform. They are also set homework which can be related to children's everyday life.

Key Stage One and Two

The National Curriculum for Mathematics 2014 provides the longer-term planning for the mathematics taught in Years 1-6. These year groups use the planning materials and resources from the White Rose Maths scheme (see below) to deliver the National Curriculum.

Homework

It is our school policy to provide parents and carers with opportunities to work with their children at home. These activities may only be brief, but are valuable in consolidating the learning that has taken place during the school week in mathematics lessons. Activities are sent home to children in years 1 to 6 on a weekly basis which may consist of activities, such as White Rose videos and worksheets. Time and competitions may also be set on online platforms, such as *Mymath and Times Table Rock Stars*. In KS1 children may additionally be set homework which is related to real life exploration. These activities are set on Google Classroom.

Please refer to SEN Planning (Learning Support Plans) and Homework Policy for more details.

Assessment

Assessment and Record Keeping

Teachers make regular assessments of each child's progress and record these systematically.

Children's class work is assessed frequently through

- regular marking (see below)
- analysing errors
- questioning
- discussion
- plenaries

This is used to inform future planning and teaching. Lessons are adapted and short term planning is evaluated and annotated in light of these assessments.

Summative assessments are made termly through the use of White Rose tests in Years 1 to 6 (one reasoning and one arithmetic paper per term, though this may vary in Year 6, where children are preparing for their SATs exams). Marks from these tests, along with teacher knowledge gained

during mathematics lessons, are used to maintain records of children's progress using the online platform Scholarpack.

Marking

Marking of children's work is essential to ensure they make further progress. All work is marked in line with the school's marking policy, and includes verbal feedback to give children immediate feedback to respond to and next steps which may occur when books are marked. Whole class marking is acceptable on occasion and children are encouraged to self-assess their work where appropriate. However, both these approaches must be overseen by the teacher or another adult and ticks written against the Learning Objective.

Inclusion and Equal Opportunities:

The daily mathematics lessons are inclusive for all pupils including those with special educational needs. The White Rose Maths scheme supports the concrete, pictorial and abstract (CPA) approach to teaching and learning. This approach, underpinned by research supports all children, including those with SEND, to retain the concepts that they have been taught and to gain a deeper understanding of them.

Our approach also advocates the use of mixed-ability pairs within the classroom. Class teachers carefully select pairs of children to work together where the attainment gap is not too large, but where one can support the other. The higher-achieving child has the opportunity to deepen their understanding by explaining it to a lower-achieving peer; the lower-achieving child benefits from having their work explained to them. This also supports children with SEND or who are lower-achieving to believe that they are capable in maths; keeping children in fixed groups can create fixed mindsets which are damaging to their progress. This is an approach which is also underpinned by research.

When questioning, teachers should use the cold-calling method so that all children are focused and engaged and ready to answer questions when called upon. Children should also be given thinking time to process their answers before being asked to verbalise them. Teachers should also expect children to answer in full sentences so that they are modeling and hearing good use of mathematical language. Teachers may wish to ask the same, or another child, to 'say it again better'.

Within the daily mathematics lesson teachers must ensure that there are activities that provide appropriate challenges for children who are higher achievers in mathematics. Examples of this include:

- The use of Inspire materials which were used in the school's previous scheme of work and use perceptual variation to ensure that children are exposed to a range of problems
- Children being challenged to create their own problems
- The use of White Rose extension tasks

Staff Development:

1. Continuous Professional Development (CPD): Regular CPD opportunities will be provided to ensure that teachers are confident in their understanding and delivery of the White Rose Maths curriculum.
2. Collaboration and Sharing Best Practices: Teachers will be encouraged to

collaborate and share best practices, enabling the development of a supportive and knowledgeable mathematics teaching community.

Parental Engagement:

1. Communication: Regular communication with parents will be maintained, providing information about the mathematics curriculum, learning objectives, and strategies to support their child's mathematical development at home.
2. Workshops and Resources: Parent workshops and resources will be provided to help parents understand the teaching methods and concepts used in the White Rose Maths curriculum.

Monitoring and Evaluation:

1. Regular Monitoring: The mathematics coordinators and senior leadership team will regularly monitor the implementation of the mathematics policy to ensure its effectiveness.
2. Review and Evaluation: The policy will be reviewed and evaluated periodically to reflect changes in the curriculum, educational research, and the needs of our students.

By implementing this maths policy, we aim to inspire a love for mathematics, develop mathematical thinkers, and equip our students with the skills and knowledge necessary for their future success.

This policy is to be reviewed in September 2025