St. Edmund's Catholic Primary School

'Together we learn and grow through worship and celebration'

Mathematics Policy

Committee responsible for policy	Curriculum and Achievement
Coordinator	Terri Meldon
Statutory/Non-statutory	Non STATUTORY
Frequency of Review	Free to determine – every 3 years or earlier if required
Date of last review Approved by **Staff/ SLT/**Committee/FGB	January 2019
Date of next review	**January 2022**
Purpose of policy	To outline the requirements of the curriculum subject
Consultation	Staff
Links to other policies	All other subject policies Marking, Planning and Assessment

The Importance of Mathematics

Mathematics is a creative and highly inter-connected discipline. 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 mathematics education provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

'Good mathematics teaching is lively, engaging and involves a carefully planned blend of approaches that direct children's learning…the pitch and pace of the work is sensitive to the rate at which children learn while ensuring expectations are kept high and progress is made by all children.'

(The Primary National Strategy 2006)

Aims

Our aims in teaching mathematics are that the children will:

• develop their conceptual understanding and fluency in mathematics in order to apply their skills, knowledge and understanding to real life situations

• achieve high standards in mathematics

• develop a positive 'can do' attitude, resilience in their learning and determination to succeed

• use and apply mathematical skills in range of real life situations with confidence, independence and understanding

• use mathematical vocabulary and equipment appropriately and accurately.

The National Curriculum for maths 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 have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems

• **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.

Planning and Organisation

Maths is a core subject in the National Curriculum and we use it as the basis for implementing the statutory requirements of the Program of Study for Mathematics.

Programmes of study include

- Number (number and place value, addition and subtraction, multiplication and division, fractions -including decimals and percentages)
- Ratio and proportion
- Algebra
- Measurement
- Geometry (properties of shapes, position and direction)
- Statistics

Daily objectives are identified within the weekly planning alongside teaching methods, differentiation, groupings, resources, key questions and key mathematical vocabulary (see appendix). The Senior Leadership Team and Mathematics Leader monitor mathematics planning in line with the annual monitoring schedule. Weekly planning is kept in planning files and available on the staff server. The Statutory Framework for Early Years Foundation Stage is used in Reception.

The planning is structured to allow full coverage and deep learning opportunities in each unit. Plans are adapted and revisited throughout the year according to need. Links are made between objectives in order to ensure links to real life, curriculum themes and to encourage conceptual understanding alongside procedural fluency.

Teaching and Learning Style

The staff at St Edmund's use the Concrete Pictorial and Abstract approach to the planning and teaching of mathematics. Our principle aim is to develop children's conceptual understanding and procedural fluency in mathematics.

Lessons are structured to include whole-class and group teaching as well as self-directed inquiry. Pair and group discussion is promoted as well as opportunities to develop team working skills. Children are actively encouraged to ask and seek answers to mathematical questions.

The children have the opportunity to use a wide range of resources such as number lines, number squares, digit cards, Numicon, bead strings, dienes, place value counters, double-sided counters and multilink to support their mathematical development.

Teaching and Learning assistants provide appropriate support to individuals or to groups of pupils, mostly within the classroom situation although small group interventions take place at the direction of the class teacher and in liaison with the Inclusion Manager.

Children are taught a range of strategies to calculate using the four operations as well as quick recall of number facts and mathematical information. Teachers demonstrate and explain using a range of teaching tools using appropriate and accurate mathematical language so that children can read, spell and pronounce mathematical vocabulary correctly. Children are encouraged to explain, reason and justify their ideas and methods in order to consolidate understanding and to progress their learning.

Monitoring, Evaluation and Review

Subject co-ordinators are responsible for monitoring the teaching of Mathematics throughout the school and report back regularly to all staff, the Senior Leadership Team and full Governing Body. The named governor for Mathematics meets with the subject co-ordinator annually.

Knowledge, Skills and Understanding

At the Foundation Stage:

Mathematics is taught in Reception using the Statutory Framework for Early Years Foundation Stage in Number, Shape, Space and Measures, working towards the Early Learning Goals.

The children are provided with rich opportunities to develop their understanding of number, calculating, measurement, pattern and shape and space through structured and child initiated play-based activities both indoors and out. Children's learning develops through playing and exploring, active learning, creating and thinking

At Key Stage 1 and Key Stage 2: Number

At Key Stages 1 and 2
Problem solving
Communicating
Reasoning
Counting
Number patterns and sequences
The number system
Using and understanding place value
Relationships between numbers
Mental methods for four operations
Solving numerical problems
Fractions

Number, Algebra and Ratio & Proportion

At Key Stage 2
Multiplication and division tables to 12x12
Fractions, decimals and percentages
Ratio and proportion
Written methods in number operations
Calculator methods
Using formulae
Solving number puzzles
Linear sequences
Ratio and proportion including shapes, percentages and fractions

Geometry and Measures

At Key Stages 1 and 2
Using and applying knowledge and understanding of shape, space and measures
Patterns and properties of shape
Properties of position and movement
Measures

Statistics

At Key Stage 2
Processing, representing and interpreting data including pie charts and use of the mean as an average

Pupils will learn by:

Playing
Sorting
Matching
Reflecting
Competition
Making patterns
Identifying patterns
Investigating
Proving and justification
Working systematically
Making conjectures
Asking questions
Analysing problems
Using symbols
Talk and discussion
Convincing others
Ordering and sequencing
Generalising
Visualising
Reasoning