ST EDMUND'S CATHOLIC PRIMARY SCHOOL

Consideration, Care and Courtesy

MATHEMATICS POLICY

PURPOSE OF STUDY

Mathematics is a creative and highly inter-connected 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 mathematics education therefore 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.

AIMS

The national curriculum for mathematics 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.

Information and communication technology (ICT)

Calculators should not be used as a substitute for good written and mental arithmetic. They should therefore only be introduced near the end of key stage 2 to support pupils' conceptual understanding and exploration of more complex number problems, if written and mental arithmetic are secure. In both primary and secondary schools, teachers should use their judgement about when ICT tools should be used.

Spoken language

The national curriculum for mathematics reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their mathematical vocabulary and presenting a mathematical justification, argument or proof. They must be assisted in making their thinking clear to themselves as well as others and teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

School 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.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

The framework for the teaching and learning of Mathematics in our school is the Primary Framework for Numeracy. This is delivered through a range of individually designed and commercially produced resources, most significant of which is the 'Collins Maths' scheme, which

is available to all classes. Additional resources include Challenge problem solving cards, ITP resources and iPad Apps.

ST EDMUND'S CATHOLIC PRIMARY SCHOOL

Consideration, Care and Courtesy

PROCEDURES

CLASSROOM MANAGEMENT GUIDELINES

Staff are aware of these factors and that effective classroom management is crucial for children to succeed in Mathematics. Staff create an effective learning environment by planning for these elements of classroom organisation using the following elements:

- There is a three – part structure to the daily maths lesson.
- This consists of an oral and mental starter, followed by a main teaching activity, and finally the plenary.
- The first and final parts of the lesson will almost always involve work with the whole class using the 'talking curriculum' approaches.
- The main teaching activity can be organised in different ways, depending on the age of the children, the stage of the 'block' or the 'strand' of work being taught, and what the teacher wants the class to achieve.
- The lesson will last from 45 – 60 minutes, depending on the age of the children.
- Staff determine the times for each part of the lesson, since these depend on their objectives for the lesson and the activities they have chosen for the children to do.
- There will be opportunity for self assessment and peer mentoring at the end of the lesson for pupils who ask for it.
- Marking in pupil books should be positive and inform the pupils of the next steps in order to enhance and progress their learning.
- In KS2, key concepts, technical vocabulary and procedures should be recorded in a 'strategy book', with pupils able to access this throughout the week and for homework.

ST EDMUND'S CATHOLIC PRIMARY SCHOOL

Consideration, Care and Courtesy

Section of lesson	What it comprises	Content may include…
Oral and Mental starter	• Mental maths warm – ups • Usually number work • Sometimes related to the main teaching activity and sometimes not directly related • Marking and assigning new homework on a Friday	• Counting (in 1s, 10s,100s, 0.1s,2s, 3s, 4s, etc) • Practising previously taught mental strategies • Recalling number facts • (+,-,x,--) • Imagining and talking about numbers, shapes… • Developing vocabulary • Pictorial 'Maths Mat' learning or display challenges
Main teaching activity	One or more of these: • Whole-class introduction to topic, with some paired work • Follow up teaching to the whole class or a group • Group work – usually three groups at most • Brief individual practice • Whole class investigation in pairs, 'sage and scribe' and talking teams. • Key concepts recorded in a strategy book.	Based on objectives from the framework for the appropriate year/s, one or more of: • Introducing new work • Extending or consolidating previous work • Using and applying what has been learned • Assessing what has been taught • Revising and further practice
Plenary	• Pupil self assessment of the learning taken place and whether a peer mentor is needed to help them. • Short reports from groups who have been working independently • Reflection on the lesson and summary of key facts and ideas • Explanation of what the class will do next	• Identifying and putting right common errors or misunderstandings • Identifying what to remember • Making links to other work • Giving work to do out of class or at home