



## ST. AUGUSTINE OF CANTERBURY CATHOLIC PRIMARY SCHOOL

### School Policy for Mathematics

#### **Mission Statement**

"I called you by your name, you are mine." Isaiah 43

The mission of our school is to support and further the teachings of Christ and His Church.

We welcome and embrace individuals of all abilities and cultural backgrounds.

We aim to enhance and celebrate their moral, physical, social and emotional development, so that they may reach their full potential in an atmosphere of stability, care and respect.

We believe that education is for all and in partnership with parents, carers, children and the wider Catholic community: we will strive and succeed in a wholly inclusive setting.

Date issued: November 2017

Date to be reviewed: November 2018

Reviewed by: [Miss Lisa Richardson](#) (Mathematics Co-ordinator)

## 1 Introduction

*"Mathematics is not just a collection of skills, it is a way of thinking. It lies at the core of scientific understanding, and of rational and logical argument."*

(Dr. Colin Sparrow, Lecturer in Mathematics, University of Cambridge)

Mathematics is important in everyday life; it has hundreds of applications, in arts, sciences, finance, health and leisure. At St. Augustine of Canterbury Catholic Primary School we realise the importance of mathematics, value mathematics and appreciate how it can contribute to many other subjects of the Primary National Curriculum, often in practical ways. We look for opportunities to provide enriching mathematical experiences for our children to develop a love for mathematics.

### 1.1 Rationale

Mathematics is a tool for everyday life. We aim to provide the children with a mathematics curriculum which will produce individuals who are literate, creative, independent, inquisitive, enquiring and confident. We also aim to produce a stimulating environment and adequate resources so that pupils can develop their mathematical skills to their full potential.

We aim to give all our children equal access to the whole mathematics curriculum, ensure that all children experience success, develop mathematical thinking, and enable each child to work independently and co-operatively. The intent of this policy for mathematics is to guide school practise to achieve this goal.

### 1.2 Our Aims and Objectives

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.

Using the Programmes of Study from the National Curriculum it is our aim at St. Augustine of Canterbury to develop:

- a positive attitude towards mathematics and an awareness of the fascination of mathematics
- competence and confidence in mathematical knowledge, concepts and skills
- an ability to solve problems, to reason, to think logically and to 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

## 2 The Mathematics Curriculum

At St. Augustine of Canterbury we follow the National Curriculum Programmes of Study for KS1 and KS2 and use the Rising Stars Primary Mathematics Planning Framework. This framework provides teachers with a structure for designing learning sequences covering the content of the National Curriculum and underpinned by its aims.

In the Early Years Foundation Stage we follow the EYFS development matters for Mathematics. Children are supported in developing their understanding mathematics in a broad range of contexts in which they can explore, enjoy, learn, practise and talk about their developing understanding. They are provided with opportunities to practise and extend their skills in these areas and to gain confidence and competence in their use.

## 2.1 The Programmes of study for Mathematics

The attainment targets for Mathematics for KS1 and 2 are:

- Number - number and place value
- Number - addition and subtraction
- Number - multiplication and division
- Number - fractions (including decimals from Year 4, and percentages from Year 5)
- Measurement
- Geometry - properties of shapes
- Geometry - position and direction
- Statistics (Year 2+)
- Ration and proportion (Year 6)
- Algebra (Year 6)

## 2.2 Planning Sequence

Many of these aspects of mathematics are connected and so do not sit in isolation. To develop the children's understanding it is necessary to make connections and to develop experiences through contexts, language, mathematical images/pictures and symbols.

The planning framework is built around four themes which make clear connections between areas of mathematics, encouraging children to use what they know and understand rather than treating each area of maths as separate and unconnected.

The mathematics within the four themes is also connected so that, as you progress through the framework, learning builds on previous experiences in a spiral, both from within the same theme and from across the other themes. The themes are as follows:

- Number Sense
- Additive Reasoning
- Multiplicative Reasoning
- Geometric Reasoning

In the Foundation Stage, there are two Early Learning Goals within mathematics - Numbers (N) and Shape, Space and Measures (SSM).

## 2.3 Planning

This is developed from the National Curriculum, using the programmes of study for each year group and the objectives from the Rising Stars Primary Planning Framework for Mathematics. Planning is a working document and as such is composed of medium term plans completed termly and ongoing plans produced on a week by week basis. At St. Augustine of Canterbury we value the development of all children and planning takes into consideration the needs of our children by recognising children with SEND or those who are Gifted and Talented (see SEND and G&T policy).

Through careful planning and preparation we aim to ensure that throughout the school children are given opportunities for:

- practical activities and mathematical games
- problem solving
- individual, group and whole class discussions and activities
- open and closed tasks, including opportunities for investigation and enquiry

- a range of methods of calculating eg. Using apparatus, mental, pencil and paper and formal methods.
- working with computers as a mathematical tool

## 2.4 Teaching and Learning

The nature of the mathematics lesson calls for a use of teaching strategies, which include:

- Introductory teaching to assess and review learning
- Direct teaching of new knowledge, skills and concepts, with opportunities to practise and apply learning
- Interactive whole class teaching
- Consolidation and further practice
- Interim review of achievement and progress
- Intervention support with groups
- Enquiry, extension enrichment work, problem solving, reasoning
- Summary assessment of progress over the unit with children

## 2.5 Time allocation

To provide adequate time for developing mathematics each class teacher will provide a daily mathematics lesson. This may vary in length but will usually last for about 45 minutes in Key Stage 1 and 50 to 60 minutes in Key Stage 2.

In the EYFS, children will engage in whole class input; focussed, adult-led activities; and child initiated learning activities to promote the development of Mathematics.

Links will also be made to mathematics within other subjects so that pupils can develop and apply their mathematical skills through real life contexts linked with different topics.

A typical 45 to 60 minute lesson in Year 1 to 6 will have the following components.

- *Oral and mental work across the range of mathematics.*

This will involve work to rehearse, sharpen and develop mental and oral skills. *Mental Maths and arithmetic tests carried out on a weekly basis inform the mental and oral focus for the following week.* Mental and oral starters do not necessarily have to link to the main learning objective.

- *The main teaching activity*

This will include both teaching input and pupil activities and a balance between whole class, guided grouped and independent work (groups, pairs and individual work).

- *A plenary*

This will involve work with the whole class to sort out misconceptions, identify progress, to summarise key facts and ideas and what to remember, to make links to other work and to discuss next steps.

Opportunities for assessment for learning should be made to gauge which children have met the learning objective.

At times there may be opportunities to develop skills and understanding of mathematics through additional activities, some of which may take place at home (See Homework policy).

## 2.6 Assessment, recording and reporting

Children's work will be assessed informally on a daily basis [with children who have not met the learning objective receiving same day interventions or attending "maths clinic"](#). Teachers record their assessments on their weekly planning sheets and are expected to address any issues arising from these in future planning, or during intervention sessions. Group or whole class observations may also be recorded on weekly plans by teaching assistants. Weekly planning is handed to the Mathematics Subject leader ([Miss Lisa Richardson](#)).

Formal assessments will take place each term using the Rising Stars progress tests. These are used to inform future planning and to identify gaps in the children's learning.

End of KS1 and KS2 take SATs tests in the summer term made up of reasoning and arithmetic papers.

Parents are informed of their child's progress during parent teacher consultations in the autumn and spring terms. A written report will be made for each child in the summer term, and EYFSP, teacher assessments for each attainment target and SATs results are made available to parents.

In collaboration with the children, individual curricular targets are set in maths. These are shared with parents at parents evening and in the children's contact books. [Parents are informed of targets that are set in mathematics following assessments. The children's progress towards achieving their target is reviewed termly and provided to parents.](#)

## **2.7 Special Educational Needs and Gifted and Talented**

Children with SEND are taught within the daily mathematics lesson and are fully included through the use of appropriate differentiation. Where applicable children's targets incorporate suitable objectives and teachers keep these objectives in mind when planning work.

Class teachers work collaboratively with the SENCO and additional support staff to ensure children are working towards their targets.

Within the daily mathematics lesson teachers not only provide activities to support children who find mathematics difficult but also activities that provide appropriate challenges for children who are high achievers in mathematics. Class teachers identify and plan for children who are on the G&T register for mathematics.

## **2.8 Cross-curricular links**

Throughout the whole curriculum, opportunities exist to extend and promote mathematics. Teachers take many opportunities to draw mathematical experience out of a wide range of activities. This will allow children to begin to use and apply mathematics in real contexts and is an integral part of the mathematics curriculum.

Each year, children will engage in an enrichment week to promote mathematics across all subjects. They will have the opportunity to use the outdoor environment to take part in maths trails, visits, etc. Real life maths contexts will develop children's understanding and enjoyment.

## **2.9 Computing**

Computing will be used in various ways to support teaching and motivate children's learning. Computing will involve computers, tablets and audio-visual aids. They will be used in a daily mathematics lesson when it is the most efficient and effective way of meeting the lesson objectives. Each child has a log in for Mathletics. This programme enables children to further develop their mathematical understanding at home or in school. It is also used by teachers to assign tasks linking to their learning in class.

## **2.10 Resources**

All teachers should organise an area within the classroom dedicated to regularly used mathematics resources. This area is easily accessible to all children and allows them to become familiar with all resources. Resources which are not used or required regularly are stored centrally in the KS1 and KS2 maths cupboards.

## **3 Equal Opportunities**

At St. Augustine of Canterbury we do not tolerate discrimination in any way. We strive to create an environment free of unfairness and prejudice. We incorporate mathematics into a wide range of cross-curricular subjects and seek to take advantage of multi-cultural aspects of mathematics. In the daily

mathematics lesson we support children with English as an additional language in a variety of ways, e.g. repeating instructions, speaking clearly, emphasising key words, using picture cues, playing mathematical games, encouraging children to join in counting, chanting, finger games, rhymes etc (see Equal Opportunities policy).

#### **4 The Role of the Co-ordinator**

It is the role of [Miss Lisa Richardson](#) the mathematics co-ordinator to:

- Ensure teachers are familiar with the NC programmes of study and the planning framework and help them to plan and deliver lessons
- Prepare, organise and lead CPD
- Work with the SENCO to deploy support staff to address needs within the school.
- Observe lessons and conduct book monitoring and pupil conferencing.
- Liaise with other mathematics co-ordinators, and attend available CPD.
- Inform parents through workshops.
- Discussions with the Headteacher, the SLT and the curriculum committee
- Monitor and evaluate mathematics provision in the school