St. Augustine's R.C. Primary School

Maths Policy

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Introduction

At St Augustine's R.C. Primary school we embrace the ethos and beliefs of the United Nations Convention on the Rights of the Child. Every child has the right to an education (Article 28) and the right to develop their talents (Article 29). We value every pupil and the contribution they have to make recognising. As a result, we aim to ensure that every child achieves success and that all children are able to develop their skills in accordance with their level of ability.

Mathematics is both a key skill within school and a life skill to be utilised throughout every person's day to day experiences. Education should prepare children to live responsibly and peacefully in a free society (Article 29).

We aim to develop lively, enquiring minds encouraging pupils to become self-motivated, confident and capable in order to solve problems that will become an integral part of their future.

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 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.

Rationale

Mathematics equips pupils with the uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem solving skills and the ability to think in abstract ways. Mathematics is important in everyday life. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a positive and enthusiastic attitude towards mathematics that will stay with them.

The National Curriculum for mathematics (2014) describes in detail what pupils must learn in each year group. Combined with our Calculation Policy, this ensures continuity, progression and high expectations for attainment in mathematics. It is vital that a positive attitude towards mathematics is encouraged amongst all of our pupils in order to foster confidence and achievement in a skill that is essential in our society.

In St Augustine's School we use the National Curriculum for Mathematics (2014) as the basis of our mathematics programme. We are committed to ensuring that all pupils achieve mastery in the key concepts of mathematics, appropriate for their age group, in order that they make genuine progress and avoid gaps in their understanding, as they move through education. Assessment for Learning, an emphasis on investigation, problem solving, the development of mathematical thinking and development of teacher subject knowledge are therefore essential components of our approach to this subject.

Aims

- To foster a positive attitude to mathematics as an interesting and attractive part of the curriculum.
- To develop the ability to think clearly and logically, with confidence, flexibility and independence of thought.
- To develop a deeper understanding of mathematics through a process of enquiry and investigation.
- To develop an understanding of the connectivity of patterns and relationships within mathematics.
- To develop the ability to apply knowledge, skills and ideas in real life contexts outside the classroom, and become aware of the uses of mathematics in the wider world.
- To develop the ability to use mathematics as a means of communicating ideas.

- To develop an ability and inclination to work both alone and cooperatively to solve mathematical problems.

- To develop personal qualities such as perseverance, independent thinking, cooperation and self-confidence through a sense of achievement and success.
- To develop an appreciation of the creative aspects of mathematics and an awareness of its aesthetic appeal.

Principles of Teaching and Learning

The school uses a variety of teaching and learning styles in mathematics lessons during each lesson.

Our teachers strive to:

- Build children's confidence and self-esteem.
- Develop children's independence.
- Allow all children to experience regular success.
- Contextualise mathematics.
- Use practical approaches to mathematics. (models and images)
- Encourage children to select appropriate resources independently.
- Challenge children of all abilities.
- Encourage children to enjoy mathematics.
- Develop a child's understanding of mathematical language.
- Learn from teachers, peers and their own mistakes.
- Allow children to ask questions as well as answer them.

Teaching resources

A coherent programme of high quality curriculum materials is used to support classroom teaching. Concrete and pictorial representations of mathematics are chosen carefully to help build both procedural and conceptual knowledge. Exercises are structured with great care to build deep conceptual knowledge alongside developing procedural fluency. The focus is on the development of deep structural knowledge and the ability to make connections. Making connections in mathematics deepens knowledge of concepts and procedures, ensures what is learnt is sustained over time, and cuts down the time required to assimilate and master later concepts and techniques.

Lesson design

Lessons are crafted with similar care and are often perfected over time with input from other teachers, drawing on evidence from observations of pupils in class. Lesson designs set out in detail well-tested methods to teach a given mathematical topic. They include a variety of representations needed to introduce and explore a concept effectively and also set out related teacher explanations and questions to pupils.

Teaching methods

Teachers are clear that their role is to teach in such a way that makes it possible for all pupils to engage successfully with tasks with the expected level of challenge. Concepts are often explored together to make mathematical relationships explicit and strengthen pupils' understanding. Precise questioning during lessons ensures that pupils develop fluent technical proficiency and think deeply about the underpinning mathematical concepts. There is no prioritisation between technical proficiency and conceptual understanding; in successful classrooms these two key aspects of mathematical learning are developed in parallel.

Pupil support and differentiation

Taking a mastery approach, differentiation often occurs through the support and intervention provided to different pupils, not in the topics taught, particularly at earlier stages. Differentiation in content is incorporated, when appropriate, to enable pupils to build understanding and confidence. In addition, questioning and the scaffolding individual pupils receive in class as they work through problems will differ, with higher attainers challenged through more demanding problems which deepen their knowledge of the same content. Pupils' difficulties and misconceptions are identified through immediate formative assessment and addressed with rapid intervention – commonly through individual or small group support.

Productivity and practice

Fluency comes from deep knowledge and practise. Explicit learning of multiplication tables is important in the journey towards fluency and contributes to quick and efficient mental calculation. Practise leads to other

number facts becoming second nature. The ability to recall facts from long term memory and manipulate them to work out other facts is also important. All tasks are chosen and sequenced carefully, offering appropriate variation in order to reveal the underlying mathematical structure to pupils.

It is important that we support all pupils in developing their mathematical thinking, both in order to improve their learning of key mathematical ideas and processes, and as an end in itself.
To provide adequate time for developing mathematics, maths is taught daily and discretely. However, the application of skills are linked across the curriculum where appropriate.

Maths Curriculum Planning

Mathematics is a core subject in the National Curriculum and we use the objectives from this to support planning and to assess children's progress. Staff use long term planning to ensure coverage of all areas of the National Curriculum and medium term planning to differentiate objectives according to the class which they teach.
It is the class teacher who completes the weekly plans for the teaching of mathematics. These weekly plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught.

Marking and presentation

Teachers follow the school's marking policy when marking books and presentation policy when guiding children as to how to present their work.

Monitoring and Evaluation

The Curriculum leaders, alongside the SLT, are responsible for monitoring and evaluating curriculum progress. This is done through book scrutiny, planning scrutiny, lesson observations, pupil interviews, staff discussions and an audit of resources.