St. Anthony of Padua Catholic Primary School

'Growing Together Following Jesus'

Mathematics Curriculum Statement

This mathematics policy is set within the context of the whole school aims and mission statement.

Our Curriculum

Mathematics is a creative and highly inter–connected discipline that has been developed over centuries, providing the solutions 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. (National Curriculum 2014)

Our curriculum is designed to cover the statutory content of the Early Years Foundation Stage Statutory Framework and the National Curriculum programmes of study and also address the aims of the Primary National Curriculum 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.

In the Statutory Framework for the Early Years Foundation Stage, Mathematics is a specific area of learning and at St Anthony of Padua we aim for our children to achieve the expected standard, as stated in the Early Goals for Number and Numerical Patterns, by the end of Reception.

Our Delivery

At St Anthony of Padua Catholic Primary School, we deliver an engaging, balanced mathematics curriculum which is accessible to all and that will maximise the outcomes for every child so that they know more, remember more and understand more. This teaching and learning of mathematics is monitored by the Headteacher and Mathematics subject lead through lesson visits, book looks, pupil and staff voice. Carefully planned CPD supports the teachers delivering a high quality mathematics curriculum.

We recognise the importance of early mathematics understanding and deliver a curriculum in the Early Years which provides a strong grounding in number so that children develop the necessary building blocks to excel mathematically through daily adult-led activities and child initiated play. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including pebbles, counters, Hungarian five frames and tens frames for organising counting - children develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, the curriculum

includes opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. We want our children to develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

This mastery approach to mathematics teaching is built upon throughout Key Stage One and Key Stage Two. Our curriculum is carefully sequenced so that prior learning is built on and the children are ready for the next steps in their learning journey. Our plans detail the statutory content to be taught each term, broken down into small progressive steps, beginning with securing place value and number so that children can confidently use and apply this knowledge when they progress through the other domains. Our calculation policy identifies efficient and accurate calculation methods for all pupils.

At the heart of our approach to the teaching and learning in mathematics is the belief that becoming a confident and competent mathematician is achievable for all. We have high expectations and encourage a positive 'can do' mindset towards mathematics in all pupils, creating learning experiences which develop children's resilience in the face of a challenge and carefully scaffolding learning so everyone can make progress. Our children's understanding of mathematics is supported using the concrete, pictorial and abstract model. The children's acquisition of mathematical language is an essential part of all lessons.

We use White Rose Maths materials to support the delivery of our daily mathematics lessons which embrace the following principles of this mastery approach.

- Lesson design links to prior learning to ensure all can access the new learning and identifies carefully sequenced steps in progression to build secure understanding.

- Examples, representations and models are carefully selected to expose the structure of mathematical concepts and emphasise connections, enabling pupils to develop a deep knowledge of mathematics.

- Procedural fluency and conceptual understanding are developed in tandem because each supports the development of the other.

- It is recognised that practice is a vital part of learning, but the practice must be designed to both reinforce pupils' procedural fluency and develop their conceptual understanding.

- Pupils are taught through whole-class interactive teaching, enabling all to master the concepts necessary for the next part of the curriculum sequence.

- In a typical lesson, the teacher leads back and forth interaction, including questioning, short tasks, explanation, demonstration, and discussion, enabling pupils to think, reason and apply their knowledge to solve problems.

- Use of precise mathematical language enables all pupils to communicate their reasoning and thinking effectively.

- If a pupil fails to grasp a concept or procedure, this is identified quickly, and gaps in understanding are addressed systematically to prevent them falling behind.

- Significant time is spent developing deep understanding of the key ideas that are needed to underpin future learning.

- Key number facts are learnt to automaticity, and other key mathematical facts are learned deeply and practised regularly, to avoid cognitive overload in working memory and enable pupils to focus on new learning.

Formative assessment for learning during mathematics lessons is essential to enable teachers to adapt their teaching to address the needs of the children. Recall tasks are used regularly to help the children remember core facts. Termly periodic assessments are carried out to assess our pupils are in relation to school and national targets. These assessments are made through teacher assessments that draw upon the mental image we have created about each child's progress through our informal day-to-day assessments and by looking at a sample of their work. Teacher judgements are supported through the use of NFER tests in Year 1 to Year 6. Statutory SATS are undertaken in Year 2 and Year 6. Year 4 children complete the Multiplication Tables Check

Children are assessed using a baseline in EYFS and teachers use this information to identify and address gaps in mathematical understanding. Children are then assessed at the end of the EYFS against the Early Learning Goals for number and numerical patterns. Children at the expected level of development will:

Number ELG

- Have a deep understanding of number to 10, including the composition of each number
- Subitise (recognise quantities without counting) up to 5; - Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

Numerical Patterns ELG

- Verbally count beyond 20, recognising the pattern of the counting system;
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; -
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

The SLT, Class Teachers and Support Staff at St Anthony of Padua Catholic Primary School are responsible for ensuring that all children have access to the complete Mathematics curriculum and make the greatest possible progress. Where appropriate, work will be adapted to meet pupils' needs and, if appropriate, extra support given. Pupils will be given suitably challenging activities. Gender and cultural differences will be reflected positively in the teaching materials used.

Our Children

At St. Anthony of Padua Catholic Primary School, we want all our pupils to experience deep, sustained understanding so that they become happy and confident mathematicians, throughout their learning and into their adult life. We aim to deliver a high quality mathematical education for our children so that they successfully acquire, consolidate and apply core mathematical knowledge. This starts in EYFS where we aim that all pupils count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers.

Mathematical confidence, with the ability to take on new challenges and yet draw on previous experience, ensures that the children are ready to face the mathematical realities of everyday life. During their time at St Anthony of Padua we want our children to:

- Enjoy maths through practical activity, exploration and discussion
- Become confident and competent with numbers and the number system
- Become fluent in the fundamentals of mathematics
- Develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- To reason mathematically by following a line of enquiry, spot relationships across domains, make generalisations and express an opinion using mathematical language

- Solve problems by applying their mathematics to a variety of routine and non-routine problems, including breaking down problems into a series of simpler steps
- Keep persevering in seeking solutions
- Develop an appreciation of the creative aspects of maths
- Have opportunities to practice the mathematics they have taught been at home