Saint Augustine Webster CVA's Subject Stories

Maths

"Being able to 'go beyond the information' given to 'figure things out' is one of the few untarnishable joys of life."

"Learners are encouraged to discover facts and relationships for themselves."
— *Jerome Bruner*

Intent

At Saint Augustine Webster Catholic Voluntary Academy, we aim to provide our children with the skills to become fluent in the fundamentals of mathematics, to be able to reason mathematically and solve problems by applying their Mathematics. These skills are embedded within lessons and established over time to develop consistency. At the centre of our mathematics curriculum is the belief that all children can be successful in the study of mathematics, delivering an inspiring, engaging and collaborative approach, based on the mastery concepts to the teaching and learning of mathematics, which is rich in mathematical terminology.

Our mastery curriculum promotes deep, long-term, secure and adaptable understanding so that children are able to become fluent in calculations and grow in confidence to reason mathematically and solve problems successfully. Through the collaborative mastery approach to mathematics, we aim to ensure all children develop resilience to become life-long mathematicians. The collaborative nature of our Mathematics curriculum continues to teach our children to respect others and their ideas and show kindness and support to each other. Each unit enables children to be numerate, independent, inquisitive, enquiring and confident. Children are encouraged to embrace mistakes as a part of learning and develop resilience through unpicking mistakes.

We aim to promote a positive attitude towards the subject, through developing enjoyment and providing opportunities for children to build on conceptual understanding of mathematics, before applying their knowledge to everyday problems and challenges. We recognise that all children should experience problem-solving and reasoning opportunities and therefore challenge is provided for all children.

Implementation

To ensure whole consistency and progression, the school uses the DfE approved 'Power Maths' scheme throughout KS2, using the White Rose Maths Edition, updated in 2022. This is fully aligned with the White Rose Maths Hub scheme, latest version 3.0, which is used in our EYFS and KS1. Teaching is underpinned by methodical curriculum design and supported by carefully crafted lessons and resources to foster deep conceptual and procedural knowledge, with the large majority of children progressing through the curriculum content at the same pace. Adapted learning is achieved by emphasising deep knowledge and through individual scaffolding, support and intervention.

All lessons in KS1 and KS2 begin with a spaced-retrieval starter called our 'Power Up'. This reviews previous learning in an effective and systematic approach to consolidate previous learning. It also supports children in beginning every Maths lessons with a positive 'can-do' attitude as they are revisiting known learning before accessing more challenging new learning, immediately giving children a sense of achievement when beginning each lesson.

In EYFS, the long-term plans have a clear progression from Nursery through to the end of Reception with all staff being aware of the end of year expectations for the Early Learning Goal for Mathematical Development. Carefully planned and prepared continuous provision, creates opportunities for children to be curious and explore mathematical concepts throughout their play. The adults are then able to support,

scaffold and challenge learning through play-based opportunities. This in turn, encourages the development of mathematical language and challenges deeper level learning. Mathematical learning is further embedded through many classroom routines, including a self-registration system. In addition to the continuous provisional learning, the reception children access the latest version of White Rose Maths. This is taught via two explicit Maths carpet time sessions, where new learning is explored practically, supported with the use of stem sentences to embed the mathematical vocabulary needed. Our provision areas are often enhanced for children to explore key learning linked to the current topics.

In KS1, all children are accessing the updated White Rose Maths scheme of learning, where key concepts have been broken down into even smaller steps to support learning and to more easily identify exactly where any intervention is needed, as we recognise that closing gaps early will help children gain greater success. In KS1, new learning is almost always presented with concrete manipulatives and pictorial representations to aid children in unpicking the mathematics and develop a secure understanding of number. Practical 'I do, we do, you do' approach leads children into their independent learning, where they are giving opportunities to go deeper with each mathematical concept with exposure to problem-solving and reasoning questions throughout their curriculum, supported with the use of stem sentences, just as is done in EYFS.

To support our ambitious Maths curriculum, Reception and KS1 also complete the Maths Hub Mastering Number programme to secure firm foundations in the development of good number sense for all children so that children are able to leave KS1 with fluency in calculation and a confidence and flexibility in number.

In KS2, the White Rose Edition of Power Maths is used to ensure a consistent approach to Maths lessons and the sequence of learning throughout the school. New concepts are shared within the context of an initial related problem, which children are able to discuss in partners. This initial problem-solving activity prompts discussion and reasoning, developing mutual respect and kindness towards others. Children may use manipulatives in KS2, as well as KS1, to help represent new learning, carrying learning through a concrete, pictorial and abstract approach. Teachers use carefully-crafted questions to draw out children's discussions and their reasoning. The class teacher then leads children through strategies for solving the problem, including those already discussed. Independent work then provides the means for all children to develop their fluency further, before progressing to more complex reasoning and related problems, with further challenge being supported through White Rose reasoning and problem-solving resources for more able children.

Mathematical topics are taught in blocks, to enable the achievement of 'mastery' over time. Each lesson phase provides the means to achieve greater depth, with more able children being offered rich and sophisticated problems, as well as exploratory, investigative tasks within lessons as appropriate. This is achieved through procedural and conceptual variations in the question's children are approaching.

Our school has a supportive ethos and our approaches support the children in developing their collaborative and independent skills, as well as empathy and the need to recognise the achievement of others. Children can sometimes underperform in mathematics because they think they can't do it or are not naturally good at it. The White Rose and Power Maths programmes address these preconceptions by ensuring that all children experience challenge and success in mathematics by developing a growth mindset.

Regular and ongoing assessment informs teaching, as well as intervention, to support and enable the success of each child.

Impact

At Saint Augustine Webster Catholic Voluntary Academy, through the implementation of this curriculum, children will leave Year 6 being fluent in the fundamentals of mathematics, to be able to reason mathematically and solve problems by applying their Mathematics. In order for this to happen, the Maths

lead will with work closely with the Senior Leadership Team, taking responsibility for the monitoring of Mathematics curriculum at least half termly. This monitoring will take the form of:

- Book assurance
- Lesson observations and feedback
- Learning walks
- Pupil voice
- Termly data analysis

The impact of the Mathematics curriculum will be monitored through on-going assessment during daily Maths lessons, emphasising the power of questioning to develop the ability for children to work collaboratively and verbally develop reasoning skills during lessons, to inform formative assessments, that will be updated regularly on to Otrack, against National Curriculum objectives for Maths, which have been further broken down, where appropriate, to reflect the small steps in the WRM and PM curriculum.

As part of each block, children will use the previous year groups White Rose end of block assessments to identify any gaps before beginning their own year groups curriculum and allow teachers to adapt teaching and ensure all Ready to Progress criteria are met.

At the end of each Power Maths or White Rose block, children will complete the end of unit check to monitor progress, which is then used to plan interventions where necessary and inform further daily reviews 'Power Up's'. This will be then be combined with termly summative assessments, using the White Rose end of term assessments, to make formal judgements, which will then be logged on Otrack. At the end of each year, formal end of year assessments will be completed in KS1 and KS2 to assure ARE judgements too.

Data from formal assessments will be collected termly and all teachers will undergo Pupil Progress meetings termly, where data is analysed and discussed with the Senior Leadership Team.

If you were to walk into Maths lessons at Saint Augustine Webster, you would see:

- In EYFS, concrete manipulatives and appropriate representations being used to support the development of children's Mathematical understanding. New learning being embedded through provision and daily routines throughout the EYFS unit.
- In KS1, all lessons begin with a 'Power Up' based on spaced retrieval to recap previous learning. This is then followed by use of the WRM sequence of learning, using predominantly concrete and pictorial representations before moving into the abstract concepts of Maths. All learning will follow and, 'I do, we do, you do' approach, working collaboratively with mathematically rich discussions.
- In KS2, lessons consistently structured as follows: Power Up (daily review of previous learning based on spaced retrieval), Discover (initial problem to engage children in collaboration and discussion about the mathematics and generate curiosity), Share, Think Together (I do, we do, you do approach as children begin to apply knowledge they have learned), Independent Practice and Reflect (verbally evaluate understanding of the key concept for the lesson).
- Lessons built with 'small steps' to enable all pupils to achieve.
- Children who are able to work both independently and collaboratively.
- Manipulatives and representations/models being used support children in understanding the reasoning behind mathematical operations (particularly in KS1).
- Children accessing questions that are carefully varied to ensure progress in skills and deepen understanding.
- Collaboration and support.
- Children engaging in Power Maths (KS2) and White Rose challenges (KS1 & 2) to deepen their understanding of the concept being explored, through a range of problem-solving and reasoning questions.

Pupil Voice

KS1

“I like the Power Ups because it gets you ready.”

“I like to work with my partner.”

“Because they are challenging for me and I love to do it.”

95% of children who completed the survey (41) said they enjoy learning Maths at St Augustine Webster.

KS2

“It’s good because you get given scenarios in the maths questions which help you.”

“I enjoy working with my partner and if one of us gets stuck we help each other.”

“It is challenging me and it is fun.”

“I strongly agree because they always have challenges and I like having a challenge. Also, we all do a practice activity before going into the actual lesson.”

“I strongly agree that I like maths at our school because there is lots of challenges and I really like. Also, if we finish our maths early, we get to do a hard challenge to test our knowledge on what we learned that day. Furthermore, when we start the lesson for the day we get to share our ideas with each other and that help me understand what we are learning and how we do it e.g. like how to set out and to work it out.”

78% of children who completed the survey (148), really enjoy or enjoy learning Maths at St Augustine Webster.

78% of children who completed the survey (148), felt that Power Maths challenges them.

97% of children who completed the survey (148), felt that they were making progress in Maths.