



St Joseph's Catholic Academy

Maths Curriculum Intent, Implementation and Impact

At St. Joseph's, we see success in Mathematics as a powerful tool for social mobility, giving children the knowledge, communication skills and critical thinking skills to be productive citizens in every aspect of life. It is a creative and highly interconnected subject underpinned by the three statutory aims of the National Curriculum: fluency, reasoning and problem solving. We wish for children to gain rich experiences during their time with us using their God given talents purposefully, knowing that they can be anything they want to be. As such, we aspire for every child to achieve daily success in maths, leaving each lesson not only with new knowledge but with a love of the subject.

Intent

Our intent is for all children to become critical thinkers. We believe by encouraging critical thinking in maths, students will learn to approach problems more thoughtfully, learn to analyse and evaluate math concepts, identify patterns and relationships, and explore different strategies for finding the solution. We aim for all our children to be proficient users of mathematical language, using maths as a basis to improve wider communication skills as well as using subject specific vocabulary to aid their mathematical thinking in different contexts.

Implementation

At St. Joseph's, we implement an inclusive Maths curriculum that meets the statutory requirements of the National Curriculum. We use 'Power Maths' as a spine in Reception, KS1 and KS2. In Nursery, we use Master the Curriculum which is mapped against the recommendations made in "Development Matters", as well as being aligned with White Rose. In turn this provides a sequenced, progressive and aligned curriculum from Nursery to Year 6, which is additionally supported by other well aligned mathematical opportunities.

Daily maths lessons take place using Power Maths resources as a basis, which have been judged as fully delivering a mastery approach and are on the Department for Education's list of recommended textbooks. Doing so not only ensures consistency of pedagogy throughout the school but it also ensures that in each unit, knowledge and concepts are built upon coherently and progressively.

The curriculum overview outlines what each year group is learning and when, supported by progression documents matched to the National Curriculum. Flexibility is built into the Power Maths programme so there is no one-to-one mapping of lessons and concepts meaning teaching can be paced according to the class. While some children will need to spend longer on a particular concept (through interventions or additional lessons), others will reach deeper levels of understanding.

The Power Maths scheme has been government approved because it is unpinned by an evidence-informed pedagogical sequence. It has been written so that careful sequencing of content, instruction and rehearsal shows pupils new and consistent patterns of useful information. These then form the basis of further concepts, rules and principles that pupils store in their long-term memory. Lessons follow the format of a "**Connect Learning**" (a prior-

learning starter activity to be used if necessary), **Discover** (where learning is framed in a real-world problem that the children must work together to explore), **Share** (an opportunity for pupils to discuss and compare the different methods and strategies they used), **Think Together** (where pupils apply new learning in a supported manner), before finally completing **Independent Practice** activities.

In addition, children complete 'Daily Fluency' activities for homework – four questions designed to engage prior learning and boost children's procedural knowledge by targeting core mathematical operations. Declarative knowledge is boosted and supplemented through dedicated 'Fluency Time', where time is especially dedicated to learning number facts, such as multiplication tables, as well as focusing on efficient and fluent calculation strategies.

During the early years of Maths at St. Joseph's, there is a deliberate focus on foundational knowledge, particularly proficiency in number as this gives pupils the ability to progress through the curriculum at increasing rates later on. This is achieved by the use of Power Maths materials and supplemented by the NCETM Mastering Number programme.

A series of stimulating lessons are planned, with clear learning objectives, to develop fluency, reasoning and problem solving and the use of subject-specific vocabulary. Children are encouraged to physically represent mathematical concepts using concrete resources, pictorial (models and images) to demonstrate and visualise abstract ideas, alongside numbers and symbols in order to gain a deeper understanding on concepts:

Concrete - Examples include structural apparatus such as cubes, counters, 3D shapes or weighing scales as well as contextual objects such as teddies or coins for counting or sorting.

Pictorial - Examples include children's own mark making and simple drawings, sketches, number lines and diagrams.

Abstract - Examples include young children's emergent graphics, early number formation, number sentences and written expanded methods.

Fluency is a fundamental aspect of mathematics, ensuring that pupils have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately. Children become confident in the two types of fluency:

Conceptual fluency, e.g. exploring the five strands of place value, (counting, recognition of cardinal numbers, knowing what each digit in a number represents, understanding our base-10 structure and exchanging), what an equivalent fraction is and identifying key features of different representations of data.

Procedural fluency, e.g. $+$ $-$ \times \div calculation methods linked to whole numbers, fractions and decimals and exploring step-by-step mental and written methods.

Children are given regular opportunities to recall known facts, develop number sense, know why they are doing what they are doing and know when it is appropriate and efficient to choose different methods and will apply skills to multiple contexts e.g., multiplying and dividing by 10 to convert units of measurements.

Reasoning and problem solving is planned and interwoven into the mathematics curriculum.

Reasoning questions are explicitly taught and modelled through the use of discussion, partner talk, manipulatives, written words using stem sentences.

Impact

In Maths lessons at St. Joseph's, there is an emphasis on pupils learning through carefully curated discussion and discovery, facilitated by the teacher where the learning takes place 'at the desk, not the whiteboard'. This approach ensures that knowledge gained is long-lasting, as well as resulting in learners who are independent, think critically and have a love for the subject.

Our well-planned Maths curriculum ensures that children are fluent and confident mathematicians, who exude an enjoyment and curiosity about the subject. Our children are enthusiastic and competent mathematical problem solvers, within maths lessons and across the curriculum. Children are well prepared for the next stage in their education as well as having the communication and problem-solving skills to achieve in the work place in the future.

The impact of effective maths teaching should be highly measurable both in lessons and over time. Assessment for Learning opportunities are present during each stage of the lesson (Discover, Share, Think Together, Independent work). Teachers are highly responsive to pupils' needs throughout the lesson, and then feedback 'in the moment' addresses any misconceptions. Where we see children not keeping pace, teachers respond rapidly to support. Termly summative assessments ensure that teachers have a strong overview of achievement in Mathematics and through skilled question level analysis, they understand which facts and concepts to target in future lessons, through homework or daily starter activities.

Overview

At St. Joseph's Catholic Academy, we have acted upon the National drive to improve maths and develop mathematical learners and thinkers. We have connected with our local Maths Hub as well as seeking support, guidance and training from external maths mastery experts. We quality assure all CPD, ensure it is evidence informed, and design it so that the teachers have the best opportunity to deliver quality first teaching.

The importance of strong middle leadership and collaboration within our Multi Academy Trust is recognised and highly valued.