Mathematics at St Margaret's
Intent, Implementation & Impact

Everyone is valued. Everyone is motivated. Everyone achieves.

Intent

We aim to develop curious, enquiring minds and encourage our pupils to become self-motivated, confident, independent and capable learners so they can solve problems and acquire a secure, long-term and adaptable understanding of maths. Mathematics is relevant to their world and provides vital knowledge and skills for every-day life, both within school and beyond.

Our teachers create engaging mathematics for all learners and encourage creativity, reasoning and problem solving. We want to help children develop an appreciation of, and enjoyment in maths through rich and challenging activities. In addition, we help them appreciate how it relates to learning in other subjects, across the curriculum and in the wider world. We promote that we are all mathematicians and we foster positivity and a 'can do' attitude towards mathematics.

In line with The National Curriculum, we aim to develop:

- Positive and determined learners who tackle mathematical challenges positively
- Confident learners who recall, use and apply mathematical knowledge, concepts and skills fluently in a variety of contexts
- Reasoning, problem solving and logical thinking, including enquiry and investigation
- Problem solvers who break problems down into a series of logical steps
- Children who work systematically and accurately
- Both independent and collaborative work to enhance learning
- Confident communicators who ask and answer questions, share ideas, learn from mistakes and explain their reasoning using mathematical language
- Pupils who can apply mathematics across the curriculum and in real life

At St. Margaret's, we use a Mastery style approach to teaching and learning, adapted for our setting and learners, using the '5 Big Ideas':

- coherence
- structures & representation
- mathematical thinking
- fluency
- variation

Teaching for mastery assumes everyone can learn and enjoy mathematics. Mastering maths means pupils of all ages acquire a deep, long-term, secure and adaptable understanding of the subject and engage fully as learners who reason and seek to make connections.

Mastery with greater depth is best achieved by enrichment and deepening of content rather than acceleration into new content. Within our school, we believe 'working at greater depth' means a child has mastered the expected learning for their age and is able to deepen their understanding and apply it to different contexts in more detail. Children who are 'working at greater depth' will be able to reason more precisely, complete more complex problems and suggest different strategies and approaches to solving calculations, demonstrating creativity and imagination. Children will be confident to apply their knowledge consistently, confidently and fluently and be able to explain what they have been doing to others, including teaching other children what they have learned.

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Implementation

At St. Margaret's, we use a Mastery style approach to teaching and learning, adapted for our setting and learners. The National Curriculum and recommended resources (Power Maths & White Rose Hub) inform our curriculum design and planning. White Rose Maths Hub & Power Maths schemes of learning are used to support medium term planning and as exemplification for maths objectives. We also use a range of other planning resources including those provided by the NCETM and NRich to enrich our pupil's mathematics.

Key documents that set out our curriculum design for maths:

a) Curriculum overview– a thumbnail sketch of maths across KS2
b) A maths progression map showing the key knowledge and skills (including Ready to Progress Criteria) that our children should acquire across Key Stage 2.
c) A yearly curriculum overview of how we cover concepts in each year group (including Ready to Progress Criteria & Problem-Solving opportunities)

In addition, weekly planning documents outline the implementation of our longer-term intent.

Daily maths lessons are taught in mixed ability classes and include the following key elements (found in our 'Expectations in Maths' document):

- Fluent in 5! / Flashback 4 /Gimme 5! regular practice of number skills to start the lesson
- Quick recap of previous day's learning
- Maths' talk/Think, Pair, Share/Guided Practice- teacher led to introduce learning
- Main task/Independent practice
- Regular pupil evaluation pit-stops throughout the lesson
- Regular teacher pit-stops/ mini plenaries where required- teacher 'facilitating'
- Immediate, ongoing feedback
- Pupils self-marking
- Reflect time built into lessons to review learning/make links

Fluency, reasoning & problem solving are included within each week's/unit's planning and learning. The WRH small steps approach is followed and when the majority of children are secure in the objective, learning moves on. There are regular opportunities to explore problem solving /investigations and reflect time is built into lessons to review learning/make links. Key areas and concepts are revisited and the Calculation Policy is followed.

Pupils' progress is monitored each lesson through formative assessment and gaps arising are dealt with through additional targeted support and intervention using a 'Same Day Intervention' (SDI) and 'Next Day Intervention' (NDI) model. 'Focus pupils' who require additional ongoing input are identified and supported and groupings are adapted accordingly. DoodleMaths is utilised as an intervention support programme and Fluency Bee intervention is used for identified pupils in Year 3. Mastering Number at KS2 is being introduced for Year 4 and Year 5.

At St. Margaret's we are an NRich Problem Solving School. Problem solving lessons are explicitly planned within the units (see curriculum overviews) with an agreed lesson structure and process followed (see 'Expectations in Maths' document and problem-solving lesson template)- Understand, Communicate, Reflect.
We have a shared belief that:

- Mathematical ability is not fixed: everyone can learn and make progress
- Problem-solving often involves taking wrong turns and making mistakes: every learner has the right to struggle and the right to enjoy success
- Everyone should have the opportunity to develop the skills and attitudes necessary to become confident problem-solvers
- Problem-solving can motivate learners to learn new mathematics, apply previous learning and make mathematical connections

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Activities are planned using a range of approaches but children are encouraged to work independently, collaboratively and like a mathematician – making connections, looking at patterns, discussing possibilities, recording systematically and explaining and evaluating. Mathematical vocabulary is modelled by adults and highlighted in the classroom and children are taught to explain their ideas and methods and to develop their verbal mathematical reasoning skills.

Impact

Children have developed resilience, independence and a secure foundation in mathematics. They can confidently recall and apply their knowledge, facts and strategies to different situations. They can think and reason critically and logically plus work independently and collaboratively. They are happy and confident to participate in mathematics activities.

Pupil progress is continually monitored against learning objectives for the lesson and against year group tracking grids in the longer term to monitor progress against expected age-related attainment.
On a day-to-day basis, the 'Same Day Intervention' (SDI) and 'Next Day Intervention' (NDI) model is used.
Summative assessments are completed at the start and end of each unit and the end of each term. These results are discussed during pupil progress meetings and support staff to identify gaps in learning and areas to prioritise. Focus pupils are then identified and supported.

We measure, assess and monitor the impact of the curriculum through the following:

- Pupil self-evaluation and peer evaluation
- Monitoring of pupil voice to check pupils have retained knowledge/skills
- Children should have acquired key vocabulary and concepts/knowledge
- Formative assessment used to diagnose and address learning gaps
- Baseline on entry to Year 3
- Pre and End of block formative assessments/termly and end of year summative assessments
- Assessment/Outcomes – Attainment against expected outcomes during the year and at the end of each year
- Assessment/Outcomes – Progress made from individual starting points
- Analysis of assessment, diagnosing knowledge and learning gaps
- Monitoring – of books and outcomes to check curriculum delivery, quality learning and pupil understanding
- Monitoring – learning walks to check learning is delivered effectively
- Monitoring – subject leads reflect and analyse effectiveness of curriculum teaching and learning
- Monitoring – subject leads check that the curriculum meets the needs of all pupils through quality teaching, with tailored support and intervention where appropriate
- Reflective staff feedback, joint staff sessions and questionnaires inform CPD to maintain and enhance teacher expertise
- Maths Ambassadors' meetings to maintain & raise the profile of the subject

The vast majority of children reach end of year or end of key stage expectations and a significant number exceed this, which is demonstrated by the data from our statutory end of Key Stage 2 assessments, in addition to our internal assessments.

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