

Mathematics Policy

All the activities in St Mary's School are carried out in the Christian spirit and should promote the school values of Faith, Family and Future – Building a positive future for all as part of God's loving family.

St Mary's School prides itself in providing equal opportunities for all members of its family regardless of disability, religion, sexual orientation, culture, gender, ethnic origin, colour or age. All pupils have access to the mathematics curriculum, and the right to a learning environment which dispels ignorance, prejudice or stereotyping.

This policy is aligned with the National Curriculum for Mathematics (DfE, 2014) and supports the aims of the Education Inspection Framework (Ofsted, 2023)

This policy should be read in conjunction with the Teaching, Learning, Curriculum and Assessment Policy, Marking and Feedback Policy and SEND, Inclusion and Equality Policy.

This policy is underpinned by the principles of teaching for mastery as promoted by the NCETM and Maths Hubs programme, drawing on international best practice.

Intent

1. To 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 their knowledge.
2. To **reason** mathematically by following a line of enquiry, building relationships, developing an argument and using mathematical language.
3. To **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing confidence, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
4. To acquire a **deep, long-term**, secure and adaptable understanding of Mathematics.
5. To create a **love** of mathematics through an exciting and engaging mathematics curriculum.
6. To engage with mathematics in a **variety** of different ways e.g. active Mathematics, use of resources, use of technology, open-ended challenges.
7. To develop the ability to **explain mathematical** thinking orally and in writing using accurate mathematical vocabulary.

Implementation

Strategies are in place within school to develop each of the key areas of mathematics, ensuring coverage of the National Curriculum 2014, and systematic coverage of key skills.

Teaching principles

- Teaching is underpinned by a belief in the importance of mathematics and that the vast majority of children can succeed in learning mathematics in line with national expectations for the end of each key stage.

- The whole class is taught mathematics together, with no differentiation by acceleration to new content. The learning needs of individual pupils are addressed through careful scaffolding, adaptive teaching, skilful questioning and appropriate rapid intervention, in order to provide the necessary support and challenge.
- Factual knowledge (e.g. number bonds and times tables), procedural knowledge (e.g. formal written methods) and conceptual knowledge (e.g. of place value) are taught in a fully integrated way and are all seen as important elements in the learning of mathematics.
- The reasoning behind mathematical processes is emphasised. Teacher/pupil interaction explores in detail how answers were obtained, why the method/strategy worked and what might be the most efficient method/strategy.
- Interim methods (e.g. expanded methods for addition and multiplication) to support the development of formal written algorithms are used as stepping stones into efficient, compact methods.
- Precise mathematical language is always used by teachers, so that mathematical ideas are conveyed with clarity and precision. Pupils are required to do the same (e.g. when talking about fractions, both the part and its relationship to the whole are incorporated into responses: "The shaded part of the circle is one quarter of the whole circle").
- Conceptual variation and procedural variation are used extensively throughout teaching, to present the mathematics in ways that promote deep, sustainable learning.
- Carefully devised exercises employing variation are used. These provide intelligent practice that develops and embeds fluency and conceptual knowledge.
- Sufficient time is spent on key concepts (e.g. multiplication and division) to ensure learning is well developed and deeply embedded before moving on.
- Frequent additional practice, outside the lesson, is encouraged, in order to develop pupils' fluency and consolidate their learning.

Mathematical Planning

The National Curriculum 2014 has six main areas of study:

- Numbers (including place value, addition, subtraction, fractions, decimals and percentages)
- Ratio and Proportion
- Algebra
- Measurement
- Geometry
- Statistics

Teachers use the NCETM resources, Oak Academy and I See Reasoning to support the development of maths mastery.

Mastering Number (NCETM National Project) for Rec, KS1 and KS2

At St Mary's C.E. Primary we have a commitment to continual development of maths mastery. We have committed to the Mastering Number project. The KS1 project aims to secure firm foundations in the development of good number sense for all children from Reception through to Year 2. The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number. Attention will be given to key

knowledge and understanding needed in Reception classes, and progression through KS1 to support success in the future.

Example of intended outcome of Mastering Number in Year 1:

Children: to develop

- good number sense
- fluency with number bonds within 10
- mathematical habits of learning, including: becoming mathematically observant (noticing and visualising), reasoning and explaining, working systematically, using spatial reasoning skills in number work.

Teachers: to develop

- understanding of year group expectations in relation to 'ready-to-progress criteria'
- subject knowledge
- pedagogical techniques which will improve pupils' fluency.

The Mastering Number project in Year 3 reinforces the concepts taught in Year 2 and enables all children develop mathematical thinking.

The KS2 Mastering Number project enables pupils in Years 4 and 5 to develop fluency in multiplication and division facts, and a confidence and flexibility with number that exemplifies good number sense. Professional development materials are utilised to cover short sessions each week. Year 6 pupils use the Mastering Number Project to embed concepts and consolidate their fluency through targeted arithmetic and reasoning practice to prepare for end of KS2 assessments

Lesson design - Teaching a knowledge rich curriculum

- Programmes of study and lesson content are carefully sequenced, in order to develop a coherent and comprehensive conceptual pathway through the mathematics. At St Mary's C.E. Primary we use high quality resources underpinned by the NCETM curriculum prioritisation map and implemented through the support of the Oak Academy resource.
- Learning is broken down into small, connected steps, building from what pupils already know.
- Difficult points and potential misconceptions are identified in advance and strategies to address them planned.
- Key questions are planned to challenge thinking and develop learning for all pupils.
- Contexts and representations are carefully chosen to develop reasoning skills and to help pupils link concrete ideas to abstract mathematical concepts.
- The use of high quality materials and tasks to support learning and provide access to the mathematics, is integrated into lessons. These may include independent practice, visual images and concrete resources.
- Technology is used purposefully to enhance mathematical understanding, for example through digital manipulatives, interactive representations, and online learning platforms.

Features of teaching

- Lessons are sharply focused; digression is generally avoided.
- Key new learning points are identified explicitly.
- There is regular interchange between concrete/contextual ideas and their abstract/symbolic representation.

- Mathematical generalisations are emphasised as they emerge from underlying mathematics, which is thoroughly explored within contexts that make sense to pupils.
- Making comparisons is an important feature of developing deep knowledge. The questions "What's the same, what's different?" are often used to draw attention to essential features of concepts.
- Repetition of key ideas, often in the form of whole class recitation, is used frequently. This helps to verbalise and embed mathematical ideas and provides pupils with a shared language to think about and communicate mathematics.
- Teacher-led discussion is interspersed with short tasks involving pupil to pupil discussion and completion of short activities.
- Formative assessment is carried out throughout the lesson; the teacher regularly checks pupils' knowledge and understanding and adjusts the lesson accordingly.
- Gaps in pupils' knowledge and understanding are identified early by in-class questioning and by reviewing homework. Where possible, they are addressed rapidly through individual or small group intervention, either on the same day or the next day, separate from the main mathematics lesson, to ensure all pupils are ready for the next lesson.
- Teachers discuss their mathematics teaching regularly with colleagues, sharing teaching ideas and classroom experiences in detail and working together to improve their practice.

A typical Mathematics lesson will include:

- **Key Vocabulary** – introduced to ensure a shared understanding is achieved.
- **New learning** – a step by step approach – journeys through the mathematics, identifying the key points through small, coherent steps – the new knowledge. Within the new learning, difficult points/ misconceptions are planned for. Questions are used to challenge/support thinking.
- **Guided practise** – through a 'my turn, your turn' approach the children practise the key concepts using variation theory. Opportunities to develop reasoning and deep understanding (contexts and representations of mathematics) are carefully planned discussion and feedback from students is utilised.
- **Independent practise** – Use of quality resources including Oak Academy, NCETM PD Lead materials, I See Reasoning to promote depth of understanding of the concepts.
- **Live marking** is utilised as an effective form of assessment to address misconceptions from the lesson. Children are encouraged to review fluency errors as identified through the live marking and highlighted examples.
- In Reception, the lesson follows the Mastery in Number programme, enhanced by spatial reasoning planning and resources.

Inclusion – Achievement for All.

It is the right of every child at our school to be provided with a meaningful and enjoyable education regardless of gender, ethnicity, disability or special need. Staff will always ensure that every effort possible is made to support or challenge children with specific needs in an environment where every child is equal. Pupils who grasp concepts rapidly will be challenged through depth of understanding and not be accelerated through new

content. Those who are not sufficiently fluent with earlier material will consolidate their understanding, including through additional practice, before moving on.

Environment

All classrooms will have a Mathematics working wall. This will be regularly updated and reflect current mathematics learning and vocabulary. It will support the key concepts of mastery; representations and structures, fluency, coherence, mathematical thinking and variation. It can also display age appropriate resources to support children's learning, such as deans, cuisenaire rods, fraction walls etc. All mathematics equipment will be clearly labelled and children encouraged to have regular access to concrete resources known as mathematics manipulatives.

Early Years Foundation Stage

We teach mathematics in our Foundation Stage where we relate the mathematical aspects of the children's work to the objectives set out in the Early Learning Goals, which underpin the curriculum planning for children during the Early Years Foundation Stage. We give all the children ample opportunity to develop their understanding of number, measurement, pattern, shape and space, through varied activities that allow them to enjoy, explore, practise and talk confidently about mathematics. The curriculum is underpinned by the NCETM Mastering Number curriculum. Mathematical thinking and investigation is incorporated into the Continuous Provision, with focussed and purposeful tasks as well as access to a range of resources to develop independent thinking.

Presentation of Mathematics Work

In mathematics books, all children will write in pencil. Each lesson must include the short date on the left-hand side of the page with the focus of learning written underneath. Both must be underlined with a ruler. Children are encouraged to present their written calculations in pencil as clearly as possible by putting one digit in a square. A ruler must be used for drawing straight lines. The emphasis of neatly produced work is important as misalignment can lead to incorrect calculations.

Assessment

Assessment for learning (AfL) - formative assessment

AfL is any assessment activity that informs the next steps to learning. The key message is that AfL depends crucially on actually using the information gained. Our belief is that by creating a two-way process of discussion through live marking, we create an environment where all learners have the confidence that they will improve.

Each lesson will have a specific focus/objective. The children will identify and discuss this at the start of their work. In line with a mastery approach, it is the expectation that all pupils reach the same learning objective at varying depths of understanding. Pupils will be encouraged to class mark, whenever relevant, and time will always be given to respond to improvements.

Formative assessment in EYFS

Mathematical development in EYFS is tracked through ongoing formative assessment and the EYFS Profile. The Foundation stage team use formative assessment to aid their planning, support all children and make sure that they all achieve to the best of their abilities. The EYFS team engages in formative assessment by taking photographs, by doing spot observations and by doing planned assessments.

Children's work is marked when appropriate. From there, teachers' planning is informed and individual need can be addressed e.g. support or additional challenge. Planning is annotated using evaluation sheets. Teachers indicate whether objectives have been understood, whether concepts have been delivered but not grasped or partly grasped. This provides a monitoring tool for planning and pupil progress. Specific pupil's names are used in evaluations to aid planning for individual needs.

Assessment of learning (AoL) - summative assessment

We make termly summative judgements of each child's achievement using NFER assessments and Oak Academy assessment questions.

Some of the evidence base for these assessments may also come from day-to-day class work, this is backed up by evidence that comes from specific tasks and tests used to assess the degree of retention, independence and breadth of application shown. We use these judgements to assess progress and achievement against individual, school and national targets. We identify and target those children not making expected progress and intervene accordingly.

Assessment is tracked at least termly using the school's A3 tracking system and Insight Assessment tool. Pupils' progress is discussed in Pupil Progress Meetings. Children who haven't made progress are discussed and made note of so that they become a focus in teacher's planning for the next term. We pass all assessment and tracking information on to the next teacher at the end of the year, so that s/he can plan for the new school year.

Parents receive termly opportunities to discuss their child's progress and attainment at Pupil Learning Meetings. We also write a summary of each child's progress and achievement in the Annual Report for parents.

Summative Assessment in EYFS

In Reception, all children are formally assessed in the autumn term using the Government Baseline Assessment.

In EYFS, we formally assess the children at the end of each term. The EYFS teacher assesses the children using a profile which is based on the National Foundation Stage Profile and Early Learning Goals. The teacher uses evidence found in photographs, observations and children's work to aid their assessment. This assessment provides data which can be used by the teacher to inform planning and give feedback to children on their goals and how they can achieve them. At the end of each EYFS stage, the data from the Foundation Stage Profile is analysed by the class teacher providing evidence to monitor pupil progress, celebrate successes and highlight gaps in understanding or performance.

At the end of EYFS, data is collected and recorded onto SIMS stating whether the children are emerging, expected or exceeding the Early Learning Goals.

The role of Parents

At St Mary's C.E. Primary School, we recognise the vital role which parents and carers play in the education and development of their children. As a school with an open door policy, parents are encouraged to come and talk to staff about their child's progress, their goals and how they can support their child in reaching them. Individual progress is also discussed at Pupil Learning Meetings. Homework is given to children as appropriate to their needs and which develops their learning through the use of Mathletics and Times Tables Rockstars.

The role of the Senior Leadership Team

The Head teacher will:

- Provide support by ensuring staff use good practice and quality first teaching
- Monitor learning and teaching
- Give feedback to teachers
- Support staff development through CPD

The Mathematics Lead will:

- Provide a strategic lead and direction for Mathematics in the school
- Provide support and advice to staff in the delivery of the Mathematics Programme of Study
- Remain informed about current developments in the subject by attending network meetings
- Monitor and evaluate teaching and learning of Mathematics
- Monitor standards in the subject
- Monitor planning and books and interview children
- Order and maintain resources to enhance effectiveness of Mathematics teaching within the school
- Work with SLT members in the evaluation and planning of actions included within the School Development Plan.
- Regularly meet with staff
- Present regular updates to Governors

The role of the Class Teacher

The Class teacher will:

- Be responsible for the teaching of Mathematics as set out in the policy.
- Provide samples of mathematics work to the Mathematics Lead when required
- Assess children's work in order to detail future planning
- Be responsible for marking books
- Be responsible for the progress of children
- Use data to track and monitor progress and to inform planning
- Use working walls to support children in their learning

Impact:

By the end of KS1 and KS2:

- Pupils make sustained progress from their starting points, evidenced by internal tracking and national assessments (EYFS Profile, KS1 and KS2 SATs).
- Gaps in attainment between groups (e.g. SEND, disadvantaged) are identified and narrowed through targeted intervention.
- Pupils are 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 their knowledge.

- Pupils can reason mathematically by following a line of enquiry, building relationships, developing an argument and using mathematical language.
- Pupils can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing confidence, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
- Pupils have the opportunity to access and master a high-quality maths curriculum that is engaging, challenging and exposes the true beauty of mathematics within our classrooms.
- Pupils believe in the beauty of mathematics and promoting opportunities to share the wonder of maths.

This policy will be reviewed bi-annually by the Mathematics Lead and SLT, in consultation with staff and governors

Date: November 2025