St Mary's Catholic Primary School

Bognor Regis

Mathematics Policy

June 2026

Review June 2029

Intent

At St Mary's Catholic Primary School, we strive for our pupils to become lifelong learners. We aim for excellence in all our school activities and encourage all pupils to achieve the best they possibly can. We teach life skills. Mathematics is a life skill. It is an essential element of communication, widely used in society, both in everyday situations and in the world of work. We at St Mary's Catholic Primary School endeavour to nurture a sense of enjoyment and curiosity about the subject.

We follow the National curriculum, whose aims in maths are that all pupils become fluent in the fundamentals of maths, are able to reason mathematically and can solve a range of problems by applying their mathematics. In order to maximise the children's success, we aim to instil in them a deep and lasting understanding of mathematical procedures and concepts. For this reason, we have adopted a 'teaching for mastery' approach across the school. Children are taught a concept in depth over a prolonged unit, moving through small progressive steps to develop a deep, lasting competence and understanding. All year groups begin with place value, which underpins our number system, before moving on to calculation and other strands. Supported by the NCETM and Maths Hub, we are following the Primary Teaching for Mastery Programme, with our Intent that every child achieves Mastery in maths; a solid understanding of maths that allows them to progress. We aim to not just close the gap, but to raise achievement for everyone; providing all children with a deep understanding and sustained learning. Through our day-to-day teaching and our implementation of Maths Mastery, we are following the Five Big Ideas (from NCETM):

- Coherence- Lessons are broken down into small, connected steps that gradually unfold the concept, providing access for all children and leading to a generalisation of the concept and the ability to apply the concept to a range of contexts.
- Representation and Structure- Representations used in lessons expose the mathematical structure being taught, the aim being that the children can do the maths without recourse to the representation
- Mathematical Thinking - If taught ideas are to be understood deeply, they must not merely be passively received but must be worked on by the children, thought about, reasoned with and discussed with others
- Fluency - Quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics
- Variation - Variation is twofold. It is firstly about how the teacher represents the concept being taught, often in more than one way, to draw attention to critical aspects, and to develop deep and holistic understanding. It is also about the sequencing of the episodes, activities and exercises used within a lesson and follow up practice, paying attention to what is kept the same and what changes, to connect the mathematics and draw attention to mathematical relationships and structure.

Implementation

At St Mary's, we have adopted a mastery approach to teaching maths where children gain a full and deeper understanding of a mathematical concept. It is not merely being able to recall key facts or know a method, it's to have the understanding of what the fact actually means and understand why a method works in the way it does. In order to support this, we use the three-stage approach of **concrete**, **pictorial** and **abstract** teaching:

Concrete: Concrete is the "doing" stage, using concrete objects to model problems. Instead of the traditional method of math teaching, where a teacher demonstrates how to solve a problem, children are encouraged to use apparatus to represent the problem how they see it using objects.

Pictorial: Pictorial is the "seeing" stage, using representations of the objects to model problems. This stage encourages children to make a mental connection between the physical object by replacing it with a visual representation through drawing.

Abstract: Abstract is the "symbolic" stage, where children now progress to representing the object as a number or mathematical symbol showing their understanding of the problem.

We use a variety of **manipulatives** in our maths classrooms and display the learning on working walls to support children moving from the concrete to a pictorial and finally to the abstract use of numbers. Children are encouraged to talk through their understanding in a range of ways including the use of stem sentences as well as working together to solve challenges.

We provide opportunities for children to develop their fluency in mental maths across the school through the use of daily Mastering Number and/or arithmetic sessions and recognise that both arithmetic (number facts) and mental calculation are vital. We use Times Tables Rock Stars from Year 2 as a way of encouraging and motivating children to learn the important times tables and division facts

We have subscribed each child to two online maths sites where they can access a variety of maths tasks to help them practice and consolidate maths learning. They all have individual usernames and passwords for these:

- **Times Tables Rock Stars**- Children can also practise their timetables by logging into their individual accounts for Times Tables Rock Stars

https://play.ttrockstars.com/auth/school/student/

- **Numbots** - https://numbots.com/

Early Years Foundation Stage

The statutory framework 2021 states: "Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically". We do this at St Mary's through a mix of adult directed whole class teaching, small group adult directed activities and adult modelling, input and questioning during Mastering Number and child-initiated learning (discovery time). The indoor and outdoor environment in the Early Years area is well resourced to encourage the independent use of maths resources e.g. ten frames, open ended manipulatives for organising, counting and subitising. We aim to develop positive attitudes and interests in maths. Opportunities for maths are developed through daily routines and all areas of learning. Children are assessed throughout the year using Development Matters 2021. At the end of reception children are assessed against the Early Learning Goals; Number and Numerical patterns, this is reported to parents and to Year 1 teachers in the Summer Term.

Organisation

In line with the Mastery approach we:

- Teach a daily mathematics lesson of 45 – 60 minutes in Year 1 – 6
- Teach x2 weekly adult directed input in EYFS.
- Teach all pupils in a whole-class setting
- Timetable a daily, fluency-focused 10/15min Mastering Number/ arithmetic session, separate to the main lesson, which focuses on mental maths skills including times tables
- Ensure the skills acquired in the maths lesson are applied across the curriculum

In line with the Mastery approach, and to meet the individual needs of children within a class, there is no one way of teaching maths, nor a particular format. We do not expect every lesson to follow the format of an introduction, main teaching, activity and plenary. Instead, we encourage variety and opportunities for pupil practise and sharing. Lessons may start with a problem or question to encourage discussion, with opportunities throughout for practise and sharing, to ensure the majority of children are keeping up with the pace. Throughout the lesson, many opportunities for feedback are planned for, whether in partners, groups or whole-class. The teacher and/or Teaching Assistant will move around the classroom, to discuss the work with children, either by offering scaffolding and support, or extending with a further question or challenge. This ensures all children are given the opportunity to master the objective in a way that is suitable to their needs. Our policy is "keep up, not catch up", therefore we offer support throughout a lesson, whilst providing opportunities for rapid graspers to have challenge. Conferencing is used for children as soon as possible if they have not grasped the concept taught.

Teaching and Learning strategies (See our Teaching and Learning Policy)

• Teachers design lessons focusing on one mathematical concept so that all children move through the content at broadly the same pace.

• Frequent, short tasks allow the children to practise key ideas and allow teachers to check the majority of children are keeping up with the pace of the lesson and learning thus allowing frequent feedback

• Activities are planned to encourage the full and active participation of all pupils.

• Teachers place a strong emphasis on correct use of mathematical language; this is supported by key vocabulary being displayed.

• Teachers use scaffolding strategies to support children to reach the objective if necessary, whilst rapid graspers are challenged.

• Stem sentences are used and repeated by the class to allow all children to use new vocabulary and understand concepts. Children share their answers in full sentences, so they can explain their answers: "I know… because…"

• Children may work individually on a task, in pairs or in a small group, depending on the nature of the activity

• Concrete resources are used/ available every lesson, for all children, in all classes to support the mastery of concepts, e.g. place value counters, dienes, Numicon, multilink, in addition to visual representations

• As much as possible, practical 'real' activities are used to introduce concepts and reinforce learning objectives.

• Opportunities to transfer skills learnt, to real situations, are used as much as possible. Teachers value pupils' oral contributions and create an ethos in which all children feel they can contribute.

• Activities offer choice. For example, children may choose from a scaffolded activity to help them reach the objective, or a challenging task to encourage deeper thinking.

Home Learning

In line with the school Homework policy, children in KS1 are expected to work on Numbots, practising their multiplication facts. Children should aim to learn their 2, 3, 4, 5 and 10 times tables by the end of Year 2.

In LKS2, children are expected to practise their multiplication facts daily using Times Table Rock Stars (TTRS). This is monitored by the teacher. Children are expected to spend a minimum of 3 minutes a day on TTRS over at least three days. Children are expected to learn

their times tables at home on a regular basis and will be tested in school regularly. They should be **fluent by the end of Year 4** at the latest.

In UKS2, TTRS is set and monitored by teachers. Children are expected to spend 3 minutes daily completing this. Children who do not yet know all their multiplication facts will be expected to learn them.

Year 5 – get paper copies of homework based on the concept linked to their weekly learning.

Year 6 – SATs Bootcamp is set weekly.

SEND

Homework set for children with special educational needs will be appropriate to their abilities and needs.

Planning

We use the National Curriculum and White Rose for our long and medium-term planning. This ensures we are teaching all objectives, relevant to the specific year group.

• In EYFS, some teacher-led activities are planned for each week, as well as independent activities, for inside and outside of the classroom. Maths is planned in line with the current children's interests.

• In KS1, planning is separate for Year 1 and Year 2, with separate lessons provided.

• In Lower KS2, children are set into Year 3, Year 3/ 4 and Year 4 groupings. These are flexible throughout the year. They follow the mixed age planning from White Rose Maths.

• In Upper KS2, children are set into Year 5 (and SEN Y6 students), Year 5/ 6 and Year 6 groupings. These are flexible throughout the year. They follow the mixed age planning from White Rose Maths. Objectives are built on in Year 6 with reasoning activities.

Short Term Planning

Often in the form of Notebooks, these plans will be varied, taking ideas from a variety of sources e.g. Gareth Metcalfe "I see reasoning", NCETM, Nrich, NCETM

- They may not show the same structure every day and must include learning objectives and outline activities, resources, key questions
- They include age-related objectives for all children, although may also include choice activities – scaffolded tasks for support or reasoning for challenge. They are flexible, as they are adjusted to the children in each class and whether they need further support or consolidation before moving on to the next objective
- They must involve pre-teaching vocabulary and concepts to focus children before a lesson, or same-day intervention activities. Key vocabulary and stem sentences will be shown on the Notebook

Assessment

Assessment for Learning is first and foremost key to assessing maths each day. With our whole-class Mastery approach, frequent short activities, questions and discussions allow teachers to see who is keeping up and who needs further support in that lesson. With feedback, whether verbal or written, completed within the lesson as much as possible, teachers are able to adapt the next day's planning as necessary.

End of unit (EoU) checks are completed and results recorded. Any child who has not passed the EoU check has some intensive teaching on the concept and then takes the second EoU check.

End of term checks are completed and recorded. Any gaps in knowledge are identified and intervention/ conferencing takes place.

At the end of the year, children in Year 2 sit the PUMA maths test; Years 3 – 5 sit the NFER tests. Results are recorded, gaps analysed and the information is used to write reports and inform the next teacher.

Feedback

Quality feedback is given to children, whether this be verbal or written, on an individual, group or whole-class basis. All work is recognised with green and pink pen, and children also have the opportunity to mark their own work – in purple. We encourage the use of challenges in mathematics.

Formal Assessments

Statutory assessments tasks (SATs) take place in 6 in the summer term. Year 4 sit the MTCs in the summer term, monitoring their times tables knowledge.

Impact

We expect to see:

- Children enjoying maths and are actively engaged in their maths learning
- Children who can quickly recall key facts and procedures
- Children who can transfer their skills to a variety of contexts
- Children who can reason about their maths
- Children securely using mathematical vocabulary
- Children using concrete resources, within all year groups
- Children showing a deeper understanding of mathematical concepts
- Varied lessons, with problems, reasoning and discussion

Impact is measured through:

- Learning walks
- Work scrutiny
- Pupil Voice
- Data analysis
- Test results

Staff training and professional development

Staff meetings and INSETs are held to discuss the expectations of teaching Maths. Where available, the school will access relevant training to ensure staff are up to date with current legislation on teaching and assessment within the Maths curriculum. The Maths Hub also provides training opportunities, including talking to other professionals and visiting schools, who teach Maths Mastery.

Review of policy

This policy will be reviewed on a regular basis, primarily by the Maths Lead and SLT, before being presented to the Governors.