



# Much Woolton Catholic Primary School

*'With Jesus we Love, Learn and Grow'*

## School Policy for Mathematics

Approved by the Governing body in October 2023

Signed \_\_\_\_\_ Chair of Governors

Signed \_\_\_\_\_ Head teacher

To be reviewed and revised in October 2025

# MISSION STATEMENT

## With Jesus we Love, Learn and Grow

### To do this we will:

- Be a Christian community that follows Jesus in living out Gospel values. (Christ centred)
- Provide opportunities for all to grow and achieve their full potential, by igniting a desire for lifelong learning. (Education)
- Be a beacon of light that shines out to others, sharing faith, hope and love. (Community)

### Objectives:

#### (Christ Centred)

- Provide quality collective worship and enriching liturgical celebrations.
- Enable our children to acquire an excellent religious education, through a well taught and resourced Come and See programme.
- Encourage all to develop their understanding of and relationship with God, while at the same time respecting that others choose to express their faith in different ways.
- Be positive role models, who treat each other with respect and are willing to forgive and be forgiven.

#### (Education)

- Provide a stimulating curriculum, which is fun, challenging and relevant to the needs of our children.
- Value all our pupils and staff, appreciating their uniqueness and individual talents, enabling them to develop these to the full.
- Have high expectations of ourselves and each other, in all that we do.
- Ensure that all children reach their full potential through effective planning, assessment and evaluation, which will inform their next steps.

#### (Community)

- Create a positive atmosphere where all feel valued and are welcomed into our school community.
- Develop positive links between the school and parish community.
- Learn about and appreciate other faiths and cultures.
- Use our talents as responsible citizens to enrich the lives of others in our local and the global community.

## **Mathematics is a sacred subject**

The ultimate purpose of Maths is the pursuit of truth. The thinking skills inherent in the math curriculum should inspire and enable learners to be innovative, creative, critical and analytical problem solvers. Exploring the beauty of mathematics enables all learners to engage with the transcendent dimensions of life, freeing them to be pioneers, trailblazers and the inventors needed today and in the future. The real- world context comes first, and the theory comes second.

## **Our Vision for Maths at Much Woolton**

*“Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solutions to some of history’s most intriguing problems. It is essential to everyday life, critical to science, technology and engineering and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.”* (National Curriculum 2014)

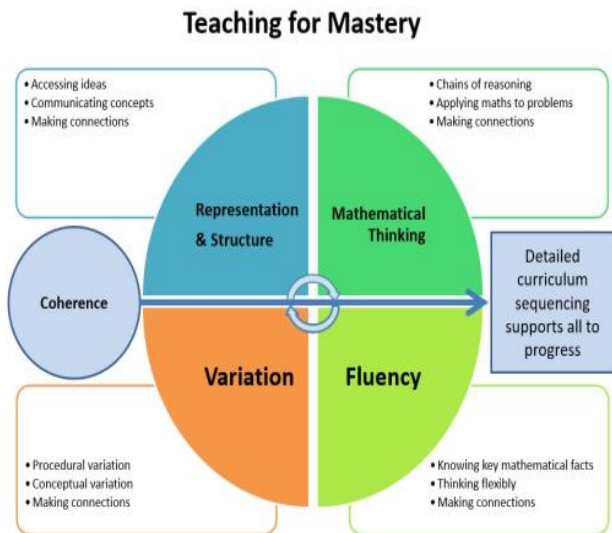
**At Much Woolton Catholic Primary School, we want all our pupils to experience deep, sustained understanding so that they become confident and able mathematicians, throughout their learning and into their adult life.**

Through a positive, caring environment, we will nurture confidence in the subject and a love of mathematics, to enable every child to reach his/her full potential. We promote a ‘can do’ attitude to maths without a fear of making mistakes. Children will be given time, support and resources to develop a depth of understanding where children can express ideas fluently and talk about the subject using appropriate mathematical language. Mathematics equips pupils with the uniquely powerful set of skills to become agents of change. These skills include logical reasoning, problem solving and the ability to think in abstract ways. Mathematics is important in everyday life. It is integral to all aspect of life and we endeavour to ensure that children develop a positive and enthusiastic attitude towards mathematics that will stay with them.

## **Mathematics at Much Woolton**

In February 2023, Much Woolton Catholic Primary School started its journey towards a whole school mastery approach to the teaching and learning of mathematics. We understand that this will be a gradual process and may take time to fully embed. The rationale behind changing our school approach to teaching mathematics arose from our involvement in the NCTEM Maths Hub and our philosophy that all children can achieve and by becoming confident problem solvers they can become agents for change

Our teaching for mastery is underpinned by the NCTEM's 5 big ideas.



***Mathematical Thinking** allow children to make chains of reasoning connected with the other areas of their mathematics.*

***Representation and Structure** ensures concepts are explored using concrete, pictorial and abstract representations, the children actively look for patterns as well as specialise and generalise whilst problem solving.*

***Coherence** is achieved thorough the planning of small connected steps to link every question and lesson within a topic.*

***Variation** is used within lesson both in pictorial representations and abstract tasks.*

***Fluency** relentlessly focusses on number and times table facts.*

### **Intent**

The intent of Much Woolton Catholic Primary school's mathematics teaching is to deliver an engaging, balanced mathematics curriculum which is accessible to all and that will maximise the outcomes for every child so that they understand more, know more and remember more. Our aim is to deliver quality teaching that will produce individuals who are numerate, creative, independent, inquisitive, enquiring and confident problem solvers. It is vital that a positive attitude towards mathematics is encouraged amongst all our pupils to foster confidence and achievement in a skill that is essential in our society. At Much Woolton, we use Maths- No Problem! as the basis of our mathematics programme. We are committed to ensuring that all pupils achieve mastery in the key concepts of mathematics, appropriate for their age group, in order that they make genuine progress and avoid gaps in their understanding that provide barriers to learning as they move through education. Assessment for Learning, an emphasis on investigation, problem solving and the development of mathematical thinking and a rigorous approach to the development of teacher subject knowledge are therefore essential components of our whole school approach to this subject.

### ***Whole class moves through content at the same pace***

When teaching maths for mastery, the whole class moves through topics at broadly the same pace. Each topic is studied in depth and the teacher does not move to the next stage until all children demonstrate that they have a secure understanding of mathematical concepts through journaling their ideas and methods.

### ***Time to think deeply about the maths***

Students are given time to think deeply about the maths and really understand concepts at a relational level rather than as a set of rules or procedures. This slower pace leads to greater progress because it ensures that students are secure in their understanding.

### ***Builds self-confidence in learners***

In a traditional primary school maths lesson, children are put in different groups and given different content based on their anticipated ability. This means that from an early age, children are classed as

those who can and can't "do maths". Teaching maths for mastery is different because it offers all pupils access to the full maths curriculum. This inclusive approach, and its emphasis on promoting multiple methods of solving a problem, builds self-confidence and resilience in pupils, whilst developing investigative, explorative and reasoning skills in pupils.

### ***Differentiates through depth rather than acceleration***

Though the whole class goes through the same content at the same pace, there is still plenty of opportunity for differentiation. Unlike the old model, where advanced learners are accelerated through new content, those pupils who grasp concepts quickly are challenged with rich and sophisticated problems within the topic. Those children who are not sufficiently fluent are provided additional support to consolidate their understanding before moving on.

### ***Basis for the 2014 National Curriculum for Maths***

Teaching maths for mastery is a key plank of the Government's education reforms and is reflected in the 2014 English national curriculum for mathematics. The NCETM, Department for Education and OFSTED have all endorsed this evidence-based approach which is a key part of the work within the Maths Hubs Programme.

#### **Lesson structure:**

- 1.** Explore - Each lesson begins with an 'Explore' task (with real life application where appropriate). Children often work in groups using concrete materials to solve the problem. The teacher then leads a discussion, using questioning to challenge and move learning forward.
- 2.** The class look at various methods in more detail to solve the problem. This will involve lots of discussions as well as the children using manipulatives to support them to solve the problem. Concrete Pictorial Abstract (CPA) Approach means pupils learn new concepts initially using concrete examples, such as counters, then progress to drawing pictorial representations before finally using more abstract symbols, such as the equals sign.
- 3.** Journals – Provide opportunities for children to record their work at an age-appropriate level, this is built upon as they move through their mathematical learning journey. Journals are used as a free space where children can explore and develop their understanding at their individual level. Children are to move to using a pictorial and abstract approach when ready. Recording in Math's Journals the methods and calculations they have used.
- 4.** Guided Practice – An opportunity for children to work through strategies learnt in the previous parts of the lesson with support where needed. Children use the Maths- No Problem! textbooks to analyse the guided practice. The questions and examples are carefully varied by expert authors to encourage pupils to think about the maths. Rather than provide mechanical repetition, the examples are designed to deepen pupils' understanding and reveal misconceptions.
- 5.** Workbook - When ready, children work independently in workbooks. Tasks and activities are designed to be easy for pupils to enter while still containing challenging components. For advanced learners, the textbooks also contain non-routine questions for pupils to develop their higher-order problem solving skills.

## **Maths- No Problem! In EYFS**

“The first few years of a child’s life are especially important for mathematics development”, says the National Centre for Excellence in the Teaching of Mathematics. Research shows that early mathematical knowledge predicts later reading ability and general education and social progress. As young as eight months old, children are developing an awareness of number names, and include these in their speech, as soon as they begin to talk. As children listen to the talk around them, they are introduced to numbers through opportunities that occur in everyday life, and experience a variety of number rhymes. This supports their growing knowledge of number names.

According to the NCETM, there are: **Six key areas of mathematical learning**

1. Cardinality and counting
2. Comparison
3. Composition
4. Pattern
5. Shape and Space
6. Measures

Looking briefly at each in turn

**Cardinality and counting** When children understand the cardinality of numbers, they know what the numbers mean in terms of knowing how many things they refer to.

**Comparison** Comparing numbers involves knowing which numbers are worth more or less than each other.

**Composition** Learning to ‘see’ a whole number and its parts at the same time is a key development in children’s number understanding.

**Pattern** Developing an awareness of pattern helps young children to notice and understand mathematical relationships.

**Shape and space** Mathematically, the areas of shape and space are about developing visualising skills and understanding relationships, such as the effects of movement and combining shapes

**Measures** Measuring in mathematics is based on the idea of using numbers of units in order to compare attributes, such as length or capacity.

Learning to count in the early years is a fundamental skill and key to mastering mathematical concepts in the future, but there’s more to it than you might think, says Sabrina Pinnock, a primary school teacher in Yorkshire.

According to researchers Rochel Gelman and C.R. Gallistel, these are the steps needed to successfully count:

1. The one-to-one principle: children must name each object they count and understand there are two groups: the one that has been counted and the one that hasn’t yet been counted
2. The stable order principle: children must know how to count in the right order
3. The cardinal principle: children need to understand the last number in the set is the total amount
4. counting anything: children need to realise that anything can be counted, not just objects that can be touched, but also things like claps and jumps
5. order of counting doesn’t matter: children need to understand that the order of counting in the set is irrelevant and will still lead to the same amount

assessing children to find out which step they are struggling with is key to helping them overcome difficulties and become confident counters.

The EYFS requires children to be supported in developing their understanding of problem solving, reasoning and numeracy in a broad range of contexts in which they can explore, enjoy, learn, practise and talk about their developing understanding. They must be provided with opportunities to practise these skills and gain confidence. Young children learn best through play and for their learning to be effective, they need sensitive and informed support from adults. All children can be successful with mathematics, provided they have opportunities to explore ideas in ways that make personal sense to them and opportunities to develop concepts and understanding. Children need to know that practitioners are interested in their thinking and respect their ideas.

### **Special Educational Needs and Equal Opportunities.**

Inclusive teaching is at the heart of a whole class mastery approach. The advantages of whole class teaching allows pupils to enjoy learning without labels. **Whole class inclusion** centres on the idea that children will learn from each other and lets teachers spend more time interacting with everyone.

When inclusive teaching in the maths classroom takes place then pupils will:

- Be more involved, absorbed and keen to learn
- Enjoy their maths, have a growth mindset and unafraid to make mistakes
- Be more flexible and learn to adapt
- Expect obstacles and challenge
- Understand where they are at, and what they need to do next
- Be hardy and independent
- Recognise progress
- Develop skills, knowledge, and understanding incrementally

Inclusive maths lessons give every child the chance to take part in lessons and feel valued. It's a crucial responsibility to ensure everyone has fair access to the curriculum.

Every primary teacher is capable of being a diversity, equality, and inclusion champion, by implementing inclusive teaching in the maths classroom.

### **Feedback and Marking**

Assessment in maths should be clear and purposeful. It needs to help children identify misconceptions, help them improve and move forward, inform any 'next steps' and support their overall progress. Marking of mathematics books should be completed in line with the school Marking and Feedback Policy. It is essential that all marking picks up and addresses any misconceptions/mistakes and thorough questioning ensures children have clarified their thinking clearly. Teachers and Learning Support Assistants are expected to use appropriate feedback methods during the lesson. Incorrect number formation should be addressed immediately in all year groups. Feedback should be effective in ensuring pupil progress throughout a lesson or unit of work. It is recognised that live feedback in addressing errors and misconceptions is the most effective.

### **Assessment**

Formative assessment for learning should occur throughout the entire maths lesson, enabling teachers to adjust their teaching/input to address the needs of the children. Teachers assess children daily through: Regular marking of work, analysing errors and picking up on misconceptions, asking questions and listening to answers, facilitating and listening to discussions and making observations. These

ongoing assessments inform future planning and teaching. Lessons are adapted readily and short term planning evaluated and edited in light of these assessments.

National Curriculum tests are used at the end of KS1 and 2; teachers also use past and sample papers to inform their assessments as they prepare pupils for these assessments.

All children in Y4 will complete the 'Multiplication Check Test'

Termly NFER assessments are completed for years 1, 3, 4, 5.

Within the EYFS all children are assessed against the Early Learning Goals at the end of Reception.

## Resources

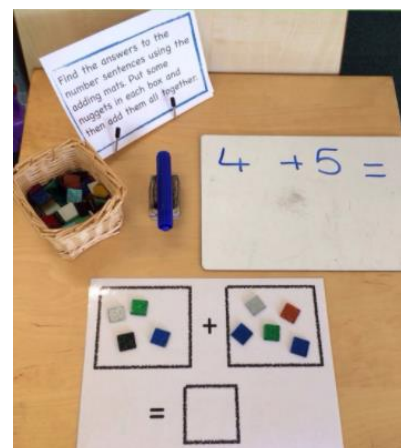
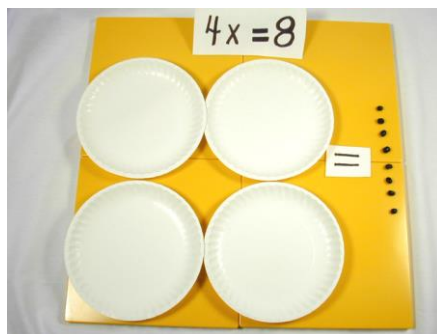
When introduced to a key new concept, pupils should have the opportunity to build competency in this topic by taking the following approach:

- Concrete – children should have the opportunity to use concrete objects and manipulatives to help them understand what they are doing.
- Pictorial – pupils should then build on this concrete approach by using pictorial representations. These representations can then be used to reason and solve problems.
- Abstract – with the foundations firmly laid, learners should be able to move to an abstract approach using numbers and key concepts with confidence

CPA Approach	
Stage	Characteristics
Concrete	Refers to the use of manipulatives, measuring tools or objects that the student handles.
Pictorial	Refers to the use of drawings, diagrams, charts or graphs that the student draws
Abstract	Refers to abstract representations such as numbers and letters that the student writes

Example:  
Tom had 3 apples. His mother gave him 4 more apples. How many apples did he have altogether?

**Concrete** Give apples and count → **Pictorial** Draw apples and count → **Abstract** Write the number statement



## Homework

There is the expectation that all pupils (Y1-Y6) will learn their times tables for a weekly test in class. All children throughout the school have log in details for our online learning platform 'Doodle maths.' It is a whole school expectation that all children will Doodle at least 3 times a week to ensure that they stay in the target 'green zone.' Children are rewarded in school for their effort and participation with their homework.

## Home/school links

At Much Woolton, we recognise that parents/carers can make a significant difference to a child's progress in maths. We encourage parental engagement by;

- Holding parent's evenings, which give families information on their child's progress and their targets for the future.
- Providing an end of year report, which outlines progress and attainment.
- Inviting parents to information events on how we teach mathematics and how they can help.
- Providing videos explaining specific calculation strategies for each year group to support homework activities.
- Providing updates on individual class and year group events on Twitter.



- Encouraging parents/carers to link to Doodle Maths so that they are able to see their child's progress and also the gaps in understanding as they move through the learning journey.

### **Computing and the use of ICT**

ICT is used in various ways to support teaching and motivate children's learning. Each classroom has a laptop connected to an interactive whiteboard. All teachers are provided with an I-pad to support their planning and provision and are encouraged to use ICT to enhance teaching and learning in mathematics where appropriate. The maths policy adheres to the whole school E-safeguarding policies and procedures.

### **Monitoring and Evaluation**

All teachers are responsible for monitoring standards but the subject co-ordinator, under the direction of the Head Teacher takes the lead in this. Monitoring activities are planned across the year. In summary these are:

- Monitoring of year group coverage.
- Monitoring of teaching and learning taking the form of lesson observations, learning walks, book monitoring and pupil interviews.
- Monitoring of assessment data, including Teacher Assessment sheets and statutory assessments.
- SENCO and Maths Co-ordinator to monitor progress of children on the SEND Register and agree support/interventions
- Monitoring delivery and impact of interventions.

Training needs are identified as a result of whole school monitoring and evaluation, performance management and needs of children. These will be reflected in the Mathematics Action plan and School Development Plan.

### **Presentation**

Pupils in each Key Stage have their own clear guidelines for presentation of work in maths books, as detailed below.

#### **KS1 Presentation Guide for Maths**

- All children to use a pencil in Maths books.
- One digit should be written in each square.
- If a mistake is made, an eraser should be used.
- All diagrams and pictures are to be drawn with a pencil.
- All lines to be drawn with a pencil and ruler.
- Felt tip pens are not to be used in any book only coloured pencils are to be used.
- Doodling is not allowed on the front or inside of any book.
- Teachers to mark in green pen.

#### **KS2 Presentation Guide for Maths**

- Write the short date and underline in pencil using a ruler
- Leave a line and begin work.
- All children to use pencil in Maths books.
- One digit should be written in each square.
- All diagrams and pictures are to be drawn with a pencil.
- All lines to be drawn with a pencil and a ruler.
- Felt tip pens/ gel pens are not to be used in Maths book, only coloured pencils are to be used.

- Doodling is not allowed on the front or inside of Maths book.
- Teachers to mark in green pen.
- Children to mark in purple – and comments to be written in pencil.

### **Reporting to parents**

Parents are given the opportunity to discuss their child's progress on two official occasions but understand that the schools' 'open door' policy enables them to address concerns throughout the year. Reports are completed before the end of the summer term. Teachers use the information gathered from their assessments to help them comment on individual children's progress.

### **The role of the Mathematics subject lead is to:**

Take the lead in policy development and the production of long and medium term planning, designed to ensure progression and continuity in Mathematics throughout the school. Ensure that these are kept under regular review.

Ensure teachers understand the requirements of the National Curriculum and EYFS Statutory Framework and support them to plan lessons.

Lead by example by setting high standards in their own teaching.

Support colleagues with teaching as well as assessment and record keeping activities.

Analyse data from National and school assessments.

Take responsibility for managing own professional development by participating in external training.

Keep up-to-date with developments in Mathematics education and disseminate information to colleagues as appropriate.

Lead continuing professional development and learning (CPDL) for the teachers and teaching assistants; provide coaching and feedback for teachers to improve pupil learning.

Lead the whole school monitoring and evaluation of teaching and learning in mathematics by observing teaching and learning in maths regularly; analysing assessment data in order to plan whole school improvement in mathematics; conducting work scrutiny to inform evaluation of progress; conducting pupil interviews and reporting to the Head teacher and Leadership.

Take responsibility for the purchase and organisation of mathematical resources.

Keep parents informed about mathematical developments.

Ensure that the school's senior leaders and governors are kept informed about the quality of teaching and learning in mathematics.

Work in close partnership with the school's SENDCo and Intervention Lead to ensure the learning needs of all pupils in mathematics are met effectively and Interventions are planned carefully for identified children.

Ensure the 'Maths' section on the school website is kept up to date and reviewed regularly and organise whole school 'Maths' events when applicable.