Our Lady's Catholic Primary School

We aspire that through the love of Jesus everyone should

"have life and have it to the full."

Jn. 10v10

MATHEMATICS

POLICY

Approved by:	
Last reviewed:	**November 2021**
Next review date:	**November 2023**

Intent

Our Lady's Catholic Primary School is fully committed for all pupils to acquire a deep, long-term, secure and adaptable understanding of mathematical concepts. Through our classroom practice and school organisation, we give pupils the best chance of mastering maths. We want children to see the mathematics that surrounds them every day and enjoy developing vital life skills in this subject.

We intend for our pupils to:

- develop a growth mind-set and positive attitude towards mathematics
- become confident and proficient with number, including fluency with mental calculation and look for connections between numbers
- become problem solvers, who can reason, think logically, work systematically and apply their knowledge of mathematics
- develop their use of mathematical language
- become independent learners and to work co-operatively with others
- appreciate real life contexts to learning in mathematics

Achieving mastery means acquiring a solid enough understanding of the maths that has been taught to enable pupils to move on to the next stage of their learning.

During Early Years Foundation Stage (EYFS) pupils:

- learn through Continuous Provision - explore mathematical concepts through active exploration and their everyday play-based learning
- are taught key concepts and develop number sense using a hands-on practical approach
- have lots of opportunities to manipulate a variety of objects which supports their understanding of quantity and number
- explore the 'story' of numbers to ten and the development of models and images for numbers as a solid foundation for further progress
- are given time for exploration and the use of concrete objects to support their mathematical understanding
- gain solid foundations that will enable them to develop skills as they progress through their schooling and ensures children are ready for the National Curriculum

During and by the end Key Stage 1 pupils will:

- develop confidence and mental fluency with whole numbers, counting and place value
- use numerals, words and the four operations with fluency
- recognise, describe, draw, compare and sort different shapes and use the related vocabulary
- use a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.
- know the number bonds within and to 10 and be precise in using and understanding place value
- read, spell and use mathematical vocabulary

During and by the end of lower Key Stage 2 pupils will:

- be increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value

- perform efficient written and mental calculations accurately with increasingly large whole numbers
- develop their ability to solve a range of problems, including with simple fractions and decimal place value
- analyse shapes and their properties, and confidently describe the relationships between them
- use measuring instruments with accuracy and make connections between measure and number
- memorised their multiplication tables up to and including the 12 multiplication table
- read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling

During and by the end of upper Key Stage 2 Pupils will:

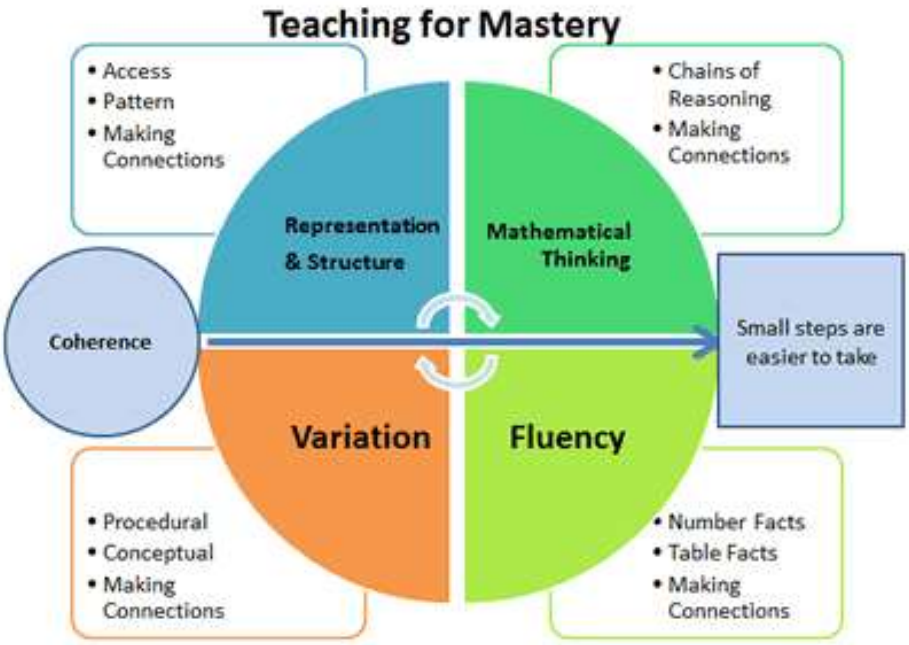
- understand the number system and place value to include larger integers
- make connections between multiplication and division with fractions, decimals, percentages and ratio
- develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation
- use the language of algebra as a means for solving a variety of problems.
- classify shapes with increasingly complex geometric properties and use the vocabulary they need to describe them
- be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages
- use mathematical vocabulary correctly and confidently

Implementation

In September 2021, Our Lady's Primary School began transitioning towards a mastery approach to the teaching and learning of mathematics. We are at the start of the exciting journey and the staff are fully committed to the ethos and the key principles of Teaching for Mastery.

Key principles:

- Opportunities for **mathematical thinking** allow children to make chains of reasoning connected with the other areas of their mathematics.
- A focus on **representation and structure** ensures concepts are explored using concrete, pictorial and abstract representations, the children actively look for patterns and generalise whilst problem solving.
- **Coherence** is achieved through the planning of small, connected steps to link every question and lesson within a topic.
- Teachers use both procedural and conceptual **variation** within their lessons and there remains an emphasis on **fluency** with a relentless focus on number and multiplication facts.



https://www.ncetm.org.uk/teaching-for-mastery

Teaching for Mastery

Pupils are taught through whole-class interactive teaching, where the focus is on **all** pupils working together on the same lesson content at the same time. All pupils are encouraged by the belief that by working hard at maths they can succeed.

We make sure that we provide:-

- small connected steps that gradually unfold the concept
- opportunities for pupils to think, reason with and discuss ideas with others
- ask open ended questions and discussions about the concepts – pupils are often frequently ask questions eg. 'What do you notice?", "How do you know that?" Can you explain your thinking?"
- use of appropriate and specific mathematical vocabulary
- opportunities for quick and efficient recall of facts and procedures
- use of manipulatives for all age groups and all abilities as well as hands, gestures and other visuals including working walls to support learning
- mini plenaries to unpick misconceptions, pose questions, challenge ideas

Mastering Number – Key Stage 1 (Year 1 and Year 2)

In addition to Teaching for Mastery, our youngest classes (EYFS, Year 1 and Year 2) we run Mastering Number programme.

Mastering Number is a daily 15 minutes session that focuses entirely on number fact

Basic Skills in Arithmetic – Key Stage 2 (Year 3, Year 4, Year 5 and Year 6)

In Key Stage 2 classes there is daily arithmetic session which focuses on maintaining the fluency. The session includes basic skills and calculations (eg number bonds, times tables).

Year 5 and Year 6 - daily additional 30 min
Year 3 and Year 4 - daily 20 mins (including additional times table practice)

Teaching and Learning

Teaching and Learning is based on the National Curriculum and Mathematics Guidance for Key Stage 1 and 2 – Non-statutory Guidance for the National Curriculum in England (June 2020) which provide:-

- teaching guidance for each ready-to-progress criterion, including core mathematical representations, language structures and discussion of connections to other criteria
- example assessment questions for each ready-to-progress criterion
- guidance on the development of calculation and fluency

Teachers create short-, medium- and long-term planning and is accompanied by a range of resources on the NCETM website, White Rose Schemes of work and others sources.

Maths Hub community

Our Lady's School is part of Maths Hub Community whereby Teachers and Support Staff benefit from:-

- ongoing CPD which they can implement in the classroom
- expert input and guidance
- peer-to-peer support and learning
- access to a wide range of high-quality online resources
- being part of a national programme exploring a current issue in maths teaching

Impact

Pupils at Our Lady's School are:-

- good mathematicians
- are fluent in basic number facts
- make connections
- reason and problem solve
- explain thinking using mathematical language
- have in-depth understanding/application in different contexts
- ready for the next step in education

Teachers and Support Staff are:-

- fully committed to developing Teaching for Mastery approach
- keen to explore new ideas and concepts with pupils
- work collaboratively with each other
- are open for discussion and future teaching and learning opportunities
- feel supported and motivated through continuous CPD

Assessment, Feedback and Marking

In addition to the formative assessment undertaken in lessons, teachers will use half-termly summative assessments supplied by the Rising Stars or NFER tests to reinforce their judgements and provide further opportunities to identify gaps in pupil learning and tailor future lessons. Teacher judgements are entered onto SIMS each term and teachers talk through the progress of their pupils at termly tracking progress meetings: this ensures targeted support can be given to those who need it.

Marking of mathematics books should be completed in line with the Our Lady's Feedback and Marking policy. It is essential that all marking picks up and addresses any misconceptions.