



**Mathematics Policy - April 2021**

***We will grow well, flourish and live life in all its fullness.***

**Rationale**

- Mathematics is a core subject of the National Curriculum.
- The concepts and skills acquired are an essential part of everyday life enabling children to understand relationships and patterns in both number, space and measures.
- Mathematics teaches children how to make sense of the world around them through developing their fluency to calculate, reason and solve problems.
- Children learn to appreciate the contribution made by many cultures to the development and application of maths.
- It is a fundamental means of investigating and interpreting our experiences, and of communicating our findings to others.
- Children learn to develop an understanding that maths is a life skill.

**Intent**

- To ensure that all pupils become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time.
- To foster a strong, positive and enjoyable attitude towards mathematics, in order that pupils become confident in developing and using mathematical ideas and strategies.
- To give a broad and balanced mathematics curriculum regardless of gender, race or ethnic background.
- To raise pupil awareness of the application of mathematics in their everyday lives and encourage them to apply their mathematics to a variety of problems by breaking them down into simpler steps and persevering in seeking solutions.
- To ensure that children master the new National Curriculum objectives in a deep and meaningful way.
- To challenge and stimulate pupils of varying abilities.
- To increase confidence in mathematics so that pupils are able to express themselves and their ideas using the language of mathematics with assurance.

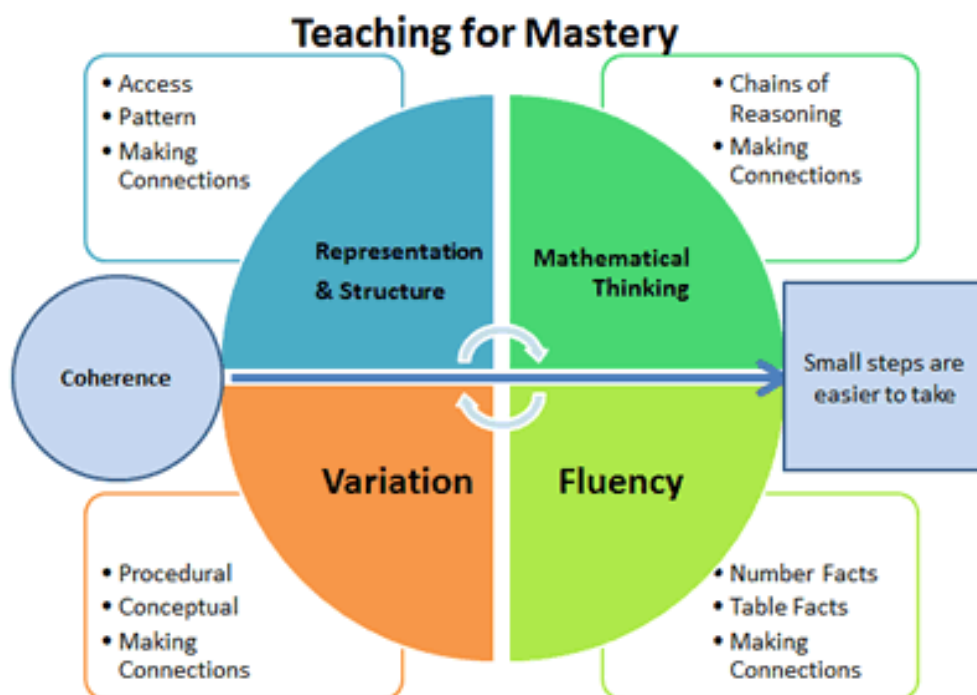
**Implementation**

Mathematics is taught in accordance with the New National Curriculum (2014) for Mathematics Programmes of Study Key Stage 1 and 2 and the Curriculum Guidance for the Early Years Foundation Stage. Long term plans ensure balance and distribution of work across the year. The mastery approach is taken to ensure each area of Maths is revisited on a regular basis allowing children to deeply master curriculum outcomes and that their learning is extended through increasingly complex problems.

Our mastery teaching is underpinned by the NCTEM's 5 big ideas.(see diagram)  
 (National Centre for Excellence in the Teaching of Mathematics)

[www.ncetm.org.uk/teaching-for-mastery](http://www.ncetm.org.uk/teaching-for-mastery)

- **Mathematical thinking** allows 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 a specialise and generalise whilst problem solving.
- **Coherence** is achieved through the planning of small connected steps to link every question and lesson within a topic.
- **Variation** is used within lessons both in pictorial representations and abstract tasks.
- **Fluency** relentlessly focuses on number and times table facts.



<https://www.ncetm.org.uk/teaching-for-mastery/mastery-explained/five-big-ideas-in-teaching-for-mastery/>

Weekly and daily plans list the specific learning objectives and expected outcomes for each lesson and give brief details of how the lessons are to be taught, with differentiation for different abilities (Also see Calculation Policy from white rose maths).

Specific activities for these lessons are taken from various schemes and resources;

- NCETM Mastery documents
- <https://www.ncetm.org.uk/teaching-for-mastery/mastery-materials/>
- White Rose Maths

- <https://whiterosemaths.com/resources/primary-resources/primary-sols/>
- Numicon
- Abacus Textbooks
- Big Maths CLIC book
- Classroom Secrets
- Active Maths

The School's adopted **Calculation policy** sets out clear guidelines for progression in teaching the four operations. The **Maths Guidance KS1 and KS2** publication (June 2020) is used to plan for progression in a variety of maths' topics and identifies the most important conceptual knowledge and understanding that pupils need as they progress from year 1 to year 4. These important concepts are referred to as **ready-to-progress criteria** and provide a coherent, linked framework to support pupils' mastery of the primary mathematics curriculum.

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/897806/Maths\\_guidance\\_KS\\_1\\_and\\_2.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/897806/Maths_guidance_KS_1_and_2.pdf)

The School's Calculation Policy (adopted from White rose maths) also clearly establishes key terms and mathematical vocabulary that must be used.

<https://whiterosemaths.com/resources/primary-resources/primary-sols/>

The teaching of mathematics supports and is embedded into learning in other curriculum areas e.g. English, Science, Computing, P.E, Relationships and Health Education, Spiritual, Moral, Social and Cultural Development, and also in Child Initiated and Outdoor Learning.

## Implementation

### Teaching and Learning

We provide an environment where there are high expectations, where a positive image of mathematics is conveyed at all times, where children enjoy mathematics and their mathematics achievements are recognised.

The teaching of mathematics at Hugh Joicey provides opportunities for: Group work, paired work through collaborative learning strategies, whole class teaching and individual work. Pupils engage in:

- Situations where they can enjoy practical experiences and discussion in recognition that these are vital prerequisites to children understanding mathematical concept
- The development of mental strategies
- Written methods
- Active maths
- Practical work
- Investigational work
- Developing fluency activities
- Reasoning activities
- Problem- solving (Mastery and Mastery with Greater Depth Challenges)
- Mathematical discussions -ask and answer questions
- High level questioning
- Consolidation of basic skills and routines
- ICT based mathematics activities

## Impact

Children will show good understanding of a mathematical concept, idea or technique if they can:

- Describe it in their own words
- Represent it in a variety of ways (e.g. using concrete materials, pictures and symbols - The Concrete – Pictorial – Abstract Approach)
- Explain it to someone else
- Make up their own examples of it
- See connections between it and other facts or ideas
- Recognise it in new situations and contexts
- Make use of it in various ways, including in new situations

**Developing mastery with greater depth is characterised by** pupil's ability to:

- Solve problems of greater complexity (i.e. where the approach is not immediately obvious)
- Independently explore and investigate mathematical contexts and structures, communicate results clearly and systematically explain and generalise the mathematics ( NCETM Teaching for Mastery materials)

## Maths and Inclusion

We provide suitable learning opportunities for all children by:

- matching the challenge of the task to the ability of the child
- using a range of strategies and teaching styles
- setting differentiated group work and pairwork
- using Teaching Assistants to support some children
- ensuring that work is matched to the needs of individuals

Special Educational Needs and Disabilities provision in maths is made through the application of Intervention and Support Plans and highlight strategies for pupils requiring extra support.

More able children have opportunities to apply their knowledge and abilities to relevant, meaningful and constructive activities which will stretch and challenge them. Open ended problems give the children greater freedom to extend their capabilities and master skills in greater depth. Reference is made to the Programme of Study to ensure children have a sufficient broad base of understanding before moving them onto the next level.

The EYFS is an inclusive curriculum and as such we meet the needs of all children. We support children with SEND according to the 2014 Code of Practice using the Inclusion Toolkit.

## EARLY YEARS Foundation Stage

Mathematics is taught using the guidelines in the Early Years Foundation Stage Framework. It involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems, and to describe shapes, spaces, and measures. In planning and guiding children's activities, we recognise the different ways that children learn (**Characteristics of Effective Teaching and Learning**) and reflect these in our practice. We relate the mathematical aspects of the children's work to the objectives set out in the Early Learning Goals for Mathematical

Development. The Reception Scheme guidance (white rose maths) and the NCTEM Early Years materials are used to support progression and coverage of the six key areas of early mathematics learning, which collectively provide a platform for everything children will encounter as they progress through their maths learning at primary school, and beyond.

<https://whiterosemaths.com/resources/early-years-resources/>  
<https://www.ncetm.org.uk/in-the-classroom/early-years/>

### **Resources**

Within each class there is an assigned display area for mathematics which may contain children's work, teacher made resources, interactive learning activities, stem sentences and published resources. These could include:- washing lines, number lines, number squares, mathematical vocabulary, group targets, challenges, shape displays, graphs, calculation posters etc. ICT is used to support and enhance the mathematics curriculum. The Forest School and outdoor areas are also regularly utilized during lessons and there are many natural resources available to support outdoor learning in maths.

### **Assessment for learning**

(Refer to Feedback and Marking Policy)

Half-termly assessments are carried out using the schools tracking documents. A copy of National Curriculum outcomes is in the back of each pupil's book for the year below and their current year allowing for staff to ensure each child is ready-to-progress in their current maths topic. These sheets are highlighted and annotated to allow children to see their progress and support teacher's assessments on school trackers.

We use end of topic tests from the White rose maths scheme each term to track pupil progress. We make long-term assessments towards the end of the school year, and we use these to assess progress against school and national targets. We use National Statutory Assessment Tasks to assess children at the end of KS1. We use Multiplication Times table checks to assess knowledge of multiplication tables at the end of Year 4. We use Pupil Self-Assessment strategies to support pupils in identifying their own learning. All data is regularly monitored and reviewed by the Maths' subject leader.

In the Foundation Stage pupils are assessed regularly using Seesaw, Development Matters Bands and Early Learning Goals recorded termly on the Early Years Foundation Stage Profile 2021.

### **Monitoring and Evaluation**

The work of the subject co-ordinator involves:

- supporting colleagues in their teaching
- being informed about current developments in the subject
- providing a strategic lead and direction for maths in the school
- evaluating the strengths and weaknesses in the subject from lesson observations
- taking pupil interviews
- taking part in book scrutiny
- data analysis to indicate areas for future improvements

**Approved by Governors:**

**Signed.....**

**Chair of Governors**

**Review April 2024**