



# Maths Policy

Staff Responsible:

S Dipper

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# Teaching and Learning in Maths

## Teaching and Learning Documentation

In order to communicate effectively each of our subject areas, key documentation is established by the Subject Leader and shared with all relevant teaching staff. This documentation includes: -

1. Subject Vision
2. Subject Policy
3. Unit of Study Overview (LTP)
4. Curriculum Planning

Together, this documentation collates the coverage and implementation of each of the Wider Curriculum Subject Areas.

## Subject Leadership Documentation

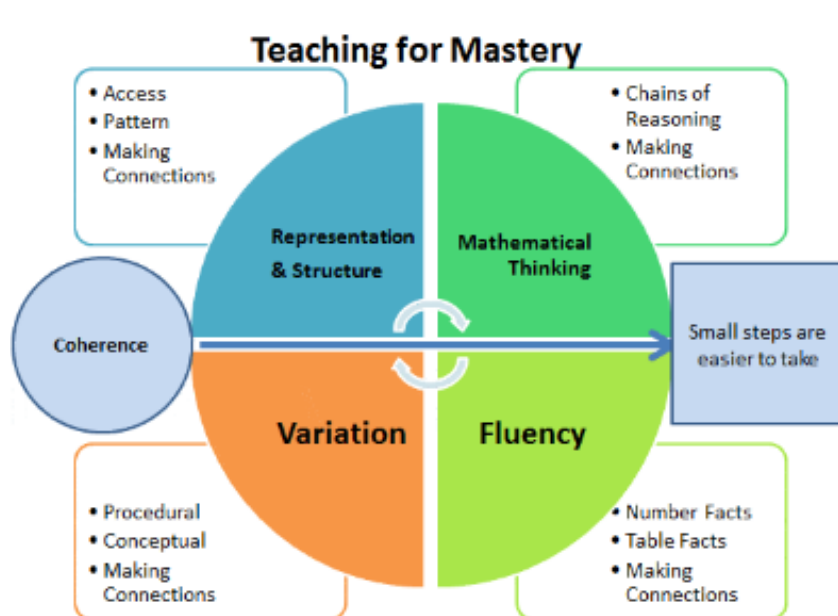
In addition, Subject Leaders are required to monitor the effectiveness of their subject throughout each academic year. In order to do this with effect, the following documentation may contain:

1. Subject Audit - An audit of the subject is completed annually RAG rating the effectiveness of the subject, whilst informing key priorities moving forward.
2. Subject Action Plan - Supports the RAG rating from the Subject Audit.
3. Learning Enquiry - As part of our monitoring cycle, our Learning Enquiry approach ensures the monitoring of each subject area through scheduled book looks, learning walks, planning/ resource checks, pupil voice and staff voice.
4. From the steps above, all findings are collated, feedback is shared and next steps are actioned.

## Delivery of Maths

In Shotley Bridge Primary School, Maths is taught daily in all year groups and is delivered by class teachers. Mathematics is taught across the school using Early Learning Goals in Foundation Stage, and moving on to the National Curriculum in Key Stage 1 and Key Stage 2.

At Shotley Bridge Primary School, we have adopted a 'mastery' approach when teaching maths. The mastery approach is defined by five key principles, which are illustrated by 'The Big 5 Ideas' diagram below:



## Coherence

Lessons are sequenced in small steps, following the guidance offered by the White Rose Maths hub. Topics are taught in appropriately sequenced blocks to allow children to acquire a depth of understanding in each area of Maths before moving on. Significant time is spent developing a deep knowledge of the key ideas that are needed to underpin future learning. The same mathematical models and vocabulary is used across school to ensure consistent progression between year groups. All topics are regularly revisited in 'morning maths' fluency sessions, and are applied to other areas of learning, making cross curricular links where relevant, to ensure the retention of knowledge over time. The structure and connections within the mathematics are emphasised, so that pupils develop deep learning that can be sustained.

## Representation and structure

Concrete and pictorial resources are used to introduce new learning and are revisited regularly to ensure children have strong number sense and procedural understanding, and to help develop their understanding of new concepts.

## Fluency

It is our intention to ensure that all children are fluent in the fundamentals of mathematics. Procedural fluency and conceptual understanding are developed in tandem because we recognise that each supports the development of the other. Gaining fluency with key number facts and mathematical procedures forms an integral part of our daily Maths teaching. This includes helping children to learn to recall key facts automatically. Children are encouraged to work flexibly, recognising that calculations can be solved in a variety of ways.

## Variation

Teachers make use of resources provided by the White Rose Maths hub to sequence learning in small steps and to teach with variation. Teaching with variation involves presenting the same concept in different ways in order to encourage children to make connections and comparisons. For example, they may be asked to consider 'What's the same?' and 'What's different?' about two different representations of the same concept. This helps to deepen children's understanding of the mathematical concepts they are taught, so that they can be flexible in their thinking and adapt their learning to new contexts.

## Mathematical thinking

Mathematical talk and discussion are used to provide opportunities for children to reason mathematically. Children are encouraged to spot patterns, make connections and use mathematical language to justify their views. Children are taught to apply their knowledge of mathematics to help them solve routine and non-routine problems with increasing sophistication, and are encouraged to be both flexible and resilient when seeking solutions.

## Meeting the needs of all pupils

We have high aspirations for all learners, and each child's learning in Maths is centred around a growth mindset. Our children fully believe that, regardless of their ability, they can develop their skills through dedication and hard work. This view of Maths creates a love of learning and a resilience that is essential for deep, challenging learning and ultimate success. As such, 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. This ensures that all

can master concepts before moving to the next part of the curriculum sequence. Differentiation is through depth and not breadth. Pupils who grasp concepts rapidly are challenged through rich and sophisticated 'Stretch it out' problems that encourage them to explore a concept in greater depth, reason about their learning or make new connections. Early intervention is used to ensure that pupils struggling to grasp new concepts introduced are given more time to consolidate their learning before moving on. Where relevant, SEN children will receive separate small group or 1:1 support.

### Phases in learning

Early Years is at the start of this journey, where the focus is on developing a strong sense of number and the recognition that maths is all around us. Pattern spotting, making sets, spatial awareness are all integral parts of this. Maths in the Early Years, as with all subjects, takes place both indoors and outdoors through a wide range of practical and 'hands on' activities. Children then have the opportunities to apply and explore these concepts through continuous provision where deliberate engineering for mathematical discussions are carefully planned for. In Early Years, lessons are planned following the Mastering Number Program. This is then supplemented using White Rose small steps for other mathematical areas, such as shape etc.

In Key Stage 1 and 2 lessons start with a retrieval approach where children are provided with opportunities to revisit and build upon previous concepts. All children will then partake in a counting task to promote and deepen number facts or timetable knowledge as this has been made a priority in our school. In KS1, this will be through a Mastering Number session and KS2, Morning Arithmetic session. Within the lesson, a back and forth approach is delivered, these scaffolded tasks can be identified in books highlighted in red to show where the mastery approach has been actioned. Children are offered opportunities to deepen their thinking through a range of prompts (#tags) linked to their piece of learning should they complete a task early.

### Lesson Content

In support of foundational understanding of Maths, key components of lessons have been established in conjunction with teaching proformas to support class teachers with consistent delivery lesson-by-lesson.

These key components include: -

- Learning Intention - To be shared and recorded for each lesson. All learning Intentions are put onto a grid at the beginning of each new unit. Children then only need to refer to their learning intention by recording the number which corresponds to the grid. By doing this, this ensures lessons are maximised so that children have as long as possible for exploring the lesson's content.

-Key vocabulary - New vocabulary is shared with the children if they have not been exposed to it before.  
throughout.

-Children in EYFS and KS1 start their maths with an NCETM mastering number session that focuses on creating the foundations and building blocks to succeed in maths. In KS2, children start with a morning maths session that can progress into number of the day where children use taught procedures to explore a given number.

-EYFS teach maths through the use of NCETM and White Rose small steps. Children learn in adult led sessions as well as child initiated. Provision in EYFS extends the children's learning and allows them to explore and develop their learning through play.

-Children in KS1 and KS2 then move onto a maths lesson that follows the White Rose small steps. Teachers adapt these small steps to meet the needs of their class. They call upon a wealth of resources to provide the children with a mastery approach lesson that is underpinned by the 5 big ideas. During the lesson, a back and forth approach between teacher and pupil takes place where the pupils show their understanding through application of new skills. Conceptual and procedural variation plays a big part in lessons where it opens the door for children being able to apply their new skills when reasoning and problem-solving. Across school, children deepen their understanding through the use of maths hashtags which provide our children with the opportunity to extend their own understanding.

### Teaching of Time

At Shotley Bridge Primary School, we believe that the concept of time should not and can not be taught in a discrete two-week block. All teachers will take time throughout the day and week to explore the clock and reinforce the telling of time and this will continue throughout the whole year. Time will also be covered as a blocked unit also.

### Teaching of Time Tables

Our approach to teaching times tables aims to combine rote teaching of fluency facts, to develop rapid recall, with strategies to help develop a conceptual understanding of multiplication facts and patterns, therefore times tables are taught in the following order:

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Count in 2, 5, 10	Times tables 2, 5, 10	Times tables 5, 10, 2, 4, 8	Times tables 3, 6, 9, 7, and all	Times tables 12 x 12	Times tables 12 X 12 Square, cubed and prime numbers.

We also, carry out 'Launch' lessons when introducing a new times table. These lessons are used to explore patterns, build it, solve it, investigate it etc. Children are given time to work through a series of activities and then complete a quiz at the end.

## Performance and Learning Evidence

Evidence collation is key to support the learning process and the monitoring of Teaching and Learning by Subject Leaders and Senior Leaders. In order to evidence Maths effectively, the following strategies have been implemented: -

- EYFS - Floor Books
- Year 1 - Exercise books
- Year 2 - Exercise books
- KS2 - Exercise books

## Assessment

Throughout Maths lessons, the Class Teacher uses sensitive and precise questioning to gauge children's conceptual knowledge, along with carefully considered open-ended questioning to encourage new ways of thinking and develop practical skills. Children are assessed regularly to ensure all children make progress and identify those children who have gaps in their learning, so that it is ensured that all children access the learning and keep up.

The Class Teacher assesses children's learning through retrieval within the lesson and special retrieval (lesson to lesson, year to year, Key Stage to Key Stage). Class Teachers use a range of strategies, such as evidence in books, questioning, and observations to make judgements about the children and to plan for next steps. In Key Stage 1 and 2 children also complete an end of unit assessment from white rose. These assessments are completed at least 2 weeks after the unit has been taught in order to identify what the children have remembered and what may need to be followed up and readdressed. Children also complete an end of term assessment on I pads (maths.co.uk), where teachers are able to carefully select the questions which they want to assess. This method then provides teachers and leaders with question level analysis enabling them to spot trends and make adjustments to teaching and learning if required.

At the end of the academic year, Class Teachers make a final judgement on whether the children are meeting age-related expectation or working below. Conversations about attainment take place during transition meetings and are communicated to parents in the end of year report.