



Vision and Aims for Our Pupils

At Great Linford Primary School, we aim for all of our children to enjoy mathematics and have a secure and deep understanding of fundamental mathematical concepts and procedures. We want children to be able to see the mathematics that surrounds them every day and to enjoy developing vital life skills in this subject.

Great Linford Primary School adopts a Teaching for Mastery approach to mathematics. We aim to teach a curriculum which:

- Develops a growth mindset and positive attitude towards mathematics.
- Encourages children to look for connections between numbers and across different areas of mathematics.
- Encourages children to communicate their understanding effectively.
- Encourages children to become problem solvers who can reason; think logically; work systematically and apply their knowledge of mathematics across different areas of the curriculum.
- Develops children's fluency in both mental and written calculations as well as fluency to quickly recall mathematical vocabulary and factual knowledge.
- Enables children to become independent learners as well as being able to work co-operatively with others.

As a result of children's learning in mathematics and problem solving across the curriculum, children will be prepared for life in modern day Britain by being confident at applying their mathematical skills, whether that is in everyday life situations, in future learning or in the workplace.

Our 4 Anchors

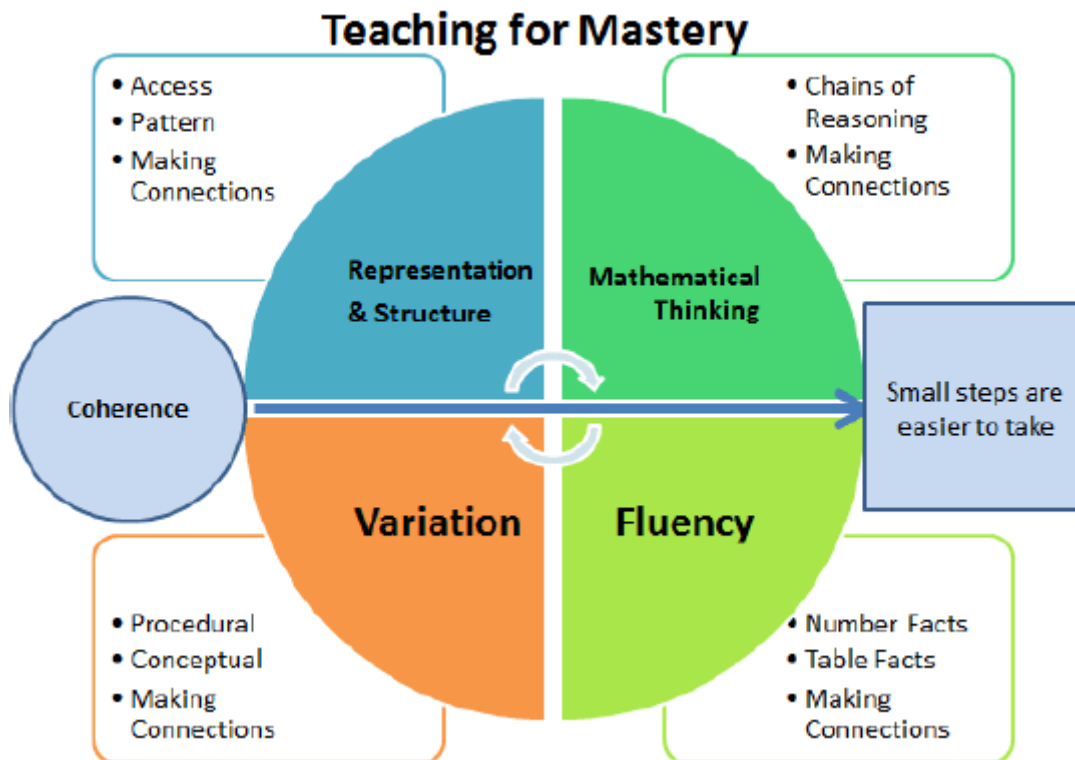
Mathematical learning begins with the manipulation of objects. Once children are able to understand a concept in this way, then they need to understand the same concept represented pictorially. Only then are children ready for abstract representation in the form of numbers and symbols before being able to apply their knowledge to different situations. At Great Linford Primary School, our mathematics planning and teaching is underpinned by the use of our 4 anchors which provide children with a progressional understanding of each area of mathematics:

- Vocabulary
- Symbols
- Pictorial Representations
- Concrete Apparatus

For each mathematics topic area, the 4 anchors are explored giving children a solid understanding of the mathematical concepts and strategies involved by using concrete apparatus, pictorial representation as well as abstract understanding, as well as enriching their vocabulary. These 4 anchors are displayed on our learning journeys and discussed regularly throughout the lessons, providing children with a tool to encourage their independence in maths learning.



The 5 Big Ideas



Our Teaching for Mastery is underpinned by the NCETM's 5 Big Ideas:

- **Coherence** is achieved by ensuring that learning is broken down into smaller connected steps so that every child is able to move through the programmes of study at broadly the same pace.
- A focus on **Representation and Structure** ensures that concepts are explored through the use of concrete, pictorial and abstract representations, allowing children to identify patterns and make connections.
- The use of **Mathematical Thinking** encourages deeper thinking through reasoning and conjecture, allowing for deeper connections to be made. Children are enabled to make generalisation statements and apply their learning across different contexts.
- An emphasis on the development of **Fluency** through weekly tests and daily practise ensures children are confident and able to apply their skills flexibly, as well as reducing cognitive load when problem solving.
- **Variation** through the use of different concepts, visual models as well as related or similar calculations allows children to develop a deeper understanding of mathematical concepts and helps them to identify patterns within our number system.

Planning and Teaching

- Teachers use the White Rose Schemes of Work as a basis for their planning in order to develop a coherent conceptual pathway through the mathematics curriculum. The focus is on the whole class progressing together.
- Flashback starters are used to revisit previous learning regularly to aid recall.
- Learning is broken down into small, connected steps, building from what pupils already know. The lesson journey should be detailed and evident on flipcharts (Smart Notebook or Powerpoint).



- Difficult points and potential misconceptions are identified in advance and strategies to address them are planned into the learning journey.
- Key questions are planned, to challenge thinking and develop learning for all pupils.
- Contexts and representations are carefully chosen to develop reasoning skills and help pupils to link concrete ideas to abstract mathematical concepts. Children should be shown typical and non-typical representations as well as non-examples.
- Stem sentences are planned in and used throughout lessons to embed the mathematical vocabulary required to communicate thinking effectively.
- Daily fluency practise occurs outside of the maths lesson to practise Weekly Maths Facts.
- Teacher-led discussion is interspersed with short tasks involving pupil to pupil discussion and practise through the use of apparatus and on mini whiteboards.
- Differentiation can be seen through the tasks completed by the children, however all children are working on the same small step and all children should be regularly practising fluency, problem solving and reasoning.

Assessment and Feedback

- Formative assessment is carried out throughout the lesson with the teacher regularly checking on pupil knowledge and understanding through the use of questioning and marking within lessons, and adjusting the lesson accordingly.
- Gaps in pupils' knowledge and understanding are addressed rapidly through individual or small group intervention either on the same day or the next day. This may be separate from the main mathematics lesson, or the following lesson may be adapted to cover misconceptions. All pupils should be ready for the next small step before it is taught.
- Books are marked before the next lesson according to our marking policy. The purpose of our marking is to identify and address misconceptions, to highlight successes to the pupils and to move children on to the next step where needed.
- Prior to a new unit of maths being taught, children will complete a pre-unit assessment (these are taken from the previous year group's end of block assessments supplied by White Rose) which will be used alongside the Ready to Progress criteria to identify essential gaps in prior learning.
- Teachers will use end of block assessments after each White Rose Block to provide further opportunities to identify gaps and to tailor future lessons. As children meet each National Curriculum statement, these are highlighted on their assessment grids and used as evidence for termly data points.
- Teacher judgements are moderated termly and teachers talk through the progress of their pupils at termly pupil progress meetings, ensuring that targeted support can be given to those who need it.

Inclusion and Special Educational Needs

Great Linford Primary School aims to meet the needs of all. Lessons are taught in mixed ability classes allowing children to learn from each other and support one another. Many classes have use of an additional adult during maths lessons. It is the responsibility of the teacher to decide how this adult will work within the class. This may include 1:1 or small group work in or out of the classroom. A teaching assistant may also oversee the main activity to enable the teacher to concentrate on specific pupils. They work collaboratively with the class teacher and feedback to the class teacher at the end of each lesson/activity. For some pupils, it may be more appropriate for them to be supported through the use of different resources, differentiated activities or through activities outside of the main mathematics lessons. Some may take longer to grasp concepts and may need careful scaffolding or extra time/support.



As well as supporting children with SEN, teachers also provide activities that suitably challenge children considered 'gifted and talented' within mathematics lessons. Teaching assistants may be used to provide an additional level of challenge for these pupils, or a teacher may work with them 1:1 on higher level activities to scaffold their understanding.

EYFS

Throughout the Foundation Stage, pupil understanding is assessed against the EYFS Statutory Framework whilst pupils in Years 1 – 6 are assessed using the National Curriculum expectations. Children in EYFS explore mathematical concepts through active exploration and their everyday play-based learning. To ensure that children are ready for the National Curriculum as they progress into year 1, EY practitioners use White Rose as a basis for their planning to enable them to build a solid foundation for their understanding of number.

Display and Resources

Every classroom has a mathematics learning journey which is divided into our 4 anchors of vocabulary, symbols, pictorial representations and concrete apparatus. Additionally, they display the learning journey small steps for each unit as well as key Stem sentences that are used within the lessons. Learning journey should have a challenge wallet with additional challenges linked to the current small step which children can access independently. These learning journeys are constantly changing and growing as they are added to during the lesson. They are created collaboratively with the pupils and should be an integral part of the learning process rather than just an attractive display. The learning journey may contain post it notes, examples of children's work, photocopied whiteboards, apparatus and flipboard chart notes. The purpose of the learning journey is to record the process of mathematical learning for each area of mathematics. This provides children with a constant reminder of the learning that has taken place, which can support them during lessons. The aim is for children to become more independent when faced with a difficult problem. All classrooms should have any mathematical resources in an easily accessible place and well labelled so that children can find and use them. Further maths resources for fractions, shape and measures are kept in a central location within the school and must be returned after use.

Monitoring

Pupils' progress is monitored through pupil progress meetings which occur each half term. The maths leader also regularly monitors the learning that is taking place in classrooms through lesson observations, learning walks, pupil interviews or by looking at lesson planning and books. Feedback and support is then given to teachers. The impact of mathematics policies and support is evaluated each term and discussed with the Governors and Senior Leadership Team.