Intent

Our Maths curriculum is reflected by our school vision which aims to enable all children, regardless of background, ability and additional needs, to flourish and become the very best version of themselves they can possibly be. We follow the White Rose framework, supported by clear skills and knowledge progression and sequenced appropriately to maximise learning for all children. We follow a mastery approach using the Concrete/ Pictorial/Abstract (CPA) methodology to enable the children to develop problem solving and reasoning skills.

Implementation

At Helmingham we follow the White Rose mixed age scheme of work .We supplement this with other resources from sites such as NCETM and other materials.

We have developed our curriculum to allow teachers and learners to achieve a secure and deep understanding of each Mathematical Concept. It is designed to give us the opportunity to address key points individually, ensure that children have a secure and deep understanding of those points, and encouraging a deeper mastery focus. In Nursery, Early Years, and where appropriate in Year 1, the principles of the Development Matters Framework will be followed, and there will be the opportunity to explore Maths and develop their understanding of Mathematical concepts through adult directed learning and self-led continuous provision

We follow a mastery scheme of work because the essential idea behind mastery in mathematics is that all pupils need a deep understanding of the mathematics they are learning so that future mathematical learning is built on solid foundations. Key ideas and building blocks are important for everyone and the class work together on the same key point, whilst at the same time pupils are supported or accelerated to gain depth of understanding and proficiency. Acceleration to higher content is avoided. Instead the reasoning behind mathematical processes is emphasised. Teacher/pupil interaction explores in detail how answers were obtained, why the method/strategy worked, and what might be the most efficient method/strategy." – (NCETM website)

At Helmingham we have a core set of principles and beliefs for achieving mastery in mathematics. This includes a belief that all pupils are capable of understanding and doing mathematics. Pupils are neither 'born with the maths gene' or 'just no good at maths'. With good teaching, appropriate resources, effort and a 'can do, will do' attitude all children can achieve and enjoy mathematics. We place great importance on' having a go' and making mistakes which we can learn from. Resilience and Risk taking are at the centre of our whole school ethos. Mastery is not just being able to memorise key facts and procedures and to answer test questions accurately and quickly. Mastery involves knowing why as well as knowing that and knowing how. It means being able to use one's knowledge appropriately, flexibly and creatively and to apply it in new and unfamiliar situations. For all maths concepts teachers need to ensure that children are challenged through being offered rich and sophisticated problems as well as developing fluency. Fluency is an important part of every lesson and children are shown a variety of ways to help improve and aid their recall .Children need to show that they can apply their knowledge in mathematics and then move on even further to prove they have mastered the concept.

A typical lesson involves recapping/revisiting, teaching new concepts, problem-solving activity prompts discussion and reasoning, as well as promoting an awareness of maths in relatable real-life contexts that link to other areas of learning. In KS1, these problems are modelled using concrete or pictorial methods. A decision is taken about how much of the scaffolding they need and then the children start to move away from the scaffolding as they become more independent Children are also encouraged to continue to use manipulatives in KS2 where appropriate to ensure a deep understanding. Teachers use careful questions to draw out children's discussions and their reasoning. The class teacher then leads children through strategies for solving the problem using modelled examples including those already discussed. Independent work provides the means for all children to develop their fluency further, before progressing to more complex related problems. Mathematical topics are taught in blocks, to enable the achievement of 'mastery' over time. Each lesson phase provides the means to achieve greater depth, with more able children being offered rich and sophisticated problems, as well as exploratory, investigative tasks, within the lesson as appropriate. During lessons, teachers will use 'live marking' and scaffolding to support and check children's understanding for this lesson and future lessons. After each unit of work, the children are given a short test and then AFL and GAPS analysis inform planning (including any extra support that is needed)

Monitoring and book scrutinies are carried out with feedback given to all staff individually at Staff Meetings. Lesson observations/team teaching/pupil talk/planning take place during weekly Leadership time. Colleagues will be developed using the Instructional Coaching method, a new initiative which aims to support colleagues on a regular basis with incremental modelled steps.

Formative teacher assessments are ongoing with summative White Rose assessments carried out at the end of each block and NTS tests at the end of each term. Results are also shared at Pupil Progress Staff Meetings the following week. In addition half termly Senior Leader analysis meetings take place. The Maths action plan includes book scrutinies which will be fed back to staff for gaps analysis and support. As a result of the school (and Trust) focus on Times Tables, we have been regularly using 'Times Tables Rock Stars' in KS2

Impact

By the end of KS2 we aim for children to be fluent in the fundamentals of mathematics with a conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. They should have the skills to solve problems by applying their mathematics to a variety of situations with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios. Children will be able to reason mathematically by following a line of enquiry and develop and present a justification, argument or proof using mathematical language. They will have developed strategies in line with CPA and have the necessary toolbox for approaching and tackling calculations and problem solving.