



Markland Hill Primary School

Maths Profile

Intent

At Markland Hill we believe that Mathematics is an important creative discipline that helps us to understand and change the world. Our aim and commitment is for all pupils to experience the beauty, power and enjoyment of mathematics and develop a sense of curiosity about the subject alongside a clear understanding.

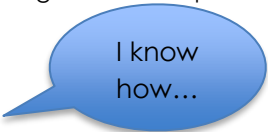
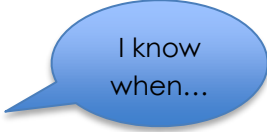
Mathematics, a universal language that enables understanding of the world, is an integral part of the curriculum. Beyond the study of numbers, shapes and patterns, it also provides important tools for work in fields such as engineering, physics, architecture, medicine and business. It nurtures the development of a logical and methodical mindset, as well helping to inculcate focus and the ability to solve all manner of problems.¹

We want our learners to leave Markland Hill with, not only a love of Maths but also a deep-rooted and long-term understanding in all areas of Maths, allowing them to become adept in the 3 overarching aims of the National Curriculum (problem solving, reasoning and fluency) and ultimately be confident mathematicians for life.

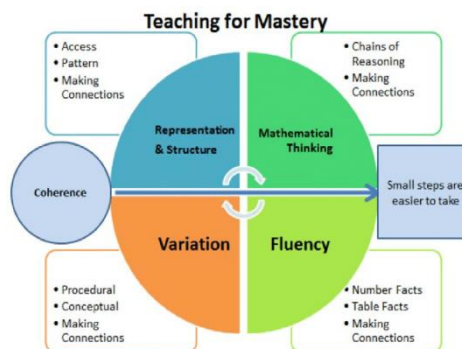
Curriculum Design and Implementation

Types of knowledge

Our mathematics curriculum is one in which children learn and use declarative, procedural and conditional knowledge, in order to guarantee long term learning and allow deep connections to develop over time.

Declarative knowledge	Procedural knowledge	Conditional knowledge
Consists of facts, formulae, concepts, principles and rules 	Recalled as a sequence of steps, this includes methods, algorithms and procedures 	Gives pupils the ability to reason and solve problems 

In order to make this a reality in our classrooms, our teaching and learning is underpinned by the [Teaching for Mastery 5 big ideas](#)². These 5 ideas are interwoven throughout our curriculum and teaching approach.



¹ Ofsted research review series: mathematics published 25 May 2021

² NCETM 2017

Growth Mindset

We foster positive 'can do' attitudes and we promote the fact that 'We can **all** do maths!' We believe all children can achieve in mathematics, and teach for secure and deep understanding of mathematical concepts through manageable steps. We use mistakes and misconceptions as an essential part of learning and provide challenges that build upon children's prior learnt knowledge and understanding.

Curriculum design

Mathematical content is broken down into small steps of learning, each explored fully to lead to a build-up of skills and knowledge with a basis of deep conceptual and procedural understanding. At our school, the majority of children will be taught the content from their year group only. They will spend time becoming true masters of content, applying and being creative with new knowledge in multiple ways. The class will move through the year group content at the same pace, with teachers providing constant opportunities to scaffold and support learners who need more input, whilst also providing challenge in order for rapid graspers to deepen their understanding. Our Maths curriculum fully meets the National Curriculum and curriculum content can be found clearly outlined in these curriculum maps which can be found at under the >Our Curriculum ? Maths area on the school website.

Lesson approach and characteristics

Maths is taught daily in all year groups.

EYFS approach

EYFS use the 'Mastering Number Programme' as the basis of their teaching of number, incorporating elements, ideas and resources from various sources to supplement and support. Great importance is placed on the children using concrete and pictorial representations. A teacher-led input is taught daily, with supporting activities weaved throughout continuous provision and mini me

KS1 & KS2 approach

In Y1 - Y6 a similar lesson structure is followed. Lessons last approx 60 mins and occur, in this form 4x per week. Teachers use high quality teaching resources including NCETM and Oak National Academy to form the basis of their lessons, this ensures the 5 big ideas are incorporated into lessons daily. Episodic learning, choral response, use of stem sentences, opportunities for exploration and collaboration are all pedagogical practices that support the learning of maths at Markland Hill.

Fluency and Number Sense

At Markland Hill we recognise the importance of developing solid number sense, including fluency and flexibility with number facts, to have a long lasting impact on future learning for all children. Gaining automaticity with number facts prevents cognitive overload and increases children's chances of becoming mathematicians who are competent and confident to reason and problem solve to a high level. The foundational knowledge and fundamental concepts of our number system are built from EYFS and throughout KS1.

By the time children reach KS2 they will have a sound understanding of the number system and a secure foundation upon which to build more complex mathematical concepts. By 'slowing down' and embedding key concepts early, children are better equipped for 'speeding up' and acquire knowledge moving through KS2 without the need for re-teaching.

EYFS and KS1

As previously mentioned EYFS use the NCETM 'Mastering Number' materials as the basis of their number input.

Moving into KS1 these materials form a 15 minute whole class fluency session done 4x per week. Children build their skills of subitisation, composition, comparison, cardinality, ordinality, counting and acquisition of number facts throughout Y1 and Y2 - leading to automaticity of addition and subtraction facts within 20.

KS2

From Y3 onwards children build upon the number skills they have already mastered. They continue to develop automaticity in addition and subtraction facts, whilst also reaching fluency and rapid recall of multiplication and division facts. In Year 4 and 5 children are taught to deeply understand the multiplicative relationship through 'Mastering Number at KS2' sessions. Other ways in which our curriculum supports fluency development are:

- 1)** There is a short daily maths session. This comprises of questions displayed for the class to complete and act as retrieval practice. Questions are written and designed by teachers to ensure they offer opportunity to practice any key areas and address any common misconceptions that have arisen.
- 2)** Homework tasks practise skills and recap knowledge covered in class. For Year 2 – Year 6 an intuitive online learning platform – Century Tech – is used to provide engaging and stimulating practice activities for children to complete independently.
- 3)** Each week, one lesson focuses on applying the methods and strategies in an arithmetic / fluency style assessment. Focus should be on methods / strategies used. Teacher modelling, discussions around efficiency and accuracy are key.

Models and Images

Each year group has concrete manipulatives appropriate for their year group content. These include Rekenreks, Base 10, Place Value Counters, Numicon, double sided counters and more. The use of manipulatives is twofold. They are used where appropriate, with the whole class, to introduce new concepts and form an important part of the learning process moving the children from the Concrete - Pictorial - Abstract.

This process is not always linear and children will move through it at different paces - however importantly no child will be expected to solely work in the abstract before they are ready. Where manipulatives are used in this way, they are planned to become obsolete when children now longer rely on them and have instead internalised the structure or concept. Manipulatives are also used within classrooms more routinely to support struggling learners with identified needs who need resources to support them daily.

Intervention

One of the principles of mastery we really value is the 'whole class teaching' approach. In summary this means; all learners move on together; learning is broken down into 'bite size' steps; no learner moves on until they have mastered the current steps; learners explore concepts in depth. In order for this approach to be successful and for all learners to progress - intervention is absolutely key. Intervention within Maths at Markland Hill is takes the form of both 'keep up' and 'catch up.'

In summary, in order to deliver the 3 primary aims of the National Curriculum (for children to become fluent in the fundamentals of Mathematics ; be able to reason mathematically and can solve problems by applying their Mathematics) we have designed a mastery approach to our curriculum that:

	• is achievable for all • provides deep and sustained learning allowing children to appreciate mathematical structures. • gives children the skills to build on something that has already been sufficiently mastered • allow children to be able to reason about a concept and make connections • develops children's conceptual understanding alongside procedural fluency • spends longer on key topics, providing time to go deeper and embed concepts • allows for the class to work together so that all can access and master maths • places emphasis on fluency and number sense of key facts • provides opportunity for 'keep up intervention' ensuring gaps in learning do not form • Has effective 'catch up' interventions in place for any children not making sufficient progress
<u>SEN and Inclusion</u>	At Markland Hill we pride ourselves on supporting all pupils to reach their full potential. The 'implementation' of the Maths curriculum has been carefully considered to cater for all learners therefore daily mathematics lessons are inclusive to pupils with special educational needs and disabilities. National Curriculum guidance informs our approach for catering for SEN: 'Children who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.' There is little differentiation in the content taught but the questioning and scaffolding individual children receive in class as they work through problems will differ, with higher attainers challenged through more demanding problems, which deepen their knowledge of the same content. Children's difficulties and misconceptions are identified through immediate formative assessment and addressed with rapid intervention – commonly through individual or small group support later the same day or within the lesson. A range of inclusion strategies, disseminated by the SENCO, are embedded in practice and teachers are aware of the special educational needs of the children in their Maths class, as well as those who have English as an additional language. Although the expectation is that the majority of children will move through the programmes of study at broadly the same pace, the 2014 National Curriculum states: 'Decisions about when to progress should always be based on the security of children's understanding and their readiness to progress to the next stage.' If a child's needs are best met by following an alternative plan, including coverage of the content from a previous year, this will be overseen by the SENCO, in collaboration with the class teacher. Specific arrangements for the provision of children with SEN and in particular those with an EHCP will be communicated to parents and carers during review meetings.
<u>Impact</u>	The impact of the Maths curriculum is measured in a number of ways. - Daily self-assessment, teacher marking - Low stakes quizzing - Data from online adaptive programmes ie. Century Tech, TTRockstars and Learning by Questions. - Weekly fluency check by way of arithmetic test (Y3-Y6) - Termly standardised assessments (NFER) - External Standardised Assessments 2024: KS1 ARE = 89% GD = 31%, KS2 ARE = 82% GD = 36%