Hagley Primary School
Maths Policy

Date: April 2025
Date of review: September 2026
Responsible member of staff: Mr T Withers

Signature: …… **(***Chair of governors***)**

Signature: …… **(***Head Teacher***)**

Our principles and beliefs

At Hagley Primary School, we are committed to fostering a love for mathematics, ensuring all children develop confidence in applying their mathematical knowledge and skills in everyday life. Our teaching approach is engaging and enjoyable, promoting a positive 'can-do' attitude while building fluency, reasoning, and problem-solving abilities. In the Early Years Foundation Stage (EYFS), children experience mathematics through rich, play-based learning opportunities that are carefully planned to develop a strong grounding in number, pattern, shape, space, and measure. Teaching follows the EYFS framework, with a strong emphasis on practical, hands-on experiences, mathematical talk, and purposeful provision that supports early mathematical thinking and prepares children for the mastery approach in Key Stage 1.

To achieve this, we embrace a mastery-based approach to mathematics. Mastery ensures that all pupils develop a deep understanding of mathematical concepts rather than simply progressing through the curriculum at speed. As a result, we dedicate time to exploring key concepts—particularly number—to strengthen fluency, encourage reasoning, and help pupils make meaningful connections in their learning. To support this, we use the concrete-pictorial-abstract (CPA) model, allowing children to explore mathematical ideas in depth and build a solid foundation of understanding.

We believe that the vast majority of pupils can master essential mathematical concepts, and we are committed to taking a steady, in-depth approach to learning. In our lessons, the whole class works together on the same key ideas, ensuring no child is left behind. Through continuous assessment, we provide targeted support and greater depth activities to challenge and extend learning, ensuring progress for all. Our focus is on fostering deep, sustainable understanding rather than rushing through content. By doing so, we equip pupils with the ability to apply their mathematical knowledge with confidence and flexibility, preparing them to reason and solve problems in a variety of contexts.

Our Mastery Curriculum

The national curriculum for mathematics (2014) aims to ensure that all pupils:

- *become **fluent in the fundamentals of mathematics**, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately*
- ***reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language*
- ***can solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions*

To achieve these aims, our curriculum is carefully structured across each term, allowing more time to focus on key mathematical concepts. This approach fosters deeper understanding and long-term retention. Additionally, our curriculum maps follow the White Rose scheme, ensuring full coverage of year group objectives while embedding fluency, reasoning, and problem-solving skills into every lesson.

Lesson design

Our lessons are carefully designed to provide a coherent, step-by-step learning journey, where key concepts are clearly identified, and misconceptions are swiftly addressed. A typical lesson follows all or part of the following structure.

Recall and Hook	Teach and learn	Apply	Challenge and Review
Lessons often begin with a Fast Four activity to recap prior learning and reinforce mathematical understanding. A problem-solving hook is introduced to engage pupils, either presenting a new concept or consolidating previous learning. This hook is open-ended, encourages mathematical discussion, promotes reasoning, and helps children make connections in their learning. Possible solutions are shared, explained, analysed, and discussed to deepen understanding, with the use of concrete resources and/or pictorial representations to support learning in all year groups.	Concrete resources and pictorial images are often used to build both procedural and conceptual understanding. High-quality modelling and worked examples ensure that learning is scaffolded effectively. Through collaborative work, children develop their understanding by reasoning, explaining, and drawing conclusions. The teacher uses targeted questioning to encourage deeper mathematical thinking and discussion. Variation is incorporated to help pupils practise the thinking process and apply their understanding in different contexts.	Once the concept has been taught, children apply their understanding independently. At this stage, independent intelligent practice is key, with carefully selected questions that allow pupils to apply their learning and uncover the underlying structure of mathematical concepts. Support is provided where needed to ensure all children can engage successfully with their learning	Children are challenged through tasks designed to deepen their mathematical understanding and develop their reasoning and problem-solving skills. They also have opportunities for peer and self-assessment, reflecting on their learning by discussing newly acquired knowledge and the skills applied during the lesson. Higher-level questioning supports formative assessment and encourages meaningful mathematical dialogue.

Problem solving

Children regularly take part in problem-solving lessons with an investigational approach, developing skills such as working systematically, making conjectures, generalising, reasoning, and visualising mathematical concepts. Problem solving is embedded throughout the curriculum, not limited to standalone lessons, so that children apply these skills in a range of contexts. They then reflect on their learning through journaling, verbal or written explanations, and self-assessment.

Calculation Guidance

In addition to this document, please refer to the White Rose Calculation Policy where you will find an in-depth guide to the calculation strategies taught at our school.

Classroom practice

When visiting our classrooms, you will see confident children who are engaged in their learning and able to reason and explain their understanding. This is achieved in a number of ways, including:

- The use of well-chosen practical resources, models and images e.g. bar modelling

- Paired and group work to support exploration and promote maths talk
- Reasoning and problem solving by children discussing, sharing and reflecting on their learning
- 'Ping pong' style teaching - to share ideas, misconceptions, pose questions and create opportunities for stretch and challenge
- A real focus on precise mathematical language
- A 'Growth Mindset' approach, where mistakes and misconceptions are valued as learning opportunities
- Teachers and teaching assistants supporting learning, asking skilful, thought-provoking questions and capturing children's reasoning skills through effective formative assessment
- Open-ended investigations incorporating low-threshold/high-ceiling tasks
- Arithmetic fluency activities that promote number sense across the 4 operations
- Displays that support learning, featuring key vocabulary, models, and images to reinforce understanding.
- Intelligent practice and carefully planned tasks

Meeting the needs of all our learners

> *'The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage.' (NC 2014)*

As all children access the same curriculum content simultaneously, some will grasp concepts more quickly while others may require additional support. Formative assessment is embedded throughout our lessons to identify these children and ensure appropriate support and challenge are provided. It is important to recognise that the need for support or challenge will vary between pupils due to the breadth of the mathematics curriculum.

Rapid graspers are challenged through:	We support children by:
• 'Differentiation by depth' • Explaining their reasoning to others • Challenges and questioning • Open-ended tasks • Generalising and testing rules • Individual maths projects	• Identifying misconceptions prior to the lesson so they can be addressed • Explaining the same key idea in different ways (finding the explanation that is most relatable for the child) • Timely interventions • Small, connected steps in learning

Assessment

Teachers plan lessons using progression grids derived from National Curriculum statements, ensuring children develop both their knowledge and skills throughout the primary phase. Alongside this, teachers assess children's understanding of key concepts and skills throughout each unit of work. This assessment often takes the form of informal activities, such as quizzes, questioning, and reviewing children's work. As a school, we promote responsive teaching through formative assessment strategies. At the end of each term, summative assessments are used to evaluate progress and inform future planning. The key skills and knowledge to be taught and assessed are identified during the planning stage of a unit. At the end of the year, parents receive a summary of their child's progress**.**

Home Learning

To ensure that learning is embedded in the long-term memory, the children's home learning will reflect what they are currently learning about in school. Home learning may include online activities, written tasks or investigations. In addition, KS2 children are encouraged to practise their times tables and number bond facts to develop their fluency.

Opportunities for Use of Technology

Children have access to a range of educational software that enhances their mathematical knowledge and skills, supporting tasks such as data handling, classification, and presenting information. Internet access and interactive whiteboards in every classroom further enrich learning. iPads and laptops are also used to research, collect, and present work, with regular reminders about online safety. To support fluency, Times Tables Rock Stars is encouraged to improve multiplication recall, particularly in preparation for the Year 4 multiplication check, while NumBots is used in Key Stage 1 to build number fluency from an early age.

Monitoring and Evaluation

The subject leader, alongside a member of SLT, is responsible for monitoring the quality of teaching and standards of children's work. This includes pupil voice and book looks to assess the impact of the curriculum and pupil's understanding. Staff are encouraged to review the curriculum termly to ensure full coverage of the National Curriculum and alignment with long-term planning. These evaluations contribute to ongoing monitoring and reporting by the subject leader**.**

Marking and Feedback

Marking in mathematics is timely and focused on supporting progress. Children are encouraged to self-mark during lessons to gain instant feedback, with teachers reviewing answers together before the end of the session to address misconceptions and celebrate success. Feedback may be given verbally, through written comments, or whole-class discussions. Where appropriate, next steps are included to guide future learning. All feedback aims to deepen understanding and support each pupil's mathematical development.