



Hazel Grove Primary School MATHEMATICS POLICY

Learning Together, Learning Forever

At Hazel Grove Primary School, we strongly believe that it is our responsibility to prepare our pupils with the mathematical knowledge, skills and attitudes that will help them become successful, happy and confident mathematicians – preparing them for the world they know and the world yet to be discovered. We aim to inspire our pupils so that they believe that they can achieve in maths.

Maths Curriculum Intent

At Hazel Grove Primary School, we believe **everyone** can achieve in maths. Our intent for mathematics is to ensure that we teach a progressive curriculum that allows children to make sense of the world around them by making connections between mathematics and everyday life. We ensure that the aims of the national curriculum for mathematics (set out below) are fundamental drivers for HGPS Maths Curriculum so that all pupils:

- Become fluent in the fundamentals of mathematics, including the varied and regular practice of increasingly complex problems over time.
- Reason mathematically by following a line of enquiry, understanding relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- Can solve problems by applying their mathematics to a variety of problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

We also aim to ensure that mathematics is a high-profile subject which our children view positively and with a 'Growth Mindset'.

Mastery of Maths

We have high expectations of all our pupils and our personalised maths curriculum strongly reflects our understanding of mastery. At HGPS, achieving mastery means:

- believe all children can achieve;
- development of deep mathematical understanding;
- development of factual/procedural and conceptual fluency;
- Longer time of key topics, to provide time to deepen and embed understanding.

Maths Curriculum at H.G.P.S

EYFS

Work undertaken within the Foundation Stage is guided by the requirements and recommendations set out in the Early Years 'Development Matters' EYFS document.

EYFS use the CPA approach to teaching 'mastery'. Through play and well-established teaching methods, children are able to develop a love and deep understanding that allows them to master maths.

By the end of the foundation stage our children will be expected to be confident and competent in learning and using key skills. The areas of learning include:

- Counting
- Sorting
- Matching
- Seeking patterns
- Making connections
- Recognising relationships
- Working with numbers, shapes space and measures

Mathematical understanding is also developed through stories, songs, games and imaginative play so that the children enjoy using and experimenting with numbers, including numbers larger than ten.

KS1 and KS2

The KS1 and KS2 maths curriculum is guided by the National Curriculum statutory requirements. KS1 and KS2 use the **CPA approach to teaching 'mastery'**. We no longer follow a scheme of work but utilise a use a range of sources to help guide our personalised curriculum such as: White Rose; NECTM, Maths No Problem and Deepening Understanding. The Units of Learning in maths are, by necessity, organised into distinct areas (see long term plans) and units of learning are carefully sequenced to **build on previous learning** and also **to allow links between mathematical concepts**. We also utilise the **'White Rose' small steps** within our curriculum. The majority of children in each year group need to be secure in each small step before they move on. Pupils will also make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They will also apply their mathematical knowledge to science and other subjects.

The expectation is that the majority of pupils will move through the units of learning at broadly the same pace. However, decisions about when to progress will always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly will be challenged through being offered rich and sophisticated problems before any acceleration through new content. **This is strongly reflected in our 'personalised learning to Maths approach'.**

Those who are not sufficiently fluent with earlier material will consolidate their understanding, including additional practice, before moving on.

Key stage 1 – years 1 and 2

The principal focus of mathematics teaching in Key Stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, using the CPA approach. At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. By the end of Year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice through 'Making Decisions', at this early stage will aid fluency. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at Key Stage 1.

Lower key stage 2 – years 3 and 4

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value through the CPA approach. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12-multiplication table and show precision and fluency in their work. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling. This will also be assessed through the most recent, 'National Times Tables tests.

Upper key stage 2 – years 5 and 6

The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio. At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages. Pupils should read, spell and pronounce mathematical vocabulary correctly.

Planning

Mathematics is a core subject in the National Curriculum, and we use the ‘CPA’ approach to teaching ‘mastery of maths’ as the basis for implementing the statutory requirements for mathematics.

We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term). We have developed our own detailed outline of what we teach long term. This is a guide for teachers and should be used as such at the beginning of the year - depending on the needs of each cohort. The Units of Learning outlined by these plans, are organised into distinct areas (see long term plans) and the units of learning are carefully sequenced to build on previous learning and to allow links between mathematical concepts.

Our medium-term mathematics plans in Years 1 to 6 are taken from the ‘**White Rose – small steps**’ materials. They give details of the main teaching objectives broken down into small steps for each phase of learning.

In some cases, some children will require the objectives from the year groups below their chronological age and will be working towards their year group related objectives. Where children are working consistently above their year group related objectives, there will be planned opportunities for their knowledge to be ‘deepened’ through varying applications of their skills.

Each year group produces weekly plans. Planning makes links to our Creative Curriculum and to promote cross-curricular links wherever possible.

Teaching and Learning for Mastery

The concept of teaching mathematics to mastery is to ensure that topics are well developed. We have high expectations of all our pupils and our personalised maths curriculum strongly reflects our understanding of mastery. At HGPS, achieving mastery means:

- believe all children can achieve;
- development of deep mathematical understanding;
- development of factual/procedural and conceptual fluency;
- Longer time of key topics, to provide time to deepen and embed understanding.

Our teaching of Maths for Mastery is structured to help concepts to be taught for longer and go deeper. For each year group, we break each curriculum strand down into 'core concepts'. These are taught in blocks of lessons to give sufficient time to develop a deep and sustainable understanding of **core maths concepts**. Each concept is broken down into '**small steps**' (lesson see White Rose). Each lesson and concept build on prior knowledge to help children build a robust and deep understanding of the concept before moving on.

The Unit teaching and learning Sequence

Pre – Learning Task (Quick check on prerequisite skills and warm-up for children)	'Small Steps' Lessons Including Progress Checks	Post-Learning Task (including Pupil Self-Assessment and Reflection)	Deepen Activity
	Immediate Intervention		

Lesson Sequence

Making Decisions Activity designed to support all key number facts	Whole Class Learning Whole class problems to spark curiosity and provide opportunities for deeper questioning. Children share, reason and learn from misconceptions through whole-class discussion	Guided Learning Scaffolding is carefully reduced to prepare children for independent practice. Children work with partners or groups	Independent Learning Activities designed to be completed independently, using conceptual and procedural variation to build fluency and develop deeper mathematical concepts	Reflect Children to review, reason and reflect on learning and teacher to assess depth of understanding
			Challenge Question This links to other areas of maths encouraging 'greater depth thinking'	

Mathematics and inclusion

Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children, whatever their ability and individual needs. We strive hard to meet the needs of those pupils with special educational needs (SEND), those with disabilities (SEND), those who are 'High Achievers' and those learning English as an additional language. For further details see separate policies: Special Educational Needs & Disability; High Achievers; English as an Additional Language (EAL).

When progress falls significantly outside the expected range, several factors are considered - classroom organisation, teaching materials, teaching style, **Adapted Teaching** - so that we can take some additional or different action to enable the child to learn more effectively. H.G.P.S 'Assessment practices', allows us to consider each child's attainment and progress against expected levels. The latter new assessment procedures inform our planning and ensures teaching is matched to the child's needs.

Intervention through School Monitoring and School Active will lead to the creation of an Individual Education Plan (IEP) for children with special Educational needs. The IEP may include, as appropriate, specific targets relating to mathematics. We also have two Maths Recovery trained staff members (Maths Lead and LSA) who will deliver Maths Recovery Intervention to our lowest 20% maths attainers.

Assessment and Recording

We assess children's work in mathematics from three aspects (long-term, medium-term and short term). We make short-term assessments which we use to adjust our daily plans. In Years 1 – 6, we use pre- and post-learning tasks as short-term assessment opportunities. Children can see their progress and if appropriate, receive 'Next Steps' in their books as an instant feedback of how they can move their learning forwards, or what they need to consolidate, and are given time and support in order to act on their individual next steps (see Green Pen Marking).

Hazel Grove Primary School uses '**White Rose Assessments**', **Termly** and '**INSIGHT**' to record the achievement of objectives in maths, in order to form longer term assessment judgements, firmly based on evidence shown within lessons, in using and applying contexts, and through assessments. We use '**White Rose Termly Progress Assessments**' for formal written assessments alongside a teacher judgement form a child's work throughout the half term. This close monitoring of children's progress half-termly allows interventions to be put in place quickly when children require extra support in making progress.

At Hazel Grove Primary we make long-term assessments towards the end of the school year, and we use these to assess progress against school and national targets. We can then set targets for the next school year and make a summary of each child's

progress before discussing it with parents. We pass this information onto the next teacher at the end of the academic year, so that they can plan for the new school year. We use the national SAT tests in Years 2 and 6.

Marking and Target Setting

At Hazel Grove Primary School, we use 'Green Pen Marking' (see marking policy) in order to give children feedback and next steps in mathematics. Feedback on the children's learning in maths is given during the lesson where possible, through marking children's work as they progress and by giving verbal feedback to the children. Children in Key Stage 2 are given opportunities to mark tasks that involve routine practice with support and guidance from the teacher, along with peer assessment. And where appropriate, children are encouraged to check computational exercises with a calculator. Where verbal feedback has been given, the children's work will be marked with a 'VF', in accordance with the school's marking policy. Through verbal and written feedback, children are given 'next steps' for learning, and are given time and/or support in order to act upon these next steps.

Children from years 1 to 6 have a whole school agreed, maths target which is year group appropriate. These targets are usually based on specific number skills appropriate to the year group objectives, such as times tables, number bonds etc., but could also have a presentational accuracy element too, where necessary. When the child has achieved a target five times independently, their target is then changed.

The Governing Body

The Governing Body is informed about standards in maths through presentations and data summaries. The Chair of Governors is present at all meetings regarding pupil achievement with the external School Evaluation Partner (SEP).

Links with Secondary Schools

High achievers from Year 5 are invited to attend inter school challenges organised by our main feeder school. We have close links with HGPSH who also provide further opportunities for able and exceptional students from across the school.

Parental and Community involvement

Parents receive individual progress reports for their children twice yearly, and have the opportunity to look at their children's work at parents' evenings and discuss their child's progress.

At the start of the academic year, Parents will receive a maths parent booklet, created by the teachers, that gives an overview of the maths objectives within the

year group, examples of written calculation methods used in school, ideas of how to support maths at home, and Rock star Maths information.

Monitoring and review

Monitoring of the standards of children's work and of the quality of teaching in mathematics is the responsibility of the mathematics subject leader, Key Stage Phase leaders and Head Teacher. The work of the mathematics subject leader also involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. The mathematics subject leader gives the Head teacher regular updates in which strengths and weaknesses in the subject are evaluated and areas for further improvement indicated. There is an action plan for maths, to ensure that issues from reported Data (attainment and progress), as well as advice from the latest OFSTED school inspection are being acted upon, and to ensure there is parity across the whole school. Regular learning walks are conducted to look at maths across the school. These provide an insight into the children's engagement and enthusiasm, level of challenge and quality of teaching and learning in a 'snapshot'.

Date	Changes
July 2021	None
September 2022	Assessment and Intervention