

Hawthorn Primary School

Maths Statement: Intent, Implementation and Impact



Whole School Curriculum Vision Statement

At Hawthorn, we provide an inclusive and creative learning environment enriched with experiences to nurture individuals socially, emotionally and academically enabling them to develop positive relationships. We support children to work together to achieve, succeed and become the best version of themselves.

As a school we incorporate the Skills Builder Framework to underpin our four curriculum drivers. This framework identifies eight universal skills which provides experiences and opportunities that allow children to become:

- **Effective Communicators** who develop effective listening, speaking and presenting skills which allow them to process and share information and ideas.
- **Reflective Thinkers** who have the ability to work creatively to find solutions to a challenge and solve problems.
- **Aspirational Individuals** who develop resilience and have the ability to achieve, setting goals for themselves.
- **Active Citizens** who can work as part of the community, in school and beyond; working cooperatively, supporting and encouraging others.

Intent

At Hawthorn we recognise that mathematics is essential in everyday life and, with this in mind, we ensure that children develop a positive and enthusiastic attitude towards mathematics that will prepare them for the next stage of education and stay with them throughout their lives.

We strive to provide children with opportunities to become fluent in the fundamentals of mathematics, including through varied and frequent practice, reason mathematically by following a line of enquiry and solve problems in fun and meaningful contexts. We want children to look for patterns, spot connections and make relationships between contexts.

Pupils typically enter our setting with low levels of prior attainment, therefore it is vital that a basic understanding of number, fluency of factual recall and fluency of mathematical procedures are addressed as we believe fluency is a necessary prerequisite to reasoning and problem solving.

The national curriculum for mathematics 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.

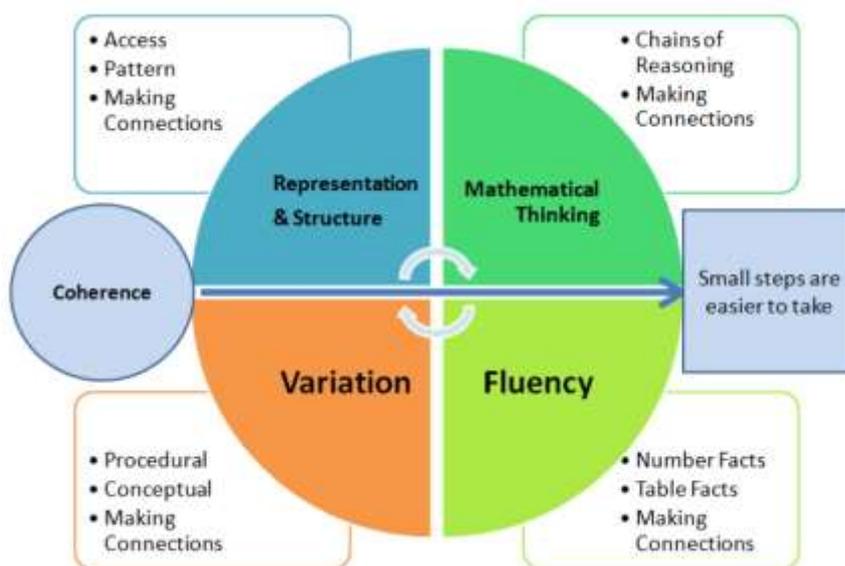
Through the teaching of maths, we aim to develop:

- A positive attitude towards maths and an awareness of the relevance of maths in the real world.
- An ability to solve problems and think logically in order to work systematically and accurately.
- An ability to work both independently and in co-operation with others.

- An ability to apply skills learned to other subject areas.
- Competence and confidence in pupils' maths knowledge, concepts and skills.

Implementation

At Hawthorn we are on our maths mastery journey, working closely with the Maths Hub. We are currently in the embedding phase of the Maths Mastery programme, introducing the '5 big ideas' into our daily teaching. The aim of this phase of the programme is to scale up teaching for mastery approaches from individual teachers' classrooms, ensuring whole-school practices are consistently adopted. There are six workshops across the year, plus support from a Mastery Specialist.



Our curriculum is designed to develop children's knowledge and understanding of mathematical concepts from the Early Years through to the end of Y6.

We adhere to the statutory guidance set out in the EYFS Framework and the 2014 National Curriculum.

The curriculum is carefully sequenced to ensure children can build foundations in number during the Autumn term, including place value; addition and subtraction and multiplication and division which will allow other key concepts to be built upon. Lessons allow for prior learning to be revisited and at the start of each new topic, key vocabulary is introduced and revisited regularly to develop language acquisition, embedding as the unit of work progresses.

Mathematical topics are taught in blocks, to enable the achievement of 'mastery' over time. These teaching blocks are broken down into smaller steps, to help children understand concepts better. This approach means that children do not cover too many concepts at once, which can lead to cognitive overload. Teachers build on prior knowledge when introducing new concepts and link new learning to skills and knowledge already acquired.

Children move through the different stages of learning at their own pace and lessons are tailored to meet the needs of all children. Reasoning and problem solving are integral to the activities children are given to develop their mathematical thinking. Children who are quick to grasp new content are offered rich and sophisticated problems, within the lesson as appropriate. The use of

'dive deeper' strategies have been introduced and will be further developed throughout the school. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on. The use of same day intervention is used throughout school to allow children to keep up rather than catch up.

The teaching of mathematics is developed through other subject areas, ensuring children see the link between what is taught in maths lessons and the wider the curriculum. Teachers are encouraged to make meaningful links to maths outside of the maths lessons and encourage children to identify maths in the wider world, e.g:

- In Science children are taught how to collect reliable data and represent this appropriately.
- In Design Technology children develop their measurement skills to help build, make and create.
- In PSHE children are taught about managing their money and how to be financially minded.

The use of outdoor area has allowed teachers to take maths learning outside, including through using natural materials to explore shape; measures are used in our edible playground and forest area and children have used the grounds to support their statistics work.

Planning

High quality planning resources are used throughout school, such as NCETM, Nrich, I see reasoning and White Rose to support, stretch and challenge all children within the classroom. In addition, the school's progression in calculation document is used to ensure a coherent approach to teaching the operations across our school.

We have a concrete, pictorial, abstract (CPA) approach to the teaching of maths and understand how important it is to show children a range of representations to develop deep understanding. We use a wide range of concrete objects within lessons, including Numicon, Base ten, counters and rekenreks.

Mastering Number

EYFS and KS1 are currently involved in the 'Mastering Number' programme with the Maths Hub and this is Hawthorn's second year. This programme aims to secure firm foundations in the development of good number sense for all children. The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number. All teachers in EYFS and KS1 have received 1:1 training, they have access to the resources online and a support group is available to share ideas. We have 60 Rekenreks within school, KS1 access these from Autumn term and they are introduced to EYFS in summer term.

In KS1 the mastering number sessions is a 10-15 minute session delivered on top of the usual maths lesson.

In EYFS the mastering number programme intends for children to make good progress towards the Early Learning Goals (ELG), be confident in communicating their ideas and develop a positive attitude towards maths and a willingness to 'have a go'. The sessions are designed to start from a point in which all children can access the learning and it is expected that all children will engage in the sessions.

The mastering number sessions cover all of the number work that will support children to meet the ELGs but do not cover measures or shape and space. There are four mastering number sessions

per week and the fifth session will be dedicated to one of the other areas, as well as opportunities being available in the wider provision.

MTC

The national curriculum states, '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'. At Hawthorn we believe that children knowing their times tables is important to mathematical learning and understanding. The reasoning and learning that comes with understanding times tables can be applied across a wide range of topics within mathematics. We aim to take a broader approach to teaching times tables which will maximise children's recall ability; reduce cognitive load, and help children to learn conceptually as well as procedurally. We have adopted a whole school approach to the teaching of time tables, building up facts systematically, exploring patterns, using concrete resources and engaging in activities focusing on variation and intelligent practice (see whole school approach to teaching times tables.)

At Hawthorn, we ensure children have opportunities within every lesson to discuss their mathematical thinking and respond to 'What do you notice?' questions, encouraging children to make connections and spot patterns.

Impact

Children at Hawthorn enjoy maths and have a positive mind-set towards their maths learning, this is evident in pupil voice surveys and when conducting learning walks. Teachers promote maths well in school and have created a positive learning environment where children know it's ok to make mistakes and how to learn from these. Children are becoming more confident at finding more than one solution to a problem and will share their methods within lessons. They can choose appropriate equipment to facilitate their learning and explain how to use them.

National Results

Our latest progress measure for maths in 2022 KS2 reported data is + 0.3 and pre-covid progress measure from 2019 showed +1.7, showing children make good progress from their starting points. Children in KS2 achieved 77% which was above national data and 27% achieving GDS.

KS1 results highlighted the impact of the pandemic with only 48% of children achieving the Expected standard.

Assessment

Formative assessment takes place on a daily basis with teachers assessing children's progress regularly and adapting their teaching to meet the needs of individual children. Reviewing prior learning allows teachers to identify any gaps in knowledge, which aspects of learning need to be revisited again and which aspects have been fully mastered. Teachers track progress using our school tracker and this is shared with SLT at pupil progress meetings and during transition meetings.

Teachers also use the SCART assessment tool to track smaller steps of progress for those children who are accessing a more tailored curriculum to meet their needs.

NfER tests are used in Autumn term for Yr2-Y6 and then Summer assessments for Yr1, 3 and 4. NfER summer assessments are not used for Yr2 and Yr6 as they complete their SATs.

Yr4 complete their MTC in June, data for 2022 shows 76% of the cohort scored 20>.

Evidence of children's work can be found in maths books, on SeeSaw (KS1/KS2), Tapestry (EYFS), photographs and teacher observations. These show a range of activities which cover fluency, reasoning and problem solving.

Regular pupil progress meetings with SLT allows children to be closely monitored and any child identified as a concern or is making slower rates of progress can be discussed and interventions can be put in place and then reviewed. Teachers know who their pupil premium and SEND children are and ensure appropriate provision is provided. All SEND children either have a tailored SEN support plan or will be included on year group provision maps.