Mathematics Policy
2026-2027

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The Nature of Mathematics at Hillbourne Primary School

At Hillbourne Primary School we aspire to ensure that our mathematics curriculum equips pupils with the knowledge they need to succeed in life.

'The responsibility of mathematics education is to enable all pupils to develop conceptual understanding of the mathematics they learn, its structures and relationship, and fluent recall of mathematical knowledge and skills to equip them to solve familiar problems as well as tackling creatively the more complex and unfamiliar ones that lie ahead.' *Page 6 Mathematics: made to measure May 2012.*

"Teachers to use their subject and pedagogical expertise to provide high quality teaching and curricular experiences in order to secure the best possible learning and outcomes for their pupils" *Confident Mathematicians: A View from Ofsted, July 2016, Surrey Plus Maths Hub*

'Teachers should use every relevant subject to develop pupils' mathematical fluency. Confidence in numeracy and other mathematical skills is a precondition of success across the national curriculum.' *Page 9 NC 2014*

The Mathematics Curriculum

The National Curriculum 2014 sets out the programmes of study for each year group. Our planning is supported by the National College for the Excellence in the Teaching of Mathematics (NCETM) which guides our teaching of Maths through small, well-sequenced steps. Teachers can use or adapt tasks for fluency, reasoning and problem-solving within each learning journey. As well as using the NCETM prioritisation materials, teachers can use additional programmes of learning such as Nrich and White Rose Maths Hub.

The key principles of our learning approach in Maths are:

- Depth before breadth; this is achieved by emphasising deep knowledge through individual support and intervention.
- Varied fluency and consolidation to build understanding of underlying concepts in tandem.
- Precise questioning to test knowledge and assess pupil progress.
- Most pupils are progressing through the curriculum at the same pace. We aim for at least 80% of the class to achieve the learning intention before progressing to the next small step.
- Methodical curriculum design supported by carefully crafted lessons and interventions.
- A blend of resources to foster deep conceptual and procedural knowledge, e.g. the use of concrete and pictorial apparatus
- Developing Mathematical thinking and language through talk tasks and promoting technical vocabulary.
- High expectations that all pupils are capable of achieving high standards in Maths
- Creating an atmosphere and culture where children are unafraid to grapple with Mathematics
- Challenge comes through more complex problem solving, not a rush to new content. (The Ofsted-Proof Guide…, Third Space Learning (2016).

Foundational Knowledge

A strong understanding of foundational knowledge in mathematics is essential for pupils' future learning and success. At our school, we recognise that fluency in foundational mathematical skills, including number facts, place value, calculation strategies and times tables, underpins children's ability to reason, problem-solve and apply mathematics confidently across the curriculum. Regular practice, retrieval and repetition are carefully planned to help pupils embed these core concepts into their long-term memory, enabling them to recall knowledge efficiently and accurately. By securing foundational skills through a balance of explicit teaching, purposeful practice and ongoing reinforcement, we ensure that all children develop confidence, resilience and mathematical proficiency, equipping them with the tools they need to access more complex mathematical ideas as they progress through their education.

Fluency, Reasoning and Problem Solving

These are three key areas required to gain a deep mathematical understanding. Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

Planning for mathematics

The planning for maths should follow the National Curriculum programmes of study for each year group which has been prioritised and sequenced using the NCETM. The learning will be progressive and ensure the children are taught the substantive and disciplinary knowledge needed over the unit so that by the end of the unit, good progress is evident.

The teaching sequence should involve concrete, pictorial and abstract methods of calculations (as appropriate) or mathematical skill to aid conceptual understanding of the objective. Each session will begin with a 'remember' task which promotes the retrieval of previous learning, this may be part of a 'fluent in five' or a stand-alone task. All inputs will require an 'I do, we do, you do' model, where the teacher models the disciplinary knowledge and then the children would have the opportunity to discuss and practise it. Once a child has shown they are proficient in using the disciplinary knowledge, they would then have the opportunity to practise this skill in a range of ways in varied fluency as well as reasoning and problem-solving independently. To enable necessary support, accelerated progress and a pacey learning journey, the teachers must move around the room to engage, question and live mark before moving them on to their next learning task. This ensures that the teachers can address any misconceptions at the point of teaching. If the children can respond to the range of tasks correctly, children will have the opportunity to 'deepen' their learning which may require the children to combine a range of mathematical concepts; investigate and reason mathematical statements or patterns; work systematically to solve open-ended questions; or find multiple solutions to complex, multi-step problems. At the end of the unit, assessments are completed which allow children to work independently to show their progress of the unit of work. This is then used by the class teacher to guide future learning where common misconceptions arise.

The maths leaders and SLT will monitor that the planning follows the agreed format but will not expect the audience for the planning to be anyone other than the teacher themselves. The maths leaders and SLT will however be looking at the impact of planning on the learning in a lesson or over time in the

books, from the classroom learning environment and through pupil conferencing. All planning should dedicate appropriate time to children working in maths for a sustained period of time for both teacher-structured work and independent work. The productivity of the children over time is a key element of work scrutiny. It generally follows that good teaching with high expectations results in at least good productivity and therefore greater evidence of progress.

All steps in the maths learning journey should allow all children to become fluent, reason effectively and solve problems that are appropriate to their next steps. It is expected all children (including those with an SEND) will have opportunities to reason and problem solve at their level. Ofsted indicate that the best-informed teachers and subject leaders know the aims, give increased emphasis to reasoning and problem solving across the mathematics curriculum while using practical apparatus and images to support pupils' conceptual understanding (An Ofsted-Proof Guide… Third Space Learning (2016)). Reasoning and Problem solving should feature as a regular aspect of the learning journey for each step taught: not just as an end of unit expectation.

Mathematics in Early Years Foundation Stage

In EYFS, there is explicit teaching which uses the CPA approach alongside the rest of the school. Children typically learn through a mix of free-choice play and more focused activities with adults both inside and outside. This is adapted appropriately to challenge or support pupils. Adults will use mathematical language and questioning effectively to develop the children's vocabulary and thinking.

Mathematics and early counting is used in real life situations. For example, the children embed their number skills when tidying away which enables them to practise touch counting whilst also ensuring objects are back where they should be. Progressively, resources are then organised into tens which helps children's number sense and bonds to ten. This enables children to practise maths regularly without realising it.

The transition phase into Year 1 ensures that, towards the end of the EYFS year there are increased opportunities for more structured sessions. To support this phase further, at the start of Year 1 there is still some 'free flow' provision.

Resources and strategies for mathematics

There are a wide variety of practical resources in the school to promote children's understanding. Some of these are:

- Shapes, including 3D shapes, geo-boards
- Clocks
- Dienes blocks and place value counters
- Multi-link cubes
- Fraction walls
- Equipment for measures – scales, cylinders, weights for estimation
- Numicon

Furthermore, each class is expected to have an up-to-date learning wall which the children can use appropriately to support them in being independent. As well as this, they are expected to display the prior learning that the children will need to refer back to. Other aspects of the working wall include:

key vocabulary, stem sentences to support reasoning, success criteria or information that would help the children to solve mathematical problems, as well as having models (I do) up for the children to refer to. Classrooms are also expected to have a clear maths resource area (age and needs appropriate), from where the children can independently choose to use mathematical resources to support their understanding.

Arithmetic practise Year 1-6

To ensure children have the regular opportunities to consolidate and build on basic arithmetic skills all lessons will start with an arithmetic starter (Fluent in 5). The arithmetic calculations should be on concepts previously taught and presented to the children in different ways to show their flexibility.

In KS1 this may be on small whiteboards to begin with and not timed. From the spring term however, Year 2 children should begin to complete this learning in their workbooks. During this arithmetic time, the teacher (or other adults) should lap the room for on-going AFL (assessment for learning) or teach/pre-teach with children with SEND or learners who require support. The questions should be peer/self-assessed and the teacher should make a note of children with misconceptions, ready to re-visit.

Checking understanding

Within the maths lesson, there should be constant checking by the teacher or teaching assistants to gauge understanding, to then work with individuals or a small group in order to support the learning or provide challenge. These groups can be planned based on the assessment information from the previous day, or they can be groups formed during a lesson where the teacher judges that a focus group would move the children's learning on. At all times, the children chosen will be fluid and flexible depending on what the children need. Teaching assistants should work with a variety of ability groupings over a week, unless they are timetabled for 1:1 support for an EHCP/SEND/IBP child.

Presentation in mathematics

The children should be taught and constantly reminded of how to present their written maths work to a high standard and encouraged to take a pride in their work in line with current school presentation guidelines. They should be taught to write one digit per square and use the lines on the page to support drawing with a ruler.

Inclusion in mathematics

Children whose progress in maths is identified as slow at pupil progress meetings have a range of strategies put in place to accelerate progress. Changes to the 'Quality First Teaching' (QFT) are made with a focus on these children. Interventions may be planned in over and above QFT to support gaps in learning.

Children with SEND

For additional guidance, please check in accordance with the 'Inclusion policy'.

All children with SEND who struggle to grasp mathematical concepts will be assessed regularly and their personal targets updated on their IEPs. This is for children who are working towards the year group expectations, but who are currently working below age-related expectation. Teachers should

use their professional judgement to identify which steps are essential to ensure the difference to age-related expectation is diminished rapidly.

Certain children will have been identified by the Inclusion Leader and class teacher who require their own learning journey. This must be consistent for these children. Additionally, after each mathematical unit, the class teacher is to assess how successfully the SEND child has diminished the difference and annotate this on their steps to success. They will also be monitored to assess their rate of progress from their starting point.

Gender and mathematics

The achievement of boys and girls in maths should be equal. The school tracks the progress of boys and girls in maths and adjusts the curriculum and focus to ensure the narrowing of any gap between the genders.

Absence of children

If the child is absent from a lesson or series of lessons the date and LI should be written into the book with an ABSENT written. If a reason for absence is known e.g. intervention or unwell, it could be noted too.

Mathematics across the curriculum

It is an expectation that children will be given regular opportunities to demonstrate the independent application of taught maths skills across the entire curriculum. *It is sequenced so that new knowledge and skills build on what has been taught before and pupils can work towards clearly defined end points. Ofsted 2019.*

There are significant links between science and the statistical element of maths in terms of the analysis of experiments, which should be utilised by class teachers. Other examples could feature measuring time, distance, mass etc. in a science experiment, interpreting graphs in Geography or their non-fiction reading, accurate measuring in Design Technology etc. Maths leaders will support teachers in the implementation of this by providing examples of links relevant to each age group and the topics learnt.

Links to speaking, listening and spoken language

'The quality and variety of language that pupils hear and speak are key factors in developing their mathematical vocabulary and presenting a mathematical justification, argument or proof. '. *Page 89 NC 2014*

All adults model and develop children's speaking and listening by talking to children, asking questions, modelling new vocabulary and helping children to express their ideas orally. This is particularly important for pupils with SEND or English as an additional language however it is good practise in supporting the learning of all.

There should be planned opportunities to develop skills in speaking and listening.
All adults in school should be good role models for the correct use of mathematical vocabulary. Stem sentences are used and modelled by the adults to encourage children to speak in full sentences with

the correct vocabulary. Sentence starters are also available to act as scaffolds to support children's reasoning both verbally and written.

Links to reading

Children should experience a wide range of reading and this includes in their maths. This may be reading and understanding problems, reading and interpreting data. Children should be taught how to annotate what they have read with numbers to help them identify the question they are being asked; the numbers and operation they will need to use; and therefore the calculation they will need to complete the question.

Links to writing

Children should be introduced to key mathematical vocabulary in a progressive way across the school and this will be displayed as part of the learning journey. The vocabulary should be modelled precisely by all staff and children should be expected to accurately use the vocabulary when speaking and in their written work.

There should be examples of written work in maths where the children are explaining their thinking, reasoning or justifying their results. The writing should follow the non-negotiables for writing and should be of the same standard as the writing in English books. As in English, spelling errors will be highlighted and pupils expected to edit and correct them.

Links to computing

'Computing has deep links with mathematics. Computing ensures that pupils become digitally literate at a level suitable for the future workplace and as active participants in a digital world' 'Calculators should not be used as a substitute for good written and mental arithmetic'. *NC 2014.*
It is our duty to ensure computing is used widely in maths to support learning and to prepare the children for their next stage in learning and life beyond. This could be making links to the use of databases, branching keys, angles, programming for position and direction or analysing and presenting data clearly etc.

ITPs still provide a very visual model that supports teaching and learning in maths. These are freely available at https://mathsframe.co.uk/en/resources/category/586/ITPs/.
All children also have a Times Table Rockstars (TTR) account which should be timetabled in for use at school and part of the home learning expectation.

Marking and feedback

The learning should always be marked in accordance with the 'Marking and Feedback Policy'. Teachers will check pupils' understanding systematically, identify misconceptions accurately and provide clear, direct feedback at the point of teaching by lapping the room in between teaching groups and providing workshops to clarify misconceptions. Where support is given in a lesson, this should be marked in accordance to the school's marking and feedback policy and support scales. During the lesson, teachers should be questioning to check or probe the child's understanding, identifying and tackling misconceptions and adapting planning for individuals, groups or the class accordingly. Examples, annotations and support to be recorded in the child's book with pen. Time must be given for responding to the marking and an expectation is that children will correct errors in purple pen before moving on to the next part of their learning.

Assessments to inform teacher judgements

For additional guidance, please check in accordance with the 'Assessment policy'.
At the end of each term, teachers will upload their assessments to DCPro. These will be based on a variety of sources but predominantly be sourced from the teacher's assessments, observations and from the children's workbooks. All children must have opportunities to work independently through the planned ARE (Age Related Expectation) tasks and through the NCETM Ready-To-Progress Unit Assessments. Deepening tasks will also be planned by the teachers to ensure children can work independently at their own pace and demonstrate further application of skills where appropriate. Children's workbooks will be moderated across year groups and schools as part of the whole school assessment cycle and all teacher assessments must be based on clear evidence of these independent tasks in books. At the end of each unit, children will independently complete an assessment for the previous unit taught. This allows teachers to assess and identify any gaps and for children to practice applying previously taught content. Content which has been identified as a gap will then be retaught as a whole-class, in small groups or individually where appropriate.

At the end of each term, each child will complete a NFER assessment. In Year 6, KS2 assessments will also be used over the year during assessment weeks in the build up to SATS in May. This is to ensure children are familiar with test procedure and give teachers additional evidence to use in their assessment. The results of these will be recorded on DCPro. In addition, Year 4 will complete a Times Tables assessment each term in preparation of the Year 4 Times Tables check.

After each half-termly or termly assessment, the strengths and weaknesses of pupils in each class will be analysed by the class teacher. This analysis is then fed to the Maths leader who will identify strengths and weaknesses in the teaching of maths across the school, and arrange corresponding CPD workshops.

Moderating Maths judgements

As part of the assessment cycle there will be regular opportunities to moderate evidence in workbooks to validate teacher assessments in school and across schools in the trust.
Evidence must indicate that:

- Children are making progress which is appropriate for their age and attainment and that pupils are sufficiently challenged.
- Children are able to independently respond to a range of ARE tasks and self-edit misconceptions.
- Children are able to independently respond to a range of deepening tasks consistently across topics for assessments at greater depth.
- DCPro assessments reflect learning in workbooks.

The evidence must be robust, reliable and recent.

Coaching and mathematics

Every teacher and teaching assistant has access to high quality coaching for maths. This can be planned or informal and may take one of the following forms:

- A planned coaching session in class – this may involve coaching how to model an aspect of maths or establishing best practice.

- Coaching in planning – this might be for the learning journey, planning a learning unit, aspects of fluency, reasoning and problem solving, or how to support different groups effectively.

Date of last review: July 2026 **Date of next review: July 2027**

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