Horsted School

Maths Policy

Horsted school is a vibrant, safe and welcoming school where we celebrate and welcome differences within our school community. The ability to learn is underpinned by the teaching of basic skills, knowledge, concepts and values with a vision to prepare pupils for a happy and healthy life beyond primary school.

The shared vision of the Bluebell Federation is:
"We all flourish from a wealth of learning experiences that positively impact on our educational, physical and emotional success."

Our school value, which underpin our curriculum, is that our children will leave us with a genuine enthusiasm for learning and as

1. **S**triving (they will be determined, persevere and they will be resilient);
2. **T**houghtful (They will be creative, logical and curious about their world and those around them);
3. **A**mbitious (personally, emotionally and academically);
4. **R**esilient (be motivated, be able to problem-solve and stay positive); and
5. **S**upportive (of themselves, others and their wider community) individuals.

Aim and purpose

We aim to achieve this through our curriculum's rich web and in partnership with parents. The curriculum at Horsted is designed to provide an enjoyable, broad and balanced education that meets the needs of all children. It provides opportunities for children to develop as independent, confident and successful learners, with high aspirations, who know how to make a positive contribution to their community and the wider society.

Horsted is an inclusive school. We strive to ensure that all children will be able to access the curriculum or make necessary modifications to it in order to achieve this.

Approved by: Mrs L Logan	**Date:** 6/3/2023
Last reviewed on:	March 2023
Next review due by:	March 2025

HORSTED SCHOOL

MATHS POLICY

"Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject."
(DfE National Curriculum 2014).

Aims and Purposes:

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.

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.

(National Curriculum 2014).

STARS
Learning Maths encourages pupils to become STARS.
Striving – Children are encouraged to always try their hardest and to apply their learning to their current unit and transfer skills and information across from previous units to multi-step problems.
Thoughtful - Children will access a range of different methods to solving mathematical problems in their time at Horsted which they will discuss with both their peers and adults in a thoughtful manner. They will discuss As part of learning Maths, children will be exposed to problems which involve them to use a range of mathematical skills, which they will have to be thoughtful in their application.
Ambitious - Children aim to achieve. They are encouraged to make aspirational progress - moving through the different 'rock status' categories on Times Tables Rockstars for example. Children are encouraged to use their Maths learning within all other subject areas.
Resilient - Children will be encouraged to learn from the mistakes that they make, realising that they are part of the learning process and nothing to feel ashamed by. They will revisit work and correct their mistakes/misconceptions encouraging their perseverance and resilience.

Supportive - Children will work in groups when learning Maths. They will learn to work well with one another and support each other by explaining how they reached an answer in their own words.

Expectations:

The expectation of the National Curriculum (2014) is that the majority of pupils will move through the programme of study at broadly the same pace. At Horsted, decisions about when to progress are based upon the security of pupils' understanding and their readiness to advance to the next stage. Pupils who grasp concepts rapidly are challenged by being offered rich and sophisticated problems before progressing through to new content. Those who are not sufficiently fluent with earlier material, consolidate their understanding, including through additional practice, before moving on.

Our approach to the teaching of mathematics focuses upon high quality teaching, in order to introduce, and then secure and embed key concepts. At Horsted School, we teach for mastery. "Mastering maths means acquiring a deep, long-term, secure and adaptable understanding of the subject. Achieving mastery means acquiring a solid enough understanding of the maths that's been taught to enable pupils to move on to more advanced material." NCTEM 2016.

We believe that teaching for mastery is a gradual, cumulative process that creates the mathematical tools needed for life. At our school, this is achieved through a rich diet of challenge, investigation and problem solving. Through these opportunities, children learn to understand and clarify information; consider what they know that will help them to solve problems; realise what they need to know next; create systems and strategies; organise information in a way that helps find patterns and solutions; investigate open ended challenges and communicate and present their findings effectively.

A child's depth of understanding, whether they are working towards, at the expected standard or at greater depth, will be challenged in a wide variety of formats and children will expect and welcome challenges which push them to deepen their learning at all levels. Our school believes that problems are not solely for those who excel in maths.

Organisation and Planning:

Horsted School has adopted the White Rose Maths' Scheme of work which systematically builds maths knowledge, skills and understanding. Teaching will cover each of the following areas of mathematics from the National Curriculum 2014:

- Number
- Calculations
- Fractions, decimals and percentages
- Measurement
- Geometry
- Statistics

<u>Long term planning</u>
The National Curriculum for Mathematics 2014 and The Early Learning Goals (Number ELG and Numerical Patterns ELG) provide the long-term planning for mathematics taught in the school.

<u>Medium term planning</u>
From EYFS to Year 6, we all use the White Rose Math's schemes of learning as our medium-term planning documents. These schemes provide teachers with exemplification for maths objectives and break down

the key aims of the National Curriculum into fluency, reasoning and problem solving. Teachers are required to stick within the year group they are teaching and support the ideal of depth before breadth. The plans support pupils working together as a whole group and provide plenty of time to build reasoning and problem-solving elements into the curriculum.

Short term planning

The above schemes of learning support daily lesson planning. Lessons are planned by teachers using the resources from White Rose and other approved providers, e.g. EYFS use Mastering Number; Year 1 use Primary Stars; and Classroom Secrets is used across the school to supplement White Rose and provide depth to the question's that the children are required to answer.

In Key Sages One and Two, Maths is taught daily for a period of between 45 minutes and an hour. It is also applied through other aspects of the curriculum to ensure that our children have the opportunity to practise their skills and knowledge, and see how Maths links to other areas of their learning.

Careful planning and preparation ensures that, throughout the school, children engage in:

- practical activities and games using a variety of resources (concrete and pictorial)
- reasoning and problem solving to challenge thinking
- individual, paired, group and whole class learning and discussions
- purposeful practise where time is given to apply their learning
- open and closed tasks
- a range of methods of calculating (see calculation policy)

Children in EYFS will be taught maths through delivery of the mathematics area of learning in the Early Years Foundation Stage framework, which is also supplemented by The White Rose scheme used throughout Key Stages One and Two. The teaching of maths in EYFS follows involves providing children with opportunities to develop and improve their skills in counting; understanding and using numbers; calculating simple addition and subtraction problems; and describing shapes, spaces and measures. Children will develop their understanding through planned, purposeful play and through a mix of adult-led and child-initiated activity. Learning can also be found through informal opportunities such as number rhymes, songs and games. There are opportunities to undertake maths activities within continuous provision and outdoor play and enhancements linked to the current learning.

It is expected that the vast majority of children in EYFS will be initially taught maths in mixed ability groups, with the whole cohort working towards the early learning goals at broadly the same pace. Pupils who grasp concepts rapidly will be challenged through having access to a wider variety of problems, whilst those children who are not sufficiently fluent in a specific area will be given opportunities to further develop their understanding before moving on. From Term 3, children will begin to be grouped more by their maths ability in order to focus on or extend children's understanding.

Assessment, recording and reporting:

Formative Assessment:

Assessment for learning should occur throughout the entire maths lesson, enabling teachers and teaching assistants to adapt their input to meet the children's needs.

Pupils' work should be marked in line with the Marking Policy. Evidence of feedback to children, either written or verbal, should be clearly identified in books. Children are expected to respond to this during time allocated for this purpose, enabling them to learn from their misconceptions or incorrect methods.

Future lesson design should depend on class success evaluated through marking and observations made during the lesson. If understanding is still not secure at the end of a taught unit, this will be addressed by the class teacher either in future lessons or in a specific intervention group for those identified children.

Summative Assessment:
At the end of terms 2, 4 and 6, teachers in Years 1 to 6 assess children against the standards in the formative assessment section on Arbor. In addition to this, teachers provide a summative assessment judgement on Arbor of either: working significantly below, working towards, working at the expected standard or working at greater depth. This is informed by the statements achieved that term, as well as any summative assessments carried out. Summative assessments used are those produced by White Rose. Pupil Progress meetings will be held in year groups on a termly basis in order to review the progress from each class and the individuals within it, to ensure that expected progress is being made.

Children in Years 2 and 6 also take the national end of Key Stage SATs test. Children in Year 4 take the Multiplication Tables Check in the summer term.

In the Foundation Stage, children are assessed using the Baseline at the start of EYFS to inform their next steps of learning. Children's progress against the Early Learning Goals associated with the mathematics area of learning are assessed on an ongoing basis. These judgments inform the Early Years Foundation Stage Profile at the end of EYFS.

For further details, see the school's Assessment Policy.

Homework

Written homework in Maths is set in line with the school policy. In addition to this, children in Years 1 and 2 are expected to play games on 'Numbots' at home to further cement their number and place value knowledge. There is a clear expectation that all children in Years 3-6 will spend time practising and rehearsing their times tables through playing a minimum of 10 games on 'Times Tables Rockstars' a week. This is also introduced to children in Year 2 at a time when times tables are being taught in class.

Inclusion and differentiation:

In order to provide all pupils with relevant and appropriate work at each stage, we:

- plan and set suitable learning challenges
- respond to pupils' diverse needs
- endeavour to overcome potential barriers to learning
- provide further opportunities to deepen and extend skills and knowledge within the context for those who consistently make more progress

From Years 1 -6, children are taught Maths formally in a range of formats. These include:

- whole mixed ability classes (Years 1-3)
- maths ability groups (Years 4-6)
- smaller intervention groups

All the mathematics we work on shows positive images of the various groups in society. We seek to celebrate the mathematical heritage of all the cultures in the school and to recognise that the mathematics we do comes from all over the world.

The Role of the Subject Leader:

The role of the subject leader is to:

- provide a strategic lead and direction for Maths;
- support and offer advice to colleagues on issues related to Maths;
- support staff development and improve the quality of teaching and learning over time;
- monitor pupil progress in Maths by working alongside colleagues, book looks, pupil interviews, and lesson observations;
- monitor and evaluate teacher's planning and teaching;
- keep self and other staff up to date with developments in Maths by relevant reading, INSET and policy development and update;
- liaise with appropriate bodies e.g. other schools, governors, the LEA etc. about matters relating to Maths;
- provide efficient resource management for the subject; and
- map coverage of the curriculum to long term plans.

(See Curriculum Policy for further details)

Resources:

Classroom maths displays are expected to engage children in the current learning and mathematical vocabulary is displayed so that children use this in the communication of their understanding. Maths work is on display in classrooms and in other areas of the school in order to encourage a positive attitude and enthusiasm towards mathematics for all groups of children.

Photocopiable resources used by year groups are stored and maintained in classrooms. Concrete resources are stored in classrooms in Key Stage One and for Key Stage 2 either in classrooms, the Y3/4 or Y5/6 shared areas. These resources include: Base-ten apparatus, Numicon, bead strings, 100 squares, clocks, place value resources, shapes, money and fraction resources (list not exhaustive).

Health and safety:

When working with tools, equipment and materials, in practical activities and in different environments, including those that are unfamiliar, pupils should be taught:

- about hazards, risks and risk control.
- to recognise hazards, assess consequent risks and take steps
- to control the risks to themselves and others.
- to use the information to assess the immediate and cumulative risks.
- to manage the environment to ensure the health and safety of themselves and others.
- to explain the steps they take to control risks.

Teachers will include in their medium/short term planning, a risk assessment outlining tools and materials which could pose a possible risk to pupils/staff using them.