

# Holland Haven Maths Policy



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Ratified by the Governing Board	
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Signed by the Chair of Governors	

# Mathematics Policy

## 1 Aims

1.1 Mathematics teaches children how to make sense of the world around them through developing their ability to calculate, reason and solve problems. It enables children to understand relationships and patterns in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics.

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 can develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.*
- ***Reasoning** mathematically by following a line of enquiry, conjecturing relationships and generalisations and developing an argument, justification or proof using mathematical language.*
- ***Solve problems** by applying their mathematics to a variety of routine and nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.*

1.2 The aims of teaching mathematics are:

- To promote enjoyment of learning through practical activity, investigation, exploration and discussion;
- To promote confidence and competence with number systems;
- To develop the ability to solve problems through decision-making and reasoning in a range of contexts;
- To develop a practical understanding of the ways in which information is gathered and presented;
- To explore features of shape and space, and develop measuring skills in a range of contexts;
- To understand the importance of mathematics in everyday life.

## 2 Teaching and learning style

2.1 Mathematics is taught discretely on a daily basis for 50 minutes each day in KS1 and 60 minutes in KS2. In addition to this, Maths Meetings are held daily for 15 minutes. There are weekly times tables tests where children progress up the class times tables ladder. Each child has access to Times Tables Rockstars, Maths Shed and Purple Mash to support their learning. Access is both in school and at home. KS2 has a scheduled MyMaths session both in class and as an option for homework. An overall skills test can be carried out weekly either using an Assertive Mentoring number test or a similar resource, an example being Twinkl Maths Mats which are a KS1 pictorial

version. Years 5, 6 and Year 2 carry out regular past practise papers for accurate assessment throughout the year and for preparation of end of Key Stage SATs. Years 1,3 and 4 use NFER materials with the same purpose. Progression ladders are an established system of delivering maths at Holland Haven and is an embedded format from Years 1 through to 6. The effectiveness of this system is due to the continuous reflection and adaptation to best suit the needs of the children. It is the expectation that children will be taught through guided groups so that the teacher and LSA will have worked closely with every child by the end of each week. There will be regular and consistent opportunities for all children to use and apply their mathematical skills and achieve their 'owl mastery challenges' indicated by an owl icon (through stickers/stamps). In addition to this, real maths is highly celebrated. There are regular, creative opportunities to develop skills and understanding of mathematics through real life contexts, some of which may take place at home as part of homework. Children are reminded that being 'maths smart' can be shown in many ways.

2.2 The school uses a variety of teaching and learning styles in mathematics. Our principal aim is to develop children's knowledge, skills and understanding. A variety of methods are taught for the basic operations as outlined in the 4 rules policy. During our daily lessons we encourage children to ask as well as answer mathematical questions. They have the opportunity to use a wide range of resources, such as number lines, Numicon, Numdrums, number squares, digit cards and small apparatus to support their work. Mathematical dictionaries are available in all classrooms. ICT is used in mathematics lessons for modelling ideas, practical investigation and methods. We have access to Purple Mash and Maths Shed as platforms that support learning in school and at home. Wherever possible, we encourage the children to apply their learning to everyday situations, referring to the using and applying mastery owl symbol (wisdom - thinking skills character).

2.3 In all classes children have a wide range of mathematical abilities. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies – in some lessons through adapted group work and in other lessons by organising the children to work in collaborative (KAGAN) pairs on open-ended problems or games. The children are appropriately placed on a starting point on the progression ladders. The children make progression based on their individual needs and have an opportunity to show mastery at each stage of the ladder. The children will be supported, guided and have input based on their level of need - this can still take place as part of a guided group. We use classroom assistants to support and guide children, deliver intervention strategies and to ensure that work is matched to the needs of individuals.

2.4 The profile of maths in and around the school is high. Part of the Champions of Change project which has been running since 2016, develops reasoning skills with the children across all subjects including maths. Reasoning starter cards have been shared and staff training has been delivered to support the use of these. Maths has been given a higher profile in our LOTC curriculum, looking at ways to teach maths skills throughout the classroom learning. A display has been created bringing maths to life for the children, where members of staff have explained how they use maths in their hobbies and at work. In addition to this Holland Haven have taken part in two regional maths competitions in the past few years. The intention is to continue this now that Covid restrictions have stopped. There is also the intention to reintroduce an annual Maths Day which has proved very successful in the past.

### **3 Mathematics curriculum planning**

3.1 Mathematics is a core subject in the National Curriculum, and we use the numeracy framework as the basis for implementing the statutory requirements of the programme of study for mathematics. To ensure coverage of the curriculum we use the Lancashire Grid for Learning coverage document for overviews and objectives.

3.2 We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term). All teachers plan to the National Curriculum with guidance from the Essex Mathematics Framework and Lancashire Grid for Learning Overviews to ensure all content is covered. Support material from maths subject leader updates provided by Essex Education Services, are shared with staff regularly. These include more able challenges, support material for SEND and problem solving activities.

3.3 Our medium-term mathematics plans give details of the main teaching objectives for each term and define what we teach. These are generated from the gap analysis from regular formative and summative data. The plans ensure an appropriate balance and distribution of work across each term. These plans are kept on the Google Drive and are monitored and reviewed by the SLT and maths leader.

3.4 Teachers are responsible for planning their own maths class. These weekly plans list the specific learning objectives and expected outcomes for each lesson, and give details of how the lessons could be taught. Planning shows adaptive teaching and refers to provision for all members of the class. The class teacher keeps these individual plans, and the maths subject leader, SLT and headteacher review them. Plans should be held on Google Drive in an allocated folder so that we have a record of all planning in order that plans may be adapted and used in the future. Coverage of the overviews are to be highlighted in termly colours as a tracking device for teachers and maths subject lead to ensure full coverage over the terms and year. Overview documents are in each phase folder on the drive.

3.5 As part of our commitment to cross curricular learning, each unit of maths planning should show an element of cross curricular maths. Any cross curricular links are indicated. There is a stronger emphasis on rich cross curricular links as it gives opportunities for the children to be fluent in mathematical aspects of life. In addition to this, LOTC learning is promoted.

3.6 It is vitally important that we plan guided maths sessions in the short term plans, to further improve first wave teaching and assessment. Any extra Wave 2 interventions are regularly monitored for impact by maths subject lead, deputy and SENCo.

3.7 To support the statutory multiplication screening that should have begun in 2020 (COVID interrupted 2020 and 2021 screenings), there is an expectation to add a multiplication focused session for 15 minutes each afternoon to allow for more exposure. Year 2-6 will complete 'fast maths' each week to increase speed for quick recall. Purple Mash and Timestable Rockstars provide practice materials.

## **4 The Foundation Stage**

4.1 We teach mathematics daily in our reception classes. As the class is part of the Early Years Foundation Stage, we relate the mathematical aspects of the children's work to the objectives set out in the Early Learning Goals/Outcomes which underpin the curriculum planning for children aged three to five. We give all the children daily opportunities to develop their understanding of number, measurement, pattern, shape and space, through continuous provision where varied activities are planned that allow them to enjoy, explore, practise and talk confidently about mathematics and develop their next steps. Children are set for their daily mathematics class and they all participate in daily maths meetings.

## **5 Contribution of mathematics to teaching in other curriculum areas**

Our school is committed to making mathematics more cross curricular. Each planned unit should have some aspect of cross curricular and 'out of your seat' planning in order to support using maths in real life situations and the continuous development of fluency (reference 4.1).

### **5.1 English**

The teaching of mathematics contributes significantly to children's understanding of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, in mathematics lessons we expect children to read and interpret problems, in order to identify the mathematics involved. They are also improving their command of English when they explain and present their work to others during plenary sessions. In English lessons, too, maths can contribute: younger children enjoy stories and rhyme that rely on counting and sequencing, while older children encounter mathematical vocabulary, graphs and charts when reading non-fiction texts. Children are expected to have a higher level of mathematical vocabulary in written and verbal form. Where appropriate mathematical vocabulary should be given in spelling tests and phonics lessons. In 2022 we introduced Subject Keys and Profiles that have an emphasis on Tier 2 Vocabulary throughout all of the subject areas.

### **5.2 Personal, Social and Health Education (PSHCE)**

Mathematics contributes to the teaching of PSHCE. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together and respect each other's views. We present children with real-life situations in their mathematics work.

### **5.3 Spiritual, moral, social and cultural development (SMSC)**

The teaching of mathematics supports the social development of our children through the way we expect them to work with each other in lessons. We group children so that they work together, and we give them the chance to discuss their ideas and results.

### **5.4 Geography**

In geography we encourage the understanding of maps and coordinates, time zones and understanding data relating to population statistics.

### **5.5 Science**

Science gives pupils the opportunity to practise drawing and understanding data

represented in graphs. Thinking skills and group investigation also enhance the ability for problem solving and lateral thinking skills.

## **6 Mathematics and ICT**

6.1 Information and communication technology enhances the teaching of mathematics significantly, because ICT is particularly useful for mathematical tasks. It also offers ways of impacting on learning which are not possible with conventional methods. Teachers can use software to present information visually, dynamically and interactively, so that children understand concepts more quickly. Younger children use ICT to communicate results with appropriate mathematical symbols. Older children use it to produce graphs and tables when explaining their results, or when creating repeating patterns, such as tessellations. When working on control, children can use both standard and non-standard measures for distance and angle. They can also use simulations to identify patterns and relationships. All children are regularly supported by appropriate software such as Maths Shed, My Maths, TTRockstars and Purple Mash - Assessment for learning using ICT software is in school and is available to be used for both formative and summative assessment.

## **7 Mathematics and inclusion**

7.1 At our school we teach mathematics to all children, whatever their ability and individual needs. Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our mathematics teaching we provide learning opportunities that enable all pupils to make good progress. We strive to meet the needs of those pupils with special educational needs, those with disabilities, more able children and those with English as an additional language, and we take all reasonable steps to achieve this. For further details see separate policies: Ordinarily Available; Special Educational Needs; Disability Non-Discrimination; English as an Additional Language (EAL) PP as well as the Mastery Statement (Journey to Mastery). Regular Wave 1, 2 and 3 practice is reviewed and updated through phase discussion meetings and intervention / provision mapping.

7.2 When progress falls significantly outside the expected range, the child may have special educational needs. Our graduated assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, differentiation – so that we can take some additional or different action to enable the child to learn more effectively. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels. This ensures that our teaching is matched to the child's needs.

7.3 Intervention through Pupil Profiles will lead to the creation of an Individual Pupil Profile for children with special educational needs. The profile may include, as appropriate, specific targets relating to mathematics.

7.4 Intervention strategies are used across KS2 to support targeted pupils to reach their expected levels. The interventions include booster groups, one-to-one tuition, Wave 3 materials and basic skills groups. In KS1, Number box, 1<sup>st</sup> Class Maths, Precision Monitoring and other booster groups to target individuals are used to support and improve pupils' progress in maths.

7.5 We enable all pupils to have access to the full range of activities involved in learning mathematics. Where children are to participate in activities outside the classroom, we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

## **8 Assessment for learning**

8.1 Assessment will take place at three connected levels: day to day, periodic and transitional. These assessments will be used to inform teaching in a continuous cycle of planning, teaching and assessment.

8.2 The children will be assessed by their class teacher each day. This will help the teacher monitor the child's progress in certain concepts. Ongoing assessments will be completed in the form of individual gap analysis. Termly assessments in number, measure, shape and data handling will also be used to aid the teacher in their assessment and monitoring role.

8.3 Day to day assessment will be an informal part of every lesson to check children's understanding and give information, which will help adjust day-to-day lesson plans. Effective AFL practice is integral to this.

8.4 Periodic assessments will take place using Assertive Mentoring results, past SATs paper data, My Maths data and progression ladder materials. This will give a broader view of progress for the learner and teacher.

8.5 Transitional assessments will take place towards the end of the school year to assess and review pupils' progress and attainment. Tests and tasks from national sources may be used. Accurate information will then be reported to parents and the child's next teacher.

8.6 Reporting to the parents is completed on a formal basis three times in an academic year - parents' evenings in the autumn and spring terms where targets can be set and then reviewed and a written report of a child's progress and achievement is given to the parents in the summer term. However, teachers are always available for informal discussions with parents at a mutually convenient time during a normal school week. Termly class visits also allow parents to look through maths work with their children to see where progress has been made.

## **9 Resources**

9.1 All classrooms have a wide range of appropriate small apparatus. Each class has a dedicated maths box/area which has a range of basic essentials for teaching mathematics. Mathematical dictionaries are available in all classrooms. Calculators are available to all classes. The library and maths cupboard contain a number of books to support children's individual research. A range of software is available to support work with the computers. The maths cupboard is in a central place within the school and is clearly organised. Each class has been asked to have a Maths Meeting area to support the daily Maths Meetings. Each class is expected to have a maths working wall / silent teacher wall and or area. Resources are available for children and adults to support the unit.

9.2 Support materials are provided on termly updates by the Essex Education Services team. The maths lead shares these out in staff meetings and provides ideas/training on how to use these materials.

## **10 Monitoring and review**

10.1 Monitoring of the standards of children's work, through book monitoring and pupil consultation, and of the quality of teaching in mathematics is the

responsibility of the subject leader. The work of the subject leader also involves supporting colleagues in their teaching, being informed about current developments in the subject and providing a strategic lead and direction for mathematics in the school. The subject leader gives the headteacher an annual summary in which she evaluates strengths and weaknesses in the subject, and indicates areas for further improvement. The subject leader is also responsible for updating and monitoring the action plan and presenting a budget bid for the finance committee.

The subject leader either individually or with the LA advisor or maths governor conducts pupil perception interviews to assess the impact of mathematics. Staff audits are conducted to allow staff to identify areas for development and their own areas for professional development.

The headteacher allocates regular management time to the subject leader so that s/he can review samples of children's work and undertake lesson observations of mathematics teaching across the school. A named member of the school's governing board is briefed to oversee the teaching of maths. This governor meets regularly with the subject leader to review progress.

10.2 The class teacher is responsible for the organisation of mathematics in his/her class based on the National Curriculum. However, the maths subject lead is responsible for the curriculum audit which covers :

- the matching of the planning to the curriculum
- the termly report to the governing board
- the termly action plan as part of RAP.
- the scrutiny of maths work and planning from each class
- lesson observations of teaching staff
- attending maths courses regarding current issues and attending the annual maths leaders' conference
- keeping abreast of new initiatives
- organising INSET for teaching and non teaching staff
- ordering maths materials/resources linked to the annual maths curriculum budget
- reviewing new materials.

10.3 This policy will be reviewed every two years.

Latest Review: January 2023

Review Date: January 2025

Signed:

Date: