THE HARLINGTON AND SUNDON ACADEMY TRUST

HARLINGTON LOWER AND SUNDON LOWER SCHOOL MATHEMATICS POLICY

Approved by Curriculum Trustee Committee: February 2023
Next review: February 2025

The curriculum policy statement and equal opportunities policy should be read as a preface to this policy. It may also be useful to read the calculation policy to understand skill progression.

Introduction

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.
(National Curriculum 2014)

The aims of the 2014 National Curriculum are for our pupils to:

- Become fluent in the fundamentals of mathematics through varied and frequent practice with complexity increasing over time.
- Develop conceptual understanding and ability to recall and apply knowledge rapidly and accurately.
- Reason mathematically; follow a line of enquiry, conjecture relationships and generalisations.
- Develop an argument, justification and proof by using mathematical language.
- Problem solve by applying knowledge to a variety of routine and non-routine problems. Breaking down problems into simpler steps and persevering in answering.

The National Curriculum sets out year-by-year programmes of study for key stages 1 and 2. This ensures continuity and progression in the teaching of mathematics.

The EYFS Statutory Framework 2014 sets standards for the learning, development and care of children from birth to five years old and supports an integrated approach to early learning. This is supported by the 'Development matters' non-statutory guidance.

The EYFS Framework in relation to mathematics aims for our pupils to:

- develop and improve their skills in counting
- understand and use numbers
- calculate simple addition and subtraction problems
- describe shapes, spaces, and measures

The purpose of mathematics in our school is to develop:

- positive attitudes towards the subject and awareness of the relevance of mathematics in the real world
- competence and confidence in using and applying mathematical knowledge, concepts and skills

- an ability to solve problems, to reason, to think logically and to work systematically and accurately
- initiative and motivation to work both independently and in cooperation with others
- confident communication of maths where pupils ask and answer questions, openly share work and learn from mistakes
- an ability to use and apply mathematics across the curriculum and in real life
- an understanding of mathematics through a process of enquiry and investigation

We aim to provide a stimulating and exciting learning environment that takes account of different learning styles and uses appropriate resources to maximise teaching & learning.

Breadth of study

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

- practical activities and games using a variety of resources
- 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 e.g. mental, pencil & paper and using a calculator
- working with computers as a mathematical tool

Through our creative approach to teaching and learning we also seek to explore and utilise further opportunities to use and apply mathematics across all subject areas.

Teachers planning and organisation

Long term planning

The National Curriculum for Mathematics 2014 and the Early Learning Goals (Number, Shape Space & Measure) provide the long-term planning for mathematics taught in the school.

Medium term planning

Reception through to Year 4 use White Rose Maths and Mastering the Curriculum schemes of learning for planning.

These schemes provide teachers with exemplification for maths objectives and are broken down into fluency, reasoning and problem solving, key aims of the National Curriculum. They support a mastery approach to teaching and learning and have number at their heart. They ensure teachers teach the objectives in the required key stage and support the ideal of depth before breadth. They 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 differentiated according to Year group and are monitored at intervals by the mathematics subject leader. At Sundon, this means that each year group within a class is taught separately although where possible, the same topics are taught at the same time.

EYFS planning is based on the Mastering Number and Master the Curriculum plans.

All classes have a daily mathematics lesson. In key stage one lessons are 45-60 minutes and in key stage two at least 60 minutes.

Teachers of the EYFS ensure the children learn through a mixture of adult led activities and child-initiated activities both inside and outside of the classroom. Mathematics is taught through an integrated approach.

Mastering Number

Children in Early Years and Key Stage 1 have a daily, 20-minute Mastering Number session, outside of their maths lesson. This is a time to rehearse key skills.

Special educational needs & disabilities (SEND)

Daily mathematics lessons are inclusive to pupils with special educational needs and disabilities. Where required, children's MSP's incorporate suitable objectives from the National Curriculum for Mathematics and teachers keep these in mind when planning work. These targets may be worked upon within the lesson as well as on a 1:1 basis outside of the mathematics lesson. Maths focused intervention in school helps children with gaps in their learning and mathematical understanding. These are delivered by trained support staff and overseen by the SENCO and the class teacher.

Within the daily mathematics lesson teachers have a responsibility to not only provide differentiated activities to support children with SEND but also activities that provide sufficient challenge for children who are high achievers. It is the teachers' responsibility to ensure that all children are challenged at a level appropriate to their ability. Using the Maths Mastery approach, the focus for these pupils is challenging 'sideways' through understanding and reasoning, rather than just giving them work from the next academic year.

Equal Opportunities

Positive attitudes towards mathematics are encouraged, so that all children, regardless of race, gender, ability or special needs, including those for whom English is a second language, develop an enjoyment and confidence with mathematics. This policy is in line with the school's 'Equality' policy.

The aim is to ensure that everyone makes progress and gains positively from lessons and inclusive lessons are planned. Lessons involving lots of visual, oral and kinaesthetic elements will benefit all children including those for whom English is an additional language (EAL).

Active learning ensures that children have an opportunity to show their learning throughout the lesson by using apparatus or a whiteboard and pen to calculate.

Lessons

In all lessons, learning objectives and success criteria are clearly displayed and discussed.

The emphasis in lessons is to make teaching interactive and lively, to engage all children encouraging them to talk about mathematics. Lessons involve elements of:

- Instruction – giving information and structuring it well;
- Demonstrating – showing, describing and modelling mathematics using appropriate resources and visual displays;
- Explaining and illustrating – giving accurate and well-paced explanations;
- Questioning and discussing;
- Consolidating;
- Reflecting and evaluating responses – identifying mistakes and using them as positive teaching points;
- Summarising – reviewing mathematics that has been taught enabling children to focus on next steps

Pupils' Records of work

Children are taught a variety of methods for recording their work and are encouraged and helped to use the most appropriate and convenient methods. Children are encouraged to use mental strategies and their own jottings before resorting to more formal written methods. Children's own jottings to support their work is encouraged throughout all year groups. Dependant on age, ability and activity; some outcomes will be recorded in Math's book, some practically and at other times children will complete a worksheet.

Marking/Feedback

Marking of children's work is essential to ensure that they make further progress and any feedback given needs to be in the moment as much as possible. Feedback reflects the learning objective and success criteria in line with the school Feedback policy. Children are encouraged to self-assess their work and to make corrections or improvements. Some pieces of work are self-marked by children where appropriate, guided by the teacher.

Giving children access to the answers during the lesson for 'live' marking, means misunderstandings are picked up more quickly allowing children to make faster progress.

Assessment
Assessment is an integral part of teaching and learning and is a continuous process.
Teachers make assessments of children daily through;

- regular marking of work
- analysing errors and picking up on misconceptions
- asking questions and listening to answers
- facilitating and listening to discussions
- making observations

These ongoing assessments inform future planning and teaching. Lessons are adapted readily and short-term planning evaluated in light of these assessments.

Medium term
Half termly assessments are carried out across the school using the assessment materials for each year group provided by Pixl, White Rose or Master the Curriculum. These materials, used alongside ongoing teacher assessment, support class teachers in making a judgement for each child. Class data is uploaded onto Pixl.

Pupil Progress meetings are timetabled each half term for all classes. Progress made by pupils is discussed and appropriate intervention considered and put in place where appropriate.

Long term
Year 4 complete the MTC (Multiplication Times tables Check) in the summer term.

Resources
Each class has a stock of core resources that are age appropriate. Additional mathematical equipment and resources are stored centrally.

Teaching and support staff will also access resources from places such as Twinkl, Mastering the curriculum and Purple Mash as deemed necessary.

<u>Role of the Maths Subject Leader</u>

- To lead in the development of maths throughout the school
- To monitor the planning, teaching and learning of mathematics throughout the school
- To help raise standards in maths
- To engage with the Maths Hub, attend workshops and implement improvements suggested
- To provide teachers with support in the teaching of mathematics
- To provide staff with CPD opportunities in relation to maths within the confines of the budget and the School Development Plan
- To monitor and maintain high quality resources
- To keep up to date with new developments in the area of mathematics

Tina Edmonds (HLS) and Richard Kingham (SLS) – Maths Subject Leaders

We support children in becoming well rounded individuals where they naturally demonstrate the values of the school in all aspects of their lives.