

# Hadley Wood School

## Mathematics Policy

### May 2018



#### **Rationale**

The National Curriculum emphasises the importance of all pupils mastering the content taught each year and discourages the acceleration of pupils into content from subsequent years. Our aim is to provide a curriculum which broadens and deepens pupil understanding, ensuring that mathematical learning is built on solid foundations. Our staff have high expectations of all children, irrespective of ability and encourage them to be successful learners and achieve their full potential. Our aim is to ensure challenge for all pupils by developing deep, rather than superficial, conceptual understanding. We believe that it is possible to develop successful mathematicians who achieve high standards by espousing a mastery based curriculum.

#### **Principles of Learning and Teaching in Mathematics**

Mathematics is a creative and highly interconnected 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 2014)

At Hadley Wood School, we aim 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

We aim to develop mastery of the mathematics curriculum through:

- a fascination and enjoyment of mathematics as a subject in which all children can achieve and be successful
- the children's abilities to use mathematics effectively, using specific mathematical vocabulary, to communicate their ideas
- independent and co-operative ways of working encouraging children to explore ideas and activities in a variety of groupings
- developing the children's ability to recall key number facts with speed and accuracy and use them to calculate and work out unknown facts (see our Progression in Calculation policy)
- increasing the confidence of our pupils and their ability to apply their mathematical knowledge and skills in a variety of challenging and real-life situations
- the children's awareness of the broad cultural background of mathematics
- the children's ability to use mathematical concepts, facts and procedures appropriately, flexibly and fluently
- ensuring children have sufficient depth of knowledge and understanding to reason and explain mathematical concepts and procedures and use them to solve a variety of problems.

#### **Planning and Delivery**

As stated in our Learning and Teaching Policy, Teachers will use Assessment for Learning (AFL) and satellite learning to plan and teach well-structured and engaging mathematics lessons. Teachers plan according to the National Curriculum Programme of study and the Enfield Mathematics Framework, ensuring multiple opportunities are provided to develop mastery across the mathematics curriculum,

using the NCETM 'Teaching for Mastery' and 'Developing Reasoning' documents alongside the White Rose enrichment materials. We use a variety of tools to create a class mathematics map, which carefully considers the seven strands of mathematics and shows clear progression of calculations (see Progression in Calculation policy). Where possible, teachers will integrate their mathematics planning within their Creative Curriculum topic. Teachers use this guidance for their year group to produce planned units of work outlining objectives to be covered and expected outcomes for each lesson.

These plans will:

- identify the appropriate learning and teaching strategies required taking into consideration a variety of tasks to suit all learning styles
- outline how new learning will be introduced using the Concrete, Pictorial, Abstract (CPA) approach to learning: concrete materials are embedded alongside pictorial representations to ensure procedural fluency and conceptual understanding are developed in tandem
- provide a balance and variety within the classroom – of content and organisational learning opportunities for children
- assess and plan for the specific needs of children (both SEND and Rapid Graspers, Gifted and Talented) within their own class whilst adhering to the expected outcomes and progression

## **Inclusion**

### **Equal opportunities**

Within planning and delivery of the National Curriculum and Enfield Mathematics Framework, teachers aim to provide differentiation, adaptation and support to ensure all children have maximum access to the curriculum. There are opportunities for adults throughout the school to support the specific needs of all children through a number of different strategies, manipulatives and interventions.

### **SEN**

Differentiated planning and support help to provide for the Special Educational Needs of the pupils. Dedicated teaching time, teaching assistants and the Inclusion Manager may be allocated to work with these children to target specific needs and allow individual or small group support. Children with Special Educational Needs will be identified by a Record of Concern and their targets will be recorded on an ISP (Individual Support Plan).

### **Rapid Graspers, Gifted and Talented**

Children who are Rapid Graspers or Gifted and Talented will also be identified in planning. Tasks are differentiated in order to challenge these pupils and adult led tasks are undertaken where possible to support them. Access to Mastery and Mastery with Greater Depth challenges are identified and provided to ensure development of deeper conceptual understanding.

Opportunities for support, challenge and extension are provided as much as possible for as many children as possible. The school provides a number of in-house opportunities (such as maths boosters, early morning revision sessions, parent and child maths workshops and interventions) as well as external opportunities (such as maths masterclasses, Borough interventions, secondary school visits) to enable all children to succeed.

### **Record keeping and Assessment**

Assessment is used to inform the teacher of pupils' progress in mathematics. Records are kept by individual teachers, using a variety of the following methods:

- Pupils' work recorded in their books (annotated where appropriate to show learning objectives met / not met)
- Annotated weekly planning sheets, recording learning outcomes and lesson evaluations
- Observations of activities & discussions with pupils
- Effective marking in children's books to identify where the Learning Objectives have been met, encourage and provide targets for further development

Formal assessment of mathematics is also carried out using:

- EYFS Framework ARA
- National SATs tasks and tests in Years 2 & 6.
- Teacher Assessment Framework (TAF) in Years 2 & 6
- optional end of year assessment tests in Years 3, 4 & 5
- half-termly mathematics assessments Years R – 6
- pitch and expectations assessment
- Testbase assessments
- observations
- NCETM/White Rose mastery statements

Each child will receive accurately pitched mathematics tasks that are discussed with them by the teacher referring to their targets (which are age related objectives as identified in the National Curriculum documentation stuck into the front and back of their books). Pupils are also able to self- and peer- assess their learning.

Records and assessments form evidence for teachers to level children in mathematics. These levels are monitored throughout the year and are available to the next teacher at the end of the academic year. These assessments are discussed in Pupil Progress Meetings (half termly) and children who are over achieving or underachieving are identified with a plan put in place for those who need further support to make progress. Each year the end of key stage SAT results and our in-house assessment system are analysed to inform SLT on school targets in mathematics for the future. Half termly tracking and assessments are also carried out to inform teachers of children's progress and the next steps for children's learning.

### **Working in Partnership with Parents**

We recognise and value the interest, support and involvement of the parents in their children's mathematical development and keep them up to date with any developments in this area. We actively encourage parents to help their children in learning mathematical facts and skills, through formal and informal meetings as well as leaflets and booklets. Homework is also set to consolidate schoolwork and encourage involvement of parents.

### **Resources and Training:**

The Mathematics Co-ordinator will ensure that:

- each classroom has a range of mathematics manipulatives appropriate for the age and ability of the children in the class
- a central bank of manipulatives is kept in the Media Suite to promote conceptual understanding across the mathematics curriculum
- regular borough led Mathematics courses are attended and relevant information and training is feedback to staff
- staff meetings are used to discuss current trends and practices in the new curriculum

### **Co-ordinator Role**

The Mathematics Co-ordinator is expected to:

- model outstanding teaching in mathematics
- ensure all teachers are familiar with the pitch and expectations as set out in the National Curriculum and help them to map and plan lessons
- prepare, organise and lead INSET
- monitor maths learning and teaching, setting targets for the future which include any National/LA initiatives
- work with the Inclusion Manager to provide advice and support for staff to identify intervention programmes
- monitor and observe colleagues teaching and planning with a view to identifying the support they need
- attend meetings and courses provided by LA Numeracy consultants
- provide information for parents in the form of booklets/leaflets and meetings
- discuss regularly with the Headteacher and Maths Governor the progress of mathematics

Review date: May 2020