



Hillocks Primary and Nursery School

Policy for Mathematics

POLICY FOR MATHEMATICS

Document Purpose

This policy reflects the values and philosophy of Hillocks Primary and Nursery School in relation to the teaching and learning of Mathematics. It sets out a framework within which all staff work. It gives guidance on planning, teaching and assessment.

This policy should be read in conjunction with the 2014 National Curriculum which outlines what children in different year groups should be taught.

The policy will be reviewed on an annual basis.

Audience

This policy, having been agreed upon by the whole staff and Governing Body is distributed to all teaching staff and copies are readily available to support staff, governors, visiting teachers, outreach staff and parents. Copies may be obtained from the office, the school website or the Mathematics coordinator.

1.Aims

Mathematics is a core subject within the National Curriculum. The aims for Mathematics are:

- To raise standards in mathematics.
- To develop a deep conceptual understanding of mathematics which enables children to use and apply numbers, shape, space and measures and statistics with competence and confidence in a range of contexts.
- To develop children's fluency in mathematics.
- To develop children's ability to reason mathematically.
- To equip children with the mathematical language needed to understand problems and explain their methods and reasoning.
- To develop the ability to solve problems through decision-making and reasoning in a range of contexts, and other curriculum areas.
- To encourage positive attitudes and enjoyment of mathematics and understand its relevance in everyday life.

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

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress will always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who

grasp concepts rapidly will be challenged through being offered rich and sophisticated problems rather than acceleration through new content. It is a 'mastery' curriculum.

Those who are not sufficiently fluent with earlier material will consolidate their understanding, including additional practice and by taking part in interventions, before moving on.

2. Mathematics curriculum planning

Mathematics is a core subject and we use the 2014 national curriculum programmes of study as the basis for our planning, ensuring we teach the relevant statutory content. This, along with the non-statutory guidance from the National Curriculum is used to inform our school's mathematics curriculum. Other useful planning resources used are:-

- The NCETM national curriculum resource tool
- The NCETM mastery documents
- 'Hamilton Trust' planning and resources
- The White Rose maths hub materials
- Maths No Problem teacher books

The school's Calculation Policy details the approach and learning progression in the main operations of addition, subtraction, multiplication and division, (including calculating with fractions). This is a working document that all staff are expected to apply.

For each unit of work, teachers need to be aware of prior learning as well as objectives to be covered. Connections between areas of maths should be made explicit and a range of pictorial and concrete representations used throughout the school to develop conceptual understanding.

Short Term Planning

There is no requirement for short term planning to be produced in a particular format. However the non negotiable elements to be included are listed below:

- Learning objective (I can statement)
- Key questions
- Mathematical vocabulary to be used
- Differentiation and support for individuals
- Deployment of adults
- An outline of activities

Where possible, teachers will give a context to the mathematics.

Homework is no longer compulsory in primary schools, but will be set when necessary at both key stages. Children will also be expected to learn number bonds and times tables. There are a range of certificates available for the rapid recall of times tables and number bonds.

Foundation stage

In the foundation stage the Numbers and Patterns document will be used alongside a skills progression map to support the planning of mathematics in line with the EYFS requirements. (Progression maps for F1 and F2 are attached)

There will be a daily input of 20 mins in F2 and 10 mins in F1 where mathematical skills will be taught. These skills are then applied during free play.

Pupils in the Foundation stage use a variety of media to record mathematics but most of the work is practical. In F2, a weekly piece of evidence of the input will be recorded. Observations will be used in F1 and F2 to show evidence of the application of learning. These observations will be recorded in the online 'Orbit' system where each child has his/her own folder which can be accessed by parents.

Teaching and learning

All pupils are entitled to a broad mathematics curriculum in which their learning needs are identified and met. Pupils should experience a range of practical and written activities on number, measurement, geometry and statistics.

In key stages one and two there will be a daily mathematics lesson. In years three to six there will also be an additional 15 minute session on practising arithmetic skills; this will happen at least twice a week. In both key stages, children will be given the opportunity to practise counting and the recall of number facts on a regular basis. There will also be a reasoning and/or problem solving element to every maths lesson.

The learning intention will be shared with the children. Learning activities are sequenced to ensure progression. This may be by means of direct teaching to the class or small groups, or by providing direct experiences in practical tasks through using a wide range of equipment and resources. The children will participate in these activities either individually, as a whole class or in pairs/groups. Progression will be monitored through work and planning scrutiny carried out by the senior leadership team as identified in the monitoring timetable.

All pupils in KS1 and KS2 use a pencil for mathematical recording and a squared exercise book to aid setting out of calculations. Each piece of work will have an 'I can' statement as the title and work will be dated. Books are marked during or after the lesson in line with the marking policy. Any misconceptions identified during marking are recorded by the teacher in a 'misconceptions book'. These are addressed by either the teacher or the TA, preferably before the next lesson.

Children also have a maths 'whiteboard book' (or maths jotter). This book is for jottings and will be particularly used in lesson starters and during the main teach. The book will not be marked but the teacher will maintain an overview of it and a selection of books will be checked by the maths coordinator as part of monitoring.

Cross Curricular Maths

Although much of the Mathematics is taught during the daily maths lesson, we constantly seek to make meaningful cross-curricular links through our themes in order to embed maths into the bigger picture of each child's learning, and to provide real life relevance to the concepts and skills that they are acquiring. This is a two-way process, so sometimes the maths objectives may be taught as part of another topic, and other times the other curricular objectives may be taught as part of the maths. Opportunities to do this may be identified at either the long-term, medium-term or short-term planning stage.

Maths Learning Environment

We aim to create a rich and stimulating Maths environment in each classroom that promotes learning and independence. Maths Working Walls and resource areas in the classroom will:

- Support the children with their Maths.
- Contain information relevant to current teaching (key vocabulary, models/images, success criteria, targets).
- Include Maths resources clearly labelled and accessible for the children.
- Be clear/large enough for children to read.
- Be changed regularly so it doesn't become just 'wallpaper'

Interventions

There are a number of interventions available for children who may need extra support with their mathematics. These include:

- 1st class@number
- 1st class@number 2
- Success@arithmetic
- Five minute box
- Catch up numeracy
- Girls' maths club
- Numicon 'Closing the gap'
- Additional booster groups in Y6

Interventions must take place in addition to the daily mathematics lesson.

3. Assessment of Mathematics

Formative Assessment

Assessment for learning is embedded into each lesson and teachers use assessment for learning techniques and strategies on a daily basis in order to identify pupils' strengths and difficulties, inform the next steps for each child's learning and improve the learning outcomes for each child. Short-term planning is constantly reviewed and modified on the basis of these assessments.

Assessment for learning strategies used will include:-

- Observations of a child or group on task
- Questioning
- Discussion with children about their task
- Marking work in books
- Children's own evaluation of their work
- Informal quizzes
- Tests on the rapid recall of number facts
- Arithmetic tests

Summative Assessment

Children's attainment in mathematics will be judged in relation to their year group using the terminology working towards, working within and embedded. An additional term, working below, will also be used when necessary.

Progress towards key objectives will be recorded in the online assessment system, Flic. In October, February and May, this information will be used to make judgements about overall progress and will inform pupil progress meetings.

At the end of each term, The White Rose arithmetic and reasoning tests will be used to provide extra information to monitor the number of children who are on track to achieve end of year expectations.

In June, a more formal test will be used to support the overall end of year teacher assessment. (These tests will be of a similar format to the statutory end of key stage tests).

At the end of Key Stages 1 and 2, the children will be assessed in line with current government policy.

4. Leadership and management

The Mathematics' Coordinator will

- Provide a strategic lead and direction for Mathematics in the school;
- Provide support and advice to staff in the delivery of the Mathematics programme of study;
- Remain informed about current developments in the subject by attending INSET sessions and being involved in independent research and reading;
- Disseminate relevant information to staff;
- Deliver INSET sessions to staff, to support staff development;
- Monitor and evaluate teaching and learning of Mathematics;
- Monitor standards in the subject, through planning and work scrutiny, statistics, quality of teaching and pupil assessments;
- Order and maintain resources to enhance effectiveness of Mathematics teaching within the school;
- Consider with staff and work with SMT members in the evaluation and planning of actions included within the School Development Plan.

The Head teacher will:

- Provide support by encouraging staff and praising good practice.
- Monitor learning and teaching through lesson observations.
- Monitor planning and reviews.
- Give feedback to teachers following lesson observations.
- Support staff development through in service training and provision of resources.
- Keep governors, staff and parents informed of developments

The Class teacher will:

- Be responsible for the teaching of Mathematics as set out in the policy.
- Provide planning and reviews for the Head Teacher and Maths leader to have access to.
- Provide samples of mathematics work to the subject leader when required.

- Assess children's work in order to detail future planning.

The governors will:

- appoint a link governor
- be well informed about standards in mathematics and setting appropriate statutory targets
- adopt and monitor the mathematics policy
- monitor the progress of the school development plan with regards to mathematics.

5. Meeting the needs of all children

Through our mathematics teaching we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of disadvantaged and vulnerable children, including those pupils who generate Pupil Premium, those with special educational needs, those with disabilities, and those learning English as an additional language. We take all reasonable steps to achieve this.

Higher attaining children are challenged by using investigations, open ended questions, and appropriate extension work as deemed relevant.

Positive attitudes are encouraged in both boys and girls towards mathematics. It is hoped they will develop an enjoyment of the subject and see it is relevant and meaningful.

When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors such as classroom organisation, teaching materials, teaching style, and differentiation so that we can take some additional or different action to enable the child to learn more effectively. Ongoing assessment for learning and summative assessment allows us to consider each child's attainment and progress against expectations. This ensures that our teaching is matched to the child's needs. Where attainment and/or progress are giving cause for concern for a particular child, reasons for this will be discussed at pupil progress meetings.

6. Partnership with Parents

Parents will be informed about children's progress, including what they are good at and what they need to do to improve: this will be achieved through parent's evenings, annual reports and sharing information about progress towards key objectives.

Parents will be informed about the schools approach to mathematics at the annual introduction meetings in September where they will receive a copy of the calculation policy for their child's year group. Parents will be encouraged to support children through homework activities and in meeting individual targets.

Policy produced by Margaret Newcombe

Agreed with staff: January 2017

Agreed with governors