



Hollinswood Primary School and Nursery

Mathematics Policy

July 2018



Contents

- Introduction
- Principles
- Aims
- Teaching and Learning
- Foundation Stage
- Equal Opportunities
- Assessment
- Roles and Responsibilities
- Guidance
- Calculation Policy
- Solo Taxonomy
- Pupil Grouping
- Deployment of other adults
- Intervention
- Marking
- Monitoring

Introduction

This policy document should be seen as a product of regular review and revision undertaken by all staff working together, and subject to amendment when necessary. This review and revision will take place as part of the school curriculum development planning cycle.

'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' (National Curriculum, 2014)

Key Principles of teaching and learning at Hollinswood Primary School and Nursery

At Hollinswood Primary School & Nursery we aim to develop every child's skills, knowledge and attitudes in order for them to become confident, independent and inspired learners.

We encourage the children to have high expectations and to contribute towards, reflect on and shape their role as learners - in addition to being responsible members of the school, the local and the wider community.

Through a context rich curriculum that goes beyond the school walls, children are given the confidence to aim high and to be the very best that they can be.

We see excellence in teaching and a love of learning as the key to succeeding in life. In a supportive, positive and caring environment, our teachers and our learners are fully committed, focused on the task ahead, passionate in overcoming obstacles and alive for a challenge.

Principles

- To develop a community of learners where learning is valued, enjoyed, supportive and lifelong;
- To enable children to become confident, resourceful, enquiring and independent learners;
- Develop children's self-respect and encourage children to respect the ideas, attitudes, values and feelings of others regardless of race and culture;
- To encourage children to take pride in their work and the work of others.

Aims of our Mathematics curriculum

In line with the National Curriculum, at Hollinswood Primary School we aim for our pupils to:

- Enjoy mathematics, be successful and to have a positive attitude to the subject.
- Work through interesting and challenging tasks that enable them to achieve standards in line with their abilities and potential.
- 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 solution.

Teaching and Learning

Teaching

The teaching of mathematics will take the form of a daily lesson that will be in line with the age, stage of development and ability of the children being taught. Regular dedicated mental maths sessions will also be planned for and delivered at appropriate levels, according to the children's needs. Each class teacher is responsible for the mathematics in their class. Daily mathematics lessons should typically follow the White Rose Scheme of learning which focusses on core topics to build deep understanding.

The objectives in the National Curriculum will be used to give mathematics teaching focus and direction to enable children to become numerate. Success criteria will be shared with all learners, so they know what they need to be able to understand, know and do in order to be successful in the lesson.

Learning

- Learning in Mathematics will be both subject specific and cross curricular.
- Will use ICT as an important element
- Will include an appropriate level of support and challenge for all, to ensure that children are guided, motivated and enthused by their learning.
- Include opportunities for 'experiential learning' led by 'real life' and motivating contexts.
- Will allow children to develop as independent learners, able to make decisions about their own work

Numerate children should:

- have a sense of the size of a number and where it fits into the number system
- know by heart number facts such as number bonds, multiplication tables, doubles and halves.
- use what they know by heart to figure out numbers mentally
- calculate accurately and efficiently, both mentally and by using written methods, drawing on a range of calculation strategies.
- make sense of number problems, including non-routine problems, and recognise the operations needed to solve them
- explain their methods and reasoning using correct mathematical terms
- judge whether their answers are reasonable and have strategies for checking them where necessary
- suggest suitable units for measuring and make sensible estimates of measurements
- explain and make predictions from the numbers in graphs, diagrams, charts and tables
- develop spatial awareness and an understanding of the properties of 2-D and 3-D shapes.

To achieve this, teachers use a wide range of teaching strategies through whole class, shared and guided session that also address a range of learning styles. These include:

- Directing
- Instructing
- Scaffolding
- Demonstrating
- Explaining and illustrating using a range of models and images.
- Questioning and discussing
- Consolidating and Evaluating
- 'Real Life' experience.

Foundation Stage curriculum

In the Foundation Stage, children engage with numbers and see how to use them in the everyday environment for labelling, quantifying and calculating and exploring space, shape and measures. Pupils use a range of materials, resources and experiences that encourage the children to develop skills which will support them with their own enquiry and investigations, giving them the confidence to 'have a go'.

Children are taught in a range of groups – individual, small groups and whole class. Throughout each activity a big focus is on developing mathematical vocabulary. Children are encouraged to talk about and share their ideas about the numbers or shapes they have been working with.

During plan, do review sessions and across the routine (register/snack time) children are given the opportunity to apply their skills in number and shape for a real purpose. This ensures children access rich and enjoyable learning experiences.

The learning objectives are taken from the development matters statements of the EYFS, the two areas for Mathematics are Number and Shape, Space and measure.

Through observations teachers identify the age and stage the children are working at and plan activities and environments which will enable the children to achieve their next steps.

Equal opportunities, inclusion and SEN

As a school we are committed to the premise that every child, irrespective of race, gender or ability is entitled to a broad and balanced curriculum and that the curriculum we teach should reflect the diversity of the society in which we live. Activities are suitably differentiated and challenging to allow all pupils (including less able, more able and gifted children, EAL) of all ages and abilities full access to the Numeracy curriculum. This is achieved using three principles:

- Setting achievable targets
- Responding to children's diverse learning needs
- Overcoming potential barriers to learning and assessment for individuals and groups of children.

Assessment

In line with the School Assessment Policy, on-going assessments are used to track pupil progress, and inform planning, taking into consideration prior learning needs. This will enable staff to identify suitable interventions to ensure that pupils make expected or more than expected progress and make age related expectations. There is an expectation that all pupils will make at least 2 steps of progress each term equating to six steps of progress each year. Impact of interventions are carefully monitored by Senior Leaders on a half-termly basis.

Data is reported every half term and analysed by the team leader of each phase. Groups of pupils' performance is compared i.e. gender, Pupil Premium, EAL, SEN and planning, teaching and learning and interventions are adapted in response to the findings.

Evidence for assessments is found within the children's workbooks. Staff use the Assessment guidelines at the front of the books to assess what a child can and can't do

and identify their next steps. Criteria is highlighted and colour-coded so that evidence can be easily found.

Throughout a lesson, and particularly within the plenary, pupils are given opportunities to self and peer assess their work, using the success criteria and learning objective of the lesson. Where appropriate, the children will be involved in setting themselves targets and assessing their progress towards these.

Roles and Responsibilities

Subject leader

- To ensure that the policy is implemented consistently across the school
- To support colleagues in the development of detailed planning that takes account of the objectives outlined in the National curriculum and White Rose documentation, as well as the ongoing needs of the children.
- To identify areas for further staff development and to ensure that staff have access to opportunities to address these.
- To develop teacher subject confidence and knowledge across the school
- To support colleagues with record keeping and assessment in Mathematics
- To monitor progress and evaluate assessment to advise the senior leadership team on action needed to address specific issues.
- To monitor the delivery of Numeracy within school.
- To monitor medium and short term planning.
- To monitor the consistent application of the marking policy.
- To keep up to date with developments in the subject area and disseminate information to colleagues as appropriate.
- To take responsibility for the purchase and organisation of resources

Class teacher

- To ensure progression in the acquisition of mathematical skills with due regard to the National Curriculum for mathematics and White Rose documentation.
- To develop and update skills, knowledge and understanding of mathematics.
- To identify and take advantage of training needs in mathematics
- To keep appropriate on-going records.
- To plan effectively for mathematics (with year group partners), liaising with the co-ordinator when necessary.
- To inform parents of pupils' progress, achievements and attainment.

Parents

Parents are important partners in the process of developing children's mathematical skills. Therefore, parents are encouraged to play a full part in their children's education by:

- Supporting their child with homework tasks
- Offering a useful stimulus and audience for children in their development of 'real life' mathematical opportunities.

Guidance

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.

Years 1-6 use the White Rose scheme of learning as its medium term planning. This provides a detailed, structured curriculum which is mapped out across all phases, ensuring continuity and supporting transition.

Short term planning is recorded weekly using the agreed school format. These weekly plans identify the areas of learning and lesson objectives; key vocabulary and resources; teaching input and activities; and deployment of additional adults. However these must be used flexibly to ensure planning responds to day to day assessments.

Work is planned in teams and include consideration for:

- Ability appropriate objectives
- Prior learning and next step needs
- Success criteria
- Differentiation
- Deployment of additional adults
- Teaching strategies - practical and investigative activities
 - guided group work
 - independent opportunities
 - use of ICT
- Questioning techniques
- Resources, including models and images.
- Assessment opportunities

At the end of each session progress is reviewed based on whether ALL children have made progress and plans are amended where necessary to ensure next steps are relevant and appropriate.

Calculation policy

A calculation policy has been devised to support the teaching and learning of calculation and ensure accurate pitch and progression across the school. The policy outlined the models and images that can be used to support the teaching and learning of calculation as well as formal written methods. This policy provides guidance to concrete, pictorial and abstract models to support the teaching and learning of mathematics in line with the White Rose Scheme of work.

Solo Taxonomy

Solo taxonomy is used in Mathematics to plan activities that require pupils to access higher order thinking skills such as evaluate, reason, compare/contrast and hypothesise when problem solving. This is supported by the White Rose scheme of work in which children work through varied fluency, problem solving and reasoning tasks. Children are asked to 'convince me' and 'show me', drawing on knowledge and skills. A portfolio of Solo Taxonomy activities has been compiled to support staff with planning.

Pupil Grouping

Daily teaching time for Numeracy should accommodate whole class shared work, independent group activities and a plenary session.

Independent groups may consist of mixed ability or children of similar ability dependent on task and groupings should be flexible. All children should be offered weekly guided opportunities with the teacher and other adults (T.A.s).

.

Deployment of other adults

Numeracy planning is shared with additional adults working within class bases and regular opportunities are created, to discuss and share pupil progress. Additional adults should be informed and updated on new initiatives and supported in their professional development.

Intervention programmes

When necessary, suitable children are selected through teacher assessment to take part in intervention programmes. These sessions may take place within or outside the regular planned mathematics sessions. Assessments are carried out before and after intervention to measure the effectiveness, impact and to inform next steps.

Marking

(see Marking Policy)

Monitoring

Teaching and learning of mathematics is monitored every term through book monitoring, lesson observations, pupil interviews and analysis of the data.