



Mathematics Policy

September 2021

Review: Summer 2023

Intent

For children to develop their mathematical understanding so they are able to make strong connections across mathematical ideas, developing fluency, mathematical reasoning, problem solving and connecting mathematics to other areas of the curriculum.

The Mathematics curriculum has been planned to be mastery of a body of subject-specific knowledge designed specifically to meet the needs of our children.

At Holtsmere End Junior School we believe that the skills are the by-product of the knowledge, not its purpose.

Learning is defined as an alteration of the long-term memory. If nothing has altered in long term memory, nothing has been learned. Therefore, the Mathematics curriculum has been planned accordingly to 'make knowledge stick'.

At Holtsmere End Junior School we know that vocabulary size is related to academic success, and schooling is crucial for increasing the breadth of vocabulary. Skills and knowledge for the subject have been identified and are lesson specific. Skills start with an imperative verb eg. Explore, consider, investigate...

Knowledge is 'to learn' and will be key concepts.

Challenge and Choice should be included in most lessons or some form of differentiation clearly identified. Differentiation will always focus on how children can demonstrate their subject specific ability and not have a barrier to this, for example their ability to write.

Introduction

This policy outlines the teaching, organisation and management of the mathematics taught and learnt at Holtsmere End Junior School.

The school's policy for mathematics is based on the document 'Programme of Study 2014' (See Appendix I). This policy has been drawn up as a result of staff discussion and has the full agreement of the Governing Body. The implementation of this policy is the responsibility of all the teaching staff. The school follows the Herts for Learning 'Essential Maths' curriculum.

Implementation

Teaching Mathematics

Teaching time

To provide adequate time for developing mathematic skills each class teacher will provide a daily mathematics lesson. This may vary in length but will usually last for 60 minutes in Key Stage 2. Links will also be made to mathematics within other subjects so pupils can develop and apply their mathematical skills. Teachers are expected to reinforce key concepts within morning activities twice weekly. Daily maths fluency sessions have also been introduced across the school as a chance to practise and embed key arithmetic skills each afternoon. The teaching of Times Tables will be explicit and take place in two sessions a week.

Class Organisation

All pupils will have a dedicated daily mathematics lesson. Within these lessons there will be a good balance between whole-class work, group teaching and individual practice. Children are taught in mixed ability classes where Challenge and Choice is implemented. Children choose from differentiated challenges with the highest challenge often being open-ended. Challenges should all work towards achieving the same LO but have a variation to cater for ability. It is important that teachers try to have a next step for each challenge. Each year group benefits from TA support during the week.

A typical lesson

A typical 60 minute lesson in Year 3 to 6 will be structured like this:

- ◆ Oral work and mental calculation (about 5 minutes)
This will involve whole-class work to rehearse, sharpen and develop mental and oral skills and will often involve reasoning.
- ◆ The main teaching input (15 minutes)
- ◆ The independent or group activity (about 30-35 minutes)
This will include both teaching input and pupil activities and a balance between whole class, grouped, paired and individual work. (See Teaching and Learning policy)
- ◆ A plenary (about 5 to 10 minutes)
This may involve work with the whole class to identify progress, applying skills learnt, what to remember and to discuss next steps.
Opportunities will be provided to allow children to self and peer-assess their work. (A mini plenary, during a lesson, may be used to assess learning)

Out-of-class work and homework

Homework will provide opportunities for children to practice and consolidate their skills and knowledge from their maths lessons. Activities will be short and focused and will be referred to and valued in future lessons. Homework supports the learning in school and should also offer challenge and choice to cater for all abilities as well as having 'Steps to Success,' 'Success Criteria,' or an example included where possible to assist home learning.

All children, with a focus on Pupil Premium children, have been given the opportunity to access extra Times Tables practise on the online platform TT Rockstars which is also offered as a club during and after school time. This is in-line with the implementation of Times Tables statutory tests which will be implemented in Year 4 from Academic Year 2021-22. Extra Maths opportunities are given to those in Year 6 in the form of 1:1 Online Tutoring, Maths Booster sessions and 1:1 Tutoring in preparation for SATs.

Interventions

Responsive interventions will be used on a daily basis to review or recap a lesson that a child needs more help with thus keeping all children on track within their lessons. Responsive interventions will be recorded within the class' 'Intervention Log' to keep a record of which children are going out, whether they have achieved the skill, and what the skill is they needed to work on thus enabling teachers to track trends within their class and provide other support where necessary. Responsive maths time is allocated daily for every class and can also be used to give children the opportunity to consolidate their learning; move children up to the next challenge; allow them to embed the learning independently; and deepen a child's understanding.

Links between mathematics and other subjects

Mathematics contributes to many subjects within the primary curriculum and opportunities will be sought to draw mathematical experience out of a wide range of activities. This will allow children to begin to use and apply mathematics in real contexts. Cross-curricular links will be identified within Maths plans.

School and Class Organisation

How we cater for pupils who are more able

Where possible, more able pupils will be taught with their own class and stretched through differentiated group work and extra challenges. When working with the whole class, teachers will direct some questions towards the more able to maintain their involvement and these pupils will also be given the opportunity to peer teach and explain concepts to the class. Challenge and Choice offers children the opportunity to choose the level of their challenge. More able children are able to choose an open ended task to extend their understanding which often leads to detailed explanations to extend their reasoning ability and mathematical vocabulary. Very occasionally,

special arrangements will be made for an exceptionally gifted pupil e.g. they may follow an individualised programme with more challenging problems to tackle. Children will be supported by a TA when possible. Responsive time will also be available to push more able children and deepen their understanding of key concepts. Opportunities for school trips will be looked into and discussed with the Headteacher, subject leader, teachers and teaching assistants.

Pupils with special educational needs and individual education plans

Teachers will aim to include all pupils fully in their daily mathematics lessons. All children benefit from the emphasis on oral and mental work and participating in watching and listening to other children demonstrating and explaining their methods. However a pupil whose difficulties are severe or complex may need to be supported with an individualised programme in the main part of the lesson.

Manipulatives

Each year group has mathematical resources that will be used regularly to support their learning e.g. place value counters, unifix, multi-link, Cuisenaire, Base-10, Numicon and metre sticks etc. The main resources are in designated cupboards in an area accessible to all classes e.g. calculators, protractors, 100 square boards, 3D and 2D shapes, fraction board, number fans and angle strips etc. Each classroom has a working wall to promote independent learning. Working wall will be updated every week to suit the areas being covered. Each working wall will include key mathematical vocabulary for the week as well as key reasoning sentence starters to encourage deeper understanding and use of correct terminology.

Information and Communication Technology

ICT will be used in various ways to support teaching and motivate children's learning. ICT will involve the computer, calculators, and interactive white boards. iPads are used to support children with their learning e.g. children creating videos to discuss steps to complete activities or teachers creating quizzes for children to compete against each other. Children will also use iPads and computers to access TT Rockstars.

SMSC and British Values

In line with the school's equal opportunities policy, all children will have an entitlement to all aspects of the curriculum, in accordance with British values e.g. mutual respect gained through collaborative work in mixed abilities.

Management of Mathematics

Role of the Subject Leader

The role of the subject leader is to:

- teach demonstration lessons modelling to other teachers key skills where necessary,
- ensure teachers are familiar with the curriculum and help them to plan lessons,
- lead by example in the way they teach in their own classroom,
- monitor books and lesson plans, and provide feedback to staff on a four weekly basis,
- prepare, organise and lead INSET, with the support of the Headteacher,
- work co-operatively with the SENCO and TA's,
- observe colleagues with a view to identifying the support they need and to ensure the quality of teaching,
- attend INSET provided by LEA numeracy consultants,
- inform parents of how to help at home referencing the school's 'Maths Calculation Policy' (see Appendix 2).
- ensure that mathematics remains a high profile in the school e.g. participating in World Maths Day, implementing Maths Weeks across the school etc and
- ensuring there is a good mathematical environment within each classroom through learning walks.

Impact

Assessment

Assessment will take place at three connected levels: short-term, medium-term and long-term.

These assessments will be used to inform teaching in a continuous cycle of planning, teaching and assessment.

Short-term assessment

Short-term assessments will be an informal part of every lesson to check their understanding and give you information, which will help adjust future day-to-day lesson plans and inform responsive interventions for that day. Many teachers will use pitch and expectation questions to assess understanding and use open ended questions to deepen thinking. This includes using named questions and a generally no-hands-up environment.

Children will have the opportunity to self and peer assess their own progress and recognise their next steps. This will be evident within their books as verbal and written assessments at least once a week. Self-assessment is often a part of the Success Criteria stuck in books across the school.

Medium-term assessment

Medium-term assessments consist of short topic tests, of roughly 10 questions, which are written by the class teacher in accordance to appropriate 'end-of-year statements' and given to pupils to assess embedded learning a couple of weeks after said topic has finished. These tests will be completed within Maths Unaided Books and then used to support half-termly teacher assessment based on the end-of-year statements for each child.

Long-term assessment

Long-term assessment consists of half-yearly formal tests which are used to support the termly teacher assessments to ensure that these are accurate across the school and that the children's progress is tracked. End of year statements for each child are referred to and used throughout this process. Provision is then made for any children who have not made expected progress. Accurate information will then be reported to parents and the child's next teacher.

Response to assessment

In response to children's needs, teachers, along with the Subject Leader, will organise Maths weeks to identify and 'fill' the gaps in their learning and to deepen their understanding of Mathematics. Additionally, the 'end of year statements' are used extensively by each class teacher in order to make continuous assessments and judgements to inform the next steps in the children's learning. Summative assessment leads to conversations in Pupil Progress where provision is then made for pupils not making expected.

Gap analysis will take place termly to identify any individualised gaps emerging from the assessment data. These gaps will then be filled and planned for within the class environment. Children will be fluidly moved through Times Tables groups as they achieve each one.

Feedback and Marking

Teachers are expected to mark in detail at least 4 out of 5 days a week. Marking will include next steps, closing the gap comments, scaffolding and reminders to support learning. Children will be given time to respond to next step questions (either during early morning work or beginning of a lesson) and teachers will respond to the children's answers.

Appendix 1: 'Programme of Study 2014' - please see separate document

Appendix 2: Maths Calculation Policy - please see separate document