



Maths Policy

June 2024

1. Introduction

The Maths curriculum at Peters Hill aims to promote high standards of Numeracy by equipping children with vital skills that they will need to use throughout their everyday lives. It is therefore important to encourage children to develop and nurture a range of strategies to help them solve problems, make links with other subjects and grow in confidence in the understanding of numbers.

Throughout the teaching of Mathematics at Peters Hill we aim for all children to develop:

- A positive, enthusiastic and resilient attitude towards maths
- A sound understanding of calculation, number, shape, space and measures, and handling and interpreting data
- A broad range of skills which can be applied both within school and within their everyday lives
- A wide range of written and mental methods that they can use to answer questions and solve problems
- A deep and lasting interest in mathematics

2. Approach

The approach to mathematics needs to be sufficiently broad, balanced and relevant to ensure that the interests of pupils' can be engaged and their motivation sustained. Curriculum planning should systematically build mathematical knowledge and skills in order for children to be able to understand and draw on the knowledge, concepts and procedures they have already learned and apply these to where they are currently in their learning as well as the next stage. Planning is also flexible to address any gaps in pupils' knowledge. At KS1 and KS2 teachers refer to the White Rose Maths Primary schemes of learning developed specifically for the 2014 National curriculum, to assist with their planning, alongside the NCETM supporting resources. We have a cumulative curriculum so that once a topic is covered it is revisited many times again in other contexts. New learning is divided into manageable steps, with new procedures clearly modelled. The programme is designed to develop fluency, build conceptual understanding and embed reasoning through an enquiry-based approach. It also allows children to explore maths and present their findings not only in a written form but also visually; to that end the school has adopted the CPA approach: concrete, pictorial, abstract. This allows the children to experience the physical aspects of maths, using a variety of resources (manipulatives) before finding a way to present their findings and understandings in a visual form. As understanding develops, children move on to use some form of abstract representation, e.g. This could be giving values to bar models to identify what is known and unknown.

The ability to calculate both mentally and in written form lies at the heart of Mathematics and continued revisiting and consolidation of these skills is essential. Teachers at Peters Hill refer to the White Rose Calculation Policy for the 4 main operations, in line with the New National Curriculum in 2014, in order to assure a consistent and progressive approach to the teaching of number calculation. This is further supplemented by visual policies for the teaching of fractions, place value and use of bar models.

A mastery approach underpins the 2014 National Curriculum. At Peters Hill we advocate spending longer on topics in order to embed understanding and develop rich connections across topics. Teachers reinforce an expectation that all pupils are capable of achieving high standards in mathematics and that the large majority of pupils progress through the curriculum content at the same pace.

Using precise mathematical vocabulary is vital in ensuring children's understanding. Rich talk and discussion between teachers and children using mathematical terminology and constant probing questions is therefore an essential tool in the ongoing assessment of children's learning.

Children will be given the opportunity to work individually and in groups of varying size and abilities using a range of mathematical activities suited to the abilities, ages and interests of the pupil. A range of resources will be used to support the learning/teaching of mathematical concepts, including manipulatives and computers.

3. Skills

In our school, the focus will be developing confidence and fluency with whole numbers, counting and place value. In addition to a secure understanding of number, calculation and number facts there are other essential skills for high quality Mathematics learning, which include:

- Problem solving- knowing the strategies and resources which need to be used to solve a problem
- Communicating – being able to explain their results verbally and in written form, using mathematical language and symbols
- Reasoning-being able to think logically and justify their ideas
- Secure with times table facts and able to apply them in lessons, not just in the weekly test.
- Developing the ability to recognise, describe, draw, compare and sort different shapes and use related vocabulary and use a variety of measures to describe and compare different quantities including length, mass, capacity/volume, time and money

These skills can also be transferred into other learning and in their everyday life and opportunities should be regularly planned, for the children to be able to practice and develop these.

4. Foundation Stage

At Peters Hill we develop a strong grounding in number, providing the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. We provide frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting – in order for children to develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, we provide a curriculum which includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

We deliver the above framework via small groups, whole class and through child-initiated activities. Children learn mathematical skills throughout the continuous provision both indoors and outdoors.

5. Progression, Continuity and Differentiation

To ensure progress, all children within the class will be taught the same content and will be given the same opportunities to understand the concepts through a variety of representations, models and images. Differentiation is achieved by emphasising deep knowledge and through individual support and intervention, not through changing the content. Difficulties and misconceptions should be addressed as they occur and children should be challenged through more demanding problems, rather than being accelerated to future curriculum content.

6. Inclusion

Mathematics at Peters Hill is taught with equal opportunities for all children throughout the school. Suitable learning challenges will be set with the aim of maximizing achievements for all pupils and IEP targets will be incorporated into lessons, as appropriate. Teachers will respond, using a full range of teaching and learning styles, to pupil's diverse learning needs and be aware of the needs of differing genders, special educational needs, disability, as well as different cultural, social, ethnic backgrounds.

7. Assessment, Recording and Reporting

A variety of assessments and tests are implemented across whole school, leading to outcomes being used to measure progress against end of year expectations and furthermore, identify any gaps in learning to inform future planning.

- Assessment at the start of the reception year – the Reception Baseline Assessment (RBA) and the assessment at the end of the EYFS and the Early Years Foundation Stage Profile (EYFSP) (*Refer to the Early years foundation stage statutory framework, effective from Jan 24*)
- All pupils from Y1 to Y6 complete short, end of teaching block written assessments
- Online STAR assessments are completed 4 times throughout the academic year in Years 3, 4 and 5, the outcomes of which are used to support future target setting

- Y5 complete end of term written assessments, based on the Y5 curriculum. This is good preparation for when children transition to Y6, as the style of the tests are set in a similar way to SATs style questions
- Y6 pupils prepare for end of KS2 SATs by completing previous SATs papers. Timing and pace and test technique become as much of a focus as knowledge and skills in answering these type of questions
- Regular arithmetic tests are completed in both Key Stage 1 and 2 and outcomes recorded on the progress tracker to support teacher assessment judgement.
- Half-termly times table rapid recall tests occur in Years 4,5 and 6, using TTRS online. Results are tracked and gaps in learning identified to inform future planning. Y4 complete the Statutory Multiplication Tables Test in the Summer term
- Assessment for learning takes place daily within and across lessons, in line with the school's marking policy. The PHPS Markbook is updated regularly, with the outcomes from on-going assessment helping to inform overall teacher assessment judgement
- Progress and targets are shared with parents and carers on a termly basis. This often occurs through discussion at Parents Evenings in the Autumn and Spring and in the Summer Term the end of year report gives parents a comprehensive overview of their child's achievement in Mathematics at the end of the year.

8. Rights Respecting School

At Peters Hill Primary School, we are committed to promoting a rights respecting ethos based on the Convention on the Rights of the Child in all aspects of school life and the best interests of the child is at the heart of our policy and practice. The pupils are taught that we all have rights and responsibilities, in our school community, locally and globally and the difference between wants and needs. We recognise that children have the right to say what they think about matters affecting them and to have their views taken seriously and we encourage them to play an active role in their own learning and to speak out and act for the rights of all to be respected locally and globally.

9. Role of Governors

Governors determine, support, monitor and review the school policies. They support the use of appropriate teaching strategies by allocating resources effectively. They ensure that the building and equipment are safe. They monitor pupil attainment across the school and ensure that staff deployment and performance management promote good quality teaching. The Curriculum Committee is given regular updates on progress in Maths throughout school and governors are able to visit school regularly (as and when appropriate depending on extenuating circumstances) to see children at work.

10. Resources and Displays

The White Rose Maths programme provides pupil and teacher resources, including CPD support, in order for outstanding mathematics lessons to be planned. These resources include teachers' planning guides, website resources and digital resources.

Each classroom will be resourced with materials to support the effective delivery of Maths.

The key manipulatives to be used are:

• Straws (Years 1-3) • Base 10 apparatus • Place-value counters • Place-value cards • Number rods • Double-sided counters • Bead strings • Digit cards • Coins • Counting sticks • Interlocking cubes • Coloured counters • 2-D shapes • 3-D shapes • Clock faces • 1–6 dice • 1–10 dice • Percentage cards • Modelling clay • Number cards • Tangrams • Fraction wall models • Rekenrek

The key visual representations include:

• Numicon • Number tracks • Ten frames • 100 squares • Number lines • The bar model • Place-value grids

In addition to existing resources, the school aims to review and update resources regularly in accordance with budget allocation.

Each classroom should have a Maths working wall display to be used as a visual, interactive tool to support pupils' learning. The five key focus areas of the Maths working wall are : Arithmetic focus of the week, models of the main learning focus, key vocabulary for the main concept that is being taught, a reasoning

challenge and an opportunity to identify where links can be made across other curriculum areas along with previous learning. The working wall display should be ever changing to reflect the current focus of learning.

11. Cross-curricular Links

Mathematics is a subject that has links with a wide range of subjects. By adopting a cross curricular approach mathematics can have a real relevance to everyday life. Approaches to cross curricular work include:

- Use of mathematical concepts in Science lessons
- Art work involving shape and pattern
- Dance and PE develops spatial awareness, direction, sequences and pattern
- Music involves counting, patterns and rhythms
- Measuring is often linked to Geography and Science outdoor work as well as cooking in the curriculum
- Many mathematical concepts are developed in the Foundation Stage outdoor classroom such as counting, measuring when working with structures, and shape and space when building and constructing materials. Activities are also linked to themes, key texts and children's interests.

At Peters Hill every effort is made to ensure that learning is meaningful and makes sense to the child. Whenever possible we promote cross curricular learning.

12. Parental Engagement

When safely appropriate, workshops are held where pupils can work alongside their children, exploring mathematical concepts and appropriate strategies to solve calculations. Progress and individual targets are discussed at parents evening, alongside teachers offering advice and support in how parents can best help their child develop a love of Maths. The curriculum is published on the school website, so that parents are fully informed about the age-related expectations. Homework is set weekly and parents are encouraged to support pupils with their home learning, including practicing their times tables facts on a regular basis. Class blogs also inform parents of the learning each week and should include modelled strategies, suggestions for a range of practical activities, challenges and number games as well as promote children's Mathematics learning in a wider context beyond school. The school Maths blog is also regularly updated to celebrate our pupils' love of Maths as well as share useful resources and links to support parents with home learning.

13. Evaluation and Monitoring

Mathematics will be monitored regularly throughout the school by:

- Book monitoring
- Lesson observations
- Reviewing and monitoring of planning
- Assessment and analysis of data
- Learning Walks
- Pupil conferencing

Where appropriate, when there has been a significant length of time passed when an area of Maths has been visited, the previous Year's end of block assessment has been used for retrieval purposes and oppor