

Peters Hill Maths Policy 2017

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 and enthusiastic 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. At KS1 and KS2 teachers use the Rising Stars Primary Mathematics programme developed specifically for the 2014 National curriculum. 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 will adopt the CPA approach: concrete, pictorial, abstract. This will allow 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 our revised Visual Calculation Policy 2016, in line with the New National Curriculum in 2014, in order to assure a consistent and progressive approach to the teaching of number calculation.

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.



Ambition

Belief

Compassion

Pride

Respect

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 range of measure 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

Foundation Stage deliver a Maths curriculum that ensures children make progress through the early Years Foundation Stage curriculum and achieve against the EYFS profile. This is done through teacher led activities and work in the outdoor environment.

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

Baseline assessments are used at the beginning of the year, the outcomes of which are used to inform target setting and planning. Pupils then sit further tests every half term, to measure progress against end of year expectations as well as weekly arithmetic tests. Assessment for learning takes place daily within and across lessons, in line with the school's marking policy. The PHPS Markbook is updated regularly, in line with outcomes from on-going assessment and tests and new pupil targets set. Targets are shared with parents and carers when set and when evaluated, as well as discussion about pupil progress at parents evenings. 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 give regular updates on progress in Maths throughout school and governors are able to visit school regularly to see children at work.

10. Resources and Displays

The Rising Stars programme provides pupil and teacher resources, including CPD support, in order for outstanding mathematics lessons to be planned. These resources include children's text books, 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 • Plates • 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

The key visual representations include:

- 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 four key focus areas of the Maths working wall will be: Arithmetic focus of the week, models of the main learning focus, key vocabulary for the main concept that is being taught and a reasoning challenge. 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.

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

Workshops are held where pupils can work alongside their children, exploring mathematical concepts and appropriate strategies to solve calculations. Individual targets are discussed at parents evening and sent home each time they are set and reviewed. The curriculum is published on the school website, so that parents are fully informed about their children's learning. 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 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.

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