

Palace Wood Primary School

Maths Policy



Written by	Emma Ridout
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Signed – Headteacher	

This policy has been impact assessed by Emma Ridout in order to ensure that it does not have an adverse effect on race, gender or disability equality



Purpose of Study:

Mathematics is a creative and highly inter-connected 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.

Aims

Palace Wood Primary School's aim is for all pupils to:

- develop their fluency, reasons and problem solving skills in mathematics:
 1. *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.*
 2. ***reason** mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language*
 3. *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 solutions*
- gain factual (I know that...), procedural (I know how...) and conceptual (I know why...) understanding of mathematics.
- enjoy mathematics, be successful and have a positive attitude to the subject
- be able to demonstrate their skills and knowledge and talk about their work using appropriate mathematical language
- use mathematics as part of their everyday life in school and at home

Objectives

- to ensure that all pupils follow a broad and balanced mathematics program based on the requirements of the new National Curriculum (Sept 2014)
- to ensure that all pupils are provided with interesting and challenging tasks that enable them to achieve standards commensurate with their abilities and potential
- to ensure that pupils can work individually, collaboratively in groups and within the whole class
- to allow pupils to develop as independent learners, able to make decisions about their own work
- to enable pupils to master the curriculum through reasoning

Mathematics in the Foundation Stage:

Problem Solving, Reasoning and Maths is developed throughout the Foundation Stage, through

- the routine of the day
- whole class counting, songs and rhymes
- adult led guided group work
- child initiated activities
- the learning environment, inside and out
- questioning and discussion
- opportunities for solving 'real life' problems

Organisation in KS1 and KS2

Children are taught as classes in mixed ability.

Children are taught maths everyday.

Principles of Teaching and Learning

In order to deliver the curriculum we use the programmes of study and APP to track pupil's ability and set them appropriately challenging work. We follow the philosophy of the new curriculum – pupils should be fluent, reason mathematically and solve problems.

Planning

The curriculum content for each year group will cover all aspects of the subject, including number, measurement and geometry. Children in Key Stage Two will also be taught statistics. Children will develop their mathematical fluency of key concepts and methods alongside planned opportunities to apply their reasoning to solve problems.

In order for children to have an effective learning experience, each lesson must be well planned. At Palace Wood, we use medium-term and short-term planning to cover all that will be taught within the classroom during each year.

- Medium term plans list the themes to be covered over a term or half-term period.
- Teachers use weekly plans setting out precisely the learning for each day. These are personal to each teacher but all include clear learning intentions, success criteria, differentiated activities and assessment procedures. Planning is a working document and should be annotated and adapted accordingly, reflecting the previous lessons outcomes. Teachers use a wide range of resources to plan such as the White Rose Maths hub, Nrich, NCETM, Oxford Owl Mastery documents.

Lesson structure

Maths lessons will be comprised of:

- Guided maths
- Main maths lesson

Guided maths is a twenty minute part of the lesson and should be delivered at the start. Children will be given short activities that challenge them and should be used to revisit or extend children's understanding. Adults will also work with guided groups in this session and will focus on either number, word problems, pre-teaching or problem solving.

Throughout the week there will be a variety of approaches to maintain the enthusiasm and interest of the pupils. Lessons will have clear learning objectives and success criteria that are communicated to the pupils.

Teaching will be oral and interactive. It will involve different elements:

- modelling – showing how to
- explanation – giving examples, giving NOT examples
- questioning – challenging understanding, reasoning
- discussion and evaluation – talking about methods, learning through misconceptions, developing mathematical language, working systematically, generalizing
- guided group teaching

The aim of all lessons is to secure good to outstanding progress for all pupils.

Assessment, Recording & Reporting

Teachers are expected to make regular assessments of pupils' progress and record them systematically.

They follow the school's assessment policy.

This involves:

- informal and formal testing of mental recall and mental calculation, given orally and through written work
- ongoing assessment for each pupil using target tracker
- termly assessments
- End of Key Stage statutory SATS in Maths
- Foundation Stage Profile
- reporting pupil progress to parents during parents' evenings and through 'End of Year' reports

Cross-curricular Skills and Links

Mathematics is frequently used in other curriculum subjects and it is important that children get the chance to emphasize and build on this opportunity. Therefore, mathematical skills will be practiced which will support ideas and activities in other subjects. Examples include measuring in technology, charts and graphs in science and geography, time and dates in history, patterns in art, music, and dance, and scoring and counting in physical education.

Resourcing

An annual review of resources is overseen by the maths co-ordinator and new stock is ordered as appropriate. There are central stores of materials for both key stages. Most equipment is stored within each classroom and should be well labelled and easy for children to access.

Differentiation and Special Educational Needs

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 should always be based on the security of pupils' understanding and their readiness to progress to the next stage. **Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems and reasoning before any**

acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

Teaching is organised to enable pupils of all abilities access to the learning. Teachers are to have high expectations and these expectations need to be discussed and reviewed with the pupils regularly.

Pupils with SEN are sometimes supported within class by the learning support staff. Mathematics targets are featured on the Provision map of pupils with mathematical SEN. Teachers will monitor the progress of individuals or groups of children and act upon any underachievement which presents itself.

Children who are identified through pupil tracking as stalling or 'falling behind' partake in small group booster work or, if necessary, 1:1. These sessions may be in addition to normal lessons or involve allocation of adults to specific children during maths lessons.

Rapid Graspers

Children who are rapid graspers and exceeding at mathematics should be identified by their teacher. Provision should be made to include rapid graspers within class lessons and provide challenges that allow them to challenge themselves. Additional problem solving, mastery at greater depth and investigative work should be given, rather than more of what they can already do or simply larger or more complex numbers. The school provides additional activities for more skilled mathematicians, with the Year 5 and 6 gifted children being invited to cluster project organised by local secondary schools (Oakwood, Invicta and MGGS) Year 6 also represent the school in an annual Maths competition.

Homework

Children receive weekly maths homework. My Maths online homework is used as well as paper homework. Children are expected to learn their multiplication tables and division facts as well.

Equal Opportunities

There is a school equal opportunities policy which is applied to mathematics. Teaching materials are chosen to reflect the cultural and ethnic diversity of our society. We try to avoid stereotyping through gender or race. Pupils' performance is monitored to ensure that no group of pupils is disadvantaged. In lessons, the full participation of both girls and boys is encouraged and care is taken to ensure that the emphasis on whole class teaching does not disadvantage any gender group.

Health & safety

In line with the school's health and safety policy, children are instructed in the safe use of all equipment. In particular, extra care should be taken when using heavy weights with balances on the floor. Care needs to be taken when younger children are using small apparatus such as counting objects. Children working outside the classroom will work in pairs or groups and be supervised by an appropriate adult.
Review date: January 2019