

Spring Meadow Infant and Nursery School

Kind Brave Curious

Mathematics Policy

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Introduction

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)

The aims of the 2014 National Curriculum are for our pupils to:

- become fluent in the fundamentals of mathematics through varied and frequent practice with increasingly complex problems over time.
- 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.
- develop an argument, justification or proof using mathematical language.
- 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.

The National Curriculum sets out year-by-year programmes of study for Key Stages 1. This ensures continuity and progression in the teaching of mathematics.

The aims for children in the Foundation Stage

The EYFS Statutory Framework 2014 sets standards for the learning, development and care of children from birth to five years old and supports an integrated approach to early learning. This is supported by the 'Development Matters' non statutory guidance. The EYFS Framework in relation to mathematics aims for our pupils to achieve the Early Learning Goals in Number and in Shape, Space and Measure.

The purpose of mathematics in our school

We want to develop mathematicians who have a positive attitude towards the subject and an awareness of the relevance of mathematics in the real world, and aim to achieve this through a broad, balanced and creative curriculum.

We want children to be able to demonstrate:

- competence and confidence in using and applying mathematical knowledge, concepts and skills through a range of representations.
- an ability to solve problems, to reason, to think logically and work systematically.
- a confident communication of mathematics where pupils ask and answer questions, openly share work and learn from mistakes.
- an ability to use and apply mathematics across the curriculum and in real life.
- an understanding of mathematics through a process of enquiry and investigation.

In the Foundation Stage children will also have the opportunity to demonstrate their mathematical knowledge and understanding through participating in the continuous provision. Each Nursery and Reception class has a mathematics continuous provision area and this is enhanced based on the children's interests and abilities. It is the intention that

all pupils receive a mastery approach to maths to ensure that mathematical skills, knowledge and understanding are embedded and deepened.

Learning Environments

We aim to provide a stimulating and exciting learning environment that takes account of different learning styles and appropriate resources to maximise teaching and learning. Every class has a '**Build it, Draw it, Say it, Write it**' working wall to support pupil's learning and help them to link the concrete work with apparatus to the pictorial and conceptual aspects of mathematics.

Breadth of Study

Careful planning and preparation ensures that throughout the school children engage in:

- practical activities and games using a variety of resources
- problem solving to challenge thinking
- individual, paired, group and whole class learning and discussions to develop reasoning
- purposeful practise where time is given to apply their learning
- open and closed tasks
- a range of methods of calculating.

Mathematics features in our cross curricular planning to develop opportunities for exploring and utilising mathematics skills in a creative way.

Planning and Organisation

Long Term Planning

The national Curriculum for Mathematics 2014, Development Matters and the Early Learning Goals (Number, Shape, Space and Measure) provide the long term planning for mathematics taught in school.

Medium Term Planning

Years 1 and 2 use the White Rose Mathematics Hub schemes of learning as the basis for their medium term planning documentation. They are adjusted to ensure all areas are sufficiently taught in order to achieve the coverage of work and evidence needed for Year 2 end of Key Stage moderation.

These schemes provide teachers with exemplifications for mathematics objectives and are broken down into fluency, reasoning and problem solving, key aims for the National Curriculum. They support a mastery approach to teaching and learning and have number at their heart. They ensure teachers stay within the required year group and support the ideal of depth before breadth. They are also supplemented with a range of problem solving and mastery resources from other sources, such as NRich and NCETM in order to ensure pupils have the opportunity at achieving Greater Depth within mathematics.

Short Term Planning

The White Rose medium term plans are supported through the use of the *Small Step Guidance* to ensure continuity and progression across Key Stage 1. Lessons are planned using a common format in Key Stage 1. EYFS plan using a common weekly format which incorporates plans for a mathematics rich environment.

All classes have a daily mathematics lesson of approximately 60 minutes duration. An additional hour of maths is also dedicated to 3 x 20 minute slots of Number Talks activities.

Teachers within EYFS ensure that the children learn through a mixture of adult led activities and child initiated activities both inside and outside of the classroom.

Special Educational Needs and Disabilities (SEND)

Daily mathematics lessons are inclusive to pupils with special educational needs and disabilities across the school, including the Infant Assessment Unit. Where required, children's IPPs incorporate suitable mathematical targets and teachers plan learning to meet these needs. Maths interventions are used to support children when specific gaps in their learning and mathematical understanding have been identified. These are delivered by both teachers and trained support staff and overseen by the class teacher.

Within the daily mathematics lessons teachers are responsible for providing differentiated activities which challenge all children at a level appropriate to their ability.

Equal Opportunities

Positive attitudes towards mathematics are encouraged so that all children, regardless of race, gender, ability, including those for whom English is an additional language, develop an enjoyment and confidence with mathematics. The aim is to ensure that everyone makes progress and gains positively from lessons. Lessons involving lots of visual models and images, aural and kinaesthetic elements will benefit all children including children for whom English is an additional language.

Lessons

The emphasis in lessons is to engage the children in mathematical activities which develop their knowledge of the number system, their fluency of calculations, their ability to talk about maths and their ability to be brave and challenge themselves sufficiently for an increased depth of mathematical understanding. Lessons will involve elements of:

- instruction – giving information and expectation of presentation
- demonstration – showing, describing and modelling mathematics using appropriate resources and visual displays
- explanations and illustrations
- investigation
- questions and discussion
- consolidation
- reflection and evaluation of responses – identifying mistakes and mis-conceptions and using them as positive teaching points in order to address next steps

Recording of Work

Lessons will involve the children recording their work in a variety of ways and the Concrete, Pictorial, Abstract (CPA) approach is adopted in line with the White Rose Calculation Policy as a means of demonstrating the strategies that have been used. EYFS teachers record the children's achievements through the use of Tapestry.

Marking

Marking of children's work is completed in line with the school marking policy and any identification of need that arises from this should be addressed as soon as possible.

Assessment

Assessment is an integral part of teaching and learning and is a continual process. Teachers make assessments of children daily through:

- regular marking of work
- analysing errors and picking up on mis-conceptions
- asking questions and listening to answers
- facilitating and listening to discussions
- making observations

These ongoing assessments inform planning and teaching. Lessons are adapted readily and short term planning evaluated in the light of these assessments.

Summative assessment is completed using key learning outcomes for every child in all areas of learning.

Resources

Each class has a stock of core resources that are age appropriate such as Numicon, tens and ones, cubes, counting equipment, number sticks, number lines, money, 2D and 3D shapes, tens frames, hundred squares, part-whole models, clocks and mirrors. Baskets with resources appropriate and useful to the lesson are provided on each table to encourage the children to make independent decisions as to how they can support their learning and prove their answers. Additional mathematical equipment is stored in a central location.

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