



Mathematics Policy

Enfield Academy of New Waltham

Introduction

This policy outlines the purpose, nature and management of the Mathematics taught in our school. Mathematics is important in everyday life. It is integral to all aspects of life and with this in mind, we endeavour to ensure that children develop a healthy and enthusiastic attitude towards mathematics that will stay with them.

The policy is based on the aims of the National Curriculum for mathematics and the Early Years 'Development Matters' EYFS document. This ensures continuity and progression in the teaching and learning of mathematics. This policy has been drawn up by the mathematics Champion, shared and discussed with all staff and has the full agreement of the Academy Improvement Committee.

Aims and Objectives

National Curriculum 2014 for mathematics aims to ensure that all pupils:

- Become fluent in the fundamentals of mathematics, including through varied and frequent practise with increasingly complex problems over time, so that pupils 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, and developing an argument, justification or proof using mathematical language;
- 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.

Children will meet these aims of the new national curriculum through achieving the following objectives:

1. To develop each child's potential in mathematics and by allowing for individual learning needs.
2. To ensure equality of access to Mathematical opportunities throughout all curriculum areas.
3. To develop a positive attitude and to enjoy mathematics.
4. To develop logical, flexible and systematic thought.
5. To understand number patterns and to recognise their relationships.
6. To develop mental ability within mathematics so that basic facts can be used quickly with clear understanding.
7. To foster a willingness persevere and be resilient to more complex problem solving activities.
8. To develop personal qualities of independence and collaboration.
9. To recognise that mathematics allows us to tackle a wide range of practical tasks and problems that we come across in real life.

Strategies for the Teaching of Mathematics

Foundation Stage

The programme of study for the Foundation stage is set out in the EYFS Framework. Mathematics involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shape, spaces and measures.

Key Stage 1 and 2

The Programmes of study for mathematics are set out year-by-year for Key Stages 1 and 2 in the new National Curriculum (2014). The programmes of study are organised in a distinct sequence and structured into separate domains. Pupils should make connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Key Stage 1

The principal focus of mathematics teaching in Key Stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place

value. This should involve working with numerals, words and the four operations, including with practical resources (e.g. concrete objects and measuring tools).

At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

By the end of Year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at Key Stage 1.

Lower Key Stage 2

The principal focus of mathematics teaching in lower Key Stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of Year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Upper Key Stage 2

The principal focus of mathematics teaching in upper Key Stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of Year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages. Pupils should read, spell and pronounce mathematical vocabulary correctly.

We endeavour to set work that is challenging, motivating, rewarding and provides the children with encouragement and opportunities to talk about what they have been doing.

Provision

Pupils are provided with a variety of opportunities to develop and extend their mathematical skills.

The teaching of mathematics at Enfield provides opportunities for:

- Group work
- Paired work
- Whole class teaching
- Individual work
- Concrete, Pictorial and Abstract approaches to lessons

Pupils engage in:

- The development of mental strategies through practice and rapid recall of basic skills and number facts practice sessions.
- Written methods
- Practical work
- Investigational work
- Problem solving
- Mathematical discussion
- Consolidation of basic skills and number facts
- Using ICT to support mathematical learning

Whole School Curriculum Issues

It is important that children should

- Present their work in a logical manner.
- Establish good recording and presentation habits as soon as possible by presenting their work tidily with well-formed figures and clear handwriting.
- Realise that errors do occur and they should not erase work as this provides evidence of understanding.
- Self-correct and revisit their work in red
- Respond to teachers' comments in red pen
- Use grammatically correct English and correct mathematical terms whenever possible.
- Be encouraged to use a variety of suitable media to enhance the appearance and understanding of their work.

The Learning Environment

Maths displays are evident in all classrooms. These may be on display boards around the edge of the classroom, or they may also be visual in other ways such

as maths working walls. Displays may include written work, which should be well-presented and displayed to present a WAGGOLL for others. Displays may also explain key concepts and vocabulary that is relevant to the learning in a particular class.

Assessing Pupil Progress

Assessment is an integral part of teaching and learning and is a continuous process.

- Formative assessment takes place in every lesson.
- Each unit of work begins with a pre-teaching assessment to ascertain children's starting points and ends with a post-teaching assessment to evidence the progress children have made.
- Summative assessments take place at periodic points during the year.

In weekly plans, the teacher will set specific learning objectives informed by assessment for learning to match teaching to the abilities and needs of all children.

At present, formal assessments are carried out at the end of years 2 and 6 (SATs). The school uses a SIMS based assessment system to summatively assess learning in mathematics.

Annual reports to parents focus on progress and attainment in all areas of the maths curriculum. Progress and individual pupil targets are also discussed at formal and informal 'Parents Evenings' throughout the year.

Inclusion

Children with special educational needs will fully access the mathematics curriculum at their own individual level.

Support will be given in the form of:

- Adult support
- Small group work
- Teaching and tasks appropriate to individual learning styles
- Use of ICT e.g. Mathsphere, 2Simple, Numbots, Prodigy maths
- Intervention strategies e.g. one-to-one tuition

Homework

Homework is used to strengthen and consolidate understanding of mathematical skills taught within the classroom. Where appropriate, homework is also used to challenge and deepen children's understanding of the concepts they have covered further.

Role of the Mathematics Champion

The Mathematics Champion is responsible for co-ordinating maths throughout the school. This includes:

- Ensuring continuity and progression from year group to year group.
- Advising on in-service training to staff where appropriate. This will be in line with the needs identified in the Development Plan and within the confines of the school budget.
- Advising and supporting colleagues in the implementation and assessment of mathematics throughout the school.
- Assisting with requisition and maintenance of resources required for the teaching of mathematics. Again, this will be within the confines of the school budget.

Role of Class Teacher

- To ensure progression in the acquisition of mathematical skills with due regard to the National Curriculum for Mathematics
- To develop and update skills, knowledge and understanding of mathematics
- To identify inset needs in mathematics and take advantage of training opportunities.
- To keep appropriate ongoing records
- To plan effectively for mathematics.
- To inform parents of pupil progress, achievements and attainment.

Equal Opportunities

All children will have equal access to a broad-based curriculum regardless of ability, gender or background.

Pupil performance is monitored by analysing pupil performance throughout the school to ensure that there is no disparity between groups.

Review Date: October 2021