



MATHEMATICS POLICY

Reviewed Annually by the Pupil Progress and Pupil Welfare Committee

Date of last Review	Signature
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Introduction

Mathematics is a highly inter-connected discipline that is essential to everyday life, critical to science, technology and engineering, and necessary in most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, and a sense of enjoyment and curiosity about the subject. This revised policy takes into account the new National Curriculum (2014).

Aims

We aim to develop lively, enquiring minds, encouraging pupils to become self-motivated, confident and capable in solving problems. The National Curriculum for mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems
- 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.

School Curriculum - Programme of Study

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 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 (concrete objects and measuring tools). Children should be able to apply their mathematical knowledge in different ways i.e. making links between different areas of mathematics and using their knowledge in “reasoning” situations.
- 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. Children should confidently use and apply the multiplication and division facts for the 2, 5, 10 & 3 times tables, in wide and varied context.

- 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.

Cross-curricular

Throughout the whole curriculum, opportunities to extend and promote Mathematics should be sought. Nevertheless the prime focus should be on ensuring *mathematical progress* delivered discretely or otherwise.

Teaching and Learning

The approach to the teaching of mathematics within the school is based on our Teaching & Learning Policy (reviewed November 2014)

Written Calculation Policy

The school's calculation policy is based on the 2014 National Curriculum guidelines; however, the Maths Lead has adapted this to fit the requirements of our school, in agreement with all staff. Please refer to our Progression in Written Calculation Policy.

Mental Maths

Children in Years 3 to 6 complete one test per week from the Schofield & Sims booklets. An entry assessment supported staff in starting children at the correct stage, so that the children experience a suitable level of challenge, but are also able to rehearse and refine prior learning. A teaching session each week allows the opportunity to discuss and revise mental calculation strategies. Every year group in school

carries out a daily counting stick activity, primarily for the rapid recall of multiplication and related division facts, but also counting forwards and backwards in whole or parts of numbers.

Resources

Every classroom has a set of essential concrete equipment to support daily learning. Resources that are not used or required regularly are stored centrally and accessed by teachers at the beginning of a topic.

Displays

All classrooms have a Maths Learning Wall, which not only shows the learning through a unit of work, key vocabulary and learning prompts, but is also an interactive area (whiteboard) where children can show their understanding of current learning and next steps, where appropriate.

Assessment

- Children in the Foundation Stage are assessed in accordance with the EYFS curriculum.
- Statutory Assessment takes place in the Summer Term in Years 2 and 6.
- For the first time in 2016, each child in Year 2 and Year 6 will be teacher assessed using the 'new' national curriculum expectations in each of the attainment targets in Maths. Year 6 children will also sit externally marked tests (SATs) in May for Maths.
- In all year groups, Teacher Assessments will inform end of year predictions as to each child's attainment in Maths; these will be made in December, March and June, supported by formal testing every short term.

Marking and presentation

Please refer to the Marking and Feedback Policy (reviewed November 2014).

Homework

Pupils are expected to complete times table practice at home to ensure rapid recall of multiplication and division facts to 12 x 12. In Key Stage 2, children also have access to the Maths Computer Programme 'SumDog', which is sometimes tailored to a particular Maths topic. In addition, Year 6 pupils may receive SATs revision homework.

Monitoring and Evaluation

The Curriculum leader, alongside SLT, are responsible for monitoring and evaluating curriculum progress. This is done through book scrutiny, planning scrutiny, lesson observations, learning walks, pupil interviews, staff discussions, regular audit of resources and attendance of cluster meetings.

Review

The mathematics policy will be reflected in our practice. The policy will be reviewed annually.

Agreement date of policy

This policy was developed by the Maths curriculum leader in November 2014.