

Stoke Holy Cross Primary School

Mathematics Policy

We are surrounded by Mathematics in our daily lives; in our jobs, through the technology we use, in science and engineering. Because of this, we believe that a high quality Mathematics education provides pupils with a firm foundation for understanding the world in which they live. At Stoke Holy Cross Primary School, we are striving to deliver a Mathematics curriculum which enables pupils to develop an understanding of the interconnected nature and beauty of the subject – leading to a lifelong love of Mathematics. We believe that every child has the potential to enjoy, and make progress in, Mathematics.

Aims

The National Curriculum 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 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.

Our objectives in the teaching of Mathematics is that children will:

- Make links between different mathematical concepts and different areas of the Mathematics National Curriculum Programme of Study.
- Make conjectures and explain their reasoning verbally and, when appropriate, in writing.
- Learn and use appropriate and accurate mathematical vocabulary for symbols, concepts and conventions.
- Develop their conceptual understanding through the use of concrete resources and manipulatives.
- Present their work through a range of concrete, pictorial and abstract representations.
- Learn to make mathematical generalisations by investigating concepts and pattern spotting.
- To make estimations and predictions based upon what they already know.

As teachers we will:

- Teach in a relational manner, rather than instrumentally, to develop conceptual understanding.
- Provide opportunities for pupils to make links between different areas of Mathematics.
- Use open ended questions (how do you know? What do you notice? What's the same? What's different?) to prompt reasoning.

- Introduce any new mathematical concept using concrete, pictorial and abstract representations.
- Offer activities with an appropriate level of challenge so that all pupils have the opportunity to make progress.
- Encourage pupils to work systematically, share conjectures, make mathematical generalisations and find proof by delivering low threshold, high ceiling activities and investigations.
- Provide pupils with the opportunity to complete daily calculating activities outside of the mathematics lesson.

Planning

We endeavour at all times to set work which is challenging and motivating. Each teacher is responsible for the planning of daily mathematics lessons, referring to the National Curriculum Programme of Study, which provides detailed guidance for the implementation of the National Curriculum for Mathematics. Planning will be informed by the White Rose Maths planning overviews. This ensures continuity and progression across the Key Stages. In Foundation, the curriculum is guided by the Early Learning Goals.

The study of Mathematics contributes to many subjects and children are given opportunities to use and apply Mathematics across the curriculum. Pupils are given opportunities, where appropriate, to develop their information technology capability in the study of Mathematics. The use of outdoor spaces has been shown to be effective in the teaching and learning of Mathematics (NCETM, 2006), therefore as a school we aim to give pupils opportunities to learn outside of the classroom when appropriate.

Teaching and Learning

Our philosophy on teaching and learning is encapsulated in our **Teaching and Learning Policy** to which reference should be made.

Equal Opportunities – Learning Together

Children of all abilities benefit from a broad, balanced and relevant mathematical curriculum whatever their age, ability, ethnic group, disability, gender, or social background. Children who may have special needs will be supported by the Class Teacher, Teaching Assistants (TA) and Special Needs Co-Coordinator (SENDCo).

Mathematics intervention will be provided to support pupils as close to the point of teaching as possible.

A lunchtime maths club runs throughout the year to support Y1-6 pupils with limited internet access or needing additional practise.

A lunch time Times Table Rock Star club will run throughout the year, providing pupils from Y1-Y6 with the opportunity to practise their times tables in a fun and engaging way.

High attaining pupils will be given the opportunity to take part in external maths quizzes and competitions.

Adults in our school are entitled to support from:

- Colleagues and subject leaders.
- In-service training within school and from outside agencies.
- Provision of materials and resources.

Resources

- YR-Y6 access to White Rose Maths Hub scheme of work as core support for planning; however staff are encouraged to draw upon a wide range of resources.
- The maths area (KS2 corridor) contains a range of mathematical equipment to be used across all age groups.
- Classes have a range of manipulatives which should be made available to pupils at all times.
- All classrooms should have a working wall or display related to a maths theme to promote the variety and/or relevance of Mathematics to other subjects/daily life.

Assessment, Recording and Reporting

Reference should be made to the Assessment, Recording and Reporting Policy.

Assessment for Learning (AfL) is regarded as an essential part of teaching and learning and is a continuous process which is shared with all learners.

Learning objectives and steps for success may be shared with pupils when appropriate. Children are offered opportunities for self/peer assessment and improvement.

Teachers monitor the acquisition of skills, knowledge and understanding through observations, discussions and assessments. This may then be recorded using the 'Whole Class Feedback' document.

Pupil progress is continually tracked through a variety of methods and assessments will take place at three connected levels: short-term, medium-term and long-term.

Y1-6 pupils are given Assessment Grids so they can see their progress and know what they have achieved and what they need to do to move their learning forward. Pupils and teachers are involved in completing the ladders from daily/weekly/termly observations/assessments.

- Formative, short-term assessments will be an informal part of every lesson to check pupil understanding and therefore influence daily planning.
- Medium-term assessments are linked to New Curriculum 2014 key objectives. Each class (Y1-6) has common assessments to support planning, teaching and learning. Y2 and Y6 will have an assessment in October to target End of Key Stage achievement.
- Summative, long-term assessments review pupils' progress and attainment. These will be made through class records, Foundation Profile score, SAT tests for pupils in Years 2 and 6 and supplemented by the NFER tests in years 1, 3, 4 and 5.

- Teachers will record attainment using Pupil Asset. They are expected to analyse progress across the class and specific groups, set targets and plan/access support strategies and report information at the termly Pupil Progress Meetings. Accurate information will be reported to parents and the child's next teacher.
- EYFS and end of KS1 maths assessments can be moderated by the cluster and/or by the Local Authority.
- Parents are invited to 2 consultations on progress per year where achievements and targets are discussed.

Foundation

Children are assessed against the Foundation Stage Profile scales throughout the year.

SMSC

Spiritual development in Mathematics

The study of mathematics enables students to make sense of the world around them and we strive to enable each of our students to explore the connections between their numeracy skills and every-day life. Developing deep thinking and an ability to question the way in which the world works promotes the spiritual growth of students. Students are encouraged to see the sequences, patterns, symmetry and scale both in the man-made and the natural world and to use maths as a tool to explore it more fully.

Moral development in Mathematics

The moral development of students is an important thread running through the mathematics syllabus. Students are provided with opportunities to use their maths skills in real life contexts, applying and exploring the skills required in solving various problems. For example, students are encouraged to analyse data and consider the implications of misleading or biased statistical calculations. All students are made aware of the fact that the choices they make lead to various consequences.

Social development in Mathematics

Problem solving skills and teamwork are fundamental to mathematics through creative thinking, discussion, explaining and presenting ideas. Students are always encouraged to explain concepts to each other and support each other in their learning. In this manner, students realise their own strengths and feel a sense of achievement which often boosts confidence. Over time they become more independent and resilient learners.

Cultural development in Mathematics

Mathematics is a universal language with a myriad of cultural inputs throughout the ages. Various approaches to mathematics are used and pupils are given the opportunity to learn about different number systems from around the world and throughout history (Romans, Egyptians, Maya).

Parental Involvement

We encourage parents to be involved in their child's learning by:

- Offering a Maths Cafe once a year – YF-6
- Giving access to MyMaths.co.uk at home
- Providing maths activity cards in Foundation as weekly home-learning
- Setting maths tasks via MyMaths, Learning logs or times tables – across school
- Maths Monkey – maths-all-around-us
- Publishing the Cluster Calculation Policy on our website
- Listing suitable websites for maths practise on school website.
- Maths termly overview for each class – school website

Monitoring and Review

The Subject Leader will:

- Keep staff updated on current issues, disseminating relevant information and identifying appropriate training/development needs.
- Have knowledge of the quality of Mathematics provision across the school.
- Monitor expectations, provision and attainment across the school and provide feedback to develop practice further in order to raise standards.
- Undertake, with staff, annual work scrutiny, identifying strengths and areas for development.
- Provide necessary equipment and maintain it to a high standard.
- Present to Governors as and when required.

This policy will be reviewed as part of the general curriculum review programme listed in the School Development and Improvement Plan.