Mathematics Policy

'So in everything, do to others what you would have them do to you'. Matthew 7:12

Introduction

At St Mark's CE Primary School, we believe 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.

This policy outlines what we are aiming to achieve in respect of pupils' mathematical education. It also describes our agreed approach to the planning, delivery and assessment of the mathematics' curriculum.

The National Curriculum (2013) for mathematics describes what must be taught in each key stage. The mathematics taught and the methods used reflect both the statutory requirements and the non-statutory guidance and recommendations outlined in the following documents:

- The Revised Statutory Framework for the EYFS (2021)
- Birth to Five Matters in the EYFS (2021)
- Mathematics Programmes of Study: Key Stages 1 and 2 National Curriculum in England (2014)
- Mathematics Planning National Curriculum documentation – Lancashire County Council (2014)

This policy provides information and guidance for staff, governors and other interested persons.

Aims

Mathematics helps children to make sense of the world around them through developing their ability to calculate, to reason and to solve problems. It enables children to understand and appreciate relationships and pattern in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics.

At St Mark's we aim to:

- develop a positive attitude to mathematics as an interesting and attractive subject in which all children gain success and pleasure;
- develop mathematical understanding through systematic direct teaching of appropriate learning objectives;
- encourage the effective use of mathematics as a tool in a wide range of activities within school and, subsequently, adult life;

- develop an ability in the children to express themselves fluently, to talk about the subject with assurance, using correct mathematical language and vocabulary;
- develop an appreciation of relationships within mathematics;
- develop an ability to think clearly and logically with independence of thought and flexibility of mind;
- develop an appreciation of creative aspects of mathematics and awareness of its aesthetic appeal;
- develop mathematical skills and knowledge and quick recall of basic facts

Teaching and Learning

The school uses a variety of teaching styles to cater for the different learning needs of pupils in mathematics lessons. Our principle aim is to develop children's knowledge, skills and understanding in mathematics. During mathematics lessons, we encourage children to ask as well as answer mathematical questions. They have the opportunity to use a wide range of mathematical resources such as number lines, number squares, digit cards and small apparatus to support their work. Children use technology in mathematics lessons where it will enhance their learning, as in modelling ideas and methods. Although the programmes of study of the National Curriculum (2014) are organised into distinct domains we believe as the National Curriculum states 'that pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasing sophisticated problems' (DFE, 2013:3) With this at the forefront of our teaching we ensure that using and applying mathematics is integrated into planning and teaching.

In all classes, there are children of differing mathematical ability. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies such as through differentiated group work, different levels of support provided to groups and individuals and by organising the children to work in pairs on open-ended problems or games.

We use teaching assistants to provide appropriate support to individuals or to groups of pupils. Teaching assistants at St Mark's are viewed as an important 'asset' to the school and, as such, are appropriately involved in the planning and delivery of the mathematics curriculum. Their knowledge, skills and understanding are constantly updated through involvement in school-based INSET and opportunities to attend relevant training courses.

Special Educational Need and Disability (SEND)

Mathematics teaching at St Mark's is inclusive for all children, including those with SEND. All children are challenged to achieve and make progress from their own starting points.

Outcomes may be achieved through careful differentiation of task presentation, resources available, supported scaffolding or the addition of support from a teacher or teaching assistant.

Where applicable, individual children's Education Support Plans (ESP) incorporate suitable objectives from the National Curriculum and teachers keep these objectives in mind when planning work.

When additional support staff are available to support groups or individual children they work collaboratively with the class teacher. The support staff will then feedback any observations, assessment etc. to the class teacher at the end of the lesson.

Within the daily mathematics lesson, teachers not only provide activities to support children who find mathematics difficult but also activities that provide appropriate challenges for children who are high achievers in mathematics.

Mathematics Curriculum Planning

Mathematics is a core subject in the National Curriculum, and we use the Mathematics Programmes of Study: Key stages 1 and 2 National Curriculum in England (2014) and the Mathematics Planning National Curriculum documentation – Lancashire County Council (2013) as the basis for implementing the statutory requirements of the programme of study for mathematics.

We carry out the curriculum planning in mathematics, with consideration to Lancashire Key Learning Indicators of Performance (KLIPs), White Rose small steps and Teacher Assessment Frameworks (TAFs) for end of KS1 and KS2. Our weekly plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught.

The head teacher and mathematics subject leader are responsible for monitoring the mathematics planning within our school.

Assessment

Assessment at St Mark's is used both to monitor progress and attainment as well as to identify areas of need which then informs future planning.

In the Foundation Stage, children's ability is initially assessed using the statutory baseline assessment, and throughout the reception year their learning is measured against the stages in Development Matters. They are assessed at the end of Reception using the Early Learning Goals.

The assessment procedures within our school encompass:

- Making ongoing assessments and responding appropriately to pupils during 'day-to-day' teaching. These 'immediate' responses are mainly verbal and are not normally recorded;
- Using knowledge of pupils drawn from ongoing pupil tracking records and the progression document to inform 'prior learning' at the beginning of each unit of work to guide our planning and teaching;
- Adjusting planning and teaching within units in response to pupils' performance;
- Use of ongoing teacher assessment in order to identify gaps in attainment and at the end of each full term using this information to judge each child's attainment against year group expectations;
- Use of information gained from statutory and internal school tests. Analysis is done at both a quantitative and qualitative level. Information gained is used to identify the group's and individual's strengths and areas for improvement and also to determine which strategies or methods are particularly effective in respect of specific areas of mathematics (the how and why).

Responses to children's work

Marking should be both diagnostic and summative and at St Mark's we believe that it is best done through conversation with the child but acknowledges that constraints of time do not always allow this. All work should be marked, although this may be by the teacher, teaching assistant, self-marked or marked by a peer. The teacher or teaching assistant may also add a positive comment or pink highlight an example of outstanding work to indicate the child's achievement or make suggestions about how they could improve their work next time and inform them of their next step in learning. The children will be expected to complete regular FIX IT or CHALLENGE activities to support and enhance their understanding. Children are given opportunities, and actively encouraged, to explain their work to others and to display their work when it seems appropriate. They are encouraged to value and respect the work of others.

The Early Years Foundation Stage

Work undertaken within the Early Years Foundation Stage is guided by the requirements and recommendations set out in the Revised Statutory Framework for the EYFS (2021) and Birth to Five Matters in the EYFS (2021). We offer all the children ample opportunity to develop their understanding of mathematics. We aim to do this through varied activities that allow them to use, enjoy, explore, practise and talk confidently about mathematics.

Contribution in Mathematics to Teaching in Other Curriculum Areas

At St Mark's we believe it is important to plan for creative learning opportunities and outcomes for mathematics across other subjects.

English

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening.

Computing/Technology

The effective use of technology, can enhance the teaching and learning of mathematics when used appropriately. When considering its use, we take into account the following points:

- Technology should enhance good mathematics teaching. It should be used in lessons only if it supports good practice in teaching mathematics;
- Any decision about using technology in a particular lesson or sequence of lessons must be directly related to the teaching and learning objectives for those lessons;
- Technology should be used if the teacher and/or the children can achieve something more effectively with it than without it;

Science

Almost every scientific investigation or experiment is likely to require one or more of the mathematical skills of classifying, counting, measuring, calculating, estimating and recording in tables and graphs. In science pupils will for example order numbers, including decimals, calculate simple means and percentages, use negative numbers when taking temperatures, decide whether it is more appropriate to use a line graph or bar chart, and plot, interpret and predict from graphs.

Art, Design and Technology

Measurements are often needed in art and design and technology. Many patterns and constructions are based on spatial ideas and properties of shapes, including symmetry. Designs may need enlarging or reducing, introducing ideas of multiplication and ratio. When food is prepared a great deal of measurement occurs, including working out times and calculating cost; this may not be straightforward if only part of a packet of ingredients has been used.

History and Geography

In history and geography children will collect data by counting and measuring and make use of measurements of many kinds. The study of maps includes the use of co-ordinates and ideas of angle, direction, position, scale and ratio. The pattern of the days of the week, the calendar and recurring annual festivals all have a mathematical basis. For older children, historical ideas require understanding of the passage of time, which can be illustrated on a time line, similar to the number line that they already know.

Physical Education and Music

Athletic activities require measurement of height, distance and time, while ideas of counting, time, symmetry, movement, position and direction are used extensively in music, dance, gymnastics and ball games.

Personal, Social and Health Education (PSHE) and Citizenship

Mathematics contributes to the teaching of personal, social and health education, and citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together and respect each other's views.

Resources

There is a range of resources to support the teaching of mathematics across the school. Staff are encouraged to use concrete and pictorial representations to support children's learning in mathematics. All classrooms have a wide range of appropriate concrete apparatus. A range of audio visual aids are also available alongside a range of online software to support mathematics learning.

Monitoring and Review

Monitoring of the standards of children's work and of quality of teaching in mathematics is the responsibility of the Head Teacher and link governor supported by the subject leader.

The work of the subject leader also involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school.

This policy should be read in conjunction with:
Calculations Policy
Curriculum Policy
Teaching and Learning Policy
Assessment Policy
Inclusion Policy

To be reviewed September 2025