



MATHEMATICS POLICY

Reviewed by Headteacher	16 th May 2019
Next Review	Summer 2021

The Vision of St John's CE Primary School, Rishworth

Matthew 5:16 (NRSV)

"Let your light shine before others, so that they may see your good works and give glory to your father in heaven."

Following Matthew 5:16, people shine through success, honesty, independence, neighbourliness and enjoyment. We believe children learn best when they're happy and have the confidence to respond to challenges, within a caring Christian environment where adults lead by example. We value the partnership with families and the community whilst striving to give our best.

The School's Aims are:

- ◆ To maximise the academic attainment of each child
- ◆ To maximise the personal, social, spiritual and physical development of each child

The pupils, staff, parents and governors of St John's have worked together to create **our core values:**

Success. We aim to provide excellent learning opportunities to ensure the best possible progress and attainment for all children whatever their needs and abilities.

Honesty. We aim to develop children's understanding of the importance of honesty in all relationships and as part of self-reflection in a Christian environment.

Independence. We aim to develop the self-confidence in all our children that enables them to think and work independently, so striving for excellence in all areas of the curriculum.

Neighbourliness. We aim to ensure that every child becomes a compassionate and respectful member of the school, local, national and global communities.

Enjoyment. We aim to be a safe, friendly and welcoming environment where children have exciting and creative learning experiences that help develop an enjoyment and love of learning.

AIMS AND OBJECTIVES

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

The aims of mathematics are:

- to promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion;
- to promote confidence and competence with numbers and the number system;
- to develop the ability to solve problems through decision-making and reasoning in a range of contexts;
- to develop a practical understanding of the ways in which information is gathered and presented;
- to explore features of shape and space, and develop measuring skills in a range of contexts;
- to apply mathematical skills across the curriculum and understand the importance of mathematics in everyday life.

INTENT

- 1. **Self** – We want to foster a sense of mathematical curiosity in our pupils so they persevere in order to deepen their understanding.
- 2. **Others** – We want our pupils to learn to work co-operatively with others to solve practical maths problems.
- 3. **Wider world** – We believe maths is an essential part of everyday life, providing a foundation for understanding the world, critical to science, technology, engineering and finance.

TEACHING AND LEARNING STYLE

The school uses a variety of teaching and learning styles in mathematics lessons. With every teacher trained in the White Rose Maths mastery approach, we move the pupils gradually from concrete to pictorial to abstract approaches. When introduced to a new concept, pupils should have the opportunity to build competency by taking the following approach:

Concrete – The 'doing' stage

Bringing concepts to life by allowing pupils the experience of handling physical objects.

Pictorial – The 'seeing' stage

Encouraging pupil to visualise and draw representations of concrete experiences which then provides a link to the abstract.

Abstract – The 'symbolic' stage

Using mathematical symbols to model and solve problems.

Our principal aim is to develop and deepen pupil's knowledge, skills and understanding in mathematics. In our daily maths lessons, we encourage pupils to ask as well as answer mathematical questions. The pupils work on a variety of fluency, reasoning and problem-solving questions. They have the opportunity to use a wide range of concrete resources such as counters, numicon, number lines, number squares, digit cards and small apparatus to support their work. Pupils use computing in mathematics lessons where it will enhance their learning, as in modelling ideas and methods. Wherever possible, we encourage the pupils to use and apply their learning across the curriculum and in everyday situations.

In all classes there are pupils of differing mathematical ability. We recognise this fact and provide suitable learning opportunities for all pupils by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies – for example: in some lessons through differentiated work, and in other lessons by organising the pupils to work in pairs on open-ended problems, investigations or games. We use classroom assistants to support some pupils and to ensure that work is matched to the needs of individuals.

MATHEMATICS CURRICULUM PLANNING

Mathematics is a core subject in the National Curriculum, and we use this as the basis for implementing the requirements of the programme of study for mathematics.

We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term). The National Curriculum gives a detailed outline of what we teach in the long term, while our yearly bespoke maths teaching programme, based on White Rose Maths, identifies the key objectives that we teach in each term. They ensure an appropriate balance and distribution of work across each term.

It is the class teacher who completes the weekly plans for the teaching of mathematics. These weekly plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught. The class teacher keeps these individual plans and submits them to the head teacher.

THE FOUNDATION STAGE

The Foundation Stage of the National Curriculum relates the mathematical aspects of the pupil's work to the objectives set out in the Early Learning Goals, which underpin the curriculum planning for pupils aged three to five. We give all the pupils ample opportunity to develop their understanding of number, measurement, pattern, shape and space through varied activities that allow them to enjoy, explore, practise and talk confidently about mathematics.

CONTRIBUTION OF MATHEMATICS TO TEACHING IN OTHER CURRICULUM AREAS

English

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, we encourage pupils to read and interpret problems in order to identify the mathematics involved. The pupils demonstrate their understanding by verbally explaining and presenting their work during lessons. Younger pupils enjoy stories and rhyme that rely on counting and sequencing. Older pupils encounter mathematical vocabulary, graphs and charts when using non-fiction texts.

Computing

Pupils use and apply mathematics in a variety of ways when solving problems using computing programmes. Younger pupils use computing software to communicate results with appropriate mathematical symbols or representations. Older pupils use it to produce graphs and tables when explaining their results or when creating and solving algorithms in order to control a variable. When using coding software, pupils learn to think creatively, work collaboratively, and reason systematically.

Personal, social and health education (PSHE) and citizenship

Mathematics contributes to the teaching of personal, social and health education, and citizenship. During paired and group work during maths lessons, the pupils are encouraged to work co-operatively and respectfully. We present older pupils with real-life situations in their work on financial management.

Spiritual, moral, social and cultural development

The teaching of mathematics supports the social development of our pupils through the way we expect them to work with each other in lessons. We group pupils so that they work together, and we give them the chance to discuss their ideas and results. The study of famous mathematicians around the world contributes to the cultural development of our pupils.

TEACHING MATHEMATICS TO PUPIL WITH SPECIAL EDUCATIONAL NEEDS

At St John's, we teach mathematics to all pupils, whatever their ability. Mathematics forms part of the school's policy to provide a broad and balanced education to all pupils. Through our mathematics teaching we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each pupil's different needs. Assessment against the National Curriculum allows us to consider each pupil's attainment and progress against expected levels.

When progress falls significantly outside the expected range, the pupil may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style and differentiation – so that we can take some additional or different action to enable the pupil to learn more effectively. This ensures that our teaching is matched to the pupil's needs.

Intervention through our special needs register may lead to the creation of an Education and Health Care Plan for pupils with special educational needs. The Education and Health Care Plan may include, as appropriate, specific targets relating to mathematics.

We enable pupils to have access to the full range of activities involved in learning mathematics. Where pupils are to participate in activities outside the classroom, for example, a maths trail, we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

ASSESSMENT AND RECORDING

We assess pupil's work in mathematics from three aspects (long-term, short-term and medium-term). We make short-term assessments which we use to help us adjust our daily plans. These short-term assessments are closely matched to the teaching objectives.

We make medium-term assessments to measure progress against the key objectives, and to help us plan the next unit of work. Each pupil has an individual record of the key objectives as the recording format for this.

We make long-term assessments towards the end of the school year, and we use these to assess progress against school and national targets. We can then set targets for the next school year and make a summary of each child's progress before discussing it with parents. We pass this information on to the next teacher at the end of the year, so that s/he can plan for the new school year. We make the long-term assessments with the help of end-of-year tests and teacher assessments. We use the national tests for pupils in Year 2 and Year 6, plus the optional national tests for pupils at the end of Years 3, 4 and 5. We use Hodder Puma, NFER and Testbase assessments for Y1 – Y6 pupils each term in order to establish standardized scores. We also make annual assessments of pupil's progress measured against the level descriptions of the National Curriculum.

Assessments of the pupil's progress are recorded regularly (at least half termly) on Target Tracker. Each teacher meets with the head every term to discuss each pupil's progress.

We monitor teaching and learning in maths each year under the direction of the maths subject co-ordinator/SLT through lesson observations, work scrutinies and learning walks. We establish strengths and weaknesses and use these to inform our future teaching plans and methods. We keep our practice under constant review.

RESOURCES

There are a range of resources to support the teaching of mathematics across the school. All classrooms have a wide range of appropriate small apparatus and a range of larger "hands on" equipment and games etc. are available from the central storage area. Computer software is available to support work on the ipads and chromebooks.

MONITORING AND REVIEW

Monitoring of the standards of pupil's work and of the quality of teaching in mathematics is the responsibility of the mathematics subject leader. The work of the mathematics 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. The mathematics subject leader gives the head teacher an annual summary in which s/he evaluates strengths and weaknesses in the subject and indicates areas for further improvement. The head teacher allocates regular management time to the mathematics subject leader so that s/he can review samples of pupil's work and undertake lesson observations of mathematics teaching across the school.