St. John's C. of E.

Blackpool's First Free School 1817

Maths Policy

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

Be Kind Be Forgiving Be a Good Friend Be Honest Love One Another

Be part of our St John's family!

Last updated: September 2024

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Curriculum Policy for Mathematics

Introduction

Our school policy sets out a framework within which the teaching and support staff can operate and gives guidance on planning, teaching and assessment. It should be read in conjunction with the National Curriculum for Mathematics, NCETM guidance, White Rose Maths and our School calculation policy, which set out in detail what the children will be taught. This document is designed for all teaching staff, all staff with classroom responsibilities, school governors, inspection teams and LEA adviser/inspectors.

This policy reflects the ethos of school as expressed in our Mission Statement:

"Everyone Matters in God's World."

and also promotes, recognises, celebrates and welcomes diversity, honesty, respect and tolerance. This is rooted in our theological Christian vision:
'In everything, do to others what you would have them do to you.' Matthew 7:12

Vision statement

At St. John's, we aim to support children to develop to their full potential as confident mathematicians. We offer a stimulating learning environment and encourage the children to make links, develop an excellent 'number sense', and see the importance of mathematics in everyday life, enabling them to apply their knowledge to the world around them. We support the children to acquire fluency with mental as well as written methods. We aim to develop an excitement and curiosity about mathematics through a variety of creative activities as well as stimulating and challenging problem solving. We encourage the use of practical apparatus and manipulatives to aid the visualisation of concepts. We aim to develop resilience in the children to accept challenge and develop a 'can do' attitude to mathematics. We challenge the more-able as well as offering support for those who need it with high-quality intervention programmes. We seek to use higher order questions, supporting children to act as lead learners by encouraging them to explain mathematical concepts to others.

Aims

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 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.

Mathematics place in the Whole School Policy

Mathematics is taught in line with the recommended objectives as set out in the *National Curriculum*. Development of mathematical skills is taught through a mastery approach throughout the School.

For each Year group, the *White Rose Units of work* have been decided and set out what a pupil should be taught with clear end of unit expectations for all pupils.

In meeting the common requirements, the programme of study for each year group should be taught to the whole class through a mastery approach. For the small number of pupils who may need additional support, (SEN, EAL) material may be selected from the objectives of earlier year groups where necessary to enable individual pupils to progress and demonstrate appropriate achievement, and targeted interventions are put into place. By using the Mastery approach, we expect all pupils to 'keep up not catch up'.

Key Learning Steps for each year group give a summative judgement on pupils' attainment within each year group. Children may be Working Towards Expected Standard, at Expected Standard or Working at Greater Depth for their year group.

Scheme of Work (please see appendix 1)

The White Rose Unit planning documents and resources have been compiled to the following principles:

- There is a whole School focus on number.
- Each unit is revisited again within the year, either in the main maths lesson or in daily maths sessions
- Each unit is planned in small steps building on previous learning.
- White Rose Maths planning and resources are supplemented by NCETM resources

Planning

Teachers are allowed to choose what format their planning takes, based on the White Rose Units

Included on Mathematics planning are -

- Key learning objectives
- Success criteria including modelled examples
- Key vocabulary
- Planning is annotated daily, and adapted according to need.

All plans are readily available from each class teacher and are monitored by the subject leader and the Head teacher. Plans are also made available for support staff working in the classroom during the lesson as appropriate.

Implementation – Content and Approaches

St. John's School has adopted the recommended objectives as set out in *The National Curriculum.* The children will be taught the following strategies for problem solving:

- Make a table or list
- Act out the situation
- Look for a pattern
- Work backwards

- Trial and improvement
- Use logical reasoning and known facts
- Use a simpler case
- Draw a picture or diagram
- Bar Model Method

A variety of teaching styles and activities are encouraged, using a CPA approach. Each class teacher takes responsibility for facilitating children's progress. They consult with the Mathematics subject leader, the Head teacher and the SENCO, as the need arises so that all children have access to the curriculum and are helped to develop.

Throughout the school, pupils will experience individual, paired, and whole class teaching in Mathematics, the balance of which rests with the class teacher. Whole Class teaching using the Mastery approach is expected in every class.

Learning activities are sequenced to ensure continuity and progression. Same Day intervention is used to ensure the pupils 'keep up not catch up'.

Learning activities are sequenced to ensure progression and taught through:

- direct teaching and instructing
- demonstrating
- questioning and discussing
- interactive oral work
- emphasis on mental calculation
- consolidating
- evaluating pupils' responses
- summarising
- providing pupils with real experience
- practical tasks

The children in the Foundation Stage are taught in line with the EYFS statutory framework. There is a strong emphasis on practical activities, to give the children the mathematical experiences they need in order to develop, extend and consolidate their mathematical thinking. There is an emphasis on developing a good number sense through subitising and using Mastery at Number materials. Staff recognise that adult directed input is also required to teach specific skills, deal with misconceptions, support, and extend learning. Mathematical learning opportunities are available in continuous provision activities. Transition into year 1 follows this style of working.

Time Allocation

Our teaching is planned from the *National Curriculum.* There is an additional fifteen minutes (30 minutes in year 5 and 6) a day spent on whole class 'daily maths' sessions, which focus on mental calculation in active, fun teacher led sessions. Key Stage one follow the Mastery at number whole class intervention.

Resources

A variety of resources for Mathematics is available through the school. Resources for mathematics are constantly being evaluated and updated. Each member of staff is invited annually to submit a list of resources they require to meet National Curriculum requirements; this is then used by the subject leader to formulate a budget request on the mathematics development plan. Resource acquisition is then subject to S.D.P. priority and budget allocation.

Cross –Curricular Links

Links between Mathematics and other curriculum areas are more fully outlined in the Scheme of Work and by teachers in their planning. The importance of cross curricular teaching is clear; no subject can be taught in isolation, a broader experience of learning will undoubtedly lead to a greater level of development in all areas of the child's experience – intellectual, physical, social, emotional and spiritual.

- English –Mathematics lessons can help to develop and support pupils' literacy skills: e.g. teaching mathematical vocabulary, reading and interpreting problems, encouraging them to explain, argue and present their conclusion to others.
- Science –Scientific investigations and experiments require classifying, counting, measuring, calculating, estimating, and recording in tables and graphs.
- Art, Design and Technology – Measurements are often needed. Patterns and constructions are based on spatial awareness and properties of shape.
- I.C.T. – Children will apply and use mathematics in a variety of ways when they solve problems using I.C.T. e.g. collect and classify data, produce graphs and tables, interpret and explain their results.
- History, Geography and R.E. – Looking at maps involves co-ordinates and often direction, position, scale and ratio. The passage of time can be illustrated on a time line.
- P.E. and Music – Songs and rhymes in Key Stage 1 for counting are very useful. Athletic activities require a variety of measurements. Counting, time, symmetry, movement, position and direction are used in music, dance, gymnastics and ball games.

Recording and Reporting

Record keeping in Mathematics is carried out in line with the school's agreed Assessment, Recording and Reporting Policy. Class teachers use the Key Learning Steps to keep their own records and are responsible for reporting to parents. Mathematics is officially reported to parents on an annual basis as part of the School Report; however, parents' evenings, and arranged meetings with staff help parents gain an understanding of both the Mathematics curriculum and their child's progress.

These records are straightforward, manageable and understandable to those who need to use them. They serve two key purposes:

- To show individual pupil's performance/progress against agreed levels of attainment.
- To show which aspects of the subject have been covered.

Assessment

Assessment in Mathematics is carried out in line with the school's agreed Assessment, Recording and Reporting Policy.

Teachers gather evidence on a regular basis during lessons and record in their Key Steps Assessment Folders. From this evidence, teachers are able to -

- Identify what has been taught and, more importantly, learnt.
- Identify misconceptions and plan strategies to address these

- Monitor pupils' progress in acquiring the knowledge, understanding and skills in Mathematics.
- Use *Assessment for Learning* as a basis for future planning and teaching.

Teachers continually collect evidence of pupils' attainment in a variety of ways, including: -

- Observing a pupil at work, individually and in groups.
- Questioning, talking and listening to pupils.
- Considering materials produced by the pupils and discussing these with them.
- Live marking children's work.
- Identifying children that need same day intervention
- Hinge and exit questions
- Self and peer assessment

Special Educational Needs

For general details with regard to provision for children with special educational needs please see our agreed Special Educational Needs Policy.

The statutory inclusion statement of the National Curriculum requires staff to modify teaching and learning to give <u>all</u> pupils relevant and appropriately challenging work at each key stage.

We adapt for less able children by

- choosing material from an early year group/key stage if appropriate.
- consolidating, reinforcing and generalising previous learning as well as introducing new knowledge, skills and understanding.
- using support staff to provide 'Numicon intervention', '1st class@number', 'Success@arithmetic' and 'Maths Booster' to children in Key Stage 1 and 2.
- teacher led *booster* mathematics groups are also provided for children in Year 5 and Year 6
- Pre-Teaching

We adapt for pupils working at Greater Depth by

- providing more open ended investigative tasks.
- adding to the complexity of the tasks and concepts presented.
- using a wider and more demanding range of resources.
- using questioning to challenge rather than expecting them to produce more recorded work than other pupils.
- Further challenges and Brain busters

Equal Opportunities

Equal opportunities at St. John's School are carried out according to our agreed Equality Policy.

All teaching and non-teaching staff are responsible for ensuring that all pupils irrespective of gender, ability, ethnicity and social circumstances, have access to the whole curriculum and opportunities to make the greatest possible progress in all areas of the curriculum whilst in our school.

The monitoring of the policy for Equal Opportunities is ultimately the responsibility of the Headteacher and the Senior Management Team, but every member of staff is responsible for the day-to-day operation of the policy in terms of promoting good practice.

Parental Involvement

Children always benefit if their parents are fully involved with all aspects of their child's education. Parental support for the curriculum is always welcomed and parents are encouraged to support homework related to Mathematics as appropriate. Parents are also welcomed into school to take part in workshops where a further insight into the Mathematics Curriculum can be gained. Parents are invited into family learning sessions with a maths focus.

INSET/Training Provision

INSET and CPD at St. John's School is carried out according to our agreed Staff Development Policy.

Staff development needs in Mathematics are considered and planned for by the Mathematics and Staff Development Subject leaders. These needs are identified through monitoring, curriculum review, evaluation and the system of performance management. These needs are highlighted as part of the Subject leaders' subject development plan, which subsequently becomes part of the School and Staff Development Plans. The effectiveness of CPD is evaluated by individual members of staff, and supported by the Subject leader.

School Transfers

Completed transfer records refer to achievements and attainment in Mathematics as appropriate and are forwarded to a pupil's new school upon transfer.

Resourcing and Funding

This is done by the subject leader in line with priorities set in the School Development Plan and budgeting considerations.

The Mathematics subject leader is responsible for maintaining and developing the Mathematics resources and monitoring their usefulness. Resources are replaced and purchased by the Mathematics subject leader following the general school ordering procedures. The current lists of resources and staff requests/concerns are considered each year before requisitions are made. The purchase of Mathematics resources each year is dependent on the Mathematics budget, which is bid for as part of the Subject Development Plan from the whole school budget. The amount of Mathematics budget will change annually and reflects the degree of priority Mathematics is given within the School Development Plan.

The Mathematics subject leader is also responsible for reviewing the resources and their storage annually in consultation with all staff.

The Role of the subject leader

The Mathematics Subject leaders Mrs S Hume and Miss A Johnston are responsible for

- Determining the aims of the school for the teaching of Mathematics throughout the school and, in consultation with the Senior Management Team, staff and governors, devising objectives or targets to allow the school to achieve these aims. Documenting these aims and objectives within the school policy for Mathematics.

- Ensuring that the *National Curriculum* is known and understood by all classroom based staff in the school.
- Work alongside Abacus Maths Hub, attend meeting, CPD, collaborate with other Schools in the Hub
- Ensuring all agreed methods of working in Mathematics are put into practice and that staff regularly reviews these methods.
- Helping devise and document Schemes of Work for each year group in Mathematics.
- Monitoring Mathematics in the school, ensuring that the teaching of Mathematics has its appropriate place in the broad and balanced curriculum of our school. This will include the monitoring of resources (including books, practical equipment, ICT soft and hardware), procedures (including timetables), teaching (including supportive lesson observation if appropriate) and planning.
- Monitoring the assessment, recording and reporting of Mathematics throughout the school and supporting staff in reporting to parents if necessary.
- Undertaking an annual review of the Mathematics curriculum in school as part of the School Development Planning process.
- Managing the budget allocation for Mathematics and advising staff on resources throughout the school.
- Through personal reading and attendance at courses, keeping abreast of developments and evaluate new ideas and approaches in Mathematics.
- Keeping staff informed of such developments.
- Submitting reports to the governing body as required.

Monitoring and Evaluation

Monitoring and evaluation is carried out to enhance the teaching and learning of Mathematics within our school. It is the responsibility of all staff to monitor and evaluate the curriculum provision made for Mathematics within the school in order that pupils make the greatest possible progress. The class teacher will carry out formal or informal evaluations at the end of each lesson and the Subject leader carries out an evaluation of the overall curriculum (that the syllabus is fully implemented). As with all evaluation, the Head teacher has overall responsibility for monitoring the work done.

An important element of the Subject leaders' role is that of monitoring the effectiveness of provision in Mathematics. Pupils' progress and performance is evaluated taking account of factors that may influence this, including teaching methods, resources, and schemes of work and accommodation.

Monitoring takes place in a number of ways:

- assessment of recorded work and working walls
- Book looks
- discussion with individuals or groups of children (child conferences)
- discussions with members of staff (teachers and support staff)
- Whole School Maths Learning walks
- Analysing whole School data