



St. Nicholas C of E Primary School

Mathematics Policy

Our Vision Statement

“To maximise the learning potential of every pupil within the love of God.”

Date reviewed: September 2020

Reviewed by: J. Harper

Approved by Headteacher: October 2020

Date of next review: Autumn 2023

The national curriculum for mathematics intends to ensure that all pupils:

1. 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
2. Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
3. 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 is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects. The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

Intent

When teaching mathematics at St Nicholas CE Primary School, we intend to provide a curriculum which caters for the needs of all individuals and sets them up with the necessary skills and knowledge for the future. We incorporate sustained levels of challenge through varied and high quality activities with a focus on fluency, reasoning and problem solving. Pupils are required to explore maths in depth, using mathematical vocabulary to reason and explain their workings. A wide range of mathematical resources are used and pupils are taught to show their workings in a concrete, pictorial and abstract form wherever suitable. They are taught to explain their choice of methods and develop their mathematical reasoning skills. We encourage resilience and acceptance that struggle is often a necessary step in learning. Our curriculum allows children to better make sense of the world around them relating the pattern between mathematics and everyday life.

Implementation

Maths at St Nicholas:

- Maths is taught daily.
- A range of reasoning resources are used to challenge all children and give them the opportunity to reason with their understanding. Children are encouraged to challenge themselves within lessons and offer peer support and coaching.
- Differentiation is used effectively to support all pupils in their learning

- Additional Maths sessions and Quality First teaching are used to support children to ensure children are ready for their next Maths lesson.
- Lessons will allow for a wide range of mathematical, enquiry-based research activities, including the following:
 - Questioning, predicting and interpreting
 - Pattern seeking
 - Collaborative work
 - Problem-solving activities
 - Classifying and grouping
- Lessons use a Concrete, Pictorial and Abstract approach to guide children through their understanding of mathematical processes.
- A Maths mastery approach is taken to the curriculum, in which fluency comes from deep knowledge and practice. This means that structured questioning is used to ensure that pupils develop fluent technical proficiency and think deeply about the underpinning mathematical concepts.
- Problem solving and Reasoning should be an integral part of Maths lessons so the children have the ability to use and apply their knowledge readily. Use of reasoning and problem solving resources will offer rich and varied challenges that will help deepen the child's understanding within the curriculum content of that specific year group rather than rushing through content of the next year group. The aims of the National Curriculum 2014 clearly states that 'Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.'
- Flashback sessions are used to revisit previous learning and to ensure maths skills are embedded
- Assessment for learning is used frequently to ensure the children have a secure grasp of mathematical knowledge required for their next step of learning.
- Homework is set to develop and review children's learning.
- Where possible, links are made with other subjects across the curriculum

Impact

As a result of our Maths teaching at St Nicholas, the impact will be:

- Engaged children who are all challenged.
- Through discussion and feedback, children talk enthusiastically about their maths lessons and speak about how they love learning about maths. They can articulate the context in which maths is being taught and relate this to real life purposes.
- Pupils who have the ability to think clearly and logically with confidence, independence and flexibility, seeing links between areas of mathematics.
- Pupils know how and why maths is used in the outside world and in the workplace. They know about different ways that maths can be used to support their future potential.
- Pupils who are able to recall basic facts rapidly and the use of mental strategies as well as the ability to recognise when it is appropriate to use other calculation strategies.

- Pupils use acquired vocabulary in maths lessons. They have the skills to use methods independently and show resilience when tackling problems.
- Learning that is tracked and monitored to ensure all children make good progress.

The role of the Subject Leader

The subject leader is responsible for preparing policy documents, curriculum plans and schemes of work for Maths; Reviewing changes to the curriculum and advising on implementation; Monitoring the teaching and learning of Mathematics, providing support where necessary; Ensuring continuity and progression from year group to year group; encouraging staff to provide effective learning opportunities for pupils; Helping to develop colleagues' expertise in the subject; Organising the deployment of resources; liaising with teachers across all phases; Communicating developments in the subject to all teaching staff; Leading staff meetings and providing staff members with appropriate training; Organising, providing and monitoring CPD opportunities; Ensuring common standards are met for recording and assessing pupil performance; Advising on the contribution of Maths to other curriculum areas, including cross-curricular and extra-curricular activities; Collating assessment data and setting new priorities for the development of Maths.

The role of the Classroom teacher

The class teacher is responsible for acting in accordance with this policy; Ensuring progression of pupils' mathematical skills, with due regard for the National Curriculum; Planning lessons effectively, ensuring a range of teaching methods are used to cover the content of the National Curriculum; Liaising with the subject leader about key topics, resources and support for individual pupils; Monitoring the progress of pupils in their class and reporting this on an annual basis to parents; Reporting any concerns regarding the teaching of the subject to the subject leader or a member of SLT; Undertaking any training that is necessary in order to effectively teach Maths.

The role of the SENCO

The role of the SENCO is to liaise with the subject leader in order to implement and develop maths throughout the school; Organising and providing training for staff regarding the maths curriculum for pupils with special educational needs and disabilities; Advising staff on how best to support pupils' needs; Advising staff on the inclusion of mathematical objectives in pupils individual education plans; Advising staff on the use of teaching assistants in order to meet the pupils' needs.

Early Years Provision

Please see the EYFS policy

The National Curriculum

At St Nicholas CE Primary School, we follow the National Curriculum for Maths - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/335158/PRIMARY_national_curriculum_-_Mathematics_220714.pdf

Planning, Assessment, Recording and Reporting

Please see the Curriculum Guidance Booklet 2020 for information on Maths planning, assessment, recording and reporting procedures at St Nicholas CE Primary School.

Displays

Displays – all classes are expected to have a Maths display. This could be in the form of a working wall, displaying challenges or work completed.

Times Tables

Times Tables – Knowledge of times tables is an integral part of a competent mathematician as the links between times tables and other areas of maths is vast. By the end of year 4, children should be secure in their knowledge of all times tables. Year 1: 2x, 5x and 10x tables. Year 2: 2x, 3x, 4x, 5x, and 10x tables. Year 3: 2x, 3x, 4x, 5x 6x and 8x tables. Year 4: all tables. Times tables should be taught by rote, through games, set as part of homework and tested on a regular basis and interventions should be implemented as necessary if the child is unsure of their tables. Associated division facts should also be taught appropriate to year group. All children should have a times table target (and corresponding division facts) that they are currently working on. Once they are secure with all times tables and division facts, children should become secure with square number, cubed numbers and prime numbers.

Equal Opportunities and Special Educational Needs

The school is committed to high achievement regardless of gender, race, disability or special need. Expectations for all pupils in the school are equal and we endeavour to develop all to the best they can achieve. The school will always seek to inform parents if they have concerns in order to gain their support and co-operation in trying to alleviate the problem. Where required, children's IEPs incorporate suitable objectives from the National Curriculum for Mathematics or Development Matters and teachers keep these objectives in mind when planning work. Please see SEN policy for further guidance.

Cross-curricular Links and Extra-curricular activities

Opportunities arise in many subject areas for children to carry out investigations, use mathematical skills and concepts and realise the practical worth of spatial, algebraic, graphic and measurement skills in everyday situations. It is therefore encouraged to apply mathematical skills across the curriculum: Art, DT, Geography, Science, History etc. which will allow children to demonstrate their understanding by embedding Maths in other subjects.

ICT now forms an integral part of all Maths teaching, both as a tool for learning and assessment and as a teaching aid. RM easimaths will be used within school and at home as a method of intervention and consolidation. White Rose Maths online resources are used throughout the school. Other web-based activities will also be used when deemed appropriate by the teacher.

Children also have the opportunity to take part in maths challenge events (both in and out of school time) that are organised within school and also through schools within and beyond the Local Authority.

Monitoring and Evaluation

The subject leader is responsible for the implementation of the policy which is reviewed regularly according to the school's schedule for the review of policies. The subject leader reports to the Headteacher and to the Standards and Effectiveness sub-committee of the Governing Body.

Monitoring of planning, learning walks and scrutiny of books, etc. are undertaken by the subject leader and Senior Management. Any information with regards to maths that arises during learning walks carried out by members of the SLT or SMT, are fed back to the maths lead (Miss J Harper). Any professional development issues that arise from monitoring will be dealt with by the subject lead in co-operation with the SLT and further support given as needed.

Maths issues form a vital part of the ongoing INSET for all staff. Key Stage and whole school staff meetings are used for discussion, review and INSET.

Parental Involvement

Parents are kept informed through:

- ◆ Regular 'Maths Workshops' (1 per year) run by the class teacher and focusing on the needs of the year group.
- ◆ Annual reports to parents giving targets
- ◆ Formal parent consultation evenings in the Autumn term and the Spring term.
- ◆ Optional parent consultations end of year.
- ◆ Informal Open Evening in the Autumn term.
- ◆ IEP's are shared with parents.
- ◆ Informal meetings with the teacher throughout the year as/when the teacher or parent has a concern.
- ◆ Informal letters/targets sent to parents depending on the need of the child.

Homework

All pupils will be expected to do some form of Maths homework on a weekly basis. The learning of number facts, tables, etc. is ongoing and vital. Teachers endeavour to explain the task clearly. Homework will be relevant to the content being studied in class and is differentiated to the ability levels and age of the pupil.