Mathematics Policy

"Teach a child to choose the right path and when they are older, they will remain upon it."

Proverbs 22:6

School Vision

At St Thomas' CE Primary School, we are taught to choose the right path. We build strong foundations that empower us to make the right choices and become valuable citizens, within our community and the wider world.

We model positive behaviours and set high expectations, through the teaching of Christian and British values, ensuring we are equipped with the skills and knowledge to build a positive future.

Ensuring that all pupils at St Thomas'
Learn, Enjoy, Achieve.

Vision

At St Thomas' we believe in creating mathematicians. We aim to spark a curiosity and excitement for maths learning, while instilling confidence and knowledge in children as they embark on their journey to mastering the maths curriculum. We aim to do this through a focused, coherent and cumulative spiral curriculum that continuously builds and consolidates knowledge to reach deep understanding.

All children are encouraged to believe in their ability to master maths and are empowered to succeed through curiosity, persistence and talk; while collectively tackling new concepts.

We believe that the maths curriculum provides children with one of the essential tools for life, thus enabling them to function mathematically in the real world.

Aims

- To have high expectations of all of our children, whose ages range from 3-11 years old, in order to raise and maintain attainment and achievement. This includes encouraging children to develop self-confidence, resilience and enjoyment in their mathematical experiences.
- To allow all children equal access to maths regardless of gender, ability, creed, or ethnic origin and encourage children to fully contribute to their mathematical learning.
- To recognise that the maths curriculum provides children with one of the essential tools for life, thus enabling them to function mathematically in the real world.
- To ensure coverage of the National Curriculum and Early Years Framework.
- To teach mathematics daily, in line with the National Curriculum and Early Years Framework, with the key requirements being:
    - An increase in the teaching of mental calculation strategies and formal written methods to support fluency.
    - Problem solving being the basis of all teaching.
    - To encourage children to reason mathematically and to apply this in both routine and nonroutine problems.

Equal Opportunities

All staff should ensure that all children have equal opportunity to succeed in maths. We should ensure that the resource materials we use, represent images which would be motivating to all children.

Curriculum Organisation

National Curriculum

The National Curriculum (2014) 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 Statutory Framework for the Early Years Foundation Stage (September 2021)
- Development Matters – non-statutory guidance for the new EYFS framework (September 2021)
- Mathematics Programmes of Study: key stages 1 and 2 National Curriculum in England (2013) (D) Red Rose Mastery documentation – Lancashire County Council (2019-23)
- (E) NCETM Mastering Number at Reception and KS1.

Early Years

In the Early Years, children are supported in their development and understanding of Number and Numerical

Patterns by focused teaching and carefully planned continuous provision experiences to meet the Early Learning Goals, as set out in The Statutory Framework for the Early Years Foundation Stage document and supported by the Development Matters (non-statutory guidance). Children are taught Number and Numerical pattern through the NCETM's Mastering Number, which aims to develop fluency in calculation and flexibility with number. Children should be provided with learning opportunities to develop their knowledge of number, patterns and connections and spatial reasoning. They will be given opportunities to develop their mathematical understanding through stories, songs, games and imaginative play and continuous provision activities. Children are encouraged to discover new words and mathematical ideas and opportunities are given for children to use the indoor and outdoor environment.

Teaching Strategies and approaches to learning

At St Thomas' we recognise that there is no one method of teaching maths. We believe that for children to receive a varied mathematical curriculum, we will use a broad and balanced teaching approach. This will include the following methods: whole class, individual and group work (a group being defined as two or more children), mental,

practical, written and oral work, with problem solving used to provoke initial topical conversation and then to develop a deeper understanding.

As a school we have created our own pedagogical approach to delivering each subject. This can best be described as follows:

Link it – Learn it – Check it- Show it – Know it - incorporating the 'I do', 'We do', 'You do' sequence within it.

For each stage there are important aspects which has been developed from our deeper understanding of cognitive load theory.

Link it- This is the stage where we work at igniting children's awareness of the topic being studied. In some subjects this works through the use of echo or choral reading of information they are about to learn as part of the topic.

Learn it – This is the stage where the teacher provides new knowledge and is part of the 'I do' sequence in our day-to-day lessons. At this stage we limit the number of questions we are asking children and focus on the teacher's exposition.

Check it – This is an opportunity for the teacher to ensure that there is full understanding happening. This is strongly associated with the 'we do' sequence in the lesson. Questions are encouraged at this stage.

Show it – This is an opportunity for children to demonstrate what they know. In some cases, this can be done orally but, in most cases, it is shown in children's books. This links with the 'you do' sequence in the lesson.

Know it – This is where we get children to retrieve information they have learned. This is normally done at the end of the learning so that children can demonstrate that they have remembered key knowledge for the long-term.

At all times the teaching should be purposeful. This will consider:

- Having a clear focus for each lesson, where the learning objectives are shared with the children.
- Ensuring the lessons maintain good and appropriate pace and support short term and long-term memory through revisiting learning in starters and future units
- Linking work to children's existing knowledge and making maths purposeful, interesting and fun.
- Using a range of teaching strategies.
- The use of correct mathematical vocabulary by the teacher, to refine the children's mathematical language.
- Mathematical discussion including questioning and explaining between the teacher and the children as well as among the children themselves using correct mathematical knowledge.

- Giving children time to discuss and record their work, encouraging them to express their thought processes.
- Giving feedback to pupils on how they are progressing and what they need to do to improve, in accordance with the marking policy.
- To follow the concrete (cubes base tens etc), pictorial and abstract approach to support the children in understanding new concepts and providing variation in mathematical modelling.
- Ensure that a mastery approach to learning is taking place for all pupils, with a personalised scaffolded approach for pupils who have specific educational needs

Planning Long Term

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 (2013) for KS1 and KS2, and Early Years Foundation Stage framework (2021) in Nursery and Reception, with the Development Matters – non-statutory guidance for the new EYFS framework (2021) used as a supporting document. The Mathematics Programmes of Study: key stages 1 and 2 National Curriculum in England (2013) is used as the basis for implementing the statutory requirements of the programme of study for mathematics for Years one to six. We carry out the curriculum planning in Mathematics in line with the sequence of learning outlined in the Lancashire Red Rose Mastery programme. This can then be supplemented through the use of White Rose and other resources to ensure that teaching outcomes are achieved.

Medium Term planning

Termly and half-termly planning is mapped out so that we have an interleaved spiral curriculum at St. Thomas'. This ensures that pupils are building the unfamiliar on top of the familiar learning. In Years 1-6, the LAPS progression small steps are used to ensure that the National Curriculum is broken down into termly targets to ensure this takes place. The long-term planning in Years 1- 6 is broken down into six half-termly blocks to give opportunities for consolidation in the short-term planning, where required, whilst ensuring full coverage of the National Curriculum over each half-term, through the coherently sequenced curriculum. This has been adapted from the Lancashire overview to ensure the learning needs of our pupils are met and are updated yearly and added to the school website.

Short Term planning

Weekly Maths plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught. These learning objectives are taken from the Lancashire Red Rose sequence of learning which are taken from the Mathematics Programmes of Study: key stages 1 and 2 National Curriculum in England (2013). In Early Years the learning has been taken from The Statutory Framework for the Early Years Foundation Stage with the guidance taken from the Development Matters to ensure all aspects of the Early Years framework are taught in a progressive way.

Further teaching

In Years 1 and 2, additional whole class mastering number take place daily, in isolation from the Maths lesson, following the NCETM's Mastering Number for KS1. This is to develop the children's number sense, providing them with firm mathematical foundations through the development of fluency in calculations and quick recall. There is an expectation that all classes from Years 1-6 deliver a 10 in 10 arithmetic check once weekly, in which children have the opportunity to consolidate on their prior learning and develop their further understanding.

Class Management

Each teacher should deliver a daily maths lesson which will typically last for 1 hour.

In addition to Maths lessons, teachers should incorporate opportunities to sharpen mental arithmetic skills, practise calculations and problem solving. Teachers should make links to Maths through other subjects (e.g. Science, Geography, History) to make it meaningful to children.

As referred to above, in Key Stage 1 they will have additional 10 minute Mastering Number sessions daily, with all classes from Years 1-6 completing a weekly 10 in 10 arithmetic challenge.

Formative Assessment

We also recognise assessment as a channel of constantly informing our planning, in addition to noting the achievements of the children in our school. Therefore, our assessments are both formative and summative. Effective assessment will be achieved by:

- Teacher and TA observations whilst children are engaged in activities.
- Instant feedback by the teacher or TA to a group or individual to extend, limit or change direction of the given task.
- Deeper questioning of a child, group or class to identify whether children have mastered a topic.
- Marking of written work and formal tasks.

Marking and feedback

Marking should adhere to the school marking and feedback policy.

Use of further challenge and support

At St Thomas' there is a balance of direct whole class teaching and an emphasis on independent exploration and guided practice through the mastery approach to learning. When setting tasks, we will ensure the work is suitable and, where appropriate, provide deeper problem-solving activities to challenge and extend deeper learning.

Adequate support is implemented when needed for learners who may be struggling with their learning. Scaffolded learning opportunities are provided for those children who require the support, with fluid groupings taking place when required to do so.

Vocabulary

The appropriate and accurate use of Mathematical vocabulary is embedded throughout school to give schools the tools to communicate accurately and mathematically. Explicit teaching of Vocabulary should be consistent within the classroom, utilising the Mathematical vocabulary document, linked to the Red Rose and NCETM learning.

Leadership

Monitoring

The Maths leadership team will conduct termly monitoring of Maths. This will consist of: book looks, learning walks, pupil voice, discussions with class teachers and support staff and reviewing the data of termly assessments to inform curriculum and teaching effectiveness.

Maths Environment

Each classroom should have a maths area and a display, which should be interactive and encourage children to experiment with mathematical concepts and support their learning. Each display in school should include a variety of elements: appropriate pictorial strategies such as part/part/whole, bar and other relevant models; key vocabulary and sentence stems for children to utilise. Maths work should be displayed in classrooms and exceptional pieces of work shared with other teachers and the wider community (in line with school policies).

Parents/Carers

The School aims to involve parents/carers in their children's learning as much as possible and to inform them regularly of their child's progress in Mathematics.

Parents/carers have the opportunity to meet with their child's class teacher each year at Parent Meetings and receive written reports on a termly basis, in regards to their progress and attainment. Information about their child's standards, achievements and next steps in Mathematics is shared with parents/carers at these times and also ways that parents/carers may be able to assist with their child's learning.

Parents/carers are encouraged to support their children with homework.

School provides a number of opportunities for parents/carers to learn about what their child is learning and the way their child is being taught through Parent Meetings and the school website.

The Year 6, Year 4 and (optional) Year 2 teachers annually hold a Parent's Meeting to inform and discuss the National Curriculum Tests which include the Mathematics Tests.

Homework

Mathematics homework is set for children in Years 1-6 and in Reception. The introduction of CGP books, ensures that homework is linked to the children in class learning, with an

overview prepared for the academic year to ensure a consistent approach is taken throughout school.

Homework provides opportunities for children to: practise and consolidate their skills and knowledge; develop and extend their techniques and strategies; and prepare for their future learning through out of class activities and homework.

Homework activities are varied, interesting and fun so that the children are motivated; the tasks often compliment the area of Mathematics being taught. Online platforms are utilised to support home learning through Numbots, Times Table Rock Stars, LBQ and maths.co.uk.

Summative & Statutory Assessments

At the beginning of Reception, the Early Years baseline test will take place, in which children are assessed are their school entry point. Children are then assessed at the end of Key Stage 2 against the National Curriculum expectations through tests provided by an external testing and assessment board. Children also undertake the Multiplication Screening Check at the end of Year 4.

Teacher assessments are ongoing throughout Key Stages 1 and 2 and all teacher assessments are supported by termly NTS assessment materials. This allows the class teacher to monitor the progress of groups of children and individuals to inform planning and to set targets for children.

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