



Thythorn Field
Primary School

Maths Policy

Adopted By School: March 2024

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Governor Signature:

THYTHORN FIELD PRIMARY SCHOOL

MATHS POLICY

‘A high-quality mathematics education provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.’ (DfES 2014)

RATIONALE

Mathematics is all around us and it underpins much of our daily lives and our future as individuals and collectively. At Thythorn our aim is to ensure that all children have the best grounding in mathematics and that they are challenged regularly to grow in their love of mathematics.

AIMS

Our aims for maths at Thythorn Field Primary School are based on the ‘The national curriculum in England mathematics programme of study, KS1 and KS2 framework’ document which is to ensure that all pupils:

- become fluent in the fundamentals of mathematics
- teach Maths Mastery at the core
- reason mathematically
- can solve problems

To achieve these aims, we strive to:

- Develop a numerate environment where mathematical risk-taking, creativity and logical thought are encouraged in order to develop independent learners.
- Secure fluency with numbers and the number system.
- Develop the ability to solve problems through decision-making, reasoning and logic in a range of contexts.
- Allow all students to understand the value of mathematics in everyday situations.
- Raise standards and achievement levels in mathematics both independently and in co-operation with others.
- Promote a positive and confident attitude to mathematics through celebrating achievement, supporting and challenging all pupils.
- Develop mathematical communication through speaking and listening, practical activities and recording work.

TEACHING AND LEARNING

All pupils are entitled to a broad mathematics curriculum in which their learning needs are identified and met. Pupils should experience a range of practical and written activities on number, measurement, geometry and statistics.

At the centre of the mastery approach to the teaching of mathematics is the belief that all children have the potential to succeed. They should have access to the same curriculum content and, rather than being extended with new learning, they should deepen their conceptual understanding by tackling challenging and varied problems. Similarly, with calculation strategies, children must not simply rote learn procedures but demonstrate their understanding of these procedures through the use of concrete materials and pictorial representations.

In the Foundation Stage, children are given the opportunity to develop their understanding of number, measurement, pattern and shape and space through a combination of short, formal teaching sessions as well as a range of planned structured play situations, where there is plenty of scope for exploration. Children will become competent 'counters' so that their fluency with the number system provides a foundation for mathematical understanding. Counting forwards and backwards in many different sized steps as well as from different starting and ending points is essential and opportunities for this will be planned for.

At Thythorn Field Primary School, we believe maths learning builds from a concrete understanding of concepts where children are manipulating objects. When children are able to see concepts this way, they then need to understand the same concepts can be represented pictorially. Children are then ready for abstract representation before being able to apply their knowledge to different situations. Children should be encouraged at all times to communicate their understanding of maths so that it clarifies their thoughts.

Children's fluency in arithmetic remains of great importance, with number facts, times table facts and various strategies for calculation taught and practiced at school with support sought from parents through homework activities. A progression towards efficient written calculations is developed and applied consistently in each year-group

All class teachers follow and plan from the National Curriculum Programmes of Study 2014 and the EYFS. Our Long and Medium term planning is informed by these documents which map out the mathematics curriculum for each year group. Weekly and daily plans are developed which give specific detail of learning objectives and appropriate differentiated activities. These can include scaffolding, questioning and opportunities for reasoning to apply their understanding. Support teachers and TAs are timetabled for each class and included in teachers written planning.

Teachers are responsible for planning and teaching all elements of the mathematics curriculum to their students. The mathematics subject leader provides support and guidance to all teachers with regard to planning. Planning is structured using the White Rose Maths Yearly overview, this allows for cohesion and thorough coverage. Children working at greater depth are expected to be taught within their year group objectives, but have appropriate challenge and opportunities to prove they are working within their greater depth capability.

We aim to teach Maths using a wide range of strategies: direction, demonstration, modelling, explanation to clarify and discuss, questioning, initiating and guiding exploration, investigating ideas, discussing and arguing listening and responding and practice and consolidation, including links to other curriculum areas and real life situations.

The structure of all lessons follows the following; flashback questions of prior learning, 'I do' demonstration of learning, 'we do' paired learning and 'you do' embedding and developing concepts individually, along with well planned challenges.

We aim to actively engage pupils in their learning by sharing lesson objectives and 'Steps to success' (success criteria) with them. These are referred to during and at the end of each lesson. Children are given opportunities to respond to feedback where appropriate, in accordance with the agreed marking policy.

We will judge the success of our mathematical teaching by:-

- The motivation and interest displayed by our pupils
- End of KS2 National Curriculum Test results
- Year 4 National Multiplication Test results
- On-going formative assessment
- Termly standardised tests
- Success in meeting targets
- Data analysis
- Book scrutinies
- Observations of the teaching of mathematics (including external partnerships with Maths Hub and TELA)

PROGRESSION IN CALCULATIONS

This calculation policy is based on the CPA (concrete-pictorial-abstract) approach - a key component of the mastery approach.

Concrete - we use physical resources to bring the maths to life e.g. numicon, base 10, counters.

Pictorial - we use pictorial representations of the problem to help pupils to 'see the maths'.

Abstract - when we are ready we move on to using numbers and key concepts confidently

The focus for EYFS / Reception should be on the understanding of early number concepts and number sense through the use of concrete manipulatives and practical experiences, as exemplified in the programmes of study. Progression guidance for the Foundation Stage is therefore not provided in this document. This document focusses on progression of calculations from Year 1 to Year 6.

This calculation policy is a guide for all staff at Thythorn Field Primary School and has been adopted from work by the White Rose Maths Calculation documents. Children should deepen their conceptual understanding by tackling challenging and varied problems. For each of the four rules of number, different strategies are laid out, together with examples of what concrete materials can be used and how, along with suggested pictorial representations. Please note that the concrete and pictorial representation examples are not exhaustive, and teachers and pupils may well come up with alternatives. Where necessary, additional guidance is given to support in teaching the given strategies.

The principle of the concrete-pictorial-abstract (CPA) approach is that for pupils to have a true understanding of a mathematical concept, they need to master all three phases. Teachers can use any teaching resources that they wish to use and the policy does not recommend one set of resources over another, rather that, a variety of resources are used.

CROSS CURRICULUM LINKS

Mathematics is an integral part of our daily lives and therefore manifests itself in many areas of the curriculum. Teachers are encouraged to find appropriate opportunities to make meaningful links with other

curriculum areas possible. Links with Computing are continually developed through use of laptops, Ipad's, PC's and appropriate software.

RESOURCES AND LEARNING EQUIPMENT

In addition to the maths equipment located in each classroom, additional resources are held centrally in the resource area, located near the computer room. Any additional requests for mathematics resources, to support teaching and learning, should be made directly to the subject leader. Year 5 and 6 have some resources in class sets (for example calculators), to facilitate the learning pertinent to their year group.

All classrooms should have at least one Mathematics board displaying current learning. Key Vocabulary will be displayed to support children's understanding of mathematical concepts and when possible supplemented with visual images. Maths learning wall should help the children learn and progress, therefore show an organic approach, with ongoing learning apparent.

PRESENTATION OF WORK

Children's maths work may be presented in a variety of ways including:

- On individual white boards or number fans
- In books
- In folders
- As part of an individual/paired/group presentation.
- As part of a class/school project.
- As a model
- As part of a classroom/school interactive display
- Through ICT
- In an assembly/class performance
- As photographs i.e. of mathematical displays.

INCLUSION

The daily mathematics lesson should be accessible for all students. Teachers involve all students through differentiating:

- Success Criteria
- Challenging Tasks
- Questioning
- Teaching Styles
- Resources

It is the responsibility of the class teacher, in collaboration with their support staff, to ensure that the needs of each individual student are being met and all children are receiving quality 1st teaching. Activities should reinforce and challenge student's understanding and love of the subject. Students identified as more able should be given open-ended tasks and challenging investigations to solve problems and find solutions. EAL children will have key vocabulary displayed and illustrated to develop subject-specific language.

INTERVENTION

The subject leader along with classroom teachers will be responsible for analysing school wide data every half term. Students who are identified as making inadequate progress will be flagged as 'at risk' children. These students will be provided with a targeted programme in the classroom and/or intervention programmes. These will be monitored and impact measured every half term through Pupil Progress Meetings with SLT. Data will be analysed by the SENCO, to ensure correct progress targets are set and achieved.

PARENTAL INVOLVEMENT

The link between home and school is forged in a number of ways. Parents will be given guidance on calculation strategies taught at school to support work been done at home.

Homework involving maths; is well explained and modelled where appropriate to enable parents to understand how they can help.

Maths sites and support strategies are shared with parents via the school's website and through curriculum information letters sent home each term.

Parents are given the shared login for their children to facilitate 'TT Rockstars' to support Times Table learning at home.

Parental guidance and information sessions are offered to parents with regard to end of Key Stage SATs testing and procedures associated with these.

ASSESSMENT & REPORTING

Assessment for Maths is carried out in accordance with the school's Assessment Policy.

Yearly Formal Assessments are carried out in the Summer term, through:-

- Foundation Stage Profile and Baseline assessments in EYFS class
- Termly assessments in all year groups
- National Multiplication Test in Y4
- National Curriculum Tests in Y6

Opportunities for assessments in Maths are integrated into termly and weekly plans.

In Year 1- Year 6 children are assessed in Maths using a range of termly tests (White Rose and NTS) designated as appropriate to test individual pupils, groups or a whole class, using standardised test material. Information from these tests will be recorded by the class teacher and assessment leader centrally and can be tracked over the year. This will be used to help inform future planning, and to identify children for intervention and support. The Maths leader can also access this data to understand school successes and areas to focus for development.

In the EYFS, pupils will be assessed and the Foundation Stage Profile completed throughout the year.

Parent's consultations are held in the Autumn and Spring terms, where class teachers discuss children's targets and progress in mathematics. 'Snapshot' reports for Maths and Literacy are shared with parents termly; pupils' achievements and areas for focus are detailed within this.

In accordance with statutory requirements an Annual Report is sent to parents towards the end of the Summer Term. This report covers progress and achievements in mathematics, setting targets for future improvement and includes the level achieved in the National Curriculum Tests for Year 6.