



St Thomas More Catholic First School

Learning, loving and living together with Christ

Policy for Mathematics

Beliefs and values

As a Catholic School we recognise the gifts and needs of each individual as a valued part of our community and we are committed to the development of the whole child to their fullest potential. We strive to work with parents to meet the needs of every child in their growth towards becoming independent and responsible members of the school community and society.

The school's mission underpins the value of enabling children to achieve their best, which is a shared vision of parents, teachers and all adults at St Thomas More.

Aims

Mathematics teaches children how to make sense of the world around them through developing their ability to calculate, reason and solve problems. It enables children to understand relationships and patterns in both number and space, in their daily lives.

The aims of teaching mathematics are:

- to promote enjoyment of learning through practical activity, exploration and discussion
- to promote confidence 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 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 understand the importance of mathematics in every day life

Teaching and learning style

Through careful planning and preparation we aim to ensure that throughout the school children are given opportunities for:

- applying their learning to everyday situations
- practical activities and mathematical games
- problem solving
- asking as well as answering mathematical questions
- mathematical reasoning, including making, testing and proving generalisations
- individual, group and whole class discussions and activities
- open and closed tasks

- a range of methods of calculating e.g. mental, formal and informal written methods
- working with computers

To ensure consistency across the school, each member of teaching staff has a copy of the Calculations Policy (updated September 2015) in an accessible display wallet. Staff also have access to the policy on the shared area and a master copy is also available. Additionally, current calculation methods (linked to topic area being taught) are displayed, on the Working Wall, in each classroom for the use of staff, supply teachers and children. (These can be printed direct from policy or displayed on poster paper on the Mathematics Working Wall.)

Children are taught mathematics within mixed ability class groups. Teachers have high expectations of all children, irrespective of ability, and encourage them to be successful and achieve their full potential. We achieve this through using a range of strategies and differentiated activities. Where teaching assistants are available, they are used to support individuals or groups, either within the class or withdrawing them for intervention strategies.

Mathematics Curriculum planning

Mathematics is a core subject in the National Curriculum 2014, and we use the Programmes of Study (PoS) as the basis for implementing the statutory requirements for mathematics. Additional guidance for specific mental and written strategies taught in each year are detailed in the school's Calculation Policy.

Mathematics takes place both within dedicated maths lessons, and through cross-curricular links as part of other topics. Long term plans are completed by class teachers to allow mathematics topics to be linked in with topics across the curriculum throughout the year. The class teacher completes a medium term plan (sequence of learning) for each Mathematics topic area to be taught, this can vary from 2 to a 4 week sequence, and plans weekly from this. The weekly plans identify the specific learning objectives, success criteria and use process skills boxes. The 'process skills' (or top boxes) help the teachers pitch the process of skills for each area of learning.

The Early Years Foundation Stage

In the Foundation Stage, mathematics is covered through Number and Shape, Space and Measure. The objectives set out in the Development Matters EYFS curriculum underpin the planning for children aged three to five. We provide opportunities for children to develop their understanding of number, calculation, measurement, pattern, shape and space, allowing them to enjoy, explore, practice and talk confidently about mathematics.

Mathematics and Inclusion

Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our mathematics teaching, we provide learning experiences that give all pupils opportunities to make good progress and become 'Mathematicians'. We strive to meet the needs of pupils with special educational needs, those with disabilities, those with special gifts or talents, and those learning English as an additional language. Please refer to SEN policy for details. Pupil Progress meetings are used to identify children who would benefit from small group intervention, either to support or extend. A Numicon intervention/catch-up programme is used for individual children when appropriate.

Assessment for Learning

Teachers assess children's work in mathematics from three aspects (long term, medium term and short term). We use short term assessments to help us adjust our daily plans. We use problem solving tasks (a weekly Big Mathematics session) and other activities to assess children's progress against a range of objectives. The 'Big Mathematics' session can relate to the Mathematics area that has just been taught or a discrete problem to assess where children are or what they can recall, from previous units. The aim of the 'Big Mathematics' session is to see if children can use and apply their mathematics skills, because at St Thomas More we are aiming to develop children's mathematical skills, so that they become competent mathematicians.

'Gold Star' activities are mathematics tasks taken at least 2 weeks after the skills have been taught to assess whether children can independently use those skills post teaching. They should be used regularly to aid assessment. A gold star marks pieces of work used for this purpose.

Assessments are recorded against Classroom Monitor (which link to the National Curriculum) and a stage-related judgement is made based on these.

Children are set targets relating to the area of mathematics being taught, pupil progress outcomes and these change in line with the teachers medium term planning. **Targets are set at least half termly and stuck in the front of mathematics books to be highlighted when achieved and a copy is placed in the child's homework diary half termly.** They are made aware of the current and future curriculum expectations for them, which are shared with their parents. These expectations are age-related, and give pupils opportunity to assess their own progress.

Work is marked in accordance with the school's Marking Policy allowing pupils and teaching staff to assess the children against specific criteria.

All this information then forms the basis for termly Pupil Progress Meetings. During these meetings, any children who are not making the expected progress are identified and strategies (including interventions) are put in place to address this.

Assessments are moderated within phases in PPA, across school and across the Catholic First and Middle schools in staff training. This provides opportunities for professional dialogue and sharing of good practice.

Children in Year 2 will be taking SATs in the summer term. The tests form part of an overall judgement, which is subject to external moderation every 4 years by the Local Authority.

Resources

The school is well resourced with a wide range of practical resources, teaching aids and computing resources. Computing resources include access to websites which allow children to practise mathematics skills both in school and at home. iPads are used, as appropriate, to enhance mathematics teaching through the use of educational apps and games. Each classroom has a Mathematics Working Wall and area with easily accessible resources for the children. This allows them to become familiar with the relevant equipment and independent when choosing resources to help themselves, (see Appendix 1 - Mathematics working walls and areas).

Homework

Children in Key Stage 2 learn different times tables and division facts and are tested weekly, this to encourage all children to learn their tables (and corresponding division facts) up to 12 x12 by the end of year 4.

The school have user accounts for Education City and My Maths where children can access homework activities and mathematical games at home.

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 children to read and interpret problems in order to identify the mathematics involved. The children explain and present their work to others during plenary sessions. Younger children enjoy stories and rhymes that rely on counting and sequencing. Older children encounter mathematical vocabulary, graphs and charts when using non-fiction texts.

Computing

Children use and apply mathematics in a variety of ways when solving problems using technology. Younger children use technology to communicate results with appropriate mathematical symbols. Older children use it to produce graphs and tables when explaining their results or when creating repeating patterns, such as tessellations. When working on control, children use standard and non-standard measures for distance and angle.

Science and topic work

Science and topic work provide great opportunities for children to applying their knowledge of mathematics. For example, analysing results from a science investigation, understanding periods of time in History, map work in Geography and mathematical features in art and D&T.

Personal, social and health education (PSHE) and citizenship

Mathematics contributes to the teaching of personal, social and health education, and citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together and respect each other's views. We present older children with real-life situations in their work on managing money.

Monitoring and Review

Monitoring of the standards of children's work and the quality of teaching and learning in mathematics is the responsibility of the subject leader and SLT. The co-ordinator is responsible for identifying needs within the school and actions that can be taken to address these through termly action plans.

The work of the subject leader also involves supporting colleagues in their teaching, being informed about current developments in the subject, and providing a strategic lead and direction for mathematics in the school. This is achieved through Learning Walks, pupil interviews, observations and planning & book trawls (see Monitoring Schedule). The subject leader gives the feedback to the head teacher and evaluates strengths and weaknesses in the subject, and indicates areas for further improvement.

This policy will be reviewed at least every two years.
Updated February 2016

Appendix 1

Mathematics Working Walls and Areas

What should be up in the classroom for mathematics. (This list does not include work on walls).

There should be a mathematics 'area' a shelf/surface under the mathematics wall. Reception must have a dedicated mathematics area.

Reception

- Numbers up to 20 in own area and in mathematics area
- Number line in mathematics area needs to be 0-10 then 11-20.
- Mathematics area will link to what has been taught
- Vocabulary
- Numicon number lines as well as normal number lines

KS1

- Number line to 100 and hundred square
- Words for numbers (Y1-1-20 and Y2 up to 100)
- Monkey mathematics-might just be for the strand being taught and should be large enough to be able to be read. (Only have up if it is useful though!)
- Vocabulary-for topic. Can be print, on sugar paper or on a whiteboard on the board.
- Times tables visible-Y1- 2, 5 and 10Y2-2, 5, 10 and extend to 3, 4, 8,
- Numicon number lines (1-21 and 10s one)
- Everyday Success Criteria
- LO and SC linked to topic-can change frequently
- May have differentiated targets.

KS2

- Positive/negative number line
- Number line to 100 and hundred sq
- Words for numbers (up to one thousand)
- Monkey mathematics-might just be for the strand being taught and should be large enough to be able to be read. (Only have up if it is useful though!)
- Vocabulary-for topic. Can be print, on sugar paper or on a whiteboard on the board.
- Times tables visible-up to 12 for Y4. Y3-2,3, 4, 5, 8, 10.
- Numicon number lines (1-21 and 10s one)
- Everyday Success Criteria
- LO and SC linked to topic-can change frequently
- May have differentiated targets.
- Multiples of 10 (Y4 may have above 100 and below 0. Could also have multiples of 100)