

St Maria Goretti RC Primary

Numeracy Policy

What is Maths?

Mathematics helps us to make sense of our world, providing a precise means of communication using numbers, symbols and shapes. It is a powerful, universal language used to explain, predict and represent events and tackle problems in everyday life.

The Nature of Mathematics

The National Curriculum lies at the heart of our policy and we use the revised Primary Framework for Mathematics for further guidance. The Framework specifies seven strands of mathematics namely:

- Using and applying mathematics
- Counting and understanding number
- Knowing and using number facts
- Calculating
- Understanding shape
- Measuring
- Handling Data

Yearly objectives, aligned to these seven strands, inform the planning and teaching of mathematics throughout the school. These objectives enable progression in learning towards the Early Learning Goals and the National Curriculum level descriptors appropriate to Key Stage 1 and Key Stage 2.

Mathematics in the Foundation Stage is viewed as a practical, activity-based subject, since for most children practical work is the most effective means by which understanding of mathematics can develop. The overview for this area of learning is taken from the Early Years Foundation Stage Profile.

As the children progress through Key Stage 1, work will progress from handling objects to a stage in which symbols are used, which can be manipulated in abstract ways and applied to problem solving.

At Key Stage 2 most children will be encouraged to work increasingly independently, applying the knowledge they have learnt to solve everyday problems and to investigate mathematical rules, patterns and relationships. Maths games and practical learning opportunities will supplement more formal maths activities throughout Key Stage 2.

Aims

1. To develop a positive attitude to mathematics and help children experience success so they will view maths with pleasure.
2. To develop and increase confidence and understanding of mathematics through a process of enquiry and experiment by working individually, in groups and as a class.
3. To encourage the ability to use and apply mathematical skills and knowledge by developing communication, reasoning, enquiry and problem-solving skills.
4. To provide opportunities for children to develop their creativity in maths
5. To enable children to appreciate mathematical patterns and relationships.
6. To develop an ability to think clearly and logically in mathematics with independence of thought and flexibility of mind.
7. To develop children who are numerate, so that by the end of Key Stage 2 they:
 - Have a sense of the size of a number and where it fits into the number system.
 - Know by heart number facts such as number bonds, multiplication tables, doubles and halves.
 - Use what they know by heart to figure out answers mentally.
 - Calculate accurately and efficiently, both mentally and with pencil and paper, drawing on a range of calculation strategies as specified in St. Maria Goretti's Calculation Policy.
 - Recognise when it is appropriate to use a calculator, and be able to do so effectively.

Planning for Mathematics

Individual class teachers will plan systematically for the teaching of mathematics in their classroom. The objectives for each year in the Primary Framework for Mathematics will be followed and, where applicable, objectives from previous or subsequent year bands will be used.

In KS1& KS2, planning is structured around 5 blocks of work, each drawing on 3 of the maths strands, including the Using and Applying maths strand. Each two or three week block is organised into three units of work that are covered termly. In their weekly planning staff use the Local Authority template and follow their recommendations with pupil 'I can' statements. Staff record objectives for the mental/oral starter and the main part of the lesson. Work is differentiated to suit the individual needs of pupils, so that personal qualities such as independence, co-operation and perseverance are developed. All lessons end with a plenary, which is recorded on the weekly planner. Mathematical vocabulary and key questions are also recorded on the weekly planner, as are any resources including ICT resources.

Time

To ensure that there is adequate time for developing numeracy skills each class teacher will provide a daily lesson for mathematics which should last at least 45 minutes in KS1 and between 50 and 60 minutes in KS2. Additional mathematics teaching is provided through implementation of intervention maths programmes for small groups of targeted children, SEN sessions are provided for children with a special need in Maths, and Gifted and Talented opportunities are offered for those identified with special ability in Maths.

Teaching and Classroom Management

Teachers will structure their mathematics lessons according to aims of the lesson and the needs of the pupils. Lessons will engage and challenge pupils, and will maintain a good pace. Teachers will provide daily oral and mental work to develop and secure pupils' calculation strategies and rapid recall skills.

In some lessons, a proportion of lesson time will be direct teaching of whole classes and groups, where the teacher will demonstrate, explain and illustrate mathematical ideas, making links between different topics in mathematics. In other lessons, where pupils are encouraged to investigate mathematical rules, patterns and properties of number and shape, direct teaching will be less evident. In such lessons, carefully framed questions will be used to guide and challenge the children's progress, which is much more self-directed. Pupils will be expected to use correct mathematical vocabulary and notation. Staff will ensure that differentiation is manageable and centred around work common to all of the pupils in a class, with targeted, positive support.

Team teaching is used both to improve the teacher : pupil ratio in sets where additional teaching support is considered necessary, and to facilitate closer monitoring and support for targeted underachievers in maths. Teaching Assistants also support the teacher in delivering the curriculum, working with small groups of children, often in the lower ability sets.

Assessment

Assessment is not as an end product but rather, forming the basis of future action. Assessment will be both formal and informal, based on observations and discussion as well as marking and formally administered tests. The assessment of mathematics will be an integral part of teaching, continually providing both 'feedback' and 'feedforward', allowing us to establish at what stage the children are, where they have come from in their learning and where their learning should go next.

Individual members of staff will be responsible for keeping up-to-date records for individual children using the APP format. These will be used to inform end of year achievement and passed on to the next year's teacher to inform future planning and development. Parents will be invited to discuss children's progress and development following the Autumn and Spring Terms and will receive a written report on children's progress at the end of each summer term.

Termly recording of attainment allow the school to assess and monitor pupil's progress and attainment against individual, school and national targets. These are important in each year band not just at the end of each Key Stage. This information will help decide on any further intervention each pupil may need. Assessment opportunities also allow us to review and record the progress children are making over time, in relation to the key objectives and specific individual targets, including those in Individual Education Plans (IEP's) and termly curricular targets.

At the Foundation Stage

The Nursery children are assessed on entry and continually throughout the year. The children in Nursery and Reception are assessed using the Early Years Foundation Stage Profile.

At Key Stage 1

In May the Year 2 children's numeracy attainment is formally reported using teacher assessment gained through APP. The pupils may also be given a formal test to help inform these judgements.

At Key Stage 2

As well as continually assessing the pupils using APP, in the summer term, all Year 3, 4 and 5 pupils complete the latest Optional QCA tests, and Year 6 are formally assessed in May for the Year 6 SATs. These tests are analysed and areas for development form the basis for the following autumn term's curricular targets.

In the autumn term, children from Years 3, 4 and 5 complete an Optional QCA test respectively, and Year 6 children complete a past SATs paper. These tests quality assure an assessment level gained through APP and enable teachers to identify strengths and areas for development, informing future planning.

The progress of all pupils is tracked throughout the year using RRR. This process enables children to be targeted for additional interventions, and underachievers are identified and more closely supported and monitored.

Resources

Number equipment is stored in each year and Topic boxes are located centrally in the booster room of the Annexe. Maths games are also available in classrooms.

ICT

Computers and other ICT equipment (including calculators) will be used for both mathematical and cross-curricular activities. Interactive whiteboards are installed in each classroom, and laptops are available for children to use in lessons. A range of software is used including Knowledge Box, the NNS Interactive Teaching Programmes, and Education City.

Display

Display has an important role in the teaching and learning of Mathematics. Every class has a numeracy display which includes number lines, number grids, vocabulary and other materials that provide a visual support for children's mathematical development.

Marking

Teachers mark children's mathematics work according to the school's marking policy. Children are encouraged to try things out without fear of 'getting it wrong'. Comments on pupils' work include praise for accuracy and effort, linked to the lesson objective or a child's personal target. Mathematical pointers towards improved performance are also included where relevant.

Pupils' names are used in constructing these comments. When possible, work will be marked with the child present allowing a two-way dialogue and immediate feedback. Pupils are also encouraged to mark and report back on their own work, such as mental maths tests, as a diagnostic assessment tool. Self-assessment methods are used to enable children to assess their own understanding against the lesson aim.

Homework

The daily mathematics lesson provides opportunities for children to practise and consolidate their skills and knowledge, to develop and extend their techniques and strategies, and to prepare for their future learning. These opportunities will be extended through weekly homework activities.

Family Numeracy Links

It is important that parents and carers should feel actively involved in their children's mathematical learning as research shows that this improves children's achievement. Most parents want to help their children with maths but don't feel able to do so.

The school aims to include parents in their children's mathematical education by providing information about maths. The school Calculations Policy provides parents with guidance regarding the calculation methods which children are taught in school.

Equal Opportunities

As a staff we will ensure equal opportunities in mathematics and will take into account culture, gender and special needs, in our planning and teaching. We will ensure we provide flexibility for children to adopt their preferred learning style.

Special Educational Needs

Children with Special Educational Needs (S.E.N.) in mathematics are supported through a range of initiatives including setting, the withdrawal of small groups of children by S.E.N. teachers and teaching assistants, the provision of differentiated work in the classroom and additional targeted support provided in the classroom by teaching assistants. Maths targets are included in I.E.P.'s where appropriate.

Gifted and Talented

Children who are gifted in mathematics are challenged through a range of initiatives including setting, the provision of differentiated work in the

classroom, withdrawal of small groups, and mathematical enrichment activities including those provided through links with local secondary schools.

The Numeracy Co-ordinator

The numeracy co-ordinator monitors:

- The assessment of numeracy through APP
- The long term progress of numeracy
- The delivery of numeracy across the school
- Staff development through staff meetings, INSET, LA advice