



Mathematics Policy

Introduction

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore 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. (National Curriculum 2013)

At Our Lady of Lourdes RC Primary School, we endeavour to ensure that children develop a healthy and enthusiastic attitude towards mathematics that will stay with them for life.

Our children will strive to:

- Be 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.
- Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- 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 through a process of enquiry and experiment.
- Make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.
- Apply their mathematical knowledge to science and other curriculum subjects, as well as seeking and recognising maths in 'real life'.
- Have a positive attitude towards mathematics and an awareness of the fascination of mathematics.

School Policy and the National Curriculum

The National Curriculum is the primary document used to direct and focus the teaching of Mathematics at Our Lady of Lourdes RC Primary School. Within KS1 and KS2, teachers use the Abacus teaching programme as a foundation for planning to ensure that coverage of the National Curriculum is thorough; progression of skills and knowledge is evident; and the standard of teaching and learning across the year groups is consistent throughout all areas of the school.

In Year 6, CGP SAT preparation materials are also used alongside Abacus. These ensure pupils are suitably prepared for the statutory SATS at the end of KS2.

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

- practical activities, investigational work and mathematical games
- problem solving

- individual, group and whole class discussions and activities
- open and closed tasks
- using mathematical ICT tools where they have been identified as an effective tool in teaching a concept or making a connection
- a range of methods of calculating e.g. mental, formal and informal written methods, jottings and using a calculator*

**Calculators should not be used as a substitute for good written and mental arithmetic and should therefore only be introduced in UKS2 to support pupils' conceptual understanding and exploration of more complex number problems, if written and mental arithmetic are secure.*

Planning and Organisation

At Our Lady of Lourdes RC Primary School, each class teacher is responsible for the teaching and learning of mathematics in their class, in consultation with, and with guidance from, the mathematics coordinator. Each class teacher plans and delivers daily maths lessons using the Abacus toolkit, which is designed to inspire a genuine love of maths and help every child master mathematical concepts. Teachers draw on alternative resources such as materials from White Rose, NCETM and Purple Mash to supplement their teaching where appropriate.

Planning is centrally stored on the school server. A planning sample for each year group is reviewed by the mathematics coordinator each half term.

Teaching of mathematics in our Reception class is based on the objectives of the EYFS Framework (2023), working towards attaining the ELG for mathematics in Number and Numerical Patterns. To ensure teaching and learning in EYFS is in line with the updated framework (specific area – mathematics), teachers make use of the 'Master the Curriculum' toolkit.

Differentiation

At Our Lady of Lourdes RC Primary School, we set high expectations and give every child the confidence that they can succeed. Teaching for mastery directs the emphasis towards designing a lesson that builds a concept well, in carefully-sequenced steps, and at the same time connects that concept: our children are taught to think deeply and make connections.

At Our Lady of Lourdes RC Primary School, we have evolved in the way we approach differentiation and teacher's planning. Teacher's preparation time is now spent designing lessons that the whole class can access, moving away from the concept of differentiating according to ability i.e. prior attainment. A more subtle approach to differentiation has been adopted where teachers are primarily teaching to the whole class, whilst still accommodating for the needs of different groups of children within their class. This is achieved by the planning and direction of tiered questioning, varying the complexity of follow-up tasks, additional scaffolding, adult support and the inclusion of additional questions/tasks. At Our Lady of Lourdes RC Primary School, we have moved away from 'What can I do for my lower, middle and higher attainers?' and are leaning more towards 'How can I teach this concept in such a way that all children will get it?'

This approach ensures all children feel part of that learning community, without being labelled. Teachers have high expectations of all learners and provide maths teaching that is accessible, resulting in the growth of pupils' self-esteem and development of learning. Children are encouraged to come together with their maths learning rather than creating divides between them by planning noticeably different tasks/activities for specific individuals/groups of pupils. High-quality, carefully-sequenced lessons are planned and delivered to support all children in making progress.

In the instance that a child/minority of children with cognitive difficulties are identified, resulting in them not accessing the learning to at least a satisfactory level, a child may then need to be taken out and taught separately, though still using teaching for mastery principles. We need to look at the individual child and be realistic: 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.

“Where teaching for mastery is working well, children often do find it easy but that’s not to say it’s boring – they find it easy because they understand it and have made connections, and that’s good for their self-esteem. I think we’ve got a bit of a culture in this country that unless children find it hard, they are not learning. We need to move away from that. Effective learning is enjoyable!” Debbie Morgan, NCETM Director for Primary

Cross-Curricular Mathematics

Throughout the whole curriculum, opportunities exist to extend and promote mathematics. At Our Lady of Lourdes RC Primary School, teachers seek to take advantage of cross-curricular opportunities e.g. planning regular opportunities for pupils to measure in science and DT; applying their knowledge of shape to reading and writing in that they learn to recognise letters and symbols; the collection and presentation of data in history and geography, and the consideration of properties of geometric patterns and shape in Art and DT.

Marking

Marking of mathematics is done in accordance with the school’s marking policy with an emphasis on being both diagnostic and summative. Pupils receive feedback of a positive nature as well as being asked to improve and review their work in the form of ‘corrections’. Where applicable, next steps are given and/or challenge may be offered. Teacher marking is done prior to the next maths lesson to ensure formative feedback is given and necessary action taken.

As well as being the responsibility of the class teacher, in UKS2 the children themselves are given the opportunity to mark exercises which involve routine practice, with support and guidance from the class teacher. Both self and peer assessment is encouraged throughout KS2: this can foster independence in the children as they take on the responsibility of reviewing their work, whilst still having the teacher present to support them if they are unable to identify and correct their errors.

Assessment

At Our Lady of Lourdes RC Primary School, we use assessment as a tool to establish what children already know and build upon it. We use assessment data to establish 'prior attainment' (rather than 'ability') and to inform teachers' planning to allow them to structure and pace a challenging and enjoyable learning experience. *"The use of the term 'prior attainment' rather than 'ability' acknowledges that attainment often does not reflect ability very well, and that ability is not fixed, but can change with good learning. By talking about 'prior attainment' we try to avoid predicting a child's likely future attainment which can become a self-fulfilling prophecy and put a ceiling on a child's learning."* Debbie Morgan, NCETM Director for Primary

Information for assessment at Our Lady of Lourdes RC Primary School is gathered in various ways: discussions with pupils, observations, scrutiny of children's work, marking, and formal testing.

Assessment toolkits used include Abacus, Headstart, CGP and Testbase materials. Teachers provide effective feedback to children to actively involve them in identifying strengths and areas to develop. Teachers are skilled in adjusting planning to inform next steps and to take account of the results of day-to-day assessment.

In the summer term, the children are formally assessed as part of the school's Assessment Policy and this is reported to parents via the child's End of Year report. Trends are identified and incorporated into the following academic year's Action Plan(s).

The general expectation is that the majority of pupils will move through the maths 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. Teachers recognise the influence assessment has on the motivation and self-esteem of children, both of which are crucial to learning, and allow for this when determining when and how each children should progress.

Tracking Systems

The assessment coordinator/mathematics coordinator collates the assessment data for each year group at the end of each half term to inform the central school tracking system, which is then evaluated by the Head Teacher and SLT. The findings are then shared with staff in order for them to effectively identify 'Pupil Progress' focus children, and implement appropriate support and intervention programmes, which are regularly reviewed in accordance with IEPs and/or 'Pupil Progress' documentation.

Exercise Books for Recording

It is school policy that children receive a new Mathematics book (red/A4/cm² pages) at the start of each academic year.

An emphasis is placed on the presentation of work in Mathematics, as with all subjects. All children are encouraged to work clearly and in an organised manner when recording their work. When using squares, one square should be used for each digit; all straight lines must be drawn with a pencil and a ruler, and all entries of work have an underlined date and LO.

Children have access to a child-friendly version of the National Curriculum's Statutory Requirements in maths for their year group at the front of their maths book. A copy of these expectations is accessible to parents via the school website.

Pupil's Maths Recording

Children are taught a variety of methods for recording their work and they are encouraged and supported to use the most efficient method of recording. This can include formal written methods, jottings and/or mental strategies (see OLOL Calculation Policy). Daily Learning Objectives (LOs) are recorded in children's books, along with the date and either a piece of written work or a brief description of an alternative task e.g. *Number Shark ICT (Bonds to 100)*. The nature of the activity e.g. 'Teacher Guided Group' or 'TA Supported' is also indicated on each piece of work. No reference made to adult involvement denotes the work has been completed independently.

Monitoring and Evaluation

The quality of mathematics teaching and learning is regularly reviewed through lesson observations, learning walks and the moderation of planning, assessment and pupils' books. Relevant action is then taken – strengths are identified and shared; areas to develop are addressed and staff supported where necessary.

Opportunities for teachers to review the teaching and learning of mathematics at Our Lady of Lourdes RC Primary School are given on a regular basis during staff meetings, Pupil Progress meetings, Performance Management reviews, lesson-observation feedback, INSET days, and via staff questionnaires.

Resources

All mathematics resources are stored centrally in the KS2 corridor. Resources are audited regularly and an up-to-date list of resources is available to staff. All year groups have a 'Mathematics Resource Box' within the classroom, which stores a range of 'common' resources, such as number cards, cubes, maths dictionaries etc. When new resources are requested by staff, their suitability is assessed by SMT and, if purchased, added to the audit upon arrival. Staff are regularly asked to review the suitability of resources currently used in school during staff meetings and via teacher questionnaires.

Equal opportunities

At our Lady of Lourdes RC Primary School, we incorporate mathematics into a wide range of cross-curricular subjects and seek to take advantage of the multi-cultural aspects of mathematics.

Homework

It is our school policy to provide parents and carers with opportunities to work with their children at home. One method we use is the setting of homework. Mathematics homework is set on a weekly basis and should be subtly-differentiated appropriately within the class, covering objectives currently being taught and/or for revision purposes. This may take a variety of forms e.g. online activities, number games and tasks, formal exercises, mathematical investigations etc. These activities are valuable in: promoting

the teaching and learning of mathematics both in school and at home, consolidating learning, which has been introduced in class, and for our Year 6 children, providing structured revision for the KS2 Arithmetic & Reasoning SATs.

Parental Involvement

At Our Lady of Lourdes RC Primary School, we encourage parents to be involved in their child's mathematics learning by:

- Inviting parents into school twice yearly to discuss the progress of their child.
- Reporting to parents during the summer term and inviting them to make comments.
- Sharing updates and photographs of the children's maths lessons via the school Facebook page.
- Sharing pupil's individual targets.
- Distributing materials which offer advice on supporting their child's mathematical learning at home, and ensuring parents have access to current information on curriculum coverage and calculation strategies pupils are being taught within school via the school website.

Reviewing the School Policy for Mathematics

The Our Lady of Lourdes RC Primary School Mathematics Policy will be reviewed every two years by the mathematics co-ordinator, in discussion with staff, the Head Teacher and the Governing Body Curriculum Committee.