



St Joseph's Catholic Primary School

Mathematics Policy

Policy reviewed and updated: December 2024

Overview

At St Joseph's Catholic Primary School, we aim to develop, consolidate and enhance pupil's mathematical knowledge and basic life skills so they are able to use it to make sense of the world around them. It is essential to everyday life, critical to science, technology and engineering, and necessary in all forms of employment. A high-quality mathematics education therefore provides a foundation for pupils to become solvers, through the process of breaking down problems into a series of simpler steps.

Aims

We aim to develop an enjoyment and love of maths. We want to give the children real life experiences so that they understand the importance of mathematics in everyday situations. We aim to give them the opportunities for mathematical thinking and discussion in creative ways so they can develop their own way of finding solutions. Finally, we want to instil confidence in using mathematics so they are capable of solving problems that will become an integral part of their future.

The National Curriculum for Mathematics aims to ensure that all pupils:

- Become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems
- **Reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- Can **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.

Organisation and Methodology Differentiation

At St Joseph's we have single and mixed age classes. All lessons take place within classes and children are in mixed ability. The initial groupings occur at the start of the school year with the help of past assessments and teacher discussions.

Throughout the year, the classes are analysed and when needed, changes are made so the children's needs are catered for. Work is differentiated in order to give appropriate levels of work for every child to progress further and challenges are set for the more able.

Teaching Organisation and Planning

The approach to the teaching of mathematics within the school is based on:-

- A mathematics lesson every day (45 minutes up to an hour)
- A clear focus on four sections:
 - 1) Class interactive mental maths session.
 - 2) Direct, instructional teaching and interactive oral work with both the whole class and smaller ability groups.
 - 3) Tasks to form concepts, consolidate ideas and methods and gain a better understanding and reasoning through problem solving and puzzles.
 - 4) Plenary that gives opportunities for assessment of the lesson.

At St Joseph's, we are using the 'White Rose Approach' to maths. This planning uses the National Curriculum (2014) to set out its framework. The 'White Rose Approach' follows the CPA approach (Concrete, Pictorial and Abstract). This allows the children to move through the stages of understanding mathematics and apply it to everyday scenarios. The children will be given the skill to reason and problem solve.

Class teachers are responsible for the relevant provision of their own classes and individually develop plans, which give details of learning objectives and appropriate differentiated activities. Although planned in advance they are adjusted on a daily basis to better suit the arising needs of a class and individual pupils.

Curriculum Links

Throughout the whole curriculum, opportunities to extend and promote Mathematics should be sought. Nevertheless, the prime focus should be on ensuring mathematical progress delivered discretely or otherwise.

Programme of Study

Early Years Foundation Stage

The programme of study for the Foundation stage is set out in the EYFS Framework. Mathematics involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shape, spaces and measures, through practical activities.

ELG: Number

Children at the expected level of development will:

- Have a deep understanding of number to 10, including the composition of each number;
- Subitise (recognise quantities without counting) up to 5;
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

ELG: Numerical Patterns

Children at the expected level of development will:

- Verbally count beyond 20, recognising the pattern of the counting system;
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Key Stage 1 and 2

The Programmes of study for mathematics are set out year-by-year for Key Stages 1 and 2 in the new National Curriculum (2014). The programmes of study are organised in a distinct sequence and structured into separate domains. Pupils should make connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Key Stage 1

The principal focus of mathematics teaching in Key Stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources (e.g. concrete objects and measuring tools).

At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity, time and money.

By the end of Year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at Key Stage 1.

Lower Key Stage 2

The principal focus of mathematics teaching in lower Key Stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

Times Tables

By the end of Year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Each year, from year 2 through to year 6 have specific times tables they must learn:

Year 2: x2, x5, x10

Year 3: x3, x4, x6

Year 4: x7, x8, x9, x11, x12

Year 5 & 6 : further consolidation of all tables including 'mega' facts (6×80 ; 7×900 ; 400×6) and 'mini' facts (0.5×8 ; 3×0.03 ; 0.009×8)

Upper Key Stage 2

The principal focus of mathematics teaching in upper Key Stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of Year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

Assessment, Recording and Reporting

All children will be assessed according to age related targets.

They will be measured by what year they are securely working at, through the use of the objectives in each year group and Standards and Testing Agency Interim Assessment Framework (Y2 and Y6). They will be graded with a Year group and

whether they are working below their Key Stage, working towards the expected standard, working at the expected standard or working above the expected standard.

Assessments will take place three times a year (once a term) and this will be recorded on the school's tracking system. The parents will be informed of progress and assessments at Parents Evenings and through annual reports.

Equal Opportunities and Inclusion

All children are provided with equal access to the mathematics curriculum. We aim to provide suitable learning opportunities regardless of gender, ethnicity or home background.

Monitoring and Evaluating

The Maths Subject Leader, alongside the SLT, is responsible for monitoring and evaluating curriculum progress. This is done through book scrutiny, planning scrutiny, lesson observations, pupil interviews, staff discussions and audit of resources and data tracking and outcomes.

Resources

Each classroom has a basic stock of mathematics equipment. There is additional equipment in the Maths cupboard.

All teachers are responsible for the care of Mathematics resources, which are overseen and audited by the Subject Leader.

All classrooms have a Mathematics Working Wall which will display vocabulary and resources relevant to Maths being taught in the class as well as using computers to support with Maths.

All teachers use a variety of online resources that they use to match the children's abilities. We have memberships to White Rose Premium Resources and Classroom secrets plus for the more able NCETM and NRich.