Mathematics Policy 2023/2024

'Together we love, learn and follow Jesus'

Mission
Together we love, learn, follow Jesus
Vision
At St Joseph's Catholic Primary School, through an open and generous heart, we learn together as a family in faith, following the gospel values of love.
Values
Hope Thankfulness Collaboration Compassion Friendship Resilience Empathy Creativity Justice Respect

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 2014)

The aims of the 2014 National Curriculum are for our pupils to:

- Become fluent in the fundamentals of Mathematics through varied and frequent practice with complexity increasing over time.
- Develop conceptual understanding and ability to recall and apply knowledge rapidly and accurately.
- Reason mathematically; follow a line of enquiry, conjecture relationships and generalisations.
- Develop an argument, justification and proof by using mathematical language.
- Problem solve by applying knowledge to a variety of routine and non-routine problems. Breaking down problems into simpler steps and persevering in answering.

The National Curriculum sets out year-by-year programmes of study for key stages 1 and 2. This ensures continuity and progression in the teaching of Mathematics.

The EYFS Statutory Framework 2014 sets standards for the learning, development and care of children from birth to five years old and supports an integrated approach to early learning. This is supported by the 'Development matters' non statutory guidance.

Intent

The EYFS Framework in relation to Mathematics aims for our pupils to:

- Develop and improve their skills in counting, developing a deeper understanding of the numbers to 10, the relationships between them and the patterns within those numbers.
- Calculate simple addition and subtraction problems.
- Describe shapes, spaces, and measures.

The purpose of Mathematics in our school is to develop:

- Positive attitudes towards the subject and awareness of the relevance of Mathematics in the real world
- Competence and confidence in using and applying mathematical knowledge, concepts and skills.
- An ability to solve problems, to reason, to think logically and to work systematically and accurately
- Initiative and motivation to work both independently and in cooperation with others
- Confident communication of maths where pupils ask and answer questions, openly share work and learn from mistakes
- An ability to use and apply Mathematics across the curriculum and in real life
- An understanding of Mathematics through a process of enquiry and investigation

We aim to provide a stimulating and exciting learning environment that takes account of different learning styles and uses appropriate resources to maximise teaching & learning.

Implementation

EYFS Focus Areas:

The principal focus of Mathematics teaching in EYFS is to ensure that children are able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. This involves providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including real world objects, tens frames, counters and cubes for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

Key Stage One Focus Areas:

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/volume, 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

Key Stage Two Focus Areas: Lower Key Stage 2 – Years 3-4

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. 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.

Key Stage Two Focus Areas: Upper Key Stage 2 – Years 5-6

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 and in working with fractions, decimals and percentages.

Teachers planning and organisation

Long term planning

The National Curriculum for Mathematics 2014, Development Matters and the Early Learning Goals (Number, Shape Space & Measure) provide the long-term planning for Mathematics taught in the school.

Medium term planning

Years 1-6 use the White Rose Maths Hub schemes of learning as their medium-term planning documents. These schemes provide teachers with exemplification for maths objectives and are broken down into fluency, reasoning and problem solving, key aims of the National Curriculum. They support a mastery approach to teaching and learning and have number at their heart. They ensure teachers stay in the required key stage and support the ideal of depth before breadth. They support pupils working together as a whole group and provide plenty of time to build reasoning and problem-solving elements into the curriculum.

Short term planning

All planning is based on the medium-term plans. It is delivered as appropriate to individual children with thought to where the children are now and what steps they need to take next. All classes have a daily Mathematics lesson where possible. Lessons are a minimum of 45 minutes long. Teachers of the EYFS ensure the children learn through a mixture of adult led activities, and child-initiated activities, both inside and outside of the classroom. Mathematics is taught through an integrated approach.

Special educational needs & disabilities (SEND)

Daily Mathematics lessons are inclusive to pupils with special educational needs and disabilities. Where required, children's IEP's incorporate suitable objectives from the National Curriculum for Mathematics or development Matters, and teachers keep these in mind when planning work. These targets may be worked upon within the lesson as well as on a 1:1 basis outside the lesson. Maths focused intervention in school helps children with gaps in their learning and mathematical understanding. Within the daily Mathematics lesson, teachers have a responsibility to not only provide differentiated activities to support children with SEND, but also activities that provide sufficient challenge for children who are high achievers. It is the teachers' responsibility to ensure that all children are challenged at a level appropriate to their ability.

Equal Opportunities

Positive attitudes towards Mathematics are encouraged, so that all children, regardless of race, gender, ability or special needs, including those for whom English is a second language, develop an enjoyment and confidence with Mathematics. The aim is to ensure that everyone makes progress and gains positively from lessons and to plan inclusive lessons.

Assessment

Ongoing Assessment

Assessment is an integral part of teaching and learning and is a continuous process. Teachers make assessments of children daily through:

- Regular marking of work
- Analysing errors and picking up on misconceptions
- Asking questions and listening to answers
- Facilitating and listening to discussions
- Making observations

These ongoing assessments inform future planning and teaching. Lessons are adapted readily and short-term planning evaluated in light of these assessments.

Termly assessments

Termly assessments are carried out across the school using the assessment materials for each year group provided by the White Rose Maths Hub in Year 1, past official SATs assessments in Y2 and Y6, alongside NFER tests in KS2. These materials, used alongside judgements made from class work, support teachers in making a steps assessment for each child.

Role of the Maths Subject Leader

The role of the Maths subject leader is to:

- Lead in the development of maths throughout the school.
- Monitor the planning, teaching and learning of Mathematics throughout the school.
- Help raise standards in maths.
- Provide teachers with support in the teaching of Mathematics.
- Provide staff with CPD opportunities in relation to maths within the confines of the budget and the School Improvement Plan
- Monitor and maintain high quality resources
- Keep up to date with developments in Maths education and disseminate information to colleagues as appropriate.

James Astle – Maths Subject Leader