

Maths Curriculum Statement; Intent, Implementation and Impact

February 2023

Intent – What do we want to achieve in Maths teaching and learning?

At St Laurence Catholic Primary we recognise that Mathematics is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy.

We aim to provide a high-quality mathematics education with a mastery approach so that all children:

- Become fluent in the fundamentals of mathematics;
- Reason mathematically;
- Can solve problems by applying their mathematics.

We incorporate sustained levels of challenge through varied and high quality activities with a focus on fluency, reasoning and problem solving. Children are required to explore maths in depth, using mathematical vocabulary to reason and explain their workings. A range of mathematical resources are used and pupils taught to show their workings with manipulatives, before establishing ways of pictorially and formally representing their understanding. They are taught to explain their choice of methods and develop their mathematical reasoning skills. We encourage resilience and acceptance that struggle is often a necessary step in learning.

We recognise and ensure that our knowledge rich curriculum is:

- Valued and specified
- Well-sequenced
- Taught to be remembered

Implementation – How we plan and teach Maths.

The content and principles of the Early Years Foundation Framework, 2014 National Curriculum and the Teaching for Mastery approach convey how mathematics is taught at our school. Mastering maths means pupils acquiring a deep, long-term, secure and adaptable understanding of the subject.

Teaching for Mastery

The phrase 'teaching for mastery' describes the elements of classroom practice and school organisation that combine to give pupils the best chances of mastering maths. Achieving mastery means acquiring a solid enough understanding of the maths that's been taught to enable pupils to move on to more advanced material. At St Laurence we teach from Reception (EYFS stage) using Power Maths and White Rose Maths materials.

EYFS

Children are exploring and immersing themselves in maths from a very young age and are introduced to the basics of maths in a variety of ways. In the Early Years Foundation Stage (EYFS), we relate the mathematical aspects of the children's work to the Development Matters statements and the Early Learning Goals (ELG), as set out in the EYFS profile document. Mathematics development involves providing children with opportunities to practise and improve their skills in counting numbers, calculating simple addition and subtraction problems, and to describe shapes, spaces, and measures. We continually observe and assess children against

these areas using their age-related objectives, and plan the next steps in their mathematical development. There are opportunities for children to encounter Maths throughout the EYFS (both in the class room and in the outdoor environment) – through both teacher guided activities and the self-selection of easily accessible quality maths resources. Whenever possible children's interests are used to support delivering the mathematics curriculum. Towards the end of Reception teachers aim to draw the elements of a daily mathematics lesson together so that by the time they move to Year 1 they are familiar with the structure with a lesson/activity.

Key Stage One and Two

The fundamentals of our Maths teaching for Mastery includes:

- Rejecting the idea that a large proportion of people 'just can't do maths'. All pupils are encouraged by the belief that by working hard at maths they can succeed.
- Pupils are taught through whole-class interactive teaching using Power Maths and/or White Rose Maths resources, where the focus is on all pupils working together on the same lesson content at the same time, as happens in Shanghai and several other regions that teach maths successfully. This ensures that all children can master concepts before moving to the next part of the curriculum sequence, allowing no pupil to be left behind.
- If a pupil fails to grasp a concept or procedure, this is identified quickly and early intervention ensures the pupil is ready to move forward with the whole class in the next lesson.
- Lesson plans identify the new mathematics that is to be taught, the key points, the difficult points, possible misconceptions and a carefully sequenced journey through our curriculum.
- In a typical lesson pupils sit facing the teacher and the teacher leads back and forth interaction, including questioning, short tasks, explanation, demonstration, and discussion.
- Procedural fluency and conceptual understanding are developed in tandem because each supports the development of the other.
- It is recognised that practice is a vital part of learning, but the practice used is intelligent practice that both reinforces pupils' procedural fluency and develops their conceptual understanding.
- Significant time is spent developing deep knowledge of the key ideas that are needed to underpin future learning. The structure and connections within the mathematics are emphasised, so that pupils develop deep learning that can be sustained.
- Pupils who grasp concepts rapidly are challenged through rich and sophisticated problems before any acceleration through new content.
- Key facts such as multiplication tables and addition facts within 10 are learnt to automaticity to avoid cognitive overload in the working memory and enable pupils to focus on new concepts. Children use engaging online programmes to support their knowledge of key facts both at school and at home.

Resources

In addition to Power Maths and White Rose Maths online resources, textbooks and practice books children are provided with a wide range of concrete, pictorial and abstract resources.

Manipulatives, pictures, words, numbers and symbols are everywhere. The mastery approach incorporates all of these to help children explore and demonstrate mathematical ideas, enrich their learning experience and deepen understanding. Together, these elements help cement knowledge so pupils fully understand what they have learnt.



Impact - What are the Maths learning outcomes for our pupils and how do we know?

Teachers have good Maths for Mastery subject knowledge and a secure understanding of year group expectations and/or pre key stage expectations and ongoing formative and summative assessments.

Assessment for learning (formative assessment) is a key element of each lesson, teachers are aware of possible misconceptions enabling them to intervene swiftly and if necessary implement additional intervention. Similarly teachers are aware of how to deepen the understanding of children who are working at greater depth within any lesson.

Each lesson ends with a reflection activity designed to develop procedural fluency and conceptual understanding. At the end of each unit of work, children are assessed for mastery by completing a short end of unit check. A mathematical concept or skill has been mastered when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations.

At three termly assessment points, pupils sit a standardised test so that gaps can be analysed at a class, cohort and national level. These assessments address the three key elements of the curriculum; fluency, reasoning and problem solving. They are used to not only inform progress but to establish individual children's strength and difficulties.