

ST LAWRENCE CATHOLIC PRIMARY SCHOOL.

MATHEMATICS POLICY



Our school is a place where we all come together as one community to learn, have fun and make lasting friendships, all under God's love and care.

1. Curriculum Statement

Intent

The 2014 National Curriculum for Maths aims to ensure that all children:

- Become fluent in the fundamentals of Mathematics
- Are able to reason mathematically
- Can solve problems by applying their Mathematics

At St Lawrence, we want all children and staff to enjoy Mathematics. Our aim is for all children to become independent learners and have the ability to problem solve and reason mathematically. We want all children to recognise the importance of Maths in the wider world and that they can use their mathematical skills and knowledge confidently in a range of different contexts.

Implementation

- Teachers reinforce an expectation that all children are capable of achieving high standards in Mathematics. Each lesson provides the means to achieve Greater Depth with more able children being offered problems to solve as well as investigative work within the lesson as appropriate
- The large majority of children progress through the curriculum content at the same pace. Differentiation is achieved by emphasising deep knowledge and through individual support and intervention.
- Teaching is carefully planned for using the White Rose Maths scheme and by using resources to consolidate their knowledge and understanding.

- Practice and consolidation play an important role to build fluency and understanding of underlying mathematical concepts.
- Teachers use careful questioning in class to test knowledge and assess children regularly to identify those requiring intervention, so that all children keep up.
- To ensure whole school consistency and progression, the school from Reception to Year 6 uses the White Rose Maths Scheme.
- Children are encouraged to explore Maths not only in a written form but also visually and verbally.
- The school uses the CPA approach- (Concrete, Pictorial, Abstract.) This encourages children to work practically and visually before relying on the abstract numbers.
- Numicon training has helped to support the CPA approach within the school and the importance of using practical resources.

Impact

- Children are supported and feel able to calculate, reason and problem solve.
- Regular and ongoing assessment is used to inform teaching, as well as intervention to support and enable the success of each child.
- More able children are challenged to fulfil their full potential.
- High standards in Mathematics are maintained throughout the school.

Teaching and Learning Years 1-6:

- Children receive a daily maths lesson, although mathematical skills run through many other areas of the curriculum.
- Each lesson focusses on one clear learning objective which all children are expected to master; extension activities enable those children who grasp the objective rapidly to extend their learning by exploring it at greater depth.
- Each lesson begins with a starter to reinforce learning or practice mental strategies to solve problems.
- Each lesson includes elements of: fluency, to practise skills; reasoning, to deepen understanding; and problem solving, to apply skills.
- Teachers use the White Rose planning and other resources to draw up medium term plans for each term, and a daily lesson plan is produced to incorporate the above elements.
- Whole class teaching is adopted and children work in mixed ability groups. All classrooms have maths displays with key vocabulary clearly displayed.
- Every classroom has a range of practical apparatus to support children's learning, with additional resources stored centrally. There is a maths cupboard opposite the deputy heads office.
- Times tables are reinforced in class 2-3 times a week as part of the mental warm up for lessons, as well as additional times tables slots for year 4. Times tables are set for homework every week in years 3-5 and tested in pupils times tables books following a systematic approach. Weekly scores are reported back to parents. (Year 2 begin in the Summer Term)
- Times Tables Rock Stars homework is set once a week.

- Arithmetic lessons are taught once a week. Teachers complete an arithmetic test one week and teach to the test the following week.
- Mathletics or Numbots are set for homework once a week in KS1 and KS2.

EYFS

The EYFS framework:

- sets the standards that all early years providers must meet to ensure that children learn and develop well
- ensures children are kept healthy and safe
- ensures that children have the knowledge and skills they need to start school.

Mathematics within the EYFS is developed through purposeful, play based experiences and will be represented throughout the indoor and outdoor provision. The learning will be based on pupil's interests and current themes and will focus on the expectations from the new Development Matters. Mathematical understanding can be developed through stories, songs, games, imaginative play, child initiated learning and structured teaching. As pupils progress, they will be encouraged to record their mathematical thinking in a more formal way. Reception have also adopted elements of the White Rose Planning to ensure continuity throughout the school.

NURSERY

By the end of Nursery children should be able to:

- Develop fast recognition of up to 3 objects, without having to count them individually ('subitising').
- Recite numbers past 5.
- Say one number for each item in order: 1,2,3,4,5.
- Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle').
- Show 'finger numbers' up to 5.
- Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.
- Experiment with their own symbols and marks as well as numerals.
- Solve real world mathematical problems with numbers up to 5.
- Compare quantities using language: 'more than', 'fewer than'.
- Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'.

- Understand position through words alone – for example, “The bag is under the table,” – with no pointing.
- Describe a familiar route.
- Discuss routes and locations, using words like ‘in front of’ and ‘behind’.
- Make comparisons between objects relating to size, length, weight and capacity.
- Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc. • Combine shapes to make new ones – an arch, a bigger triangle etc.
- Talk about and identifies the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like ‘pointy’, ‘spotty’, ‘blobs’ etc.
- Extend and create ABAB patterns – stick, leaf, stick, leaf.
- Notice and correct an error in a repeating pattern.
- Begin to describe a sequence of events, real or fictional, using words such as ‘first’, ‘then...’

RECEPTION

The Reception Baseline Assessment (RBA) is a statutory assessment from September 2021 onwards. It provides a snapshot of where pupils are when they arrive at school. It will provide a starting point to measure the progress schools make with their pupils between reception and the end of primary school. The reception baseline is an age-appropriate assessment of mathematics. It is clearly linked to the learning and development requirements of the Early Years Foundation Stage (EYFS).

By the end of Reception children should be able to:

- Count objects, actions and sounds.
- Subitise.
- Link the number symbol (numeral) with its cardinal number value.
- Count beyond ten.
- Compare numbers.
- Understand the ‘one more than/one less than’ relationship between consecutive numbers.
- Explore the composition of numbers to 10.
- Automatically recall number bonds for numbers 0–5 and some to 10.
- Select, rotate and manipulate shapes to develop spatial reasoning skills.
- Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.
- Continue, copy and create repeating patterns.

- Compare length, weight and capacity.

Reception teachers will assess at the end of Reception these ELG's in Mathematics.

Mathematics Number

- 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.

Mathematics Numerical Patterns

- 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.

KS1

The principal focus of mathematics teaching in key stage 1 is to ensure pupils develop confidence and mental fluency. The Concrete, Pictorial, Abstract approach is used to encourage children to visualise maths in different ways and see connections.

Throughout Key Stage 1, it is important that children gain a secure knowledge of number and place value and become confident when using the four operations in both formal methods as well as problem solving. Alongside number work, pupils begin to identify fractions using shapes, objects and quantities and make connections to equal sharing and grouping. Pupils will also develop their ability to recognise, describe, draw, compare and sort different shapes. They will have the opportunity to use a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money and are expected to use related vocabulary for all topics.

Links to other subjects should be made where appropriate e.g. shape through art or computing, measures through science or coordinates in geography.

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.

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, including long multiplication and division, and in working with fractions, decimals and percentages.

Assessment

- Children receive feedback through teacher assessment, both orally and through written feedback. Assessment is carried out, through marking against the learning intention for that lesson.
- At the end of the lesson, the children review their work and self-evaluate. The children then indicate how confident they feel about their learning using ? / * This is in line with the schools marking policy.
- In Years 2-6 children complete a Wow and Now half way through each unit and complete an end of unit assessment. Year 1 begin Wows and Nows in the Summer term.
- At the end of each blocked unit of work, the children in years 2-6 complete the White Rose Maths 'End of Unit Assessment'. The outcome of this is used by the teacher to ensure that any identified gaps in understanding can be addressed before the next unit is taught. This can be stuck in books at the end of the unit.
- Children complete NTS assessments termly in years 1, 2, 3, 4 and 5.
- Years 6 complete practice SATs papers.
- Teacher Assessment and Formal Assessment is combined to form a judgement of children's current level of attainment. This data is inputted to Pupil Asset each term.
- Assessment data in Maths is reviewed throughout the year to inform interventions and to also monitor progress and attainment. End of year data is used to measure the extent to which attainment gaps for individuals and identified groups of learners are being closed. This data is used to inform whole school and subject development priorities for the next school year.
- Through on-going assessment, Maths targets are set and these are discussed and reviewed with parents at Parents Evenings.

Inclusion

Teaching maths for mastery is different because it offers all pupils access to the full maths curriculum. This inclusive approach, and its emphasis on promoting multiple methods of solving a problem, builds self-confidence and resilience in pupils. Though the whole class goes through the same content at the same pace, there is still plenty of opportunity for differentiation. Taking a mastery approach, differentiation occurs in the support and intervention provided to different pupils, not in the topics taught, particularly at earlier stages. There is no differentiation in content taught, but the questioning and scaffolding individual pupils receive in class as they work through problems will differ, with higher attaining children, or those pupils who grasp concepts quickly, challenged through more demanding problems which deepen their knowledge of the same content. Those children who are not sufficiently fluent are provided additional support to consolidate their understanding before moving on. Pupils' difficulties and misconceptions are identified and addressed with intervention – commonly through individual or small group support.

2014 National Curriculum states:

'Decisions about when to progress should always be based on the security of children's understanding and their readiness to progress to the next stage.' If a child's needs are best met by following an alternative plan, including coverage of the content from a previous year, this will be overseen by the SENDCo, in collaboration with the class teacher and with the knowledge of SMT. Specific arrangements for the provision of children with SEND will be communicated to parents and carers during SEND reviews.

Equal Opportunities

The school is committed to ensuring the active participation and progress of all children in their learning. All children will be given equal opportunities to achieve their best possible standard, whatever their current attainment and irrespective of gender, ethnic, social or cultural background, home language or any other aspect that could affect their participation or the progress of which they are capable.

Each class/year group has a LSA to support children within the class. Where this support is not sufficient you may need to liaise with the SENCO. Intervention through focused SEND support will lead to the creation of a 'One Page Profile' which may include specific targets for maths.

Role of the Subject Leader:

- To support staff and NQT's with their professional development and promote Maths in the school through Maths displays and celebrating Maths achievement.
- To monitor progression and continuity of Maths throughout the school through lesson observations and monitoring of outcomes of work in Maths books.
- To ensure that all staff have access to necessary planning and resources to deliver the curriculum effectively.
- To monitor children's progress through the analysis of whole school data. This data will be used to inform the subject development plan.
- To organise, audit and purchase central and class-based Maths resources
- To encourage parents/carers to become more involved in Maths education.

- To ensure that all staff have access to training and Inset to help develop their Mathematical knowledge and understanding.

Maths Policy Updated October 2024

Next review date : October 2026