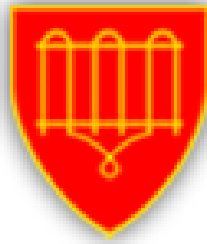


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## St Laurence CE Primary School

### Mathematics Policy

#### Vision

Our vision is for all children to enjoy mathematics and have a secure and deep understanding of fundamental mathematical concepts and procedures. We want children to see the mathematics that surrounds them every day and enjoy developing vital life skills in this subject.

Our three main values are at the core of all we do: **Creativity, trust and wisdom.**

Pupils are encouraged to think creatively when solving problems, using equipment and applying the knowledge that they already have.

Pupils will trust each other to be supportive when working together to discuss, explain and present ideas. This includes challenging and being challenged in a constructive way.

Having the wisdom to accept that we make mistakes and that these can actually help us is a key life skill and helps pupils to develop a resilient approach.

**Intent:** We aim for children:

- To develop a positive attitude towards mathematics
- To develop rapid recall of key number facts
- To become confident and proficient with number, including fluency with mental calculation and looking for connections and patterns
- To become problem solvers who can reason, work systematically and apply their knowledge of mathematics
- To talk about their maths work with confidence using mathematical language
- To become independent learners whilst also working cooperatively to learn with others
- To recognise real life applications of the maths they learn

#### Implementation

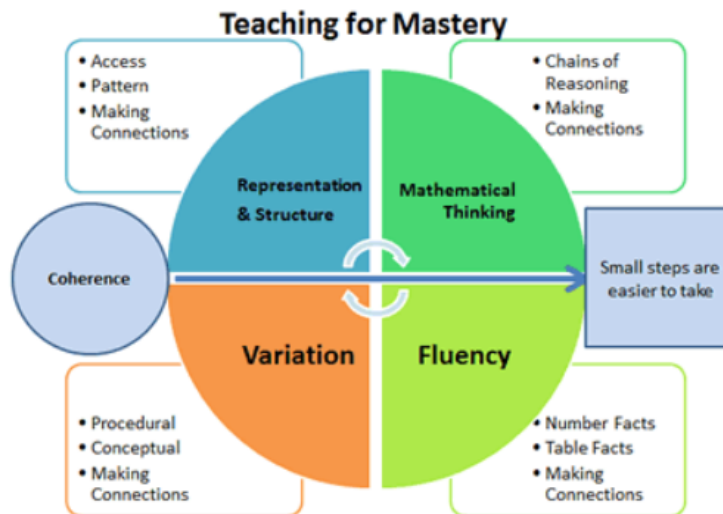
At St Laurence's we have adopted a mastery approach to the teaching and learning of mathematics. This is underpinned by the NCETM's 5 Big Ideas

- Opportunities for **Mathematical Thinking** allow children to make chains of reasoning connected with other areas of mathematics
- A focus on **Representation and Structure** ensures concepts are explored using concrete, pictorial and abstract representations. The children actively look for patterns and generalise when problem solving.
- **Coherence** is achieved through the careful planning of small, connected steps that gradually unfold the concept
- Teachers use both procedural and conceptual **Variation** within their lessons

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- There is a focus on **Fluency** throughout with an emphasis on learning key facts and times tables to automaticity.



### Teaching Principles

- Success in maths is achievable for all. We have high expectations and encourage a 'can do' mindset towards mathematics in all pupils.
- The whole class is taught together. The learning needs of individuals are addressed through careful scaffolding, questioning and appropriate intervention where necessary to provide appropriate support and challenge.
- Pupils are encouraged to reason about a concept and make connections to solve problems. Making comparisons (What is the same/different?) and *Prove it* activities are used to develop deep understanding.
- Teachers and pupils use precise mathematical language, using stem sentences where appropriate to convey their ideas with clarity and precision.
- Lessons will provide opportunities for children to talk about and evaluate their learning with adults and their peers
- Conceptual and Procedural variation are used to promote deep and sustainable learning.

### Curriculum Design and Planning

Staff use the NCETM spines as a starting point in order to develop coherent and comprehensive planning. Learning is broken down into small steps and the lesson journey is evident in carefully sequenced PowerPoints. Staff also produce a weekly plan giving an overview of the learning, highlighting key facts or stem sentences and detailing support or challenge activities. Potential misconceptions are identified in advance and mathematical language is introduced at the beginning of a unit. Contexts and representations are carefully chosen to develop reasoning skills and help pupils link concrete ideas to abstract concepts.

The following high-quality materials may also be used by staff to support teaching and learning:

- White Rose Maths Schemes of Learning and Assessment Materials
- Power Maths Textbook activities
- Target Maths Textbooks
- Nrich Problem Solving Activities

Opportunities for extra fluency practice (times tables facts, addition and subtraction facts) are also provided outside of the lesson.

Maths Assertive Mentoring tasks are completed each week in Years 2-6. This provides the opportunity for additional retrieval practice covering all aspects of mathematics. Children then have the opportunity to discuss and improve their learning or address misconceptions whilst working 1:1 with a teacher.

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### Lesson Structure

- Lessons are sharply focused
- Key learning points are identified explicitly
- Mathematical generalisations are emphasised and may be expressed through repetition of stem sentences
- Teacher led discussion is interspersed with short tasks involving paired talk and completion of short activities.
- Independent practice includes reasoning and problem-solving activities for all.
- Formative assessment is carried out throughout the lesson. Challenge (Dong nao jin) activities are available in every session.
- Intervention may be individual or small group, ideally on the same day or on the next day before the next lesson.

### Resources

Each year group is resourced with materials required to deliver maths lessons. The range of concrete materials used is detailed in the Calculation Policy. Each classroom has a Maths Working Wall which is used to support teaching and learning and is updated regularly to be relevant to the lessons currently being taught.

*My Maths* (an online maths learning tool) is used by teachers to support learning in class and at home.

Maths homework tasks may also be set on *Seesaw*, enabling parents to be involved in their child's learning.

Websites such as Top Marks or ICT Games may be used to improve children's quick recall of number facts, including times tables.

### Homework

Children in Years 1- 6 will receive a weekly homework task. In KS1, this will be linked to number fluency and times tables. In KS2, there will also be tasks to consolidate classwork.

### **Assessment**

In addition to the formative assessment undertaken daily in lessons, teachers will use end of unit assessments and termly summative assessments (during Assessment Week) supplied by NFER. These are used to reinforce judgements, identify gaps in learning and adapt future planning. Teacher assessments are entered onto iTrack each term and children needing support are identified and discussed at pupil progress meetings.

Weekly assertive mentoring tasks also provide valuable information about an individual child's progress which is used to inform teacher assessment.

Maths books are marked in line with the marking policy. A highlighting system is used to provide 'at a glance' feedback to pupils.

### **EYFS**

Children in the early years develop their mathematical understanding through direct teaching (whole class or small group), enhanced provision and continuous provision across the day, inside and out. Children are taught key concepts and develop number sense using a hands-on, practical approach. They have access to a wide range of concrete resources (not just maths equipment) in various areas of provision. We use the NCETM Mastering Number Programme and BBC Numberblocks to support the direct teaching of number and numerical patterns. Opportunities to develop understanding of shape, space and measure are identified through continuous provision. Timely adult interventions embed and extend children's learning whilst reinforcing and building vocabulary.

### **Inclusion**

St Laurence C.E. Primary aims to meet the needs of all, regardless of social class, gender, culture, religion, language, special educational need or disability. Teachers use a range of strategies to ensure inclusion and create a positive ethos. We strongly believe that all children are able to achieve in mathematics. Some may need careful scaffolding or extra time/support whilst others may require greater challenge. The use of manipulatives and additional adults is carefully considered.

### **SMSC Development**

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The study of mathematics enables pupils to make sense of the world around them. We encourage pupils to make connections between their maths skills and every-day life. Developing deep thinking and an ability to question the way in which the world works promotes the spiritual growth of pupils. Problem solving skills and teamwork are fundamental in this subject. Pupils are encouraged to explain concepts to each other in order to develop their strengths and become independent and resilient learners. Teachers explain the purpose of key aspects of maths lessons which provides an opportunity to discuss different approaches to maths from around the world

### **Cross- Curricular Links**

Maths is a subject that touches on many areas taught in our school. It contributes significantly to children's understanding of English. Children build a wide maths vocabulary and are able to articulate their maths thinking in clear sentences. Problem solving activities promote reading and comprehension. In addition to music lessons, children also enjoy stories and poetry with rhythm which can link to counting, sequencing and pattern making activities. Children may use computers to create tables and graphs and can also use simulations to identify patterns and relationships. ICT enhances the teaching of mathematics significantly enabling teachers to use representations to model new learning.

### **Role of the Subject Leader**

The subject leader's responsibilities are:

- To ensure a high profile of the subject and continued development and improvement
- To model the teaching of mathematics through open lessons or lesson studies
- To ensure that the required resources are available to deliver a concrete-pictorial-abstract approach
- To ensure progression of key knowledge and skills and support staff with planning where required
- To lead whole-school monitoring and evaluation of teaching and learning in maths
- To keep parents informed about maths at our school

Marie Mintoft May 2021

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