Mathematics Policy

November 2019

Leamington Values

Friendship Respect Honesty Determination Courage

Together we make a Difference

Leamington Community Primary School: **Mathematics Policy**
Principles and Rationale

School aims and objectives:

Mathematics teaches us how to make sense of the world around us through developing a child's ability to calculate, to reason and to solve problems in a real-life context. It enables children to understand and appreciate relationships and patterns in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics.

At Leamington Community Primary School, we aim to develop numerate children who are confident with number and understand mathematical calculations, in order to develop key problem solving skills. We promote 'Numeracy for Life' and we believe that Mathematics provides children with the essential life skills of:

- Understanding number and calculation
- Problem solving
- Enquiry
- Reasoning skills
- Finance

At Leamington Community Primary School, we provide children with a fun but focussed Maths curriculum, providing the children with the skills to become equipped for adult life. We adopt a fully inclusive, mind-friendly approach to teaching and learning in Mathematics where children are challenged sufficiently in a supportive environment with real-life links. Assessment for learning allows children and teachers to review the strategies and methods used in the lessons thus always moving learning on.

Aims:

- To develop numerate children through a ***'problem solving approach'*** and ***'Numeracy for life'.***
- Ensure every child is confident and enthusiastic when approaching Mathematical problems.
- Provide children with the skills to use and apply Mathematics in different contexts.
- Provide children with the vocabulary to talk about and explain Mathematical concepts.
- Provide children with an exciting Maths curriculum which is embedded in real life situations and practical problem solving.
- Use technology to enhance learning and teaching of Mathematics.
- Use a variety of learning styles and resources to cater for all children's needs.
- Promote positive attitudes to Maths.

Planning our Mathematics Curriculum

Mathematical development is one of our primary focus points from the moment that our children enter our school. Children need to be able to recognise numbers, identify differences, add things together and recognise shapes, time, days of the week etc. to be able to live and learn independently. We know that all aspects of learning in this area impact on our children's achievement across the curriculum and in their everyday lives.

At Leamington Primary School, we use Assessment for Learning strategies to ensure that our curriculum is designed to meet our children's needs. This has to be our starting point.

Our focus for Mathematics is ensuring that we create an immersive curriculum and constantly use opportunities in all areas of our curriculum to develop children's mathematical understanding, linked to real-life.

Planning

Mathematics in Foundation Stage 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 shapes, spaces, and measures. Here in Leamington, we ensure that children take part in fun, play-based activities which give them the opportunity to develop their problem solving skills and a love of maths. We encourage the children to explore, practise, learn and talk. Our children are given the opportunity to practise skills and gain confidence through planned activities whilst working independently in the continuous provision. Foundation Stage provision provides the children with resources for counting, calculating, measure and shape which are available indoors and outdoors. In Foundation Stage, Mathematics is made up of these aspects:

- Number
- Shape, Space and Measures

In KS1 and KS2, the staff have created a bespoke immersive curriculum that is adapted to the needs of the child. Staff use School Improvement planning documents alongside White Rose Hub planning documents and techniques given from Tara Loughran (Maths consultant) to plan Mathematics lessons with a problem solving approach in a real-life context.

At the end of the academic year the staff share areas of learning which have been identified as areas of development in the pupil's previous year's work and from teacher assessments. This is used to support the staff in creating a Mathematics curriculum that is tailored towards the needs of the children. At this point, and throughout the year, interventions are identified for specific children to close any identified gaps.

Teacher's planning in Mathematics should contain:

- Links to the narrative text.
- Child-friendly learning objectives, that have a clear learning focus.
- Clear differentiation with SEN and More Able children identified and provided for.

- Opportunities for discussion and reasoning.
- A clear balance between learning and teaching.
- A problem based approach where appropriate, with opportunities for real-life problem solving.
- Clear plenaries which consolidate learning as well as move learning forward.
- Support staff working with a range of children.
- Challenge through investigations to broaden the children's understanding.
- Progression through the different areas of mathematics.
- Clear purpose to promote a positive attitude towards Mathematics.
- Evaluations to inform next steps.

Daily Mathematics lesson.

In most cases this will adhere to the structure of a typical maths lesson which will include a mental and oral starter linked to a main lesson linked to a plenary. The objective should be linked to the focus and year group targets. All work in the lesson should link to this objective. Teaching should follow the school calculation policy.

Mental and Oral starters should include; opportunities for counting, recall of facts, i.e. number bonds, times tables, deriving facts, reasoning, application and open ended questions.

A variety of teaching styles should be used over the course of the week. Cooperative learning styles should include, e.g. pair-share, group work etc.

Differentiation should be evidenced through questioning, resources and additional support. The main teaching input will also include appropriate differentiated tasks that allow challenge for all levels of ability.

Within each lesson, mini plenaries will be used where appropriate as opportunities for formative assessment to reinforce learning/ move learning on and address any misconceptions. Capturing progress is key and mini plenaries are a valuable way to assess and make key judgements on how to move learning on. Plenaries provide opportunities to ensure that the pupils have grasped the objective and made progress so that the next lesson can begin on firm foundations. A plenary should confirm, extend and invigorate learning. It has to be about learning and not just consolidation.

Lessons, where appropriate, will contain a problem solving approach and real-life link in any aspect of the session.

Mind Friendly and Active Learning

Our Learning and Teaching policy states that children learn best when they are engaged and active participants in their learning. Mind-friendly learning gives teachers opportunities to challenge children's thinking in a non-threatening way, whilst embedding learning. This also helps to promote positive attitudes to Maths.

We recognise that Mathematics lessons should **not** be dominated by teacher talk. Children can use whiteboards, clocks, show me activities, talking partners, mind maps, flash cards and number fans etc. Children should be given thinking time before answers are expected, opportunities to

share ideas with a partner and then a group before feeding back to the class. This reinforces learning and develops speaking and listening skills. We believe that 'talking maths' strategies are essential if we are going to develop numerate children with secure reasoning skills who are confident to explain their thinking. Teachers will aim to complete one active maths lesson a week, this can take place outside, in the hall, on the corridor or in class.

Time for Reflection

It is paramount that children are given time to reflect on their learning at the end of every lesson. Rather than being a time to show examples of good work, children should be given a range of ways to reflect on their learning journey. This will help consolidate learning and highlight misconceptions. It should also be a time for children to extend the skills they have learnt that lesson in a different way, maybe as a word problem with a real life context, missing number problem or a puzzle. It is essential to achieving *mastery* that our children can recognise what skills and knowledge they need in a variety of contexts. It also provides children time to explain their learning and gain confidence when discussing Mathematics.

Calculation Policy

At Leamington Community Primary School the staff agreed to follow the progression of written calculations detailed in the School Improvement Liverpool calculation policy. The policy is located on the staff shared drive and school website.

The essential components of the Calculation Strategy are;

- **Children's mathematical development should be progressive and structured.**
- **In all lessons children should be taught a core strategy.**

Children's work, application of skills in problem solving and teachers' professional judgements will inform when a child is proficient in one method and ready to be challenged by the next step.

It is important to stress that when using the Calculation Policy:

- Children will be encouraged to approximate their answers before calculating.
- Children will be encouraged to check their answers after calculations are made.
- Children will be encouraged to consider if a mental calculation is appropriate before using written calculations.

Liverpool Counts Quality Mark:

To add to our work in Mathematics, the school has also participated in the Liverpool Counts Quality Mark and achieved Gold status. The aims of the quality mark include (taken from the LCQM handbook):

The specific remit of the Quality Mark is to tackle the negative attitudes towards numeracy and mathematics which are prevalent in many areas of our society.

We aim to challenge these widely held views and promote a culture where people readily understand the impact good numeracy skills and mathematics qualifications can have on the social, financial, health and employment aspects of their lives.

We also aim to support teachers and other adults in our schools to encourage pupils to make connections in their numeracy and mathematics lessons to real life contexts and with other areas of their school experiences.

The school has developed a real-life problem solving approach to Mathematics to meet the aims of the quality mark, thus providing purposeful learning and 'Numeracy for Life' skills to our children.

Equal Opportunities:

As mentioned in the Disability Equality Scheme, all reasonable adjustments will be made to allow all stakeholders to have access to the full curriculum regardless of any disability. Any child with a disability will have targets tracked and planned for to ensure they have full access to the curriculum, and that good progress is made. Every pupil, regardless of gender, ability, racial, linguistic, cultural or religious background is entitled to the curriculum at Leamington.

This is a Safeguarding School

We have a duty to safeguard and promote the welfare of children.

If we have any concerns that a child may be suffering harm, we have no choice but to refer to Social Services when appropriate.

- The Designated Safeguarding Lead is Mrs Iris Kelleher.
- The Deputy Designated Safeguarding Lead is Mrs Rachel Mellor.
- The nominated governors for Safeguarding is Mrs Dawn Mercer.
- Copies of the school's Child Protection and Safeguarding policy can be found on the school website and can be obtained from the school on request.

This policy also links with:

- School Improvement Liverpool Calculation policy.
- Teaching and Learning policy.
- School Improvement Liverpool planning documentation.