

St Levan Primary School

where all children SHINE-for life

Maths Policy

Spring 2017

(To be reviewed initially Autumn 2018)

Philosophy

The new National Curriculum states that:

"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."

At St Levan we see Maths very much as a multi-discipline, cross curricular, interconnected subject which should encourage creativity. We want the children to see Mathematics as being relevant to their world and applicable to everyday life as well as being something that they will need as they move on through their school life and ultimately to the world of employment. We also want our children to develop a love and appreciation for mathematics in its own right as a remarkable subject. To that end, a high-quality, inter-related and creative Maths experience should be one that develops the children's ability to think mathematically and one which allows them to apply the tools to which they have been exposed in a variety of ways.

Following the introduction of the new National Curriculum in 2014 the emphasis has been to ensure that all children:

- Become **FLUENT**
- **REASON** and **EXPLAIN** mathematically
- Can **SOLVE PROBLEMS**

This means that children need to be regularly exposed to opportunities involving increasingly complex problem solving which allows them to apply their Maths knowledge to a greater depth. In doing so they should be encouraged to develop an argument and line of enquiry which they can prove and justify using mathematical vocabulary. This includes the ability to break down problems, both routine and non-routine, into a series of steps.

Aims

We want to teach Maths in a way that:

- delivers Maths in line with new National Curriculum guidelines
- provides a relevant, challenging and enjoyable curriculum and learning experiences for all pupils
- ensures that there is continuity and progression in maths throughout the school in line with the guidance from the Early Years Foundation Stage and the National Curriculum
- develops mental imagery through use of concrete ideas
- challenges children to stretch themselves and take risks in their learning becoming problem solvers
- develops mental strategies and fluency
- encourages children to use mathematical vocabulary to reason and explain
- develops skills in correct use of equipment
- encourages children to work systematically and to appreciate the importance of accuracy and meaning
- ensures children in Key Stage 1 are secure in their understanding of number and number relationships
- involves parents as much as possible in their children's mathematical learning
- ensures the delivery of Maths allows for cross curricular opportunities
- ensures children develop a positive attitude to maths so they are confident and competent in their ability to apply maths in different contexts
- creates a lively, exciting and stimulating environment in which the children can learn Maths
- promotes the concept that acquiring Maths knowledge and skills provides the foundation for understanding the world around the children
- allows time for partner talk in order to stimulate and develop a curiosity for Maths
- creates a sense of awe and wonder surrounding Maths

Approach

A calculation policy was developed in 2014 in line with the New National Curriculum requirements. The programmes of study set out within each area in the new National Curriculum will be used to ensure children get the learning experience that is required.

It is important that children are allowed to explore Maths and present their findings not only in a written form but also visually; to that end the school will adopt a problem solving approach to mathematics which allows children to use imagery to support them working through a problem.

All teaching staff at St Levan attend staff meetings that regularly have a Maths focus, which provide information on current thinking and introduces them to new teaching methodologies and ideas. For example, this term, teachers have looked at how to develop times table teaching and different questioning specifically in mathematics.

As far as possible we plan and set our work out in meaningful contexts, giving the maths we teach a real purpose. Our curriculum maps highlight the opportunities for making maths work cross-curricular and relevant to the children's learning in other areas. Our planning is flexible and can be adapted to fit in with special occasions and celebrations, ensuring that the children experience maths as a vital and vibrant subject, which is an essential part of their world. For example, each year, children are challenged to grow £5.00 with a project of their choice. Teachers use their professional judgement concerning the most appropriate grouping and teaching styles for the activities. Modelled, shared and guided approaches are selected to develop whole class, targeted groups and independent learning needs for all children.

As far as CPD is concerned, teachers attend courses looking at new methods, approaches, reasoning, problem solving and mastery at greater depth. In addition, staff who are teaching at the end of each key stage (both teachers at our school) have received CPD addressing the requirements of the new National Curriculum particularly in relation to assessment and moderation.

Parental Involvement

It is important that parents and carers are actively involved in the children's education. In order to help keep them informed of what is happening within school we have run a series of parent and child workshops focussing on the *four pillars of mathematics* outlined by Dr Ruth Merttens. Parent's evenings occur regularly where pupils' progress and attainment are discussed, targets shared and ideas given for what can be done at home to support children. Our small size enables us to keep regular contact with parents.

Homework

Parents are provided with a homework overview which outlines the learning objectives for the week and suggests activities that can be carried out at home which will help to consolidate and develop their child's learning. These may include number games or puzzles, some number facts to learn, or activities that make use of the home context or require children to collect data or make measurements. Parents are encouraged to record how their child has responded to the activities, by using the homework sheet as a form of communication with the teacher.

Planning and Assessment

Teachers work individually within the curriculum framework to plan and deliver lessons that suit the particular learning styles of the children within the year groups of the class (Class 1: R, Yr1, Yr2 Class 2: Yr3, Y4, Yr5, Yr6). They use their own judgement and use of formative assessment to ensure a flexible approach is adopted which recognises the pace of learning within the classroom. Individual, paired and group work is used across a series of lessons and children are given challenges and open-ended problem solving tasks to demonstrate their understanding.

Planning demonstrates the various challenges available to children, together with AfL (Assessment for Learning) opportunities (speaking and listening and self/peer assessment) and teacher assessment.

Short term planning in maths is carried out on a daily basis allowing teachers to respond to the needs of the children. These plans include learning objectives, (WALTs), success criteria (WILFs), warm up and the main activity, specific resources to be used (including TA support), differentiation, guided groups, key vocabulary and key questions and opportunities for formative assessment.

Across a range of lessons children should be allowed to engage in mathematical discussion (talk partner or group work), investigations, problem solving, practical experiences and written methods, as well as allowing for time to demonstrate their understanding through challenge and mastery at greater depth tasks. Planning is annotated daily to inform next steps.

Assessment is ongoing and is based on the learning objectives for the lesson. We see assessment as central to the teaching and learning process, enabling us to plan work appropriately to match the needs of the children. We do this as much as possible through direct observations, discussion, questioning, marking, testing and note taking. These assessments directly inform planning.

In order to inform planning and to assess children's progress, teachers will use the assessment programme *Mappix* which tracks the children's progress and understanding across assessment criteria objectives from Year 1 to Year 6. This will be updated regularly and informed by annotated plans and work in children's books.

Children will be assessed through the application of tests termly; this summative assessment will be used in conjunction with the information from *Mappix* to identify next steps and therefore inform planning, targets and interventions. KS2 currently use tests from TestBase (midyear and end of year) and Twinkl as well as sample and past papers from KS2 SATs testing. KS1 currently use tests from Twinkl as well as tests developed by the class teacher based on *Mappix* data.

Children will be provided with feedback either verbally or through written marking. Often, in order to clarify understanding of a concept, children will be set a challenge task, (NCETM mastery documents give examples of mastery material) but not for every lesson; these are completed by the children at the next earliest opportunity after the lesson and will often be in 'purple polish time'. When marking work teachers adhere to the school's Marking Policy.

Resources and Displays

Each classroom is resourced with materials to support the delivery of Maths; such items should include number lines, multiplication tables, 100 squares, 2D and 3D shapes, multilink cubes, dice and other smaller items. Larger materials such as scales, trundle wheels and measuring cylinders will be held centrally in the store cupboard outside.

Children are encouraged to use whatever resources are available to them in the classroom and which they feel would be beneficial to help them when completing Maths work.

Each classroom has a display dedicated to Maths to support learning; this could be in the form of a working wall, strategy board or problem solving area and pupil voice should be evident.

We have interactive boards in each classroom with laptops with internet access. We ensure, at the planning stage, that we include the use of maths software and websites to enhance the children's learning in many areas of maths.

Audits are carried out and new resources budgeted for and ordered as required.

Management of the subject

Our maths coordinator will

- ✓ Seek to enthuse pupils and staff about maths and promote achievement
- ✓ Advise and support staff in the planning, delivery and assessment of maths
- ✓ Manage and develop maths resources
- ✓ Monitor and evaluate maths throughout the school (including work scrutiny and data analysis)
- ✓ Monitor the maths curriculum and update the school's policy in accordance with national guidelines and curriculum statements
- ✓ Continue to develop the calculation policy (in an concrete, pictorial, abstract manner) to support children and staff
- ✓ Attend courses and disseminate any relevant information to staff through inset and informal conferencing
- ✓ Ensure continuity and progression from year group to year group
- ✓ Advise on in-service training to staff
- ✓ Advise and support staff on the implementation and assessment of maths throughout the school
- ✓ Take an active part in the setting up and running of Network Clusters of Schools to ensure that best practice in mathematics is disseminated and government funding is used to advance and enhance the quality of teaching and learning in our local schools. (Specific focus planned with the Maths Hub focusing on mastery in schools with mixed age classes)

Role of governors

We have one named governor who assumes responsibility for the curriculum in the school by meeting regularly with the Head teacher and the curriculum co-ordinator and taking an overview of provision and standards in mathematics.

Inclusion

In line with the School's Inclusion Policy each child will have an equal entitlement to all aspects of the Maths curriculum and to experience the full range of Maths activities. Therefore, in delivering Maths, care will be taken to ensure that a variety of learning styles are accessed and teaching methods adopted.

Intervention groups will take place both within the Maths lesson and outside; these sessions may be delivered by the teacher or teaching assistant and may involve individual or small group work, accessing both ends of the learning spectrum.

Success Criteria

This policy will support teachers in the delivery of the objectives from the Framework and Early Years Foundation Stage Framework. It will enable our school to meet our aims and objectives and to ensure that we foster an understanding and enjoyment of mathematics. It will be reviewed on a two yearly cycle.

Monitoring and review

The Headteacher is responsible for monitoring the implementation of this policy and for seeking the views of staff, children and parents. The Headteacher will report to the governing body on the effectiveness of this policy.

This policy was approved by the full governing body in September 2016. It is due for review by September 2019.