

St Luke's C of E Primary School Mathematics Policy

This policy is intended to be read by teachers, teaching assistants, parents, governors, inspectors, support staff and staff from other schools with which we may have links.

1. INTRODUCTION

Mathematics is a creative and highly interconnected 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.

The National Curriculum for Mathematics describes what must be taught in each key stage and is followed closely at St Luke's. This ensures continuity and progression in the teaching of mathematics. This policy follows a whole-school format and rationale.

2. RATIONALE

All school policies form a public and accountable statement of intent. This policy is intended to create an agreed whole-school approach of which staff, children, parents, governors and other agencies have a clear understanding. It reflects the essential part that mathematics plays in the education of our children. It is important that a positive attitude towards mathematics is encouraged among all children and staff in order to foster self-confidence and a sense of achievement. The policy also explains how we, as a school, meet our legal requirements in this subject area.

3. SCOPE

This statement of policy relates to all children, staff, parents and governors of St Luke's. The age range, and any SEN, of children in the school is acknowledged in the creation of this policy and the development of the mathematics curriculum.

4. PRINCIPLES

Key to the effective implementation of this policy document are the following key principles:

- policy and provision are evaluated and reviewed regularly
- resources (time, people and equipment) are planned, budgeted for, and detailed when appropriate in the School Improvement Plan
- the governing body of St Luke's discharges its statutory responsibilities with regard to mathematics
- cross-curricular links will be highlighted where appropriate
- planning of mathematics ensures continuity and progression across all abilities, year groups and key stages.
- the document should be read in conjunction with the school calculation policy (Appendix I).

5. AIMS

Although relating specifically to mathematics, our aims for the subject are also in line with the school's general aims.

We aim to provide the children with a mathematics curriculum that will nurture individuals who are numerate, literate, creative, independent, inquisitive, enquiring and confident. We also aim to provide a rich environment and stimulating resources so that children can develop their mathematical skills to full potential.

Pupils should attain the targets set out in the National Curriculum programmes of study for mathematics. All pupils:

- should become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- should reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- should be able to solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

6. PROVISION

Children will be provided with a variety of opportunities to develop and extend their mathematical skills in and across each phase. ICT is used across all phases when it is considered appropriate by the class teacher.

In the Foundation Stage, mathematics is taught in a variety of ways.

- Through a main teaching input where the children are actively involved in the learning process. A new concept is either taught or reinforced using a range of practical, more formal and physical methods.
- Through ‘WOW challenges’ where the children complete a task related to the teaching input or previous learning.
- Through ‘Continuous Provision’ where mathematical activities are put out for the children to complete through their own independent learning.
- Through adult intervention/questioning where the children are challenged to extend their own play ideas and apply their mathematical knowledge to new situations.
- Through interactive whiteboard games both during carpet time and in continuous provision.
- Regular whiteboard sessions where number formation, ordering, addition and subtraction activities are practised.

At Key Stages 1 & 2 most lessons will follow the format of having a mental/oral starter, a main teaching activity and a plenary session (or mini-plenaries). Maths will be taught within sets based within each teaching unit (Years 1 and 2, Years 3 and 4, and Years 5 and 6). Pupils will be allotted to sets according to the class teachers' opinion of their needs. In general, there will be one set for each year group, and one set to fulfil the function of a support group. However, it is recognised that sometimes children will be better served by more flexible grouping.

The teaching of mathematics at St Luke's will provide opportunities for

- group work
- paired work
- whole-class teaching
- individual work.

Children engage in:

- the development of mental strategies (as set out in the school's calculation policy)
- written methods (as set out in the school's calculation policy)
- practical work

- investigation work (including prediction)
- problem-solving
- mathematical discussion
- consolidation of basic skills and number facts
- directed ICT time (including use of the school's tablets)

We recognise the importance of establishing a secure foundation in mental calculation and recall of number facts in order to facilitate the use of standard written methods. We aim to use mathematical vocabulary accurately and see its use as an essential part of good maths teaching. Children are expected to use it in their verbal and written explanations.

Mathematics contributes to many subjects and it is important that the children are given opportunities to apply and use mathematics in real contexts.

It is important that time is found in other subjects for pupils to develop their mathematical skills. For example, there should be regular, carefully planned opportunities for measuring, properties of shape and geometric patterns, presentation of data in subjects across the curriculum. In addition, opportunities should be taken to provide mathematical activities during Early Morning Work slots and other short periods. We endeavour at all times to set work that is challenging, motivating and which encourages the children to talk about what they have been learning.

6.1 Early Years - See Statutory Framework for the Early Years Foundation Stage, Setting the standards for learning, development and care for children from birth to five, Published March 2014.

(https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/299391/DFE-00337-2014.pdf)

6.2 Key Stages 1 and 2 - See Mathematics Programmes of Study: Key Stages 1 and 2, National Curriculum in England

(https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/239129/PRIMARY_national_curriculum_-_Mathematics.pdf)

7. ASSESSMENT

Assessment is regarded as an integral part of teaching and learning and is a continuous process. It is the responsibility of class teachers to assess all children in their class. The guidance here should be read in conjunction with the school assessment policy document.

In our school we continually assess our pupils and record their progress against National Curriculum objectives. We see assessment as an integral part of the teaching process and strive to make our assessment purposeful, allowing us to match the level of work to the needs of the children, thus ensuring maximum progress.

Information for assessment will be gathered in various ways:

- talking to the children (including using feedback from LSAs)
- observing work (including using feedback from LSAs)
- marking work
- during oral sessions, including both starters and plenaries, including the use of fans, e.g.
- using test results

Teachers will use assessment to plan further work. Assessment notes are expected to be shown as annotations on weekly plans, which will then be adapted or revised accordingly.

In the Foundation Stage, Baseline Assessment takes place within the first half term of the children's entry in to school and the results are entered on Target Tracker. This is then updated half termly.

In KS2 children will be expected to perform a termly written test which is age specific and, together with teacher assessment, helps to provide a level for work performed that term.

8. ROLE OF SUBJECT MANAGER

The mathematics coordinator is responsible for coordinating mathematics through the school. This includes:

- ensuring continuity and progression from year group to year group
- providing all members of staff with guidance and access to a scheme of work to show how aims are to be achieved and how the variety of all aspects of mathematics is to be taught
- advising on in-service training to staff where appropriate. This will be in line with the needs identified in the School Improvement Plan and within the confines of the school budget
- advising and supporting colleagues in the implementation and assessment of mathematics throughout the school
- assisting with requisition and maintenance of resources required for the teaching of mathematics. Again this will be within the confines of the school budget.
- monitoring progress over time
- ensuring that any child who makes less than a whole level progress over 2 years is placed on an PPP for maths and that future progress is tracked.

9. ROLE OF CLASS TEACHER

- To ensure progression in the acquisition of mathematical skills with due regard to the National Curriculum for mathematics.
 - To acquire, plan, and develop the use of exciting and motivating resources.
 - To develop and update their skills in and knowledge and understanding of mathematics.
 - To identify INSET needs in mathematics and take advantage of training opportunities.
 - To keep, and to supply the coordinator with, appropriate on-going records.
 - To plan effectively for mathematics, liaising with coordinator when necessary. Planning should use the Abacus format, but must show clearly how lessons are being utilised and adapted to pupil needs. In particular:
 - Group names should be shown, together with core, support or extension;
 - Weekly homework should be indicated;
- To inform parents of pupils' progress, achievements and attainment.

10. PERFORMANCE INDICATORS

Performance indicators, which are the criteria for success of the school's mathematics policy at St Luke's, are

- at KS2 (target for year)
- at KS1 (target for year)
- children enjoy mathematics
- children talk confidently about what they are doing in mathematics.

11. INCLUSION AND EQUAL OPPORTUNITIES

Every child has an entitlement to a broad, balanced, meaningful and relevant maths curriculum. We recognise that each child is unique in terms of characteristics, interests, abilities, motivation and learning needs. At St Luke's we recognise children's different learning styles and preferences and aim to provide learning contexts for visual, auditory and kinaesthetic learners. Those children with exceptional learning needs will have equal access to high-quality and appropriate maths education.

We incorporate mathematics into a wide range of cross-curricular subjects and seek to take advantage of multicultural aspects of mathematics. All children have equal access to the curriculum regardless of their gender, race, cultural background or disability. This is monitored by analysing pupil performance throughout the school to ensure that there is no disparity between groups.

12. HOME LEARNING

Homework is important to help children develop as confident mathematicians. At St Luke's we believe that home learning should be closely linked to work carried out in class, and that it is important that parents are kept informed about expectations and are encouraged and supported in helping their children.

- Homework activities should normally be differentiated.
- In order to achieve consistency, Abacus (Activelearn) activities will normally be set each week.
- Leaflets (dealing with basic calculations or times tables, for example) will be prepared and circulated in order to assist pupils' learning and to support parents (see Appendix II, e.g.).

13. SOCIAL, MORAL, SPIRITUAL AND CULTURAL DEVELOPMENT

We address children's social development through the playing of mathematical games, the use of discussion and the opportunities for collaborative work. Moral development is addressed by exploring the ways in which right and wrong are sometimes fixed within mathematics and how this compares with other subjects and aspects of life. Spiritual development may occur when exploring the relationships and patterns within mathematics, which can inspire a feeling of wonder and awe. Mathematics offers many opportunities for the exploration of other cultures, for example the multiplication methods of the ancient Chinese, the structure of Japanese numbers or the patterns of Islam. In other senses, mathematics can be regarded as culture-free. Children with English as an additional language who have previous knowledge of written numbers and mathematical symbols may find that written mathematics is an excellent form of communication in the early days of integration into an English-speaking classroom.

14. HEALTH AND SAFETY

Consideration for health and safety is of the utmost importance in maths. Appropriate storage and handling methods are taught to all children. The children are taught to follow simple instructions to control the risks to themselves and others. Teachers make sure that Teaching Assistants are aware of safety procedures.

15. PARENTAL INVOLVEMENT

We encourage parents to be involved by

- inviting them into school twice-yearly to discuss the progress of their child
- inviting them into school in the summer term to discuss the yearly report
- inviting them to curriculum evenings
- encouraging parents to help in classrooms
- holding workshops for parents focusing on areas of mathematics.

16. GOVERNING BODY

We have an identified governor for numeracy and they have reviewed Primary Framework training and are invited to attend relevant school INSET. The numeracy governor visits the school regularly to talk with the subject coordinator and, when possible, observes some daily mathematics lessons.

The numeracy governor reports back to the full governors on a regular basis.

APPENDIX

Appendix I – School Calculation Policy

Appendix II – Times tables support booklet