



Little Sutton Primary Mathematics Policy

Introduction

This policy outlines the teaching, organisation and management of the mathematics taught and learnt at Little Sutton Primary School.

The school's policy for mathematics is based on the 2014 National Curriculum. The policy has been drawn up as a result of staff consultation and has the full agreement of the Governing Body.

Aims

'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.' Using the Programmes of Study from the 2014 National Curriculum it is our aim:

- To 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
- To **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- 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
- To embed a **mastery approach** to learning by ensuring all children have a deep structural knowledge and the ability to make connections
- To encourage **personalisation** by ensuring all children work independently and collaboratively and be able to select appropriate materials for the task set, in a responsible manner.

Organisation and planning

The National Curriculum for Maths is used by all teachers to ensure that all parts of the programme of study are taught. The programme of study is split into various strands which directly relate to maths at Key Stage 1 and Key Stage 2. Within each key stage, there is the flexibility to introduce content earlier or later than set out in the programme of study.

Children in the Foundation Stage work towards the Early Learning Goals by following Development Matters and work is planned with links to other curriculum areas so that the children have a range of learning experiences. Pupils have access to a variety of play based activities alongside more structured teaching and opportunities for self- initiated learning.

School written calculation policies for each of Addition, Subtraction, Multiplication and Division have been agreed by the LTE and Little Sutton staff to ensure continuity and progression throughout the school. Copies of these sheets are passed on to the new class teacher to help with this progression. **See Appendix 1 for LTE Calculation Policy.**

Year 1 and 2 teach as classes. In Years 3 and 4, the children are taught in Gender groups. Mixed ability grouping is also introduced in Year 5 and 6. These groups have the support of a teaching assistant.

Teachers plan on a weekly basis taking into consideration the needs of the set/class following the National Curriculum statutory guidance. These are matched up to the weeks available at the beginning of each year by the maths team leader. Problem solving, thinking activities and investigations are also planned into strands where applicable. If lessons involve straight number work then a problem is planned so that children can apply their skills. The context of work for Gender groups is considered and planned for. Mental maths objectives have been taken out of the medium term planning and are together in a Maths Passport. Children work through this at their own pace through the school. **See Appendix 2 for Guidelines to Maths Passports.**

Planning is available on the planning drive and is used as an ongoing tool. On the maths weekly planning the focus for the pre-starter/starter, depth of learning and, where applicable, resources are listed. Some lessons will involve cross-curricula planning.

Ways in which we teach

The daily mathematics lesson is appropriate for almost all pupils. Mastery approaches focus on ensuring pupils engage through the curriculum at the same pace. However, work is also appropriately differentiated to meet the needs of individual pupils including Special Educational Needs and more able children (see relevant sections). Resources are therefore differentiated, modified and used imaginatively to support learning, and Teaching Assistants play a valuable part in supporting the effective delivery of daily mathematics lessons for all pupils. Teachers and Teaching assistants rotate and support around the groups each week.

We also continually aim to improve the accuracy and speed of children's mental skills according to their starting points. As a result, each child in school has a Maths passport. The targets are varied and represent the mental maths targets from the National Curriculum. Children are encouraged to know their targets. Children in the Foundation Stage start with their own targets taken from the Early Learning Goals and during the course of the year start on the Maths passport. Targets are set from this on a regular basis as those set are achieved and parents have a list of all the targets at home. Parents can thus keep track of children's progress. **See Appendix 2 for Guidelines to Maths Passports.**

Creative Curriculum opportunities

As part of the creative curriculum, maths may be taught through themed weeks or a 'topic' on a termly basis e.g. Enterprise week. As many units as possible are also taught through other subjects e.g. Statistics through Science. Such approaches and activities provide an ideal opportunity for children to apply the knowledge and skills learnt in the daily Maths lesson to more open-ended investigative tasks thus developing their confidence and enjoyment of Maths.

Social, Moral Spiritual and Cultural (SMSC)

Mathematics contributes to our pupils SMSC development particularly through:

- Spiritual development: helping pupils obtain an insight into the infinite, and through explaining the underlying mathematical principles behind patterns.
- Moral development: helping pupils recognise how logical reasoning can be used to consider the consequences of particular decisions and choices and helping them learn the value of mathematical truth.
- Social development: through helping pupils work together productively on complex mathematical tasks and helping them see that the process is often exciting than simply trying to achieve an answer.
- Cultural development: through helping our pupils appreciate that mathematical thought contributes to the development of our culture and is becoming increasingly central to our highly technological future, and through recognising that mathematicians from many cultures have contributed to the development of modern day mathematics

Teaching Strategies

The range of teaching styles will include; problem solving and investigating, practical work, consolidation and practice, mathematical discussions and mental and oral maths. Objectives are covered through a range of teaching and learning experiences which include individual, group and whole class work, mathematical discussion, practical work and games.

Each class has a daily lesson and this is planned using a common format. Lessons start with chanting of Mental maths e.g. number bonds or times tables. Each lesson generally consists of an oral/mental starter, a main activity and a plenary, but the actual structure of the lesson can be changed to suit the needs of the lesson and lesson objectives e.g. the mental starter may be left out if more time is needed in the lesson. If a starter is not relevant for one group, they may start on their activities straight away. In themed weeks such as Enterprise, Arts week or Health Week, lessons may be delivered in a different format.

The children are encouraged to work independently, using Lead Learners to help when necessary. They use the 4B's when they get stuck on a task and are encouraged to use 'help boxes' of equipment available in class. Working walls also allow children to see examples of the tasks they are undertaking.

Equal opportunities

Little Sutton Primary School is committed to ensuring that it meets its specific duties in relation to current equality legalisation. As an inclusive school we recognise the need to tailor our approach to also support all pupils including those disadvantaged and on the Pupil Premium register. The Mathematics curriculum is accessible to all pupils regardless of race, gender, class, culture or disability. Pupils will have equal opportunity to develop their full potential in all areas of the mathematics curriculum. The contributions of all children will be respected and valued.

Gifted and Talented

The approach of math mastery aims to stretch pupils including the more able pupils.

In the foundation stage, children are provided with differentiated tasks in each mathematical session. The more able are extended with targeted questioning and those which complete the early learning goals before the end of the year will be provided with specifically tailored activities.

Across the school, tasks are differentiated in order to challenge these pupils. When working with the whole class, teachers will also direct some questions towards the more able to maintain their

involvement. In years 5 to 6, more able pupils will be taught in a group with children of similar ability in their year group. They are challenged daily with more extension activities provided in order to maintain their involvement.

The school also provides a number of in-house opportunities (such as Maths Challenges and Inter-house maths competitions) for all children to succeed. The school also has access to a number of 'Gifted and Talented' Mathematics competitions and workshops with our partners within the Learning Trust for Excellence (LTE). Enrichment is also provided through additional expertise from outside agencies to support the more able mathematicians.

SEN

Teachers will aim to include all pupils fully in their daily mathematics lessons. During lessons we provide learning opportunities that enable all pupils to make progress. We do this through a focus on mastery approaches and responding to each child's different needs and using practical resources to support conceptual approaches.

Should progress fall significantly outside the expected range, the child may have special educational needs. Intervention through School Action will lead to the creation of an individual Target Plan (ITP) for children with special educational needs. The ITP may include, as appropriate, specific targets relating to mathematics. (See SEN Policy).

Sometimes SEN pupils may receive additional one to one support to further help them access the mathematical work through Teaching Assistant support to help build the confidence of target children.

Computing

Computing provides opportunities for pupils to develop logical thinking by using graphic packages and spreadsheets to solve numerical, algebraic and graphic problems. Databases and spreadsheets and simple programming are also used to present and analyse data.

All classrooms have either Smart or Interactive Whiteboards with a wide range of resources available for them on Activ Inspire. Each classroom has at least one computer, access to Ipads, up to 12 laptops for a year group. Abacus Evolve, MyMaths, Planet Sherston Software and Education City are examples of some of the programs which can be used to practice skills and support the daily maths lesson as well as a wide range of activities on websites. **Appendix 3** details many of the websites that are also used to support teaching and learning. There is also timetabled access to the computer suite.

Ipads, Roamers and Beebots are used to explore computer control leading to the computer language, logo. Foundation Stage also have access to remote control toys. Calculators are available in all classrooms but are used as an additional resource to aid number concepts.

Resources

In Foundation Stage and Year 1, each child has a Maths book and a folder to record work. Abacus Workbooks are sometimes used in Year 1. Some children in Year 2 work in Abacus Workbooks and a few children in KS2 who need the extra support for some concepts. From Year 2 upwards, children record their work in their maths books, but also have a Learning Journal. This allows the children to choose the way they record results of investigations and when a particular activity needs plain paper, rather than squared. It also encourages conceptual understanding.

There are a number of published schemes which are used to support and enhance mathematical learning. These vary according to each year group and a variety of frameworks are used to stretch

the more able pupils in each topic in their year group. In particular, the school uses a combination of materials from recommended publishers from NCETM including Shanghai Maths and White Rose materials. Other key resources include Pearson, Collins and Rising Stars to support mastery approaches to learning.

Materials considered necessary for everyday use are kept in the classroom, labelled and easily accessible to encourage independent use by children. Staff are encouraged to have help boxes in their classrooms, which children can help themselves to if they need extra resources during lessons. Structured apparatus is shared by the whole school is centrally stored in labelled cupboards/shelves in the Mathematics Resources Room located near to the Library. Textbooks are stored in classrooms. Resources are monitored, updated and added to regularly (**see Appendix 4 on Foundation /KS1 and KS2 resources**).

Various recommended website addresses are constantly being issued to staff and are used for ideas, resources and games within lessons. A wide variety of problem solving games and word problem cards, alongside ICT programmes which provide our children with a rich, broad and balanced curriculum (**see Appendix 3 on Foundation /KS1 and KS2 resources**).

Children in the Foundation stage work towards the Early Learning Goals using a wide range of practical and computing resources but not a formal scheme.

Marking

Work is marked according to our School marking policy and indicates whether or not the Learning Objective has been achieved. Close the Gap tasks are set for those children who have not achieved their targets and these are followed as soon as possible. See Marking Policy.

Homework

Homework is set each week throughout school. Mental maths skills are set each week based on the maths passport. Homework is varied between sheet and online work as appropriate to the teaching.

Monitoring and Assessment

Children's progress with mental maths is continually being monitored through the maths passport. Children are assessed against targets taken from Classroom Monitor. Each objective is then highlighted in different colours so that progress for different times of the year can be monitored. Children's targets are shared with the next teacher at the end of the year to ensure continuity and progression.

We also carry out formal assessments in each year group

- Years 2 and 6 are assessed by Teacher assessments and SATS tests in May
- Years 3,4 use NFER/Rising Stars tests for assessment in the second half of the Summer Term
- Year 1 and 5 use school based tests and SATS tasks in the second half of the Summer term

Children in the Foundation Stage are baselined in September to provide an accurate starting point for each pupil. Pupils are then continually assessed throughout the year and progress towards the Early Learning Goals is monitored. Results of assessments from all other year groups are recorded in mark books and through Classroom Monitor, these are analysed by the maths team, Phase Teams and Leadership Team. Results of assessments are used to inform planning, groupings and to identify underachievement so that targeted support can be put in place. Staff meet in Phase teams to moderate work and agree levels. At the end of each academic year, a

written report is given in maths and parents are informed of SATS results. Termly progress against targets is discussed at Parents' Evening.

Maths teaching and progress is evaluated and monitored by the Maths Curriculum Team, Phase Teams and Leadership Team. This includes monitoring of planning, lesson observations, book scrutinies and Pupil conferencing.

Health and Safety

Little Sutton Primary School is committed to ensuring pupils have a positive and enthusiastic attitude towards mathematical activities in a safe environment. All staff ensure that all equipment is safe for use and carefully stored in an appropriate place. Pupils are also encouraged to learn how to take responsibility for their own safe practice, i.e. to use mathematical apparatus safely, to work in a limited space and being aware of others. Staff regularly audit equipment on a termly basis to ensure it is safe to use

Safeguarding

Little Sutton Primary School is committed to safeguarding and promoting the wellbeing of all children and expects its staff and volunteers to do the same. The school follows the Safeguarding Policy for Schools and Education and throughout all lessons, we are therefore committed to fulfil this, as specified in the Safeguarding Policy, part 1, subsection 9

In particular, Little Sutton Primary School monitors online activity to ensure that inappropriate mathematical (and sites in general) are not accessed by pupils or staff. This is done with specialist online monitoring software.

Where children are completing interventions or working with groups, in designated areas around the school, pupils are supervised whilst walking to and from the classrooms for the period of learning.

This policy was approved by the governing body on 21st March 2017.

This policy will be reviewed in March 2020