

Description of policy formation and consultation process

This policy outlines the teaching, organisation and management of the mathematics taught and learnt at South Kilworth C of E Primary School.

The policy has been drawn up as a result of staff discussion and has the full agreement of the Governing Body. The implementation of this policy is the responsibility of all the teaching staff.

This policy should be read in conjunction with the LASA Calculation Policy.

General principles

Mathematics will be taught to all pupils throughout the school in ways appropriate to their ability. It will be taught as a single subject and in cross-curricular topics.

The school Equal Opportunities Policy applies to the teaching of Mathematics, as to all other subjects. All pupils will be encouraged to work to their full potential.

Aims

Mathematics is a tool for life. To function in society, we all need to be able to communicate mathematically. We must ensure that the children in our care leave our school with high standards of numeracy.

In our teaching of mathematics at South Kilworth Primary, we hope to:

- inculcate an enjoyment and love of maths
- enable pupils to have opportunities for mathematical thinking and discussion
- provide opportunities for pupils to demonstrate and use their mathematics,
- provide a role-model by using mathematics for practical purposes, organisational and administrative tasks
- give pupils opportunities to use mathematics in everyday situations
- help pupils to understand that mathematics is a powerful tool for communication
- instil confidence at using mathematics
- encourage pupils to take responsibility for their own learning

Planning and Delivery

The programme of study set out in the statutory order for mathematics forms the content of the school mathematics curriculum in the Foundation Stage, Key Stage 1 and Key Stage 2.

It is the responsibility of all teachers who teach mathematics to ensure that all have access to the programme of study for mathematics at an appropriate level. The entitlement in Key Stage 1 and Key Stage 2 is outlined in the Framework for Teaching Mathematics that ensures that each pupil undertakes work from each attainment target during each term. The curriculum guidance for the Foundation Stage details the content of the mathematics curriculum in the Early Years.

Each year group writes medium term plans for each half-term in the light of pupil progress and adjusts these if necessary to suit the children within their class.

Each teacher also writes short-term plans for units of work, detailing how the mathematics is to be taught, the resources used and the differentiated activities and opportunities that will be available to support learning.

Mathematics will be taught across other subjects when possible and there will be a daily dedicated maths lesson. Planning will be monitored at regular intervals with regard to the efficacy of teaching and learning.

All the children will have opportunities to:

- work at their own ability level
- work in pairs and in small and large groups
- use calculators and computers
- use a wide range of mathematical tools/instruments
- rehearse mental strategies and skills

The tasks or activities:

- will bring together different areas of mathematics
- will be balanced between those which develop knowledge, skills and understanding, and those which develop the ability to tackle practical problems
- will be balanced between those of short duration and those which have scope for development over an extended period
- will promote constantly the use of mental calculation
- encourage confidence in the use of mathematical tools
- will involve both independent and co-operative work
- will be both of the kind that have exact results/answers and those that have many possible outcomes
- will encourage a positive attitude
- will be balanced between different modes of learning
- should help children to develop their personal qualities, including:
 - ◊ motivation and willingness to 'have a go'

- § flexibility and creative thinking
- § perseverance, reliability and accuracy
- § willingness to check, monitor and control their own work
- § independence of thought and action
- § ability to co-operate within a group
- § systematic work habits
- § expectation to use a known fact to help work out unknown facts

Early Years (Reception)

The development of mathematical thought is an important area of experience for children in the Early Years. Learning in mathematics should be primarily first-hand, experiential and active. Play and talk are essential to the learning process. This delivery will be supported by: the Curriculum Guidance for the Foundation Stage, the Framework for Teaching Mathematics, Development Matters and other available teaching resources.

We recognise that some children will be ready to embark upon the National Curriculum during their time in Reception. We need to be aware of this and ensure that such children undertake work that is appropriate to their ability.

Years 1 - 6

Pupils will follow the requirements of the National Curriculum. Developing mathematical language, reasoning and skills in applying mathematics should be set in the context of the other areas of mathematics. Measurement should be associated with handling data and shape and space. Calculating skills should be developed in number and through work on measures and handling data. Algebraic ideas of pattern and relationships should be developed in all areas of mathematics.

In Key Stage 1 there is a daily mathematics lesson and a weekly number bond test will also be completed. All pupils in Key Stage 2 have a daily mathematics lesson alongside this a weekly times table test will also be conducted.

Classroom Organisation and Expectations

Classroom organisation for mathematics will be such that the children are encouraged to show independence in choosing the resources/materials needed for a task and to promote self-motivation/organisation.

We will endeavour to:

- ensure the environment is stimulating and supportive
- create challenging activities in which children can experience success
- value the achievement of each child

- build upon the knowledge and skills which children have gained formally and informally
- give the children mathematical experiences which match their ability and stage of development, are structured and maintain a good pace
- organise both collaborative and individual activities
- make clear to the children the purpose and relevance of any mathematical activity
- keep records of the children's progress and achievements and set realistic targets
- encourage independent use of a variety of apparatus and equipment
- use maths in cross-curricular topics wherever appropriate
- ensure children meet the same mathematical ideas in a wide variety of contexts

Pupils with special educational needs and individual education plans

Teachers will aim to include all pupils fully in their daily mathematics lessons. All children benefit from the emphasis on oral and mental work and participating in watching and listening to other children demonstrating and explaining their methods. However a pupil whose difficulties are severe or complex may need to be supported with an individualised programme.

Cross Curricular Links

Mathematics is used in other curriculum areas wherever possible or appropriate. This helps to expand and consolidate mathematical concepts and using maths in a purposeful way in everyday contexts helps the children to realise that mathematics is important in the real world.

Programs on classroom computers and laptops are used to consolidate number skills, explore patterns in data, compare measures of distance, angles and time and reinforce the correct use of mathematical language.

Calculators are used in mathematics for a range of purposes:

- Pupils in KS1 are introduced to calculators and the patterns generated by them
- Pupils in KS2 are taught basic functions of a calculator
- Calculators are not used for basic calculation where a mental or written method is more appropriate but as a resource to check work, number pattern investigations or to perform calculations that are part of a larger problem.

Inclusion

Activities are planned to encourage the full and active participation of all pupils irrespective of ability. Teachers use questioning techniques to involve pupils of all abilities during whole class work and differentiate tasks to suit individual needs during the main part of the lesson. Where appropriate, children will have mathematics targets on the Individual Education Plans and these targets will be met within and outside of the daily maths lesson.

Tasks in mathematics follow the whole school policy on equal opportunities.

Out-of-class work and homework

The daily mathematics lessons will provide opportunities for children to practice and consolidate their skills and knowledge, to develop and extend their techniques and strategies, and to prepare for their future learning. These will be extended through out-of-class activities or homework. Homework is set on a weekly basis in KS1 and KS2 and includes games and investigations to be completed together at home. For further details please see South Kilworth Primary Homework Policy.

Teaching Strategies

Mathematics teaching at all levels should include opportunities for

- ◆ Modelling by the teacher to include:
 - directing - sharing the teaching and learning objectives, drawing attention to particular points
 - instructing - giving information on how to do a particular process/activity
 - demonstrating - showing, describing and modelling mathematics
 - explaining and illustrating - accurate, well-paced explanations referring to previous work or methods
 - evaluating pupils' responses - identifying mistakes and using them as positive teaching points
 - summarising - reviewing during the lesson what is being taught/learned
- ◆ discussion between teacher and pupils
- ◆ interactive involvement of pupils through carefully planned questioning
- ◆ appropriate practical work
- ◆ consolidation and practice of fundamental skills, vocabulary and routines
- ◆ problem-solving, including the application of maths to everyday situations
- ◆ investigational work
- ◆ rehearsal of mental strategies

Mathematics is a search for patterns and relationships.

We will endeavour to:

- provide opportunities to discover and investigate patterns and describe and record relationships
- encourage exploration and experiment, trying things out in as many different ways as possible
- encourage ways of ordering or arranging, combining or separating; looking for similarities or differences
- help children generalise from their discoveries using correct vocabulary

- help children understand and see connections between mathematical ideas

Mathematics is a creative activity, involving imagination, intuition and discovery.

We will endeavour to:

- value and allow time for trial-and-adjustment approaches
- view unexpected results as a source of further enquiry rather than mistakes
- encourage the creation of mathematical structures and designs
- encourage the formation and manipulation of mental images
- foster initiative, originality and divergent thinking
- encourage questions, conjectures and predictions
- encourage children to find and explain their own methods

Mathematics is a way of solving problems.

We will endeavour to:

- help children identify information and ways to obtain it
- encourage logical reasoning, consistency and systematic working
- ensure the development and use of skills and knowledge necessary for solving problems
- help children know how and when to use different mathematical tools
- help children discover and invent their own mathematical problems

Mathematics is a means of communicating information or ideas.

We will endeavour to:

- make time for both informal conversation and formal discussion about mathematical ideas
- introduce appropriate and varied mathematical vocabulary
- create opportunities for describing properties, for giving examples, for clarifying or explaining, for predicting results.....
- encourage reading and writing about maths, and representing and structuring ideas using pictures, symbols, diagrams, graphs.....

Presentation

Children will be encouraged to set work out neatly and to show their method of working out so that the work can easily be talked through. The date will be written at the top. All work will be accompanied by a learning objective.

Marking will identify the extent to which the learning object has been met and will include next steps relevant to that piece of work. Target stamps will also be used to indicate when a piece of work shows evidence of the child working towards their current target.

The children's books/folders will demonstrate the wide variety of mathematics work undertaken throughout the year. These may contain examples of symbolic, graphical, diagrammatic, pictorial, written and group (photocopied) work. They may also contain a teacher's note about oral work and annotated photographs of any practical work.

Please see Presentation and Marking policies for further information.

Assessment and Recording

Assessment will take place at three connected levels: short-term, medium-term and long-term. These assessments will be used to inform teaching in a continuous cycle of planning, teaching and assessment.

Short-term assessments will be an informal part of every lesson to check their understanding and give you information, which will help you to adjust day-to-day lesson plans.

Medium-term assessments will take place termly in the form of APP completed on classroom monitor.

Long-term assessments will take place towards the end of the school year to assess and review pupils' progress and attainment. These will be made through compulsory National Curriculum mathematics tests for pupils in Years 2 and 6 and supplemented by the optional QCA tests for children in Years 3, 4 and 5. Teachers will also draw upon their class record of attainment against key objectives and supplementary notes and knowledge about their class to produce an annual Teacher Assessment Summative Record. Accurate information will then be reported to parents and the child's next teacher.

Targets

All children within the school have personalised Numeracy Targets. For KS1 and KS2 these targets are kept in the front of Numeracy books and dated when they have been met. Previous targets are kept as evidence of the child's progress. In Foundation Stage the individual's targets are located in the back of the Learning Journeys.

The Role of the Co-ordinator

The co-ordinator will endeavour to:

- ❖ ensure understanding of the requirements of the National Numeracy Strategy and National Curriculum Mathematics
- ❖ keep up to date with developments in maths teaching
- ❖ observe colleagues and monitor plans and quality of teaching with the Head teacher
- ❖ lead by example in the way of teaching in own classroom
- ❖ prepare policy documents as necessary
- ❖ advise colleagues, help develop expertise and monitor the teaching of maths throughout the school
- ❖ encourage the development of valid maths activities that are appropriate, differentiated and enable progression
- ❖ encourage use of ICT as appropriate in supporting teaching/motivating pupils
- ❖ liaise with Key Stage 1 and 2 staff, Headteacher, Governors, parents and advisers as necessary
- ❖ work co-operatively with the SENCO
- ❖ provide feedback to the Governors
- ❖ use the school budget to buy appropriate resources and equipment
- ❖ Complete resource audits
- ❖ To keep up-to-date by attending courses and feedback sessions organised by LEA, Cluster groups or other colleagues.

The over-riding task must be to provide support for all who teach mathematics and so improve the quality and continuity of mathematics teaching and learning throughout the school.