

Lewknor C of E Primary School
Mathematics
October 2014 – Review October 2017

Mathematics equips pupils with the uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem solving skills and the ability to think in abstract ways. Mathematics is important in everyday life. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a healthy and enthusiastic attitude towards mathematics that will stay with them.

The National Curriculum order for mathematics describes what must be taught in each key stage. Lewknor Primary School follows the National Curriculum (2014), which provides detailed guidance for the implementation of the Curriculum for mathematics. This ensures continuity and progression in the teaching of mathematics. In early years the curriculum is guided by the Early Learning Goals.

National Developments

The policy has been written taking into account the Programme of Study for Mathematics. As these national documents are re-written and further guidance is developed reviewing this policy will be necessary.

Aims

At Lewknor School we aim to enable pupils to:

- learn the facts and techniques that they will need to study the subject further and for everyday life
- think logically and clearly
- solve problems using the most appropriate method
- reach the highest standard possible and to think for themselves within the subject
- be creative and imaginative, to appreciate the power, pattern (and beauty) of Mathematics, and use appropriate vocabulary
- be confident to talk about their work
- be confident to work using mental methods
- to have good numeracy skills
- to have a fascination of mathematics and promote a way of doing mathematics
- harness their imagination, initiative and flexibility of mind
- build children's confidence in mathematics by creating an 'I can do this!' culture in the classroom
- work systematically and to show a respect for accuracy, clarity and meaning
- encourage children to work both independently and co-operatively

Objectives

These may be considered in five main categories. These briefly are:

- Facts - pupils need to know and remember some basic facts at each level if progress is to be made. These include terms, notation conventions and outcomes
- Skills - include not only the use of number facts and computational procedures but also practical skills and the ability to communicate

- Conceptual Structures - interconnecting bodies of knowledge involving understanding relationships, the ability to select to use Maths in context and to interpret results.
- General Strategies - the ability to estimate, approximate, simplify, reason, test hypotheses, prove, disprove and identify patterns
- Personal Qualities – foster good work habits and develop confidence in the subject along with a positive attitude

Breadth of Study

Through careful planning and preparation we aim to ensure that throughout the school children are given opportunities for:

- practical activities and mathematical games
- problem solving
- individual, group and whole class discussions and activities
- open and closed tasks
- a range of methods of calculating e.g. mental, pencil and paper and using a calculator
- working with computers as a mathematical tool

Organisation

There is a mathematics lesson every day and we expect this subject to take up at least five hours each week. Mathematics teaching is carried out by each class teacher. In every class children are grouped according to their ability.

Teaching and Learning

Early Years Foundation Stage

Children follow the Early Years Foundation Stage Curriculum. We give all children the opportunity to talk and communicate in a widening range of situation and to practise and extend their range of vocabulary and numeracy skills. They have the opportunity to explore, enjoy, learn about, and use mathematics in a range of situations. Mathematics is planned on a half termly basis and assessed using the criteria from the Early Learning Goals. Mathematics is taught both as a discrete subject and within the whole Early Years Curriculum to give children opportunities to use their Numeracy skills in real life situations.

Key Stages 1 and 2

The class will work on the same unit, allowing the teacher to work with the whole class, with groups of pupils and, at times with individual pupils. Mostly pupils will work in differentiated groups, but at times teachers may group the pupils differently in order to enable different pupils to work together.

Each week every pupil will receive whole class and group teaching. Pupils must be given the opportunity to talk about their mathematics as well as listening to the views of others. In addition the teacher may discuss the children's thinking.

We follow the National Curriculum for Mathematics which ensures continuity and progression in the teaching of mathematics. The planning structure for each year is organised with reference to Abacus Maths. (**Overviews of each year groups** - App. 1) and progression in matched to this planning structure. (**Progression of skills** – App.2)

Much of the planning is sourced from the Abacus Maths scheme and the websites 'Hamilton Trust' and 'Click Teacher'. Teachers use this planning as a basis and then adapt them according to their class, resources and groups. We also use supplementary materials as well as a mixture of games, puzzles and investigations.

Each class has its own SMARTBOARD which are used on a regular basis through a range of packages. This may be for the mental warm up, the main teaching, a plenary or throughout the lesson.

In addition all classes are equipped with pupil whiteboards which allow the children to work individually or as part of a group. These are available to the children in all sessions.

Mental Working / Recording

We want pupils to work mentally whenever possible. We teach pupils to choose a suitable paper and pencil method or a calculator method - when working mentally is not possible.

In line with the New Curriculum, we set aside approximately ten minutes every day to work with pupils on their mental methods. This helps them to learn number bonds and tables as well as developing their facility and confidence with numbers.

We aim to help pupils develop written methods that reflect their mental processes. Teachers should decide for individuals and groups, how far to encourage them to develop these methods in "Standard" type approaches. We must look carefully at the work of each individual to understand their thinking in order to decide how to help them develop their methods.

Periodically teachers test number, with pupils competing against their previous scores rather than against other pupils. Generally the facts tested will be different for different groups of pupils.

Formal Written Calculation Methods

It is important that pupils experience a consistency of approach in developing formal written methods for calculating. At Lewknor, staff have agreed that there should be a consistent approach and have set guidelines in place to ensure this for addition, subtraction, multiplication and division. (**Calculation Policy** –App. 3)

Calculators and other Resources

Pupils use calculators from Key Stage 2 onwards, where it is appropriate to do so. We teach them how to use them, and set tasks that enable them to learn to choose when to use them. When we expect pupils to work with calculators (mentally or to help them develop their pencil and paper methods) we specify this.

Most resources are kept in classrooms and in shared areas, accessible to pupils. We teach pupils how to use them and recognise that we need to teach them to make appropriate choices of equipment.

Assessment and Target Setting

Children are informally assessed by the class teacher during and after a unit of work in order to inform their planning. Formal assessments are completed at least three times a year to assess the children's levels in mathematics.

We prepare pupils for Key Stage 1 & 2 SATs so that they can achieve as well as possible.

Each half term we plan a formal review of the progress made by each pupil and use this to plan for the next half term. Information from these formal and informal assessments are recorded by the teachers and at the end of the academic year are recorded on to Electronic tracking system which will then be passed to the next teacher.

Children are set group targets throughout the year, according to their unit of work. The target sheets are stuck on the inside front cover of every child's maths book. When a child has passed a target it is highlighted in discussion with the teacher. Teachers will then discuss the next target with the children.

Equal Opportunities

We aim to provide for all children so that they achieve as highly as they can in Mathematics according to their individual abilities. All children have equal access to the Mathematics curriculum and to suitable learning opportunities regardless of gender, disability, ethnicity or home background. We aim to identify which pupils or groups of pupils are under-achieving and take steps to improve their attainment through an individually tailored programme of intervention. More able children are also identified and additional provision is mapped. Activities and work are differentiated to enable all to take part. Children with SEN are included in quality first teaching. Children with Pupil Profiles that identify learning difficulties in mathematics have additional provision.

Monitoring

The class teachers will monitor the approaches stated in this policy. In addition the Maths Co-ordinator and Head teacher will monitor Maths throughout the school. Strategies used will include sampling children's work and observations, looking at records and plans.

Marking

All work should be marked and appropriate comments recorded relating to performance, presentation, organisation and accuracy. See also the school's Marking Policy.

Parental Involvement

We recognise that parental involvement is an important factor in helping children achieve their best and actively encourage parents to become involved with their children's development in Mathematics through:

- parents' meetings twice a year, along with opportunities to look at children's work
- the school's 'open' attitude to visits from parents/carers, where teachers make themselves available whenever a discussion need is identified
- use of the Home Learning Pack, maths games