



# FULMER INFANT SCHOOL

## MATHEMATICS POLICY

There are four main purposes to this policy:

- To establish an entitlement for all pupils
- To establish expectations for teachers of this subject
- To promote continuity and coherence across the school
- To state the school's approaches to this subject in order to promote public, and particularly parents' and carers', understanding of the curriculum

### Introduction

Mathematics is not a subject in its own right. It is a skill which is acquired through being taught Mathematics effectively.

Mathematics is a proficiency which involves confidence and competence with numbers and measures. It requires an understanding of the number system, a repertoire of computational skills and an inclination and ability to solve number problems in a variety of contexts.

Mathematics demands practical understanding of the ways in which information is gathered by counting and measuring, and is presented in graphs, diagrams, charts and tables. Mathematics is the application of number and computational skills across the curriculum and in daily life.

Through our approach to the teaching of Mathematics we aim to achieve good standards of mathematics in all our pupils.

### Expectations

By the end of Key Stage 1, the performance of the great majority of the pupils should be within the range of levels 2 to 3. Most pupils are expected to achieve level 2.

### The aims of Mathematics and how these contribute to the school's aims

The school aims to:

- Provide a relevant, challenging and enjoyable curriculum for all pupils
- Meet the requirements of the National Curriculum programmes of study
- Cover the National Curriculum in ways which give particular emphasis to mathematics skills
- Promote Mathematics as an essential element of communication, which allows pupils to describe, illustrate, interpret, predict and explain
- Provoke an appreciation of the relationships in Mathematics; that Mathematics is not an arbitrary collection of disconnected items
- Show pupils the fascination of Mathematics and promote ways of doing Mathematics which harness their imagination, initiative and flexibility of mind

- Build pupils' confidence by creating an "I can do this" ethos in the classroom
- Encourage pupils to work systematically and to show a respect for accuracy and meaning
- Encourage pupils to work independently and with others
- Develop mental imagery

## **Strategy for implementation**

### **Entitlement and curriculum provision**

During the Early Years Foundation Stage, in the Reception year, our aim is for pupils to cover a broad curriculum that leads towards achieving the national expectations as described in the Early Learning Goals. In this way, the pupils are ready to take a full part in the dedicated Mathematics lesson by the end of the year. In order to achieve this, lessons are comprised of: a whole class introduction, involving some counting, with finger games, number rhymes and songs; and a plenary for the whole class to discuss what has been learnt and for the teacher to assess and reward progress. The pupils may undertake group activities at the same time or activities may be structured across the school day, according to the pupils' age, stage of development and level of maturity.

From Year 1, all pupils have a dedicated Mathematics lesson every day. Lessons last about 45 minutes.

### **Teaching and Learning**

We aim to provide all pupils with some direct teaching every day, which is oral, interactive and stimulating. Teaching styles and lesson structure provide opportunities for pupils to consolidate their previous learning, use and apply their knowledge, understanding and skills, pose and ask questions, investigate mathematical ideas, reflect on their own learning and make links with other work.

Our approach to teaching is based on four key principles:

- A dedicated Mathematics lessons every day
- Direct teaching and interactive oral work
- An emphasis on mental calculation
- Activities differentiated in a manageable way so that all pupils are engaged in Mathematics related to a common theme, unless group objectives are diversely different

As much time as possible is spent in each lesson in direct teaching and questioning of the whole class, groups or individuals. There is an appropriate range of elements in the teaching, namely directing, instructing, demonstrating, explaining and illustrating, questioning and discussing, consolidating, evaluating responses and summarising. Pupils are encouraged to make decisions, communicate their understanding to others and to reason. Teachers aim to create an environment where pupils are secure and feel confident in being able to take risks in their learning.

Teachers are responsible for planning and teaching all elements of the Mathematics curriculum to their pupils. The Mathematics leader provides support and guidance to all teachers. Teachers are supported by teaching assistants in KS1, whose work is directed by the teacher. In general, their role is to help the pupils they work with derive as much benefit and make as much progress in lessons as possible. They take part in staff development and have regular discussions with teachers about the purpose of activities and the progress that pupils they work with make.

### **Assessment and recording**

Assessment and recording are undertaken at three levels: short-term, medium-term and long-term.

## **Short-term assessments**

Teachers keep their own informal records of those pupils whose progress is markedly different from that which is expected. These informal records are notes of anything which surprises them, either in terms of a lack of understanding or exceptionally good progress.

These observations are supplemented by:

- Short, informal tests focusing on rapid recall of mental calculation skills

## **Medium-term assessments**

Each unit of work is evaluated using information arising from short-term assessment and medium-term assessments. Teachers highlight termly plans to indicate the extent to which:

- Pupils have met the objectives
- Pupils have responded but the objective needs more attention
- Objectives were not covered, or pupils did not achieve them

Every term assessment activities are planned which involve a range of ideas and skills linked to one or more of the key objectives covered previously. Assessments are made as a result of this work. Teachers provide constructive written and oral comments (not marks out of 10) on any written work produced as soon as possible after the assessment activity in order to help pupils to appraise their own performance and focus on what they need to do to improve. The pupils' progress in achieving the key objectives is recorded.

As a result of these assessments, individual targets are discussed with pupils. These targets are related to the list of key objectives. Parents are kept informed about these through target interviews.

Short and medium-term assessments are designed to be largely formative.

## **Long-term assessments**

These are undertaken through a combination of teacher assessment. Tests, such as the end of year 2 tests, may be used to further inform teacher assessment.

Summative teacher assessments are made in relation to each child at the end of each year. At the end of each year, teachers use their informal records (from short-term assessment), their class record of key objectives (from medium-term assessment) and their highlighted termly plans to support them in writing annual report to parents.

## **Continuity and progression**

The yearly teaching objectives and the termly planning sheets from the Framework are used consistently by all teachers to ensure continuity and progression across the school. Teachers also use the supplement of examples in the Framework to ensure that planned activities, irrespective of the age and ability, are pitched at the right level.

## **Inclusion**

All pupils are included in the daily Mathematics lessons and have experience of direct, interactive and lively teaching appropriate for their age and stage of development. During the mental oral session, teachers use a mixture of questions directed at the whole class and some questions pitched specifically at particular groups or individuals within the class, in order to ensure the involvement of all pupils. Teachers leave sufficient "thinking time" after questions and use a balance of open and closed questions. During the main teaching activity, teachers plan activities, which are differentiated around a single mathematical theme. Across each week all pupils have the opportunity discuss their learning during the plenary.

## **Able, Gifted and Talented Pupils**

Pupils on the register for Able, Gifted and Talented have challenging targets and can be supported through extension work; other support can be accessed as seen appropriate.

## **Learning resources**

Resources that are used regularly are available as appropriate in all classrooms.

## **The learning environment**

Classrooms are stimulating learning environments. Displays contain a mixture of:

- Problems to stimulate imagination
- Prompts to help pupils develop an image of number and the number system (for example number squares and number lines) and to help them remember key facts and vocabulary
- Pupils' work which celebrates achievement

## **Homework**

Homework is set for pupils in Key Stage 1. This consists of short tasks, which consolidate and develop work done in lessons.

These tasks are varied, interesting and fun. They must motivate and stimulate pupils' learning and encourage good study skills and may comprise of the following:

- Activities that make use of the home context
- Number games or puzzles
- Activities requiring pupils to collect data or take measurements
- Problems to think through and decide how they might be solved

## **The role of parents and carers**

The role of parents is very important and school seeks to support the education partnership between home and school. Parents may become involved in the following ways:

- Regular opportunities for parents to have confidential discussions about their child's progress with the teacher
- Prominent displays around the school which promote the subject
- Through work sent home which might require parents to work with or help their child
- Understanding in the subject through information evenings and information leaflets

## **The contribution of Mathematics to other subjects in the curriculum**

### **Literacy**

- Teaching mathematical vocabulary and technical terms
- Asking pupils to read and interpret problems
- Expecting pupils to locate and discuss the Mathematics in problems
- Expecting pupils to explain, argue and present their conclusions to others, both orally and in writing

Literacy supports Mathematics, for example in the Early Years Foundation Stage and Key Stage 1. Stories, rhymes and songs are sometimes chosen which rely for their appeal on the pleasure of counting, the sequencing of events, and the use of everyday words such as "on" and "under", "up" and "down" to describe position or direction.

## **ICT**

Computers may be used to encourage pupils to:

- Explore, describe and explain number patterns (e.g. by using a counting programme or a spreadsheet)
- Practise and consolidate certain number skills (e.g. by using programmes designed to sharpen the rapid recall of mental skills or to remember the names of 2-D shapes)
- Explore and explain patterns in data (by using data-handling applications)
- Estimate and compare measures of length or distance, angle and time (by using a floor robot or a programme which allows the child to navigate a point around the screen)
- Experiment with, and discuss properties of, patterns in shape and space (by using applications that transform shapes and create geometric patterns)

## **Spiritual development**

Pupils are encouraged to be aware of the power and beauty of Mathematics, to reflect on and celebrate their own abilities, as well as those of others, and to see how Mathematics can sometimes give insight into situations which go beyond the physical.

## **Personal, social and health education**

The ability to work collaboratively as well as individually is an essential quality in good Mathematics learning. Group work and problem solving activities are a regular feature of lessons so that pupils develop qualities such as tolerance and the ability to see other points of view. These activities encourage pupils to develop their own strengths when working as a member of a team.

## **Leadership and management**

### **Staff development and training opportunities**

As a result of monitoring and evaluation procedures and the whole-school staff development policy, individual teachers and whole-school needs are identified.

### **Leadership and management roles**

The Headteacher and Mathematics leader is/are responsible for supporting the development of effective teaching across the school. The main roles are to:

- Ensure that teachers are familiar with the Renewed Framework and help them plan lessons
- Prepare, organise and lead training, with the support of the Headteacher
- Support the Headteacher in carrying out an audit and agreeing an action plan with staff and the governing body
- Work co-operatively with the SEN Co-ordinator in providing advice and support to staff
- Attend training to broaden their knowledge of Mathematics and Mathematics teaching
- Make reports to the governor responsible for mathematics the school's progress in implementing the Revised National Mathematics Strategy
- Lead, manage and monitor the implementation of the Revised National Mathematics Strategy, including monitoring teachers' planning and the quality of teaching in classrooms
- Manage the school's allocation of funds for training, including the release time for staff (e.g. to observe leading Mathematics teachers, demonstration lessons in school, shared teaching sessions or support for planning)

The Governor's role is to:

- Meet with the Headteacher and Mathematics leader to discuss the school's progress and future plans

- Hold discussions with teachers and observe some teaching with the co-operation and advice of the Headteacher or the subject leader

### **Staff development and training opportunities**

Whole school training needs are identified as a result of the monitoring and evaluation programme; the subject is monitored and evaluated in line with school policy.

### **Related Policies and Other Documents**

Able, Gifted and Talented Policy  
Assessment, Recording, Reporting Policy  
Curriculum Policy  
Inclusion Policy  
Marking and Feedback Policy  
School Plan  
SEND Policy  
Teaching and Learning Policy