

# William Gilpin C.E. Primary School

## Mathematics Policy

### 1 Aims and Objectives

- 1.1** Mathematics teaches us how to make sense of the world around us through developing a child's ability to calculate, to reason and to solve problems. It enables children to understand and appreciate relationships and pattern in both number and space in their everyday lives. It is a whole network of concepts and relationships which provide a way of viewing and making sense of the world. It is used to analyse and communicate information and ideas and to tackle a range of practical tasks and real life problems.
- 1.2** Mathematics equips pupils with uniquely powerful ways to describe, analyse and change the world. Pupils who are functional in mathematics and financially capable are able to think independently in applied and abstract ways, and can reason, solve problems and assess risk.
- 1.3** Using the Programmes of Study from the National Curriculum and the National Numeracy Strategy Framework for Teaching Mathematics it is our aim to develop:
- ✓ a positive attitude towards mathematics and an awareness of the fascination of mathematics;
  - ✓ competence and confidence in mathematical knowledge, concepts and skills;
  - ✓ an ability to solve problems, to reason, to think logically and to work systematically and accurately;
  - ✓ initiative and an ability to work both independently and in cooperation with others;
  - ✓ an ability to communicate mathematics;
  - ✓ an ability to use and apply mathematics across the curriculum and in real life;
  - ✓ an understanding of mathematics through a process of enquiry and experiment.

### 2 Teaching and Learning Style

- 2.1** The school uses a variety of teaching and learning styles in mathematics lessons. Our principal aim is to develop children's knowledge, skills and understanding in mathematics. We do this through a daily lesson that has a high proportion of whole-class and group-direct teaching. During these lessons we encourage children to ask as well as answer mathematical questions. Wherever possible, we encourage the children to use and apply their learning in everyday situations.
- 2.2** In all classes there are children of differing mathematical ability. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies - in some lessons through differentiated group work and in other lessons by organising the children to work in pairs or groups on open-ended problems or games. We use classroom assistants to support some children and to ensure that work is matched to the needs of individuals.
- 2.3** We use ICT and the interactive whiteboard to enhance the children's learning where appropriate.
- 2.4** When appropriate, we use the TASC (Thinking Actively in a Social Context) wheel to help provide a framework for problem solving in mathematics and to encourage children to experiment with a range of methods of working and calculation.

**2.5** Throughout the whole curriculum opportunities exist to extend and promote mathematics. Teachers seek to take advantage of all opportunities.

### **3 Mathematics Curriculum Planning**

**3.1** Each class teacher is responsible for the mathematics in their class in consultation with and with guidance from the mathematics leader. The approach to the teaching of mathematics within the school is based on three key principles:

- ✓ a mathematics lesson every day;
- ✓ a clear focus on direct, instructional teaching and interactive oral work with the whole class and group;
- ✓ an emphasis on mental calculation.

Each class organises a daily lesson of between 45 and 60 minutes for mathematics.

**3.2** Mathematics is a core subject in the Curriculum and we use the National Numeracy Strategy Framework for Teaching Mathematics as the basis for implementing the statutory requirements of the programme of study for mathematics.

**3.3** We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term). The National Numeracy Strategy Framework for Teaching Mathematics gives a detailed outline of what we teach in the long term.

**3.4** The planning structure for each year is organised into five blocks. The structure is the same for each year group. A block is designed to cover the equivalent of 6 weeks or 9 weeks of teaching. Each block has incorporated into it objectives from the Using and Applying mathematics strand and from two or three of the other core strands. The blocks are:

- Block A: Counting, partitioning and calculating.
- Block B: Securing number facts, understanding shape.
- Block C: Handling data and measures.
- Block D: Calculating, measuring and understanding shape.
- Block E: Securing number facts, relationships and calculating.

Each block is made up of three units. A unit represents 2 or 3 weeks of teaching.

**3.5** Our medium-term mathematics plans give details of the main teaching objectives for each term and define what we teach. They ensure an appropriate balance and distribution of work across each term.

**3.6** It is the class teacher who completes the weekly plans for the teaching of mathematics. These weekly plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught.

**3.7** 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 eg. mental, pencil and paper and using a calculator;
- ✓ working with computers as a mathematical tool.

#### **4. The Foundation Stage**

- 4.1** Teaching in the Reception class is based on objectives set out in the Foundation Stage Profile; this ensures that they are working towards the 'Early Learning Goals For Problem Solving, Reasoning and Numeracy'.
- 4.2** We give all the children ample opportunity to develop their understanding of number, measurement, pattern, shape and space through varied activities that allow them to enjoy, explore, practise and talk confidently about mathematics through play based activities.

#### **5. Teaching Mathematics to Children with Special Educational Needs**

- 5.1** At our school we teach mathematics to all children, whatever their ability. Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our mathematics teaching we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. Assessment against the NNS Framework allows us to consider each child's attainment and progress against expected levels.
- 5.2** Within the daily mathematics lesson teachers not only provide activities to support children who find mathematics difficult but also activities that provide appropriate challenges for children who are high achievers in mathematics.

#### **6 Assessment and Recording**

- 6.1** We assess children's work in mathematics by making informal judgements as we observe them during lessons. Short term assessment involves observations by the teacher and daily summative assessment which is used to adjust daily plans. At the end of a unit of work, we make a summary judgement about the work of each pupil in relation to NNS Framework level of attainment.
- 6.2** We make medium term assessments to measure progress against the key objectives, and to set moving on targets for the children.
- 6.3** We make formative assessments twice a year, in January and May from which we set targets for development. We use long term assessments towards the end of the school year, and we use these to assess progress against school and national targets. We make a summary of each child's progress and discuss it with parents with areas for development. We make long term assessments with the help of end of year tests and teacher assessments. We use the national tests for children in Year 2 and Year 6, plus the optional national tests the children at the end of Years 3, 4 and 5.

#### **7 Pupils' Records of Their Own Work**

- 7.1** There are occasions when it is both quick and convenient to carry out written calculations. It is also important to record aspects of mathematical investigations. Children are taught a variety of methods for recording their work and they are encouraged and helped to use the most appropriate and convenient method of recording. Children are encouraged to use mental strategies before resorting to a written algorithm.

## 7.2 Exercise Books for Recording.

It is school policy that the following pattern is used:

- KS1: plain exercise books moving to 1cm squares when ready
- Year 3: 1 cm squares
- Year 4: 1 cm squares
- Year 5: 7 mm squares
- Year 6: 7 mm squares

All children are encouraged to work tidily and neatly when recording their work. When using squares one square should be used for each digit. When involved in routine practice of calculations the children are encouraged to fold a page in half creating two columns for answers.

## 8 Marking

- 8.1 Work in mathematics can generate a great deal of marking and it is recognised that it is not always desirable to mark every piece of work. The children themselves can mark exercises which involve routine practice with support and guidance from the teacher. Where appropriate, children in Years 5 and 6 are encouraged to check computational exercises with a calculator. This can foster independence in the children, who can seek help if they are unable to locate and correct their errors.

## 9 Management of Mathematics

### 9.1 Role of the Coordinator

- ✓ Teach demonstration lessons when necessary;
- ✓ Ensure teachers are familiar with the Framework and help them to plan lessons if required;
- ✓ Lead by example in the way they teach in their own classroom;
- ✓ Prepare, organise and lead INSET, with the support of the Headteacher;
- ✓ Work co-operatively with the SENCO;
- ✓ Observe colleagues from time to time with a view to identifying the support they need;
- ✓ Attend INSET provided by LA Numeracy consultants;
- ✓ Inform parents;
- ✓ Discuss regularly with the Headteacher and the Numeracy Governor, the progress of implementing the Strategy in the school.

### 9.2 Role of the Headteacher

- ✓ Lead, manage and monitor the implementation of the Strategy, including monitoring teaching plans and the quality of teaching in classrooms;
- ✓ With the Numeracy Governor, keep the Governing Body informed about the progress of the Strategy;
- ✓ Ensure that mathematics remains a high profile in the school's development work;
- ✓ Deploy support staff to maximise support for the Strategy.

## 10 Monitoring and Review

- 10.1 Monitoring of the standards of children's work in mathematics is the responsibility of the maths leader.

This policy will be reviewed in the Spring Term 2014 or in light of new legislation.

**Signed:**

**Date:**