

BURFORD SCHOOL



# Burford School

## Mathematics Policy



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## Mathematics Policy

**This policy was approved by the governing body in November 2009**

**This policy will be reviewed in November 2011**

### **Introduction**

#### **The Importance of the Subject**

Mathematics is a form of communication that transcends cultural boundaries; it is a creative subject that can be used to describe, illustrate, interpret, predict and explain the world around us. Through mathematics, pupils develop essential skills that enable them to participate in the modern technological world. They also learn to think in abstract ways and to solve problems using logical argument.

### **Aims**

At Burford School, pupils will

- Learn the facts and techniques that pupils will need to study the subject further and will allow pupils to use mathematics in everyday life
- Reach the highest standard possible and to think for themselves within the subject
- Be creative and imaginative; to appreciate the power and beauty of mathematics

### **Objectives**

To achieve the above, pupils must

- Have good numeracy skills
- Be confident in working mentally
- Be confident in talking about their work
- Think logically, solving problems using the methods most appropriate to them

## **Overall Management of the Subject**

1. Curriculum time allocated to mathematics per school year:  
KS1 and KS2: 5 hours per week or equivalent.

### **Teaching Strategies**

Mathematics is delivered through a variety of approaches – sometimes as part of the learning through play approach (EYFS), sometimes through the creative curriculum and sometimes as a separately timetabled subject (Key Stages 1 and 2).

Teacher exposition, modelling of skills and techniques, guided practical work, with frequent use of ICT both in class and in the ICT suite, are examples of teaching strategies used.

Children identified as making insufficient progress are targeted through planned guided activities within sessions

### **Learning Styles**

Many learning styles can be, and are accommodated through the pursuit of mathematics at school, to ensure effective learning opportunities for all children and to develop key skills which have universal application.

Some examples are: problem solving and reasoning, independent and collaborative work and abstract thinking. All can be demonstrated through problem solving work, in a variety of contexts.

### **Key Skills**

The key skills, outlined in the National Curriculum Handbook, may all be developed through mathematics.

- **Communication** – presentation of ideas, reasoning and hypotheses;
- **Application of number** – proportions, quantities, analysis of results, checks for reasonableness;
- **ICT** – entry and analysis of results using spreadsheets, graphical presentation of results, internet searches and CD-ROM reference material;
- **Working with others** – collaborative practical and research work;
- **Improving own learning and performance** – critical evaluation of investigative work;
- **Problem solving** – planning investigations, explaining results, developing hypotheses.

### **Thinking Skills**

- **Information processing skills** – analysis of results;
- **Reasoning skills** – making predications; explanation of observations or patterns;
- **Enquiry skills** – ‘real life’ investigative work;
- **Creative thinking skills** – planning investigations; developing hypotheses;
- **Evaluation skills** – examining practical work for reasonableness and consistency of results.

## **Inclusion**

It is important that the mathematics curriculum is accessible and challenging to **all** children, meeting the specific needs of individuals and groups of pupils. Contexts for teaching and learning should be meaningful and appeal to pupils from all social, cultural and religious backgrounds, those with physical disabilities or other special educational needs, those identified as Young, Gifted and Talented In mathematics, children of different ethnicity and linguistic ability, boys and girls. Through the teaching of mathematics at school, all stereotypical images are challenged.

## **Differentiation**

The organization of the Primary Framework for mathematics enables teachers to offer challenge for all levels of ability; lesson plans reflect this and show clear differentiation to accommodate the range of needs within a given class group. **For those children whose attainment falls below the expected level of the year group or those whose attainment significantly exceeds the expected level**, work may be drawn from objectives outlined in the Renewed Framework documentation relating to years above or below the year in question.

Further requirements, as detailed in children's provision maps, are integrated into plans for teaching and learning mathematics.

The breadth and depth of study should be challengingly extended **for able, talented and gifted children**, through further questioning, independent research and the provision of cross-curricular opportunities.

Assessment methods should take into account individual requirements and potential barriers, ensuring that it is children's skills, knowledge and understanding of science which are assessed.

## **Cross-curricular Links**

**English** – Speaking and listening skills, when communicating ideas, findings and giving explanations orally; note formats, flow diagrams, annotations etc. to support oral explanations

**SCIENCE** - Consider how to collate and then to represent and interpret results; consider appropriateness of results

**ICT** - may be used for recording, analysis and graphical presentation of results; comparison of, information, including CD-ROM, internet and video; compiling databases; simulation and modelling of mathematical processes and systems.

**History** – charting the lives of significant mathematicians and the role of mathematics in the advances made in science and technology, developing a growing awareness of different periods of time and their position relative to other periods studied.

**Geography** – use maps to develop an understanding of scale

**Art** – drawing etc with a particular mathematical focus, symmetry, scale drawings

**PSHE** – the need to work together, to share and consider ideas when problem solving, discussing strategies, explaining their reasoning

### **Health and Safety**

In accordance with the requirements of the National Curriculum, all pupils should, during practical work, be made aware of hazards and risks, both immediate and cumulative, to themselves, others and the environment. Children should be helped to ensure the health and safety of all.

### **Assessment**

Children are assessed throughout the academic year, both formatively and summatively, and results of assessments recorded, as detailed in the school policy for Assessment, Recording and Reporting.

Timings of summative assessments are outlined in the School Assessment Calendar.

For assessment to be meaningful, it should always be used to:

- inform future planning;
- inform the pupil of his/her progress;
- inform the teacher of individual and group progress and attainment;
- inform the parents of their child's progress and attainment;
- provide evidence, when tracking progression of an individual or group;
- provide data for statutory assessments at the end of each Key Stage;
- set individual and class targets;
- evaluate teaching and learning of mathematics.

Every effort should be made to assess each child's progress within each of the four strands of the national Curriculum attainment targets.

### **Monitoring, Evaluation and Development**

It is the responsibility of the subject coordinator to monitor and evaluate the teaching, learning, planning and assessment of mathematics in school.

This may be done through regular work sampling; observation of lessons in each class/year group; analysis of planning documents; monitoring of assessment evidence; discussion with colleagues to learn of difficulties, to inform and advise.

From this a mathematics action plan, outlining development of the subject to improve each of these elements, will be created and maintained as a dynamic tool, taking into account school based issues, county and national guidelines and requirements.