

# Woodlands Primary School

## Mathematics Policy



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<b>Signed – Headteacher</b>	

This policy has been impact assessed by Sue Buxton in order to ensure that it does not have an adverse effect on race, gender or disability equality.

## **1. Purpose of Study**

### **1.1**

At Woodlands Primary School we believe mathematics teaches us how to make sense of the world around us through developing a child's ability to calculate fluently, to reason and to solve problems. It enables children to understand and appreciate relationships, look for patterns and make connections in their everyday lives. We aim to encourage a sense of enjoyment and curiosity about mathematics.

The governors and staff are committed to providing a full range of opportunities for all pupils, regardless of gender, disability, and ethnicity, social, cultural or religious background. All pupils have access to the mathematics curriculum, and the right to a learning environment, which dispels ignorance, prejudice or stereotyping.

### **1.2**

The aims of mathematics are:

- To promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion.
- To develop logical thinking and reasoning skills through generalising, conjecturing, justifying and proving.
- To promote confidence and competence so that children are proud of their achievements.
- To develop a thorough knowledge and understanding of numbers and the number system so they are fluent in the fundamentals of mathematics and can apply this to mathematical problems.
- To develop the ability to solve problems through decision-making and reasoning in a range of contexts.
- To develop a practical understanding of the ways in which information is gathered and presented.
- To explore features of geometry and develop measuring skills in a range of contexts.
- To understand the importance of mathematical skills in everyday life.
- To promote resilience and a growth mind set amongst pupils so they are equipped to be challenged and solve problems.

## **2. Teaching and learning style**

### **2.1**

Woodlands Primary School uses a variety of teaching and learning styles in mathematics lessons. Our principal aim is to develop children's knowledge, fluency of mathematical skills, and the ability to problem solve and reason in mathematics.

### **2.2**

Mathematics is taught daily through whole-class teaching, group work and investigative approaches. In Key Stage 1 teaching is class based. Lower KS2 are grouped in mixed ability classes. In Upper KS2, classes are split into four groups; all children are grouped according to ability. Throughout all lessons, there is an open dialogue between the teacher and the pupils which encourages understanding and helps identify their next steps.

### **2.3**

To cater for all learners and to develop the ability to move fluently between mathematical ideas, a wide range of resources and manipulatives are readily available for the children to use. In addition to this, Computing supports mathematics teaching. We build on the children's knowledge in order to use and apply their maths skills in everyday situations. We encourage children to make rich connections across mathematical ideas to develop fluency, reasoning and problem solving skills by carefully planning tasks and questions to promote procedural and conceptual variation.

## **2.4**

We provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We aim to deepen and broaden the mathematical understanding of all pupils using open-ended problems, games and challenges. Children work both collaboratively and independently.

## **2.5**

In KS1, Year 2 have regular homework that supports their learning. In KS2 the children are set a weekly homework task; this directly links with the current unit of learning and is differentiated for each maths group.

## **3 Mathematics curriculum planning**

### **3.4**

Mathematics is a core subject in the National Curriculum 2014 and is used as the basis for implementing the statutory requirements of the programme of study for mathematics.

### **3.5**

Each year group has a maths overview to show progression across the year. This identifies the key objectives in mathematics that we teach within each academic year. While these are organised in distinct domains, rich links between them are created to deepen understanding.

### **3.6**

Weekly plans identify the specific learning intentions and provide details of the structure and content for the lesson. Class teachers reflect on and discuss the plans with the mathematics subject leaders.

## **4 Contribution of mathematics to teaching in other curriculum areas**

### **4.1 English**

Mathematics supports the English curriculum in our school by actively promoting the skills of reading, writing, speaking and listening. For example, we encourage children to read and interpret problems in order to identify the mathematics involved. The children explain and present their work to others during lessons, both independently and collaboratively. Younger children enjoy stories and rhyme that rely on counting and sequencing, and older children encounter mathematical vocabulary, graphs and charts when using non-fiction texts. All year groups use English skills to help enhance their reasoning skills in maths.

### **4.2 Science**

During science lessons, children use and apply their data handling skills when creating tables and graphs of scientific measurements. Whole class discussion of data also highlights the importance of recording information clearly and appropriately in relation to the purpose. Children also use a wide range of measuring devices in real-life contexts. Children read the scales on force meters, measuring cylinders, weighing scales and a variety of other instruments.

### **4.3 Computing**

Children use and apply mathematics in a variety of ways when solving problems using Computing. Younger children use computing to communicate results with appropriate mathematical symbols. Older children use it to produce graphs and tables when explaining their results and creating repeating patterns, such as tessellations. When working on control, children use standard and non-standard measures for distance and angles. They use simulations to identify patterns and relationships. All KS2 Year groups have access to RM Maths program and a web based program (MyMaths) as a way to further the children's learning.

Calculators can be introduced towards the end of KS2 to support complex number problems, only once good written and mental arithmetic has been secured.

#### **4.4 Personal, social and health education (PSHE) and citizenship**

Mathematics contributes to the teaching of personal, social and health education and citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities within the classroom encourage them to work together and respect each other's views. We present older children with real-life situations, for example, problem solving in the context of money and in projects involving managing budgets. .

#### **4.5 Spiritual, moral, social and cultural development**

The teaching of mathematics supports the social development of our children. We encourage collaborative working to discuss ideas and solutions to calculations, as well as more complex problem solving and investigations.

### **5 The teaching of mathematics to children with special needs**

#### **5.1**

It is part of the school curriculum policy to provide a broad and balanced education to all children. We provide learning opportunities that are carefully matched to the needs of children with learning difficulties and deploy support staff effectively to ensure the learners' needs are met. Interventions and manipulatives, including Numicon, help to fill gaps in attainment where the level of achievement is not currently at expected. Work in mathematics takes into account the targets set for individual children on provision maps.

### **6 Assessment and recording**

A formal base-line test is undertaken each autumn in Year R. In Years 2 and 6 statutory assessments are undertaken in line with government policy. Formal assessments in all other year groups take place at the end of each year so that progress in mathematics is tracked throughout the school. Assessments are also informed by the teachers' knowledge and understanding of the individual child.

#### **6.1**

We assess children's work in mathematics continuously. We make formative assessments which we use to help us adjust our daily plans. These short-term assessments are closely matched to the learning intentions.

#### **6.2**

We use termly assessments to record children's progress in relation to the objectives covered in a term and report these to SLT. Target Tracker is used to support the monitoring process. Target Tracker is used effectively and diagnostically to identify next steps for teaching and learning.

#### **6.3**

We make long-term assessments towards the end of the school year, and we use these to assess progress against school and national targets. We set targets for the next school year and make a summary of each child's progress before discussing it with parents. We pass this information on to the next teacher at the end of the year, so that s/he can plan for the new school year. Target Tracker and regular moderation within school is used to ensure consistency in standards across the school. External moderation with other schools is used to support and verify this. We use the national tests for children in year 2 and 6, plus additional formal tests for children at the end of years 3, 4, and 5.

### **7. Resources**

#### **7.1**

There is a range of resources to support the teaching of mathematics across the school. All classrooms have a wide range of appropriate manipulatives. A range of software is available to support work with the computers.

## **8 Monitoring and review**

### **8.1**

Monitoring the standards of children's work and of the quality teaching in mathematics is the responsibility of a member of the Senior Leadership Team. The work of the mathematics subject leaders involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. The mathematics subject leaders gives the Headteacher an annual summary in which s/he evaluates strengths and weaknesses in the subject and indicates areas for further improvement. The Headteacher allocates regular management time to the mathematics subject leaders so that s/he can review samples of children's work and undertake lesson observations of mathematics teaching across the school. Governors monitor each section of the school plan and liaise with the mathematics subject leaders when mathematics forms part of this.