



## Rushey Green Primary School Mathematics Policy for the New Curriculum (September 2014)

### **Mission Statement**

At Rushey Green Primary School we work in partnership with parents to provide a mathematics education of the highest quality, which celebrates everyone's success in a happy, caring environment.

We teach Mathematics as a way of viewing and making sense of the world around us. It is used to analyse and communicate information and ideas: to represent and predict; to tackle a range of tasks and real life problems. Mathematics is seen not just as a subject for study in its own right, but as a usefulness and relevant tool for most aspects of everyday life.

### **Aims and Objectives**

*Through learning mathematics in school pupils will have:*

- A positive attitude to mathematics as an interesting and attractive subject.
- An appreciation of the subject's creative and aesthetic aspects as well as an understanding of the nature of numbers.
- Core skills and knowledge, including quick recall of key elements of the subject, including timetables (reinforced by the calculation policy).
- An ability to think clearly and logically in mathematics with confidence, independence of thought and flexibility of mind.
- An extensive range of mathematical vocabulary and an ability to communicate mathematical ideas confidently and fluently.
- Skills to solve problems following a process of enquiry and experiment; identifying patterns and discovering relationships.
- An awareness of the uses of mathematics in the world beyond the classroom, solving problems they meet in everyday life and understanding better the world around them, satisfying their curiosities and developing their creative abilities.

### **Resources**

The school is well resourced with various mathematical equipment, maths schemes, and assessment materials.

The children have access to the class based maths equipment, such as multi-link, unifix, money, measuring tapes, scales, Dienes Base 10 equipment and in some cases, compasses and protractors.

Every class is equipped with at least 3 computers used to support, develop and extend numeracy lessons in the classroom. Pupils also have access to tablets (one per pupil if booked in advance).

It is important that equipment is cared for and items are counted back in each lesson. An annual audit is done and equipment can be replaced if damaged or missing (within reason.)

Each class has an interactive whiteboard and teachers are given regular updates and training on the software available for teaching.

A wide range of teachers' handbooks, investigation and problem solving books, maths tests, assessment materials, mathematical theory, etc. are kept in the reprographics room. Each class has at least one Mathematics dictionary.

### **Scheme of work and planning**

The school is now following the Abacus scheme which covers the new curriculum for each year group. Detail lesson plans are available with links to suitable resources and interactive whiteboard activities. They are differentiated (core, support and extend). However, teachers are encouraged to use this as a guide. The expectation is that teachers will be able to plan lessons according to the needs and interests of their pupils. Creativity in lesson planning is encouraged.

Planning at every stage should be informed by gaps analysis. Annotation of lesson plans is expected, so that they will be adapted on a daily basis according to the level of understanding and progress of the pupils.

Plans clearly show differentiation. Teachers can divide their class up into as many as 5 ability groups to allow a full range of differentiation. However, at times, mixed ability grouping can also be beneficial (e.g. pairing a more able pupil with a weaker one to encourage collaborative learning). Focus groups should be periodically formed if particular pupils are struggling on a certain topic. These will allow the teacher to give extra support and are expected to be different week by week.

### **Investigations and Problem Solving**

One area of focus in mathematics has been to increase investigations and problem solving activities in the classroom. Pupils need to work on investigations where they explore and develop their mathematical knowledge. Such tasks help pupils to build on their existing knowledge and understanding. It will also help pupils to develop their mathematical decision making skills, being able to articulate their thinking and to move forward to using more abstract language, symbols and representations.

Mathematical investigations and problem solving activities are taught regularly.

### **Assessment**

Assessment in Mathematics will be carried out *in line with* the school's assessment and teaching policies.

### **Teaching time**

To ensure that there is adequate time for developing numeracy skills, each class teacher is expected to provide a daily lesson for maths, which should be the equivalent of 45 minutes in Key Stage 1 and 50-60 minutes in Key Stage 2. Specific timings is a matter for the professional judgement of the teacher.

It is also important to allow time in other subjects for pupils to apply their mathematical skills and knowledge. For example, planning regular opportunities for measuring in science and design technology, using properties of shapes and patterns in art and collecting and presenting data in history, geography and IT. It is important to look for opportunities for drawing mathematical experiences out of a wide range of children's activities across the curriculum as these will encourage and develop practical application of the subject.

### **A Typical Lesson**

A typical lesson in years 1 to 6 will be structured as follows:

- A 5 to 10 minute starter activity (written or oral) that leads into and is related to the main teaching activity (about 40 minutes) often delivered through the use of interactive whiteboards. Work as a whole class, in groups, in pairs and as individuals. During this session the focus is on direct teaching and questioning the whole class. Learning objectives should be made explicit at the start and throughout the lesson. Can the pupils explain at any given moment what the lesson is about? Direct teaching must be oral, interactive, explaining and illustrating, questioning, discussing, and consolidating and evaluating pupils' responses.
- A plenary to round off the lesson (about 10 minutes). Work with the whole class to sort out misconceptions and identify progress, to summarise key ideas and what to remember, to make links to other work and discuss the next steps. Pupils need to self-evaluate the lesson, recording in an age appropriate way, how they felt the lesson went. Older pupils should record specifically what they learn/skills they developed and identify any areas they had difficulty with (for teacher's reference and to inform planning/intervention).

### **Layout of Written Work**

Presentation of work should be emphasised at all times. Rulers should be available each lesson from year 1, as an essential piece of mathematical equipment. Dates can be underlined and from year 2 margins should be drawn to place question numbers behind and structure the work. This also leads to accuracy of diagrams, an essential skill required by year 5.

### **Approach to Calculations (Also see Calculation Policy)**

With the implementation of the National Curriculum, children in the early years are encouraged to develop and use oral methods or calculations, the ability to calculate mentally lies at the heart of numeracy and children learn more sophisticated methods as they move through the school. As they get older they are encouraged to use informal jottings to tackle more complex problems.

Once children show a good understanding of mental strategies then standard written methods are taught. An emphasis on mental calculation does not mean that written methods are not taught, but we create a balance between the mental and written methods as the way in which pupils' progress from one to the other is very important.

### **Homework**

Learning is also enriched through regular homework which is linked to the work being undertaken in classes. Mathematics home learning is given according to age group. (See Home Learning Policy).

### **Displays**

All classrooms have mathematics display which:

- Are an integral part of teaching
- Ask question to promote mathematical thinking
- Celebrate children achievement
- Contain vocabulary

### **Supporting the full range of pupils**

Rushey Green School strives to extend all pupils to reach their full potential but in addition we have a register of children who we have identified as demonstrating a gift or talent in one or more curriculum area. Children showing a gift for maths are identified on the register and where possible, encouraged to attend relevant extra curricular activities and work within the class is differentiated to challenge the more able pupil.

Children with specific learning difficulties in Mathematics will have these specified and addressed on the Individual Education Plans (IEPs). Small group and individual support will be given accordingly in whole class sessions as well as through withdrawals if deemed necessary.

For pupils with EAL, where appropriate, additional resources will be supplied to support children in learning vocabulary of mathematics or to access the curriculum.

Pupils with hearing impairment follow the mainstream National Curriculum unless there are special circumstances. Pupils are supported in the classroom setting by trained Teaching Assistants for part of their day. TAs provide individual, small group and class support. The resource endeavours to provide support for numeracy sessions wherever possible.

This Policy will be reviewed annually.

Reviewed November 2014