

# **The Grange School**

## **Mathematics Curriculum Policy**

**June 2016**

**To review June 2019**

## **The Grange School      Mathematics Policy**

### **Introduction**

Maths is everywhere! It is an essential component in the education of every child and teaches us how to make sense of the world around us, through developing an ability to calculate, to reason and to solve problems. It enables pupils to understand and appreciate relationships and pattern in both number and space in their everyday lives. Through their growing knowledge and understanding, pupils learn to appreciate the contribution made by many people to the development and application of mathematics.

### **Our Aims and Objectives**

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 encouraging natural curiosity and investigative approaches
- . To develop a thorough knowledge and understanding of numbers and the number system
- . 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 shape and space, and develop measuring skills in a range of real-life contexts
- . To understand the importance of mathematical skills in everyday life.
- . To promote confidence and competence so that pupils are 'proud to shine' in their mathematical work

### **Organisation of Provision**

#### **Whole school vision**

In our school, we believe that all Maths lessons should be:

- Engaging
- Challenging
- Investigative
- Enjoyable
- Be taught in a variety of ways with a variety of resources

#### **Mathematics curriculum planning**

Mathematics is a core subject in the National Curriculum and we deliver a curriculum that meets the requirements of this. We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term). The National Curriculum gives a detailed outline of the objectives we teach to in the long term, while our Learning Journey outlines the key objectives in mathematics that we teach in each year. These medium-term mathematics plans are also supplemented by a Programme of Study for each year group. They ensure an appropriate balance and distribution of work across each term. These plans are kept by both

the class teachers and the subject leader. 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. The class teacher keeps these individual plans, whilst the subject leader monitors the quality of planning regularly.

### **Teaching and learning styles**

The school uses a variety of teaching and learning styles in mathematics lessons. Our principal aim is to develop pupils' knowledge, skills and understanding in mathematics. We do this through a daily lesson that employs a range of techniques, strategies and activities. Sometimes, we 'chunk' these lessons together, to enable pupils to explore concepts in depth. They have the opportunity to use a wide range of resources and practical equipment, and each class has its own Number Box, which pupils are encouraged to use independently. Pupils and teachers use ICT in mathematics lessons where it will enhance their learning, and to assist with modelling ideas and methods. Wherever possible, we encourage the pupils to use and apply their learning in everyday situations, including conducting some maths lessons outdoors.

In all classes, there are pupils of differing mathematical ability. We recognise this fact and provide suitable learning opportunities for all pupils by matching the challenge of the task to the ability of the pupil, whilst maintaining our high expectations of every child. Throughout lessons a range of strategies are used to ensure appropriate levelled learning. Pupils are always asked to undertake independent work but other strategies are also utilised. In some lessons, group work is undertaken, and in other lessons, pupils are organised to work in pairs on open-ended problems or games. During lessons we encourage pupils to ask as well as answer mathematical questions and we highly value the importance of talk in developing mathematical understanding. We use Learning Support assistants to support some pupils within lessons and to ensure that work is matched to the needs of individuals. However, all adults work with pupils of all abilities.

Pupils are also set a weekly homework task in order to consolidate their learning in mathematics.

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

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

We enjoy teaching mathematics to all pupils, whatever their ability, and have the highest expectations of all our pupils. We provide learning opportunities that are matched to the needs of pupils with learning difficulties. Work in mathematics takes into account the targets set for individual pupils in their Individual Education Plans (IEPs). A range of intervention strategies are used with pupils who have been identified as requiring additional support in order to achieve their objectives. Equally, intervention may be used with pupils who need to make accelerated progress from time to time. This intervention may take place within normal mathematics lessons, or as additional provision and can be conducted in small groups or on a one-to-one basis. This intervention will be conducted by both teachers and Learning Support Assistants.

## **Assessment and recording**

We assess pupil's work in mathematics from three aspects (long-term, short-term and medium-term). We use Assessment for Learning to make short-term assessments which we use to help us adjust our daily plans. These short-term assessments are closely matched to the teaching objectives and are made by annotating our lesson plans. These annotations then inform our planning for subsequent lessons, which are adapted as necessary.

We make medium-term assessments to measure progress against the key objectives, and to help us plan the next unit of work. We use termly assessments as a way of recording pupil progress in objectives covered across that specific term. APP assessment is used on an on-going basis and these documents are always passed on to subsequent teachers.

We make long-term assessments three times per year, and we use these to assess progress against school and national targets. This information is a major part of our Termly Pupil Progress meetings. We can then set targets for the next school term and make a summary of each child's progress before discussing it with parents. We pass this information onto the next teacher at the end of the year, so that s/he can plan for the new school year. We make the long-term assessments with the help of both formal assessment tests and teacher assessments. Our teachers understand the importance of using both methods when levelling pupils attainment and ensure there is no over-reliance on one method. We also make annual assessments of children's progress measured against the level descriptions of the National Curriculum and these are reported to parents via the pupils' Annual Report.

Teachers meet regularly to moderate their judgements by reviewing individual examples of work against the national exemplification material.

## **Resources**

High-quality, stimulating maths display is a priority in our school, as we believe that pupils should be immersed within maths throughout their primary education. Children are encouraged to refer to and use these displays as an aid to learning and teachers refer to them and use them as part of their teaching.

There is a range of resources to support the teaching of mathematics across the school. All classrooms have a wide range of appropriate small apparatus including a Number Box, which contains all the equipment which pupils use on a daily basis. Pupils are taught how to use these resources and are encouraged to do so independently as a part of all maths activities.

There is also a central Maths Store, containing a wide range of resources to aid teachers with their lesson planning. This central store also contains an extensive range of mathematical equipment to use in other areas of maths, such as time, shape and measures.

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

### **Themed Work**

Our school offers a creative curriculum, where pupils often guide the course of their learning. We are careful to ensure that we make links between themes we are studying and mathematics. This link encourages pupils to consider the role and purpose of maths in a variety of contexts. It also serves as a motivating factor and allows extra opportunities for the

pupils to consolidate key mathematical skills and understanding.

#### English

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, we encourage pupils to read and interpret problems in order to identify the mathematics involved. The pupils explain and present their work to others during lessons. Younger pupils enjoy stories and rhyme that rely on counting and sequencing. Older pupils encounter mathematical vocabulary, graphs and charts when using non-fiction texts.

#### Science

During science lessons, pupils are able to 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 clear recording of information. Pupils are also able to use a wide range of measuring devices in a real-life context. Pupils are required to read the scales on Newton meters, measuring cylinders, weighing scales and a variety of other instruments.

#### Information and communication technology (ICT)

Pupils use and apply mathematics in a variety of ways when solving problems using ICT. Younger pupils use ICT to communicate results with appropriate mathematical symbols. Older pupils use it to produce graphs and tables when explaining their results or when creating repeating patterns, such as tessellations. When working on control, pupils use standard and non-standard measures for distance and angle. They use simulations to identify patterns and relationships.

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

The teaching of mathematics supports the social development of our pupils through the way we expect them to work with each other in lessons. Pupils are expected to work together in a range of contexts, and we give them opportunities to discuss their ideas and results.

### **Further enrichment opportunities in Mathematics**

The school offers a range of further enrichment opportunities in mathematics. These include whole school Maths Days, expert visitors and educational visits that focus on maths. There are also opportunities for pupils to take part in local and national maths events, such as the Primary National Maths Challenge. The school also intends to offer extra-curricular maths activities for pupils.

In order to achieve the highest possible levels of attainment for all pupils, the school also offers support for parents, in the form of events that share our knowledge and understanding of maths used in school, enabling parents to further support their children at home.

### **Monitoring and review**

Monitoring of the standards of pupils' work and of the quality teaching in mathematics is the responsibility of the mathematics subject leader. The work of the mathematics subject leader also 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 leader regularly reviews samples of pupils' work and undertakes lesson observations of mathematics teaching across the school.

Planning and books are regularly scrutinised and pupils are interviewed. A named member of the school's governing body is briefed to oversee the teaching of mathematics.

Date of most recent review: June 2013

Date of next review: June 2016 or sooner if required