

The Grange School

Mathematics Curriculum Policy

June 2019

To review June 2021

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 practical and explorative

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 Classroom secrets scheme outlines the key objectives in mathematics that we teach with supplementary activities to secure understanding. 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 is responsible for the weekly skills taught based on the their assessments in class. These weekly plans list the goals for each lesson and targets for each specific group according to need. 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. Extensive work is spent on using manipulatives and children are encouraged to explore their understanding of key mathematical concepts through this hands on approach. 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 homework tasks on MyMaths in order to consolidate their learning in mathematics. This is set either weekly or a teacher will allocate all relevant modules for a half term.

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 Learning Plans (ILPs). 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 AfL books. 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. We use KPIs (Key Performance Indicators) to make assessments of the children in their mathematics learning and then tailor our teaching to the needs of the individual, group and class.

We make long-term assessments three times per year, and we use these to assess progress against school and national targets using PUMA tests. 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.

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 common language of maths vocabulary across school and symbols are used consistently throughout so that in whatever year group you meet a concept/word the symbol is always the same.

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 maths trays, which contain 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.

Contribution of mathematics to teaching in other curriculum areas

Themed Work

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.

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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.

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 2019

Date of next review: June 2021 or sooner if required