



Maths at Grange Primary Academy

Maths Curriculum Drivers

As a result of the children being taught the Grange Curriculum, our children will be:

A Resilient Learner

Mathematical knowledge and understanding is shared with the children and prioritised in the teaching. We are committed to ensuring children learn and remember the fundamentals of key mathematical concepts. The mathematical learning process will include regular peer and feedback to further develop knowledge and skills. Children will be expected to use new mathematical concepts to not only develop fluency but to also problem solve and reason.

An Independent Enquirer

Children will be encouraged to ask questions and reason about the mathematical concepts they learn. They will want to know the 'rules' of maths and experiment with these in a range of different situations and through variation. They will investigate and explore the links between different mathematical concepts and how these can link together to complete more complex tasks.

An Articulate Collaborator

Children will experience a wide range of mathematical concepts and to articulate their reasoning; they will be encouraged to develop a critical standpoint based on prior knowledge. They will be taught precise, technical vocabulary and they will apply this to their discussions during the learning process. They will work confidently with others to problem solve, demonstrating a secure level of mathematical knowledge and understanding.

An Ambitious Individual

The maths learning journey through Grange does not shy away from the complex concepts or skills. Lessons will ensure that children understand the core conceptual and procedural variation of mathematical concepts taught so children can become fluent and tackle complex tasks. Children will demonstrate their mathematical knowledge and understanding through high quality answers to tasks completed and confident discussion.

A Considerate Participator

Children will experience a breadth of mathematical concepts across a range of strands. Children will be excited to share their mathematical knowledge using our CPA approach and taking an active part in discussions to reason and problem solve these concepts to develop an even deeper understanding. They will respect and value the opinions of others. They will explore how the mathematical concepts they have been taught can be used in everyday life and their purpose in the real world.

Sequencing of Content

The Grange maths curriculum has been designed to support pupils to be able to perform simpler tasks so they can move on to perform more complex tasks.

Key maths concepts are sequenced into blocks and then into small steps which are sequenced in order of difficulty and dependency.

Each step builds carefully from the previous step, building on pupils' prior knowledge to develop new skills, with nothing left out. Many skills are transferable between different blocks (e.g. place value and addition and subtraction)

Purpose

At Grange, our maths curriculum is an ambitious, connected curriculum that is accessible to all our pupils from Reception to Year 6 as well as equip them with the skills and knowledge to support their journey through secondary school and beyond into adult life.

We believe all children can achieve in maths. Our curriculum is both mastery and spiral. Children spend time on topics to help gain a deeper understanding and make connections through understanding, doing and improving.

Big Ideas

- **Number:** Place value, addition and subtraction, multiplication and division, fractions, decimals, percentages, ratio, algebra
- **Measurement:** Length and height, weight and volume, time, money, perimeter and area, converting units
- **Geometry:** Shape, position, and direction
- **Statistics**

Deepening Concepts

We want children to become fluent in the fundamentals of mathematics, to be able to reason and to solve problems.

Visualisers – we use the CPA approach to help pupils understand mathematics and to make connections between different representations.

Describers – we place great emphasis on mathematical language and questioning so pupils can discuss the mathematics they are doing, and so support them to take ideas further.

Experimenters – as well as being fluent mathematicians, we want children to love and learn more about mathematics.

Retrieval Practice

Children take part in daily recall sessions to retrieve concepts previously taught. True or False questions used to check understanding of concepts learnt. Learning journeys fit together so that learning can be retrieved and applied. End of unit tests (Yr2-6) used at the end of each block to assess learning retained.

British Values

An understanding of the role that Maths plays in the democratic processes.
The models for teaching promote a methodology that is inclusive.
Having tolerance and respect for the learning stages of others.
Valuing the contribution of all through the reasoning and problem solving of Mathematics.
Self-awareness and the security to develop and demonstrate own opinions.
Encouraging the independent selection of manipulatives to aid learning.
Developing an understanding of what makes good relationships with others.
Models for teaching promote a methodology that is inclusive.
Having tolerance and respect for the learning stages of others.
Valuing the contribution of all.

Cultural Capital

Cultural capital is the accumulation of knowledge, behaviours, and skills that a child can draw upon and which demonstrates their cultural awareness, knowledge, and competence; it is one of the key ingredients a pupil will draw upon to be successful in society, their career and the world of work.

In Maths, Cultural Capital can be gained in many ways;

- We appreciate the maths contributes to our culture and technological developments through our annual STEM week.
- We explore the Maths of different time periods and cultures – Chinese New Year, Romans etc.
- We investigate and research cross-cultural patterns – tessellation / tiling etc.
- We incorporate Maths into cross-curricular topics.
- We are a diverse school with many children who have lived in different countries. The children like to explore how maths is taught in different parts of the world.

SMSC

In Maths we actively encourage deep thinking and questioning skills to promote the spiritual growth of our learners. All children are taught to be sensitive to the needs and experiences of all when tackling mathematical concepts. We aim to expose learners to the richness and power of maths and to promote a sense of wonder - Maths in nature is embedded in sequences, patterns and symmetry. An exploration of shape and real-world examples. We encourage learners to appreciate the enormity of the world of Maths as it has developed through time.

Within the classroom, we encourage respect at all times ie. when listening to the explanations of others. We promote discussion about mathematical understanding and challenge assumptions. We encourage learners to see how logical reasoning can be used to make decisions and choices that help them to learn in Maths. We explore and evaluate the effectiveness and accuracy of graphs and statistics. We organise project work such as Year 6 Fundraising Week to help learners use their maths in understanding risk and real-life economics. All children in KS1, LKS2, UKS2 also learn about economic wellbeing for a term in PSHE to help them be responsible with their money in the real world.

The use of mini-whiteboards to share learning to develop self-esteem and self-awareness. The use of collaborative learning and talk-partners – demonstrating the power of the group in problem solving and testing their own understanding. The use of working walls/displays to share good practise and celebrate achievement. Through the use of puzzles and investigations we encourage the development of a growth-mindset.

Impact

Through our planned and progressive curriculum children build a knowledge and understanding of key concepts and skills within Maths. Through the development of Maths skills, children can question ideas and reflect on their knowledge and understanding of Maths in a real-life context. Learning allows children to work collaboratively and practically to investigate and experiment and be able to reason.