Mathematics Curriculum

Glascote Academy Curriculum

Aim	Our aim is for every child to be a citizen of the world with an instilled sense of **Pride** in themselves, in their work, in their school and in their community				
Trust Vision	Inspiring all to excellence				
Trust Values	We care 	We leave no-one behind 	We celebrate individuality 	We are brave 	
Virtues	**P**erseverance 	**R**espect 	**I**nquisitive 	**D**uty 	**E**xpressive 
Big Ideas	**G** Globalisation 	**L** Leadership 	**A** Adventure 	**S** Significance 	**C** Change 	**O** Observe Critically 	**T** Traditions 	**E** Enterprise 

Curriculum Intent

Upholds and promotes our vision of "Pride"

Raises aspirations and open's their eyes to a world beyond their immediate surroundings

Shapes independent and co-operative learners who learn from their mistakes

Promotes a life-long love of learning

We consider our Glascote Family to be special and unique and as such our pupils deserve a curriculum that…

Promotes practical everyday life skills that prepare them for their future

Promotes creativity, curiosity, and confidence

Secures knowledge and skills across all EYFS and National Curriculum subjects that build upon prior knowledge

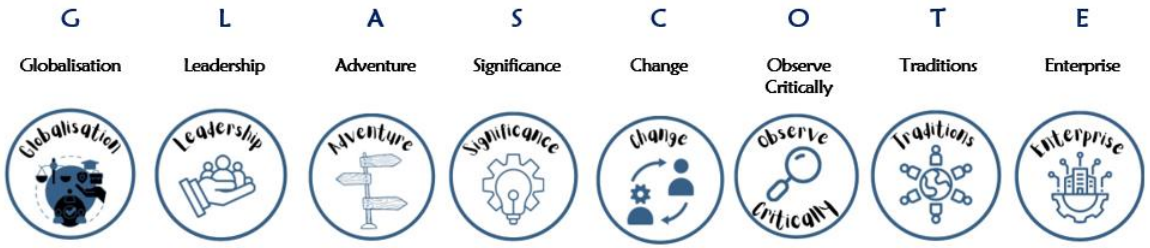
Builds character, resilience, self-motivation, and a will to succeed

Subject Specific Sequencing and Key Concepts:

Each subject has been planned to ensure that knowledge and skills are sequenced from Early Years to Year 6. Key Concepts are the subject specific '*Golden Threads'* that children will learn about, return to and revisit as they progress through our school. Our pupils will have opportunities to link new learning to prior knowledge thus building a rich and deep knowledge of these '*Golden Threads'* with each encounter. (*See Mathematics long term plan with key concepts)*

Big Ideas:

These are the overarching *'Glascote'* concepts that pupils can use and apply across different curriculum subjects. For example, in all areas of the curriculum, children will build an understanding of 'significance'; learning about significant authors, artists, scientific discoveries, pieces of music, figures and events from different cultures, religions and history.



Character Virtues:

These are the underpinning qualities and character traits stemming from *'Pride'* that we desire all of our children, and staff, to demonstrate.

IMPLEMENTATION – Our approach

Mathematics at Glascote Academy, is taught by following the scheme of work from White Rose Maths. We chose White Rose Maths for our pupils as we believe that it supports our aim to build citizens of the world, our intrinsic values, virtues and 'Big Ideas'.

A typical Mathematics lesson provides the opportunity for all children, regardless of their ability, to become confident and capable learners. We are committed to building on prior learning and enabling our children to demonstrate a deep, conceptual understanding of each topic that they can develop over time. They are encouraged to develop fluency in their recall of key facts and a whole school approach to the teaching of calculation strategies is deployed across the school. This ensures a consistent and progressive approach and prepares our children for the upper key stage 2 curriculum and beyond.

IMPLEMENTATION – Our approach

The national curriculum for mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

Staff at Glascote Academy create a positive attitude towards mathematics both inside and outside the classrooms and promote the expectation that all children can achieve highly through adaptive teaching. Recall, repetition, modelling and practice are key facilitators used to support all children in their learning. Key vocabulary is an integral part of each unit of work, enabling children to have a greater understanding of important key concepts, '*Golden Threads*', thus enabling them to communicate accurately about mathematical information.

EYFS Development Matters 2020

In Reception, we follow the EYFS framework. Teachers ensure the children learn through a mixture of adult led activities and child-initiated activities both inside and outside of the classroom. Mathematics is taught using material from White Rose Maths. Mathematical skills and knowledge are taught through 'In the Moment' opportunities, linked to 'Number', 'Patterns & Connections' and 'Spatial Reasoning'.

Key Stage National Curriculum Expectations: Mathematics

Key stage 1:

The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the 4 operations, including with practical resources [for example, concrete objects and measuring tools].

At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Lower Key stage 2:

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the 4 operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word-reading knowledge and their knowledge of spelling.

Key Stage National Curriculum Expectations: Mathematics

Upper Key stage 2:

The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all 4 operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

IMPACT– Our approach

At Glascote Academy, we are determined that teaching and learning in all subjects is driven by our curriculum intent. Therefore, we monitor the impact of learning in each lesson through teacher observations, discussions, and work produced which is evidenced in children's books, and White Rose Workbooks.

Impact is also measured through:

- White Rose end of term assessments
- Smart Grade analysis
- End of key stage external assessments (Y2 and Y6)
- Internal and external picture building