Cranford Park Academy

Mathematics Curriculum Statement

At Cranford Park Academy, our pupils understand the important role of mathematics and how it is an essential part of our everyday lives from the structure of our day, to the purchases we make and the buildings we make our homes. Many of the careers our pupils choose to pursue in the future will have maths at their core. It is therefore crucial we develop mathematicians who are knowledgeable, curious and creative and this is achieved through an engaging curriculum where a mastery approach is at its core.

Our Nursery and Reception classes follow the objectives from the Early Years foundation stage (EYFS) statutory framework as well as the White Rose Education's schemes of learning. In Nursery, we are further supported through the use of Master the Curriculum resources. Pupils, at this early stage of mathematics, learn the fundamental ideas of number and shape through activities which encourage exploration and investigating. This is enhanced by numerous outdoor learning activities and our Forest School provision. Working with manipulatives and concrete objects allow our pupils to explore number concepts; encouraging counting, understanding and comparing quantities as well as beginning to carry out simple calculations. This early understanding of number is essential for future success.

As our pupils move to KS1 and then progress into KS2, they continue developing their mathematical knowledge through the use of White Rose Education's schemes of learning. This scheme uses the mastery approach and is fully aligned with the National Curriculum. Pupils are able to access the learning through discussion, exploration and practice. At the heart of a mastery approach is a strong understanding of number and the CPA (concrete, pictorial, abstract) approach is used not only in our early years teaching but throughout our school. New learning is introduced using manipulatives and pictorial images which help pupils to see how the maths is structured. Our lessons encourage pupils, at all stages of their maths development, to explore the concept in depth and over time they build upon this knowledge to develop a deeper understanding. Pupils working at greater depth are challenged with non-routine questions and tasks which require higher-order thinking skills.

We encourage pupils to explore, clarify, practice and apply the knowledge they are developing. We journal key ideas, concepts and skills through anchor charts in KS1 which support our pupils to use mathematical language, when discussing their ideas, through the use of sentence stems. In KS2, pupils are encouraged to compose their own notes during lessons, explaining mathematical concepts, in their Maths Journals. A Maths Journal is a personalised notebook and just one example of how we encourage our pupils to take responsibility for their own learning.

Our pupils are encouraged to develop their maths away from the classroom environment through the use of online websites. In KS1 and lower KS2, we use TT Rock Stars https://ttrockstars.com/ to develop our rapid recall of multiplication facts which is a key focus for our Year 4 pupils who sit the MCT national tests. The Multiplication Tables Check (MTC) is a key stage 2 assessment taken by pupils at the end of Year 4. This website allows access to multiplayer games which creates healthy competition as well as a hunger to succeed. Children in upper KS2, who have not yet secured their rapid recall of multiplication facts, are also encouraged to practise regularly on TT Rock Stars.

Our pupils are also encouraged to use White Rose Education's 'One Minute Maths' app https://whiteroseeducation.com/1-minute-maths. This is an engaging and easily accessible way to practise basic number skills; focusing firstly on subitising in the Early Years and KS1. There are opportunities to practise all four operations and develop pupils' early mental maths strategies, including securing knowledge of multiplication and division facts. There is no specific route or starting point. Having chosen a topic, each pupil answers a series of randomly generated questions; a different set of questions every time means they learn the concept, not a sequence of answers.

Pupils in Years 1 to 6 also have access to Freckle https://freckle.com/en-gb/, an online learning platform that helps pupils to practise maths at their own level. Freckle continuously adapts to each student's individual skills, so every student is getting the appropriate challenge. It allows pupils to practise fluency skills as well as reasoning and problem solving questions. Freckle promotes student independence and encourages them to take ownership over their learning.

Eedi https://eedi.co.uk (Years 5 and 6) is another online resource we use in UKS2. Eedi is particularly supportive for our Year 6 pupils with their preparations for the end of key stage 2 SATs examinations. Pupils work through low-stakes quizzes which focus on different maths objectives. Once completed, they receive supportive feedback based on their specific misconceptions to help them improve. The instant feedback supports pupils to identify areas of strength as well as areas which need further development.

These online tools continue to build on the work we do in the classroom, not only through practising mathematical skills and increasing retention of key facts but also by creating mathematicians who are resilient, focused and want to achieve their best.

Our mathematics curriculum at Cranford Park Academy...

- Is accessible to all. We know we can progress and succeed no matter where our starting point may be.
- Helps pupils develop a good grasp of mathematical knowledge and skills. Key knowledge is recalled quickly and applied appropriately to solve problems within different contexts.
- Develops creative thinkers who are fluent and expressive using appropriate mathematical vocabulary to explain their thinking.
- Makes connections between mathematical topics and beyond mathematics into areas such as science, technology and into the world we live in.

“Mathematics has beauty and romance. It’s not a boring place to be, the mathematical world.
It’s an extraordinary place; it’s worth spending time there.”
Marcus du Sautoy, British mathematician