



## Maths Curriculum Statement

### King's Academy Binfield and King's Academy Oakwood

This document sets out the maths curriculum that we have selected as most appropriate for our students that will support them to achieve our vision and aims; 'dare to be remarkable' and 'opportunity and success on a global stage'.

#### **Intent**

It is imperative that all our students develop the knowledge, skills and understanding in numeracy, in order to prepare them for the next stage of their education and their future lives. A significant focus on the active teaching of counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shapes, spaces, and measure from the early years onwards is essential.

Mathematics is a key subject in understanding the way the world works and opportunities to change the world, and at King's Academy Binfield and King's Academy Oakwood we want students to enjoy Maths and to have the curiosity to experience the power of Mathematics with clear understanding, from 3 - 16.

As an academy we will develop a growth mindset and promote teaching through the fact that we can all do Maths, and have positive learning attitudes. We teach for secure and deep understanding of mathematics through small manageable steps. Students will spend time applying new knowledge in multiple ways. Retrieval practice is valued; we want our students to learn more and remember more. We use mistakes and misconceptions as a key part of learning, and provide challenges through rich problems.

Using the national curriculum as our minimum in each key stage, our curriculum will be broad, ambitious and relevant for the students. We aim for all pupils to:

- 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

Consequently, we have designed a curriculum which focuses on discrete teaching and learning in English and maths and then weaves these subjects into topics at KS1 or into subject specific learning in KS2 and KS3, where there are purposefully planned opportunities for students to apply them within other areas of the curriculum.

The curriculum will be enhanced through co-curricular opportunities from visits and visitors, clubs and enrichment opportunities, such as UKMT Maths Challenges.

## **Implementation**

We will never under-estimate the capabilities of our students and we aim to enable all students regardless of backgrounds and needs, and therefore we will be ambitious with our teaching for deeper understanding. Teachers will reinforce an expectation that all students are capable of achieving high standards.

Teaching is methodical using small manageable steps that is underpinned by carefully structured curriculum design and supported by resources to foster deep and conceptual and procedural knowledge.

Centralised lesson planning is key and provides an equitable approach and diet for our students. It also eliminates unnecessary workload for teachers and priority can be given to ensuring the adaptations are adequate to their groups. It ensures the scheme of work will be of a high standard as it will be collaboratively planned and discussed. Our curriculum builds on prior learning and provides sufficient opportunity for guided and independent practice.

## **EYFS**

In EYFS, students will take part in daily adult-led Maths activities based on teaching the skills of early place value, addition and subtraction, measurement, geometry and multiplication and division. Prior to and following the adult-led activities, students will have the opportunity to explore their learning further by completing activities set up in and around the classroom independently, with peers or with adult support. Discrete teaching opportunities are available through the specific area of Mathematics within the EYFS curriculum, however there will be many opportunities throughout a day within the remaining 6 areas of learning to consolidate and practice skills learnt.

## **KS1 and KS2**

In KS1 and KS2 lessons use a variety of teaching and learning styles. The principal aim is to develop children's knowledge, skills and understanding in mathematics. We do this through a daily mathematics lesson where children are given opportunities for:

- Practical activities and mathematical games
- Problem solving
- Open and closed tasks
- Individual, group and whole class discussions and activities
- A range of methods of calculating e.g. mental, pencil and paper and using a calculator
- Working with computers as a mathematical tool
- Using a wide range of support resources e.g. number squares, digit cards and number lines
- Using and applying their learning in everyday situation

Once again, Mathematic skills will be linked across subjects and the curriculum where possible.

The teachers will follow the following sequence when introducing a new concept:

1. Concrete – children should have the opportunity to use concrete objects and manipulatives to help them to understand what they are doing
2. Pictorial – children should add pictorial representations alongside their concrete work. These can then be used to help reason and problem solve.
3. Abstract – moving from the concrete and pictorial to the abstract and being able to solve problems in a more abstract way.

Mathematical talk – using questions to introduce a concept to the children – will be used at the start of each small step of learning. There will then follow a series of tasks and activities through direct teaching, guided teaching or independent working to allow children opportunities to explore the concept and demonstrate their understanding. Children will have access to apparatus to support their learning as required. The tasks will move from varied fluency to reasoning and problem solving

Teaching resources available for use in all classrooms range from simple counters, an array of sorting materials, Numicon, Dienes and access to e-learning on iPads and Chromebooks.

Students are regularly assessed and early intervention given to those who fall below national expectations.

### **KS3 & KS4**

Early catch up is essential; students who enter KS3 with KS2 outcomes in Maths 'below expected' are given the highest priority to catch up through the Personalised Development Programme that is timetabled simultaneously for all year 7 tutor groups Maths specialist teachers, so targeted intervention can be implemented.

In our lessons you will see students attempting the same challenging content but being provided with appropriate support. High attainers are expected to produce work of greater depth. The use of CPA is continued through to embed new learning or support the accessing of prior knowledge.

Knowledge is regularly tested through short unit tests, with more formal assessments completed at the end of each term. We aim for all students to access the curriculum and therefore to promptly identify and support students who are falling behind and provide additional support through P7 sessions.

Analysis of planned, regular moderation, work scrutiny and data drops for each year group enable accurate assessments to be made, progress to be tracked and next steps in learning to be planned for, including the adapting of teaching methods.

### **Impact**

With a centrally planned scheme, the common teaching and assessments will provide a more succinct curriculum and understanding of maths.

Challenging targets are set across all phases of the academies. Whilst there is not yet any nationally recognised published data, strong progress was made by the first cohort of Y7 students in all subject areas as recognised in the DfE Report of Visit, July 2019. It is intended that the outcomes at all phases and key stages will be within FFT 20% and above national average.

The destinations of our students will be carefully monitored to ensure the aspirational curriculum we have implemented enables strong post-16 progression to A Levels and post-18 progression to university.