



Mathematics at Vanguard School

Subject Policy

Intent:

At Vanguard School, we strongly value all our students' wellbeing and as such our mathematics curriculum will be tailored to each individual to provide an appropriate level of challenge and a foundation of mathematical understanding. Our mathematics curriculum aims to support all students to:

- Become fluent in the fundamentals of mathematics through a spiral curriculum. This will equip students with their best foundation to be able to tackle mathematical contexts they will encounter in their lives.
- Reason mathematically by exposure to mathematical investigations, problem solving and justification of solutions from early in KS3. This will enable students to help to develop a better understand how to reason and communicate their reasoning for all topics in life, at an appropriate level for them.
- Solve problems mathematically becoming increasingly confident in breaking down problems and applying techniques to unfamiliar problems. Students are encouraged to apply these problem-solving skills to life outside the mathematics classroom to help them see that barriers can be broken down into manageable steps.
- Enjoy their learning of mathematics. Students are most likely to develop a better understanding of a subject if they develop a genuine interest for it. Our curriculum aims to expose students early on to different topics within mathematics allowing students to explore areas of interest to them. There is also a focus on creating cross-curricular links using manipulatives and ICT resources where possible to enhance enjoyment.

We recognise that autistic pupils may display highly varied profiles of ability in the Mathematics skills in which they excel, or, find the most challenging. Additional specialised support will provided, for example, for skills related to spatial concepts and for skills requiring fine motor skills which for some pupils will be challenging. As a school, we appreciate the unique skillset profiles our pupils are likely to exhibit in the subject and will personalise learning accordingly.

Implementation:

At Vanguard School, we follow a spiral curriculum within the mathematics curriculum, allowing a natural progression through the fundamental categories whilst regularly reminding students of previously learnt material. Our 5 key categories are:

- Number
- Geometry
- Algebra
- Statistics
- Functional skills and investigation weeks

Each half term students will study a topic from at least 4 of these categories. This will promote memory skills and allow students to build their understanding at a pace appropriate to them, whilst working as a class on the set category.

Prior to studying a new topic in a category, students will answer a small set of questions, to determine an appropriate path for them to follow for that topic. This will enable students strong in one particular topic to continue to be challenged and for pupils who struggle in that topic to concentrate on developing their fundamental skills in that area and their esteem and confidence.

Impact:

Maths has been a success at Vanguard School. Students report that they enjoy the lessons and have feel that they are achieving success and learning new things. They have found the varied style of delivery between more traditional lessons and the use of technology to be engaging and enjoyable, whilst still providing a sense of structure and stability.

Progress has been good across the school and every student is demonstrably further along than when they started. We have implemented a robust and flexible tracking system to monitor the progress of students. Over 70% of students are on track to achieve their GCSE target grades ranging from grade 3 to grade 7.

In future we plan to embed some regular low-stakes tests in Maths for two reasons: first as a way for both ourselves and our students to check their progress across the subject and secondly to build up resilience to the idea of testing, which can be a source of anxiety for students.

Curriculum Planning and Sequencing

Our curriculum plan broadly follows the My Maths textbooks scheme of work. This is a spiral style curriculum where students visit each topic a number of times from Year 7 to Year 11, each time building on prior knowledge in order to further their understanding. Lessons will be delivered on a particular topic for 2 to 3 weeks before moving on to a new topic. This length of time has been determined to allow a balance between depth of study and maintaining engagement for our student population.

When choosing a spiral style curriculum over a mastery style curriculum, where for example students may study algebra for all of year 8, we decided that a spiral was a better fit for several reasons. Revisiting a topic several times allows time for students to catch-up if they did not access the topic the first time around, and that spreading the topic over a number of years decreases the risk of a student missing that topic entirely.

Each year begins with a number topic as we believe this is an important foundation to begin with. The mix of topics then promotes interleaving. For example, in year 7 students study area and perimeter, then they study fractions. We would make sure to include some fractions questions involving area and perimeter in order to revisit an old topic, while learning a new one. This is a key part of our strategy in tackling the forgetting curve.

Qualifications and Exam Board

Our current year 9's will begin their GCSE's next year, and will be preparing for the Edexcel exam board. This particular exam board was chosen for a number of different reasons. We believe the assessments are clear and straightforward, the language used in the assessments is easily understood which will be beneficial for our population. The range of resources available with this specification is another benefit, and supports teachers well in preparing students for the exam. Finally, as one of the most popular specifications for maths, and as a growing school which will be employing more Mathematics teachers in the future, we believe that with this exam board will be most likely to be familiar to any new members of staff, which will be beneficial for our students.

In the future, we may also offer Edexcel awards in Maths. These are smaller qualifications than GCSE's and may be suitable for those students who might not be able to achieve a pass in GCSE maths.