Clevedon School Mathematics Curriculum: Statement of Intent

"A coherent and exciting curriculum which develops students who are confident, articulate and problem-solvers, bringing a sense of achievement and enjoyment"

Purpose of study:

Our curriculum gift for all learners is to gain the skills necessary to reason mathematically, the opportunity to appreciate the power and beauty of mathematics and give a sense of enjoyment and curiosity of the subject. We intend for all students to have procedural fluency and a bank of key skills that will equip them for successful integration in all aspects of their social and economic life. Our curriculum aims for students to have a conceptual understanding to allow them to be independent and become mathematicians who can problem solve. Mathematics is fundamental to empowering pupils to understand the world around them giving the underlying principles of science, engineering, technology and finance. We want to ensure students have a deep understanding of mathematical concepts so that they can use it as a tool to solve problems in both mathematics and other subject areas. We intend for students to be creative thinkers and confidently be able to recognise and use mathematical concepts to solve problems beyond the mathematical world. We will provide students with the fundamental numeracy skills needed to be a functioning member of society. Being a mathematician is a way of interacting with the universe, it is a way of thinking that helps us find solutions in the world. So our curriculum wants students to be fluent in a range of different mathematical behaviours. We want students to go beyond calculations and following procedures to visualise, represent ideas and organise information. Importantly we want students to generalise, noticing what is the same and what is different whilst extending ideas beyond what is in front of them. By learning to model, predict, explain and verify we are enabling our students to be empowered for life.

1. The Clevedon way promotes character, ambition and community in our curriculum:

The mathematics curriculum aims to develop student's confidence to reason mathematically and solve problems. We aim to stretch all students by exploring varied and increasingly complex problems over time. This will enable them to recall and apply knowledge rapidly and accurately. The curriculum will build character as a result of a need for resilience in everyday lessons. The mathematics curriculum also aims to ensure students encounter diverse cultures, societies and people through the exploration of the origins and history of mathematics when relevant.

Clevedon students will be able to make an impact on our local, national and global community because they will have the mathematical skills to work alongside global citizens and to compete in national and international competitions such as the United Kingdom Mathematics Challenges and Mathematics Olympiad competitions. Students are given the opportunity to gain the necessary skills to study beyond KS5, through the study of A Level and Further Mathematics. The skills and knowledge acquired will allow them to successfully study at university level, in mathematics or subjects requiring or desiring these qualifications, opening the door to numerous lucrative and enriching careers.

The intention of our curriculum is to embed the Clevedon School values of kindness through fostering a positive department culture that values and celebrates mistakes. Resilience, tolerance and perseverance are all qualities which students will develop; these are essential life-long skills to any successful career.

2. Our curriculum is ambitious for all learners:

We realise it is crucial to root learning in real life, in order to help students to see the links between school and the world beyond our walls, as well as prepare them for life after Year 11 and 13. Links are made to other curriculum areas and real-life applications when applicable. Real-life analogies are drawn upon when teaching key concepts, as well as the content or context from another subject area to show the application of a skill. Students are made aware of where a particular piece of mathematics may link at a later point, either at the next key-stage, university level, or beyond.

In order to ensure students have the opportunity to continue study at Level 2 or 3 at KS5 (depending on starting point), or to access a subject-related apprenticeship, our content covers the skills needed to be successful in later life. In addition to the mathematical skills acquired, students will be critical thinkers, and non-routine problem-solvers, both desirable skills in many professions.
We have high expectations of our PP students, the implementations of the 5Cs ensures their participation is guaranteed and their progress is supported. Students will be afforded the same opportunities as other student groups and provided with the necessary tools and equipment to allow them to access the curriculum fully, allowing them to succeed and flourish. For students with SEND, we ensure we maintain high expectations of their potential and progress by exposing all students to the same content, whilst scaffolding difficult concepts as necessary. When needed, resources will be differentiated to cater for individual needs to allow them to access the curriculum.
We ensure that students who come to us with high prior attainment and high aspirations are stretched and challenged to achieve their goals by having an opportunity to engage in deeper thinking of the subject and through pre-exposure to where concepts link later in the study of mathematics. Students are given opportunities to take part in external competitions, enrichment activities, such as inspirational mathematics talks and presentations, as well as in-house activities such as cryptography club.

3. Our curriculum is sequenced to enable our students to progress to brilliance:

The curriculum is a progression model which allows students to master skills along the journey. The curriculum is a route map, but has elements of flexibility built into it. We believe mastery learning is essential and through our rigorous assessment cycle we are able to offer responsive teaching. We ensure understanding is secure across each class before we move on.
Across KS3, key concepts are revisited regularly to allow students to successfully progress to KS4 and KS5 by having mastered the key skills.
Each time a concept is encountered, the building blocks and prior knowledge is revisited and refreshed as appropriate to allow new ideas to be linked to solid foundations.
At KS4, there is a balance of familiar and unfamiliar content in Year 10 to allow pupils to consolidate known skills, recall prior knowledge, as well as the challenge of new concepts and techniques. The content in Year 11 is generally more difficult and builds upon skills acquired in Year 10 and prior.
We incorporate spaced practice and retrieval activities such as substantial recall staters to ensure get an opportunity to forget and retrieve their knowledge from prior learning. Hegarty Maths forms a large part of mathematics homework, promoting independent learning through pupils being able access help in the form of demonstration videos and from the instant feedback as to whether questions are right or wrong. All these strategies aim to make our students feel confident and prepared when tackling problems or examinations.
At KS5, the curriculum is delivered in an order which reflects the level of difficulty and demand of the content, as well as allowing students to apply knowledge learned earlier in the course to harder concepts later. Year 12 is predominantly dedicated to study of the AS course, with students starting the A2 content towards the end of the year. Applied units, mechanics and statistics, are delivered at a time so that students have the necessary cross-over knowledge at that point in time and show the clear links and applications of different disciplines of mathematics.