

Mathematics gives you the skills and knowledge to be able to successfully navigate through a world that is surrounded by numbers. Delivering a successful mathematics curriculum will equip learners with the ability to reason and problem solve; skills which are fundamental to achieving success in both everyday life and future employment.

At Downlands, we are proud to deliver a curriculum that is designed to ensure that all pupils of all abilities and backgrounds are given the opportunity to develop in both their understanding of and confidence in mathematics, recognising its value in all paths of life. Exceptional provision for our lower attaining pupils and those with Special Educational Needs and Disabilities (SEND) enable those pupils requiring extra support to follow the same curriculum as the rest of the cohort.

During KS3, all pupils are taught the same topics at the same time, resulting in everyone having access to the same topics, whilst being tailored to individual needs. The three principles that underpin our curriculum are developing a deep understanding; developing mathematical thinking and fluency; and developing problem solving skills. By creating a positive culture, we increase confidence and competence, which results in strong secure learning. Students are introduced explicitly to new mathematical vocabulary, which they are encouraged to use that orally and within their written work.

Our curriculum design incorporates the best of both 'mastery' (spending longer and putting depth before breadth and making connections) and 'spiral' (supporting our belief that learning takes place over time and is most successful by repeatedly exposing pupils to topics in different contexts with increasing levels of difficulty across different years). It has also been sequenced to ensure that any mathematics skills taught in other subject areas are either taught in mathematics lesson first, or alongside the other curriculum areas, to both support and raise awareness of the use of mathematics across the curriculum.

Key Stage 3

An introduction to algebra offers a new and exciting start to KS3 mathematics. With all pupils starting with very little knowledge of algebra from KS2, an opportunity is created for a positive start by all, as it is not hindered by any difficulties or misconceptions previously encountered. An early introduction to algebra also allows immediate exposure of combining algebra with other mathematical topics, enhancing problem-solving skills and encouraging an appreciation of the significance and value of algebra within mathematics. Gaps and misconceptions of key topics: number, shape and statistics from the KS2 curriculum are identified and addressed using regular skills checks, which continue throughout the curriculum. These ensure that misconceptions are swiftly identified and addressed and do not impact the understanding and learning of subsequent topics. Opportunities are given to use skills that have already been learnt in different contexts whenever possible, resulting in both improved memory and connections made between the different topics.

Key Stage 4

At key stage 4, the curriculum is separated into higher and foundation topics, and pupils follow the course that will further support and enhance their understanding and will ensure the best chances of success when sitting the GCSE. We use the examining body, Edexcel, as it helps students understand key mathematical concepts and core skills, while simultaneously building their confidence and motivation in the subject.

KS4 builds on the skills learnt at KS3 and we offer the same principles of teaching, incorporating both 'mastery' and 'spiral' methods. To allow our students to be successful problem solvers, we introduce new material in small steps; provide accurate and detailed models; continuously check student understanding; allow independent practice; and provide weekly and monthly reviews.

We see KS4 mathematics as a stepping stone for all students. For those who will not continue the subject at higher education, we offer them the mathematical and financial literacy that will support them in adulthood. For those who will study the subject at KS5 or university, we ensure their knowledge of key topics is secure. We facilitate in bridging the gap by offering further support on a weekly basis and delivery of supplementary courses in silo to their mathematics GCSE. We have found this is a catalyst for motivation and confidence in our students.

Our key strategy to recover from the pandemic in maths is to focus on the sequencing of questions and effective questioning. By intelligently varying sequences of questions and offering deliberate guided practice, we are able to allow students to better predict patterns and think mathematically; rather than think and work procedurally. It is through this instruction we expect to see most growth of our students in mathematics.