Dallam School

Mathematics
Curriculum Intent

Why we teach what we teach

The Dallam Mathematics curriculum seeks to build confident, fluent mathematicians. It is our ambition that every child can use mathematics to reason and solve problems in the real world. We aim to help our students build the mathematical knowledge and skills required to allow them to access and explore the world around them. We place an emphasis on developing functional numeracy, to not only enable our students to achieve strong exam outcomes, but to leave school able to use mathematics to reason.
Our aim is that having left school, our students can confidently apply mathematics either in the pursuit of further study, or as a reasoning tool to help them in problem-solving and decision-making.

Core concepts	Mathematics is split into the following key areas of study: number, algebra, shape, statistics, and probability. At Dallam School, we believe that by developing strong foundations in number, pupils can then go on to access the other strands of the maths curriculum through this. We focus on making strong links between topics, so that pupils begin to see mathematics as a series of interconnected skills and approaches to problem solving.
How our curriculum builds over time	Our whole curriculum is shaped by our school vision which aims to enable all children, regardless of their background/ability/additional needs, to flourish to become the absolute best version of them-selves they can possibly be. We teach the National Curriculum, supported by clear skills and knowledge progression. This ensures that skills and knowledge are built on year by year and sequenced appropriately to maximise learning for all children. We believe that all of mathematics can be appreciated more fully once a student has a deep appreciation of the number system, therefore we put number sense and place value first to ensure that all understanding builds. Our Key Stage 4 curriculum is designed to build upon skills learnt at Key Stage 3. At this stage in the curriculum students will now be following a foundation tier or a higher tier scheme of work. All students will sit the Edexcel GCSE in Mathematics.
Key ingredients of a lesson	All great lessons include a recap of previous content, to root the lesson in the context of the unit. This is then followed by an element of new content delivery, which is explored through thoughtful, planned questioning. Pupils then will have an opportunity to practice using new skills, whilst the teacher checks for understanding. Teachers check on understanding and review the material to allow pupils to make maximum progress and to prevent misconceptions from developing. Teachers then review the learning which has taken place whilst checking progress and understanding.
How we assess the knowledge, understanding and skills of students	Teachers assess students' understanding at multiple opportunities within a lesson. As a department we use mini-whiteboards in many lessons which allow staff to determine when students are ready to start independent work and who may need extra support. Students are given mini quizzes fortnightly based on the content they have been taught and staff give student feedback and a task based on their weaknesses to enable learners to make progress. Students also have formal assessments at the end of each unit.

How we provide cultural capital and extra-curricular opportunities	We endeavour to broaden students' experience of mathematics through several strategies. We run a club providing additional challenges for students in addition to participation in STEM events around the school. In addition to this, we provide a daily support session for pupils, to allow them to access either extra help if necessary, or additional challenge. We also provide opportunities for our students to engage in additional mathematics support programmes, such as the Parallelogram, operated by Dr Simon Singh.
How we provide stretch and challenge enrichment	Our higher ability students do not race through the curriculum, but instead work through it in much greater depth. Links to A-Level Maths are made where appropriate. Students in KS3 can attend the weekly maths club where students are faced with problem solving tasks which can help them to prepare for the UKMT Maths Challenge. The UKMT Maths Challenges are available to the most able students in KS3 and KS4 and are individual and team based with the highest achievers becoming part of the British Mathematical Olympiad and further going on to represent the UK in the International Mathematical Olympiad. This gives students an opportunity to take their knowledge of mathematics a step further.
How we adapt our curriculum to meet the needs of all students	To make mathematics lessons inclusive our teachers anticipate what barriers to learning activities and lessons may pose for students with particular SEN. We minimise the need for any copying from the board and use scaffolded worksheets instead. Seating plans are used to enable both the teacher and learning support assistant to provide one to one help when necessary. We regularly discuss mathematical errors and misconceptions as a class to avoid the culture of 'right answers' which helps to prevent students becoming inhibited by fear of making mistakes. Students can also attend maths support at lunchtime four days a week to get help with homework.
How we link our subject knowledge to the world of work and further study	We make clear links to the world of work and further learning throughout our lessons, focussing on developing skills rooted in the concrete context of the real world, before moving to more abstract areas of maths. Our students are encouraged to engage in events run by the Advanced Maths Support Programme, and we are constantly developing links with local universities.
How we provide personal development for students	In Mathematics, we develop independence by encouraging our students to try challenging problems without initial support from the teacher. Through this low-stake form of testing, we allow our students to develop the courage to tackle more challenging problems independently. We have an embedded culture of respect in our classrooms, where discussion is encouraged, and pupils are led into an environment where making mistakes is part of their learning. To further develop integrity in our students, we encourage them to share their mistakes and own their progress. Compassion is built into our classroom culture again, where pupils of all abilities work together to solve problems, often starting with goal-free problems which all students can access. Our focus on endeavour is centred on progress, rather than attainment – we celebrate our students' successes with the class, placing a focus on effort and endeavour.