

The aim of the Mathematics curriculum across all sites within the Raedwald Trust is to ensure that all learners develop their mathematical fluency, are able to reason using this fluency and apply their knowledge to solve a wide range of practical/functional problems.

As an alternative provision, we believe that all students should have the same opportunities that mainstream students would experience so we cater for students working at Entry Level up to the GCSE Higher Tier. Alongside these courses, students will have the opportunity to sit Functional Skills qualifications that will highlight our learners' understanding of transferable practical mathematical knowledge.

Students that work within our sites have all experienced a varied education. Many students have experienced interrupted education both short and long term. A large investment of time is spent reviewing and improving gaps in knowledge.

In addition to consolidating subject content from Key stage 3, the statutory areas that are covered across our curriculum are:

- Number
- Algebra
- Ratio, proportion and rates of change
- Geometry and measures
- Probability
- Statistics

The Programme of study allows students to gain a wide breadth of the GCSE content. A focus on functional understanding, number and ratio is deliberate to allow students these core skills. These topics make up 56% of the course. The scheme is designed to allow enough time to allow topics to be reviewed to improve memory recall.

	Number	Geometry and measures	Ratio, proportion, rates of change	Algebra	Statistics	Probability
19 weeks 38 Lessons	Equivalent fractions, decimals and percentage	Perimeter	Simplifying a ratio	Sequences	Representing data- Bar charts, Pie charts and Pictograms	Probability scale
	Approximation	Area	Sharing in a given ratio	Substitution	Scatter diagrams	Relative frequency
	$\times$ and $\div$ Fractions	Surface area	Percentage Increase/decrease	Linear equations	Averages	Tree diagrams
	Fractions of a quantity	Volume	Percentage change	Brackets and factorising		Sample spaces
	Four operations			Plotting linear and quadratic graphs		
	Prime numbers, HCF and LCM					

The Programme of Study aims to deliver the wide breadth of the demanding GCSE specification. Due to limitation of time a number of topics are not looked at within their entirety and these include angles, Pythagoras' theorem, Trigonometry, vectors, and volume of cones/pyramids. It is hoped that the mainstream schools will develop these gaps in learning.

Due to the wide variety of learners that attend our varied provisions we do not apply a one size fits all model. Many students have missed large gaps in their education and students also join us at various points across the academic year.

The scheme allows us to differentiate work to Entry Level to support students that need to develop and gain confidence within the core strands of mathematics. The specification we use is co-teachable with the GCSE course.

Students performing at or above GCSE Grade 5 on arrival will be given a differentiated tasks which will allow them to access the Higher GCSE paper. Students will complete the additional topics alongside the main scheme of work. Through collaborative work with the dual school it is hoped that students can receive support to aid understanding from mainstream teachers.

Improving recall

Topics are revisited at the start of lessons that review and recap knowledge from last lesson, last week and last month. The EDI framework used with lessons explicitly focusses on recall of previous knowledge. We use this format to allow us to improve retention of key knowledge. We also ensure that lessons place a high emphasis on fractions, decimals, percentages and ratio as these topics are fundamental topics that are tested within many other topic areas.

Assessment in Mathematics

We assess pupils for three key reasons:

- a. To find out what they do and do not know so that we can plan next steps in their learning journey.
- b. To understand their patterns of progress.
- c. To make judgements about their progress towards key markers in their education.

Ultimately, good assessment will add value to pupil outcomes by helping teachers and leaders to understand what is having good impact and what needs to be refined or addressed for individual pupils.

We use subject specific moderated assessments to baseline student understanding against standardised GCSE/Functional Skills /Entry level assessments. We use this information to capture what the students know within each subject and most importantly any gaps in their knowledge. We use this information to inform future planning to ensure students make progress within each subject.

Assessment is ongoing and individual teachers record and share students achievements with parents and home school. Using subject specific moderated assessments, subject teachers assess all students by using GCSE, Functional Skills and Entry Level questions. Students also complete end of topic assessments. The assessments mirror the level of challenge that they will face when they reach their final examinations. We discuss current attainment with students in relation to their acquisition and mastery of skills as well as GCSE/Functional skills Level. At each stage we look at gaps in learning and adapt lessons to improve these areas.

Mathematics and the wider curriculum

Cultural Capital

Within the Trust we believe that it is important for all students to develop cultural skills, knowledge and behaviours that will allow them to thrive in society and the world of work. The Mathematics curriculum sets out to develop our learners' cultural capital to make them ready for their next stage in their lives. This is achieved in many ways including teaching real life skills related to reading timetables, budgeting, finance, recipes, speed/distance, etc.

SMSC

Mathematics enables students to make sense of the world around them and we strive to enable each of our students to explore the connections between their numeracy skills and every-day life. Students are provided with opportunities to use their maths skills within real life contexts, applying and exploring the skills required in solving various problems.

Problem solving skills and teamwork are fundamental to mathematics through creative thinking, discussion, explaining and presenting ideas. Students are always encouraged to explain their understanding to each other and support each other in their learning. Through teamwork, students are able to gain confidence which should lead to them becoming independent learners.

Within the curriculum we look at various approaches to Mathematics from around the world and use this to discuss their origins. This includes different multiplication methods from around the world and also the origins of Pythagoras' theorem. We try to develop an awareness of both the history of maths alongside the realisation that many topics we still learn today have travelled across the world and are used internationally.

British values

The Mathematics curriculum promotes the British values of tolerance and resilience each lesson through problem solving and understanding of complex concepts. Students are encouraged to learn from mistakes and are supported to improve their understanding. Within the statistics modules students are encouraged to evaluate data and look for bias.

Careers

Within lessons pathways for future study of STEAM subjects is promoted. When looking at topics students are encouraged to see how these might be used in the real world and within vocational contexts. Lessons are linked to developing vocational and functional understanding of IT, Construction, Cooking, Sport, Science, Transport planning, Finance, etc. Staff will make every attempt to link mathematics into the vocational interests of individual students.

Reading

Every opportunity is taken within the classroom to allow students to develop their reading. Many forms of text are actively shared with students to prepare them for independence within society including reading menus, timetables, recipes, advertisements, construction plans, etc.

Students are actively encouraged to read and are supported to understand key words. Shared reading and choral reading often occurs when looking at texts as a class.

Staff explicitly teach the meaning of command words as part of the EDI lesson structure to aid students' understanding of mathematical questions. Within lessons staff promote high standards of literacy, articulacy and the correct use of standard English. Displays engage students to support them with the understanding of key command words.