Raedwald Academy Trust
KS3 Maths Policy

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

Within the Traded KS3 offer students after induction will begin the topics in order, working from number, statistics, number, ratio, probability, statistics, and measure.

We aim to provide our students with opportunities to follow a programme of study based on the National Curriculum. It will build upon subject knowledge gained in KS2 whilst preparing them for the challenges of KS4 – whether this is in an Alternative Provision or if they have returned to mainstream education. Pupils entering our Trust are likely to be at different stages in their mathematical knowledge. Initially they will be assessed for prior knowledge and will enter the programme of study at an appropriate level, progressing along curriculum strands – these strands will be revisited throughout the key stage to enable pupils to cover them regardless of when they enter the trust. Year 9 pupils also can start studying GCSE mathematics topics as they begin following the 3-year GCSE course.

The fundamental areas in our mathematics curriculum are:

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

The overview below is intended for those on a full-time offer. However, as the units are repeated each year it is also suitable for those on a part-time offer and those joining us mid-way through the key stage. Bespoke learning packages and initial assessment will ensure that students will access the relevant content for the unit as outlined in the curriculum strands.

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Overview of units of study across each year

	Autumn	Spring	Summer
Year 7	**Number** – four operations; rounding; factors and multiples; basic percentages **Algebra** – coordinates in all four quadrants **Ratio** – fractions **Geometry** – area and perimeter; draw and measure line segments and angles; **Statistics** – representing data	**Number** – BIDMAS; decimal place value; negative numbers **Algebra** – simplify algebraic expressions; substitution **Ratio** – calculate fractions; divide a quantity to a given ratio **Geometry** – properties of polygons **Probability** –simple probability experiments	**Number -** money; using a calculator; inverse operations; change between standard units (time, length etc); percentage change **Algebra –** sequences **Ratio** – scale factors; **Geometry –** properties of angles; transformations **Statistics –** analysing data
Year 8	**Number**– four operations; factors and multiples; BIDMAS; using a calculator **Algebra –** simplify and manipulate algebraic expressions; algebraic vocabulary; solve simple equations **Ratio –** manipulate and calculate fractions; **Geometry –** properties of polygons and 3D shapes; area and perimeter; volume of cuboids and prisms	**Number**– rounding; percentages; money including decimals; percentage change **Geometry –** describe/draw/measure line segments and angles in shapes; properties of angles at a point **Statistics –** representing data	**Number –** inverse operations; negative numbers; change between standard units (time, length etc); **Algebra** – sequences; co-ordinates in 4 quadrants; substitution; solving basic equations **Ratio –** divide a quantity in each ratio **probability**– basic probability theory **Statistics** – representing and analysing data
Year 9	**Number –**basic number; factors and multiples; basic fractions; basic decimals; rounding	**Number** - basic percentages **Algebra –** sequences **Ratio –** introduction to ratio and proportion	**Algebra -** equations; **Geometry –** transformations; Pythagoras' theorem; 2D

	Algebra – basic algebra; co-ordinates and linear graphs **Geometry –** angles; scale drawings and bearings; **Statistics –** collecting and representing data Time for review and revision	**Geometry –** introduction to perimeter, area, and circumference **Probability –** basic probability Time for review and revision	representations of 3D shapes **Statistics –** scatter graphs Time for review and revision

Assessment and outcomes

We assess pupils for three key reasons:

a. To find out what they do and do not know so that we can plan the 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.

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

We use this information to capture what the students know within each strand and most importantly any gaps in their knowledge. We use this information to inform future planning to ensure students make progress within each strand.

Assessment is ongoing, and individual teachers record current working grades at the end of each half term. Using subject specific moderated assessments, subject teachers assess all students by using KS3 curriculum strands (RAG rating) and using the Mastery progress grid. 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 for year 9. At each stage we look at gaps in learning and adapt lessons to improve these areas.

Students that have large gaps in learning are supported through a differentiated curriculum that includes small group teaching with the use of Numicom to aid low level understanding of number.

Mathematics and the wider curriculum

Cultural Capital:

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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 prepare them for their next stage of life. This is achieved in many ways including teaching students 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 can 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 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 skills. 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 occur when looking at texts as a class.
Staff explicitly teach the meaning of command words 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.