

# Parkside Academy

## Key Stage 4 Mathematics Policy

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### Origins of the Curriculum

Our Key Stage 4 Mathematics programme of study is firmly rooted in the National Curriculum for Mathematics. It is designed to ensure that all pupils—whether attending Parkside Academy full-time or on dual placements—have access to a broad, ambitious curriculum that mirrors the standards and expectations of mainstream education. The programme aims to complement and enhance the learning provided by pupils’ home schools, supporting smooth progression to post-16 education, training, or employment.

**Progression Across the Phase** is mapped carefully to build on prior knowledge acquired at Key Stage 3. The sequence of learning is deliberately planned to develop mathematical fluency, reasoning, and problem-solving skills in a structured and coherent way. This ensures pupils can strengthen and extend their understanding of number, algebra, ratio, geometry, probability, and statistics, building the secure foundations they need for examination success and life beyond school.

**Organisation of Subject Content** follows a concentric model, with key mathematical concepts revisited regularly through interleaving and spaced practice. Units are taught in a logical sequence that allows knowledge and skills to build cumulatively, while ensuring that core skills—particularly in number and ratio—are reinforced throughout the year. This structure ensures pupils have multiple opportunities to consolidate learning and apply skills in increasingly complex contexts.

**Purpose Beyond the National Curriculum** recognises that Mathematics is fundamental to everyday life, employment, and active citizenship. Beyond meeting statutory requirements, the curriculum equips pupils with essential numeracy and problem-solving skills they will rely on long after they leave school. Pupils are encouraged to develop resilience, logical thinking, and the confidence to apply their learning to real-life situations.

**Designed for Alternative Provision**, this curriculum is deliberately tailored for the Raedwald Trust’s AP context and Pathways available at Parkside Keys Stage 4 (*see table below*). This curriculum is deliberately flexible and responsive to the needs of pupils whose educational journeys may have been disrupted.

It prioritises identifying gaps in understanding and tailoring support to maximise progress during placements of varying length. Practical and functional applications of Maths are emphasised throughout, ensuring that all pupils experience Mathematics as a relevant and empowering subject that prepares them for reintegration into mainstream settings, further education, or the world of work.

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<b>Pathways</b>	<b>Roll Status (full time/fractional)</b>
KS4 Haven Plus Double PEX (up to 2 years)	Single Roll
KS4 Haven Plus CiC (up to 2 years)	Dual Roll – fractional placement
Haven Highly Complex KS4 (up to 2 years)	Dual Roll – fractional placement

### Content and Sequencing

The Mathematics curriculum is structured around the breadth and ambition of the KS4 National Curriculum and reflects the key content areas assessed across the major exam boards. It is designed to ensure that pupils build fluency, mathematical reasoning, and problem-solving skills across a balanced range of topics:

- Number: Structure and calculation; fractions, decimals and percentages; measures and accuracy
- Algebra: Notation, vocabulary and manipulation; graphs; solving equations and inequalities; sequences
- Ratio, Proportion and Rates of Change
- Geometry and Measures: Properties and constructions; mensuration and calculation; vectors
- Probability
- Statistics

### Working Mathematically is embedded throughout, supporting pupils to:

Develop fluency through varied practice and retrieval

Reason mathematically by making connections, using mathematical language, and constructing arguments

Solve problems in both mathematical and real-world contexts

### Organisation of Learning Objectives

Learning objectives are derived from the National Curriculum but are adapted to meet the diverse needs of our pupils and the range of exam boards they may be working towards in their home schools. The sequence of learning is carefully mapped to move from foundational to more complex ideas, with early focus on number, ratio, and algebra as these underpin much of the GCSE content and everyday functional maths.

Key concepts are revisited through a concentric model that uses interleaving and spaced retrieval to support long-term retention. Pupils regularly practise applying skills across topics, developing their capacity for mathematical thinking and resilience in tackling unfamiliar problems.

### Curriculum Coverage

Given the short-term and sometimes fractional nature of placements on the Haven pathways, it is not always possible to deliver the entire GCSE Mathematics specification in full. Instead, the curriculum prioritises core concepts and key skills that provide the strongest foundation for post-16 progression and reintegration into mainstream education. Where possible, content is aligned with the most commonly used local exam boards to support continuity of learning. Some advanced topics—such as vectors or volume of cones and pyramids—may be covered with less depth depending on the time available and pupils' prior coverage. There is a separate programme of study for pupils who will be taking the higher GCSE paper.

### Curriculum Intent

Our aim is to equip pupils with the mathematical knowledge, skills, and confidence they need to navigate both academic and real-life challenges. The curriculum supports pupils in developing critical thinking, logical reasoning, and the ability to engage with data and quantitative information in informed and meaningful ways.

The structure of the curriculum reflects the importance of both breadth and depth, providing repeated opportunities to revisit and apply prior knowledge. Lessons are designed using evidence-informed approaches—including scaffolding, modelling, and cognitive science principles such as Rosenshine's Principles of Instruction and Generative Learning techniques—to ensure accessibility and challenge for all learners, regardless of their starting point.

*Note: This curriculum is designed for a full-time offer; refinements to content and delivery may be made for pupils accessing provision through fractional and/or short-term placements. Please see the table of Haven Pathways on Page 1 for further detail.*

**Adaptation of Teaching** is based on a diet of high-quality teaching (EEF, 2022), comprehensive induction, baseline assessments and ongoing teacher evaluation.



Induction, Individual Learning Plans (ILPs) and SEND information guide the support needed, which may include:

- Use of overlays for Irlen’s syndrome or dyslexia
- Additional scribing or use of technology
- Explicit vocabulary instruction, sentence starters and frameworks for scaffolding writing
- Practical learning and visual aids
- Flexible groupings and targeted interventions to close gaps in prior knowledge

These assessments identify each pupil’s subject-specific knowledge and SEND requirements. Pupils are taught through our pedagogical approach (EDI – explicit direct instruction).



This responsive approach ensures every pupil can access the curriculum, engage with content, and make meaningful progress.

**Overview of Units of Study:**

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	Autumn	Spring	Summer
Year 1	TBC	TBC	TBC
Year 2	TBC	TBC	TBC

### Assessment and Outcomes

#### How will assessments be made on an ongoing basis? (Formative Assessment)

Assessment is embedded throughout the Mathematics curriculum using a variety of formative strategies. Small class sizes enable staff to closely monitor individual progress within each lesson, identifying misconceptions and addressing them in real time through targeted questioning, verbal feedback, worked examples, and adaptive teaching.

A whole-school RAG (Red–Amber–Green) system is used via a formative assessment tracker, recording each pupil’s progress from their initial baseline assessment—completed during induction—and updated regularly to reflect their understanding of taught content and skills. In addition to daily in-lesson checks, pupils complete end-of-unit assessments across core topics. These take the form of short exam-style question sets, undertaken in a calm, supported classroom environment to reduce anxiety while gradually building familiarity with assessment formats and expectations.

#### How will this information be used to inform practice?

Information gathered through formative assessments and module tasks directly informs curriculum delivery and classroom practice. Teachers use insights from questioning, classwork, and assessment trackers to adapt planning, revisit key concepts, and personalise scaffolding for individual pupils.

Assessment outcomes are shared with pupils as part of an ongoing dialogue, helping them to reflect on their progress, identify strengths, and develop effective revision habits. This process builds learner confidence and increases ownership of learning. Data is also shared with pupils’ home schools where appropriate, supporting collaborative planning for reintegration and continuity of learning.

#### What are the intended outcomes of delivering this curriculum?

The overarching aim is for all pupils to be equipped to reintegrate successfully into mainstream education and continue working towards a nationally recognised qualification in mathematics, such as GCSE or Functional Skills. Beyond academic outcomes, the curriculum supports the development of essential life skills in numeracy, logical reasoning, and independent problem-solving. Pupils gain the confidence to engage with mathematics in real-world contexts and apply their learning meaningfully as they move towards post-16 education, training, or employment.

### **How will benchmark/statutory assessments be used to track progress and inform practice?**

Progress in Mathematics is measured against each pupil's baseline assessment and tracked using internal formative tools. Where possible, statutory benchmark assessments provided by mainstream schools are used in conjunction with the Haven assessment framework to:

- a. Track progress**—ensuring alignment with age-related expectations, national curriculum and external exam requirements
- b. Inform practice**—highlighting priority areas for intervention, shaping teaching sequences, and ensuring pupils are well prepared to succeed in formal examinations arranged and hosted by their mainstream setting (where they have one)

Termly summative assessments are mapped to key learning objectives, providing a broader overview of attainment and identifying areas for consolidation or extension. In addition, pupils working toward GCSE or Functional Skills qualifications undertake structured exam practice to build assessment readiness over time.

Assessment outcomes are analysed regularly to inform reintegration planning, tailor teaching approaches, and shape the wider curriculum offer. While measurable progress is important, equal value is placed on building mathematical resilience, independence, and a positive learning identity in pupils whose prior experiences of maths may have been disrupted or negative.

### **Mathematics and the Wider Curriculum**

**How does this curriculum area support the delivery of British Values, SMSC, and cultural capital?** Mathematics contributes significantly to pupils' spiritual, moral, social, and cultural (SMSC) development and supports the promotion of British Values. Pupils build resilience and perseverance through tackling challenging problems, developing a growth mindset that encourages learning from mistakes. Collaborative tasks require pupils to communicate effectively, listen to differing viewpoints, and engage constructively with others—reinforcing values such as mutual respect, democracy, and individual liberty.

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Moral and ethical reasoning is developed through interpreting statistical data and recognising potential misuse or bias, particularly in media and public discourse. Pupils are supported to question information critically and apply their learning to real-world ethical dilemmas—for example, in the use of statistics in advertising or political campaigns.

The curriculum builds cultural capital by exploring the historical development of mathematical ideas and recognising the global nature of mathematical thought. Pupils learn about mathematical methods from diverse cultures and study the contributions of mathematicians from a range of backgrounds, helping them see Maths as a shared human endeavour rather than a purely abstract subject.

Mathematics is also made relevant to daily life through practical applications—such as budgeting, understanding payslips, managing time, and interpreting financial products—supporting pupils’ readiness for independent adulthood.

**How will reading be developed as a core part of this subject?** Reading and literacy are integrated throughout the Maths curriculum. Pupils engage with functional texts such as menus, timetables, invoices, and data tables, learning to extract and apply relevant information in real-life contexts. Mathematical problems are often presented through worded scenarios, requiring careful reading and comprehension.

Teachers explicitly teach mathematical vocabulary and exam command words to ensure pupils can access and interpret questions confidently. This vocabulary is reinforced through shared reading, choral practice, and embedded use in lessons, helping pupils to become fluent in the language of Maths. Through exposure to different types of written problems and data presentations, pupils develop strategies for reading with purpose and clarity, contributing to stronger performance across both Maths and cross-curricular literacy.

**How will this subject support pupils’ knowledge and understanding for life beyond education?** Mathematics provides pupils with vital skills for navigating everyday life and preparing for further education, employment, and citizenship. Core numeracy skills enable pupils to manage personal finances, plan budgets, interpret financial products, and make informed consumer decisions.

Pupils also develop broader skills in logical reasoning, pattern recognition, estimation, and problem-solving—transferable across a wide range of vocational and academic pathways, including engineering, business, construction, health, and the wider STEAM industries. The curriculum aims to foster mathematical confidence, encouraging pupils to approach unfamiliar problems with logic and resilience. Whether in the workplace, higher education, or everyday decision-making, pupils leave with the tools to apply mathematics meaningfully and with purpose in the real world.