

POLARIS EDUCATION

MATHEMATICS CURRICULUM

Curriculum Vision

At Polaris, we believe that mathematics is an essential life skill that enables pupils to make sense of the world around them, solve problems, think logically and become independent learners. Our mathematics curriculum is designed to provide all pupils with the knowledge, skills and confidence required to succeed in education, employment and everyday life.

The curriculum is carefully sequenced from Year 1 to Year 11, ensuring that knowledge and skills build progressively over time. Through a consistent structure of half-termly themes, pupils revisit and deepen their understanding of key mathematical concepts, allowing learning to become embedded in long-term memory. This approach is particularly important for our pupils, many of whom have SEND, gaps in prior learning, disrupted educational experiences or barriers to engagement.

We recognise that pupils may be working at different stages across different areas of mathematics. Therefore, the curriculum provides a flexible progression framework that enables teachers to match learning accurately to individual need whilst maintaining high expectations for all learners.

Our mathematics curriculum aims to:

- Develop fluency in number and calculation.
- Promote mathematical reasoning and problem-solving skills.
- Build confidence and resilience when approaching mathematical challenges.
- Enable pupils to apply mathematical knowledge in practical and real-life contexts.
- Develop financial literacy, employability skills and preparation for adulthood.
- Ensure all learners access an appropriate accreditation pathway at Key Stage 4.
- Support progression into further education, employment and independent living.

At Key Stage 4, pupils follow pathways which best meet their individual needs and aspirations through:

- AQA GCSE Mathematics
- Entry Level Mathematics (Entry 1-3)
- NCFE Functional Skills Mathematics Level 1 and Level 2
- ASDAN Mathematics Short Course

Through these pathways, pupils continue to develop both academic and functional mathematical skills while preparing for their next stage of learning and life.

Implementation

The Polaris Mathematics Curriculum is delivered through a structured progression model that maps knowledge and skills from Year 1 through to Year 11. The curriculum is organised around six recurring half-term themes

This consistent structure supports retrieval, reinforces prior learning and helps pupils make connections across different areas of mathematics.

Teachers use ongoing assessment to identify pupils' starting points and adapt learning accordingly. Lessons are carefully planned to provide:

- Explicit teaching of new concepts.
- Guided practice and modelling.
- Opportunities for repetition and retrieval.
- Practical and visual approaches to support understanding.
- Reasoning and problem-solving opportunities.
- Real-life mathematical applications.

Teaching is adapted to meet the needs of individual pupils through:

- Scaffolding and differentiated resources.
- Small-step learning approaches.
- Concrete, pictorial and abstract representations.
- Individual targets and personalised learning pathways.

- Intervention and reinforcement where required.

Across Key Stages 3 and 4, pupils are provided with opportunities to apply mathematics through:

- Financial education.
- Enterprise activities.
- Employability projects.
- Independent living skills.
- Cross-curricular learning.

At Key Stage 4, learning is further personalised through pathway-specific programmes leading to GCSE, Entry Level, Functional Skills or ASDAN accreditation. These pathways ensure that all pupils experience success and achieve meaningful outcomes.

Cross-Curricular Mathematical Themes (Years 7-11)

Embedded across all pathways:

Financial Capability

- Budgeting
- Banking
- Shopping
- Tax
- Payslips
- Savings
- Interest

Employability Mathematics

- Problem solving
- Data interpretation
- Measurements
- Costings
- Timetables
- Project planning

Independent Living

- Household budgeting
- Cooking and recipes
- Travel planning
- Bills and utilities
- Personal finance

Mathematical Reasoning

- Explain
- Justify
- Prove
- Compare
- Evaluate

Curriculum structure

Key stage 1						
	Autumn 1 Number	Autumn 2 Shape & Fractions	Spring 1 Time & Duration	Spring 2 Length & Height	Summer 1 Mass & Weight	Summer 2 Capacity & Volume
Year 1	Count to 100, place value within 100, one more and one less, number recognition and ordering	Recognise common 2D and 3D shapes, identify halves and quarters	Tell time to the hour and half hour	Compare lengths and heights using practical language	Compare mass and weight using practical objects	Compare and describe capacity and volume
Year 2	Place value to 100, addition and subtraction, multiplication and division facts (2, 5, 10)	Properties of 2D and 3D shapes, thirds, quarters, equivalence	Tell time to 5 minutes, intervals of time	Measure and compare length and height using standard units	Measure and compare mass using standard units	Measure capacity, collect and interpret simple data
Key stage 2						
	Autumn 1 Number	Autumn 2 Shape & Fractions	Spring 1 Time & Duration	Spring 2 Length & Height	Summer 1 Mass & Weight	Summer 2 Capacity & Volume
Year 3	Place value to 1000, multiplication tables 3,4,8	Fractions, equivalent fractions, right angles, shape properties	Analogue and digital time, 24-hour clock introduction	Measure perimeter, compare lengths and distances	Add and subtract measures involving mass	Capacity, volume, bar charts and pictograms

Year 4	Place value beyond 1000, negatives, four operations	Equivalent fractions, symmetry, geometry	Time conversions and problem solving	Metric conversion and measurement	Weight and mass conversions	Statistics, graphs and data interpretation
Year 5	Place value to 1,000,000, factors, multiples, primes	Fractions, decimals, percentages, coordinates and angles	Timetables and elapsed time	Area, perimeter and scale	Metric conversion and practical measures	Statistics and data handling
Year 6	Number fluency, formal calculations and reasoning	Algebra, fractions, percentages and geometry	Ratio and proportion involving time	Coordinates and measurement	Statistical analysis and averages	Transition to KS3 mathematics
Key stage 3						
	Autumn 1 Number	Autumn 2 Shape & Fractions	Spring 1 Time & Duration	Spring 2 Length & Height	Summer 1 Mass & Weight	Summer 2 Capacity & Volume
Year 7	Place value, BIDMAS, primes, factors and multiples	Geometry, angles, area, perimeter and fractions	Ratio, proportion, speed and time	Measurement, scale drawings and units	Algebraic expressions and equations	Probability and statistics
Year 8	Fractions, decimals, percentages and negative numbers	Circles, Pythagoras, shape properties and transformations	Financial maths, percentage change and rates of change	Units, area, volume and compound measures	Formulae, graphs and sequences	Data handling and probability

Year 9		Standard form, indices, surds and roots	Trigonometry, constructions and geometric proof	Direct and inverse proportion, compound measures	Coordinate geometry, gradients and graphs	Simultaneous equations, sequences and functions	Statistics, probability and GCSE preparation
Key stage 4 pathways							
All pathways		<i>Number skills</i>	<i>Geometry, fractions and shape pathway content</i>	<i>Financial maths, time, budgeting and money skills</i>	<i>Measure, scale, perimeter, area and practical applications</i>	<i>Algebra, ratio, proportion and workplace maths</i>	<i>Statistics, probability, data handling and examination preparation</i>
GCSE	Year 10	Standard form, indices, surds, bounds, FDP conversions, calculator skills	Fractions, area and perimeter, circles, sectors, compound shapes	Ratio, proportion, speed, distance-time graphs	Similarity, scale drawings, Pythagoras	Percentages, compound measures, direct proportion	Volume, surface area, statistics and probability
	Year 11	urds, algebraic fractions, recurring decimals, retrieval and revision	Trigonometry, constructions, loci, bearings	Compound interest, growth and decay, direct and inverse proportion	Coordinate geometry, gradients, graph interpretation	GCSE revision and examination preparation	Post-16 transition mathematics
Entry Level Maths	Year 10	Number recognition, place value, counting, addition and subtraction	Shape recognition, simple fractions, symmetry	Reading clocks, calendars and timetables	Measuring length and height using standard units	Comparing and measuring mass	Measuring capacity and simple data handling

	Year 11	Consolidation of number and calculation skills	Practical geometry and shape investigations	Time, sequencing and practical applications	Practical measuring and problem solving	Consolidation and accreditation preparation	Transition and independence mathematics
Functional skills level 1 -2	Year 10	Whole numbers, decimals, fractions, percentages, estimation	Shape, space and measure in everyday contexts	Timetables, travel planning, elapsed time	Metric measures, perimeter and area	Ratio, recipes, workplace calculations	Data handling, averages, charts and statistics
	Year 11						
		Multi-step number problems and estimation	Workplace measure and scale drawings	Wages, payslips, tax and budgeting	Area, perimeter, conversion and problem solving	Functional Skills examination preparation	Employability and independent living mathematics
ASDAN Mathematics	Year 10	Number Module	Geometry and Measure Module	Money and Everyday Mathematics	Practical Measurement Investigations	Consumer Mathematics Projects	Probability and Statistics Module
	Year 11	Mathematical Discovery Module	Geometry and Measure Challenges	Money and Financial Awareness	Community Mathematics Projects	Portfolio Completion and Moderation	Independent Living Mathematics

Impact

Mathematics Curriculum Impact

The impact of the mathematics curriculum is measured through pupils' progress, attainment and their ability to apply mathematical skills confidently across a range of contexts.

By the time pupils leave Polaris, they will:

- Demonstrate increased confidence in mathematics.
- Show secure understanding of age-appropriate mathematical concepts.
- Apply mathematical knowledge to solve problems independently.
- Use mathematical vocabulary accurately.
- Recognise the relevance of mathematics in everyday life.
- Develop resilience when tackling unfamiliar problems.
- Be prepared for further education, employment and adulthood.

Pupils' progress is evidenced through:

- Daily formative assessment.
- Retrieval practice and low-stakes quizzes.
- Half-termly assessment points.
- Termly summative assessments.
- Accreditation outcomes.
- Work scrutiny and pupil voice.
- Progress against EHCP outcomes where appropriate.

Success is reflected in pupils achieving outcomes appropriate to their individual starting points, including:

- AQA GCSE Mathematics qualifications.
- Entry Level Mathematics qualifications.
- NCFE Functional Skills Mathematics qualifications.
- ASDAN Mathematics Short Course certification.

Ultimately, the impact of our curriculum is that pupils leave Polaris with the mathematical understanding, confidence and practical skills required to participate successfully in modern society, manage everyday situations independently and progress positively into education, employment and adult life.