MATHS

CURRICULUM OVERVIEW – KEY STAGE 3

OUR CURRICULUM INTENT

At The Forest Academy, our Maths curriculum develops confident, fluent and resilient mathematicians who reason clearly and apply mathematics to real-life problems. Whatever their starting point, every student builds secure knowledge of number, algebra, ratio and proportion, geometry and statistics, ready for further study, work and everyday life.

Our spiral scheme of work revisits key topics each year in greater depth and regularly interleaves earlier learning. Number and algebra are secured early because they underpin later content, and from Year 9-tiered pathways stretch and support every student at the right level as they move towards GCSE.

Students become fluent in key procedures; reason using precise mathematical vocabulary and solve unfamiliar problems with resilience. Functional projects and links with Geography and Science show the value of mathematics beyond the classroom, while regular assessment, question-level analysis and targeted revision prepare students well for GCSE and beyond.

CURRICULUM JOURNEY

Year 7 secures number and introduces early algebra, as many students arrive with little algebra from primary school. Students then develop fractions, decimals and percentages and meet ratio and proportion, one of the five big GCSE topics. Spring covers primes, equations and transformations, then data linked to Geography and Science, angles and conversion rates. Summer introduces construction early, alongside probability and sequences, before revision, the end-of-year exam and a functional project.

Year 8 revisits and extends Year 7 learning through our spiral scheme of work. Students strengthen number fluency and apply it to area, volume, equations and inequalities, then extend percentages, proportion and data. In spring they meet HCF and LCM, indices, factorising and enlargement, alongside averages and angle reasoning. Summer extends construction, probability and linear graphs, before revision, the end-of-year exam and a functional project.

Year 9 is taught in three pathways (Higher 1, Higher 2 and Foundation), so every student consolidates Key Stage 3 at the right level before GCSE. All pathways follow the same sequence: number and measure; fractions, percentages and ratio; indices, algebra and transformations; statistics and angles; then construction, probability and graphs. Higher 1 extends this to bounds, surds, quadratics, trigonometry and circle theorems, giving an early start on higher-tier GCSE content.

Year 10 begins GCSE study in three-tiered pathways, revisiting Key Stage 3 strands in greater depth through our spiral scheme of work. Foundation and Higher 2 secure number, algebra, ratio, geometry and statistics at their tier, while Higher 1 extends to proof, algebraic fractions, histograms, non-right-angled trigonometry and transformation of functions. The year closes with revision, the end-of-year exam and a functional project.

Year 11 revisits core number, algebra, and ratio and proportion to prepare students for harder content. November and March mocks, followed by question-level analysis and pinpoint learning booklets, target each student's gaps alongside tiered teaching of the remaining GCSE topics. The final half-term focuses on exam preparation, with timed past-paper practice to replicate exam conditions.

MATHS

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	AUTUMN TERM 1	AUTUMN TERM 2	SPRING TERM 1	SPRING TERM 2	SUMMER TERM 1	SUMMER TERM 2
YEAR 7	**Number, expressions & measure** N1: add & subtract negatives; powers of ten; multiply & divide; rounding. A2: form & simplify expressions; expand single brackets. S1: units of measure; perimeter; area of rectangles & triangles.	**Fractions, decimals & ratio** N2: decimals & fractions; equivalent fractions; FDP equivalence; mixed numbers & improper fractions. P1: simplify ratios; express as a percentage or proportion; divide in a given ratio.	**Primes, algebra & symmetry** N3: primes; powers & roots; prime factor decomposition. A1: function machines; form expressions; substitution; solve linear equations. S2: line & rotational symmetry; reflection; translation.	**Data, angles & percentages** D2: pictograms; bar charts; line graphs. S3: 2D & 3D shapes; types of angles; angles on a line & full turn; quadrilaterals. P2: percentages; exchange & conversion rates.	**Angles, probability & sequences** S4: measure & draw angles; 3D shapes & nets; construct triangles. D3: writing probabilities; exhaustive outcomes; estimated frequency. A3: plot coordinates; number sequences; nth term.	**Revision & assessment** Revision of the year's learning. End-of-year exam. Functional math project.
YEAR 8	**Number, measure & equations** N1: multiply & divide; rounding; decimals; BIDMAS. S1: area of rectangles & triangles; volume of cuboids; area of compound shapes. A1: substitution; solve linear equations; inequalities; further equations.	**Percentages, proportion & data** N2: percentages & fractions of amounts; percentage increase & decrease. P1: express as a percentage or proportion; divide in a given ratio; direct proportion. D1: two-way tables; bias.	**Indices, algebra & transformations** N3: powers & roots; prime factor decomposition; HCF & LCM. A2: expand & factorise single brackets; laws of indices. S2: translation; rotation; enlargement.	**Statistics, angles & scale** D2: pie charts; averages & spread; stem & leaf. S3: angles in triangles & quadrilaterals; parallel lines; angles in polygons. P2: scale; further percentages.	**Construction, probability & graphs** S4: 3D shapes & nets; accurately drawing triangles; constructing perpendiculars. D3: estimated frequency; experimental & theoretical probability; combined probabilities. A3: plot linear graphs; midpoint & gradient; equations of linear graphs.	**Revision & assessment** Revision of the year's learning. End-of-year exam. Functional math project.

MATHS

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	AUTUMN TERM 1	AUTUMN TERM 2	SPRING TERM 1	SPRING TERM 2	SUMMER TERM 1	SUMMER TERM 2
YEAR 9 Higher 1	**Number, measure & quadratics** N1: directed numbers; estimating; bounds. S1: area & circumference of circles; volume of prisms; surface area; compound measures. A2: expand & factorise double brackets; completing the square.	**Fractions, percentages & ratio** N2: four operations with fractions; percentage change; reverse percentages & fractions. P1: direct proportion; comparing value; FDPR & harder ratio. D1: sampling; Venn diagrams.	**Indices, equations & vectors** N3: index laws; standard form; surds. A1: rearranging formulae; simultaneous equations; solving quadratics. S2: enlargement; column vectors; similarity.	**Statistics, trigonometry & graphs** D2: scatter graphs; averages from frequency tables; box plots. S3: Pythagoras' theorem; trigonometry; circle theorems. P2: further percentages; graphs.	**Construction, probability & graphs** S4: constructing perpendiculars; angle bisectors; plans & elevations. D3: experimental & theoretical probability; combined probabilities; Tree diagrams. A3: equation of a line; real-life graphs; non-linear graphs; nth term of non-linear sequences.	**Revision & assessment** Revision of the year's learning. End-of-year exam. Functional math project.
YEAR 9 Higher 2	**Number, measure & equations** N1: decimals; BIDMAS; directed numbers. S1: area of compound shapes; area & circumference of circles; volume of prisms. A1: inequalities; further solving equations; rearranging formulae.	**Fractions, percentages & ratio** N2: fractions of amounts; percentage increase & decrease; four operations with fractions. P1: divide into a given ratio; direct proportion; comparing value. D1: two-way tables; bias.	**Indices, algebra & transformations** N3: prime factor decomposition; LCM & HCF; index laws. A2: laws of indices; factorise single brackets; expand double brackets. S2: translation; rotation; enlargement.	**Statistics, angles & scale** D2: averages & spread; stem & leaf; scatter graphs. S3: parallel lines; angles in polygons; Pythagoras' theorem. P2: scale; further percentages.	**Construction, probability & graphs** S4: accurately drawing triangles; constructing perpendiculars; angle bisectors. D3: estimated frequency; experimental & theoretical probability; combined probabilities. A3: nth term of linear sequences; plot linear graphs; midpoint & gradient; equations of linear graphs.	**Revision & assessment** Revision of the year's learning. End-of-year exam. Functional math project.
YEAR 9 Foundation	**Number, measure & equations**	**Fractions, percentages & ratio**	**Indices, algebra & transformations**	**Statistics, angles & scale**	**Construction, probability & graphs**	**Revision & assessment**

	N1: rounding; decimals; BIDMAS. S1: volume of cuboids; area of compound shapes; area & circumference of circles. A1: solving linear equations; inequalities; further solving equations.	N2: fractions of amounts; percentage increase & decrease; four operations with fractions. P1: divide into a given ratio; direct proportion; comparing value. D1: types of data; two-way tables.	N3: prime factor decomposition; LCM & HCF; index laws. A2: laws of indices; factorise single brackets; expand double brackets. S2: translation; rotation; enlargement.	D2: averages & spread; stem & leaf; scatter graphs. S3: angles in triangles & quadrilaterals; parallel lines; angles in polygons. P2: scale; further percentages.	S4: accurately drawing triangles; constructing perpendiculars; angle bisectors. D3: estimated frequency; experimental & theoretical probability; combined probabilities. A3: nth term of linear sequences; plot linear graphs; midpoint & gradient; equations of linear graphs.	Revision of the year's learning. End-of-year exam. Functional math project.

MATHS

CURRICULUM OVERVIEW –KEY STAGE 4

YEAR 10 | GCSE MATHEMATICS — BUILDING DEPTH

Year 10 begins GCSE study in three-tiered pathways (Higher 1, Higher 2 and Foundation), revisiting Key Stage 3 strands in greater depth. Higher 1 move into advanced content such as proof, algebraic fractions, histograms and transformation of functions, while Higher 2 and Foundation secure the core skills for their tier.

YEAR	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
YEAR 10 **Higher 1**	**Number, measure & quadratics** N1: directed numbers; estimating; bounds. S1: compound measures; sectors & arcs; pyramids, cones & spheres. A1: simultaneous equations; solving quadratics; quadratic simultaneous equations.	**Percentages, proportion & data** N2: reverse percentages & fractions; interest; recurring decimals. P1: comparing value; FDPR & harder ratio; algebraic direct & inverse proportion. D1: sampling; Venn diagrams.	**Surds, proof & transformations** N3: standard form; surds; proofs of features of whole numbers. A2: completing the square; algebraic fractions; algebraic proofs. S2: similarity; combinations of transformations; negative enlargement.	**Statistics, trigonometry & units** D2: box plots; cumulative frequency; histograms. S3: circle theorems; Pythagoras & trigonometry in 3D; non-right-angled trigonometry. P2: calculating interest; complex units.	**Loci, probability & functions** S4: plans & elevations; bearings; loci. D3: Tree diagrams; Venn diagrams & set notation; conditional probability. A3: graphical solutions; graphs of trigonometric functions; transformation of functions.	**Revision & assessment** Revision of the year's learning. End-of-year exam. Functional math project.
YEAR 10 **Higher 2**	**Number, measure & brackets** N1: directed numbers; estimating; bounds. S1: volume of prisms; surface area; compound measures. A2: factorise single brackets; expand & factorise double brackets.	**Fractions, percentages & ratio** N2: four operations with fractions; percentage change; reverse percentages & fractions. P1: direct proportion; comparing value; FDPR & harder ratio. D1: sampling; Venn diagrams.	**Indices, equations & vectors** N3: LCM & HCF; index laws; standard form. A1: rearranging formulae; simultaneous equations; solving quadratics. S2: enlargement; column vectors; similarity.	**Statistics, trigonometry & graphs** D2: scatter graphs; averages from frequency tables; box plots. S3: Pythagoras' theorem; trigonometry; circle theorems. P2: graphs; calculating interest.	**Construction, probability & graphs** S4: constructing perpendiculars; angle bisectors; plans & elevations. D3: combined probabilities; tree diagrams; Venn diagrams & set notation. A3: real-life graphs; non-linear graphs; nth terms of non-linear sequences.	**Revision & assessment** Revision of the year's learning. End-of-year exam. Functional math project.

YEAR	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
YEAR 10 **Foundation**	**Number, measure & equations** N1: decimals; BIDMAS; directed numbers. S1: area of compound shapes; area & circumference of circles; volume of prisms. A1: solving linear equations; inequalities; further solving equations.	**Fractions, percentages & ratio** N2: fractions of amounts; percentage increase & decrease; four operations with fractions. P1: divide in a given ratio; direct proportion; comparing value; FDPR & harder ratio. D1: two-way tables.	**Indices, algebra & transformations** N3: prime factor decomposition; LCM & HCF; index laws; standard form. A2: factorise single brackets; expand & factorise double brackets. S2: rotation; enlargement; column vectors.	**Statistics, angles & Pythagoras** D2: stem & leaf; scatter graphs; averages from frequency tables. S3: parallel lines; angles in polygons; Pythagoras' theorem. P2: further percentages; graphs.	**Construction, probability & graphs** S4: accurately drawing triangles; constructing perpendiculars; angle bisectors. D3: experimental & theoretical probability; combined probabilities; tree diagrams. A3: plotting linear graphs; midpoint & gradient; equations of linear graphs.	**Revision & assessment** Revision of the year's learning. End-of-year exam. Functional math project.

MATHS

CURRICULUM OVERVIEW – KEY STAGE 4

YEAR 11 | CONSOLIDATION, MOCKS AND EXAM PREPARATION

Year 11 secures the core number, algebra and ratio skills needed for harder GCSE content, then uses the November and March mocks and question-level analysis to target gaps. Tiered teaching in spring leads to focused exam preparation and past-paper practice.

YEAR	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
YEAR 11	**Number, algebra & ratio** Revisit core number and algebra skills needed for harder topics. Ratio and proportion, one of the five big GCSE topics. Revision for the November mocks begins before half-term.	**Mocks, QLA & data and shape** November mocks. Re-teach weaker topics using QLA and pinpoint learning booklets. Revisit data and shape, e.g. averages and Pythagoras. Ultimate Revision Guides issued by tier.	**Tiered content & mock preparation** Higher: circle theorems; bounds; volume of spheres, cones & pyramids. Foundation: angles in polygons; ratio & proportion; Pythagoras. Preparation for the March mocks.	**Targeted revision** Close gaps identified in the March mocks. Revisit remaining topics likely to appear in the GCSE exams.	**Exam preparation** Timed past-paper practice to replicate exam conditions and reduce exam stress. Focus on topics that will most benefit students in their GCSEs.	**GCSE examinations** Final GCSE papers.

GCSE QUALIFICATION | PEARSON EDEXCEL GCSE MATHEMATICS (1MA1)

PAPER 1 • NON-CALCULATOR
1MA1/1 | 1h 30m | 33⅓% | 80 Marks

PAPER 2 • CALCULATOR
1MA1/2 | 1h 30m | 33⅓% | 80 Marks

PAPER 3 • CALCULATOR
1MA1/3 | 1h 30m | 33⅓% | 80 Marks

MATHEMATICAL REASONING AND ASSESSMENT

Throughout the course, students explain their reasoning, justify answers, interpret graphs and data, and apply mathematics to unfamiliar and real-life problems, including through functional projects. Diagnostic assessments throughout the year identify gaps early, and end-of-year exams in Years 7–10 check retained knowledge. In Year 11, two mock cycles in November and March, followed by question-level analysis and pinpoint learning booklets, target each student's weaker areas before the final GCSE examinations.

OFFICIAL GCSE SPECIFICATION LINK Pearson Edexcel GCSE Mathematics (1MA1) qualification specification