

MATHEMATICS Scheme of Work 2023-24: YEAR 10

(OCR Syllabus)

AUTUMN TERM 1: SEPT - OCT	AUTUMN TERM 2: OCT - DEC	SPRING TERM 1: JAN - FEB
Probability, Number and Algebra	Geometry and Number	Geometry.
<p>AO: to revise, consolidate and build on yr 9 skills. The first half term we start with revising, consolidating and building on probability skills that pupils started in year 9, but struggled with. Then we return to recap and extend algebra skills.</p> <p>Main text: Hodder GCSE Foundation Maths text books. Number topic: Fractions and / or LCM / HCF revision. Probability topics: Experimental probability / relative frequency. Combined events and probability diagrams, including theoretical probability of combined events and conditional probability. Algebra topics: Multiplying out two binomials, factorising quadratic expressions, (H) completing the square. Solving quadratic equations by various methods. Solving simultaneous equations. Using graphs to solve equations. Iteration. Also, baseline and number age tests in the 1st week.</p>	<p>AO: to extend previously learned skills in geometry and number. This half term we will recap and extend our knowledge of graphs, then continue to extend the number work started last half term.</p> <p>Main text: Hodder GCSE Foundation Maths text books. Geometry topics: Using features of straight line graphs, parallel and perpendicular lines, plus tangents. Graphs of quadratic functions, including how equn's change. (H) Graphs of circles incl. problem solving. Graphs of other polynomials: plotting, sketching and recognising. Number topics: Index notation and the laws of indices. Working with powers and roots. Standard form. Surds: approximation and exact values. Manipulating and working with surds.</p>	<p>AO: to introduce the topics of vectors and circle theorems, plus recap / extend knowledge of transformations. This half term we introduce vectors and (for higher pupils) circle theorems. Main text: Hodder GCSE Foundation Maths text books. Geometry topics: Vector notation and representation. Vector arithmetic. Using vectors in geometric proofs. Reflections, translations, rotations and also combined transformations. All 8 circle theorems and their usage. (Only higher need Circle Theorems. Foundation are better revising other knowledge gap topics. See if I can get help with a split class 1st lesson of the week whilst doing C. Theorems.)</p>
SPRING TERM 2: FEB - MAR	SUMMER TERM 1: APR - MAY	SUMMER TERM 2: JUN - JUL
Number and Geometry	Number, Statistics, Geometry and Algebra	Algebra and Geometry.
<p>AO: to extend previously learned skills in number and geometry. To extend knowledge and understanding in number and geometry, in particular – congruency and trigonometry. Main text: Hodder GCSE Foundation Maths text books. Geometry topics: Congruency rules and application. Similarity in triangles and other shapes, plus enlargements. Trigonometric ratios, including exact values. Trig. in right angled triangles. (H) The sine, cos and area rules. Number topics: Compound interest – growth and decay. Simple interest – growth and decay.</p>	<p>AO: to consolidate and extend knowledge and understanding in all four areas of maths. At KS4 pupils need to be able to apply previous knowledge to more complex problem solving. Main text: Hodder GCSE Foundation Maths text books. Number topics: Direct and inverse proportion, including graphical representation. Statistics topics: Populations and samples, tables and graphs, pie charts, cumulative frequency curves, histograms, line graphs, summary statistics, misleading graphs, scatter diagrams. Geometry topics: Graphs of real world contexts, gradients, areas under graphs. Algebra topics: (If time.) Writing formulae, substituting values into formulae.</p>	<p>AO: to extend geometry knowledge and understanding. To continue to extend knowledge of algebra – especially algebraic inequalities, plus loci. Main text: Hodder GCSE Foundation Maths text books. Algebra topics: Changing the subject of a formula, working with formulae. Expressing algebraic inequalities, number lines, solving inequalities. Solving quadratic inequalities, graphing and working with inequalities. Geometry topics: Constructions and loci, including revising perpendicular bisectors, angle bisectors and applying that knowledge to more complex problems. Revision, end of year exams. School trips.</p>

