MATHEMATICS Scheme of Work 2023-24: YEAR 9 **(OCR Syllabus)**

AUTUMN TERM 1: SEPT - OCT	AUTUMN TERM 2: OCT - DEC	SPRING TERM 1: JAN - FEB
Statistics, Number, Algebra and Geometry	**Algebra, Geometry and Number**	**Number, Algebra and Geometry.**
AO: to revise, consolidate and build on yr 8 skills. The first half term we are revising, consolidating and building on basic skills that pupils should have learned in year 8. **Main text: Hodder GCSE Foundation Maths text books.** **Statistics topics:** Recap: scatter diagrams (esp line of b. f.) and pie charts. **Number topics:** Recap: BODMAS, inverse operations, number properties, multiples, factors and primes plus rounding. LCM and HCF – problem solving (esp. indices method). Functions and sequences, including nth term. **Algebra topics:** Algebraic notation, simplifying expressions, multiplying out brackets, factorising expressions, problem solving. Multiplying out two binomials, introduction to factorising quadratic expressions and (for more able pupils) *completing the square if time.* Algebraic fractions (push higher to harder ones). **Geometry topics:** Constructions and Loci Also, carry out base-line and numerical age tests in 1st week.	**AO: to extend previously learned skills in algebra and geometry, and to revise number.** This half term we will continue to extend the algebra work started last half term and then start on geometry and number, which should be an extension of year 8 work. **Main text: Hodder GCSE Foundation Maths text books.** **Algebra topics:** Linear equations (solving and rearranging). Quadratic equations (factorising and solving). Simultaneous equations (including solving using graphs. Iteration (if time). **Geometry topics:** Graphs (co-ordinates, mid-points and what a line segment is). Revise straight line graphs. Angles. (Angle facts, parallel lines, angles in triangles, angles in polygons. Problem solving using the above. *Maps and scale drawings ONLY IF PUPILS ARE OK WITH EARLIER TOPICS. MOST WERE GOOD AT FRACTIONS LAST YEAR.* **Number topics:** Fractions and decimals. (*Equivalent fractions, fractions of a quantity*, recurring to exact fraction conversions.)	**AO: to revise the basics of each topic and extend knowledge in it.** Consolidate knowledge on each of the listed topics, then extend knowledge and practise problem solving skills. **Main text: Hodder GCSE Foundation Maths text books.** **Algebra topics:** Algebraic formulae. (Writing, substitution, changing the subject, working with.) **Geometry topics:** Unit conversions. (Various units and money, writing a value as a percentage of another, problem solving.) Compound units including Density and Pressure Perimeter and Area of common shapes. Perimeter and area of circles (circumference, area, complex areas such a donuts, sectors.)(They struggled with this last year.) **Number topics:** Review percentages, including percentage change using multipliers.
SPRING TERM 2: FEB - MAR	**SUMMER TERM 1: APR - MAY**	**SUMMER TERM 2: JUN - JUL**
Number and Geometry	**Geometry**	**Number and Probability.**
AO: to extend previously learned skills in number and geometry. We Introduced proportion in year 7, now we need to expand on that introduction. **Main text: Hodder GCSE Foundation Maths text books.** **Geometry topics:** If time - Constructions / Loci and Bearings revision. (Yr 10 have usually forgotten this, so practise now.) **Number topics:** Recap direct proportion. Use direct proportion in problem solving. Inverse proportion and problem solving. Approximation and estimation. (Rounding, approximation and limits.)	**AO: to extend geometry knowledge and understanding.** At KS4 pupils need to extend existing geometry knowledge and start new topics. **Main text: Hodder GCSE Foundation Maths text books.** **Geometry topics:** Equation of a straight line. Plotting and using the features of straight line graphs. Parallel and perpendicular lines. Plotting graphs (including quadratic, cubic, and if time – show how to solve simultaneous equations graphically.) Plotting graphs of other polynomials, reciprocals, exponential functions and circles. Matching equations. 3D shape. (Review of solids, drawing 3D, plans and elevations, prisms and cylinders, pyramids.	**AO: to extend geometry knowledge and understanding.** We Introduced ratio in year 7, now we need to expand on that introduction. **Main text: Hodder GCSE Foundation Maths text books.** **Number topics:** Ratio. (Recap of introducing ratios, sharing in a given ratio, comparing ratios.) **Probability topics:** Basic probability experiments. Combined events and probability diagrams, including theoretical probability of combined events and conditional probability. Revision, end of year exams. School trips.