**MATHEMATICS Scheme of Work 2022-2023: YEAR 8 (OCR Syllabus)**

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| **AUTUMN TERM 1: SEPT - OCT** | **AUTUMN TERM 2: OCT - DEC** | **SPRING TERM 1: JAN - FEB** |
| **Number** | **Number and Measurement** | **Geometry** |
| **AO: to revise, consolidate and build on yr 7 skills.**  The first half term we are revising, consolidating and building on basic number and geometry skills that pupils should have learned in year 7.  **Main texts: Hodder KS3 Maths text books for number.**  **Number topics:**  BODMAS, inverse operations, number properties.  Multiples, factors and primes.  Rounding.  Approximation and limits of accuracy.  Fractions: mixed number, multiplication and division, problem solving.  Percentages: revise increase/decrease, percentage change, reverse percentages (which is a new topic).  Also, carry out base-line and numerical age tests in the first week. | **AO: to extend previously learned skills in geometry, explore proportional reasoning and start studying algebra.**  This half term we will extend the number work started last half term and then start on measurement, which should be an extension of year 7 work.  **Main texts: Hodder KS3 Maths text books for number and geometry.**  **Number topics:**  Index notation and prime factorisation.  **Measurement topics:**  Mass and time.  Interpreting scales, the metric system, metric/imperial conversions.  Bearings (take a whole week, pupils always get confused).  Scale drawing (do a display piece).  Compound units.  Also, do some fun Christmas activities. | **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 texts: Hodder KS3 Maths text books for geometry**  **Geometry topics:**  Angles (including internal and external angles of various polygons using both methods).  Parallel lines rules.  Areas of common shapes, including combined shapes and circles (expand into areas of sectors).  Pythagoras’ Theorem.  Loci (This is a new topic, which brings together much the previous week’s work.)  Nets and prisms. (An opportunity for display pieces.) |
| **SPRING TERM 2: FEB - MAR** | **SUMMER TERM 1: APR - MAY** | **SUMMER TERM 2: JUN - JUL** |
| **Algebra** | **Geometry** | **Probability** |
| **AO: to extend previously learned skills in probability, number and angles.**  We Introduced algebra in year 7, now we need to expand on that introduction.  **Main texts: Hodder KS3 Maths text books for algebra**  **Algebra topics:**  Solving equations. (Setting up and solving simple equations.)  Solving equations. (Introduce expanding brackets.)  Simplifying simple, then harder expressions.  Solving by substitution, then by elimination.  Sequences: generating, special, linear, quadratic, how to recognise which is which. | **AO: to extend geometry knowledge and understanding.**  At KS3 pupils need to extend existing geometry knowledge and start new topics.  **Main texts: Hodder KS3 Maths text books for geometry.**  **Geometry topics:**  Enlargements; briefly recap the other transformations, then use the power point to go through enlargements in detail.  Scale drawing.  Similarity.  Trigonometry.  Equation of a straight line.  Plotting graphs (including quadratic, cubic, and if time – show how to solve simultaneous equations graphically.) | **AO: to extend geometry knowledge and understanding.**  At KS3 pupils need to extend existing geometry knowledge and start new topics.  **Main texts: Hodder KS3 Maths text books for geometry.**  **Probability topics:**  Collecting data (including designing a questionnaire - if possible, have a trip out to do a practical on this).  Combined events (space diagrams, tree diagrams, Venn diagrams, other methods, and knowing which to choose.)  Estimating probability (a whole week).  Scatter diagrams.  Revision, end of year exams. School trips. |