**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. |