KS4 curriculum map

|  | **Topic** | **Key concept – what do I want the students to learn from this unit?** | **What knowledge will they acquire?** |
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| **YEAR 9 OVERVIEW** | | | |
| **Y9 - half term 1** | Number  Handling data  Algebra  Geometry | Factors, powers and roots.  Analysing and presenting data.  Algebraic manipulation.  Pythagoras’ theorem. | Understand and use negative and fractional indices.  Use operations including indices in the correct order.  Use and calculate in standard form.  Write any number as the product of prime factors. Use prime factors to find the HCF and LCM.  Averages and range from a table.  Drawing and analysing scatter graphs.  Drawing and analysing a cumulative frequency graph.  Drawing and analysing a boxplot.  Calculating quartiles and the interquartile range.  Factorising an expressions using a common factor.  Expanding a pair of binomials. Expanding three binomials.  Factorising a quadratic when a = 1.  Calculating a missing side in a right-angled triangle using Pythagoras’ theorem. |
| **Y9 – half term 2** | Geometry  Number  Probability | Pythagoras’ theorem and trigonometry.  Perimeter, area and volume.  Surface area and volume of cuboids.  Four operations with fractions and decimals.  Using and understanding probability. | Calculating a missing side in a right-angled triangle using Pythagoras’ theorem.  Calculating a missing side or angle in a right angled triangle using trigonometry.  Surface area and volume of cuboids and prisms (including cylinders).  Circumference and area of a circle. Area of compound shapes.  Area and perimeter of sectors.  Volume and surface area of pyramids, cones and spheres.  Adding, subtracting, multiplying and dividing with fractions and decimals.  Knowing the link between recurring decimals and fractions.  Algebraically convert recurring decimals to fractions.  Listing outcomes in sample space diagrams. Using product rule for outcomes.  Drawing and interpreting frequency trees.  Understanding and calculating experimental probabilities. Using and calculating probabilities from a Venn diagram. |
| **Y9 – half term 3** | Geometry  Algebra  Number | Properties of angles.  Solving linear equations.  Understanding and using percentages. | Understanding and using the properties of angles in parallel lines and polygons.  Understand and use bearings.  Solving linear equations with one or two steps, which can also include brackets. Solving equations with unknowns on both sides. Solving inequalities.  Solving equations with fractions.  Understanding and using decimal multipliers.  Increasing or decreasing amounts by a percentage. Calculating simple and compound interest.  Calculate the original amount after a given percentage increase or decrease. |
| **Y9 – half term 4** | Algebra  Geometry | Using and manipulating formulae.  Shapes and constructions.  Linear functions. | Substituting into formulae.  Deriving formulae.  Rearranging formulae.  Modelling using formulae.  Drawing and understanding nets of 3D shapes.  Drawing and understanding plans and elevations.  Drawing and interpreting scale diagrams.  Drawing constructions accurately.  Drawing the loci of points from a given set of constraints.  Plotting vertical and horizontal lines on a coordinate grid.  Plotting equations of the form y = mx + c.  Drawing and interpreting real life graphs.  Plotting lines of the form ax + by = c.  Understand the properties of parallel lines. |
| **Y9 – half term 5** | Geometry | Transformations and vectors.  Measures. | Perform and recognise rotations, reflections and translations on a coordinate axes.  Perform and recognise enlargements with and without a centre of enlargement.  Perform enlargements with fractional and negative scale factors.  Understand and recognise invariance. Understand and use the properties of congruent triangles.  Convert between different metric units.  Convert between metric units of area and volume. Understand and use compound units including density and pressure. |
| **Y9 – half term 6** | Algebra. Financial project | Simultaneous equations.  Non-linear functions.  Algebraic manipulation.  Building a house. | Solve a pair of simultaneous equations graphically.  Solve a pair of simultaneous equations algebraically.  Plot and understand the properties of quadratic graphs.  Plot and understand the properties of cubic graphs.  Plot and understand the properties of reciprocal graphs.  Plot and understand the properties of exponential graphs.  Factorising an expressions using a common factor.  Expanding a pair of binomials. Expanding three binomials.  Factorising a quadratic when a = 1.  Understand all expenditures for building a house. Understanding and planning all the tasks needed to build a house. |