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|  | **Mathematics** | | | | | |
| **Term 1** | | **Term 2** | | **Term 3** | |
| **Year 10** | *Pupils will develop an understanding of the following units of work:*      **Congruency, similarity:** using scale factors and rules to work out missing angles and enlargement.  **Trigonometry:** use of ratios, revision of Pythagoras theorem  Cosine and Sine rules(higher) | *Pupils will develop an understanding of the following units of work:*      **Representing solutions of equations and inequalities:** Show solutions on a number line. Show solutions using straight line graphs.  Solve quadratics by factorising equations. Solve quadratic inequalities (higher).  **Solve simultaneous equations:**  Both linear, one quadratic (higher) | *Pupils will develop an understanding of the following units of work:*    **Angles and bearings:**  Draw and interpret scale drawings, Measure and read bearings, Using Pythagoras and trigonometry with bearings.  **Working with circles:**  Recognise parts of a circle, length of an arc, area of a section, circle theorem (higher), surface area and volume of cylinder, cone sphere | *Pupils will develop an understanding of the following units of work.*      **Vectors**: Use and understand notation, drawing vectors. vector journeys in shapes(higher). proof of vectors(higher) to construct geometric arguments.  **Ratios and fractions:**  Link ratio and fractions. link ratios and graphs  Write ratio in form 1: n and n:1.  **Percentages and interest:**  Percentage problems, compound interest, growth and decay, compound interest. Iterative processes  **Probability:** Likely outcomes, tree diagrams, Venn diagrams, Conditional probability (higher) | *Pupils will develop an understanding of the following units of work:*      **Collecting, representing and interpreting data:**  Collecting data, sampling, statistical diagrams, comparing distributions and analysis    **Non calculator methods:**  Mental and written methods of calculation. Rational and irrational numbers  Understand and use surds(higher). Rounding to significant figures and decimal places(revision) | *Pupils will develop an understanding of the following units of work:*    **Types of number and sequences:**  Factors and multiples, prime factors and LCM, nth term of a sequence (revision)  Rule for quadratic sequences(higher)    **Indices and roots:**  The rules of indices, calculations with standard form.    **Manipulating expressions:**  Add, subtract, multiply and divide algebraic fractions. Both form and solve equations and inequalities fractions. |

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|  | **Mathematics** | | | | | |
| **Term 1** | | **Term 2** | | **Term 3** | |
| **Year 11** | *Pupils will develop an understanding of the following units of work:*    **Gradients and lines:**  Straight line graphs  Solve simultaneous equations graphically.  Perpendicular lines and their equations(higher)  **Non-linear graphs:**  Quadratic, cubic, reciprocal graphs  Exponential graphs (higher), circle equations (higher), equations of tangent to curve (higher)  **Using graphs:**  Reflections in given lines, conversion graphs, real life graphs.  Distance time, speed/time graphs. Graphs of proportion. Area under a graph (higher) | *Pupils will develop an understanding of the following units of work:*    **Expanding and factorising**  **Changing the subject of formulae:**  Linear equations(revision)  Inequalities(revision)  Change subject when it appears more than once(higher)Iteration(higher)    **Functions:**  Composite and inverse functions  Graphs of quadratic functions  Solve quadratic inequalities (higher) | *Pupils will develop an understanding of the following units of work:*    **Multiplicative reasoning:**  Direct and inverse Proportion, density, pressure.  Ratio problems  Geometric reasoning: angles and parallel lines  Polygons  Circle theorem (higher)  Pythagoras and trigonometry (Revision)  **Geometric reasoning:**  Parallel lines and angles(revision). Interior and exterior angles of polygons. Circle theorem (higher). Pythagoras and trigonometry ratios (revision).  Algebraic reasoning:  Simplify complex expressions. Find nth term linear sequences (revision). Algebraic proofs(higher).  Inequalities in two variables (higher) | *Pupils will develop an understanding of the following units of work:*  **Transforming and constructing:**  Perform symmetry, and transformations of shapes.  Identify invariant points(higher)  Constructions(revision)  Trigonometric graphs(higher)  Translations and reflections of given functions (higher).  **Listing and describing:**  Product rule (higher)  Sample spaces(revision)  Venn Diagrams (revision) construct plans and elevations(revision)Compare distributions(revision) interpret scatter graphs(revision) | **Revision and GCSE Exam**  *Exams are May/June. Lesson(s) spent revising and applying knowledge to exam questions / exam practice.*      ***Show that:*** *vectors and congruent triangles (higher)* | **Revision and GCSE Exam**  *Exams May/June. Lesson(s) spent revising and applying knowledge to exam questions / exam practice.* |