**All Saints’ Academy Mathematics KS4 Curriculum**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cycle | Year 10 Foundation | Year 10 Higher | Year 11 | |
|  | Knowledge & Skills | Knowledge & Skills | Knowledge & Skills | |
| 1 | **Algebra:**   * Laws of Indices * Multiplying linear expressions * Factorising Quadratic Expressions * Changing the subject   **Number:**   * Standard Form * Error Intervals * Compound Growth and Decay   **Construction:**   * Perpendicular bisector of a line * Angle bisector * Shortest distance from point to a line   **Proportion:**   * Simplifying ratios and sharing ratios * Best buys | **Algebra:**   * Laws of Indices * Multiplying linear expressions * Factorising Quadratic Expressions * Changing the subject   **Number:**   * Standard Form * Indices and Surds * Error Intervals * Compound growth and decay   **Geometry:**   * Pythagoras’ Theorem and 3D shapes * Fractional and negative enlargements * Similar Shapes and Triangles * Area and Volume Scale Factor   **Construction:**   * Perpendicular bisector of a line * Angle bisector * Shortest distance from point to a line   **Proportion:**   * Simplifying ratios and sharing ratios * Best buys * Connected Ratios | Foundation   * Revision and preparation for mocks | Higher   * Circle Theorems * Quadratic Inequalities * Sine and Cosine Rule * Revision and preparation for mocks |
| Careers | **Quantity Surveyor** | **Meterologist** | **College options needing Mathematics** | **University options with Mathematics** |
| 2 | **Geometry:**   * Area of rectilinear shapes, triangles and circles * Sector perimeter and area * Area of compound shapes * Surface Area and Volume of Prisms * Pythagoras’ Theorem   **Algebra:**   * nth term of linear sequences * Straight Line graphs * Simultaneous Equations   **Data Handling:**   * Scatter graphs and Line of Best Fit * averages from tables and grouped intervals | **Geometry:**   * Spheres, pyramids, cones, frustums and composite solids * Sector perimeter and area * Area of compound shapes   **Algebra:**   * Algebraic fractions * Constant of proportionality * Straight line graphs * Linear and quadratic sequences * Simple Geometric progressions. * Linear inequalities and inequality regions * Simultaneous Equations – Linear, Quadratic and Circle Equations as one of the equations | Revision and preparation for mocks | |
| Careers | **CAD Technician** | **Acoustic Consultant** |  | |
| 3 | **Probability:**   * Product Rule for Counting * Two-way tables * Venn Diagrams * Tree Diagrams and Conditional Probability   **Geometry:**   * Angles in Polygons * Trigonometry   **Algebra:**   * Solving Quadratic Equations algebraically and from their graphs | **Algebra:**   * Quadratic, cubic, exponential and reciprocal graphs * Tangent to a circle * Completing the Square * Solving Quadratic Equations algebraically and from their graphs   **Probability:**   * Product Rule for Counting * Two-way tables * Venn Diagrams * Tree Diagrams and Conditional Probability   **Geometry:**   * Angles in Polygons * Trigonometry * Vectors   **Statistics:**   * Cumulative frequency graphs & box plots * Histograms. | Revision and preparation for final examinations. | |
| Careers | **Sports Science and Analysis** | **Statistician** |  | |