

Higher Level Mathematics Syllabus

Calculations and Calculator Skills.

- Writing normal numbers in Standard Index Form
- Writing numbers from Standard Index Form to normal numbers.
- Solving calculations in Standard Index Form using a scientific calculator and the relative function.
- Solving calculations written as normal numbers using a scientific calculator.
- Evaluating powers, roots and exponential functions using a scientific calculator.
- Long multiplication.
- Estimation.
- Multiplying by powers of 10.
- Prime Factors, Highest Common Factor and Lowest Common Multiple.

Further calculations, Non Calculator Skills.

- Conversion of one currency to another.
- Converting Imperial to Metric units and Metric units to Imperial.
- Fractions and Decimals.
- Solve percentage problems Including Compound and Simple Interest.
- Percentage Increase and Decrease including Profit and Loss.

Angles.

- Identifying and calculating angles from the following:
- Angles in a Triangle,
- Angles on a Straight Line,
- Angles where Parallel Lines are involved in the diagram,
- Interior and Exterior angles in Regular Shapes.

Areas and Volumes.

- Areas of regular shapes including
- Triangles,
- Rectangles
- Trapeziums
- Circles.
- Volumes of Cuboids,
- Cylinders,
- Prisms.
- All formula for Areas and Volumes must be learnt as not information sheets are given in the examination.

Ratios.

- Ratios in the form of 3:7.
- Ratios of similar shapes.
- Ratios of ingredients when cooking.

Pythagoras and Trigonometry

- Calculate the length of a side of a right angled triangle using Pythagoras Theorem.
- Calculate the length of a side of a right angled triangle or an unknown angle using one of the three Trigonometry ratios. Sine, Cosine or Tangent.
- Understand and use a scientific calculator for both of these topics.

Algebra.

- Factorising equations.
- Expanding and simplifying equations.
- Solving equations.
- Writing algebraic expressions.
- Solving Simultaneous Equations by the elimination method.
- Find solutions to quadratic equations by factors.

Number Patterns.

- Complete a number pattern.
- Explain in words how to complete the pattern.
- Write the expression for the “nth” term for a given pattern.

Graphs.

- Complete Scatter Graphs and draw a line of best fit.
- Take data from Scatter Graphs, including the Correlation..
- Complete the table of results for Straight Line Graphs.
- Draw Straight Line Graphs and use the graph to give values of X and Y.
- Complete the table of results for Quadratic Graphs.
- Draw Quadratic Graphs and find the solutions from the graph.

Statistics.

- Calculate the Mean, Mode and Median.
- Complete Frequency and Cumulative Frequency tables.
- Draw Cumulative Frequency Graphs.
- From the graphs clearly identify the Median, Upper, Lower and Inter Quartile values.

Probability.

- Writing probabilities from given information.
- This will be either as a fraction or decimal.
- Writing down all possible outcomes of events.
- Work out the probability of an event happening.
- Work out the probability of combined events.
- Complete Tree Diagrams.

Miscellaneous.

- Draw Stem and Leaf Diagrams, including a Key.
- Calculate Moving Averages.
- Inequalities
- Identify Lines, Areas and Volumes from given formula.