Cambridge Checkpoint Mathematics *Year 9*

Course Outline:

- Mathematics candidates gain lifelong skills, including the development of their mathematical knowledge, confidence by developing a feel for numbers, patterns and relationships, an ability to consider and solve problems and present and interpret results, communication and reason using mathematical concepts and a solid foundation for further study.

Aims:

The aims are to enable candidates to:

- develop their mathematical knowledge and oral, written and practical skills in a way which encourages confidence and provides satisfaction and enjoyment
- read mathematics, and write and talk about the subject in a variety of ways
- develop a feel for number, carry out calculations and understand the significance of the results obtained
- apply mathematics in everyday situations and develop an understanding of the part which mathematics plays in the world around them
- solve problems, present the solutions clearly, check and interpret the results
- develop an understanding of mathematical principles
- recognise when and how a situation may be represented mathematically, identify and interpret relevant factors and, where necessary, select an appropriate mathematical method to solve the problem
- use mathematics as a means of communication with emphasis on the use of clear expression
- develop an ability to apply mathematics in other subjects, particularly science and technology
- develop the abilities to reason logically, to classify, to generalise and to prove
- appreciate patterns and relationships in mathematics
- produce and appreciate imaginative and creative work arising from mathematical ideas
- develop their mathematical abilities by considering problems and conducting individual and co-operative enquiry and experiment, including extended pieces of work of a practical and investigative kind
- appreciate the interdependence of different branches of mathematics
- acquire a foundation appropriate to their further study of mathematics and of other disciplines.

Assessment:

Cambridge Checkpoint (Mathematics)

Component	Duration	Marks Allocated
Paper 1	1 hour	50 marks
Paper 2	1 hour	50 marks

Assessment Objectives (AO):

To pass Cambridge IGCSE Mathematics candidates must meet the following Assessment Objectives (AOs) which apply to all components:

AO1: Mathematical techniques:

Candidates should be able to:

- organise, interpret and present information accurately in written, tabular, graphical and diagrammatic forms
- perform calculations by suitable methods
- use an electronic calculator and also perform some straightforward calculations without a calculator
- understand systems of measurement in everyday use and make use of them in the solution of problems
- estimate, approximate and work to degrees of accuracy appropriate to the context and convert between equivalent numerical forms
- use mathematical and other instruments to measure and to draw to an acceptable degree of accuracy
- interpret, transform and make appropriate use of mathematical statements expressed in words or symbols
- recognise and use spatial relationships in two and three dimensions, particularly in solving problems
- recall, apply and interpret mathematical knowledge in the context of everyday situations. Investigate and research a variety of appropriate sources.

AO2: Applying mathematical techniques to solve problems:

In questions which are set in context and/or which require a sequence of steps to solve, candidates shouldbe able to:

- make logical deductions from given mathematical data
- recognise patterns and structures in a variety of situations, and form generalisations

- respond to a problem relating to a relatively unstructured situation by translating it into an appropriatelystructured form
- analyse a problem, select a suitable strategy and apply an appropriate technique to obtain its solution
- apply combinations of mathematical skills and techniques in problem solving
- set out mathematical work, including the solution of problems, in a logical and clear form using appropriate symbols and terminology.

Term 1 Topics:

During term 1, students will study the following topics:

- Map Scale & Calculation of Area
- Expansion & Factorisation of Algebraic Expression
- Simple Algebraic Fractions
- Congruency & Similarity
- Linear Equations in Two Unknowns
- Quadratic Functions & Equations
- Pythagoras' Theorem

Term 2 Topics:

During term 2, students will study the following topics:

- Mensuration of Pyramids
- Cones & Spheres

Term 3 Topics:

During term 3, students will study the following topics:

- Set Language & Notation
- Data Analysis and Probability