Ascot High School Department

Mathematics Department

Grade 11 CSEC Curriculum

September - December 2025

Introduction:

Based on the philosophy that mathematics is all around us and that everyone uses and understands some mathematics, the Mathematics Curriculum for Grade 10 CSEC is designed to:

- build students' learning and numeracy skills by exploring and applying the model of the 4Cs (creativity, critical thinking, collaboration and communication), while gaining knowledge of the content area;
- correct, where necessary, and build upon the knowledge of students through activities related to everyday life, applying mathematical principles of investigating, reasoning, estimating, forming conjectures and testing them, and through meaningful communication;
- expand knowledge through the formation of new concepts while establishing the inter-relatedness of mathematics with other disciplines;
- enable the development of attitudes of self-awareness and self-confidence, appreciation of enquiry, independent thinking, willingness to share, and cooperation with others in the pursuit of knowledge.
- help students' build life skills in order for them to be; flexible, productive, have good initiatives, exercise healthy habits, be a good leader and to be able to develop their social skills; by implementing the concept of the National Goals (Jamaicans are empowered to achieve their fullest potential, The Jamaican society is secure, cohesive and just, Jamaica's economy is prosperous, Jamaica has a healthy natural environment) while gaining knowledge of the content areas.

Unit Title	**Previous Knowledge:** Check that students can:	**General Objectives** On completion of this Section, students should:	**Key Skills**	**Specific Objectives:** Students should be able to:	**Duration (Regular Class)**	**Duration (Extra Class)**	**Assessment**	**Resources**
	•		•			Extra class: 2 days Extra class: 2 days Extra class:2 days	• Practice questions from past paper booklet • Home work/ class work ongoing weekly • Pop- Quiz	• Algebra tiles • Teacher-generated worksheets • Past papers • Videos
Unit Title	**Previous Knowledge:** Check that students can:	**General Objectives** On completion of	**Key Skills**	**Specific Objectives:** Students should be able to:	**Duration**		**Assessment**	**Resources**

		this Section, students should:						
RELATION, FUNCTIONS AND GRAPHS	• plot graphs • change the subject of formulae • apply the distributive law to factorize or expand algebraic • expressions; • factorize algebraic expressions; • • rewrite a quadratic expression in the form • • solve quadratic equations algebraically	1. appreciate the importance of relations in Mathematics; 2. appreciate that many mathematical relations may be represented in symbolic, tabular or pictorial form; and, 3. appreciate the usefulness of concepts in relations, functions and graphs to solve real-world problems.	make comparisons, draw graphs, computation, solve problems	1. Explain basic concepts associated with relations; 2. represent a relation in various ways; 3. state the characteristics that define a function; 4. use functional notation; 5.distinguish between a relation and a function; 6. draw graphs of linear functions; 7. determine the intercepts of the graph of linear functions; 8. determine the gradient of a straight line; 9. determine the equation of a straight line;	2 weeks 2 weeks		• Practice questions from past paper booklet • Home work/ class work ongoing weekly • Pop- Quiz	Past papers Videos Teacher-generated worksheets Graph sheets

				10. solve problems involving the gradient of parallel and perpendicular lines; 11. determine from co-ordinates on a line segment: (a) the length; and, (b) the co-ordinates of the midpoint; 12. solve a pair of simultaneous linear equations in two unknowns graphically; Past paper practice (objectives 1 - 12) 13. represent the solution of linear inequalities in one variable using:	2 weeks 2 weeks	Extra Class: 2 days		

				(a) set notation; (b) the number line; and, (c) graph. 14. draw a graph to represent a linear inequality in two variables; 15. use linear programming techniques to graphically solve problems involving two variables; 16. derive the composition of functions; 17. state the relationship between a function and its inverse; 18. derive the inverse of a function; 19. evaluate a function f(x) at a given value of x	2 weeks			

				20. draw and use the graph of a quadratic function to identify its features: (a) an element of the domain that has a given image; (b) the image of a given element in the domain; (c) the maximum or minimum value of the function; and, (d) the equation of the axis of symmetry; 21. interpret the graph of a quadratic function to determine: (a) the interval of the domain for which the elements of the range may be greater than or less than a given point; (b) an estimate of the value of the gradient at a given point; (c) intercepts of the function;	2 weeks			

				- Past Paper Practice (objectives 13 -21) 22. determine the equation of the axis of symmetry and the maximum or minimum value of a quadratic function expressed in the form $\square(\square + h)^2 + \square$ 23. sketch the graph of a quadratic function expressed in the form $\square = \square(\square + h)^2 + \square$ and determine the number of roots; 24. draw graphs of nonlinear functions; 25. interpret graphs of functions; and, 26. solve problems involving graphs of linear and nonlinear functions. Past paper practice	2 weeks 1 week	Extra Class: 3 days Extra class: 2 days		

Additional Topics: Statistics, Geometry and Trigonometry

ASSESSMENTS:

A unit test will be done at the end of each unit. For each sub-topic students will be assessed using graded class work and homework assignments along with any other form of assessment the teacher may devise.

Homework: 10% of the overall grade for the semester

Class Work: 10% of the overall grade for the semester

Sessional Test 1: 20%

Practical: 20%

End of Term Exam: 40% of the overall grade for the semester