GRADE EIGHT

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INTRODUCTION

"Each student is capable of learning mathematics and learning it well."
"Success is best achieved when school and families work together."

GOAL

To empower all I.C.H.S. students to keep abreast with the demands of the 21st century with regards to mathematical skills, attitudes and understanding that will enable them to be successful in career choices and their daily lives.

FRAMEWORK

The Mathematics Curriculum has been drafted in keeping with the NSC (STEM) and CXC (CSEC) programmes. It is organized by grade level to run over a period of five (5) years from grade 7 through to grade 11. Please note that the CXC (CSEC) Mathematics Examination which will be administered at the end of grade 11 is **NOT** examined only on grades 10 and 11 objectives. It is examined on the entire five (5) years of work.

The I.C.H.S. Mathematics Department believes that proficiency in most of mathematics is not an inborn characteristic; it is a consequence of persistence, effort, practice, support, encouragement and effective instruction. The use of the curriculum will allow all stakeholders: teachers, parents and students to effectively and efficiently execute the programme.

TO PARENTS/GUARDIAN

Ways to help your child succeed in mathematics:

- Always talk about mathematics in positive ways.
- Have high expectation for your child.
- Become familiar with what your child is studying in mathematics.
- Highlight forms of mathematics your child may encounter in her daily life.
- Help your child with her homework; if necessary identify a friend or relative who knows mathematics. Find out if that person would be willing to answer an occasional phone call from your daughter.
- Seek assistance if and when your child experiences difficulty in mathematics.
- Encourage your child.

GRADE 8
TERM 1

TOPIC	OBJECTIVES:

1 Number Bases	Students should be able to:
	  1. state the place value of a digit in a numeral in any base.
	  2. convert numbers written in base 2, 3 and 5 to base 10 and vice versa
	. 3. add, subtract and multiply numbers written in base 2, 3 and 5.
	
	  1.

2. **Integers and Rational Numbers**	Students should be able to: 1. compare and order any given set of integers or rational numbers. 2. perform the four basic operations on integers and rational numbers (emphasis on negative ones).

3A. **Algebra:-Laws of Algebra**	Students should be able to:
	1. identify and apply the following algebraic laws
	     (a) commutative law
	     (b) associative law
	     (c) distributive law
	
	2. (a) add, subtract, multiply and divide like and unlike terms.
	     (b) add, subtract, multiply and divide expressions.
	3. expand and simplify expressions involving brackets. including $(a + b)^2$ and $(a - b)^2$.

3B. **Linear Equation & Inequalities in one Variable**	Students should be able to:
	1. Solve problems involving:
	    -Fraction
	    -Brackets
	    -Both fraction & bracket
	    Equations.
	2. Find solution sets of given inequalities.
	3. Use the number line to show the solution set of inequalities.
	4. Use set notation to show the solution set of inequalities.
	5. Use inequalities to solve worded problems

TERM II

TOPIC	OBJECTIVES:
4.Solids (Project Topic)	Students should be able to: 1. Identify a solid shape 2. State the difference between a solid and a solid shape 3. Identify nets of solids 4. Draw nets of solids 5. Construct solids from nets 6. Differentiate between a prism and a pyramid. 7. Investigate each solid shape for sides, edges and vertices. 8. Volume of cube and cuboids.

5. Consumer Arithmetic II	Students should be able to:
	 1. Solve problems involving marked price (or selling), cost price, percentage profit or loss, actual profit or loss and discount.
	 2. Solve problems involving
	     - rates
	     - utility bills
	     - invoices & shopping bills
	     - insurances
	     - banking

6. Ratio & Proportion	Students should be able to: 1. Compare two quantities using ratio 2. Express ratio in the form a to b or a : b or $\frac{a}{b}$ 3. Reduce a given ratio to its simplest form. 4. Find the ratio of two quantities measured in different units. 5. Write a ratio equivalent to a given ratio. 6. Calculate the missing quantity, given two equivalent ratios. 7. Use map ratio to calculate the actual distance between two places given their distance apart on a map. 8. Use ratios to solve problems in sharing. 9. Solve equation involving simple ratio. 10. Solve problems involving direct or inverse proportions

7.**Relation, Mapping (Function), and Graph**	1. Recognize a relation 2. Describe a relation as a set of ordered pairs 3. Use arrow diagram to show relation 4. Use Cartesian graph to show relation 5. Identify relations which are mappings / function 6. Define a mapping (function) as a many –to-one or one-to-one relation 7. Recognize a relation 8. Describe a relation as a set of ordered pairs 9. Use arrow diagram to show relation 10. Use Cartesian graph to show relation 11. Identify relations which are mappings / function 12. Construct table and draw the graph for given relations e.g. $x \rightarrow x^2 + 4$, $x \rightarrow x^2 + 2x + 6$
8.**Circles**	Students should be able to: 1. Identify parts of the circle 2. Recognize that the value of $\pi = \dfrac{22}{7}$ or 3.14 3. Compare the circumference of the circle to its diameter as π 4. Use formula to calculate area and circumference of circle when radius or diameter is given. 5. Calculate radius or diameter of a circle when circumference or area is known. 6. Calculate length arc & area of sector of circle using angles at the center whose measures are factors of $360°$ 7. Calculate the perimeter & area of circle combine with other polygons such as square, rectangle, triangle etc.

TERM III

TOPIC	OBJECTIVES:

9.Consumer Arithmetic III	Students should be able to:
	1. Solve simple problems involving payment by installment (e.g. Hire purchase, mortgages etc)
	2. Make comparison between hire purchase and cash price
	. 3. Solve problems involving
	    - salaries & wages
	    - commission.

10. Construction Angles and Triangles	Students should be able to:
	1. Construct with compasses only 60°, 30°, 45°, 90°, 120°,etc
	2. Construct the perpendicular bisector of a given line.
	3. Construct triangles with compasses and without the aid of a protractor when:
	  (i) the measurements of the three sides are given
	  (ii) the measurements of one side and two angles are given
	  (iii) the measurements of two sides and an angle are given

11. Pythagoras Theorem	Students should be able to : 1. use calculator to calculate square and square roots of numbers. 2 use pythagoras' theorem to calculate the unknown lengths of lines. 3. use pythagoras' theorem to prove whether or not a triangle is right-angled.