

# GRADE SEVEN

The text "GRADE SEVEN" is rendered in a bold, black, sans-serif font. The letters are slightly slanted to the right. Below the text, a soft, grey shadow is cast onto the white background, creating a three-dimensional effect. The shadow is a lighter, semi-transparent version of the text above it, positioned directly underneath and slightly offset to the right.

**IMMACULATE CONCEPTION HIGH SCHOOL**  
**MATHEMATICS DEPARTMENT**  
**GRADES 7 CURRICULUM**  
**2017- 2018**

**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 21<sup>st</sup> 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 7

### TERM 1

<b>TOPIC</b>	<b>OBJECTIVES:</b>
<b>1. <u>Sets I</u></b>	Students should be able to; Students should be able to: <ol style="list-style-type: none"><li>1. Use a phrase to describe a set</li><li>2. List the members of a set from a given description</li><li>3. Give examples of sets</li><li>4. Define, describe and give examples of empty sets</li><li>5. Identify and distinguish between sets which are equivalent and sets which are equal</li><li>6. Identify the cardinal number of a set</li><li>7. Distinguish between finite and infinite sets</li><li>8. Identify and construct subsets of a given set</li><li>9. Calculate the number of subsets of a set of 'n' elements</li><li>10. Determine the complement of a given set, given the universal set.</li><li>11. Determine and count the elements in the intersection and union of two sets</li><li>12. Construct and use Venn diagrams to show subsets, complements and the intersection and union of sets.</li><li>13. Determine the number of elements in named subsets of two intersecting sets, given the number of elements in some of the other subsets</li><li>14. Solve problems involving the use of Venn diagrams with not more than two sets.</li></ol>
<b>2. <u>Basic Algebra</u></b>	Students should be able to: <ol style="list-style-type: none"><li>1. Use symbols to represent numbers, operations, variables and relations</li><li>2. Identify and formulate expressions</li><li>3. Group and collect like terms to simplify algebraic expressions</li><li>4. Perform the four basic operations with expressions</li><li>5. Substitute values for given variables to arrive at simple solutions</li><li>6. Translate verbal phrases into algebraic symbols and vice versa</li><li>7. use symbols to represent binary operations ( other than the four basic ones) and perform simple computations with them</li><li>8. Solve simple linear equations in one variable</li></ol>

TOPIC	OBJECTIVES:
3. <u>Indices</u>	<p>Students should be able to:</p> <ol style="list-style-type: none"> <li>1. Identify and use an index of a number</li> <li>2. Differentiate between expressions such as <math>x^2</math> and <math>2x</math></li> <li>3. Differentiate between <math>x^a + x^b</math> and <math>x^a \times x^b</math></li> <li>4. Establish and use the rule <math>a^n \times a^m = a^{n+m}</math></li> <li>5. Establish and use the rule <math>a^n \div a^m = a^{n-m}</math></li> <li>6. Use the laws of division to prove <math>x^0</math> is 1</li> </ol>
4. <u>Approximation &amp; Measurement 1</u>	<p>Students should be able to:</p> <ol style="list-style-type: none"> <li>1. Express any decimal to a given number of decimal places</li> <li>2. Approximate by rounding off to the nearest whole number; tens, hundreds, tenths, hundredths etc</li> <li>3. Approximate a value to a given number of significant figure</li> <li>4. Write a whole number in standard form (scientific notation)</li> <li>5. Identify situations in daily life where measurements are used.</li> <li>6. Identify the appropriate instrument (scale) for use in given measuring situations</li> <li>7. Identify and use the appropriate metric unit and symbol for length, area, mass, time and temperature</li> <li>8. Demonstrate the need for a starting point for measuring distance</li> <li>9. Distinguish between features of the traditional clock and the digital clock, also the 12hour and 24 hour clocks Perform measurement conversions and calculations</li> </ol>

## TERM II

<b>TOPIC</b>	<b>OBJECTIVES</b>
5. <b><u>Coordinate Geometry</u></b>	Students should be able to: <ol style="list-style-type: none"><li>1. identify the X and Y axes</li><li>2. identify the X and Y coordinates</li><li>3. relate ordered pairs to the X and Y axes</li><li>4. read points from the Cartesian plane.</li><li>5. plot points on the Cartesian plane.</li><li>6. Write coordinates of points as ordered pairs Connect points on the Cartesian plane to form plane</li></ol>
6. <b><u>Lines, Angles and Angles Associated with parallel lines</u></b>	Students should be able to: <ol style="list-style-type: none"><li>1. Draw a line segment</li><li>2. Distinguish between horizontal lines and vertical lines</li><li>3. Use protractor to measure and draw angles</li><li>4. Estimate the size of angles in degrees</li><li>5. Identify and sketch different types of angles (acute, obtuse, straight, right and reflex)</li><li>6. Identify parallel, perpendicular and intersecting lines</li><li>7. State property of vertically opposite angles</li><li>8. Identify and name angles formed when parallel lines are cut by a transversal lines.</li><li>9. Do related calculations involving properties of angles e.g. complementary, supplementary etc.,</li></ol>
7. <b><u>Measurement 11</u></b>	Students should be able to: <ol style="list-style-type: none"><li>1. Identify and list the properties of the following plane Shapes: Triangle, Square, Rectangle, Rhombus, Kite Parallelogram, trapezium and <b>circle</b>.</li><li>2. Explain and the concept of area and perimeter of each given plane shapes.</li><li>3. Calculate the area and perimeter of these shapes.</li><li>4. Look at the concept of symmetry and congruency of given plane shapes.</li><li>5. Name and identify polygons</li><li>6. Find the sum of interior angles of any regular polygons</li></ol>
8 <b><u>Reflection</u></b>	. Students should be able to: <ol style="list-style-type: none"><li>1. Reflect a shape.</li><li>2. Give properties of a reflection</li><li>3. find mirror line when shape and its image are given</li></ol>

## TERM 111

<u>TOPIC</u>	<u>OBJECTIVES</u>
9. <u>Consumer Arithmetic 1</u>	Students should be able to: <ol style="list-style-type: none"><li>1. Identify the function of money</li><li>2. Compute the total price given quantity and unit price</li><li>3. Compute the unit price given the total quantity and total price</li><li>4. Identify best buys and bargains by comparing unit cost</li><li>5. Calculate profit or loss when the cost price and selling price are given.</li><li>6. Calculate profit or loss as a percentage</li><li>7. Calculate discount, sales tax (eg. GCT) profit or loss when these are given in percentage.</li></ol>
10. <u>Statistics</u>	Students should be able to: <ol style="list-style-type: none"><li>1. Calculate the mean, mode and median of a given set of data</li><li>2. Draw and pictograph, line graph, pie chart and bar graph to represent a given set of data</li><li>3. Read and interpret pictograph, pie chart, bar graphs and line graphs when given.</li><li>4. Draw a simple frequency table for a set of data.</li></ol>