Port Moresby International School

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Owned and operated by the International Education Agency.

Unit & Assessment Outline for Students & Parents Grades 7 – 10.

Year	**2026**	Grade	9	Semester	2
Course Title	Intermediate Mathematics				
Curriculum Taught	IGCSE CORE/PNG				
Topics	Algebra, Statistics, Probabilty, Graphs and Inequality				

Assessment

Week	Topic(s)	Type of Task	Weighting
2	Transformation, Similarity/Congruency of Similar Figures	Test 1	20%
8	Algebra	Test 2	20%
14	Statistics and Probability	Assignment	15%
18	Graphs and Inequality	Test 3	25%

Learning outcomes against which the students will be reported

Understands and recalls mathematical facts.

1 Appropriately simplify, expand, factorize, and solve algebraic expression.

2. Collect, organize, display, interpret and analyse statistical data and draw conclusions.

3. Determine and compare theoretical and experimental probabilities and evaluate the likelihood

4. Construct, interpret and analyse graphs.

5. Solve, represent and interpret inequalities algebraically and graphically.

Course Aims/Goals

1. To develop a feel for number, carry out calculations and understand the significance of results.
2. To gain understanding of pattern and structure in Mathematics.
3. To gain sound oral, written, and practical skills in mathematical processes.
4. To apply mathematical knowledge and skills through investigative inquiry in a variety of contexts.
5. To develop in the students a logical and systematic approach to Mathematics.
6. To acquire a foundation for further study for Mathematics.

Content Outline

Weeks	Content Outline	Curriculum Links
1-2	Completing and describing number patterns. Finding terms and writing rules for sequences. Using the Tn formula. Identify formulae for various patterns. Apply formulae to find values of various patterns. Number pattern problems. TEST 1	PNG 9.3.3.6 PNG 9.3.3.7 PNG 9.3.3.8
3-4	Basic rules for solving inequalities. Solving inequalities with single variables. Representing inequalities on a Number Line. Linear equations. Solving simultaneous equations using substitution and elimination method.	PNG 9.3.3.5 PNG 9.3.3.4
5-6	Formulate algebraic expressions and equations. Factorize algebraic expressions, monic and non-monic quadratic expressions. Solve quadratic equations	PNG 9.3.3.9 PNG 9.3.3.10
7-8	Simplify algebraic expressions using algebraic products and quotients, addition and subtraction of algebraic fractions, multiplication and division of algebraic fractions. Word problems on algebraic fractions. Algebraic products using index laws. Algebraic quotients using index laws. Substitute values into formulas and solve for the unknown. Substitute values into the given formula and determine the required solution. TEST 2	PNG 9.3.3.11 PNG 9.3.3.12 PNG 9.3.3.13 PNG 9.3.3.14
9 -10	Linear sequences. Sequences with quadratic and cubic rules	IGCSE C2.7
11-12	Types of data (Discrete and Continues Variables). Calculation of Mean, Mode, Media and range. Analyzing & Reporting. Stem and leaf plots. Comparing sets of data. Plan and design data collection method. Data collection. Organization of data. Representation of data. Introduction to probability. Probability based on experiments and theory. Tree Diagrams. Complementary events. Problem solving using sum of probabilities. Events using 'at least'. Exclusive events. Inclusive events.	PNG 9.4.4.1 PNG 9.4.4.2 PNG 9.4.4.3 PNG 9.4.4.4 PNG 9.4.4.5 PNG 9.4.4.6
13-14	Sets and subsets. The universal set. Set notations and Venn diagram. Problem solving with sets. Relative frequency. Tally charts and frequency tables, Pie charts, Bar charts. Stem and leaf diagram (Back - to - back) Types of correlation, Line of best fit. ASSIGNMENT: Statistics and Probability	IGCSE C1.2 IGCSE C8.2 IGCSE C9.4 IGCSE C9.5
15-16	Gradient of a straight line (y = mx + c). Equation given the gradient and y-intercept, two points, one point and the gradient and graph. Solve Linear Equations. Plotting and sketching linear functions. Interpret linear relationship between two quantities. Graph the linear relationship between two quantities.	PNG 9.3.3.1 PNG 9.3.3.2 PNG 9.3.3.3
17-18	Linear equations. Solving simultaneous equations using graphical methods and digital technology. Solving inequalities with single variables. Solve linear inequalities and represent the solutions set on a number line. Completing and describing number patterns. Finding terms and writing rules for sequences. Using the Tn formula TEST 3	PNG 9.3.3.4 PNG 9.3.3.5 PNG 9.2.2.6
19-20	Solve linear equations. Plotting and sketching linear equations.	PNG 9.2.2.7 PNG 9.2.2.8