Port Moresby International School

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

Year	**2026**	Grade	8	Semester	2
Course Title	Mathematics				
Curriculum Taught	PNG, IEA & Cambridge Checkpoint				
Topics	Geometry, Algebra, Coordinate Geometry & Data Handling				

Assessment

Week	Topic(s)	Type of Task	Weighting
2	Geometry	Test # 1	25%
6	Sequences, Functions and Graphs	Test # 2	30%
10	Positions and Transformations	Assignment	15%
16	Statistics & Probability	Test # 3	30%

Learning outcomes against which the students will be reported

- **Recognise, describe, and generalise mathematical patterns and relationships** by generating sequences, determining rules, and expressing relationships using algebraic notation.
- **Represent and analyse functions and graphs** by constructing tables of values, plotting graphs, interpreting graphical information, and connecting equations to real-world situations.
- **Apply spatial reasoning and coordinate geometry skills** to locate positions, determine bearings, calculate midpoints, and solve problems involving coordinates.
- **Perform and describe geometric transformations** including translations, reflections, rotations, and enlargements, and explain their effects on shapes and figures.
- **Collect, organise, represent, and interpret data** using appropriate statistical methods and representations to draw conclusions and make informed decisions.
- **Investigate and solve probability problems** by calculating theoretical probabilities, conducting experiments and simulations, and comparing experimental results with expected outcomes.

Course Aims/Goals

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

Content Outline

Weeks	Content Outline	Curriculum Links
1–2	**Sequences** – Number patterns, term-to-term rules, nth-term rules, linear and quadratic sequences	8As.01, 9As.01, 8As.02, 9As.02
3–4	**Functions** – Function machines, input-output relationships, inverse operations, representing situations with functions	8As.03, 9As.03, 8As.04, 9As.04
5–6	**Graphs** – Tables of values, linear graphs, gradient and intercept, graphing quadratic functions	8As.05, 9As.05, 8As.06, 9As.06,
7–8	**Graphs** – Interpreting graphs **Position and Coordinates** – Bearings, coordinates, midpoint of line segments, map skills	8As.07, 9As.07 8Gp.01 - 8Gp.06
9–10	**Transformations** – Translations, reflections, rotations, enlargements and scale factors, interpret position on maps and plans. Perimeter and area of squares and rectangles enlarged by a positive scale factor.	9Gp.01 - 9Gp.07
11–12	**Statistics: Data Collection & Representation** – Sampling methods, surveys, data collection, bias and reliability; tables, charts, graphs, stem-and-leaf diagrams, scatter plots, infographics	8Ss.01/9Ss.01 - 8Ss.03/9Ss.03
13–14	**Statistics: Data Analysis** – Mean, median, mode, range, interpreting trends and making conclusions	8Ss.04/9Ss.04
15–16	**Probability** – Complementary events, mutually exclusive events, theoretical probability, probability of combined events	8Sp.01/9Sp.01- 8Sp.03/9Sp.03
17–18	**Probability Investigations** – Experiments, simulations, expected frequency, comparing theoretical and experimental probability	8Sp.04/9Sp.04
19–20	**Review, Consolidation and Assessment** – Revision of all topics, problem-solving investigations, past papers, projects (if applicable), end-of-term assessment and feedback	Checkpoint, IEA, PNG