

Math

Syllabus: Grade 8

<p>Rationale for Learning Mathematics</p> <p>*Gain an appreciation for the important role mathematics plays in modern society.</p> <p>*Develop enough mathematical literacy to enable students to function at their maximum potential in a modern economy.</p> <p>*Develop the ability to estimate solutions, compute accurately, assess the reasonableness of their answers, and reason logically and critically.</p>	<p>Class Rules:</p> <ol style="list-style-type: none"> 1. Arrive on time, prepared, and ready to learn 2. Respect yourself and others 3. Make friends and be thoughtful 4. Take turns speaking and listening 5. Say Please and Thank you 6. Try your best!
<p>Math Strands</p> <p>The Palau mathematics curriculum framework is organized under the following 5 STRANDS, or content themes, that run across grades 1 through 12.</p> <ol style="list-style-type: none"> 1. Number Sense, Properties, and Operations 2. Unit Systems and Measurement 3. Spatial Sense and Geometry 4. Data, Statistical Analysis, and Probability 5. Patterns, Functions, and Algebra 	<p>Math Resources and Materials</p> <p>Grade 8 Math Dimensions A and B</p> <p>Computation of Letter Grade:</p> <ul style="list-style-type: none"> • 90%-100%.....A • 80%-89%..... B • 70%-79%..... C • 65%-69%..... D • 0%-64%..... F <p>Methods of Evaluation:</p> <p>Quarterly grade for Grade 1-8 is based on :</p> <p>A. 85% = Class Average</p> <p>* Class Average = 70% Test + 30% Other Components such as quizzes, group works, classwork, homework, self-assessments, experiments/demonstrations/research/project</p> <p>B. 15% = Quarter Exam</p>

Strand/Topics	Grade 8
Number Sense, Properties, and Operations	<ul style="list-style-type: none"> • Solve equations using multiple strategies including the usage of square roots and cube roots to represent the solutions to equations. • Apply properties of integer exponents to generate equivalent expressions or solve problems involving all numbers and operations. • Use factors, multiples, prime factorization, and <i>relatively prime numbers</i> to solve problems. • Convert a rational number to a decimal using long division; recognize that for rational numbers the decimal expansion terminates in 0s or repeats eventually. • Convert between forms (whole numbers, fractions, decimals, and percentages). Divide a fraction by a whole number and vice versa (a whole number by a fraction). • Compare and order fractions, decimals, and percent efficiently and find their approximate locations on a number line. • Compute square root and cube root of a perfect square and cubic numbers. • Relate negative numbers to contextual situations, such as temperatures below zero, location below sea level, and being in debt. • Compute quotients of fractions, and solve word problems involving division of fractions by fractions.
Unit Systems and Measurement	<ul style="list-style-type: none"> • Convert diameter into radius, finding diameter when given circumference, or radius when given circumference, and vice versa • Find the area of polygons by composing into rectangles or <u>decomposing into</u> triangles and other shapes. • Identify the center, diameter, and radius of a circle. • Construct circles of a given radius or diameter. • Measure the circumference of circles and relate circumference to perimeter. • Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. • Use other methods or formula for the capacity or volume of a rectangular prism, cube, and cuboid when given its side. • Find the edge of a cube when given its volume. • Find the unknown dimension of a cuboid when given the volume and two dimensions.
Spatial Sense and Geometry	<ul style="list-style-type: none"> • Find the area of polygons by composing into rectangles or <u>decomposing into</u> triangles and other shapes. • Find the area of compound figures made up of semicircles and quarter circles, rectangles, triangles, and etc. • Find the unknown dimension of a cuboid when given its volume and the area of the face perpendicular to the unknown dimension. • Convert the volume of a liquid from cm^3 to liters and vice versa. • Solve multi-step word problems that involve the volume of a liquid in a rectangular tank. • Use the properties of triangles and quadrilaterals to evaluate angles. • Find unknown angles in problems that involve triangles and /or quadrilaterals.

Strand/Topics	Grade 8
Spatial Sense and Geometry	<ul style="list-style-type: none"> • Use the properties of triangles and quadrilaterals to evaluate angles. • Find unknown angles in problems that involve triangles and /or quadrilaterals. • Define the Pythagorean Theorem. • Construct a triangle. • Understand the properties of regular pentagon, hexagon, octagon, and decagon • Compare two different proportional relationships represented in different ways. • Verify experimentally the properties of rotations, reflections, and translations.
Data, Statistical Analysis, and Probability	<ul style="list-style-type: none"> • Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. • Interpret different types of graphs and line plots (e.g., pictograph, bar graph, circle graph, broken line, graph), tables, charts, schedules, dot plots, and box plots.
Patterns, Functions, and Algebra	<ul style="list-style-type: none"> • Use letters to represent unknown numbers. • Write an algebraic expression in one variable (unknown). • Simplify algebraic expressions with one variable by adding or subtracting like terms (algebraic terms). • Evaluate algebraic expressions using substitution. • Find the value of a simple algebraic expression using substitution method. • Determine function rule that represents a linear relationships between two quantities. • Solve word problems leading to algebraic inequalities in one variable involving any of the four basic operations, graph the solution set of the inequality and interpret it in the context of the problem.