



Mathematics Subject Overview/ Vertical Curriculum Map MYP Years 1-5



Grade Level	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
MYP 1	Title/Theme: Number System Common Core Standards: 6.NS.1, 6.NS.2, 6.NS.3, 6.NS.4	Title/Theme: Rational numbers Common Core Standards: 6.NS.5, 6.NS.6, 6.NS.7, 6.NS.8	Title/Theme: Ratios and proportions Common Core Standards: 6.RP.1, 6.RP.2, 6.RP.3a, 6.RP.3b, 6.RP.3c, 6.RP.3d	Title/Theme: Equations and Expressions Common Core Standards: 6.EE.1, 6.EE.2, 6.EE.3, 6.EE.4, 6.EE.5, 6.EE.6, 6.EE.7, 6.EE.8, 6.EE.9	Title/Theme: Geometry Common Core Standards: 6.G.1, 6.G.2, 6.G.3, 6.G.4	Title/Theme: Statistics Common Core Standards: 6.SP.1, 6.SP.2, 6.SP.3, 6.SP.4, 6.SP.5
	Content: -Division of fractions, -How decimals and fractions relate to one another. -Dividing multi-digit whole numbers - Adding, subtracting, multiplying and dividing decimals -Find LCM and GCF of two whole numbers	Content: -Usage of positive and negative numbers - Use number line diagrams and coordinate axes to plot negative numbers on the line and in the plane -Order and find absolute value of rational numbers. -Graphing points in all four quadrants of the coordinate plane including the use of coordinates and absolute value to find distances between points	Content: -Concept of a ratio and ratio language - Concept of a unit rate -Ratio and rate reasoning to solve real-world and mathematical problems, -Make a table of equivalent ratios and find missing values -Solve unit ratio problems including unit price and speed	Content: -Write and evaluate numerical expressions. -Apply the properties of operations to -Identify equivalent expressions -Solve equations or inequalities -Use variables to represent two quantities in a real-world problem	Content: - Classify and measure two- and three-dimensional figures, such as triangles, quadrilaterals, cubes, prisms -Compute distance, area and volume and report their answers using accurate terms, such as miles, square miles or cubic feet. -Solve real-world and mathematical problems involving area, surface area, and volume	Content: -Develop understanding of statistical variability. -Summarize and describe distributions.
	# of weeks: 6	# of weeks: 4	# of weeks: 6	# of weeks: 6	# of weeks: 4	# of weeks: 5
	Key Concept(s): Logic	Key Concept(s):Form	Key Concept(s): Relationships	Key Concept(s): Logic	Key Concept(s): Form	Key Concept(s): Relationship
	Related Concept(s): Representation, Quantity	Related Concept(s): model system	Related Concept(s): representation, equivalence	Related Concept(s): Generalization, Model	Related Concept(s): justification and measurment	Related Concept(s): justification , representation
	Global Context: Scientific and Technical Innovation	Global Context:Fairness and development	Global Context: Fairness and development	Global Context: personal and cultural expressions	Global Context: orentation in space and time	Global Context: globalization and sustainability
	Statement of Inquiry: Representing using a logical process may lead to better understanding of number system.	Statement of Inquiry: Understanding rational numbers enhances logical reasoning system of real world	Statement of Inquiry: Equivalent values expressed in different forms can be used to describe and calculate the relationship between quantities and rates.	Statement of Inquiry: Algebra follows a logical system of reasoning using variables to represent the unknown, in real life situations	Statement of Inquiry: measurment is expressed in varies forms to communicate the space around or within an object	Statement of Inquiry: Analyzing interpreting data impact decision making in the world
	MYP Objectives: A,B,D	MYP Objectives: A, & C and B	MYP Objectives: C & D	MYP Objectives: B, D & C	MYP Objectives: A, & B	MYP Objectives: A and C
	ATL Skills:-Thinking skill(Transfer) :combine knowledge , understanding and skills to evaluate -Self management: Reflection skills -Identify strengths and weaknesses of personal learning strategies.	ATL Skills: -Thinking skillsCritical thinking skills, (Practice observing carefully in order to recognize problems) -Creative thinking skills (Use brainstorming and visual diagrams to generate new ideas and inquiries)	ATL Skills: -Critical thinking (Recognize and evaluate propositions) -self-management skills :(Reflection skills) (Identify strengths and weaknesses of personal learning strategies)	ATL Skills:- Communication skills (How can students communicate through interaction?) -Self-management skills (affective skills) (Practice focus and concentration)	ATL Skills:- Communication: (Use a variety of speaking techniques to communicate with a variety of audiences) - Collaboration: Manage and resolve conflict and work collaboratively in teams	ATL Skills: -Research skills (Information Literacy Skills) Collect, record and verify data (Interpret Data) -Communication skills (Organize and depict information logically).
	Assessment Task with criteria: Criterion D: shopping time, student will use their knowledge of number system and the relations between operations to shop using stationary shop list with a specific budget. Criterion A: Students begin with basic decimal addition and multiplication, then progress to identifying and correcting mistakes, performing calculations with greater complexity, and solving multi-step decimal problems. Criterion B: The assessment has two connected investigations: Task 1: Students investigate the relationship between dividing a fraction by 2 and multiplying the fraction by Task 2: Students investigate how multiplying a decimal by powers of 10 changes the position of the decimal point and develop a mental-math strategy.	Assessment Task with criteria: Cruterion A: Students explore integers, opposites, ordering numbers, and coordinates through real-life contexts such as submarine depths, financial gains and losses, and locations of sea-serpent sightings. They use these contexts to demonstrate their understanding of positive and negative numbers and how they are represented visually. Criterion C: Students use real-world contexts such as time zones and temperatures to understand how positive and negative integers represent quantities relative to zero. They compare integers, determine their distance from zero using absolute value, and represent relationships using inequalities and number lines. Criteion B: students can find a relation and describe a relationship between two quantities.	Assessment Task with criteria: Criterion D: Students begin by representing real-life situations as ratios and simplifying them. They then investigate whether simplifying a ratio changes its value and learn two methods for determining whether two ratios are equivalent: simplification and cross-multiplication. Criterion C: Students take on the role of a smart shopper advisor. They select one shopping scenario, organize the information using a ratio table, calculate the unit rate for each option, and determine which product offers the better value. They must then clearly explain and justify their decision.	Assessment Task with criteria: Criterion B: Students begin by generating values from a given pattern, then look for the relationship between the term number n and the value of the term. They use this relationship to write an equation, predict future terms, explain the pattern in words, and finally verify their generalization with their own example. Criterion C: The assessment checks whether students can translate a real-world limit or requirement into a one-step inequality, solve and graph it, and communicate their mathematical reasoning clearly using words, symbols, equations, graphs, and visuals. Criterion D: Students apply mathematics to different contexts, including area, perimeter, unknown quantities, fractions, inequalities, and multi-step relationships. The assessment progresses from straightforward calculations to forming and solving equations and inequalities.	Assessment Task: Criterion A: Students develop their understanding of area as the amount of space covered by a two-dimensional shape. They apply appropriate formulas, break complex shapes into simpler parts, and use subtraction when necessary to solve real-world area problems. Criterion B: The assessment checks whether students can calculate volume, investigate how multiplying one dimension changes the volume, and generalize that multiplying one dimension by a factor multiplies the volume by the same factor. Calculate → Change a dimension → Compare volumes → Identify a pattern → Generalize → Verify	Assessment Task with criteria: Criterion C: Students compare temperature data from Saudi Arabia and Morocco over 10 days. They calculate statistical measures such as the mean, median, mode, and range, then use graphs or plots to represent the data visually. Finally, they interpret the results and explain what the data suggests about the temperatures and climate in the two countries.Criterion A : Knowing and understanding how the students can find measures of center and measures of variation and interpret them



Grade Level	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
MYP 2	Title/Theme: Integer Numbers Common Core Standards: 6.NS.5 6.NS.6 (a , b , c) 6.NS.7 (a , b , c , d) 6.NS.8	Title/Theme: Rational Numbers Common Core Standards: 7.NS.1 (a , b , c , d) 7.NS.2 (a , b , c , d) 7.NS.3	Title/Theme: Equations and Algebraic Expressions Common Core Standards: 7.EE.1 7.EE.2 7.EE.3 7.EE.4 (a , b)	Title/Theme: Geometry and Measurement Common Core Standards: 7.G.2 7.G.3 7.G.4 7.G.5 7.G.6	Title/Theme: Ratio and Proportions Common Core Standards: 7.RP.1 7.RP.2 (a , b , c , d) 7.RP.3 7.G.1	Title/Theme: Probability Common Core Standards: 7.SP.1 7.SP.2 7.SP.3 7.SP.4 7.SP.5 7.SP.6 7.SP.7 (a , b) 7.SP.8 (a , b , c)
	Content: -Integer numbers and absolute value - Comparing and ordering integers - Adding integers - Subtracting integers - Multiplying integers - Dividing integers	Content: -Rational numbers -Comparing and ordering rational numbers -Multiplying rational numbers - Dividing rational numbers - Adding and subtracting like denominator rational numbers - Adding and subtracting unlike denominator rational numbers -Powers and exponents -Order of operations	Content: -Variables and algebraic expressions -Equations -Addition and subtraction equations -Multiplication equation -Solving two steps equations -Writing two steps equations -Solving equations with variables in both sides -Modeling equations -Inequalities	Content: -Relations between angles and straight line -Area of triangle and tranpezoid -Circumference of circle -Area of Circle -Area of composite shapes -3- D shapes -Drawing 3- D shapes -Transversal slicing Surface area of quadrangular prism -Volume of cylinder - Volume of triangular and quadrangular prisms	Content: - Ratio - Rate - Conversion between Metric units - Conversion between English units - Solve proportion - Fractions and percentage - Find the percentage mentally - Estimating the percentage - Percentage formula	Content: -Measures of center and range -Events and probability -Counting the outcomes - Principal of Counting -Compound Events -Theoretical probability and trial propability -Statistical inference
	# weeks: 5	# weeks: 4	# weeks: 6	# weeks: 5	# weeks: 7	# weeks: 5
	Key concept: Relationships	Key concept: Relationships	Key concept: Relationships	Key concept: Form	Key concept: Relationships	Key concept: Logic
	Related concepts: Quantity, Representation	Related concepts: Equivalence, Simplification	Related concepts: Equivalence, Model	Related concepts: Measurement, Representation	Related concepts: Equivalence, Representation	Related concepts: generalization, Model
	Global context: Identities and relations	Global context: Identities and relations	Global Context: Fairness and development	Global context: Scientific and technical innovation	Global context: Fairness and development	Global context: Personal and cultural expression
	Statement of inquiry: Human constant need over the centuries to develop set of numbers to represent realistic quantities and to express the relations between them MYP objectives A: Knowing and understanding B: Investigating patterns C: Communication	Statement of inquiry: The human developed groups of numbers to simplify the expression of equivalent amounts in different forms to meet his needs MYP objectives B: Investigating patterns: C: Communication	Statement of inquiry:Representing relationships using algebraic equations and expressions leads to a deeper understanding of their importance in real life situations MYP: MYP objectives A: Knowing and understanding D: Applying mathematics in real-life contexts	Statement of inquiry: Human use of the relation between the geometric shapes and its representations was the basics of development of architecture creativitv throughout aoes. MYP objectives B: Investigating patterns: C: Communication	Statement of inquiry: Applying the concept and principle of proportionality and equal proportions has an essential role in making the right decisions in different life situations MYP objectives A: Knowing and understanding B: Investigating patterns: C: Communication	Statement of inquiry: Representing statistical data leads us to systematic analysis that produces logical generalizations a b MYP objectives A: Knowledge and understanding C: Communication D: Applying mathematics in real-life contexts
	ATL skills: Critical thinking skills: Practise observing carefully in order to recognize problems Communication: Use intercultural understanding to interpret communication	ATL skills: self-management skills -Reflection skills: Consider ATL skills development Transfer skills: Apply skills and knowledge in unfamiliar situations	ATL skills: Affective skills: Practise "failing well" Critical-thinking skills: Gather and organize relevant information to formulate an argument	:ATL skills: Creative-thinking skills: Practise visible thinking strategies and techniques self-management skills- Reflection skills: Demonstrate flexibility in the selection and use of learning strategies	ATL skills: Communication skills: Give and receive meaningful feedback Critical thinking	ATL skills: Information literacy skills: Access information to be informed and inform others Media literacy skills: Demonstrate awareness of media interpretations of events and ideas (including digital social media)
	Assessment Task with criteria A: Knowledge and understanding: The test focuses on operations with integers, including using the number line, ordering and comparing integers, absolute value, and solving real-life problems involving positive and negative numbers B: Investigating patterns:test focuses on integers and their operations, including using the number line, ordering and comparing integers, absolute value, solving real-life problems, identifying and completing number patterns, and understanding powers and the signs of their results. C: Communication : Applying the concepts and principles of integers in real-life situations by investigating the depths of the ocean, the heights of famous buildings, and the depth reached by the Titan submersible, then using positive and negative integers to compare these measurements, calculate differences, and investigate the cause of the Titan submersible implosion.	Assessment Task with criteria B: Investigating patterns :The test focuses on understanding and applying fractions, including equivalent fractions, simplifying fractions, comparing and ordering fractions, finding fractions of numbers, converting fractions between different forms, identifying patterns, and solving real-life problems involving fractions. C: Communication :This project aims to help students understand and apply the basic concepts of fractions and rational numbers by geting product.	Assessment Task with criteria A: Knowledge and understanding:The test focuses on solving linear equations using mathematical rules and showing the steps clearly. Students practice solving equations with one variable, including equations involving addition, subtraction, multiplication, division, and parentheses D: Applying mathematics in real-life contexts:The test focuses on using algebraic expressions and equations to represent and solve mathematical and real-life situations. It assesses students' ability to write mathematical expressions, solve and check equations, find unknown angles, interpret data, and use algebra to solve problems	Assessment Task with criteria B: Investigating patterns:The test focuses on understanding the angles of polygons, especially the relationship between interior and exterior angles. Students use patterns, formulas, and geometric properties to calculate unknown angles and the sums of angles in different polygons C: Communication:The main idea of this project is to understand and apply basic geometry concepts, including angle relationships, area, circumference, composite shapes, and volume by getting product	Assessment Task with criteria A: Knowledge and understanding: The test focuses on understanding and applying ratios, proportions, scale drawings, and percentages. Students practice simplifying ratios, solving proportions, using scale to find real distances, comparing scale models, and applying percentage changes to real-life situations such as maps, models, and stock prices B: Investigating patterns, The test focuses on understanding and applying ratios, proportions, scale drawings, and percentages. Students practice simplifying ratios, solving proportions, using scale to find real distances, comparing scale models, and applying percentage changes to real-life situations such as maps, models, and stock prices C: Communication:The test focuses on understanding and applying ratios, proportions, scale drawings, and percentages. Students practice simplifying ratios, solving proportions, using scale to find real distances, comparing scale models, and applying percentage changes to real-life situations such as maps, models, and stock prices Performance task: Students will choose promotional offers in discount seasons to help users make the right decisions while shopping	Assessment Task with criteria A: Knowledge and understanding:The test focuses on probability and data analysis. Students learn how to count possible outcomes, calculate probabilities, and analyze data using range, mode, mean, median C: Communication Performance task based on collecting and analysing data D: Applying mathematics in real-life contexts:The test focuses on applying statistics and probability to real-life situations involving employee selection, drawing colored balls, and analyzing students' grades.



Grade Level	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
MYP 3	Title/Theme: Number System Common Core Standards: 8.NS.1, 8.NS.2, 8.EE.1, 8.EE.2 , 8.EE.3, 8.EE.4	Title/Theme: Expressions and Equations Common Core Standards: 8.EE.1, 8.EE.2,8.EE.3 ,8.EE.4,8.EE.7a ,8.EE.7b,8.EE.5,8.EE.6 ,8.EE.8a,8.EE.8b '8.EE.8c	Title/Theme: Functions Common Core Standards: 8.F.2, 8.F.1, 8.F.3, 8.F.4, 8.F.5	Title/Theme: Triangles and transformations Common Core Standards: 8.G.1 a, b, c, 8.G.2, 8.G.3, 8.G.4, 8.G.5, 8.G.6, 8.G.7, 8.G.8	Title/Theme: Volume and Surface Area Common Core Standards: 8.G.9	Title/Theme: Data Analysis Common Core Standards: 8.SP1, 8.SP2, 8.SP3, 8.SP4
	Content: -Rational Numbers -Powers and Exponents - Multiply and divide monomials - Powers of monomials -Negative Exponents -Scientific notations -Compute with sceitnific notations, roots, estimate roots -Compare real numbers	Content: -Solve Equations with rational co-efficients, -Solve 2 step equations - Write 2 step equations -Solve equations with variables on each side -Solve multi step Equations - Constant rate of change - Slope, Equations in y=mx - Slope-intercept form - Graph line using intercepts -write linear Equations -Solve systems of equation by graphing -Solve systems of equation algebraically.	Content: -Represent relationships -Relations - Functions - Linear functions -Compare properties of functions - Construct functions - Linear and non linear functions -Qualitative Graphs	Content: -Lines, Angles of Triangles -Pythagorean theorem -Distance on coordinate plane -Translations, Reflections, Rotations, Dilations -Congruence and transformations - Similarity and transformations -Properties of Similar polygons, similar triangles and indiret measurement -Slope and similar triangles.	Content: -Volume of cylinder -cone and sphere -Surface area of Cylinder and cone -Changes in dimensions .	Content: -Scatter Plots -Lines of best fits - Two-way tables -Descriptive Statistics
	# of weeks: 8	# of weeks: 9	# of weeks: 3	# of weeks: 8	# of weeks: 3	# of weeks: 3
	Key Concept(s): Form	Key Concept(s): Relationships	Key Concept(s): Relationships	Key Concept(s): Relationship	Key Concept(s): Form	Key Concept(s): Logic
	Related Concept(s): Representation, Simplification	Related Concept(s): model , Equivalence	Related Concept(s): Patterns, justification	Related Concept(s): Justification and measurement	Related Concept(s): Models, measurements, quantities	Related Concept(s): Justification, Representation, generalization.
	Global Context: Globalization and sustainability	Global Context: globalization and sustainability	Global Context: Globalization and sustainability	Global Context: Orientation in space and time	Global Context: Personal and cultural expressions	Global Context: Orientation in space and time .
	Statement of Inquiry: Nature has different forms that can be represented in different ways globally. MYP Objectives: A , B, D	Statement of Inquiry: models created with equivalent equations can reveal relationships between human actions and environmental consequences MYP Objectives: B, D	Statement of Inquiry: Justification of patterns and relationships will help raise awareness on global issues MYP Objectives: D, C	Statement of Inquiry: Making appropriate connections helps us justify what we discoer throguh measurement and observation.. MYP Objectives: A,B, C	Statement of Inquiry: Understanding forms and models enhances creativity and helps to develoop different cultures.. MYP Objectives: A, B,C	Statement of Inquiry: Logic is essential to justify different representations over space and time MYP Objectives: A, D ,C
	ATL Skills: Self-management skills: organization skills Set goals that are challenging and realistic social: social skills Give and receive meaningful feedback	ATL Skills: Communication skills -interpret and use effectively modes of non-verbal communication -take effective notes in class	ATL Skills: communication- communication skills Understand and use mathematical notation social : collaboration skills :Listen actively to other perspectives and ideas	ATL Skills: self management skills- affective Mindfulness — Practise focus and concentration Thinking : Critical-thinking skills Consider ideas from multiple perspectives	ATL Skills: Communication skills Interpret and use effectively modes of non-verbal communication Thinking : creative thinking skills Use brainstorming and visual diagrams to generate new ideas and inquiries	ATL Skills: Research skills Collect and analyse data to identify solutions and make informed decisions Thinking : Critical skills Interpret data
	Assessment Task with criteria: A: Knowledge and understanding Students will demonstrate their understanding of exponents and exponent laws by selecting appropriate mathematical methods, applying them correctly, and solving problems with increasing levels of difficulty. B Investigatating Pattern This exam assesses students' ability to identify and explain patterns involving squares, square roots, cubes, and cube roots. Students will complete tables, find patterns, and apply their understanding to simple real-life problems involving area and volume. Applying math to real life context (Performance Task) This performance task assesses students' ability to apply mathematics to real-life situations. Students will use diameters, scientific notation, and calculations to solve problems involving balls, the Earth, the Moon, and speed.	Assessment Task with criteria: B. Investagating Pattern This exam assesses students' ability to identify and describe patterns when solving equations with rational coefficients. Students will complete tables, compare equations, develop rules, and apply their rules to new examples, including equations with negative coefficient + D Real - life application Students will be given a systems of equations and they create a scenario .. Then they will solve these equations with the knowledge of the skills learnt in the unit.	Assessment Task with criteria: D. Applying mathematics to Real life context (Performance task) In this project with the knowledge of linear and non linear functions students will be asked to make a qualitative graph . They will make their own description of the pattern in the graph related to a global issue. C. Communicating Students will clearly present and explain their survey results using tables, graphs, charts, and appropriate mathematical vocabulary. They will communicate their findings in an organized and understandable way.	Assessment Task with criteria: A . Knowledge and understanding + This assessment checks students' ability to understand and apply geometric concepts such as the Pythagorean theorem, triangle classification, and measurements to solve mathematical problems. B investigating pattern This assessment checks students' ability to identify and investigate patterns in transformations. Students will perform translations, reflections, and combined transformations, compare different orders, and determine whether transformations are commutative. Students will also describe and generalize the patterns they find and verify their conclusions using examples and graphs. C. Communicating This assessment checks students' understanding of angles, triangles, and parallel lines. Students will use angle properties and mathematical reasoning to find missing angles, solve triangle problems, justify their answers, and classify triangles. D. Applying mathematics to Real life context (Performance task) This assessment checks students' ability to apply mathematical strategies to real-life situations involving distances, areas, heights, and measurements, and to explain whether their solutions are reasonable.	Assessment Task with criteria: A . Knowledge and understanding This assessment checks students' ability to understand and apply formulas for finding the volume of 3D shapes, including cubes, cylinders, and cones. Students will select the correct formula, substitute the given values, perform calculations accurately, and solve problems involving volume in familiar and real-life situations. B . Investigating patterns (Performance task) In this task students will perform various operations on cylinders they will investigate the effect of these opearions . They will use same dimensions paper to construct cylinder 1 and cylinder 2 , by changing the height and the circumference of the cylinder . After constructing these cylinders they will mention when and why they see a major change in the volume of the cylinder. C. Communicating This assessment checks students' ability to communicate their mathematical understanding clearly using correct mathematical language, symbols, formulas, and representations. Students will organize their work, explain their reasoning, and present their solutions clearly when working with 3D shapes, volume, cones, cylinders, and cubes.	Assessment Task with criteria: A. Knowledge and understaning Students will demonstrate their understanding of data collection and analysis by conducting a survey, organizing the data, and using appropriate statistical methods such as mean, median, mode, range, and graphs to analyze the results. + D. Applying mathematics to Real life context (Performance task) Students will use the survey data to make a real-life decision or recommendation. They will analyze the results, interpret the data, and justify their decision using mathematical evidence from the survey. C. Communicating Students will clearly present and explain their survey results using tables, graphs, charts, and appropriate mathematical vocabulary. They will communicate their findings in an organized and understandable way.



Grade Level	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
MYP 4 Diploma	Algebra, Unit # 1 Title/Theme: Relationships between quantities	Algebra, Unit # 2 Title/Theme: Linear and Exponential Relationship	Algebra, Unit # 3 Title/Theme: Reasoning with Equations.	Algebra, Unit # 4 Title/Theme: Discriptive Statistics	Geometry, Unit # 5 Title/Theme: Congruence,Proof, And Constructions.	Geometry, Unit # 6 Title/Theme: Connecting Algebra and Geometry Through Coordinates.
	Common Core Standards: N.QN.1,N.QN.2, N.QN.3 A.CED.1 ,A.CED.2 ,A.CED.3 , A.CED.4	Common Core Standards: A.REI.10 ,A.REI.11, A.REI.12, F.BF.1, F.BF.2, F.BF.3, F.IF.1, F.IF.2 F.IF.3 ,F.IF.4 ,F.IF.5, F.IF.6 , F.IF.7 a,e , F.LE.1 F.LE.2 F.LE.3 F.LE.5	Common Core Standards: A.REI.1 , A.REI.3 ,A.REI.5, A.REI.6	Common Core Standards: S.ID.1, S.ID.2 , S.ID.3, S.ID.5 ,S.ID.6(a,b,c) S.ID.7 ,S.ID.8	Common Core Standards: G.CO.1,G.CO.2,G.CO.3,G.CO.4 G.CO.5 ,G.CO.6 ,G.CO.7, G.CO.8 G.CO.12, G.CO.13	Common Core Standards: G.GPE.4,G.GPE.5,G.GPE.7
	Content: - Represent relations. - Interpret graphs of relations. - Determine whether a relation is a function - Find function values. - Translate sentences into equations. - Solve equations involving more than one operation. - Solve equations involving consecutive integers. - Solve equations with the variable on each side. - Solve equations involving grouping symbols.	Content: - Identify linear equations, intercepts, and zeros. - Graph linear equations. - Find zeros of linear functions - Model linear functions - Use rate of change to solve problems. - Find the slope of a line. - Write and graph linear equations in slope-intercept form. - Model real-world data with equations in slope-intercept form. - Identify the effects on the graphs of linear functions by replacing f(x) with f(x)+k and f(x-h) for positive and negative values. - Identify the effects on the graphs of linear functions arithmetic sequences. - Relate arithmetic sequences to linear functions. - Write an equation of a line in slope-intercept form given the slope and one point.	Content: - Solve linear inequalities by using addition. - Solve linear inequalities by using subtraction. - Solve linear inequalities by using multiplication. - Solve linear inequalities by using division. - Solve linear inequalities involving more than one operation. - Solve linear inequalities involving the disruptive property - Solve compound inequalities containing the word and, and graph their solution set. - Solve compound inequalities containing the word or, and graph their solution set. - Determine the number of solutions a system of linear equations has - Solve systems of linear equations by graphing. - Solve systems of equations using substitution. - Solve real-world problems involving systems of equations by using substitution. - Solve systems of equations by using elimination with addition. - Solve systems of equations by using elimination with substitution. - Solve systems of equations by using elimination	Content: - Investigate relationships between quantities by using points on scatter plots. - Use lines to make and evaluate predictions. - Find measures of central tendency , variation and position. - Represent sets of data using different visual displays. - Identify sample statistics and population parameters. - Analyze data sets using statistics. - Describe the shape of distribution - Use the shapes of distributions to select appropriate statistics - Determine the effect that transformations of data have on measures of central tendency and variation - Compare data using measures of central tendency and variation.	Content: - Measure and classify angles - Identify and use congruent angles and the bisector of an angle - Identify and use special pairs of angles - Identify perpendicular lines - Identify and name polygons - Analyze changes in perimeter, circumference and area of two-dimensional figures - Identify the relationships between two lines or two planes - Name angle pairs formed by parallel lines and transversals - Use theorems to determine the relationships between specific pairs of angles - Use algebra to find angle measurements - Recognize angle pairs that occur with parallel lines - Prove that two lines are parallel - Identify and classify triangles by angle measures - Identify and classify triangles by side measures - Apply the Triangle Angle-Sum Theorem - Apply Exterior Angle Theorem - Name and use corresponding parts of congruent polygons - Prove triangles congruent using the definition of congruence - Identify reflections, translations and rotations	Content: - Finding slopes in co-ordinate planes - Finding distance and mid points in co-ordinate plane - Determining if lines are parallel in co-ordinate plane - Determining if lines are perpendicular in co-ordinate planes - Find perimeters and area of parallelograms in co-ordinate planes - Find perimeters and areas of triangles in coordinate plane
	# of weeks: 4 Key Concept(s): Relationships Related Concept(s): Equivalence, Quantity	# of weeks: 10 Key Concept(s): Relationships Related Concept(s): Change, Systems	# of weeks: 2 Key Concept(s): Logic Related Concept(s): System ,Equivalence	# of weeks: 5 Key Concept(s): logic Related Concept(s): Patterns, Justification	# of weeks: 7 Key Concept(s): Relationships Related Concept(s): Representation , Justification	# of weeks: 4 Key Concept(s): Relationships Related Concept(s): Models , Space
	Global Context: Identities and Relationships Statement of Inquiry:Understanding relationships between quantities enhances reasonable meaning of situations.	Global Context: Orientation in space and time Statement of Inquiry: -Representing and investigating patterns of related quantities, give clear visualization and ease prediction of the relation.	Global Context: Scientific and Technical innovation Statement of Inquiry: -Relate quantities by different systems and represent these relations by different types of forms,using technical systems.	Global Context: Scientific and Technical innovation Statement of Inquiry: -Follow patterns of related quantites and simplify their relations.	Global Context: Scientific and Technical innovation Statement of Inquiry: -Establishing patterns in the natural world can help in understanding relationship	Global Context: Oritation in space and time Statement of Inquiry: -Understanding relationships between shapes and models enable contiuous improving situation in space.
	MYP Objectives: A Knowing and understanding C : Communication (performance task) D Applying mathematics in real life contexts	MYP Objectives: A: Knowing and understanding C: Communicating B investigating pattern	MYP Objectives: B: Investigating patterns C: Communication Applying mathematics in real life contexts	MYP Objectives: A: Knowing and understanding D :Math applications	MYP Objectives: A: Knowing and understanding B: Investigating Patterns	MYP Objectives: B: Investigating Patterns C:: Communication
	ATL Skills: -Communication:understand and use mathematical notation -Thinking:Critical :interpert Data and Propose and evaluate a variety of solution.	ATL Skills: -Thinking:Make unexpected or unusaul connectios between obects and/or ideas. -Self- management:Reflection:consider personal learning strategies.	ATL Skills: -Thinking:critical (test generalizations and conclusions), -Transfer (combine knowledge, understanding and skills to create products or solutions).	ATL Skills: -Thinking:critical (test generalizations and conclusions), -Transfer (combine knowledge, understanding and skills to create products or solutions).	ATL Skills: -Research:information literacy skill(collect,record and verify data) -Media literacy skills(demonestarte awarness of media interpretations of events and ideas(including digital social media).	ATL Skills: -Research:information literacy skill(collect,record and verify data) -Media literacy skills(demonestarte awarness of media interpretations of events and ideas(including digital social media).
	Assessment Task with criteria: Formative and summative assessment : A &C and D Criterion A & D The main idea of this test is to assess students' understanding of functions, relations, and linear equations and how to apply them to real-life situations. The test checks whether students can understand, represent, evaluate, and apply linear functions and algebraic expressions to mathematical and real-world problems, while also using algebra to solve geometry problems. Criterion C The main idea of this task is to help MYP4 students who struggled with the factorization unit review and understand the different types of factorization in a simple, visual, and creative way.	Assessment Task with criteria: Formative and summative assesement : A,B,C Criterion A: The main idea of this test is to help students discover and understand the formula for finding the sum of an arithmetic sequence by looking for patterns and then generalizing the relationship. The Test guides students to discover that the sum of an arithmetic sequence can be found by multiplying the number of terms by the average of the first and last terms. Criterion C The main idea of this test is to assess students' understanding of linear equations, gradients, intercepts, and algebraic manipulation, and their ability to apply these concepts to both mathematical and real-life situations.Students learn how to interpret, represent, construct, and solve linear equations in different forms. They also connect the algebraic features of a line to real-world contexts such as taxi fares and mobile phone plans.	Assessment Task with criteria: Formative and summative assessment :B and C Criterion B Students begin by writing ratios from real-life situations and simplifying them. They then investigate whether the original ratio and its simplest form have the same value. Finally, they use simplification and cross-multiplication to determine whether two ratios are equivalent and develop a general rule. Criterion C Students act as smart shopper advisors. They choose a real-life shopping situation, organize the information in ratio tables, calculate the unit rate for each option, and then use their calculations to justify which offer is the better deal. D Applying mathematics in real life contexts	Assessment Task with criteria: Formative and summative assessment : A,D Criterion A: Students work with different types of data representations, including correlation graphs, box plots, stem-and-leaf plots, and frequency tables. They use these representations to identify patterns, calculate statistical measures, and make conclusions about data. Criterion D Students explore how study hours are related to test scores by creating and analyzing a scatter plot. They then determine the type of relationship, find a line of best fit, and use the equation to make predictions. The second part focuses on using a cumulative frequency graph to understand the distribution of data and construct a box plot.	Assessment Task with criteria: and understanding Formative and summative assessment B : Criterion B Students explore how a shape changes when it is translated, rotated, or reflected. They investigate what happens when multiple transformations are performed one after another and learn to determine the single transformation or rule that produces the same final image.	Assessment Task with criteria: Formative and summative assessment : A & B and C Criterion C: Students use a real-world architectural context to identify pairs of congruent triangles and prove that they are congruent using criteria such as SSS, SAS, ASA, AAS, or RHS. The focus is not only on getting the correct answer but also on explaining and communicating the reasoning clearly. Criterion B: Students use coordinates to calculate side lengths and slopes, then look for patterns and relationships. They move from basic calculations to making observations, forming general rules, and finally proving or verifying those rules mathematically. Criterion A: The test guides students from calculating distances, slopes, and midpoints to discovering and proving geometric properties of isosceles triangles using coordinate geometry.



Grade Level	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
MYP 4 Masarat	Title/Theme: Linear equations and Inequalities Common Core Standards: A.CED.1, A.CED.2, A.CED.3, F.IF.4, F.IF.5, F.IF.6, F.IF.7 a, F.IF.7 b, E.BF.4, E.BF.3 Content: Solving multi-step equations Solve the equation containing a variable at both ends Solve equations that include absolute value Solve linear inequalities by adding and subtracting Solve linear inequalities by multiplication and division Resolve multi-step inequalities Solve Composite inequalities Solve the inequalities that include absolute value	Title/Theme: Linear functions and its analysis Common Core Standards: IF.1, IF.2, IF.3 Content: Relationships and Functions Graphing linear equations Solving linear equations graphically Rate of change and slope Writing equations in the slope- intercept form Graphing equations using slope- intercept form Writing Equations in the point- slope form Parallel and perpendicular lines	Title/Theme: Systems of Linear equations Common Core Standards:A.CED.3, A.REI.11, (+) N.VM.6, 7, 8, 9, 10, 11, 12 Content: Solve system of two linear equations graphically Solve system of two linear equations by substitution Solve system of two linear equations by elimination Solve system of two linear equations by multiplication Application of systems of equations	Title/Theme: Polynomials Common Core Standards:F.IF.4, F.IF.5, F.IF.7, F.IF.8, F.IF.9, A.CED.4, N.CN.7, N.CN.8 (+) Content: Laws of power Real numbers Multiplying and dividing monomial Polynomials Adding and subtracting polynomials Multiplying monomial by polynomial Multiplying polynomials Analysing monomial Using squaring property Distributive property Quadratic equation $X^2 + bX + c = 0$ Difference between two squares Complete square Solving quadratic equations by completing the square Solving quadratic equations by quadratic formula"	Title/Theme: Radical equations and triangles Common Core Standards: SRT6, SRT7, SRT8, Content: Radical equations and triangles: Simplifying radical expression Rational powers Operations on radical expressions Radical equations Pythagorean theorem Distance between two points and coordinate of the midpoint Congruent triangles Trigonometric ratios	Title/Theme: Probability and Statistics Common Core Standards:S.CP.1, S.CP.2, S.CP.3, S.CP.4, S.CP.5, S.CP.6, S.CP.7, S.CP.8 (+), S.CP.9 (+), S.MD.6(+), S.MD.7 (+) Content: Design survey study Analysis of survey results Sample statistics and population Permutations and combinations Probability of compound events
	# of weeks: 6	# of weeks: 6	# of weeks: 5	# of weeks: 9	# of weeks: 4	# of weeks: 3
	Key Concept(s): Relationships	Key Concept(s): Releationships	Key concept: RELATIONSHIPS	Key Concept(s): Relationships	Key Concept(s): Form	Key concept: Logic
	Related concepts: Equivalence, Simplification, Representation	Related concepts: , Generalization,Form, Representation	Related concepts: Systems, Representation	Related concepts: Equivalence, Simplification, Generalization	Related concepts: Generalization, Simplification ,Equivalence	Related concepts: Measurement, Pattern
	Global Context: Identities and Relationships	Global Context: Identities and Relationships	Global Context: Scientific and Technical innovation	Global Context: Personal and cultural expressions	Global Context: Personal and cultural expressions	Global Context: Scientific and Technical innovation
	Statement of Inquiry: Representation and simplification of relationships in the form of equations help us make decisions	Statement of Inquiry: Representing linear functions in different forms plays a role in understanding mathematical lines of reasoning and predicting future changes.	Statement of Inquiry: Representing systems of linear equations contributes to expressing the linear relationships between two quantities to obtain logical solutions.	Statement of Inquiry: Representing relationships in quadratic equations form helps determine logical proposed solutions to scientific experiments	Statement of Inquiry: using trigonometric relationships helps to simplifying patterns that play a major role in calculating the dimensions of geometric shapes.	Statement of Inquiry: Using probability to analyze statistical data helps us make decisions based on mathematical logic
	MYP objectives Objective A: Knowing and understanding Objective C: Communicating D: Applying mathematics in real life context	MYP objectives Objective B: Investigating patterns Objective C: Communicating	MYP objectives Objective A: Knowing and understanding Objective B: Investigating patterns	"MYP objectives Objective A: Knowing and understanding Objective B: Investigating patterns Objective D: Applying mathematics in real life context	MYP objectives Objective A: Knowing and understanding Objective B: Investigating patterns: Objective C: Communicating	MYP Objectives: Objective C: Communicating Objective D: Applying mathematics in real life context
	ATL Skills: Self-management - Organization skills: Use appropriate strategies for organizing complex information Thinking skills - Transfer skills: Apply skills and knowledge in unfamiliar situations	ATL Skills: Communication skills: Understand and use mathematical notation Reflection skills: Demonstrate flexibility in the selection and use of learning strategies	ATL Skills: Thinking : Transfer Skills : Apply skills and knowledge in unfamiliar situations Reflection skills: Develop new skills, techniques and strategies for effective learning	" ATL Skills: Transfer skills: Use effective learning strategies in subject groups and disciplines Creative-thinking skills: Generate "what if?" questions	ATL Skills: Communication skills: Make effective summary notes for studying Creative-thinking skills: Make unexpected or unusual connections between objects and/or ideas	ATL Skills: Research: Media Literacy Skills : Use a variety of technologies and media platforms to source information including social media and online networks. Research: Information Literacy Skills : Collect and verify data
	Assessment Task with criteria A: Knowledge and understanding (Summative paper pencil Test) C: Communication Performance task: A task that puts the student in a real experience to make a decision to choose the best mobile company while traveling to a country of his choice D: Applying mathematics in real life context ,(Summative paper pencil Test)	Assessment Task with criteria B: Investigating patterns (Summative paper pencil Test) C: Communication Performance task : the students will use what they learned about writing equations and its representations and composing systems of equations to design a playground by drawing lines and writing its equations correctly.	Assessment Task with criteria A: Knowledge and understanding (Summative paper pencil Test) B: Investigating patterns (Summative paper pencil Test)	Assessment Task with criteria A: Knowledge and understanding (Summative paper pencil Test) B: Investigating patterns (Summative paper pencil Test) D: Applying mathematics in real life context ,(Summative paper pencil Test)	Assessment Task with criteria A: Knowledge and understanding (Summative paper pencil Test) B: Investigating patterns (Summative paper pencil Test) C: Communication Performance task: A task that puts the student in a real experience to make a decision to choose the best mobile company while traveling to a country of his choice	Assessment Task with criteria C. Communication, Performance task: Allow the students to do real experiment to collect data and use the measures of center of their grades and make a plain to improve it and compare the results after applying the plan D. Applying mathematics to Real life context (Summative paper pencil Test)



Grade Level	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
MYP 5	Title/Theme: Similarity, Right Triangle Trigonometry, and Proof Common Core Standards: G.SRT.1, G.SRT.2, G.SRT.3, G.CO.9, G.CO.10, G.CO.11, G.SRT.4, G.SRT.5, G.GPE.6, G.SRT.6, G.SRT.7, G.SRT.8	Title/Theme: Applications of Probability Common Core Standards: S.CP.1, S.CP.2, S.CP.3, S.CP.4, S.CP.5, S.CP.6, S.CP.7, S.CP.8 (+), S.CP.9 (+), S.MD.6(+), S.MD.7 (+)	Title/Theme: Circles With and Without Coordinates Common Core Standards: G.C.1 , G.C.2 , G.C.3 , G.C.4 (+), G.C.5, G.GPE.1, G.GPE.2, G.GPE.4, G.GMD.1, G.GMD.3	Title/Theme: Linear Equations , Inequalities & Functions Common Core Standards: A.CED.1, A.CED.2, A.CED.3, F.IF.4, F.IF.5, F.IF.6, F.IF.7 a, F.IF.7 b, F.BF.4, F.BF.3	Title/Theme: System of Equations and Inequalities Common Core Standards: A.CED.3, A.REI.11, (+) N.VM.6, 7, 8, 9, 10, 11, 12	Title/Theme: Quadratic Functions and Relations Common Core Standards: F.IF.4, F.IF.5, F.IF.7, F.IF.8, F.IF.9, A.CED.4, N.CN.7, N.CN.8 (+)
	Content: Special right triangles , Trigonometry and Angles Of Elevation And Depression Proving Congruency SSS, SAS, ASA, AAS, HL Dilations Similar Polygons Similar Triangles Parallel Lines and Proportional Parts Parts Of Similar Triangles	Content:Simple probability Probability With Permutations and Combinations Probability With Permutations and Combinations Simulations Probabilities of Independent and Dependent Events Probabilities of Independent and Dependent Events contd. Probability of mutually exclusive events	Content:Circles and circumference Measuring angles and arcs Arcs and Chords Inscribed angles Tangents Secants , tangents and angle measures Special segments Equation of Circles	Content:Solving Absolute Value Equations Solving Inequalities Solving Compound and Absolute Value Inequalities Linear Relations Scatter Plots and Lines of Regression Special Functions Parent Functions and Transformations Graphing Linear and Absolute Value Inequalities	Content:Solve Systems of Equations Solving systems of inequalities by graphing Optimization with Linear Programming Systems of Equations in three variables Operations with Matrices Multiplying Matrices Solving Systems of Equations Using Cramer's rule Solving Systems of Equations Using Inverse Matrices	Content:Graphing Quadratic Functions Solving Quadratic Equations Solving Quadratic Equations contd. Solving quadratic Equations by Factoring Complex numbers Completing the square Quadratic Formula and the Discriminant Transformation of Quadratic Graphs Quadratic Inequalities
	# of weeks: 6 weeks	# of weeks: 5 weeks	# of weeks: 5 weeks	# of weeks: 6 weeks	# of weeks: 5 weeks	# of weeks: 5 weeks
	Key Concept(s): Relationships	Key Concept(s): RELATIONSHIPS	Key Concept(s): FORM	Key Concept(s): Logic	Key Concept(s): RELATIONSHIPS	Key Concept(s): RELATIONSHIPS
	Related Concept(s): Models , Justification	Related Concept(s): Patterns, Justification	Related Concept(s): Measurements, Space	Related Concept(s): Simplification, Models	Related Concept(s): Systems, Models	Related Concept(s): Models, Representation
	Global Context: Identities and Relationships	Global Context: Fairness and development	Global Context: Personal and Cultural Expression	Global Context: Scientific and technical innovations	Global Context: Scientific and technical innovations	Global Context: Scientific and technical Innovations
	Statement of Inquiry: Modeling allows us to solve and justify problems for identities arising from technology. MYP Objectives: A , D, C	Statement of Inquiry: Patterns can help us make relations in order to predict the most possible outcome of an event and its fair consequences. MYP Objectives: A, B, D	Statement of Inquiry: Understanding form and shapes enhances creativity in personal and cultural expressions MYP Objectives: A, B, C	Statement of Inquiry: Modelling using a logical process helps us to understand the world we live in. MYP Objectives : A,B, C	Statement of Inquiry: Mathematical models can be used to better understand systems in our life. MYP Objectives: A, D, B	Statement of Inquiry: Sound decisions can be made by using technology to find a model that represents a relationship. MYP Objectives: A,c, D
	ATL Skills:Thinking - Critical thinking skills: Gather and organize relevant information to formulate an argument thinking skills- Evaluate evidence and arguments	ATL Skills: Communication skills, Make inferences and draw conclusions Critical –thinking Skills: -Interpret Data	ATL Skills: Communication skills: -Make inferences and draw conclusions Critical –thinking Skills: -Practice observing carefully in order to recognize problems	ATL Skills: Self- management skills - Reflection skills Consider content -What did I learn about today? -What don't I yet understand? -What questions do I have now	ATL Skills: Communication skills –Organize and depict information logically	ATL Skills: Creative thinking skills –Make guesses, ask “what if” questions and generate testable hypotheses Transfer skills Combine knowledge, understanding and skills to create products or solutions
	Assessment Task with criteria: A: Knowledge and understanding Summative assessment (paper pencil) Students will use their knowledge of similarity and congruence to solve problems, find unknown values, and explain their answers in different context. D : Applying math to real-life conext + Students will apply trigonometry to solve real-life problems and explain whether their answers are reasonable and accurate. C : Communication (performance task) Students will use appropriate mathematical language, diagrams, calculations, and clear steps to communicate their mathematical thinking and solutions.	Assessment Task with criteria: A: Knowledge and understanding Summative assessment (paper pencil) Students will use probability concepts and mathematical strategies to solve problems and find correct solutions. B : investigating patterns :Students will identify patterns in probability, make predictions, and explain or justify their findings. These are short, clear, and appropriate for an MYP 5 student-facing summative assessment. + D : Applying math to real-life conext (Performance task) In the task students will find out the pattern obtained while throwing a dice and a coin and they will find out the fairness of the game given some condition. once done with this they will then suggest a fair approach to the game.	Assessment Task with criteria: A: Knowledge and understanding Summative assessment (paper pencil) B : investigating patterns + C : communication Students will construct circles and with the knowledge of the parts of circles they will construct some segments. once done they will identify the general rules and connections between these segments in the circles.	Assessment Task with criteria: A: Knowledge and understanding Summative assessment Students will use circle theorems, formulas, and mathematical strategies to solve problems and find correct solutions. + B : investigating patterns (paper pencil) Students will identify patterns in circles and sectors, describe relationships, and use their findings to make and justify general rules. C : communication (Performance task) Students will construct their own deisgns and then they will figure out the equations of the designs along with each each parts domain and range. They will then explain whv they restricted the domain and rance.	Assessment Task with criteria: A: Knowledge and understanding Summative assessment Students will use mathematical knowledge and skills to solve inequalities, equations, functions, and graphing problems. D : Applying math to real-life conext + Students will apply mathematics to solve real-life problems, create mathematical models, and explain their solutions. B : investigating patterns + C : communication Students will construct circles and with the knowledge of the parts of circles they will construct some segments. once done they will identify the general rules and connections between these segments in the circles.	Assessment Task with criteria: A: Knowledge and understanding Summative assessment (paper pencil) C : communication (performance task) Students use quadratic functions to model real-life situations and clearly explain their answers using graphs, equations, and mathematical language. + D : Applying math to real-life conext (Performance task) Students will take a picture of any model which represents a quadratic form. They will then investigate the different parts of the quadratic either by using the graphing calculator or on the computer.