

MYP 1:

Unit title and teaching hours	Key concept	Related concepts	Global context	Statement of inquiry	Objectives	ATL skills	Content
Unit 1: Numbers and Number systems 18 hours	Form	Representation Systems	Orientation in space and time. Exploration: Civilizations and Human interactions	As civilizations evolve and humans interact across time and place, different systems and forms of representation develop to make sense of the world and their place within it.	Criterion A: Knowing and understanding Students will demonstrate their knowledge and understanding of number systems by recognizing, describing, and using different types of numbers (e.g., natural numbers, integers, rational numbers, irrational numbers, and real numbers). They will apply appropriate mathematical terminology, notation, and representations to solve problems involving place value, operations, powers, roots, and number properties. Students are expected to show a clear understanding of how number systems have evolved and how they are used in various real-life and historical contexts. Criterion B: Investigating Patterns Students will explore and analyze numerical patterns and relationships within and across number systems. They will use inductive reasoning to identify regularities, generate rules or generalizations, and justify their findings using appropriate mathematical strategies. This includes investigating recurring decimals, patterns in powers and roots, and properties of numbers such as primes, multiples, and factors. Emphasis is placed on recognizing structure and making connections across different number representations and systems.	Communication Skills Students will develop the ability to clearly and effectively express mathematical ideas using appropriate vocabulary, symbols, and visual representations (such as number lines). They will engage in meaningful mathematical discussions, explain their reasoning both verbally and in writing, and present findings from investigations involving number patterns and systems to peers or teachers. Research Skills Students will strengthen their ability to locate, interpret, and evaluate information about number systems from a variety of sources, including historical and cultural contexts (e.g., Babylonian, Roman, or African number systems). They will collect data, organize numerical information meaningfully, and reflect on the evolution and application of number systems across time and civilizations. Thinking Skills Students will enhance their critical and creative thinking by analyzing patterns, solving problems, and making generalizations related to number systems. They will use logical reasoning to justify their conclusions, explore alternative	-Number System -Base-10 system and Base-60 system. -Powers/Indices -Roots -Factors and Divisibility tests -LCM and GCD and their applications -Operation of numbers -Use of BODMAS Service learning: Create a game that challenges players to solve puzzles using ancient number systems like Roman numerals, African counting methods, or the Babylonian base-60 system.

						strategies for problem-solving, and reflect on their own thinking processes to refine their mathematical understanding.	
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Unit Title and Teaching Hours	Key concept	Related concepts	Global context	Statement of inquiry	Objectives	ATL skills	Content
Unit 2: Percentages 18 hours	Form	Equivalence Quantity Exploration: Inequality	Fairness and Development	Inequality and difference become clearer through the use of equivalent forms of quantities, helping us make informed and fair comparisons that support equitable development.	Criterion C: Communicating Students will clearly and effectively communicate their understanding of percentages using appropriate mathematical language, symbols, and representations. They will show their working using organized and logical methods, present solutions using clear steps, and use tools such as tables, graphs, or diagrams where appropriate. This includes communicating percentage calculations in real-world contexts such as discounts, interest rates, tax, and population data. Criterion D: Applying mathematics in Real-Life contexts Students will apply their understanding of percentages to investigate and solve problems set in real-life situations. They will select and use appropriate strategies to calculate percentage increase or decrease, discounts, profit/loss, interest, and other relevant applications. Emphasis is placed on interpreting results, evaluating the reasonableness of answers, and making connections to everyday	Communication Skills Students will practice explaining their thinking clearly when solving percentage problems. They will use correct mathematical words (like "percent," "increase," "discount") and symbols, and they will show their steps in an organized way. They will also learn to ask good questions, listen to others, and work together in group tasks. Thinking Skills Students will use logical thinking to solve real-life problems using percentages like finding discounts or understanding test scores. They will try different ways to solve a problem and choose the best method. They will also learn how to check if their answers make sense and explain why they chose their solution. Self-Management Skills Students will learn how to stay organized when working on percentage tasks. They will plan their work, keep track of their	-Percentages -Percentages and Fractions -Percentages and Decimals -Applications of Percentages -Percentage Change

					financial literacy, personal budgeting, and societal issues like income inequality or taxation.	steps, and use their time wisely during class and homework. They will also set personal goals (like improving accuracy) and reflect on how they can get better at solving problems	
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Unit Title and Teaching Hours	Key concept	Related concepts	Global context	Statement of inquiry	Objectives	ATL skills	Content
Unit 3: Algebraic Expressions and Equations 18 hours	Logic	Generalization Models Patterns	Scientific and Technical innovation Exploration: Patterns in nature	A logical process helps to model and generalize patterns in the natural world, supporting innovation and understanding in scientific and technical systems.	Criterion A: Knowing and Understanding Students will demonstrate their knowledge and understanding of algebraic concepts by identifying and using appropriate mathematical language, symbols, and notation. They will apply basic operations to simplify algebraic expressions and solve simple equations. Students will show their understanding by working through step-by-step problems and selecting correct strategies to reach accurate solutions. Criterion B: Investigating Patterns Students will explore how patterns can be generalized using algebraic expressions. They will identify relationships in numerical or visual patterns and use logical reasoning to write expressions and rules. Students will test, explain, and refine their generalizations, laying the foundation for understanding how algebra models	Communication Skills Students express mathematical ideas clearly using words, symbols, and visual representations (like patterns, graphs, or equations). They listen actively, explain their thinking, and collaborate respectfully with peers during problem-solving and presentations. Thinking Skills Students apply logical reasoning and critical thinking to recognize patterns, make generalizations, and solve equations. They explore multiple strategies, justify their solutions, and reflect on their methods to improve their understanding. Research Skills Students collect and organize information from different sources	Patterns in nature -Core of a Pattern -Sequences -Translating between words and mathematical expressions. -Pattern rule -Algebraic Equations -Solving Algebraic Equations

					real-life patterns and situations.	(such as examples, patterns, or models). They analyze real-world contexts where algebra is used, and evaluate how accurate or useful their mathematical models are.	
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Unit Title and Teaching Hours	Key concept	Related concepts	Global context	Statement of inquiry	Objectives	ATL skills	Content
Unit 4: Geometric Constructions 18 hours	Form	Measurement	Personal and Cultural Expression Exploration: Artistry and Creativity	Artistry and creativity are enhanced through an understanding of how measurement helps to define forms, allowing individuals to explore and express cultural and personal ideas through geometric construction.	Criterion C: Communicating Students will effectively communicate mathematical ideas, reasoning, and construction processes using correct geometric terminology and clear, organized representations. This includes accurate labeling of diagrams, step-by-step explanations of constructions, and the use of appropriate symbols and notation. Students demonstrate their understanding through written, oral, or visual presentations. Criterion D: Applying Mathematics in Real-Life Contexts	Thinking Skills Students develop critical and creative thinking by analyzing geometric problems, making connections between shapes and angle properties, and planning step-by-step constructions. They evaluate their work for accuracy and consider multiple approaches to solve construction challenges. Self-Management Skills Students manage their time and materials effectively when completing geometric	-Geometric Elements -Types of Angles -measuring of Angles -Angle Relationships (Intersecting lines) -Complementary and Supplementary angles -Parallel lines and transversals

					Students will apply their knowledge of geometric constructions and angle properties to solve practical problems. This involves using constructions to create or analyze shapes and patterns, interpreting real-world contexts such as design or architecture, and demonstrating how geometry is used to model and solve authentic challenges. Students show creativity and critical thinking in connecting mathematical concepts to everyday life.	constructions. They follow instructions carefully, maintain an organized workspace, and show persistence when correcting errors or refining their constructions. Communication Skills Students clearly express their understanding by explaining their reasoning, using correct geometric vocabulary, and presenting their constructions with accurate labels and annotations. They listen to peer feedback and collaborate respectfully during group activities.	
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Unit Title and Teaching Hours	Key concept	Related concepts	Global context	Statement of inquiry	Objectives	ATL skills	Content
Unit 5: Fractions 18 hours	Logic	Quantity Simplification	Identities and Relationships Exploration: Human connections	Using logic to simplify and manipulate quantities can help us explore human connections	Criterion A: Knowing and Understanding Students demonstrate knowledge and understanding of fractions by	Thinking Skills Students develop logical reasoning and problem-solving skills by exploring patterns and	-Introduction to Fractions -Comparing Fractions -Operations with fractions -Multiple operations (BODMAS)

				within families, communities, and cultures, revealing how mathematical ideas reflect and shape our identities and relationships.	identifying, representing, and describing fractions in various forms. They explain concepts such as equivalent fractions, simplifying fractions, and the relationship between fractions, decimals, and percentages. Students apply this understanding to solve straightforward problems involving fractions. Criterion B: Investigating Patterns Students plan and carry out investigations involving fractions, such as exploring equivalent fractions or fraction operations. They collect and analyze data, recognize patterns, and use logical reasoning to make generalizations about fractions. Students communicate their findings clearly, using appropriate mathematical language and representations.	relationships within fractions. They analyze how fractions can be simplified, compared, and manipulated, and apply strategies to solve fraction-related problems effectively. Self-Management Skills Students manage their time and resources to complete fraction tasks accurately and independently. They organize their work systematically, stay focused during activities, and persist when facing challenging problems involving fractions.	
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Unit Title and Teaching Hours	Key concept	Related concepts	Global context	Statement of inquiry	Objectives	ATL skills	Content
Unit 6: Data Management 18 hours	Relationships	Representation Justification	Identities and Relationships Exploration: Data management	Being able to represent relationships effectively can help justify characteristics and trends uncovered in communities, deepening our understanding of how identities and relationships influence data and its interpretation.	Criterion C: Communicating Students organize and present data clearly and effectively using appropriate mathematical language, symbols, and representations. This includes creating accurate tables, graphs, charts, and written explanations. Students ensure their communication is structured, logical, and accessible to others, demonstrating an understanding of the data they are sharing. Criterion D: Applying Mathematics in Real-Life Contexts Students apply data-handling skills to real-world contexts by collecting, organizing, interpreting, and analyzing data related to identities, relationships, or communities. They draw conclusions and reflect on the significance of trends and patterns, showing how data informs understanding of human behavior, needs, or values.	Research Skills Students collect relevant and reliable data through surveys, observations, or secondary sources. They learn how to formulate effective questions, organize their findings, and evaluate the credibility of information. These skills help students investigate trends and relationships within their communities and reflect on how identity factors influence data collection and interpretation. Thinking Skills Students use critical and creative thinking to interpret data, identify patterns, and draw meaningful conclusions. They analyze how data can be represented in different ways and evaluate which methods best support their conclusions. Students also consider how bias or perspective can influence data interpretation in social or cultural contexts.	-Types of Data -Using graphs to represent data -Types of graphs(Bar graphs, line graphs, Pie-chart) -Analyzing different graphs -Misleading graphs

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MYP 2:

Unit title and teaching hours	Key concept	Related concepts	Global context	Statement of inquiry	Objectives	ATL skills	Content
Unit 1: Ratios and Proportions 18 Hours	Logic	Equivalence Simplification Quantity	Identities and Relationships Exploration: Competition and Cooperation	Using a logical process to simplify quantities and establish equivalence can help analyze competition and cooperation within and between communities.	Criterion A: Knowing and Understanding Students demonstrate an understanding of ratios, equivalent ratios, and proportional relationships by selecting appropriate methods and mathematical strategies. They solve problems by applying their knowledge and explain their reasoning using correct mathematical terminology and notation. Criterion C: Communicating Students use appropriate mathematical language, diagrams, and representations (such as tables, graphs, and double number lines) to communicate their understanding of ratios and proportions. Their work is organized and logical, and they explain their steps clearly to support their solutions.	Communication skills Students express their mathematical reasoning clearly using appropriate vocabulary such as <i>ratio</i>, <i>proportion</i>, and <i>equivalence</i>. They represent comparisons and relationships using tables, graphs, models, and number lines, and they explain their solutions logically in both written and oral formats. Communication also includes collaboration—sharing ideas and solutions with peers to develop deeper understanding. Thinking skills Students develop logical thinking as they identify patterns, recognize proportional relationships, and simplify or scale ratios. They use critical thinking to decide which strategies or models best represent real-world problems. Creative thinking is used to apply proportional reasoning to	-Ratios -Equivalent ratios -Ways of representing ratios -Solving proportions -Proportional relationships

						unfamiliar contexts, such as analyzing sports statistics, recipes, or population data.	
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Unit title and teaching hours	Key concept	Related concepts	Global context	Statement of inquiry	Objectives	ATL skills	Content
Unit 2: Probability 18 Hours	Logic	Representation Systems	Personal and Cultural expression Exploration: Games and play	A logical system of representation can help explore and analyze the games that humans play, revealing how chance, strategy, and cultural expression shape the way we engage with uncertainty.	Criterion B: Investigating Patterns Students identify and describe patterns or rules within probabilistic contexts. They make conjectures based on experimental or theoretical probability and test the validity of these conjectures using logical reasoning and appropriate methods. Students reflect on the consistency or variability of outcomes in relation to games or real-life scenarios. Criterion D:Applying Mathematics in Real-Life contexts Students apply probability concepts to real-life and culturally relevant situations, such as analyzing games of chance or everyday decision-making. They interpret outcomes, make predictions, and justify their reasoning using appropriate mathematical methods. Students reflect on how chance and uncertainty affect choices in different personal or cultural contexts.	Communication Skills: Students will express mathematical ideas clearly using appropriate vocabulary related to probability (e.g., likelihood, chance, outcome). They will represent information visually using charts, trees, and tables, and explain reasoning through discussions, written responses, and presentations. Thinking Skills: Students will collaborate effectively in group activities and probability games, sharing ideas respectfully and supporting one another’s learning. They will practice active listening and contribute constructively to discussions, especially when exploring games from different cultures. Social Skills: Students will use critical thinking to analyze the fairness and likelihood of outcomes in various scenarios. They will identify	-Events and Outcomes -Representing the Sample Space -Representing probability numerically -Calculating probability -Types of Probability

						patterns in experimental and theoretical probability, reflect on strategies, and creatively apply their understanding to real-world and game-based contexts.	
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Unit title and teaching hours	Key concept	Related concepts	Global context	Statement of inquiry	Objectives	ATL skills	Content
Unit 3: Integers 18 Hours	Form	Representation Quantity	Orientation in space and time Exploration: Human explorations	Being able to represent different forms of quantities has helped humans explore and describe the position, direction, and changes in our world over time.	Criterion A: Knowing and Understanding Students demonstrate knowledge and understanding of integers by selecting appropriate strategies to represent and compare quantities with direction or value (e.g., elevation, temperature, time zones). They solve problems involving addition, subtraction, and real-life application of integers using accurate methods and correct mathematical language. Criterion D:Applying Mathematics in Real-Life contexts Students apply integer concepts to real-world situations connected to space and time such as temperature change, altitude, and financial gains/losses. They select suitable models, justify their thinking, and reflect on how integer operations help interpret and describe real-world events and positions.	Communication Skills Students will use appropriate mathematical vocabulary (e.g., positive, negative, increase, decrease) to express and explain their understanding of integers. They will communicate their reasoning using number lines, diagrams, and real-world representations (such as maps or temperature charts), and collaborate with peers to solve problems and present findings clearly. Research Skills Students will gather and interpret data involving integers from real-life contexts such as weather, geography, and finance. They will analyze how integers are used to represent position, time, and change, and use digital tools or other sources to	-Introduction to Integers -Absolute value -Cartesian plane -Operations with Integers (Multiplication, Division, Addition and Subtraction) -Multiple operations

						investigate examples where negative and positive values help describe the world around us.	
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Unit 4: Algebraic Expressions and Equations 18 Hours	Form	Simplification Equivalence	Scientific and Technical Innovation Exploration: Mathematical Puzzles	Producing equivalent forms through simplification can help to clarify, solve, and create puzzles and tricks, demonstrating how abstract reasoning supports innovation in science and technology.	Criterion B: Investigating Patterns Students will identify, describe, and extend patterns found in algebraic expressions and equations. They will represent these patterns using mathematical language and symbols, and apply them to create simplified or equivalent expressions. Through logical reasoning, they will recognize how patterns contribute to efficient problem-solving and support innovations in mathematics and technology. Criterion C: Communicating Students will clearly and precisely communicate their algebraic thinking using correct mathematical notation, symbols, and terminology. They will organize their work using steps, tables, graphs, or models to explain the processes involved in simplifying and solving expressions and equations. Communication will be	Communication Skills Students will express algebraic ideas clearly using appropriate mathematical vocabulary, notation, and symbolic language. They will explain their reasoning step-by-step in solving expressions and equations, both orally and in writing, and use visual representations (such as tables, models, and graphs) to support understanding and share findings effectively. Thinking Skills Students will use critical and creative thinking to recognize and apply algebraic patterns, simplify expressions, and solve equations. They will make connections between abstract algebra and real-world problem-solving in technical contexts, reflect on their	-Introduction to Polynomials -Simplifying expressions -Translating to algebra from words -Solving equations -Inverse of a function -Representing Inequalities -Solving Inequalities -Representing solutions on a number line

					tailored to ensure their reasoning is easily understood by others, reflecting real-world practices in technical problem-solving.	strategies, and refine their approaches for greater accuracy and efficiency.	
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Unit 5: 2D and 3D Geometry 18 Hours	Relationships	Generalization Measurement	Orientation in space and time Exploration: Natural and Human Landscapes	Generalizing relationships between measurements helps us explore and understand the formation and changes of human and natural landscapes over time and space.	Criterion A: Knowing and Understanding Students demonstrate knowledge and understanding of geometric concepts by selecting and applying appropriate formulas for calculating area, perimeter, surface area, and volume of 2D and 3D shapes (such as trapezoids, circles, and prisms). They use mathematical vocabulary, symbols, and representations to show clear and accurate working in real and abstract problems related to spatial relationships and physical structures. Criterion D: Applying Mathematics in Real-Life Contexts Students apply their understanding of geometric measurement to real-world situations that involve human and natural landscapes. They select appropriate strategies and models to solve problems related to building	Communication Skills Students will communicate mathematical ideas clearly using precise geometric vocabulary, labeled diagrams, and correct notation when working with shapes, measurements, and formulas. They will explain their reasoning when solving problems involving area, surface area, and volume, and collaborate effectively to discuss and compare solutions, especially when applying geometry to real-world spatial contexts. Thinking Skills Students will use critical thinking to analyze the relationships between different measurements and shapes, evaluate real-life spatial	-Trapezoids -Circles (Circumference and area) -Surface Area of Prisms -Volume of Prisms

					design, geography, and environmental structures. Students reflect on the effectiveness of their methods and explain how their mathematical reasoning supports understanding of spatial relationships over time.	problems, and select appropriate mathematical strategies. They will apply creative thinking when designing or interpreting geometric models, and use transfer skills to connect their mathematical understanding with how human and natural landscapes are formed and measured over time and space.	
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Unit title and teaching hours	Key concept	Related concepts	Global context	Statement of inquiry	Objectives	ATL skills	Content
Unit 6: Univariate Data 18 Hours	Form	Representation Justification	Fairness and Development Exploration: Accessing equal opportunities	Different forms of representation can help justify conclusions regarding access to equal opportunities, supporting critical understanding of fairness and development in society.	Criterion B: Investigating Patterns Students will select and apply appropriate mathematical strategies to explore patterns in data. They will identify trends and make generalizations using statistical tools such as measures of central tendency, dispersion, and various data representations. Students will interpret how data patterns reflect real-world issues, such as equality and access to opportunities, and communicate their findings clearly. Criterion C: Communicating Students will use appropriate mathematical language, notation, and forms of representation such as	Research Skills Students will gather and interpret data from reliable sources, design surveys or use existing datasets to explore issues of fairness, access, and development. They will evaluate the relevance and reliability of their data and use appropriate tools to analyze it. By synthesizing statistical findings, they will make reasoned judgments about trends and inequalities in various social contexts. Social Skills Students will collaborate	-Introduction to Univariate Data -Stem-and-Leaf plots -Back-to-back Stem and Leaf Diagrams -Measures of Central Tendency (Mean, Mode and Median) -Effect of outliers -Measures of Dispersion (Range, Quartiles)Box and Whisker Plots

					stem-and-leaf plots, box-and-whisker plots, and statistical summaries to effectively communicate their analysis. They will organize their work clearly and logically, using tables, graphs, and written explanations to support conclusions about fairness, variation, and trends in univariate data.	effectively when collecting, organizing, and interpreting data in group investigations. They will listen to others’ perspectives, give and receive feedback constructively, and contribute respectfully in discussions—especially when analyzing real-world issues involving fairness and access. These interactions help foster empathy and critical thinking in a data-informed social dialogue.	
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MYP 3							
Unit title	Key concept	Related concept	Global context	Statement of inquiry	Objective	ATL skills	content

Numbers and exponents	logic	Quantity, systems, simplification	Orientation in space and time	The use of numbers and exponents in various mathematical systems reflects the logic and cultural practices of different societies, including African cultures, in expressing and solving real-world problems	Knowledge and Understanding Understand and apply the properties of numbers and exponents in various mathematical contexts. Investigating Patterns Explore and analyze patterns involving numbers and exponents to identify relationships and rules. Communicating Clearly explain and present mathematical concepts and solutions related to numbers and exponents. Reflecting Evaluate and improve methods and strategies used in solving problems involving numbers and exponents	Research skills: Information Literacy: the students will Locate and assess sources on traditional African mathematical systems and current exponent rules. Self management skills Organizing Information the students will put research findings into a logical report for presentation correctly. Communication Skills: Presentation: The creation and delivery of clear and engaging visual and oral presentations. Social skills Collaboration: the students will Work well in groups to do research and deliver conclusions during their presentations	Numbers and exponents Traditional number systems difference between rational and irrational numbers. Scientific notation Exponential notation Standard form Rules of exponents Evaluating numberswith integer exponents Deriving and usingthe laws of exponents
Unit title and teaching hours	Key concept	Related concepts	Global context	Statement of inquiry	Objectives	ATL skills	Content

Triangle 10 hours	Relationships	Generalization measurement	Scientific and technical innovation Exploration: principles anddiscoveries	Understanding properties of triangles aids in solving real-world problems such as designing modern, traditional African art and architecture	Knowledge and Understanding Understand and apply properties and theorems related to triangles in various geometric contexts. Investigating Patterns Explore and analyze patterns in triangles to identify and apply geometric relationships and properties. Communicating Clearly describe and present geometric concepts and solutions related to triangles using appropriate terminology and representations. Reflecting Evaluate the effectiveness of methods used in solving problems	Thinking (Transfer skills) Inquire in different contexts to gain a different perspective Make connectionsbetween subject groups and disciplines Self-management (Reflection skills) Demonstrate flexibility in the selection and use oflearning strategies Social skills learners will practice Collaborative learning in preparing triangular designs	Know: Theorems of Isosceles Triangles. Properties of the Equilateral Triangles.
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							Interior and Exterior angles of triangles. Pythagoras Theorem, its converse and Pythagorean Triples. Similarity of triangles and other polygons, scale factor, area factor and perimeter factor. Quadrilaterals and their properties. Do: Solve problems using the properties and theorems learned
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					involving triangles and adjust strategies as needed.		
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Linear relationship 15 hours	relationships	Representation change	Globalisation and sustainability	The representation of relationships between changing quantities helps us to make predictions, solve problems, and make informed decisions in a connected and sustainable world.	□ knowing and understanding i. select appropriate mathematics when solving problems in both familiar and unfamiliar situations ii. apply the selected mathematics successfully when solving problems iii. solve problems correctly in a variety of contexts □ C: Communicating i. use appropriate mathematical language (notation, symbols and terminology) in both oral and written explanations ii. use appropriate forms of mathematical representation to present information iii. move between different forms of mathematical representation	Information literacy skills Finding, interpreting, judging and creating information Collect, record and verify data Present information in a variety of formats and platforms\ Collect and analyse data to identify solutions and make informed decisions Process data and report results Understand and use technology systems VII. Media literacy skills Interacting with media to use and create ideas and information Communicate information and ideas effectively to multiple audiences □ Thinking VIII. Critical thinking skills Analysing and evaluating issues and ideas Gather and organize relevant information to formulate an argument Interpret data Consider multiple alternatives, including those that might be unlikely or impossible Make guesses, ask “what if” questions and generate testable hypotheses X. Transfer skills Utilizing skills and knowledge in multiple contexts Apply skills and knowledge in	Components of linear functions. Key terms ---slope, y-intercept, x-intercept, independent and dependent variables Types of equations used to represent linear functions Equations of parallel and perpendicular lines Construction of tables of values Graph straight lines using different forms Write equations from points Use graphs to write an equation
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						unfamiliar situations Transfer current knowledge to learning of new technologies	
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Unit title and teaching hours	Key concept	Related concepts	Global context	Statement of inquiry	Objectives	ATL skills	Content
3 D and 2 D shapes 15 hours	Relationships	Generalization measurement	Scientific and technical innovation	Understanding relationships between dimensions of 3D shapes and generalizing measurements enables innovative solutions to real-world challenges in science and technology.	Objective A: Knowing and understanding Use appropriate formulas to calculate surface area, volume, and related measurements of 3D shapes. Solve problems involving 3D shapes in both mathematical and real-world contexts. Objective C: Communicating Represent calculations and visualizations of 3D shapes effectively using drawings, sketches, or software tools. Use appropriate mathematical language and units to explain relationships.	Communication skills Oral communication Written communication Visual communication Social skills Collaboration Respect and empathy Conflict resolution Research skills Finding information Evaluating information Organizing information on 3D shape	Volume and Surface Area of 3D shapes - Understand and apply the three trigonometric ratios - Find the length of a side using one of the three trigonometric ratios - Find the size of an angle using one of the three trigonometric ratios - Understand what is meant by angles of elevation and depression 3D problems involving pythagoras
Unit title and teaching hours	Key concept	Related concepts	Global context	Statement of inquiry	Objectives	ATL skills	Content

Bivariate data	relationship	Quantity and models	Orientation in space and time	Analyzing relationships between two quantities using mathematical models allows us to identify patterns, interpret trends, and make predictions, enabling a deeper understanding of connections within and across contexts in space and time.	Objective B: Investigating patterns Identify patterns, relationships, and trends within bivariate data. Make predictions based on data using mathematical models, such as linear regression. Objective D: Applying mathematics in real-life contexts Apply bivariate data analysis to solve real-life problems in areas such as science, technology, and geography. Use technology (e.g., graphing software) to analyze relationships and validate findings.	Thinking Skills: Critically assess patterns and trends in data. Draw justified conclusions and evaluate the limitations of models in real-world applications. Research Skills: Collect, organize, and analyze data from authentic contexts. Use research findings to generate meaningful interpretations and predictions. Self-Management Skills: Plan and manage time for completing data collection, analysis, and presentation tasks. Reflect on the accuracy and validity of predictions made from mathematical models.	Introduction to Bivariate Data: Understanding dependent and independent variables. Organizing data into tables for analysis. Visualizing Relationships: Constructing scatter plots. Identifying trends: positive, negative, and no correlation. · Correlation and Regression Analysis: Correlation coefficient: strength and direction of the relationship. Drawing and interpreting the line of best fit. Real-life Applications: Using bivariate data to analyze real- world scenarios (e.g., temperature vs. ice cream sales, height vs. shoe size, time vs. distance). Interpreting data to inform decisions in urban planning, weather forecasting, or economics. Technology in Bivariate Data Analysis: Use of graphing calculators or software to construct and analyze scatter plots.
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							Predictive modeling using computational tools.
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Unit title and teaching hours	Key concept	Related concepts	Global context	Statement of inquiry	Objectives	ATL skills	Content
Geometric transformations Expressings bealifes and values	forms	Patterns,space	Personal and cultural expressions	Understanding of patterns produced by forms in space can enhance creativity and help express beliefs values	Criterion B: Identify and describe patterns and relationships between pre- image and image properties during transformations (e.g., translation, reflection, rotation, and dilation). Represent transformations mathematically and visually using accurate notation and tools. Criterion C: Use appropriate mathematical vocabulary, symbols, and diagrams to represent transformations and their properties .Use multiple forms of mathematical representation to communicate the relationship between geometric figures and their transformations.	Communication Organize and express ideas clearly: Use precise Interpret and use visual data effectively: Engage in collaborative discussions: Self management Set goals and manage time effectively Practice self-discipline and perseverance: Organize resources and materials Reflect on learning progress	Types of Transformations Translation: Sliding a figure without rotation or flipping. Reflection: Flipping a figure over a line of reflection. Rotation: Turning a figure about a fixed point by a certain angle. Dilation: Resizing a figure proportionally with a scale factor. Properties of Transformations Translation, rotation, and reflection preserve size and shape (isometric transformations). Dilation changes size but preserves shape (non-isometric transformation). Coordinate Rules for Transformations Translation: Reflection Rotation Dilation: Properties of Transformed Figures Congruence and similarity
Unit title and teaching hours	Key concept	Related concepts	Global context	Statement of inquiry	Objectives	ATL skills	Content

Linear systems	Relationship	Representation and models	Fairness and development	Representing relationships with models can promote and support social entrepreneurship	Criterion A: Demonstrate knowledge and understanding of linear systems by accurately solving problems using algebraic, graphical, and numerical methods. Apply appropriate mathematical techniques to represent and analyze systems of linear equations. Criterion D: Identify real-life situations where systems of linear equations and inequalities can be applied. Formulate mathematical models.	Communication Practice explaining the solution process for linear systems verbally and in writing, using precise mathematical terminology (e.g., slope, intercept, elimination, substitution). Use graphs, tables, and equations to present solutions clearly. Create and interpret visual models like graphs . Collaborative Problem-Solving: Work in pairs or groups to solve real- world problems involving linear systems	Regression Analysis – Using linear regression to model relationships in scatter plots and determine best-fit lines. Matrix Methods – Solving linear systems using matrix operations, including row reduction and inverse matrices. Parametric Systems – Exploring systems with parameters and their effect on solution sets. Linear Programming – Applying systems of inequalities to optimize real-
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							world problems using graphical and algebraic methods. Transformation of Linear Systems – Investigating how scaling, rotation, and translation affect solutions. Multivariable Systems – Extending linear systems to three or more variables and interpreting solutions geometrically
MYP 4 MATHEMATICS							
Unit Title and Teaching hours	Key Concept	Related concept	Global Context	Statement of Inquiry	Objectives	ATL skills	Content

Unit 1: Being specific 18 hours	Form	Simplification Quantity	Globalization and sustainability Exploration: Exploring different ways of measuring human-made systems.	Representing quantities and numbers in different forms and simplifying them can help understand human-made systems to create a sustainable world.	Criterion A: Knowing and Understanding Students demonstrate their understanding of mathematical concepts, formulas, and facts. They show the ability to recall, apply, and make connections between mathematical ideas. This criterion assesses students' depth of knowledge and their ability to articulate it. Criterion D: Applying Mathematics in ability to connect abstract mathematical concepts to practical situations, demonstrating relevance and application.	1: Thinking Skills Critical Thinking: Students analyze and evaluate information, ideas, and arguments, questioning assumptions and forming judgments. Problem-Solving: Students develop strategies to solve mathematical problems, testing different approaches to find the most effective solution. 2: Research Skills Students will be able to gather, evaluate, and synthesize information from various sources.	-Polya's problem-solving steps -The number system -Laws of exponents and scientific notation. -Units and measurement -Surds, roots and radicals. -Absolute value.
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Unit Title and Teaching hours	Key Concept	Related concept	Global Context	Statement of Inquiry	Objectives	ATL skills	Content
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Unit 2: Decisions, decisions 18 hours	Logic	Generalizati on Models	Scientific and technical innovation Exploration: Exploring the natural world by developing realistic models.	Using logic to make generalizations enhances the development of models in the scientific world.	Criterion B: This criterion involves identifying and analyzing patterns in coordinate geometry and systems of linear equations. Students should recognize how different representations of equations (like slope-intercept form or standard form) relate to graphical representations and real-life situations. Criterion C: In this criterion, students communicate their findings and mathematical reasoning effectively, both in written and oral forms. This includes explaining the process of making generalizations from data, presenting solutions to systems of equations, and interpreting graphical representations clearly.	1: Thinking skills Critical Thinking: Students analyze mathematical problems, break them down, and identify patterns and relationships in coordinate geometry and systems of linear equations to make valid generalizations. 2: Communication Skills Students effectively explain their reasoning when making generalizations about geometric shapes or systems of linear equations. This includes clearly communicating how they solve problems and represent real-world situations mathematically. 3: Research Skills Students investigate different ways to solve linear equations or represent geometric figures. Students will explore various methods of solving systems (e.g., substitution, elimination) or using technology to model linear relationships.	-Making generalizations -Coordinate geometry -Modelling: Linear equations and systems of linear equations
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Unit Title and Teaching hours	Key Concept	Related concept	Global Context	Statement of Inquiry	Objectives	ATL skills	Content
Unit 3: A whole range of things 18 hours	Relationships	Representation Quantity Generalization	Globalization and sustainability Exploration: Exploring trends and the impact of decision-making on the environment	How quantities are represented can help to establish underlying relationships and trends in a population.	Criterion A: Knowing and Understanding Students demonstrate an understanding of statistical measures (mean, median, mode, range, variance, etc.) and apply these concepts to describe and quantify univariate data. They also show proficiency in creating and interpreting histograms. Criterion C: Communicating Students effectively communicate their analysis of data, explaining the steps used to quantify the data, interpret histograms, and summarize conclusions. They provide clear reasoning for the choices of statistical methods and visual representations.	1: Communication skills Students will clearly communicate the results of data analysis, explaining how statistical measures and histograms represent the data, and presenting conclusions based on the interpretation of these visual tools. 2: Thinking skills Critical Thinking: Students will analyze data distributions using univariate statistics and interpreting histograms to make informed conclusions about data sets. Problem-Solving: Students will apply statistical methods to quantify data, identifying patterns, and interpreting histograms to solve real-world problems or make predictions based on data.	-Univariate statistics -Quantifying data -Histograms

Unit Title and Teaching hours	Key Concept	Related concept	Global Context	Statement of Inquiry	Objectives	ATL skills	Content
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Unit 4: So, what do you think? 18 Hours	Relationships	Generalization Representation	Identities and relationships Exploration: Exploring trends and characteristics amongst individuals.	Generalizing and representing relationships can help to clarify trends amongst individuals.	Criterion B: Investigating Patterns Students investigate patterns in bivariate data, identifying relationships or correlations between two variables. Criterion D: Applying Mathematics in Real-Life Contexts Students apply their understanding of sampling techniques and bivariate data to real-world problems, such as market research or scientific studies, demonstrating the practical application of these mathematical concepts in decision-making and data analysis.	1: Communication Skills Students will communicate the process and rationale behind selecting a sampling method. Students will also present scatter plots, lines of best fit, and interpret correlation results effectively. 2: Research Skills Students will investigate different sampling methods and their applications in real-life research contexts. s.	-Sampling techniques -Bivariate data
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Unit Title and Teaching hours	Key Concept	Related concept	Global Context	Statement of Inquiry	Objectives	ATL skills	Content
Unit 5: Back to the Beginning 36 Hours	Relationships	Representation Patterns equivalence	Scientific and technical innovation Exploration: Exploring systems and methods to create models	Discovering relationships and patterns and studying equivalence between representations can lead to innovation better models	Criterion A: Knowing and Understanding Students will demonstrate knowledge and understanding of mathematical concepts by identifying key features of relations and functions, expanding and factoring quadratic expressions, and recognizing the structure of quadratic	1: Communication Skills Students will develop the ability to express mathematical ideas clearly using appropriate vocabulary, notation, and representations. They will communicate their reasoning through written explanations, graphs, diagrams, and symbolic work, both individually and	-Relations and functions -Quadratic Expressions -Representing Quadratic Functions -Solving Quadratic Functions

				equations. They will apply appropriate formulas, terminology, and representations in familiar and unfamiliar contexts. Criterion B: Investigating Patterns Students will explore patterns in relations and quadratic functions by forming general rules from observed data. They will investigate how changes in variables affect the shape and direction of quadratic graphs, and derive connections between different forms of a quadratic expression or equation. Clear communication of findings and logical reasoning are emphasized. Criterion C: Communicating Students will use mathematical language, symbols, diagrams, and representations to clearly communicate their understanding of quadratic relationships. They will present their work in a logical, organized, and readable manner, making effective use of technology when appropriate to represent functions and equations graphically. Criterion D: Applying Mathematics in Real-Life contexts Students will apply their knowledge of quadratic functions and expressions to solve real-world problems, such as projectile motion or optimization scenarios. They will make justified	collaboratively. Emphasis will be placed on justifying steps in problem-solving, presenting logical arguments, and actively engaging in mathematical discussions. 2: Thinking Skills Students will use critical thinking to analyze patterns, interpret functions, and solve complex quadratic problems. They will evaluate different methods for solving equations and consider the efficiency and accuracy of their strategies. Creative thinking will be encouraged through exploring multiple representations of quadratic relationships, making conjectures, and reflecting on the connections between algebraic and graphical models.	
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					decisions based on mathematical models, interpret the results in context, and reflect on the reasonableness and implications of their solutions.		
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MYP 5

Unit Title and Teaching hours	Key Concept	Related concept	Global Context	Statement of Inquiry	Objectives	ATL skills	Content
Unit 1: Mathematically speaking 18 Hours	Logic	Validity Representation	Identities and relationships Exploration: Exploring personal and physical health and good lifestyle choices.	Understanding health and validating life style choices result from using logical representations and systems.	Criterion B: Investigating Patterns This criterion assesses learners’ ability to identify patterns in set operations and probability, such as the behavior of events in combined scenarios. Students will explore relationships between events, the effects of combining events, and how to represent them graphically using Venn diagrams. Criterion C: Communicating Students will effectively communicate their solutions by explaining the steps of set operations, presenting Venn diagrams to illustrate the relationships	Communication skills Students will clearly communicate the steps and reasoning involved in solving problems related to set operations and probability, including the use of Venn diagrams to visualize relationships between sets or events. Research Skills Students will investigate different approaches for solving probability problems, such as conditional probability, and exploring the practical applications of set operations and Venn diagrams in real- world contexts (e.g., surveys, decision- making).	-Set operations and -Venn diagrams -Probability of single and combined events

Unit Title and Teaching hours	Key Concept	Related concept	Global Context	Statement of Inquiry	Objectives	ATL skills	Content
Unit 2: Spacious Interiors 18 hours	Form	Representation Space	Personal and cultural expression. Exploration: Exploring the ways in which we reflect on, extend and enjoy our creativity.	Representing transformed objects and studying their form helps us enjoy their creativity in space.	Criterion A: Knowing and Understanding Students demonstrate understanding of the formulas and concepts for surface area and volume, applying them to solve problems involving a range of 3D objects. They also understand the principles of geometric transformations and can apply them to manipulate and analyze shapes. Criterion D: Applying Mathematics in Real-Life Contexts Students apply their knowledge of surface area, volume, and geometric transformations to solve real-world problems, such as designing objects, analyzing physical spaces, or modeling structures, where understanding the relationship between surface area, volume, and transformations are crucial.	Thinking skills Critical Thinking: Students will analyze how changes in dimensions impact the surface area and volume of 3D objects, and evaluate the effects of geometric transformations on shapes (e.g., translation, reflection, rotation, dilation). Analytical Thinking: Students will break down complex geometric problems related to surface area and volume into simpler components, such as calculating the surface area of composite shapes or determining the effects of transformations on different geometric figures. Communication Skills Students will effectively explain the process for calculating surface area and volume, particularly in complex or combined shapes. Communicating the steps involved in geometric transformations, explaining how each transformation affects the shape or space.	-Surface area and volume -Geometric transformations

Unit Title and Teaching hours	Key Concept	Related concept	Global Context	Statement of Inquiry	Objectives	ATL skills	Content
Unit 3: How do they measure up? 18 Hours	Logic	Approximation Generalization Systems	Personal and cultural expression Exploration: Exploring the appreciation of the aesthetic.	Systems use logic to validate generalizations and increase our appreciation of the aesthetic.	Criterion B: Investigating Patterns Identifying and investigating patterns in circle properties, such as the relationship between angles subtended by the same arc or the behavior of tangents and radii. Students explore how these geometric relationships emerge from theorems. Criterion D: Applying Mathematics in Real-Life Contexts Students apply their knowledge of circle theorems and right angles to solve real- world problems, such as in engineering.	Communication skills Students will clearly explain the steps and reasoning involved in solving problems related to right angles, properties of circles, and circle theorems Thinking Skills Problem solving: Learners will use circle theorems to solve geometry problems involving the calculation of unknown angles, identifying relationships between arcs, chords, and tangents. Creative Thinking: Learners will find different ways to apply theorems.	-The right angle -Properties of circle -Circle theorems 1 -Circle theorems 2

Unit Title and Teaching hours	Key Concept	Related concept	Global Context	Statement of Inquiry	Objectives	ATL skills	Content
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Unit 4: What comes next? 18 hours	Form	Patterns Change	Scientific and technical innovation Exploration: Exploring how humans apply their understanding of scientific principles to real-life situations.	Representing patterns and change in a variety of forms has helped humans apply their understanding of scientific principles.	Criterion A: Knowing and Understanding Students demonstrate understanding of sequences, including arithmetic and geometric progressions, and show proficiency in rearranging formulae and solving proportional relationships. Criterion C: Communicating Students clearly communicate their reasoning and processes when solving sequence problems, rearranging formulae	Self-management Skills Organization: Learners will systematically organize steps when rearranging formulae, Time Management: Learners will efficiently manage time when working on problems that require multiple steps. Research Skills Students will investigate different types of sequences, such as arithmetic, geometric, and Fibonacci sequences, and researching real-life	-Sequences -Rearranging formulae and proportions
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