Mathematics - Subject Overviews – MYP 3

** All units taught in MYP Years 1-5 are continuously being developed and improved to best meet the needs of the students at LIS. Therefore, the following Subject Overview is only a reflection of current plans for the course. Some changes to this document may occur as a result of planning done throughout the academic year.*

	Unit	Concepts	Global Context	Statement of Inquiry	Inquiry Questions	MYP Objectives ATL Skills	Content
Unit 1	**Numbers Explored from Microscopic to Astronomic**	Form Representation Simplification	Orientation in space and time Space Developments	Representing and simplifying quantities in different forms can help explore remarkable space developments.	**Factual**: What is a quantity? What are the laws of exponents? **Conceptual**: How are quantities represented in different forms? How does simplification lead to equivalent forms? **Debatable**: What does it take to make the next great discovery?	**Criterion A**: i, ii, iii **Criterion D:** i, ii, iii, iv, v **ATL Skills** Information literacy Communication Creative-thinking	Scientific notation Exponential notation Standard form Rules of exponents Texts/Resources: DeltaMath Desmos Clark Creative
Unit 2	**Linear Relationships**	Relationships Change Patterns	Globalization and sustainability Impact of human decision-making	Representing patterns of change as relationships can help determine the impact of human decision-making on the environment.	**Factual**: What is a pattern in mathematics, and can you give examples of patterns in daily life? How are linear	**Criterion C:** i, ii, iii, iv, v **Criterion D:** i, ii, iii, iv, v **ATL Skills** Communication Critical thinking	Proportional relationships, slope-intercept form, solve linear equations, functions, graphs Texts/Resources: DeltaMath Desmos

					relationships represented graphically? **Conceptual**: How does the representation of data through graphs and equations help us analyze and predict environmental changes? **Debatable**: Does our understanding of the relationship between human actions and environmental impact drive a sense of personal and social responsibility for sustainability?		Clark Creative
Unit 3	**Linear Systems**	Logic Models Systems	Fairness and development Social entrepreneurship	Modeling different restraints with systems of equations helps us make logical decisions involved with social entrepreneurship.	**Factual**: What is a system of equations and which strategies do we have to systematically solve them. What are some real-world examples	**Criterion A:** i, ii, iii **Criterion B:** i, ii, iii **ATL Skills** Critical-thinking Transfer Organization	Linear equations System of linear equations Slope-intercept form Substitution Elimination Graphing Texts/Resources: DeltaMath Desmos

					where systems of equations have been applied to make logical decisions in social entrepreneurship? **Conceptual**: How do models and systems interact within the context of social entrepreneurship? **Debatable**: Should social entrepreneurs rely solely on mathematical models and systems when making decisions, or are there other factors to consider?		Clark Creative
Unit 4	**Exploring Bivariate Data with Scatter Plots**	Relationships Validity Quantity	Identities and relationships What it means to be a human	Validating relationships between quantities can highlight what it means to be human.	**Factual**: What are scatter plots, and how are they used to represent bivariate data? **Conceptual**: How do scatter plots help us explore and understand relationships between quantities?	**Criterion C:** i, ii, iii, iv, v **ATL Skills** Communication Critical thinking Information literacy	Association Bivariate data Scatter plots Line of best fit Slope and intercept Two-way tables Relative frequencies Linear functions Texts/Resources: DeltaMath Desmos Clark Creative

					Debatable: Should we rely solely on quantitative data to understand human identity and relationships, or are qualitative factors equally important? Can quantitative data accurately represent what it means to be human?		
Unit 5	**Compound Surface Area & Volume**	Form Approximation Space	Scientific and technical innovation Industrialization and engineering	Industrialization and engineering often rely on approximation of space in order to design forms.	**Factual**: Can you identify instances where approximation is used in everyday products and structures? **Conceptual**: How do patterns in surface area and volume emerge in compound shapes? **Debatable**: What is the importance of approximation in industrial design and engineering? Should designers	**Criterion B:** i, ii, iii **ATL Skills** Creative-thinking Collaboration	Volume of cones Cylinders Spheres Congruence Transformations Lines Angles Input and output functions Texts/Resources: DeltaMath Desmos Clark Creative

					prioritize spatial efficiency over aesthetic considerations in industrial design?		
Unit 6	**Triangles & Pythagorean Theorem**	Logic Generalization Equivalence	Personal and cultural expression Intellectual heritage	Exploring the geometric achievements of ancient Greek mathematicians highlights the role of logic in deriving generalizations and equivalence, fostering a deeper appreciation for the intellectual heritage of mathematical inquiry.	**Factual**: What logical principles underlie the Pythagorean theorem, as evidenced by its proofs developed by ancient mathematicians? **Conceptual**: How do mathematicians determine the equivalence of geometric shapes? In what ways did ancient Greek mathematicians apply logical reasoning to advance geometric knowledge? **Debatable**: Is there a limit to the generalizability of geometric principles, or do they hold true	**Criterion D**: i, ii, iii, iv, v **ATL Skills** Communication Critical thinking	Pythagorean theorem Proving Triangles Congruence Coordinate system Texts/Resources: DeltaMath Desmos Clark Creative

					across all mathematical contexts?		

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