2022-2023 Mathematics Subject Group Overview

MYP Year	Subject Group	Unit Title	Hours	Key Concept	Related concept(s)	Global Context	Statement of Inquiry	Objectives A i, ii, iii B i, ii, iii C i, ii, iii, iv, v D i, ii, iii, iv, v	ATL Skills	Content
1	Mathematics	Composing and Decomposing: Here comes the Sun	36	Relationships	Quantity, Pattern	Scientific & Technical Innovations	Patterns and relationships of quantities in environmental options can be used for consumer-decision making in a modern society.	B i, ii, D iii	Thinking	6.3A, 6.3B, 6.3E, 6.7D, 6.8A, 6.8B, 6.8C, 6.8D
1	Mathematics	Relating Quantities: Big Foot Conspiracy	30	Logic	Equivalence, representation	Globalization & Sustainability	Calculating and representing equivalent measurements can logically justify how markets should sell their goods to consumers.	C ii, iii, iv	Communication	6.4B, 6.4C, 6.4D, 6.4E, 6.4F, 6.5A, 6.5B, 6.5C
1	Mathematics	Moving Beyond Positive Quantities: My Ocean View	22	Relationships	Justification, model	Scientific & Technical Innovations	Modeling and representing relationships can display the consequences of global changes on the environment.	C iv	Communication	6.2A, 6.2B, 6.2C, 6.2D, 6.11A

1	Mathematics	Determining Unknown Quantities	42	Form	Model, Quantity	Scientific & Technical Innovations	Numerical values can be changed through multiple representations and models that are used in our daily lives.	A iii, Ci	Thinking, communication	6.4A, 6.6A, 6.6B, 6.6C, 6.7A. 6.7B, 6.7B, 6.9A, 6.9B, 6.9C, 6.10A, 6.10B
1	Mathematics	Describing Variability of Quantities	20	Form	Model Quantity	Scientific & Technical Innovations	Mathematical principles are used to understand how geometric models are measured and its form can serve as a tool for creativity and design in real-world applications such as architecture.	C v	Research	6.12A, 6.12B, 6.12C, 6.12D, 6.13A, 6.13B, 6.14A, 6.14B, 6.14C, 6.14D, 6.14E, 6.14F, 6.14G, 6.14H
1	Mathematics	Operations with Rational Numbers: Cooking with Computations	36	Logic	Measurement, pattern	Personal & Cultural expression	Justifying and Identifying relationships with logic can be used to find different culture expressions.	A ii	Social, self-management	6.3C, 6.3D, 6.3E

2	Mathematics	Thinking Proportionally	36	Relationships	Equivalence, model	Identities & Relationship	The student uses the process skills with deductive reasoning.	A ii, Ci	Communication, thinking	7.5B 7.8C 7.9B-C 7.4A-E
2	Mathematics	Applying Proportionally	28	Relationships	Change, Simplification	Scientific & Technical Innovations	Mathematical principles are used to show relationships between two variables through various representations.	B iii	Communication	7.4D 7.13A-F 7.5A-C
2	Mathematics	Reasoning Algebraically	43	Form	Model, Quantity	Scientific & Technical Innovations	Numerical values can be changed through multiple representations and models that are used in our daily lives.	A iii, Ci	Thinking, communication	7.2A 7.3A -B 7.10A-C 6.7D 7.11A-B 7.7A 7.4A
2	Mathematics	Analyzing Populations and Probabilities	46	Logic	Change, Representation	Scientific & Technical Innovations	The use of logic in data analysis and finance allows for the justification of mathematical principles.	C v	Research, thinking	7.6A- I 7.12B

2	Mathematics	Construction and Measuring	22	Form	Model Quantity	Scientific & Technical Innovations	Mathematical principles are used to understand how geometric models are measured and its form can serve as a tool for creativity and design in real-world applications such as architecture.	C v	Research	7.9A-D 7.11C 7.8A-B

3	Mathematics	Transforming Geometric Objects	49	Relationships	Change, Space	orientation in space and time	Transformations can change relationships and the orientation of nouns; through space and time.	Investigating patterns A i, ii, iii B i, ii, iii	Communication	8.10A, 8.10B 8.10C, 8.10D, 8.3A, 8.3B, **8.3C,** 8.8D
3	Mathematics	Developing Function Foundations	13	Relationships	Representation, Change	identities and relationships	Functions can change the representation of identities and relationships	Communicating C i, ii, iii, iv, v	Self-management	**8.3C** 8.4A **8.4B 8.4C** 8.5A 8.5E 8.5H 8.5F **8.10C** 8.10D 8.5B **8.5I 8.5G**

3	Mathematics	Data Data Everywhere	24	Logic	Patterns, Justification	personal and cultural expression	Logic can be used to justify patterns with in our personal and cultural expressions.	Communicating B i, ii, iii D i, ii, iii, iv, v	Communication	8.5C 8.11A 8.5C **8.5D 8.5I** 8.11B 8.11C
3	Mathematics	Modeling Linear Equations	23	Relationships	Models, Systems	Scientific & Technical Innovations	Linear systems and models can help develop scientific and technical innovations.	Applying mathematics in real life context C i, ii, iii, iv, v D i, ii, iii, iv, v	Communication, thinking	8.8A 8.8B **8.8C** 8.9A 8.5B
3	Mathematics	Applying Powers	58	Form	Measurement, Space	globalization and sustainability	Measurements within a space can help to understand form need for globalization and sustainability.	Knowing and understanding A i, ii, iii	Self-management, Thinking	8.2A 8.2B 8.2C **8.2D** 8.6C **8.7C** 8.7D 8.12C 8.12D 8.12A 8.12B 8.12E 8.12F 8.12G 8.6A 8.6B **8.7A 8.7B**

3	Mathematics (HS Algebra I)	Modeling and solving Equations, functions, and Inequalities	90	Relationships	Model, Representation, justification	Identities & relationships	Multiple representations can be used to model and justify the processes and solutions for multi-step linear equations and inequalities that model real world relationships.	A i, ii, iii B i, ii, iii	Thinking	A.1A,B,C,D,E,F, G

3	Mathematics (HS Algebra I)	Linear Functions	28	Relationships	Patterns Change	Identities and relationships	Understanding linear relationships can aid in making predictions in future events and/or outcomes.	B i, ii, iii C.i, ii, iii D.iii, iv, v	Thinking Skills Communication Skills	A.3C A.5A A.5B A.2A A.2C A.12A
3	Mathematics (HS Algebra I)	System of Linear equations and inequalities	18	Connections	Systems Equivalence Justification	Scientific and technical innovation	The ability to use logic to solve problems and justify solutions in mathematics aids in the proof of scientific experiment and discovery.	A.i B.ii C.i, ii, iii, iv, v D.iv	Thinking Skills Self - Management	A.2I A.3F A.3G A.5C A.3D A.3H
3	Mathematics (HS Algebra I)	Polynomials	21	Relationships	Quantity Simplification	Scientific and technical innovation	The ability to recognize relationships to simplify problems aids	A.i, iii B.ii, iii C.iv, v D.i, iii, iii, iv, v	Thinking Skills	A.10A A.10B A.10D A.10C A.10F
3	Mathematics (HS Geometry)	Two-Dimensional and three-dimensional Figures	45	Relationships	Measurement, Justification	Identities & relationships	Discovering mathematical relationships can lead to a better understanding of how systems evolve.	A.i, ii, iii B.ii C.ii, iii D.i, v	Thinking	Students will use logic, both inductive and deductive reasoning to form conjectures about numerical situations and conditional statements.

3	Mathematics (HS Geometry)	Geometry Basics	25	Logic	Justification, Representation	Identities & relationships	Decision-making can be improved by using a model to represent relationships.	A i, ii, iii B ii, iii C i, ii D i	Thinking	Students will use logic, both inductive and deductive reasoning to form conjectures about numerical situations and conditional statements.
3	Mathematics (HS Geometry)	Intro to Geometry and Conditional Statements	22	Logic	Space Justification	identities and relationships	The student uses the process skills with deductive reasoning to understand geometric relationships including conditional statements	A i, ii, iii B i, ii, iii C ii D i	Thinking skills Social skills	Derive and use the distance, slope, and midpoint formulas to verify geometric relationships. Determine an equation of a line parallel or perpendicular to a given line that passes through a given point Identify and determine the validity of the converse, inverse, and contrapositive of a

										conditional statement. Investigate patterns to make conjectures about geometric relationships, including angles formed by parallel lines cut by a transversal.
3	Mathematics (HS Geometry)	Rigid transformation and Triangle relationships	19	Logic	Justification Pattern	identities and relationships	Students apply the definition of congruence to identify congruent triangles and their corresponding sides including special segments.	A i B i C i D iii	Thinking skills Self-management skills	Investigate patterns to make conjectures about geometric relationships, including, criteria required for triangle congruence, special segments of triangles. Prove two triangles are congruent by applying the Side-Angle-Side, Angle-Side-Angle,

										Side-Side-Side, Angle-Angle-Side, and Hypotenuse-Leg congruence conditions
3	Mathematics (HS Geometry)	Points of Concurrency and Non-Rigid Transformations	17	Logic	Space Justification	identities and relationships	Students perform constructions within the triangle in order to analyze their attributes and similarities between triangles	A i, ii, iii B i, ii, iii C i, ii, iii, iv, v D i, ii, iii, iv, v	Thinking skills Social skills	Investigate patterns to make conjectures about geometric relationships including special segments. Verify theorems about the relationships in triangles, including proof midsegments, and medians, and apply these relationships to solve problems Determine the image or pre-image of a given two-

										dimensional figure under a composition of a composition of non-rigid transformations. Apply the Angle-Angle criterion to verify similar triangles and apply the proportionality of the corresponding sides to solve problems.