# Mathematics - Subject Overviews – MYP 2

** 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 |
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| **Unit 1** | **Exploring Olympic Equivalence with Ratios** | Logic<br><br>Equivalence<br>Quantity | Identities and relationships<br><br>Competition | Using a logical process to simplify quantities and establish equivalence can help analyze competition. | **Factual**: What is equivalence?<br><br>**Conceptual**: How do we simplify quantities?<br>How can we establish equivalence?<br><br>**Debatable**: Could we use logical processes to make competition fairer?<br>Should we make competition fairer? | **Criterion B:** ii, iii<br><br>**Criterion D:** i, ii, iii, v<br><br>**ATL Skills**<br>Creative-thinking<br>Critical-thinking<br>Information literacy | Ratios<br>Proportions<br>Equivalence<br>Logical thinking<br>Analyzing<br><br>Texts/Resources:<br>DeltaMath<br>Desmos<br>Creative Clark |
| **Unit 2** | **Integers** | Relationships<br><br>Representation<br>Approximation | Personal and cultural expression<br><br>Lifestyle choices | Approximating and representing quantities them in different ways helps use visualize relationships between quantities when trying to make better lifestyle choices. | **Factual:** In what ways can approximating numbers help us make quick decisions about our daily exercise routine? | **Criterion A:** i, ii, iii<br><br>**Criterion C:** i, ii, iii, iv, v<br><br>**ATL Skills**<br>Communication<br>Critical-thinking | Ratios<br>Proportional Relationships<br>Unit rates<br>Coordinate plane<br>Tables<br>Graphs<br>Equations<br>Diagrams<br>Verbal descriptions of |

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| | | | | | **Conceptual:** How can drawing a graph help us explain our fitness plan to others? How does understanding the math behind our exercise routine help us make better decisions for our overall well-being?<br><br>**Debatable:** Why is it important to understand the links between different aspects of fitness for a healthier life? | | proportional relationships<br>Percent<br>Mathematical operations on fractions and rational numbers.<br><br>**Texts/Resources:**<br>DeltaMath<br>Desmos<br>Creative Clark |
| **Unit 3** | **Data Sampling & Measures of Central Tendency** | Relationships<br><br>Generalization | Fairness and development<br><br>Equal opportunities | By exploring the relationships between different developmental factors using measurements of central tendency, we can generalize conclusions about equal opportunities across countries. | **Factual:** How do we measure central tendencies in data? What are some examples of relationships between developmental factors in low-income and high-income countries?<br><br>**Conceptual:** How can we generalize conclusions about equal opportunities | **Criterion C:** i, ii, iii, iv, v<br><br>**ATL Skills**<br>Communication<br>Information literacy | Data sampling methods<br>Measures of central tendency (mean, median, mode)<br>Data visualization (stem-and-leaf plots, box-and-whisker plots)<br>Organize data<br>Analyze data<br>Create visual representations<br><br>Texts/Resources:<br>DeltaMath<br>Desmos<br>Creative Clark |

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| | | | | | based on data from different countries?<br><br>**Debatable:** Could generalizations about equal opportunities overlook important differences between countries? | | |
| **Unit 4** | **2D & 3D Geometry** | Form<br><br>Space | Orientation in space and time<br><br>Natural and human landscapes | Exploring geometry reveals how understanding form and spatial relationships enriches our perception of human and natural landscapes, fostering a deeper connection to our surroundings. | **Factual:** What are some examples of geometric forms and spatial shapes in human-made structures? What are some examples of geometric forms and spatial shapes in the natural world?<br><br>**Conceptual:** How does understanding geometric form enhance our appreciation of human-made structures and natural landscapes?<br><br>**Debatable:** Does the spatial layout of landscapes impact human well-being? | **Criterion D:** i, ii, iii, iv, v<br><br>**ATL Skills**<br>Critical-thinking<br>Creative-thinking | Geometric shapes (e.g., triangles, quadrilaterals, polygons, cubes, and right prisms)<br>Volume and (surface) area calculations<br>Spatial relationships (e.g., parallel, perpendicular)<br>Angles (supplementary, complementary, vertical, and adjacent)<br>Scaling<br>Slicing<br>Drawing geometric shapes<br><br>Texts/Resources:<br>DeltaMath<br>Desmos<br>Creative Clark |

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| **Unit 5** | **Algebraic Expressions & Equations** | Form<br><br>Change<br>Patterns | Scientific and technical innovation<br><br>Innovation | Investigating algebraic expressions and equations reveals how recognizing patterns and understanding the concept of form foster innovative thinking in scientific and technical fields. | **Factual:** What are algebraic expressions and equations?<br><br>**Conceptual:** How do we recognize patterns in algebraic expressions and equations?<br>How can understanding form in algebraic expressions lead to innovative thinking?<br><br>**Debatable:** Can recognizing patterns in algebraic expressions enhance problem-solving skills?<br>Does innovation in scientific and technical fields depend on a strong foundation in algebra? | **Criterion A:** i, ii, iii<br><br>**ATL Skills**<br>Critical-thinking<br>Organization | Operations, (rewriting) expressions<br>Equations<br>Coefficients<br>Inequalities<br>Sequences graphing<br>Solve multi-step problems<br>Use variables<br><br>Texts/Resources:<br>DeltaMath<br>Desmos<br>Creative Clark |
| **Unit 6** | **Probability** | Logic<br><br>Validity<br>Models | Personal and cultural expression<br><br>Games and play | By using logic and probability models, we can improve and validate our decision-making when playing games involving chance. | **Factual:** What ways can we model probability?<br><br>**Conceptual:** How can logic help to | **Criterion B:** i, ii, iii<br><br>**ATL Skills**<br>Critical-thinking<br>Creative-thinking | Probability (models)<br>Likelihood<br>Empirical probability<br>(relative) frequency<br>(compound) events<br>Sample space<br>Simulation |

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| | | | | | validate our probability models?<br><br>**Debatable:** Are probability models valid enough to predict events? | | Texts/Resources:<br>DeltaMath<br>Desmos<br>Creative Clark |