	Year Plan for *Mathematics* grade 8 (MYP3)									
unit no.	**Unit title**	**Time**	**Key concept**	**related concept**	**global context**	**Statement of Inquiry**	**Objectives**	**ATL skills**	**Content**	**Resources**
1	Number	15 hours	Form	Quantity, Representation, Simplification	Orientation in space and time.	Representing and simplifying quantities in different forms can help explore remarkable discoveries and developments	1.Identifying and representing rational numbers. 2.Evaluating negative and zero exponents. 3.Simplifying expressions with exponents. 4.Representing numbers in scientific notation. 5.Performing operations with numbers in scientific notation.	1.**Research:** Information literacy skills 2.**Self-management:** Affective skills	1.How can a number be rational or irrational? 2.Representing rational numbers 3.Exponents 4.Zero and negative powers 5.Multiplying powers 6.Dividing exponents 7.Scientific notation: Writing really large and really small quantities 8.Addition/subtraction with scientific notation 9.Multiplication/division with scientific notation	Page 4 - 47
2	Triangles	15 hours	Relationships	Generalization, Measurement	Scientific and technical innovation	Generalizing relationships between measurements can help develop principles, processes and solutions.	1.Solving problems involving right triangles using Pythagoras' theorem. 2.Determining whether or not two triangles are similar. 3.Using the properties of similar triangles to find missing measurements. 4.Using trigonometric ratios to solve problems involving right triangles.	1.**Thinking:** Critical-thinking skills 2.**Communication:** Communication skills	1.Theorems and proof 2.Pythagoras' theorem 3.Applying the Pythagorean theorem 4.Putting Pythagoras on the map 5.Similar and congruent triangles 6.Proving triangle similarity 7.Applications of similar triangles 8.The sine ratio 9.Other trigonometric ratios	Page 50 - 99
3	Linear Relationships	15 hours	Relationships	Change, Models, Representation	Globalization and sustainability	Representing patterns of change as relationships can help determine the impact of human decision-making on the environment.	1.Representing linear relationships in different ways. 2.Determining the characteristics of a linear relationship (gradient,y-intercept). 3.Graphing linear relationships using a variety of methods. 4.Understanding the relationship between parallel and perpendicular lines. 5.Applying mathematical strategies to solve problems using a linear model.	1.**Thinking:** Critical-thinking skills 2.**Research:** Media literacy skills	1.Representing linear relationships 2.Rate of change 3.Parallel and perpendicular lines 4.Intercepts 5.Recognizing linear relationships 6.Gradient-intercept form 7.Other algebraic representations of linear equations 8.Determining the equation of a line 9.Vertical and horizontal lines	Page 102 - 151
4	3D shapes	15 hours	Relationships	Generalization, Measurement	Scientific and technical innovation	Generalizing relationships between measurements can help analyze and generate products, processes and solutions.	1.Calculating the surface area and volume of 3-dimensional shapes involving cylinders, cones, pyramids and spheres.2.Applying mathematical strategies to solve problems involving 3D shapes.	1. **Thinking:** Creative-thinking skills 2.**Thinking:** Transfer skills	1.Surface area of a cylinder 2.Volume of a cylinder 3.Volume of a cone 4.Surface area of a cone 5.Volume of a pyramid 6.Surface area of a pyramid 7.Surface area of a sphere 8.Volume of a sphere	Page 154 - 201
5	Bivariate data	15 hours	Relationships	Models, Quantity	Identities and relationships	Modeling the relationships between quantities can highlight what it means to be human.	1.Representing bivariate data using a scatter plot. 2.Representing data using a line of best fit. 3.Calculating Pearson's correlation coefficient. 4.Analyzing data and drawing conclusions	1.**Research:** Media literacy skills 2.**Self-management:** Organization skills	1.Scatter plots 2.Line of best fit 3.Describing relationships 4.Calculating the correlation coefficient 5.Correlation and causation	Page 204 - 253

6	Linear systems	15 hours	Relationships	Representation, Models	Fairness and development	Representing relationships with models can promote and support social entrepreneurship	1.Solving complex multi-step algebraic equations. 2.Representing and classifying systems of linear equations. 3.Solving a system of linear equations using graphing, substitution and elimination. 4.Applying mathematical strategies to solve problems using a system of linear equations to help in decision-making.	1.**Communication:** Communication skills 2.**Social:** Collaboration skills	1.Solving linear equations 2.Solving linear systems by graphing 3.Number of solutions to a linear system 4.Solving linear systems by substitution 5.Solving linear systems by elimination 6.Problem solving with linear systems	Page 316 - 354
7	Geometric transformations	20 hours	Form	Patterns, Space	Personal and cultural expression	An understanding of patterns created by forms in space can enhance creativity and help express beliefs and values.	1.Transforming a figure by rotation, reflection, translation and dilation. 2.Analyzing the defining features necessary to produce different types of tessallations. 3.Applying mathematical strategies to solve problems involving geometric transformations, similarity and congruency. 4.Creating a tessallation.	1.**Self-management:** Reflection skills 2.**Communication:** Communication skills	1.Tessallations 2.Translations 3.Rotations 4.Reflections 5.Analyzing tessallations 6.Dilations	Page 256 - 313