

MATHEMATICS								
pMYP - Year 1								
Unit title	Key concept	Related concepts	Global contexts	Inquiry statement	MYP Subject groups Objectives	ATL Skills	Content	Nr. of lessons (voluntary)
Whole numbers and number properties (26 lessons)	Form	Approximation System	Orientation in space and time	Numbers can be different - prime, composite, square even cube	A - all strands B - all strands D - i, ii, iii	Thinking Communication Social Research	Hindu-Arabic system Big numbers Whole numbers, operations Number lines Rounding, approximation Order of operations Powers, square and cube numbers Divisibility tests, factors, multiples Prime and composite numbers	26
Points, lines, angles Geometrical shapes (17 lessons)	Form	Representation Space	Scientific and technical innovations	Solids can be classified according to their properties	B - iv C - all strands	Thinking Research	Points, vertices, lines Parallel and intersecting lines Angles - measuring angles, drawing angles Angles on a line and on a point Vertically opposite angles Bisecting angles Polygon, circles, triangles, quadrilaterals Solids Sketching solids Nets of solids	17
Fractions and decimals (31)	Relationships	Equivalence Simplification	Fairness and development	Forms could be changed through simplifications.	A - all	Thinking Social Communication Self-management	Fractions, as divisions Proper and improper fractions Fractions of quantities Fractions on a number line Equal fractions, Comparing fractions Adding and subtracting fractions Constructing decimals, Decimals on number line Comparing, rounding and ordering decimals Converting between fractions and decimals Adding and subtracting decimals Multiplying and dividing by powers of 10 and whole numbers	31
Measurement, time (17)	Relationships	Change Quantity	Globalisation and sustainability	Examining the resources we use helps us to measure our impact on the environment.	C - all D - all	Communication Research	Reading scales Measuring the length and converting between measuring units (km, m, dm, cm, mm) Finding the perimeter of rectangle, square and shapes with all sides length given Finding the actual length if drawn length in scale diagram is given Finding the drawn length in the scale diagram if actual length is given Finding scale if drawn and actual length are given Converting between units of mass (t, kg, dag, g, mg) Reading and drawing time lines Converting units of time Calculating time Converting between 24 and 12 - hour time Reading timetables	17

Percentages and integers (12)	Form	Generalization Patterns	Globalisation and sustainability	Changing the form of numbers can help us to find equivalence in world.	A - all C - ii	Communication	Percentages Converting between percentages, decimals and fractions Reading and creating number lines Finding quantity of percents Finding percentage of quantities Finding opposites Drawing a situation of combined effects Reading and drawing number lines for negative numbers Operations with negative numbers	12
Probability (10)	Logic	Models, Validity	Fairness and development	Probability to model a fair world is 50-50 chance.	A - all strands	Social	Describing probability using words or phrases Describing probability using percentage List possible outcomes Calculating probability	10

### MYP1 - Year 2

Unit title	Key concept	Related concepts	Global contexts	Inquiry statement	MYP Subject groups Objectives	ATL Skills	Content	
Geometry and transformation	Form	Representation Space	Personal and cultural expression	Understanding transformations can help us to see patterns in the world around us	A - all D - all	Research Thinking	Location Coordinates Directions Area of rectangle, triangle, parallelogram Volume of rectangular prism Translation Rotation Symetry Enlargement and reduction	28
Statistics and sets	Logic	Simplification Validity	Fairness and development	Collecting data can help bussinesses to make informed decisions.	A - all D -all	Thinking Communication	statistics Line graphs Sets	21
Decimals and number properties	Relationship	System Quantity	Orientation in space and time	Decimal numbers are useful for describing natural occurences	A - all D - all	Thinking Research	Whole numbers Positive and negative numbers Fractions Decimals	32
Percentage	Logic	Generalisation Change	Fairness and development	Mathematics can help us analyse the fairness of different voting systems	C - all D - all	Communication Social	Percentage	9
Algebra	Form	Equivalence Approximation	Identities and relationships	Forming linear equations can help us to find equivalence in real-life situations	B - i, ii C - i, ii, iii	Self-management	Algebraic expressions Equations Coordinate geometry	20
Measurement	Logic	Patterns Models	Scientific and technical innovations	Solving mathematical puzzles can help us to better understand mathematical concepts	B - all	Thinking Social	Angles and lines Polygons Measurement	24

### MYP2 - Year 3

Unit title	Key concept	Related concepts	Global contexts	Inquiry statement	MYP Subject groups Objectives	ATL Skills	Content	
Ratio	Relationship	Equivalence Simplification	Identities and relationships	Understanding the ratios in which we should eat certain food groups can improve our health and well-being	D - all	Research Self-management	Ratio Probability Statistics	20
Solids	Form	Models Patterns	Personal and cultural expression	Real world objects can be represented by polygons	D - all	Research Thinking	Solids Circles Transformations	16
Rates	Logic	Quantity Approximation	Globalisation and sustainability	Performing calculations allows us to compare the characteristics of different countries	C - all D - all	Thinking Communication	Rates Sets and Venn diagrams Interpreting tables and graphs	20
Number	Form	Equivalence System	Scientific and technical innovations	Different methods can be used to perform a calculation	A - all B - all	self-management Research	Numbers and their properties Divisibility rules	12
Percentage	Relationship	Change Quantity	Fairness and development	Using percentages to measure change allows us to make more meaningful comparisons	D - all	Thinking Self-management	Real numbers and Ratio Percentage	16
Laws of algebra	Form	Validity Representation	Orientation in space and time	The way that mathematicians write algebraic expressions has changed over time	A - all C - all	Communication Research	Algebraic operations Laws of algebra Equations	16
Measurement	Form	Space Generalisation	Globalisation and sustainability	Taking measurements allows us to be more aware of changes to our natural resources	D - all	Thinking Communication	Geometry of polygons Radicals Pythagoras theorem Length and area Patterns and formulae Measurement	36

**MYP3 - Year 4**

Unit title	Key concept	Related concepts	Global contexts	Inquiry statement	MYP Subject groups Objectives	ATL Skills	Content	
Algebra Indices (19 lessons)	Form	Equivalence Patterns Representation	Scientific and technical innovation	Changing the way we represent numbers can help us perform calculations.	A - all strands B - all strands C - all strands	Thinking Communication	Algebraic notation Evaluating algebraic expressions Collecting like terms Algebraic products Evaluating indices Index laws Scientific notation Rational indices	19

Sets and Venn Diagrams (15 lessons)	Logic	Quantity Systems Models	Globalization and sustainability	Intersection of sets and relaxation by gridders are in a very close relationship.	A - i B - ii D - i, ii, iii	Thinking	Set Special number sets Interval notation Complement of set Venn diagrams Problem solving with Venns diagrams	15
Trigonometry (12 lessons)	Relationships	Models Systems	Orientation in time and space	Using trigonometric ratios help us to find orientation in space.	A - all strands D - i, ii, iii	Thinking Communication Transfer	Sides of right triangle Trigonometric ratios Finding sides and angles in right triangle Problem solving with trigonometry True bearings	12
Algebraic expansion, radicals and surds (21 lessons)	Form	Generalization Simplification	Globalization and sustainability	Forms could be changed through simplification.	A - all B - iii	Thinking Social	Distributive law Difference of two squares Perfect square expansion Radicals and surds simplifying radicals to the simplest form Adding, subtracting, multiplying radicals Division by radicals	21
Linear equations and inequality	Relationship	Equivalence Validity	Personal and cultural expression	So I Hope we made an impression, me and my friend, Mr. Linear Equation !!! Valerie Rugbart	A - all D - all	Self-management Social Thinking	Using inverse operations to isolate unknown from linear equation, rational equation and linear inequality. Translating word problem into equation or inequality.	12
Measurement, coordinate geometry	Form	Space Approximation	Fairness and development	Considering finite landfill resources helps us to understand the importance of responsible waste management	D - all	Thinking Research	Converting between units of length, area, volume and capacity Finding the perimeter of circle arc and combined shapes Finding the area of sectors and combined shapes Finding the surface area of pyramid, cylinder, cone and sphere and combined solids Finding the volume of cylinder, pyramid, cone, sphere, and combined solids Cavalieri's principle Finding the capacity of solids	31
Quadratic factorisation	Form	Change Equivalence Validity	Identities and relationships	Verifying the validity of general rules and using quadratic factorisation helps us change the form of expressions.	A - all C - iii	Communication	Student know what factorisation and trinomial is Student know how to factorise - by removing common factors - using difference of two squares - using perfect square Student is able to factorise expression with four terms, and quadratic trinomial using "product and sum" method	8

**MYP4 - Year 5**

Unit title	Key concept	Related concepts	Global contexts	Inquiry statement	MYP Subject groups Objectives	ATL Skills	Content
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Algebraic fractions, formulae	Form	Simplification Patterns	Scientific and technical innovation	With correct simplification we can come to the solution of mathematical and technical puzzles	B - all	Communication Social	Evaluating, simplifying, multiplying, dividing algebraic fractions Adding and subtracting algebraic fractions Constructing formula Substituting into formula Rearranging formula	15
Logic and Financial mathematics	Logic	Change Quantity	Globalisation and sustainability	Decision-making can be improved by using a model to investigate possible options	A, D - all	Self-management Research	Propositions Compound statements Constructing truth tables Business calculations Appreciation and depreciation Simple and compound interest Personal loans	15
Geometry and vectors	Form	Space Generalization	Orientation in time and space	Understanding geometric relationships can enhance creativity	D - all	Social Research	Construct reflected, translated, rotated, enlarged or reduced object Identify congruence and similarity Students are able to find missing length using similarity Area and volume of similar objects Finding length of sides and size of angle using deductive geometry Vector representation and its length Adding, subtracting vectors and multiplying vectors by number	45
Statistics, comparing numerical data	Relationship	Models Representation	Orientation in space and time	Analysing data helps us to identify important events in our history	C, D - all	Communication Research	Students know to work with data - find mean, median, range of data set Students know how to draw diagram showing data and properties of data set Students can compare 2 data sets	20
Probability	Relationship	Validity System	Identities and relationships	Knowledge of probability can help us understand how the world works	A, D - all	Thinking Research	Students can find probability of independent events, compound events	15
Functions and equations	Relationship	Approximation Equivalence	Personal and cultural expression	Mathematics can help us to understand beauty in the world around us	A - all strands	Thinking Research	Quadratic equation The Null Factor law Solution by factorisation Completing the square Simultaneous linear equations Non-linear simultaneous equations Quadratic functions Exponential and rational functions Direct and inverse proportion	40

**MYP5 - Year 6**

Unit title	Key concept	Related concepts	Global contexts	Inquiry statement	MYP Subject groups Objectives	ATL Skills	Content	
Probability	Logic	Change Representation	Identities and relationships	Collecting and interpreting data can help us to understand our place in the world	A- all D - all	Communication Self-management	Sets and Venn diagrams Probability	15
Algebra	Relationship	Equivalence System	Scientific and technical innovation	Formulating mathematical laws can help us to understand the world	A - all	Thinking Research	Indices Factorisation Radicals and surds Algebraic fractions	25

Quadratic functions	Form	Models Space	Personal and cultural expression	Mathematical models can describe the characteristics of the architecture we see around us	A - all	Thinking Self-management	Quadratic equations Realations and functions Eponential function Quadratic functions Inequalities Calculus	50
Number sequences	Relationship	Generalisation Patterns Quantity	Globalisation and sustainability	It is important that humans farm in a responsible manner to minimise the impact on the environment	B - all D - all	Thinking Communication	Number sequences	10
Geometry	Form	Validity Simplification	Orientation in space and time	Geometric calculations help us simplify our view of the real world	B - all C - all	Social Research	Pythagoras theorem Coordinate geometry Congruence and similarity 3D trigonometry Deductive geometry Advanced trigonometry Non-right angled triangle trigonometry Vectors	45
Bivariate statistics	Relationship	Approximation Patterns	Fairness and development	Using a model to represent relationship can help us make predictions	C - all D - all	Communication Social Research Thinking	Statistics Bivariate statistics	15