Class of 2020 - IB Math - 1st year 2018-19

Dates	Unit	Topics	Project	Days	IB Rec.
9/5 - 9/21	1. Algebra review (Chapter 1, 2, 4)	Notation, domain, range, factoring, exponents; graphing	Desmos plotting	8	
9/24 - 10/19	2. Functions (Chapter 1)	Inverse, composition, transformations	Inverse graphing	12	10
10/22 - 11/2	3. Quadratics (Chapter 2)	Completing square, graphs, roots, quadratic formula, discriminant	Ballistics application	8	5
11/5 - 11/21	3b. Rational functions (Chapt 5)	Solving, graphs, asymptotes	Reciprocal function graphing, asymptotes	9	
11/26 - 12/7	4. Exponents and logs (Chapter 4)	Solving, graphing, applications, logarithms	Desmos graph manual fit	7	10
12/10 - 12/18	4b. Exponential functions	Solving, graphing, applications		6	10
1/2 - 1/18	5. Polynomials (Chapter 6)	Zeros, symmetry, end behavior, graphing, imaginary numbers	Algebra 2 Mock Regents	10	
1/29 - 3/14	6. Probability (Chapter 3)	Definitions, counting, conditionals, frequency, Venn diagrams, trees	Simulation (binomial?), table, trees	9	10
3/18 - 3/28	7. Sequences (Chapter 6)	Arithmetic, geometric, recursive	Infinite geometric series	8	5
4/1 - 4/18	8. Descriptive statistics (Chapter 8)	Frequency, central tendency, dispersion	Subway comparison	8	5 (+10)
4/29 - 5/9	9. Bivariate analysis (Chapter 10)	Scatter plots, correlation, regression		8	8
5/13 - 5/23	10. Trig	periodic functions (Chapter 11, 13)	Trig ratios, unit circle, graphing	7	8 (+8)

(104) total instructional days (including projects and assessments)

Class of 2020 - IB Math - 2nd year 2019-20

Dates	Unit	Topics	Project	Days	IB Rec.
9/5 - 9/21	1. Functions review (Chapter 1)	Graphical features, in/decreasing, extrema (gradient), continuity; applications; sequences		10	
9/24 - 10/5	2. Derivatives (Chapter 7)	Limits, tangents/normals, differentiating polynomials		10	10
10/9 - 10/19	3. Vectors (Chapter 12)	Introduction, arithmetic, line equations, intersection, applications		9	8
10/22 - 11/2	4. Calculus (Chapter 7)	Graphical interpretations, kinematics, applications		10	10
11/5 - 11/21	5. Trig & periodic functions (Chapter 11, 13)	Sine, cosine rules, transformations, applications, identities, derivatives		11	8
11/26 - 12/7	6. Probability distributions (Chapter 15)	Binomial expansion, expected value, normal distribution		10	
12/10 - 12/18	7. Bivariate analysis (Chapter 10)	Review cumulative frequency; scatter plots, regression		7	
1/2 - 1/18	8. Integration (Chapter 9)	Antiderivatives, areas, motion applications		13	15
1/29 - 2/15	9. Calculus (Chapter 7)	Product/quotient/chain rules, kinematics, graphical interpretation, applications		13	5
2/25 - 3/8	10. Vectors (Chapter 12)	Dot product, angles, applications		10	8
3/11 - 3/22	11. Integration (Chapter 9)	Definite integrals, areas, volumes, kinematics		10	
3/25 - 4/5	12. Functions review (Chapter 1-4)	Exponentials, logarithms, rational expressions, sequences & series		10	
4/8 - 4/18	13. Probability & statistics review (Chapter 11, 13)	Independence, conditional, frequency, cumulative, & normal distributions		9	
4/29 - 5/3	14. Review			5	

137 instructional days (30 more than projected actual)

IB Guide for Math SL

Topic	Skills	Hours
Algebra	Sequences, exponent & log rules, binomial expansion	9
Functions and equations	Inverse, composition, graphing (max, min), transformations; quadratic, exponential, rational; applications	24
Circular functions and trigonometry	Radians, standard angles, identities, graphing; sine, cosine, area rules	16
Vectors	Operations, scalar product, angle calculation, line equations, intersections	16
Statistics and probability	Concepts, frequencies, cumulative, box plots, summary statistics, regression; probability, independence, conditional, sets, Venn diagrams, binomial & normal distributions	35
Calculus	Limits, derivative, tangents, product, quotient, chain rules, extrema, inflection, graphs, applications; integrals, areas, volumes, kinematics	40
Exploration		10
Total		150

Considerations and strategy

- Weak prior knowledge: reteach early followed by periodic mixed practice
- Shallow understanding, procedural: connect multiple representations, formal notation with explicit rationale
- Little writing or technology experience: projects, Desmos & MS Office instruction