IB Math Analysis & Approaches SL Year 2 Subject Group Overview - Semester 1

Unit Name	**Limits, Average rate of change, Intro to Derivatives**	**Basic Derivative Rules**	**Analyzing Functions with Derivatives**
Time Frame	3 Weeks	8 Weeks	5 Weeks
Standards/ IB Topics	Topic 5: AA SL 5.1 – 5.2 Limits, Definition of derivative Review AA SL 1.2, 1.3, 1.7	Topic 5: AA SL 5.3, 5.4, 5.6 Differentiation Review AA SL 1.9, 2.1-2.11	Topic 5: AA SL 5.7-5.9 Analyzing functions with derivatives Review AA SL 3.1-3.8
Content Specific Information	5.1 Intro to the concept of a limit. Derivative as a rate of change 5.2 Increasing and decreasing functions. Graphical representation of positive, negative, and zero derivatives. 1.2 Arithmetic sequences and series 1.3 Geometric sequences and series 1.7 Laws of exponents and logarithms	5.3 Power rule 5.4 Equations of tangents and normals 5.6 Basic derivative rules: sinx, cosx, e^x, lnx, sum, product, quotient, chain 1.9 Binomial theorem 2.1 Linear functions 2.2 Domain, range, function notation. Inverse functions 2.3 Graphs of functions 2.4 Key features of graphs of functions, points of intersection of two curves using technology 2.5 Composite and inverse functions 2.6 Quadratic functions - graphs 2.7 Solving quadratic equations, discriminant 2.8 Reciprocal functions, rational functions 2.9 Exponential functions, logarithmic functions 2.10 Solving equations graphically and analytically 2.11 Transformations of graphs	5.7 Second derivative, graphical behavior of graphs with first and second derivatives 5.8 Max/min, optimizations, points of inflection. 5.9 Kinematics, PVA 3.1 Distance and midpoint 3.2 Trig ratios, sine rule, cosine rule, area of triangles 3,3 Applications of right and non-right triangles, angle of elevation and depression 3.4 Circles – radian measure, arc length, sector area 3.5 Unit circle 3.6 Trig identities 3.7 Sine and cosine functions 3.8 Solving trig equations
Common Assessments/ Major Projects	Common Homework Quizzes Common Formative Assessments Common Summative Assessment	Common Homework Quizzes Common Formative Assessments Common Summative Assessment	Common Homework Quizzes Common Formative Assessments Common Summative Assessment
Resources	My IB Resources (www.ib.org) IB QuestionBank Calculus, A Complete Course (Mark Sparks) Master Math Mentor (pdfs) www.flippedmath.com Khan Academy Delta Math InThinking IB Resource Mathematics: Analysis and Approaches SL, Oxford textbook Teacher Created Resources	My IB Resources (www.ib.org) IB QuestionBank Calculus, A Complete Course (Mark Sparks) Master Math Mentor (pdfs) www.flippedmath.com Khan Academy Delta Math InThinking IB Resource Mathematics: Analysis and Approaches SL, Oxford textbook Teacher Created Resources	My IB Resources (www.ib.org) IB QuestionBank Calculus, A Complete Course (Mark Sparks) Master Math Mentor (pdfs) www.flippedmath.com Khan Academy Delta Math InThinking IB Resource Mathematics: Analysis and Approaches SL, Oxford textbook Teacher Created Resources

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MCS Math Resource List

IB Math Analysis & Approaches SL Year 2 Subject Group Overview - Semester 2

Unit Name	Anti-Differentiation, Integration	Applications of integration	IB Exam review
Time Frame	3 weeks	6 weeks	5 weeks
Standards/ IB Topics	Topic 5: AA SL 5.5 Review AA SL 4.1-4.4, 4.10	Topic 5: AA SL 5.10-5.11 Review AA SL 4.5-4.12	All AA standards 1.1-5.11
Content Specific Information	5.5 Anti-differentiation, initial conditions, definite integrals as area under a curve 4.1 Sampling, bias, outliers 4.2 Presentation of data: histograms, cumulative frequency curve, box and whisker plots 4.3 Measures of central tendency 4.4 Correlation and regression 4.10 Equation of regression line	5.9 Kinematics 5.10 Indefinite integration, integration by substitution or inspection 5.11 Definite integrals 4.5 Basic probability 4.6 Venn diagrams, tree diagrams, combined events, conditional probability 4.7 Probability distributions, expected value 4.11 Conditional probability 4.8 Binomial distribution 4.9 Normal distribution 4.12 Standardized normal distribution	1.1-5.11
Common Assessments / Major Projects	Common Homework Quizzes Common Formative Assessments Common Summative Assessment	Common Homework Quizzes Common Formative Assessments Common Summative Assessment	Mock IB Exam Review notebook with practice past papers
Resources	My IB Resources (www.ib.org) IB QuestionBank Calculus, A Complete Course (Mark Sparks) Master Math Mentor (pdfs) www.flippedmath.com Khan Academy Delta Math InThinking IB Resource Mathematics: Analysis and Approaches SL, Oxford textbook Teacher Created Resources	My IB Resources (www.ib.org) IB QuestionBank Calculus, A Complete Course (Mark Sparks) Master Math Mentor (pdfs) www.flippedmath.com Khan Academy Delta Math InThinking IB Resource Mathematics: Analysis and Approaches SL, Oxford textbook Teacher Created Resources	Past IB exams My IB Resources (www.ib.org) IB QuestionBank Calculus, A Complete Course (Mark Sparks) Master Math Mentor (pdfs) www.flippedmath.com Khan Academy Delta Math InThinking IB Resource Mathematics: Analysis and Approaches SL, Oxford textbook Teacher Created Resources