

Mathematics Grade 12

The following table provides a summary of the learning content for the NCCS syllabus for Mathematics AS Level, and indicates how this series covers all topics and general objectives of the syllabus. The specific objectives and competencies are given in the actual topics in the Teacher's Guide.

Theme 1: Mathematics 1	LB pages
Topic 1: Equations, expressions, identities and inequalities	pp. 1–23
Gain further understanding for manipulating quadratic expressions and solving quadratic equations.	
Topic 2: Sequences and series	pp. 24–45
Gain further understanding of sequences and series.	
Topic 3: Graphs and functions	pp. 46–67
Understand the concept of function and use function notation.	
Topic 4: Coordinate geometry	pp. 68–85
Gain further understanding for solving problems involving coordinate geometry.	
Topic 5: Circular measure	pp. 86–99
Understand the relationship between radians and degrees and solve problems involving arc length and sector area.	
Topic 6: Trigonometry	pp. 100–122
Understand and use trigonometric ratios and their identities.	
Topic 7: Vectors in three dimensions	pp. 123–144
Understand and use vectors in three dimensions.	
Topic 8: Differentiation	pp. 145–168
Know how to find a derivative of a function and use derivatives to solve problems.	
Topic 9: Integration	pp. 169–200
Know how to integrate derivatives to find their functions and use integration to solve geometric problems.	
Know how to use integration to determine areas and volumes, and solve problems involving easy kinematics.	

Theme 2: Mathematics 2	LB pages
Topic 1: Algebra	pp. 201–220
Gain further understanding for manipulating algebraic expressions and solving absolute value equations and inequalities.	
Topic 2: Logarithmic and exponential functions	pp. 221–236
Understand the connection between logarithm and indices, and solve problems involving logarithm and exponential function.	
Topic 3: Trigonometry	pp. 237–269
Gain further understanding for the use of trigonometric ratios and their identities.	
Topic 4: Differentiation	pp. 270–297
Acquire further understanding for finding the derivative of a function.	
Topic 5: Integration	pp. 298–321
Learners extend their knowledge for integrating derivatives.	
Topic 6: Numerical solutions of equations	pp. 322–334
Understand alternative methods for locating roots of equations and use iterative formula.	