

CAMBRIDGE INTERNATIONAL AS & A LEVEL

Mathematics 9709

Syllabus Overview

Examinations 2028, 2029 and 2030

Understanding the whole syllabus

Mathematical understanding joins accurate techniques with the ability to choose and explain a method. Topics connect through notation, algebraic relationships, diagrams and models. The route table identifies the components that apply to you; it is not a requirement to study every optional paper.

For Mathematics 9709, the content map below follows the approved subject briefing and the official syllabus. Labels group related areas for orientation; the detailed syllabus remains the authority for individual learning requirements.

Content map

Syllabus area or component	What the area covers
Six components and route choices	The course is built around six possible components.
Paper 1: Pure Mathematics 1	Pure Mathematics One provides the foundation for every route. It covers quadratics, functions, coordinate geometry, circular measure, trigonometry, series, differentiation and integration.
Paper 2: Pure Mathematics 2	Pure Mathematics Two extends this work through algebra, logarithmic and exponential functions, further trigonometry and calculus, and numerical solutions of equations. It belongs only to the standalone pure-mathematics AS route.
Paper 3: Pure Mathematics 3	Pure Mathematics Three is the advanced pure component for A Level. It adds vectors, differential equations and complex numbers while developing the earlier algebra and calculus in greater depth.
Papers 4-6: Mechanics and statistics	The applied components are Mechanics, Probability and Statistics One, and Probability and Statistics Two. Mechanics covers forces, motion, momentum, Newton's laws, energy, work and power. The statistics components develop data representation, probability distributions, estimation and hypothesis testing.

These areas should be read as a connected course. Begin with the foundational knowledge identified in the first part of the map, then build towards the applications and explanations that depend on it. Secure the prerequisite technique before increasing problem complexity. Keep a record of whether an error came from choosing a method, carrying it out or interpreting the answer, then revisit the relevant step. Where a row describes a choice of topics or components, study the selection required by your agreed route rather than treating all alternatives as compulsory.

Qualification and component choices

Route	Components	Progression
AS Pure Mathematics	1 + 2	Standalone AS; no carry-forward to A Level
AS Pure Mathematics and Mechanics	1 + 4	May support a valid staged A Level route
AS Pure Mathematics and Statistics	1 + 5	May support a valid staged A Level route
A Level with Mechanics	1 + 3 + 4 + 5	Full A Level
A Level with Statistics 2	1 + 3 + 5 + 6	Full A Level

Choose the combination before selecting resources. Staged entry is subject to Cambridge carry-forward rules and time limits; your centre must confirm the valid combination for your examination series.

The AS Pure Mathematics-only route, Papers 1 and 2, cannot be carried forward towards A Level. The full A Level routes are 1+3+4+5 or 1+3+5+6; Mechanics 4 and Statistics 2 (6) are not combined in one route.

The assessed skills

Assessment objectives describe the abilities Cambridge looks for across the qualification. The following explanations paraphrase the syllabus objectives; they are not additional topics or separate orientation tasks.

Assessment objective	Meaning for the learner
AO1 Knowledge and understanding	Select accurate subject knowledge, terminology and examples that answer the question, and explain their meaning.
AO2 Application and communication	Interpret the information, apply an appropriate method and explain the relationships or reasoning that support the answer.

These abilities work together in an answer. Accurate knowledge supports application, while a clear explanation shows how the evidence or method leads to a conclusion. The balance varies by component, so the next lesson connects these abilities with the actual assessment formats.

Key pointers: Follow the stated examination-year syllabus, cover the required areas for your route and develop skills alongside knowledge. **Next:** Open **Assessment Overview**.