Full SBB Additional Mathematics (G2 vs G3)

A 2026-ready handbook + checklist for Secondary students & parents (Singapore)

Who this is for	What you get	How to use it
Sec 2-4 students taking or considering Additional Mathematics under Full SBB. Parents who want a clear, official-syllabus-backed map.	A crisp G2 vs G3 comparison (what changes, what doesn't). Topic checklists + exam-smart study system.	Print and tick weekly. Use the official links on Page 5 to download the latest MOE/SEAB PDFs.

Why tuition with BukitTimahTutor.com

A-Math is a 'skills compounder': small gaps in algebra and functions snowball fast. Our 3-pax small-group coaching focuses on concept clarity, mark-earning working, and paper strategy - so practice turns into real score gains.

- **Small groups** (3 students): every line of working gets corrected.
- **Experienced guidance**: step-by-step habits for accuracy, speed, and exam calm.
- **Weekly structure**: topic -> mixed practice -> timed sections -> error-log fixes.

How we want the best for our Sec A-Math students

- **Understand before speed** (explain the 'why' in simple words).
- **Show working like a scorer** (method marks matter).
- **Be consistent**: 30-45 min, 4-5 days/week beats cramming.
- **Train exam calm**: timed practice + a rescue strategy for tough questions.

Quick readiness scan (tick what's true today)

- ☐ I can factorise confidently and check my answers.
- ☐ I'm comfortable with functions/graphs (turning points, intercepts, gradient).
- ☐ I can handle surds and indices without guessing.
- ☐ I solve equations/inequalities with clear working.
- ☐ I understand trigonometry beyond formulas (identities + equations).
- ☐ I know what differentiation means (gradient/rate of change) and can apply it.
- ☐ I review mistakes with an error log (not just redo).
- ☐ I can finish a timed section without panic.

Full Subject-Based Banding (Full SBB) - the 90-second map

Full SBB lets students take subjects at different levels (G1, G2, G3) so the subject level matches readiness. MOE provides separate mathematics syllabuses for G1/G2/G3, and at upper secondary, students who are interested may offer Additional Mathematics as an elective.

Level	What it usually means	What to watch
G1	Core maths foundation, paced for consolidation.	Prioritise accuracy and confidence first.
G2	Stronger foundation + more breadth; a common stepping stone to G3 subjects.	Gaps in algebra/graphs show up quickly.
G3	Most demanding depth/rigour; typical route to O-Level content and advanced STEM readiness.	Expect multi-step problems + proof-style reasoning.

G2 vs G3 Additional Mathematics: what's different?

Both levels build the same big strands - Algebra, Geometry & Trigonometry, and Calculus - but G3 typically goes further in breadth and depth (e.g., binomial, logs/exponentials, proofs).

Item	G2 A-Math	G3 A-Math
National exam code	4051 (N(A) level)	4049 (O-Level)
Paper structure	2 x 1h45; 70 marks each; answer all	2 x 2h15; 90 marks each; answer all
Typical emphasis	Build foundations + prepare for higher pathways (including O-Level A-Math).	Greater rigour + broader content; strong prep for advanced STEM maths.
Step-up topics	More focused set of functions & algebra; formulae provided.	Adds/strengthens logs & exponentials, binomial, partial fractions, proofs & deeper applications.

Decision checklist (use this with your teachers)

- ☐ My algebra fundamentals are stable (factorisation, indices, surds, equations).
- ☐ I can read graphs and link features to equations (domain/range, turning points).
- ☐ I can practise consistently (not only before exams).
- ☐ I want pathways that benefit from A-Math (JC/Poly STEM, engineering/science).
- ☐ I can cope with multi-step questions and show working for method marks.
- ☐ I've confirmed what my school offers under Full SBB and the selection criteria.

Official syllabus map (2026) - what the exam really tests

SEAB publishes the official examination syllabuses each year. Use these to stay aligned, especially if your school notes differ.

Level	Assessment objectives (approx.)	Scheme of assessment
G3 / O-Level (4049)	AO1 50% | AO2 40% | AO3 10%	Paper 1: 2h15, 12-14 Qns, 90 marks Paper 2: 2h15, 9-11 Qns, 90 marks
G2 / N(A) (4051)	AO1 50% | AO2 40% | AO3 10%	Paper 1: 1h45, 13-15 Qns, 70 marks Paper 2: 1h45, 8-10 Qns, 70 marks

Topic checklist (G3 core, with notes for G2)

G3 (4049) builds advanced Algebra, Geometry & Trigonometry, and Calculus. G2 (4051) uses the same strands but focuses on a smaller/stepping-stone set (still assessed with reasoning and clear working).

Algebra

- ☐ Quadratic functions: completing the square; max/min; always positive/negative.
- ☐ Equations & inequalities: quadratic inequalities; linear-quadratic simultaneous equations.
- ☐ Surds and indices: simplify, rationalise, solve equations with surds.
- ☐ Polynomials (G3 focus): factor/remainder theorem; cubic factorisation and solving.
- ☐ Partial fractions (G3): including repeated linear factors.
- ☐ Binomial expansions (G3): general term; combinations notation.
- ☐ Exponential & logarithmic functions (G3): laws, change of base, modelling.

Geometry & Trigonometry

- ☐ Trig functions: any angle; radians; graphs.
- ☐ Trig identities & equations: prove identities; solve in a given interval.
- ☐ Coordinate geometry: lines, midpoint, area; circles (standard form).
- ☐ Plane geometry proofs (G3): similarity, midpoint theorem, tangent-chord theorem.

Calculus

- ☐ Meaning of derivative: gradient of tangent; rate of change.
- ☐ Differentiation: power rule; trig; e^x and ln x; product/quotient/chain.
- ☐ Applications: stationary points; increasing/decreasing; optimisation.
- ☐ Integration: areas under/below x-axis; kinematics (s-v-a).

The high-alpha A-Math study system

Marks come from (1) clean techniques, and (2) selecting the right method under time pressure. This system converts practice into score improvements.

1) Concept -> Example -> Mixed practice

Concept: explain the 'why' in 2-3 sentences.

Examples: do 3-5 worked questions slowly; annotate steps.

Mixed: combine topics (real exams mix!) then time it.

2) The 10-minute Error Log

Write the **exact error** (sign, identity, interval, algebra).

Write a **one-line fix rule**.

Do **2 similar questions** immediately to lock it in.

Paper strategy (simple and ruthless)

- **First pass:** secure all doable questions cleanly - don't donate easy marks.
- **Second pass:** medium questions; write working clearly for method marks.
- **Rescue move:** if stuck, draw, define variables, state key formula, show partial working.
- **Sanity checks:** signs, domain/interval, angle units, reasonableness.

Most common mark leaks (tick the ones you do)

- ☐ **Algebra drift**: expand right but simplify wrong -> slow down and line-check.
- ☐ **Wrong interval** (trig): forget the interval -> box it before solving.
- ☐ **Stationary points**: find dy/dx=0 but don't classify -> 2nd derivative / sign test.
- ☐ **Logs mix-ups**: misuse laws/change of base -> keep a 1-page laws sheet; drill.
- ☐ **Integration**: forget +C / bounds -> write integral statement first.
- ☐ **Calculator brackets**: key in wrong -> rewrite with brackets clearly before typing.

A practical 12-week upgrade plan

If you have less time, compress - but keep the same structure.

Weeks	Focus	Non-negotiables
1-4	Foundation rebuild	Daily algebra (15-20 min) + 3 topic sets/week + start error log
5-8	Breadth + mixing topics	2 mixed sets/week + 1 timed section/week + review corrections
9-11	Timed papers & refinement	1 full timed paper/week + targeted drills from error log
12	Exam readiness	Short timed revisions + rest/sleep plan + formula/identity recall

Official links (MOE + SEAB) - always check the latest

- **MOE Full SBB syllabus downloads:** https://www.moe.gov.sg/secondary/schools-offering-full-sbb/syllabus
- **MOE G2 & G3 Additional Mathematics syllabuses (PDF):** https://www.moe.gov.sg/-/media/files/secondary/fsbb/syllabus/2020-g2-and-g3-additional-mathematics-syllabuses.pdf
- **SEAB O-Level A-Math (4049) syllabus for 2026 (PDF):** https://www.seab.gov.sg/files/O%20Lvl%20Syllabus%20Private%20Cddts/2026/4049_y26_sy.pdf
- **SEAB N(A)-Level A-Math (4051) syllabus for 2026 (PDF):** https://www.seab.gov.sg/files/NA%20Level%20Syllabus%20Sch%20Cddts/2026/4051_y26_sy.pdf

Need help choosing G2 vs G3, or catching up fast?

WhatsApp us at **+65 88231234** (scan the QR in the banner). Share your level, latest score, and 2 hardest topics - we'll suggest a clear next-step plan.

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