

Mathematics Level 10

Contents

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Aboriginal and Torres Strait Islander content has been excluded as accuracy cannot be guaranteed, and it is better to be respectful than cover the entire curriculum inaccurately.

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Contents

This book is the **Mathematics Level 10** student workbook. It is written for **Level 10** (Year 10 in Victorian schools) of the Victorian Curriculum F–10 Version 2.0 (VC2), Mathematics. **The book is one level, not a band.** Every content description in it is tagged Level 10 — there is no Level 9 content and no VCE content in the book. Level 9 is assumed prior knowledge: a subtopic may rehearse a Year 9 skill in a short opening, and never re-teaches it as new or assesses it as a Level 10 outcome. Level 10 is the exit point of the compulsory curriculum, and what this book sets up is VCE — named in the teacher notes as destinations, never taught or assessed.

It is one book in a per-level series (Foundation, then Levels 1 to 10), built one classroom year at a time from VCAA’s per-level authority files — for this book, `maths_10.json`: 30 content descriptions, 103 elaborations and 3,968 linked multiple-choice questions, read in full and verified character-for-character against VCAA’s own export. For a Year 10 classroom it is the whole of the year’s mathematics: all 30 Level 10 content descriptions are owned here, in full and at full depth, because for a Year 10 teacher this is the only book on the desk.

The series is ten booklets:

- **Chapter 1 — Number and algebraic manipulation** — `Maths10_Chapter01` — subtopics 1A–1E, and topic test T1 (87 pp)
- **Chapter 2 — Equations and inequalities** — `Maths10_Chapter02` — subtopics 2A–2F (101 pp)
- **Chapter 3 — Graphs, models and algorithms** — `Maths10_Chapter03` — subtopics 3A–3D, and topic test T2 (81 pp)
- **Chapter 4 — Measurement** — `Maths10_Chapter04` — subtopics 4A–4D (64 pp)
- **Chapter 5 — Space** — `Maths10_Chapter05` — subtopics 5A and 5B, and topic test T3 (45 pp)
- **Chapter 6 — Statistics** — `Maths10_Chapter06` — subtopics 6A–6E (90 pp)
- **Chapter 7 — Probability** — `Maths10_Chapter07` — subtopics 7A and 7B, and topic test T4 (47 pp)
- **Chapter 8 — Extended tasks** — `Maths10_Chapter08_Tasks` — the two extended tasks X1 and X2: full briefs, planning frames, data-quality checklists, rubrics and one worked exemplar each, for the modelling and investigation cycles a timed written paper cannot assess (21 pp)
- **Chapter 9 — End-of-book review** — `Maths10_Chapter09_Review` — the Level 10 review across all 30 content descriptions, Part A technology-free and Part B technology-active, with answers and fully-worked solutions (35 pp)
- **Chapter 0 — Contents** — `Maths10_Chapter00_Contents` — this booklet: how to use the book, what it covers, teacher notes and safety notes (0 pp)

Series total: ten booklets ≈ 571 pages. The built booklets — `Maths10_Chapter00_Contents`, `Maths10_Chapter01` to `Maths10_Chapter07`, `Maths10_Chapter08_Tasks` and `Maths10_Chapter09_Review` — are in `S:\Files\VC2Maths\Textbook10\`.

How to use this book

Chapters follow the strands. Seven chapters: Number + Algebra, Algebra, Algebra, Measurement, Space, Statistics, Probability. Algebra carries 16 of the 30 content descriptions — more than half the book — so it is split across three chapters as a sizing split inside one strand: Chapter 1 is algebraic manipulation, Chapter 2 is equations and inequalities, and Chapter 3 is graphs, models and algorithms. All three are labelled Algebra and map only to Algebra codes. The Number strand carries exactly one content description at this level, so it does not get a chapter of its own: `VC2M10N01` sits at the head of Chapter 1 as subtopic 1A and keeps its Number strand tag in the coverage map below. Inside the chapters, subtopic order is teaching order: 4D (logarithmic scales) is last in Measurement because it is the hardest Measurement idea and needs 2E; 2F (solving graphically and by guess-check- and-refine) is last in Chapter 2 because its question “have you found them all?” only makes sense once the equation types before it are on the table; and 7A precedes 7B because multi-step experiments, replacement and independence are the machinery conditional probability runs on.

Book order is a teaching order. Read front to back, every dependency is satisfied before it is needed. Every subtopic that rests on an earlier one opens with a one-line pointer to its prerequisite — 1C and 1D rest on 1B, 2A on 1C and 1E, 2D on 1D, 2F on 2C, 2D and 2E, 3B on 1D, 2D and 2E, 3C on 2E and 3B, 4A on 1A, 4C on 4A and 4B, 4D on 2E and 3C, 6B on 3A, 6E on 6A, 6B and 6D, and 7B on 7A and 6C. These pointers are teaching advice, not a second coverage map: they create no second owner of any code.

One content description per subtopic — with two named pairs. Each of the 28 subtopics owns its content description outright, quoted verbatim at the top of the subtopic. Two subtopics own two codes each because each pair is a single teaching sequence: 1B owns VC2M10A01 and VC2M10A02 (factorising under the exponent laws is one toolkit with the exponent laws applied to products and quotients), and 2A owns VC2M10A07 and VC2M10A12 (linear equations extended by one step to simple algebraic fractions). Both codes of a pair are delivered and separately evidenced. VCAA's elaborations are carried in every subtopic for linkage and coverage only: they are illustrations of what a content description might look like, not a checklist to work through in order, and a subtopic that delivers its content description through other contexts has still taught the curriculum.

The shape of every subtopic. Each subtopic opens with its content description and its achievement-standard extract quoted from the curriculum, and a **You need first** line naming the Level 9 codes it rehearses. Then the theory — every result stated before it is used — then worked examples set out one step per line, then practice questions: a scaffolded set followed by an unscaffolded set graded to the end of the compulsory curriculum, with one real-context item carrying its source line. Answers and fully-worked solutions, each item with its diagram, close every subtopic so a student can check their own work, and a teacher note records the Level 9 codes rehearsed, the digital-tool class if any, and the VCE destinations. Extended task X1 sits at the end of subtopic 3C and extended task X2 at the end of subtopic 6E, where they are set; the full briefs, frames, checklists, rubrics and exemplars are gathered in the Chapter 8 Tasks booklet.

Standard and extended blocks. Nine subtopics are standard blocks — one theory sequence, three worked examples, and the scaffolded and unscaffolded practice sets. Nineteen are extended blocks, authored at double allocation — 1B, 1C, 1D, 2A, 2C, 2D, 3B, 3C, 3D, 4B, 4C, 4D, 5A, 5B, 6A, 6D, 6E, 7A and 7B — because their content descriptions name three or more distinct techniques or a full modelling or investigation cycle. Extended is a size instruction, not a split: an extended subtopic is still one subtopic, one file, one owner.

Level 9 is assumed, and the book says where. A subtopic may rehearse an assumed Year 9 skill in a short opening — 2C cannot solve simultaneous equations graphically without a line, and 4B cannot use a bearing without SOH-CAH-TOA — but it does not re-teach it as new content and does not assess it as a Level 10 outcome. Every teacher note names the Level 9 code it rehearses.

The level ceiling is enforced. Level 10 is the exit level of the compulsory curriculum and this book stops exactly at it. Not taught anywhere in the book: function notation $f(x)$; domain and range as formal concepts; the quadratic formula derived (it is used as a tool, never derived); the discriminant as a named classifier with case analysis and proof (the value of the discriminant is in scope); logarithm laws and $\log$ as an operator — 4D teaches logarithmic scales, not logarithms; the unit circle and trigonometric ratios beyond 90° ; the sine and cosine rules and non-right-angled trigonometry; least-squares regression and the correlation coefficient — 6B places a line of good fit by eye or by digital tool; standard deviation, the normal distribution and z-scores; probability distributions; Bayes' theorem as a formula; matrices as a topic — 3D uses a two-dimensional array inside an algorithm, which is a data structure, not matrix algebra; vectors; calculus in any form; and the three-dimensional distance formula. A subtopic that reaches past this list has broken the level, not gone the extra mile.

Digital tools are named by class, and the book does not supply them. Eleven content descriptions name digital tools — five in the content description itself (VC2M10A06, VC2M10A09, VC2M10A11, VC2M10A16, VC2M10P01) and six more in elaborations only (VC2M10A13, VC2M10A14, VC2M10M03, VC2M10SP01, VC2M10ST01, VC2M10ST02). Every affected subtopic names the tool class — scientific calculator, spreadsheet, graphing tool, dynamic geometry software, or a general purpose programming language — never a product, shows the input and the expected output so the page is usable when the tool is not, and carries the banner DIGITAL TOOL — this task assumes `<class>`. Your teacher will nominate the tool. **No CAS anywhere in the book.** Where a content description names a tool, the tool-free path is still taught and still assessed, so no student is blocked by access and none misses the by-hand skill.

Everything real is really real. Every data set, table, graph, rate, price, measurement, map and media item carries a source line with a retrieval date, drawn from reputable Australian sources. Anything presented as current — an interest rate, a tax rate, a price, a population, a fare — carries an *as at* stamp; anything older is labelled *HISTORICAL* and used for trend or comparison only. There are no invented statutes, communities, organisations, schools, businesses or people: a scenario may use a generic actor, but nothing that could be looked up is fictitious — and if a context cannot be sourced, the context is changed.

The notation and conventions of this book. Subtraction and negative numbers use a proper minus — -1 , $5 - 8 = -7$ — never a hyphen; the product of perpendicular gradients being -1 in 3A turns on it. Multiplication is $\times$, never $\cdot$. $\therefore$ opens a concluding line. The book says **exponent**, not *index*, following VCAA's own wording. Exact answers stay exact — surd and π form where the content description calls for exact representation — with a decimal approximation given only when asked and the rounding stated. Approximation is $\approx$, degrees are 45° , en dash for ranges, em dash for parenthetical breaks, and solutions are set out one step per line, never chained equals. Quartiles use the Australian school convention — the median-of-halves rule, where the median splits the ordered data set and, when n is odd, is excluded from both halves; boxplots use the $1.5 \times \text{IQR}$ rule for outliers. That is the convention VCE uses. Everything is metric, GST is 10%, currency is Australian (cash totals round to the nearest 5c — 1c and 2c coins were withdrawn in 1992), dates read 7 August 2026, temperatures are $^\circ\text{C}$, seasons run southern hemisphere, and bearings are three-figure true bearings written 047°T . Spelling is en-AU: *metre*, *centre*, *modelling*, *analyse*, *practise* (verb) and *practice* (noun).

Every new mathematics word is named and explained the first time it appears. Curriculum terms are used as VCAA uses them; where the curriculum uses a word without defining it, the subtopic states the definition it is using and every question is answerable on that definition alone. General vocabulary is held at or below Year 10 reading level, so the difficulty lands on the mathematics, not on the reading.

Every page is labelled Level 10. Every chapter cover and every subtopic heading carries (Level 10) — a teacher never has to consult a planning document to find out which year a page belongs to.

Which book is which. This is the single-level Year 10 book. The Levels 9–10 band book is a separate product for composite Year 9/10 classes and covers these same 30 content descriptions in its own plan — two products covering one year level, deliberately, with neither book deferring anything to the other. A straight Year 10 class uses this one. Nothing in this book is shared with the band book; the two are written independently.

Assessment is school-designed. Four topic tests, two extended tasks and one end-of-book review — 270 marks in all — all school-marked against the Level 10 achievement standard. Nothing in this book is a VCAA instrument. See the teacher notes below.

What this book covers

The table below is the coverage register for this book, reproduced from the series plan: every one of the **30** content descriptions of VC2 Mathematics Level 10, against the subtopic that owns it, with the elaboration ids fully expanded and the current multiple-choice question-bank count. **Each code appears exactly once as an owner. There are no unowned codes and no code is owned twice.** The series checks itself against this map, both directions: authority $\rightarrow$ book (each code has exactly one owning subtopic, and that subtopic delivers the whole content description, not just the part its elaborations illustrate) and book $\rightarrow$ authority (no subtopic exists without a content description, none is carried as prerequisite scaffolding, and none teaches content whose only home is Level 9 or VCE).

#	CD code	Strand	Owner	Elaboration ids	MCQs
1	VC2M10N01	Number	1A	VC2M10N01.E 01, VC2M10N01.E 02	96
2	VC2M10A01	Algebra	1B	VC2M10A01.E 01, VC2M10A01.E	96

#	CD code	Strand	Owner	Elaboration ids	MCQs
3	VC2M10A02	Algebra	1B	02 VC2M10A02.E 01	96
4	VC2M10A03	Algebra	1C	VC2M10A03.E 01, VC2M10A03.E 02	96
5	VC2M10A04	Algebra	1D	VC2M10A04.E 01, VC2M10A04.E 02, VC2M10A04.E 03	144
6	VC2M10A05	Algebra	1E	VC2M10A05.E 01, VC2M10A05.E 02	96
7	VC2M10A06	Algebra	3D	VC2M10A06.E 01, VC2M10A06.E 02	96
8	VC2M10A07	Algebra	2A	VC2M10A07.E 01	96
9	VC2M10A08	Algebra	2B	VC2M10A08.E 01, VC2M10A08.E 02 (<i>truncated upstream — D12</i>)	144
10	VC2M10A09	Algebra	2C	VC2M10A09.E 01, VC2M10A09.E 02, VC2M10A09.E 03, VC2M10A09.E 04, VC2M10A09.E 05	336
11	VC2M10A10	Algebra	3A	VC2M10A10.E 01, VC2M10A10.E 02	96
12	VC2M10A11	Algebra	3B	VC2M10A11.E 01, VC2M10A11.E 02, VC2M10A11.E 03, VC2M10A11.E 04	240

#	CD code	Strand	Owner	Elaboration ids	MCQs
13	VC2M10A12	Algebra	2A	VC2M10A12.E 01, VC2M10A12.E 02	144
14	VC2M10A13	Algebra	2D	VC2M10A13.E 01, VC2M10A13.E 02, VC2M10A13.E 03	192
15	VC2M10A14	Algebra	2E	VC2M10A14.E 01, VC2M10A14.E 02, VC2M10A14.E 03, VC2M10A14.E 04, VC2M10A14.E 05	240
16	VC2M10A15	Algebra	3C	VC2M10A15.E 01, VC2M10A15.E 02, VC2M10A15.E 03, VC2M10A15.E 04, VC2M10A15.E 05, VC2M10A15.E 06	288
17	VC2M10A16	Algebra	2F	VC2M10A16.E 01, VC2M10A16.E 02	96
18	VC2M10M01	Measurement	4A	VC2M10M01.E 01, VC2M10M01.E 02, VC2M10M01.E 03	124
19	VC2M10M02	Measurement	4D	VC2M10M02.E 01, VC2M10M02.E 02, VC2M10M02.E 03, VC2M10M02.E 04	192
20	VC2M10M03	Measurement	4B	VC2M10M03.E 01,	225

#	CD code	Strand	Owner	Elaboration ids	MCQs
				VC2M10M03.E 02, VC2M10M03.E 03, VC2M10M03.E 04, VC2M10M03.E 05	
21	VC2M10M04	Measurement	4C	VC2M10M04.E 01, VC2M10M04.E 02, VC2M10M04.E 03, VC2M10M04.E 04, VC2M10M04.E 05	235
22	VC2M10SP01	Space	5A	VC2M10SP01. E01, VC2M10SP01. E02, VC2M10SP01. E03, VC2M10SP01. E04, VC2M10SP01. E05	215
23	VC2M10SP02	Space	5B	VC2M10SP02. E01, VC2M10SP02. E02, VC2M10SP02. E03, VC2M10SP02. E04, VC2M10SP02. E05, VC2M10SP02. E06	263
24	VC2M10ST01	Statistics	6A	VC2M10ST01. E01, VC2M10ST01. E02, VC2M10ST01. E03, VC2M10ST01. E04, VC2M10ST01. E05, VC2M10ST01. E06	53

#	CD code	Strand	Owner	Elaboration ids	MCQs
25	VC2M10ST02	Statistics	6B	VC2M10ST02. E01, VC2M10ST02. E02, VC2M10ST02. E03, VC2M10ST02. E04	12
26	VC2M10ST03	Statistics	6C	VC2M10ST03. E01, VC2M10ST03. E02, VC2M10ST03. E03	9
27	VC2M10ST04	Statistics	6D	VC2M10ST04. E01, VC2M10ST04. E02, VC2M10ST04. E03, VC2M10ST04. E04, VC2M10ST04. E05	15
28	VC2M10ST05	Statistics	6E	VC2M10ST05. E01, VC2M10ST05. E02, VC2M10ST05. E03, VC2M10ST05. E04	12
29	VC2M10P01	Probability	7B	VC2M10P01.E 01, VC2M10P01.E 02, VC2M10P01.E 03, VC2M10P01.E 04, VC2M10P01.E 05, VC2M10P01.E 06	18
30	VC2M10P02	Probability	7A	VC2M10P02.E 01	3
	30 CDs		28 subtopics	103 elaborations	3,968

	CDs in authority	Owned	Unowned	Owned more than once
Level 10	30	30	0	0

Source: codes, strands, elaboration ids and question-bank counts quoted from `maths_10.json`, the Level 10 authority file (VCAA export retrieved 29 July 2026). The table is sorted by strand then code — not by file order, and file order is not teaching order.

Notes on this table:

- Every code in this table is **Level 10**. The table carries no level column because one would repeat “Level 10” thirty times; each subtopic still states its level in its own front matter and on its heading.
- The **Elaboration ids** column is the full set VCAA gives for each code — this is what joins the book to the question bank. Elaborations are illustrations of what a content description might look like, not the content description itself: the content description is the expectation, and coverage is measured against the content description text only.
- VC2M10A08.E02 is truncated in VCAA’s own export — it stops mid-example. The truncation is quoted as published and not reconstructed: the content description itself says “graph their solutions **on a number line**”, so 2B teaches the number line as the assessed skill.
- **Nine elaborations carry Aboriginal and Torres Strait Islander content and are not taught in this book.** They are VC2M10A09.E05 (the instructive game *Weme*), VC2M10A14.E05 (ranger groups’ feral-animal programs), VC2M10A15.E05 and VC2M10A15.E06 (carbon dating of artefacts; native animal populations on Country/Place), VC2M10M02.E04 (the Madjedbebe dig), VC2M10M03.E05 (navigation, design of technologies and surveying), VC2M10SP02.E06 (kinship systems as networks), VC2M10ST02.E04 (spearthrowers) and VC2M10ST04.E05 (Indigenous data sovereignty and the ‘Closing the Gap’ report). They are excluded under the notice on the first page of every booklet in this series — accuracy cannot be guaranteed, and it is better to be respectful than cover the entire curriculum inaccurately — and each affected subtopic records the exclusion in its own teacher note, so the coverage audit reports it as accepted, never silently dropped. Because elaborations are illustrations, not content descriptions, no code loses its teaching sequence: all 30 codes are delivered in full through their other elaborations and everyday class contexts, and coverage stands at 30 of 30 either way.
- **The counts close.** 30 codes, 28 owners — every code is owned exactly once, with no unowned code and no code owned twice. Subtopics 1B and 2A own two codes each; every other subtopic owns exactly one, and no code is owned by more than one subtopic. 103 elaboration ids, each carried exactly once. 3,968 banked questions keyed to these codes. No code is deferred to another book.

What this book does not cover. Level 9 content belongs to the Level 9 book and to the Levels 9–10 band book: this book rehearses Level 9 skills where a subtopic needs them and teaches and assesses none of them as Level 10 outcomes. There is no Level 10A pathway — VCAA publishes none and this book does not invent one, label content “10A”, or mark any subtopic “extension”. Towards Foundation (Mathematics Levels A–D) is a separate product for students with disability working below Foundation Level, and none of its outcomes is referenced, mapped or assessed here. The VCE study designs — Foundation Mathematics, General Mathematics, Mathematical Methods and Specialist Mathematics — are reference only: named in teacher notes as destinations this work leads to, never taught, assessed or used to widen a subtopic. The same 30 content descriptions also appear in the Levels 9–10 band book; that overlap is deliberate — two products covering one year level — and neither book defers anything to the other. None of these exclusions is a coverage gap.

The question bank is unevenly distributed, and that is not a scope signal. Algebra’s 16 codes carry 2,496 banked items; Statistics’ five carry 101 and Probability’s two carry 21. The five thinnest codes are VC2M10P02 (3), VC2M10ST03 (9), VC2M10ST02 (12), VC2M10ST05 (12) and VC2M10ST04 (15) — against VC2M10A09 at 336. Bank density measures the bank, not the curriculum: no subtopic is authored thinner because its bank is thin, or padded because its bank is fat — the authoring weight column of the series plan, not the bank count, sets the volume. The flag is raised against `maths_10.json` for the MCQ system; no subtopic in this book is resized in response.

Teacher notes

Standing. Everything in this book is school-designed and school-marked. VC2 reports student achievement against the **Level 10 achievement standard**, not against a mark total. The marks below exist so a school can build its own reporting and so students meet a mark-allocated, part-technology-free paper before VCE. They are not a VCAA instrument and carry no VCAA weight. Every paper carries this standing notice:

This is a school-designed paper. It is not a VCAA instrument. Achievement in the Victorian Curriculum is reported against the Level 10 achievement standard, not against a mark on this paper.

Read the level. This is the exit year of the compulsory curriculum and the year before VCE. Assessment here is a written paper with a mark scheme — items are pitched to the end of Level 10 and not one step past it. Nothing on the prohibited list in *How to use this book* is assessed: no Level 9 outcome as a Level 10 outcome, no log laws, no least-squares regression or correlation coefficient, no reconstructed half-plane from VC2M10A08 .E02, no VCE content. An item testing any of these is a defect regardless of how well it is written.

Shape — every test and the review are in two parts. Eleven of the thirty content descriptions name digital tools, and VCE's own structure makes the by-hand paper a prerequisite skill — Mathematical Methods and Specialist Mathematics each carry a technology-free examination, and General Mathematics Examination 1 is technology-free multiple choice. A student who has only ever manipulated algebra with a tool meets that paper for the first time in Year 11; that is why every instrument here has a Part A.

- **Part A — technology-free.** Exact values, algebraic manipulation, factorisation, by-hand solution, reading a graph, constructing a proof, interpreting a boxplot.
- **Part B — technology-active.** Scientific calculator, spreadsheet, graphing tool, dynamic geometry software or a general purpose programming language, as nominated by the teacher. **No CAS.**

The topic tests — 4 tests, 150 marks. One test per chapter group, hosted at the back of the last chapter of its group and folded into that chapter's booklet. Each test is worth 5 marks per content description the group owns, so test size tracks curriculum weight and every content description is separately scored — a coverage audit reads delivery straight off the mark scheme. Tests are cumulative: a later test may assume an earlier chapter's content.

Test	Covers	Chapters	Host	CDs scored	Part A (tech-free)	Part B (tech-active)	Total	Time
T1	Number and algebraic manipulation	1	Ch 1	6	20	10	30	35 min
T2	Equations, graphs, models and algorithms	2–3	Ch 3	11	25	30	55	60 min
T3	Measurement and space	4–5	Ch 5	6	12	18	30	35 min
T4	Statistics and probability	6–7	Ch 7	7	12	23	35	40 min
				30	69	81	150	

Item mix. Short-answer dominant, in the 1-, 2- and 3-mark band, with one 5–8 mark multi-part question per part set in a real Victorian context and carrying its source line. Multiple choice is used sparingly — no more than 6 items in any

one test, four options A–D, never five. Every test is followed by **answers** (final values only) and then **fully-worked solutions** for every item, each with its diagram.

Paired subtopics are scored per code. T1 tags its 1B items VC2M10A01 or VC2M10A02 separately, and T2 tags its 2A items VC2M10A07 or VC2M10A12 separately. Both codes of a pair must be separately evidenced: a paired subtopic that scores only 5 marks total, or that tags both codes to one item, has broken the coverage join.

The end-of-book review — 1 review, 80 marks.

Review	Format	Coverage	Part A	Part B	Total	Time
Level 10 Review	Two sessions, or one 90-minute sitting; Part A sat and collected before Part B is issued	All 30 CDs , weighted to the chapters carrying the heaviest VCE load	30	50	80	90 min

This is the exit paper of the compulsory curriculum. It reports against the whole Level 10 achievement standard and is the instrument a school uses to advise on a VCE mathematics pathway. It carries answers and fully-worked solutions. **It is not a VCE examination, is not modelled on one, and may not be described as practice for one.**

The extended tasks — 2 tasks, 40 rubric marks. Three content descriptions require a full cycle that a timed written paper cannot assess — VC2M10ST05 (plan and conduct an investigation, evaluate and report findings with consideration of the limitations of any inferences) and VC2M10A15 and VC2M10M04 (formulate, solve, interpret, evaluate and modify a model, and report assumptions, methods and findings). Each task is a structured brief with a marking rubric, is teacher-marked, and is not counted in the test totals above. X1 is set at the end of subtopic 3C and X2 at the end of subtopic 6E; the full briefs live in the Chapter 8 Tasks booklet.

Task	Type	Host	Marks	Assesses
X1	Mathematical modelling	3C	20	VC2M10A15 and VC2M10M04 cycles, drawing on 2E, 3B and 4C
X2	Bivariate / time-series statistical investigation	6E	20	VC2M10ST05 cycle, drawing on 6A–6D

Each rubric scores five criteria at 4 marks each: **formulate** (assumptions and variables stated) · **solve** (mathematics correct and shown) · **interpret** (answer read back into the situation with units) · **evaluate** (model or method tested, limitations named, model modified where needed) · **report** (methods and findings communicated to the stated audience). The tasks require student-generated or student-sourced data; the book supplies the brief, the planning frames, the data-quality checklist, the rubric and one fully-worked exemplar on a supplied data set, labelled EXEMPLAR — practice, not the task.

Totals.

	Instruments	Marks
Topic tests	4	150
End-of-book review	1	80
Extended tasks (rubric, not counted with tests)	2	40
Book	7	270

This matches the Level 10 mark total in the Levels 9–10 band plan exactly, so a school running both products compares like with like. The internal split differs — this book has four chapter groups where the band book has three — the totals do not.

Administration. Standing rules for every instrument:

- **Two parts, always.** Part A is technology-free and is sat and collected before Part B is issued — for the tests and for the review alike.
- **The teacher nominates the Part B tool** from the classes named by the content descriptions: scientific calculator, spreadsheet, graphing tool, dynamic geometry software, or a general purpose programming language. No CAS. Where a class has no access to the nominated tool, the tool-free path taught in the subtopic is still assessable.
- **Times are planning numbers, not limits to beat.** 35, 60, 35 and 40 minutes for T1–T4; 90 minutes for the review, which may be split across two sessions.
- **Tests are cumulative.** A later test may assume content taught in an earlier chapter; that is deliberate.
- **Marking is diagnostic.** Every test, the review and both rubrics ship with criteria written in the language of the achievement-standard extract carried in the authority file for each content description, so a teacher's judgement maps to VCAA wording without translation. Eighteen distinct achievement-standard extracts cover the 30 codes; the mark scheme quotes the relevant one verbatim beside each scored item. Six of the eighteen are shared by more than one code — most notably the extract covering VC2M10A07, A08, A09, A10, A12 and A13 — and shared wording is not permission to score those codes jointly.
- **A mark is a record that evidence was seen.** The records are for reporting against the Level 10 achievement standard. They are not used to rank students.

The question bank. The bank holds 3,968 multiple-choice items keyed to the 30 codes in the coverage table above. They are a linked digital asset: they are counted in the coverage table so the join can be seen to be live and so a code with thin bank support is visible, but they are not reprinted in this book and do not set page counts. The printed assessment above uses multiple choice sparingly — four options A–D, never five — and is short-answer dominant.

Safety notes

This is a paper-and-screen book. There are no flames, no heating, no chemicals and no sharp tools anywhere in it. Safety is stated **at the point of use**: every task that uses physical equipment or collects data names what it needs on the same page as the task. Standing rules, in every part of the book:

1. **Chance equipment stays on the desk.** The coins, dice, spinners and playing cards in Chapter 7 and its test are equipment for recording results, not games and not food. The teacher collects them and counts them back when the trials are done.
2. **Clinometer work runs under school supervision.** The angle-of-elevation work in subtopic 4B is printed as worked scenarios. If a class extends it into a practical — making a clinometer and measuring angles of elevation outdoors — that activity runs under the school's own supervision and permissions: a clear standing area, students staying where the teacher can see them, and never sighting the sun or a bright light source directly.
3. **Surveys and data collection respect people.** The investigations in 6E and the extended tasks X1 and X2 ask only questions the teacher has approved, and responses are recorded as numbers and counts — never as names. Surveying another class or year level needs the teacher's permission first, and the school's rules govern what may be asked and what may be kept. Sensitive topics use published data from an approved body, with informed consent, rather than data collected by the class.
4. **Media items stay in the book.** The statistical claims critiqued in 6D are presented in the book with their source line — masthead or publisher, title and date. The critique is of the claim and the display, and no student needs to hunt down the original to take part.
5. **Screens follow the school's rules.** The spreadsheet, graphing, dynamic geometry, simulation and programming work in 2A, 2C, 2D, 2E, 2F, 3B, 3D, 4B, 5A, 6A, 6B and 7B runs on school-approved devices and accounts. Tools are named by class, never by product, and no menu paths are given, so nothing in the

book dates with a software release. Nothing personal is typed into a shared file, and investigation data is recorded as counts, never as names.

6. **Real data stays sourced.** Every real datum in the book carries a source line with a retrieval date, and anything presented as current carries an as at stamp. Nothing that could be looked up is invented — no fictitious statute, organisation, town, council, standard or brand — so no student is ever sent looking for something that does not exist, and a teacher can verify any figure in the book.

Cultural safety. Aboriginal and Torres Strait Islander content is handled as stated in the coverage map above: the nine elaborations that carry it are excluded under the notice on the first page of every booklet in this series, and each affected subtopic records the exclusion in its own teacher note. Nothing is invented or relocated to stand in — no People, Country, language group, game, site or practice — and where VCAA names no People, place or language group, this book names none either.