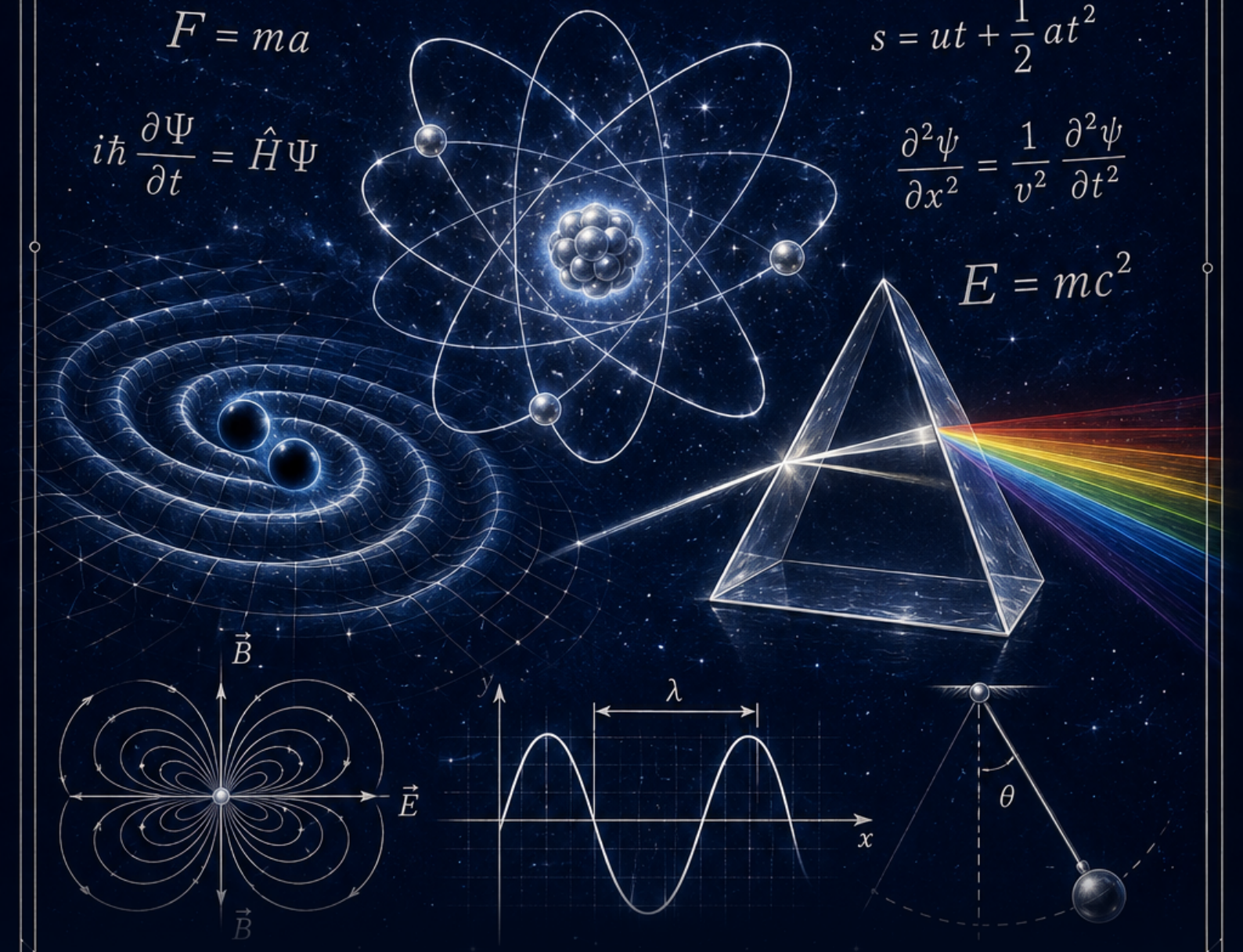
A-LEVEL PHYSICS
100 AI PROMPTS

for Smarter Revision *and* Exam Prep

Active recall, exam technique, and mark-scheme thinking — without cheating.



V AI Study Method
THE VELVET METHOD™

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A six-step AI study system

A-Level Physics

100 AI Prompts for Smarter Revision & Exam Prep

Active recall, exam technique, and mark-scheme thinking — without cheating.

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What Is the Velvet Method?

The Velvet Method is a six-step framework for using AI as a study partner — not a shortcut. Each letter is a stage of effective revision, and each is grounded in what cognitive science says actually works: building understanding, retrieving it under pressure, and spacing your review over time.

V — View See the whole picture of a topic before you study the detail.

E — Evaluate Run a diagnostic to find exactly where your gaps are.

L — Learn Fill those gaps in a way that genuinely sticks.

V — Verify Prove you know it with exam-style questions and examiner-style feedback.

E — Explore Push into top-grade thinking: application, analysis, and unseen problems.

T — Transform Reflect, plan your next session, and lock it in with spaced repetition.

Used in order, the six stages turn AI from a machine that hands you answers into a tutor that strengthens your own thinking — so the work stays yours, and so does the understanding you carry into the exam.

How This Book Is Organised

This book follows the Velvet Method exactly. Its six chapters are the six stages, and the prompts in each chapter do that stage's job for A-Level Physics. View prompts help you map the course; Evaluate prompts diagnose your gaps; Learn prompts help you understand; Verify prompts test you against mark schemes; Explore prompts stretch you into top-grade thinking; and Transform prompts help you reflect and remember.

Work through the stages roughly in order when you tackle a whole topic, or dip into a single stage when you need it — a quick diagnostic before a test, or some examiner-style marking the night before.

Every prompt is a starting point, not a script. Adapt them, raise the difficulty, swap in your own topic, and ask the AI to challenge your thinking rather than do it for you. The goal is never to get answers from AI. It is to use AI to test, challenge, and sharpen what you know.

How to Run a Velvet Session

Having a hundred prompts is not the same as knowing how to use them. Here is how the six stages fit together in a real study session — and how to turn them into a habit rather than a one-off.

For a new topic, work roughly in order: View to map it, Evaluate to find your gaps, Learn to fill the most important ones, Verify to prove they're fixed, Explore to stretch, and Transform to lock it in and plan your next review. You won't always use all six — before a test you might go straight to Evaluate and Verify.

A worked example

Say you have ninety minutes on capacitance. Open with a View prompt to map the sub-topics — definition of capacitance, charging and discharging through a resistor, the time constant RC, energy stored, capacitors in series and parallel. Run the Evaluate diagnostic and find that the energy stored on a capacitor and the meaning of the exponential decay constant are shaky. Use two Learn prompts: an analogy for what RC physically represents, and a draw-from-memory prompt for a discharge curve with the half-life and time constant labelled. Then Verify with an examiner-marked six-marker on deriving the time taken for a capacitor to fall to half its initial charge. Finally, a Transform prompt schedules a review of capacitor energy in three days. One topic, five prompts, every stage earning its place.

Spread it out

The method works partly because it spaces your learning, so resist racing through this whole book in one sitting. A realistic rhythm is one or two topics a week through the full cycle, with short Verify and Transform reviews of earlier topics layered on top. The spacing is not a delay — it is the mechanism.

Lean on the prompts less over time

At first, use the prompts word for word. As you grow more confident, strip the scaffolding away — shorten them, raise the difficulty, and eventually run a whole stage from memory. The aim is to need this book less and less.

Trust, but Verify

AI is a powerful study partner, but it is not always right — and the danger is that you are using it precisely because you don't yet know the material well enough to notice when it's wrong. Treating its output as automatically correct is the single biggest risk in studying with AI.

What to watch for in Physics especially: AI can invent a plausible-looking mark scheme that doesn't match your board; it can produce algebra that looks right but drops a factor of two, or swaps r for r^2 in an inverse-square law; it can give a 'correct' numerical answer with the wrong unit prefix or the wrong number of significant figures; it can confuse exam-board conventions (directions of forces, sign conventions for work done on versus by a gas, or different definitions of the elementary charge depending on context); it can describe a phenomenon in general terms that is fine in a popular-science treatment but wrong at A-Level precision (for example, treating the photoelectric effect as if intensity affected the maximum kinetic energy of electrons). Always check any derived equation by checking units and limits, and trust your data booklet values over the AI's recall.

So build the habit of checking. Keep your specification and a trusted textbook to hand, and cross-reference anything that will go into your memory. Ask the AI to show its reasoning and where a mark point comes from, so you can judge it. When a marked answer surprises you, challenge it — ask why that is the model answer. And use the Verify-stage prompt that asks the AI to include a deliberate error, to keep your own eye sharp. If the AI and your specification ever disagree, the specification wins.

This is not a reason to distrust the tool. It is the skill that makes you safe to use it — and learning to check AI well is itself one of the most valuable things this method will teach you.

Quick Start: Which Prompt, When

Not sure where to begin? Match your situation to a stage:

Starting a brand-new topic: View (Prompts 1–10), then run a diagnostic.

A test tomorrow, short on time: the diagnostics (Prompts 11–25), then a few Verify prompts on your weak spots.

You've revised but it won't stick: Learn (Prompts 26–43), especially Feynman and draw-from-memory.

You know it but keep losing exam marks: Verify (Prompts 44–71), especially examiner marking and command words.

Aiming for the top grades: Explore (Prompts 72–88).

End of a session or week: Transform (Prompts 89–100).

When in doubt, run the Whole-Topic Diagnostic (Prompt 11) — it will tell you what you need.

These prompts are your toolkit.

The Velvet Method course is where you learn to wield them.

Six steps taught in full, worked examples for every stage, and a complete prompt library across your subjects.

Learn the method at aistudymethod.co.uk/courses

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Note on Exam Boards and Syllabi

This book supports A-Level Physics students across all major UK exam boards, including AQA, Edexcel (Pearson), OCR A, OCR B (Advancing Physics), and WJEC/Eduqas. The prompts cover the core content common to every specification, so whichever board you study, the great majority will be directly relevant.

Exam boards differ in option topics, in the contexts they use, and in the names they give to some sections, but the fundamental physics at A-Level is highly consistent: mechanics, materials, waves, electricity, photons and quantum, gravitational, electric and magnetic fields, capacitance, electromagnetic induction, nuclear and thermal physics, and practical and mathematical skills are examined by every board at comparable depth. Where specifications diverge — particularly on optional units such as astrophysics, medical physics, or engineering physics — the prompts are written broadly enough to remain useful, and engaging with material slightly outside your spec will still deepen your physical reasoning.

Always cross-reference with your own specification and use it as the definitive guide to what you will be examined on. This book is a powerful revision companion; your specification remains the final word on content.

V

View

Before you revise a single detail, build the big picture. The View stage uses AI to map the syllabus, find the core ideas a topic depends on, and see how everything connects — so that when you study the detail, it has somewhere to attach. Start here for any new topic.

Prompt 1: Map the Whole Specification

Copy this prompt into your AI tool:

> Act as an A-Level Physics tutor. Give me a structured overview of the entire A-Level Physics course, grouped into its major areas: mechanics, materials, waves and optics, electricity, quantum and particle physics, gravitational/electric/magnetic fields, capacitance and EM induction, nuclear and thermal physics, and the practical and mathematical skills that run across them. For each area, list the key sub-topics in a single line.

What this helps you practise: Seeing the whole course as one connected map before revising any single part.

How to use it well: Keep this overview somewhere visible and tick off each sub-topic as you secure it, so you always know where a new detail fits in the bigger picture.

Prompt 2: Build the Big Picture of a Topic

Copy this prompt into your AI tool:

> Before I study [topic, e.g. simple harmonic motion or particle physics] in detail, give me a one-paragraph big-picture summary: what this topic is fundamentally about, the three or four core ideas everything else hangs on, and how it connects to the rest of A-Level Physics.

What this helps you practise: Building a mental framework that later detail can attach to.

How to use it well: Read this before your textbook, not after. The framework makes the detailed reading far easier to absorb and remember.

Prompt 3: Create a Personalised Spec Checklist

Copy this prompt into your AI tool:

> Using the A-Level Physics specification for [your exam board] on the topic of [topic], produce a checklist of everything I must be able to do, written as a list of 'I can…' statements (for example, 'I can derive the equation $T = 2\pi\sqrt{(l/g)}$ for a simple pendulum and explain the small-angle approximation').

What this helps you practise: Turning a vague topic into a concrete, testable list of skills.

How to use it well: Tell the AI your exact board. Then RAG-rate each statement (red/amber/green) so your revision targets reds first.

Prompt 4: Find the Spine of a Topic

Copy this prompt into your AI tool:

> Identify the five or six absolutely central ideas in [topic, e.g. electromagnetism, or thermal physics] that everything else depends on. Explain in one line why each is load-bearing, and what falls apart if I don't understand it.

What this helps you practise: Distinguishing the core principles from the peripheral detail.

How to use it well: Master the spine first. Once the central ideas are secure, the surrounding detail attaches quickly and makes sense.

Prompt 5: See How a Topic Connects to the Course

Copy this prompt into your AI tool:

> Show me how [topic] links to other areas of A-Level Physics. Give me a synoptic map: for each connection, name the other topic and explain the link in one sentence (for example, simple harmonic motion links to waves, to circular motion, to alternating current, and to electron orbits in atomic models).

What this helps you practise: Thinking synoptically, which is what separates top grades at A-Level.

How to use it well: Synoptic links are heavily rewarded. Build these maps early so that by exam season the connections feel natural rather than forced.

Prompt 6: Prioritise by Exam Weighting

Copy this prompt into your AI tool:

> Based on past A-Level Physics papers for [your board], tell me which sub-topics of [module, e.g. fields or quantum] appear most frequently and carry the most marks. Help me rank what to prioritise if my revision time is limited.

What this helps you practise: Spending limited time where it earns the most marks.

How to use it well: Treat this as guidance, not gospel — always cross-check against your specification. But it's a sensible way to triage when time is short.

Prompt 7: Get a Five-Minute Primer Before a Lesson

Copy this prompt into your AI tool:

> I'm about to study [topic, e.g. nuclear binding energy] for the first time. Give me a five-minute primer: the key vocabulary I'll meet (mass defect, binding energy per nucleon, fission, fusion), the main idea in plain English, and the three questions I should be able to answer by the end of the lesson.

What this helps you practise: Priming your brain so new teaching lands on prepared ground.

How to use it well: Previewing before a lesson dramatically improves how much you take from it. The questions also tell you what to listen for.

Prompt 8: Turn Spec Points into Exam Questions

Copy this prompt into your AI tool:

> Take these specification statements for [topic] and, for each one, write the kinds of exam questions an examiner could realistically ask from it, including the likely command words (state, calculate, derive, explain, evaluate) and mark allocations.

What this helps you practise: Seeing your syllabus through the examiner's eyes.

How to use it well: This converts passive spec points into active targets. Keep the questions to test yourself with later in the Verify stage.

Prompt 9: Sketch a Concept Map of the Field Analogies

Copy this prompt into your AI tool:

> Describe a concept map that compares gravitational, electric and magnetic fields at A-Level: list the key quantities (field strength, potential, force, flux), the analogous equations, the differences (sign, attractive/repulsive, source of field), and the limits of the analogy — as a set of nodes and labelled links for me to draw out by hand.

What this helps you practise: Organising the three fields topics around their shared and differing structure.

How to use it well: Draw it yourself rather than copying — the act of arranging the nodes is where the learning happens. Use the same diagram in revision and in answers.

Prompt 10: Set a Clear Goal for a Revision Session

Copy this prompt into your AI tool:

> Help me set a specific, achievable objective for a 45-minute revision session on [topic, e.g. circular motion]. Define exactly what I should be able to do by the end, and break it into three concrete checkpoints.

What this helps you practise: Giving each session a clear purpose instead of vague 'reading'.

How to use it well: A session with a defined endpoint is far more effective than open-ended revision. Check off the three checkpoints as you go.

E

Evaluate

You can't fix gaps you haven't found. The Evaluate stage uses AI as a diagnostic: it tests you, catches the things you only think you know, and tells you precisely where to spend your time. Honest answers here save you hours later.

Prompt 11: Whole-Topic Diagnostic with Confidence Rating

Copy this prompt into your AI tool:

> You are an A-Level Physics examiner running a diagnostic. Write 12 short-answer questions spanning [topic, e.g. simple harmonic motion], with a spread of difficulty and varied command words (state, calculate, derive, explain). Present them and wait. I will answer each and tag my confidence as (Sure), (Unsure) or (Guess). Then mark against concise model answers, flag anything I marked (Sure) but got wrong as my most dangerous gap, flag anything I got right but marked (Guess) as not yet secure, and rank my weakest sub-topics with what to study first. Finally, give me a one-sentence summary of my top three dangerous gaps that I can paste straight into my revision tracker.

What this helps you practise: Pinpointing exactly where your understanding is weakest before you revise.

How to use it well: The confidence tags are the magic: they catch the gaps a normal quiz hides — the things you got right by luck and the things you were wrong but certain about.

Prompt 12: Rapid Recall Audit

Copy this prompt into your AI tool:

> Give me 15 quick recall questions covering the breadth of [module, e.g. fields, or particle physics], one at a time, no notes allowed. At the end, sort every topic I touched into three buckets: secure, shaky, and missing.

What this helps you practise: A fast, honest snapshot of what's actually in your memory.

How to use it well: Do this closed-book and resist the urge to look anything up — the value is in the honest result, not a good score.

Prompt 13: Find My Misconceptions

Copy this prompt into your AI tool:

> Ask me to explain [concept, e.g. why a satellite in orbit is in free fall, or what 'voltage' actually is]. As I answer, probe for the specific misconceptions A-Level Physics students commonly hold (for example, thinking there is no gravity in orbit, or treating current as 'used up' by a resistor), and tell me clearly which ones I'm showing.

What this helps you practise: Surfacing the subtle wrong ideas that quietly cost marks.

How to use it well: Misconceptions are dangerous because they feel like knowledge. Naming yours is the first step to fixing them.

Prompt 14: Pre-Test Triage

Copy this prompt into your AI tool:

> I have a test on [topic] tomorrow. Run a quick diagnostic to find out where my understanding is weakest, then tell me precisely which two or three areas to spend tonight on, and roughly how long on each.

What this helps you practise: Turning night-before panic into a focused, prioritised plan.

How to use it well: Be honest in your answers — a diagnosis based on bluffing sends you to revise the wrong things.

Prompt 15: Command-Word Diagnostic

Copy this prompt into your AI tool:

> Test whether I can handle different command words on the same content. Ask me a 'state', then a 'calculate', then an 'explain', then a 'derive' question on [topic, e.g. capacitor discharge], and tell me which command word I struggle with most.

What this helps you practise: Diagnosing exam-technique gaps, not just knowledge gaps.

How to use it well: Many students lose marks not because they don't know the content but because they 'state' when asked to 'explain'. This finds that pattern.

Prompt 16: Map the Gaps Across a Module

Copy this prompt into your AI tool:

> Sweep across the whole of [module, e.g. fields and capacitance] with a broad set of questions including derivations, calculations, graph sketches and conceptual explanations. Output a ranked gap list — my weakest area at the top — with a one-line reason for each ranking.

What this helps you practise: Getting a module-wide picture rather than topic tunnel vision.

How to use it well: Use the ranked list to plan a week of revision, working top-down from your biggest weakness.

Prompt 17: Test Depth, Not Just Surface

Copy this prompt into your AI tool:

> Ask me about [concept, e.g. the work–energy theorem, or de Broglie wavelength], and whatever I answer, keep asking 'why' and 'how do you know' until either my understanding runs out or you're satisfied it's genuinely deep. Then tell me where it ran out.

What this helps you practise: Distinguishing real understanding from memorised statements.

How to use it well: The point where you can no longer answer 'why' is exactly where your real revision should begin.

Prompt 18: Diagnose My Maths-in-Physics Skills

Copy this prompt into your AI tool:

> Test my quantitative skills for A-Level Physics with a short mixed set: rearranging an equation with three unknowns, using exponentials in radioactive decay, applying logs to find

> a decay constant, vector resolution on an inclined plane, an inverse-square law calculation, a ratio-reasoning question (what happens to F if r doubles), and a percentage uncertainty propagation. Tell me which I need to practise.

What this helps you practise: Catching the maths skills that A-Level Physics quietly demands across every paper.

How to use it well: A large fraction of A-Level Physics marks are quantitative. Don't let these be the easy marks you drop.

Prompt 19: Diagnose My Practical Understanding

Copy this prompt into your AI tool:

> Quiz me on the required practical for [practical, e.g. determining the Young modulus of a wire, or investigating the relationship between g and pendulum length]: independent and dependent variables, control variables, sources of error, what to plot to get a straight line, and how reliability and validity were ensured. Tell me where my practical understanding is thin.

What this helps you practise: Securing the practical-skills marks that appear across every paper.

How to use it well: Examiners love practical questions because students under-revise them. This finds your blind spots before they do.

Prompt 20: Test a Linked Concept

Copy this prompt into your AI tool:

> Give me a diagnostic that specifically checks whether I can connect [topic A, e.g. circular motion] and [topic B, e.g. gravitational fields], not just recall each separately — for example, a question on satellite orbits. Tell me whether my weakness is in the individual topics or in linking them.

What this helps you practise: Diagnosing synoptic weakness, a common hidden gap.

How to use it well: You can know two topics well and still fail to link them. This isolates which problem you actually have.

Prompt 21: Self-Explanation Check

Copy this prompt into your AI tool:

> I'm going to explain [topic, e.g. why a transformer requires alternating current] to you in my own words. Listen, then identify every gap, error, vague statement, or missing link in my explanation, in order of importance.

What this helps you practise: Forcing the gaps in your understanding to reveal themselves.

How to use it well: Explaining out loud exposes far more than re-reading ever will. The vague bits in your explanation are your real gaps.

Prompt 22: Exam-Readiness Score

Copy this prompt into your AI tool:

> Act as a tough A-Level Physics examiner. Ask me the hardest questions you realistically could on [topic], then rate my readiness for each sub-area on a scale of 1 to 5 and justify each score.

What this helps you practise: Getting a frank, examiner's-eye assessment of where you stand.

How to use it well: Ask it to be strict. A flattering score the week before an exam helps nobody.

Prompt 23: Confidence vs Competence Audit

Copy this prompt into your AI tool:

> For [topic, e.g. waves], first ask me how confident I feel about each sub-area (standing waves, superposition, refraction, diffraction, polarisation, interference). Then test me on each. Finally, show me where my confidence and my actual performance don't match.

What this helps you practise: Exposing over-confidence, which is where careless marks are lost.

How to use it well: The mismatches matter most: areas you feel sure about but perform poorly on are where exam disasters happen.

Prompt 24: Diagnose from a Mistake

Copy this prompt into your AI tool:

> Here is a question I got wrong: [paste the question and my answer]. Don't just give me the right answer — diagnose the underlying gap or misconception that caused the mistake, and tell me what else that gap probably affects.

What this helps you practise: Learning from errors at the level of the cause, not the symptom.

How to use it well: One mistake often points to a deeper gap that's costing you elsewhere too. Fix the cause, not just the instance.

Prompt 25: Weekly Diagnostic Sweep

Copy this prompt into your AI tool:

> Run my weekly diagnostic across everything I've revised this week: [list topics]. Compare my performance, tell me what has improved and what is slipping, and what needs revisiting before next week.

What this helps you practise: Tracking progress and catching topics that fade over time.

How to use it well: Knowledge decays without review. A weekly sweep catches the slipping topics before they're forgotten.

L

Learn

Now fill the gaps in a way that sticks. The Learn stage uses AI to explain, analogise, roleplay, and break concepts down — and crucially to check your understanding, not just deliver information. One rule for every prompt here: when an explanation finally clicks, close the chat and reproduce it from memory, out loud or on paper, before moving on. Understanding something as you read it is not the same as being able to recall it later — the moment of 'I get it' is the cue to test yourself, not to stop.

Prompt 26: Explain with an Analogy

Copy this prompt into your AI tool:

> Explain [difficult concept, e.g. why the area under a force–displacement graph equals work done, or why electric potential is negative inside an atom] using a clear everyday analogy. Then ask me to map each part of the analogy back onto the real physics to check I've understood, not just enjoyed the story.

What this helps you practise: Grasping an abstract process by anchoring it to something familiar.

How to use it well: Always map the analogy back to the physics — an analogy you can't translate is entertainment, not understanding.

Prompt 27: Use the Feynman Technique

Copy this prompt into your AI tool:

> I'm going to explain [topic, e.g. why electromagnetic induction generates an EMF] as simply as if I were teaching a 14-year-old. Listen, then point out exactly where I used jargon to paper over a gap, where my logic broke, and where I oversimplified to the point of being wrong.

What this helps you practise: Achieving genuine understanding by teaching it plainly.

How to use it well: If you can't explain it simply, you don't fully understand it. The jargon you reach for marks the gaps.

Prompt 28: Roleplay the Particle

Copy this prompt into your AI tool:

> Roleplay as an electron travelling through a single-slit and then a double-slit experiment. Narrate what happens at each stage — the wavefunction spreading, the interference pattern building up, the single-particle versus pattern paradox — and quiz me on what's happening as we go.

What this helps you practise: Making a counter-intuitive quantum phenomenon vivid and memorable.

How to use it well: Narrative ordering helps multi-step processes stick. Try it for any process where the sequence matters (chain reactions, charging capacitors, ray paths through a fibre).

Prompt 29: Build a Mnemonic

Copy this prompt into your AI tool:

> Help me create a memorable mnemonic for [ordered list or set, e.g. the electromagnetic spectrum in increasing frequency, or the SUVAT equations and when each applies]. Then test me on whether I can reconstruct the full list from the mnemonic.

What this helps you practise: Locking ordered sequences and equation sets into long-term memory.

How to use it well: Make the mnemonic slightly absurd or personal — odd associations are easier to recall than bland ones.

Prompt 30: Walk Me Through, Then Blank It Out

Copy this prompt into your AI tool:

> Walk me through [derivation, e.g. deriving the equation for the time period of a mass on a spring, or for the de Broglie wavelength of an accelerated electron] one clear step at a time. Then give the same derivation back to me with key steps blanked out for me to fill in.

What this helps you practise: Moving from guided understanding to independent recall of a derivation.

How to use it well: The blank-it-out step is the learning. Don't skip it because the walkthrough felt clear — clear isn't the same as learned.

Prompt 31: Compare and Contrast

Copy this prompt into your AI tool:

> Build a comparison table for [X vs Y, e.g. gravitational and electric fields, or alpha, beta and gamma radiation]. Include the points A-Level examiners care about (equations, signs, magnitudes, range, ionisation). Then quiz me specifically on the differences, since that's what questions target.

What this helps you practise: Sharpening the distinctions examiners love to test.

How to use it well: Confusable pairs are exam favourites. Knowing the differences cold is worth more than knowing each in isolation.

Prompt 32: Teach the Hard Bit Three Ways

Copy this prompt into your AI tool:

> Explain [tricky concept, e.g. resonance, or why the photon model fits the photoelectric effect] to me in three completely different ways — a definition-led way, an analogy, and a worked example with real numbers. Then ask me which made it click and test that understanding.

What this helps you practise: Finding the explanation that actually works for you.

How to use it well: Different concepts yield to different explanations. Keep the version that clicks and use it as your anchor.

Prompt 33: Ground the Abstract in the Concrete

Copy this prompt into your AI tool:

> Take this abstract idea — [e.g. flux linkage, or potential difference] — and give me two concrete, specific physics examples of it in action with real numbers and units, then ask me to generate a third myself.

What this helps you practise: Connecting principles to the real examples exams demand.

How to use it well: Generating your own example is the test of understanding. If you can produce a new case, you've got the principle.

Prompt 34: Draw It from Memory

Copy this prompt into your AI tool:

> Guide me to draw a labelled diagram of [setup, e.g. a single-slit diffraction experiment, a transformer with primary and secondary coils, or the velocity selector in a mass spectrometer] from memory. Ask me what goes where, then tell me what I missed or mislabelled.

What this helps you practise: Building the precise, labelled recall that diagrams require.

How to use it well: Drawing from memory is retrieval, not copying. Redraw until you can produce the full labelled version unaided.

Prompt 35: Why Does It Work That Way?

Copy this prompt into your AI tool:

> Don't just tell me what happens in [phenomenon, e.g. total internal reflection, or beta-plus decay] — explain why it works that way from underlying principles. Give the underlying reason for each step (conservation laws, refractive indices, weak interaction), so I understand the logic rather than memorising a sequence.

What this helps you practise: Replacing rote memory with causal understanding.

How to use it well: Understanding the 'why' means you can reconstruct the 'what' even if you forget it, and handle unfamiliar twists.

Prompt 36: Unpack a Definition Word by Word

Copy this prompt into your AI tool:

> Take this precise A-Level definition — [e.g. of gravitational potential, of electric field strength, or of a node in a standing wave] — and unpack it word by word, explaining why each term is in there (per unit, at infinity, at a point) and what would be wrong if it were left out.

What this helps you practise: Mastering the exact wording examiners require.

How to use it well: A-Level definitions are precise for a reason. Knowing why each word matters helps you reproduce them exactly.

Prompt 37: Link Equation to Physics

Copy this prompt into your AI tool:

> For [equation, e.g. $F = BIL \sin\theta$, or $T = 2\pi\sqrt{(m/k)}$], explain in detail what each symbol means, what physical situation each was derived for, the limits of the equation, and a concrete

> situation in which it correctly predicts behaviour. Then ask me to do the same for a different equation.

What this helps you practise: Mastering equations as physics rather than as algebra.

How to use it well: Equations on your data sheet are useless unless you know when they apply. Practise stating the conditions for each one.

Prompt 38: Interleave Two Confusable Topics

Copy this prompt into your AI tool:

> Alternate between explaining and quizzing me on [topic A, e.g. magnetic flux density] and [topic B, e.g. magnetic flux linkage], which I keep mixing up. Deliberately switch between them so I have to tell them apart each time.

What this helps you practise: Building the discrimination to keep similar topics separate.

How to use it well: Interleaving feels harder than studying one topic at a time, but it's exactly that difficulty that stops you confusing them.

Prompt 39: Turn My Notes into Understanding

Copy this prompt into your AI tool:

> Here are my notes on [topic, e.g. nuclear fission]: [paste]. Turn them into a clear, causal explanation, and point out anything I've written down as a fact without actually understanding why it's true.

What this helps you practise: Converting copied notes into genuine comprehension.

How to use it well: Notes can hide a lack of understanding. This step exposes the lines you've memorised but couldn't explain.

Prompt 40: Explore What Happens If a Condition Changes

Copy this prompt into your AI tool:

> For [system, e.g. a mass on a spring undergoing SHM, or a charged capacitor in an RC circuit], walk through what would change if one specific condition were altered — for example, if the spring constant were doubled, or if the resistor were replaced with one of half the value. Use the change to test whether I really understand the working system.

What this helps you practise: Deepening understanding by examining how a system responds to change.

How to use it well: Understanding how systems respond proves you understand the underlying physics, and prepares you for application questions.

Prompt 41: Build Precise Vocabulary

Copy this prompt into your AI tool:

> Generate the key technical terms for [topic, e.g. quantum physics — photon, work function, threshold frequency, de Broglie wavelength], each with a precise A-Level definition and a sentence showing correct use. Then test me by giving definitions and asking for the term, and vice versa.

What this helps you practise: Building the exact vocabulary that earns marks.

How to use it well: Imprecise vocabulary loses marks even when the idea is right. Drill the exact terms until they're automatic.

Prompt 42: Explain the Shape of a Graph

Copy this prompt into your AI tool:

> Talk me through interpreting the [named curve, e.g. the binding-energy-per-nucleon curve, a stress–strain graph for a ductile metal, or a decay curve for radioactive activity]. Explain the physics behind every section, then give me a blank version to annotate myself.

What this helps you practise: Understanding the physics behind standard graphs, not just their shapes.

How to use it well: Examiners ask you to explain shapes, not just recognise them. Always tie each part of the curve to the underlying physics.

Prompt 43: Make a Phenomenon into a Story

Copy this prompt into your AI tool:

> Turn [multi-stage process, e.g. the chain of events in a fission reactor from neutron capture to electrical generation] into a short, vivid story with a clear sequence of events, then quiz me on the order and the key things that happen at each stage.

What this helps you practise: Using narrative structure to remember multi-stage physical processes.

How to use it well: Sequences are easier to recall as a story than as a list. Make the cause-and-effect chain the plot.

V

Verify

Familiar is not the same as known. The Verify stage uses AI as an examiner: it asks exam-style questions, marks you against realistic mark schemes, and shows you exactly where marks are won and lost. This is the heart of the method, so this is the longest chapter.

Prompt 44: Examiner Marking Against a Mark Scheme

Copy this prompt into your AI tool:

> Act as a senior A-Level Physics examiner. Give me one 6-mark question on [topic]. After I answer, mark it against a realistic mark scheme: list each available mark point, show which I hit and which I missed, award a mark out of 6, and tell me the single most valuable improvement.

What this helps you practise: Practising extended answers and learning how marks are actually awarded.

How to use it well: The mark-by-mark breakdown is the gold here. Note which mark points you keep missing — that pattern is your improvement plan.

Prompt 45: Closed-Book Retrieval Quiz

Copy this prompt into your AI tool:

> Quiz me on [topic] with ten questions, one at a time, no notes allowed. Don't give me the answer until I've committed to mine, then tell me if I'm right and correct any error precisely.

What this helps you practise: Strengthening memory through the act of retrieval itself.

How to use it well: Retrieval, not re-reading, is what builds durable memory. Commit to an answer before checking — the effort is the point.

Prompt 46: Drill the 'Explain' Reasoning Chain

Copy this prompt into your AI tool:

> Give me an 'explain' question on [topic, e.g. why a conductor moved through a magnetic field experiences an induced EMF]. Mark me specifically on whether my answer forms a complete chain of reasoning, where each point causes the next, rather than a list of disconnected facts.

What this helps you practise: Building the linked reasoning that 'explain' questions demand.

How to use it well: 'Explain' means show the causal links. A list of true facts with no connections rarely scores full marks.

Prompt 47: Find the Missing Mark Points

Copy this prompt into your AI tool:

> Write a model answer to a 5-mark question on [topic], then remove two of the mark points and present it to me. Ask me to identify exactly which two mark-worthy points are missing.

What this helps you practise: Training your eye to see what a full-mark answer requires.

How to use it well: Learning to spot what's missing from a good answer is how you stop leaving marks on the table in your own.

Prompt 48: Demand Precise Definitions

Copy this prompt into your AI tool:

> Test me on the key definitions for [topic, e.g. fields — electric field strength, electric potential, equipotential]. Accept only answers that are precise to A-Level standard — if I'm vague or miss a key word (per unit, at infinity, positive test charge), tell me exactly which word would have earned the mark.

What this helps you practise: Producing the exact wording that definition marks require.

How to use it well: One missing word can cost a definition mark. This drills the precision examiners insist on.

Prompt 49: Mark a Derivation

Copy this prompt into your AI tool:

> Ask me to derive [equation, e.g. $v = \sqrt{(GM/r)}$ for circular orbit, or the equation linking refractive index to critical angle]. Mark me strictly on each line: are the starting principles correct, are the substitutions valid, are the steps justified, is the algebra clean? Give me a mark out of 4.

What this helps you practise: Producing exam-accurate derivations that earn every available mark.

How to use it well: Most derivation marks are lost on missing justification, not algebra. Write a short reason for each step.

Prompt 50: Application Question, Marked

Copy this prompt into your AI tool:

> Give me an application question that places [principle, e.g. conservation of momentum, or Lenz's law] in an unfamiliar context. After I answer, mark whether I correctly applied the principle to the new situation rather than just restating what I memorised.

What this helps you practise: Practising the application skill that distinguishes strong candidates.

How to use it well: Application questions reward transfer, not recall. Marks come from using the principle, not reciting it.

Prompt 51: Structure a Six-Marker

Copy this prompt into your AI tool:

> Give me a 6-mark extended-response question on [topic]. Before marking my content, assess the structure of my answer: is it logically ordered, does it address the command word, and does it make the right number of distinct points for the marks available?

What this helps you practise: Structuring long answers so every mark is reachable.

How to use it well: Examiners can only award marks they can find. Clear structure makes your points easy to credit.

Prompt 52: Check a Multi-Step Calculation

Copy this prompt into your AI tool:

> Give me a quantitative A-Level Physics problem on [topic, e.g. capacitor charging time, projectile motion with air resistance ignored, or photon energy and momentum]. Mark my working as well as my answer, since method marks matter.

What this helps you practise: Securing the maths marks and the method marks behind them.

How to use it well: Show full working — method marks are available even when the final answer is wrong. Never just write the answer.

Prompt 53: Interpret Data, Then Get Marked

Copy this prompt into your AI tool:

> Present me with a set of physics data — for example a decay-count table, a stress–strain graph, or a log–linear plot of intensity against distance — on [topic]. Ask me to describe the trend and explain it, then mark me separately on the 'describe' and the 'explain', since students often do one well and the other poorly.

What this helps you practise: Separating data-description skill from data-explanation skill.

How to use it well: Describe what the data shows (with figures and gradients) before you explain why. Mixing the two is a common mark-loser.

Prompt 54: Synoptic Retrieval Challenge

Copy this prompt into your AI tool:

> Ask me a question that requires me to pull together knowledge from at least three different areas of A-Level Physics to answer fully — for example, a problem on a satellite that needs circular motion, gravitational fields, and energy. Mark me on the breadth and the quality of the links I make.

What this helps you practise: Retrieving and connecting across topics under question pressure.

How to use it well: Synoptic questions reward range and linkage. Practise reaching deliberately into other topics for relevant points.

Prompt 55: Same Topic, Different Command Words

Copy this prompt into your AI tool:

> Ask me three questions on [topic] using three different command words — for example 'state', 'calculate' and 'derive'. Mark each against what that specific command word requires, and tell me which I handle worst.

What this helps you practise: Matching your answer to what each command word actually demands.

How to use it well: The content may overlap, but the command word changes what scores. This builds that discrimination.

Prompt 56: Mark Significant Figures and Units

Copy this prompt into your AI tool:

> Test me on calculations from [topic]. Mark me strictly on significant figures, unit conversions, and unit consistency — the technical accuracy marks examiners regularly remove without students noticing.

What this helps you practise: Hardening the technical accuracy that quietly costs marks across the paper.

How to use it well: Significant figures and units are easy marks lost in a moment. Train yourself to add and check them by default.

Prompt 57: Spring the Common Error Trap

Copy this prompt into your AI tool:

> Ask me questions on [topic] that are deliberately designed around the errors A-Level Physics students most commonly make (for example, confusing 'weight' with 'mass', dropping the factor of one half in kinetic energy, or using sin instead of tan when resolving on a slope). Catch me if I fall for one and explain the precise correct version.

What this helps you practise: Inoculating yourself against the classic, predictable mistakes.

How to use it well: Examiners know the common errors and test for them. Knowing yours in advance is half the battle.

Prompt 58: Rapid-Fire Definitions

Copy this prompt into your AI tool:

> Fire 15 key terms from [module, e.g. fields, or particle physics] at me, one at a time, and ask me to give the precise definition for each as fast as I can. Then list the ones I got wrong or vague for me to drill again.

What this helps you practise: Making core definitions fast and automatic.

How to use it well: Speed matters — in the exam you want definitions to come instantly so your thinking time goes on the hard parts.

Prompt 59: Predict the Mark Scheme

Copy this prompt into your AI tool:

> Show me a past-paper-style question on [topic]. Before answering, I'll predict what the mark scheme rewards (which mark points and in what wording). Then reveal a realistic mark scheme and tell me how accurate my prediction was.

What this helps you practise: Learning to think like the examiner who wrote the mark scheme.

How to use it well: If you can predict the mark scheme, you can target your answer at it. This builds that examiner's instinct.

Prompt 60: Verify a Diagram

Copy this prompt into your AI tool:

> Ask me to describe or sketch [diagram, e.g. the field lines around a positive and negative point charge, or a ray diagram for total internal reflection in a step-index optical fibre]. Then

> critique my version against what an examiner expects: correct axes, correct labels, correct conventions.

What this helps you practise: Producing exam-accurate diagrams under recall conditions.

How to use it well: Diagram marks are precise — wrong field-line directions or missing arrows lose them. Verify yours against the expected version.

Prompt 61: Drill Uncertainty Propagation

Copy this prompt into your AI tool:

> Give me a problem on [topic, e.g. determining a resistivity from measurements of length, diameter and resistance] and ask me to calculate the value and its absolute uncertainty correctly. Mark me on the method of combining uncertainties as well as the answer.

What this helps you practise: Securing the uncertainty marks that examiners reliably award and students reliably miss.

How to use it well: Always state whether you are adding absolute uncertainties (sum/difference) or percentage uncertainties (product/quotient). Method marks come from saying so explicitly.

Prompt 62: Practise a 'Compare' Question

Copy this prompt into your AI tool:

> Give me a 'compare' question on [X and Y, e.g. gravitational and electric fields, or transverse and longitudinal waves]. Mark me on whether I made genuine comparative statements (linking the two) rather than describing each separately, which scores poorly.

What this helps you practise: Writing true comparisons rather than parallel descriptions.

How to use it well: A real comparison uses linking words — 'whereas', 'in contrast', 'both'. Two separate descriptions side by side rarely earn the comparison marks.

Prompt 63: Practise an 'Evaluate' Question

Copy this prompt into your AI tool:

> Give me an 'evaluate' question on [topic, e.g. the suitability of a particular energy source from a physics perspective]. Mark me on whether I presented evidence on more than one side and reached a justified conclusion, rather than just listing points.

What this helps you practise: Building the balanced judgement 'evaluate' requires.

How to use it well: 'Evaluate' wants a weighed conclusion, not a list. Make sure you actually come down on a side, with a reason.

Prompt 64: Practise a 'Suggest' Question

Copy this prompt into your AI tool:

> Give me a 'suggest' question that puts [topic] in an unfamiliar scenario where there isn't one textbook answer. Mark me on whether my suggestion is physically reasonable and properly justified.

What this helps you practise: Building the applied reasoning that 'suggest' questions test.

How to use it well: 'Suggest' rewards sensible, justified physics in a new context — there's room for more than one good answer, so reason it through.

Prompt 65: Climb the Define–Describe–Explain Ladder

Copy this prompt into your AI tool:

> On [single concept, e.g. radioactive half-life], ask me first to define a key term, then to describe what happens in a worked example, then to explain why. Mark each rung separately so I can see where my answer stops being strong.

What this helps you practise: Seeing exactly where your understanding shifts from solid to shaky.

How to use it well: The rung where your answer weakens shows the boundary of your real understanding — revise from there.

Prompt 66: Mark My Real Answer

Copy this prompt into your AI tool:

> Here is my answer to [question]: [paste]. Mark it strictly to A* standard against a realistic mark scheme, tell me the exact mark, and rewrite one sentence of mine to show what top-mark phrasing looks like.

What this helps you practise: Getting precise, personalised feedback on your actual writing.

How to use it well: The rewritten sentence is a model to imitate. Compare it with yours to see exactly what 'top mark' phrasing adds.

Prompt 67: Fill a Retrieval Grid

Copy this prompt into your AI tool:

> Create a retrieval grid for [topic, e.g. waves]: a set of prompts or blank cells covering the key equations, definitions, units and quick conceptual questions, which I'll fill in entirely from memory. Then check my grid and highlight the gaps.

What this helps you practise: Wide-coverage recall practice in one efficient exercise.

How to use it well: Retrieval grids cover a lot of ground fast. Redo the gaps a day later to confirm they've stuck.

Prompt 68: Simulate a Timed Question

Copy this prompt into your AI tool:

> Give me a single A-Level question on [topic] with a stated mark allocation, and tell me the realistic time I'd get for it in the exam (a mark a minute is a good rule of thumb). I'll answer under that time pressure, then you mark it.

What this helps you practise: Practising working accurately at exam pace.

How to use it well: Knowing your content isn't enough if you're too slow. Practise to the clock so timing never surprises you.

Prompt 69: Sit a Mini Past-Paper Set

Copy this prompt into your AI tool:

> Give me a short set of five exam-style questions covering the breadth of [module], mixing recall, calculation, and data questions, as a real paper would. Mark the whole set and summarise my strongest and weakest question types.

What this helps you practise: Rehearsing the mixed demands of a real exam paper.

How to use it well: Mixed sets reveal which question types you fear. Drill the weakest type specifically afterwards.

Prompt 70: Catch the AI's Deliberate Error

Copy this prompt into your AI tool:

> Answer this question yourself: [question, e.g. a numerical problem in capacitor energy, or a derivation in SHM]. Include exactly one subtle but real physical error in your answer — for example, a factor of two missing, a sign error, or the wrong power of ten in a constant — and challenge me to find and correct it. Tell me if I got it, then explain the error and why it would have been easy to miss — so I learn the spotting pattern, not just the specific instance.

What this helps you practise: Building the critical eye to spot when AI (or you) is wrong.

How to use it well: This is essential AI-literacy: the AI can be confidently wrong, especially on factors of two and sign conventions. Practising spotting errors protects you from absorbing them.

Prompt 71: Mixed Whole-Paper Retrieval

Copy this prompt into your AI tool:

> Quiz me with 12 questions drawn from across everything in A-Level Physics I've named: [list topics]. Mix the topics randomly, as an exam does, and at the end tell me which topics I'm weakest on overall.

What this helps you practise: Retrieving under the topic-switching conditions of a real exam.

How to use it well: Random topic order is harder than block revision — and exactly what the exam does. Train for it.

E

Explore

Top grades come from thinking, not just knowing. The Explore stage uses AI to push you into application, analysis, unseen data, and synoptic links across the course — the level that separates good answers from excellent ones.

Prompt 72: Tackle Unseen Data

Copy this prompt into your AI tool:

> Give me a novel data-analysis question for A-Level Physics using an unfamiliar experiment related to [topic, e.g. capacitor discharge]. Provide data I've never seen (raw voltage versus time, or log voltage versus time), ask me to deduce the time constant and explain my reasoning, then tell me how well I handled the unfamiliarity.

What this helps you practise: Applying knowledge to genuinely new data, as top questions demand.

How to use it well: The hardest marks come from unfamiliar contexts. The more strange data you practise on, the less anything surprises you.

Prompt 73: Build a Synoptic Chain

Copy this prompt into your AI tool:

> Challenge me to connect at least three different A-Level Physics topics into a single chain of reasoning about [theme, e.g. how a transformer converts mechanical energy into electrical energy in a power station]. Push me to make each link explicit and physically sound.

What this helps you practise: Constructing the extended, cross-topic reasoning that earns top grades.

How to use it well: Top candidates connect topics. Practise building chains: mechanics → electromagnetic induction → circuits → power transmission.

Prompt 74: Apply a Principle to a New Context

Copy this prompt into your AI tool:

> Take [principle, e.g. conservation of energy, or the inverse-square law] and give me a scenario I won't have studied — an unusual device or natural phenomenon — where I have to apply it. Then judge whether I applied it correctly.

What this helps you practise: Transferring a principle beyond the example you learned it with.

How to use it well: Real understanding is shown by transfer. If you can only use a principle in its original example, you don't fully own it yet.

Prompt 75: Critique an Experimental Design

Copy this prompt into your AI tool:

> Describe a flawed experiment investigating [topic, e.g. determining g with a pendulum, or measuring the resistivity of a wire]. Ask me to identify the weaknesses — systematic errors, random errors, uncontrolled variables, calibration issues, parallax — and suggest specific improvements. Then evaluate my critique.

What this helps you practise: Building the experimental-evaluation skill examiners reward heavily.

How to use it well: Practical evaluation marks are abundant and under-revised. Train your eye to spot what's wrong with a method.

Prompt 76: Predict and Justify

Copy this prompt into your AI tool:

> Set me a scenario about [topic, e.g. a charged particle entering a region of crossed electric and magnetic fields] and ask me to predict what would happen, then justify my prediction with physics. Tell me whether my reasoning, not just my prediction, was sound.

What this helps you practise: Reasoning forward from principles to predicted outcomes.

How to use it well: In application questions the justification scores, not the guess. Always explain the physics behind your prediction.

Prompt 77: Investigate an Open Question

Copy this prompt into your AI tool:

> Pose me a genuinely open physics question related to [topic, e.g. 'is the photon a particle, a wave, or neither?'] — one where you explore possibilities with me rather than giving a single answer — and challenge my reasoning at each step.

What this helps you practise: Practising the exploratory thinking behind the hardest questions.

How to use it well: Sit with open questions rather than rushing to one answer. The ability to reason through uncertainty is what 'suggest' and 'discuss' questions reward.

Prompt 78: Connect to Real Research

Copy this prompt into your AI tool:

> Link [topic] to a real-world example or piece of research — for instance gravitational-wave detection, the Large Hadron Collider, fusion reactors, or MRI scanners — and ask me application questions that use that context.

What this helps you practise: Seeing how textbook physics shows up in unfamiliar exam contexts.

How to use it well: Exam contexts are often drawn from real research. Familiar real examples make unseen contexts less intimidating.

Prompt 79: Reason Across Scales

Copy this prompt into your AI tool:

> Ask me a question that requires me to reason from the sub-atomic and quantum scale up to the macroscopic level for [topic, e.g. why a metal conducts electricity, or why a hot object emits a thermal spectrum]. Judge whether I kept the chain of cause and effect intact across the scales.

What this helps you practise: Building the multi-scale reasoning that synoptic questions demand.

How to use it well: Keeping a causal chain coherent from particle to bulk is a high-level skill. Practise it deliberately.

Prompt 80: Interpret a Graph You've Never Seen

Copy this prompt into your AI tool:

> Show me (in words) an unfamiliar graph or figure related to [topic] that I wouldn't have met in class — for example a log–log plot of intensity against distance, or an I–V characteristic for a non-ohmic component I haven't seen. Ask me to interpret it from first principles, then tell me what I read well and what I missed.

What this helps you practise: Reading unfamiliar figures using underlying physics, not memory.

How to use it well: Unseen graphs test whether you understand the physics or just memorised familiar shapes. Reason from the axes up.

Prompt 81: Design an Investigation

Copy this prompt into your AI tool:

> Ask me to design an experiment to investigate [question related to topic, e.g. the relationship between the period of a mass on a spring and the suspended mass]. Require me to state the variables, controls, method, expected results, and how I'd ensure reliability and validity, then critique my design.

What this helps you practise: Mastering experimental design, a guaranteed source of marks.

How to use it well: Designing investigations forces you to understand variables and controls deeply — exactly what practical questions test.

Prompt 82: Challenge My Reasoning

Copy this prompt into your AI tool:

> I'll make a physical claim and my reasoning for it about [topic, e.g. why a satellite at a higher orbit moves more slowly than one at lower orbit]. Your job is to challenge it — find the flaw, the missing step, or the better counter-argument — and push me to defend or revise my position.

What this helps you practise: Strengthening arguments by stress-testing them.

How to use it well: Having your reasoning challenged is uncomfortable and valuable. A claim that survives scrutiny is one you can defend in the exam.

Prompt 83: Choose the Right Model

Copy this prompt into your AI tool:

> Give me a physical scenario in [topic] and a set of possible models or assumptions (point mass vs extended body, constant g vs varying g, uniform field vs radial field, ideal gas vs real gas). Ask me which is most appropriate and to justify the choice, then tell me if I'm right and why.

What this helps you practise: Applying physical judgement to decide between competing models.

How to use it well: Choosing the correct model, and justifying it, is a recurring A-Level skill. Learn the conditions each model requires.

Prompt 84: Debate an Ethical or Evaluative Issue

Copy this prompt into your AI tool:

> Set me an evaluative question on a contested area such as nuclear power, satellite navigation, or large-scale particle accelerators. Mark me on whether I presented a balanced argument with evidence on both sides and a justified conclusion.

What this helps you practise: Building the balanced, evidence-based judgement evaluative questions need.

How to use it well: Evaluative questions want both sides and a reasoned verdict. Avoid one-sided lists — weigh the arguments and conclude.

Prompt 85: Solve a Novel Problem

Copy this prompt into your AI tool:

> Give me a problem on [topic] that I can only solve by combining two or more principles I've learned separately — for example, a question on a charged sphere in a gravitational field that needs both Coulomb's law and Newtonian gravity. Don't tell me which principles — let me work it out, then review my approach.

What this helps you practise: Combining principles to solve unfamiliar problems, the mark of mastery.

How to use it well: The hardest questions hide which knowledge to use. Practising 'which principle applies here?' is itself a skill.

Prompt 86: Run an Order-of-Magnitude Estimate

Copy this prompt into your AI tool:

> Give me a Fermi-style estimation problem rooted in A-Level Physics — for example, estimating the number of photons emitted per second by a 60 W bulb, or the maximum height to which a person could jump on the Moon. Ask me to reason from sensible assumptions to an answer to the right order of magnitude, and judge my reasoning.

What this helps you practise: Building the physicist's instinct for back-of-the-envelope reasoning.

How to use it well: Order-of-magnitude work tests whether you understand the scale of physical quantities. State every assumption explicitly.

Prompt 87: Apply Synoptic Thinking to a Device

Copy this prompt into your AI tool:

> Pick a device or technology — for example a mass spectrometer, an optical fibre, or a transformer — and ask me to explain it synoptically: the physics that makes it work, the engineering compromises, the materials used, and a calculation showing it functioning. Mark how well I integrated the different areas.

What this helps you practise: Integrating multiple topics around a single real example.

How to use it well: Devices are natural synoptic hooks. Tracing one across the spec rehearses exactly the linkage examiners reward.

Prompt 88: Use a Limiting Case to Test Understanding

Copy this prompt into your AI tool:

> Pose me a problem on [topic] in which I have to consider the behaviour in a limiting case — for example, what happens to capacitor discharge as $R \to \infty$, or to a pendulum's period as the amplitude becomes large. Mark me on whether my reasoning about the limit was physically sound.

What this helps you practise: Building the analytical habit of checking equations against their limits.

How to use it well: Limiting cases reveal whether an equation makes sense. They also catch errors in derivations — if the limit is unphysical, the derivation is wrong.

T

Transform

Learning that isn't reviewed is learning that fades. The Transform stage uses AI to help you reflect on how you studied, log your mistakes, plan your next session, and schedule spaced reviews — turning effort today into memory that lasts to the exam.

Prompt 89: Review the Session

Copy this prompt into your AI tool:

> Summarise what I worked on in this session on [topic]. Tell me what now looks secure, what's still shaky, and what I should revisit — and schedule reviews at widening intervals (1 day, 3 days, 7 days, 14 days) — this is the rhythm the cognitive-science research on spacing shows beats forgetting.

What this helps you practise: Consolidating a session and planning the right review timing.

How to use it well: Ending each session with a review-and-schedule step is what turns effort into lasting memory.

Prompt 90: Build a Spaced-Repetition Schedule

Copy this prompt into your AI tool:

> Help me build a spaced-repetition schedule for [topic or set of topics] running up to my exam on [date]. Space the reviews so I revisit each topic at widening intervals, and tell me what to do on each review day (definitions Monday, derivations Tuesday, calculations Wednesday).

What this helps you practise: Scheduling reviews at the intervals that beat forgetting.

How to use it well: Spacing is one of the most powerful study principles there is. A schedule removes the guesswork and the cramming.

Prompt 91: Build an Error Log

Copy this prompt into your AI tool:

> Help me set up an error log for A-Level Physics. Give me a simple structure to record each mistake (question, my answer, the correct answer, the cause: equation chosen, sig fig, sign convention, missed mark point). Then take this mistake I just made — [describe it] — and show me how to log it.

What this helps you practise: Turning mistakes into a targeted, personal revision resource.

How to use it well: Your errors are the most efficient thing you can revise. A good log makes sure you actually learn from each one.

Prompt 92: Plan Tomorrow from Today's Gaps

Copy this prompt into your AI tool:

> Based on the gaps we found in today's session — [list them] — build me a focused plan for tomorrow's revision: what to do, in what order, and how long on each, with the biggest weakness first.

What this helps you practise: Converting today's diagnosis directly into tomorrow's action.

How to use it well: A plan built from real diagnosed gaps beats a generic timetable every time. Let the evidence drive the plan.

Prompt 93: Run a Metacognitive Check

Copy this prompt into your AI tool:

> Ask me reflective questions about how I just studied [topic]: what worked, what I avoided, where I lost focus, and whether I tested myself or just re-read. Then suggest one change to my method.

What this helps you practise: Becoming aware of, and improving, how you study.

How to use it well: Studying smarter starts with noticing how you study now. One honest change per week compounds quickly.

Prompt 94: Set Up a Progress Tracker

Copy this prompt into your AI tool:

> Help me create a simple progress tracker for A-Level Physics: a list of all my topics (mechanics, materials, waves, electricity, quantum, fields, capacitance, induction, nuclear, thermal) with a confidence rating for each that I can update over time. Suggest how often to revisit and update it.

What this helps you practise: Keeping a clear, evolving picture of where you stand.

How to use it well: A tracker stops you over-revising comfortable topics and neglecting weak ones. Update it honestly after each session.

Prompt 95: Find My Recurring Mistakes

Copy this prompt into your AI tool:

> Here are several mistakes I've made recently: [paste or describe them]. Look for the pattern — is there a recurring type of error (forgetting half-factor in KE, wrong direction with right-hand rule, dropping sig figs, treating sin θ as θ at large angles) — that I keep repeating?

What this helps you practise: Spotting the systematic weakness behind scattered errors.

How to use it well: Individual mistakes are noise; the pattern is signal. Fixing one recurring flaw can lift marks across many questions.

Prompt 96: Plan a Timetable to the Exam

Copy this prompt into your AI tool:

> Work backwards from my exam date [date] to build a realistic A-Level Physics revision timetable across all my topics: [list]. Build in review days, weak-topic time, and full past-paper practice near the end.

What this helps you practise: Turning a daunting syllabus into a paced, finishable plan.

How to use it well: Working back from the exam date keeps the plan realistic. Protect the review and past-paper days — don't let content crowd them out.

Prompt 97: Analyse a Mock Paper

Copy this prompt into your AI tool:

> Here are my results and the questions I dropped marks on in a recent mock: [paste]. Help me analyse it: which topics, which question types (definition, calculation, derivation, extended explanation, data interpretation), and which skills cost me marks, and what I should prioritise as a result.

What this helps you practise: Mining a mock for everything it can tell you.

How to use it well: A mock is a diagnostic, not a verdict. The marks you dropped are a precise map of what to revise next.

Prompt 98: Turn Weaknesses into a To-Do List

Copy this prompt into your AI tool:

> Take everything we've identified as weak across my recent sessions — [summarise] — and turn it into a concrete, prioritised to-do list of specific revision actions, not vague intentions (for example: 'do 10 capacitor-energy questions from past papers and log every sign error').

What this helps you practise: Converting fuzzy weaknesses into clear next actions.

How to use it well: 'Revise capacitors' is vague; 'do five RC-discharge questions and one derivation' is an action. Make every item doable.

Prompt 99: Establish a Brain-Dump Routine

Copy this prompt into your AI tool:

> Teach me a brain-dump routine for [topic, e.g. nuclear physics]: I write everything I can recall from memory (key equations, definitions, processes, applications), you check it against what I should know, and we reflect on what was missing and why. Help me make this a regular habit.

What this helps you practise: Combining free-recall retrieval with reflective review.

How to use it well: The brain dump is pure retrieval; the check-and-reflect is where it sharpens. Doing it regularly builds both memory and self-awareness.

Prompt 100: Consolidate the Week

Copy this prompt into your AI tool:

> It's the end of my study week. I covered [list topics]. Run a consolidation: a quick mixed quiz across all of them, a note of what improved and what's slipping, and a plan for what next week should prioritise.

What this helps you practise: Closing each week with review, reflection, and re-planning.

How to use it well: A weekly consolidation stops topics quietly fading and keeps your plan responsive to how you're actually progressing.

Final Closing Note

You have now worked through 100 prompts designed to help you think more clearly, revise more effectively, and prepare more confidently for your A-Level Physics exams.

Remember: the goal was never to rely on AI for answers. It was to use AI as a tool to test, challenge, and strengthen your own understanding. The strongest students are not those who avoid difficulty, but those who engage with it deliberately. Each gap you found, each explanation you improved, and each mistake you corrected has strengthened your thinking.

As you continue, aim to depend less on the prompts and more on your own judgement. AI can support you — but your reasoning, clarity, and persistence are what earn the marks.

Approach your exams calmly. Think carefully. Write clearly. You are more prepared than you think.

Using AI Beyond This Book

The prompts in this book are starting points, not final forms. As you grow more confident, begin to modify them:

- Add constraints, for example “limit your answer to three key points”.
- Increase the difficulty gradually as you improve.
- Ask the AI to challenge your reasoning rather than agree with it.
- Request alternative explanations when the first doesn't click.
- Ask it to critique your thinking instead of handing you the answer.

The most powerful use of AI is not asking it to tell you things — it is asking it to test and refine your thinking. Treat AI as a tutor, not a shortcut. The skill of asking better questions will keep mattering long after these exams are over.

About the Velvet Method

The Velvet Method is a study system built by teachers who believe that AI, used well, can give every student the kind of personalised support that was once the preserve of expensive private tutoring.

Our resources are designed around cognitive science — retrieval practice, spaced repetition, schema-building, and metacognition — and around a single principle: AI should strengthen a student's thinking, never replace it.

Explore the full series of subject guides, free revision games and tools, and the Velvet Method course at aistudymethod.co.uk.

The Velvet Method Series

The 100 AI Prompts series supports students across GCSE, A-Level and IBDP. Every title is free to download.

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- English Language
- English Literature
- Mathematics
- Physics
- Biology
- Chemistry
- Geography
- History
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- Economics
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- Religious Studies
- Psychology
- French
- Spanish
- German

A-Level

- Mathematics
- Further Mathematics
- Physics
- Chemistry
- Biology
- Economics
- History
- Geography
- English Literature
- Psychology
- Computer Science
- Politics
- Business

IBDP

- Mathematics: Analysis & Approaches
- Mathematics: Applications & Interpretation
- Physics
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