



Dendrite Education

*The architecture of understanding*

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*Build Your Own*  
**AI TUTOR**

*A student guide to smarter revision*

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*Key Stage 5*  
*A learning & revision toolkit*

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# A Word to Students

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You are growing up in the first generation of students with a personal tutor available twenty-four hours a day. That is an extraordinary privilege, and a serious responsibility. Used wisely, an AI tutor can explain a tricky idea in three different ways until it clicks, quiz you relentlessly without getting bored, and mark your essays at two o'clock on a Sunday morning. Used lazily, it will happily do your thinking for you, and your learning will quietly evaporate.

This booklet shows you how to use AI the first way. It is not a shortcut. It is a method: five simple steps, a handful of powerful prompts, and a habit of honest self-reflection. Follow it, and you will revise less and remember more. You will walk into your exams knowing not only the content, but how to answer the questions.

The Dendrite philosophy is simple: learning is the architecture of understanding. Knowledge is not a pile of facts dropped into your head. It is a network you build, branch by branch, link by link, by retrieving, applying and connecting. The five steps in this booklet are how you wire that network deliberately rather than hoping it forms by accident.

Three habits matter most. Rigour means pushing your thinking to the top of the mark scheme rather than settling for a serviceable answer. Honesty means being clear with yourself about what you do and do not yet know, and never passing off AI work as your own. Consistency means showing up to the work every day, even when it is hard.

*Now let us get started.*

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# 1. Why This Works

*The science of smart revision*

Decades of research in cognitive science point to a small number of techniques that reliably move information from short-term into long-term memory. Most students, if we are honest, spend their revision time re-reading notes and highlighting them in interesting colours. This feels productive. It is not. Here is what actually works.

## The four pillars of effective revision

### 1. Active recall

Pulling information out of your brain is many times more effective than pushing it in. Every time you successfully retrieve a fact, you strengthen the neural pathway to it. Re-reading does almost nothing; closing the book and trying to write down what you remember does almost everything.

### 2. Spaced repetition

You forget things on a predictable curve. If you revisit a topic just as it is starting to fade, you interrupt the forgetting and lock it in for longer. Short, frequent sessions spread over weeks beat a single marathon cram session every time.

### 3. Feedback

Practice without feedback bakes in your mistakes. You need someone, or something, to tell you not just that you were wrong, but why you were wrong and what a top-mark answer looks like. This is where most students struggle to revise alone.

### 4. Deliberate practice

You cannot get better at the 100-metre sprint by jogging. You get better by sprinting, failing, adjusting, sprinting again. In exams, that means past-paper questions under timed conditions, in exam-board style, at the grade you are targeting.

#### Where an AI tutor fits in

An AI tutor gives you active recall on demand, infinite patience for spaced repetition, instant feedback on every answer, and an unlimited supply of exam-style questions. That is why this booklet works. You are stacking four of the most powerful learning techniques into a single habit.

## 2. Using AI Responsibly

*The rules of the road*

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AI is a tool. Like a calculator, a library, or a set of past papers, it is only as good as the hands it is in. Before you start, read this page carefully and return to it whenever you are unsure.

### Your AI integrity pledge

By using an AI tutor for revision, you commit to the following:

- I will use AI to learn, not to cheat. I will never submit AI-generated text as my own coursework or exam work.
- I will treat the AI as a tutor, not a ghostwriter. It explains, questions, and corrects. I still do the thinking.
- I will always verify important facts against my exercise book, textbook, or a trusted source before I rely on them.
- I will not share personal information such as full names, addresses, dates of birth, school IDs, or contact details with any AI tool.
- I will tell a teacher, tutor or parent if the AI ever gives advice that feels unsafe, upsetting, or inappropriate.

### What counts as malpractice?

Copying an essay, paragraph or solution produced by AI and presenting it as your own work is **malpractice** under JCQ (Joint Council for Qualifications) rules. It risks disqualification from the subject, the exam series, or in severe cases all qualifications in that session. It is also pointless as you sit your real A Levels alone, in silence, with a paper and a pen.

Using AI to explain a topic, quiz you on it, or give feedback on writing that you then redraft yourself is not cheating. These are the uses this booklet is built around.

### A quick test

#### The "exam hall" test

Before you hand in any piece of work after an AI session, ask: "If I were sitting the real exam tomorrow, could I write this from memory?" If yes, it was revision. If no, you have outsourced your learning, and you need to go back through the material properly.

## 3. Choosing Your AI and Getting Set Up

*A two-minute setup that saves you hours*

Several AI tools are suitable for schoolwork, including Claude, ChatGPT, Google Gemini, and Microsoft Copilot. All of them will work with the prompts in this booklet. Check with your parents or a teacher which tools you are allowed to use, and make sure any account meets the minimum age requirement (usually 13 or 18 depending on the platform).

### Before your first session

1. Find a quiet place with your exercise book, textbook, and a pen. AI is a revision partner, not a replacement for your own notes.
2. Have the exam-board specification open in another tab. You will use it to check what your tutor covers.
3. Decide what you want to achieve in this session: learn a new topic, test an old one, or practise an exam question.
4. Set a timer. Twenty-five minutes of focused AI revision is worth more than an hour of drifting.

### Name your tutor

Give your AI tutor a name and a consistent role at the start of every long session. This sounds silly but it genuinely works. You behave more like a student and less like someone typing at a search box. The next section shows you how.

#### **A note on privacy**

Never paste photos of yourself or others, full names of teachers or classmates, or anything from the school's internal systems into an AI chat. Treat every conversation as if it might one day be read by a stranger, because in a sense, it might be.

## 4. The Five-Step Framework

*One method. Every subject. Every topic.*

Every productive revision session follows the same arc. You set up your tutor, you learn, you test, you practise exam questions, and you reflect on what to do next. Miss any of these steps and the session leaks effectiveness. Do all five and you will be astonished at how fast you progress.

Step	What you do	What you get
1 — Create	Set up your tutor with subject, exam board and target grade.	A tutor that knows your level and gives answers pitched at it.
2 — Learn	Ask for a clear, structured explanation of the topic.	Working knowledge you can explain to someone else.
3 — Test	Get quizzed on what you've just learned.	Proof of what you can recall — and what you cannot.
4 — Practise	Attempt A Level-style questions under exam conditions.	Exam technique, not just knowledge.
5 — Improve	Identify weaknesses and plan your next session.	A shorter, sharper to-do list for tomorrow.

### How long should a session take?

A full run through all five steps for a single A Level sub-topic takes around 45–60 minutes. You do not have to do it all in one sitting. You can learn on Monday, test on Wednesday, practise exam questions on Friday, and review over the weekend. In fact, spacing the steps out is even more powerful as it bakes in spaced repetition automatically.

## 5. Step 1 — Create Your Tutor

*Set up the tutor you wish your school could afford*

This is the single most important prompt you will ever use. It tells the AI who it is, who you are, and what you need from it. Paste it at the start of every long revision session. Edit the parts in square brackets for your subject, exam board, and target grade.

### The master setup prompt

#### **PROMPT · Master tutor setup**

You are my expert A Level [SUBJECT] tutor. Your name is [NAME].

Your role is to:

- Explain clearly, using examples I can remember.
- Assume I have zero prior knowledge of this topic. Rely strictly on the official specification for my exam board to identify the necessary concepts, rather than asking me to provide them.
- Quiz me often and increase difficulty gradually.
- Challenge me to make synoptic links between this topic and other areas of the specification.
- Give me honest feedback: tell me when I am wrong and why.
- Link everything back to the exam board's assessment objectives.
- Model top-grade answers so I can see what I am aiming for.
- When appropriate, introduce me to key academic theories, historiography, or wider reading that would elevate my answer to an A\*/A standard.
- Adopt a friendly, encouraging and conversational tone.

My details:

- Exam board: [AQA / Edexcel / OCR]
- Current working grade: [e.g. C]
- Target grade: [e.g. A]
- Topic today: [insert topic]

Ground rules:

1. Keep explanations concise; use bullet points and examples.
2. Use UK English spelling and A Level-appropriate vocabulary. Use clear, accessible language suitable for a 16-18 year old student, and define any complex terms or jargon simply before using them.
3. If you are unsure of a fact, say so – do not invent information.
4. Never just give me the direct answer. Ask scaffolding questions to help me figure it out myself, and actively identify and tackle any underlying misconceptions in my thinking.

### Why this prompt works

- It sets a clear role: "expert A Level tutor" — not a general assistant.
- It gives the AI your exam board so its examples match your real papers.
- It pegs difficulty to your target grade — ensuring answers are sufficiently complex but not quite undergraduate level.
- The "do not invent information" rule reduces (though does not eliminate) made-up facts.

#### **Important tip:**

Save this prompt in a Note on your phone. At the start of every session, copy it, fill in the brackets, and paste. Ten seconds of setup saves ten minutes of drifting.

## 6. Step 2 – Learn

*Build working knowledge before you test yourself*

Once your tutor is set up, it is time to learn. The goal here is not to skim, it is to understand the topic well enough that you could explain it to a friend. Use the prompts below in order.

### The teach-me prompt

**PROMPT · Teach me this topic**

Teach me [TOPIC] step by step.

For each step, please include:

- A one-sentence definition in plain English.
- A worked example (or quoted evidence, for literature).
- The exam-board keyword or command word I should know.
- How this links to the A Level mark scheme.

After the explanation, give me three checking questions that prove

I have understood the basics before we move on.

### Follow-up prompts when something doesn't click

If a part of the explanation does not land, do not just stare at it. Push back with one of these:

**FOLLOW-UP · Re-explain differently**

Explain that again in a different way. Use a real-world analogy and assume I have never heard of [the confusing term] before.

**FOLLOW-UP · Build a concept map**

Give me a concept map of [topic] showing the links between all the key ideas. Use bullet points and indentation instead of a picture.

**FOLLOW-UP · Teach me the common mistakes**

What are the three most common mistakes students make on [topic] at A Level? For each one, show me the wrong answer and the correct one.

## 7. Step 3 — Test

*If you can't recall it, you haven't learned it*

Testing is where the real learning happens. The moment you close the explanation and try to retrieve the information yourself, you are rewiring your brain for long-term memory. Do not skip this step, even if you feel like you already know it.

### The testing prompt

**PROMPT · Test me**

Test me on [TOPIC].

Please:

- Ask me ten short-answer questions, one at a time.
- Wait for my answer before revealing the correct one.
- After each question, tell me if I was right, partially right, or wrong.
- For every wrong or partial answer, *ask guiding questions* to help me discover what I missed.
- Keep score. After question ten, tell me my total and my weakest area.
- Use an encouraging, conversational tone when revealing if an answer is right or wrong, rather than just stating it robotically.

Start with easy questions and get harder. Do not let me off the hook if my answer is vague – push me to be precise.

### Upgrade the challenge

Once you are scoring 8/10 or higher, it is time to step up. Use these variations:

- **Mixed topic recall:** "Test me on a mix of the last three topics we studied, so I cannot predict which one is coming next."
- **Interleaved practice:** "Alternate between calculation questions and explanation questions."
- **Explain back:** "Instead of testing me, ask me to teach the topic back to you as if you were a Year 11 student. Interrupt with questions whenever I am unclear."

### The Feynman trap

If you cannot explain a topic simply to a younger student, you do not understand it yet. This is called the Feynman technique, and it is the most honest test of your own knowledge. An AI tutor is the perfect audience — it will happily play the role of a confused Year 11.

## 8. Step 4 – Exam Practice

*Knowing the content is not the same as answering the question*

Every year, students who know their subject lose marks because they did not answer the question that was asked. A Level exams use specific command words (describe, explain, evaluate, compare) and specific mark schemes. Your AI tutor can replicate both.

### The exam question prompt

#### PROMPT · Full exam drill

Give me three A Level-style exam questions on [TOPIC] at [TARGET GRADE] level, from [EXAM BOARD].

Format each question exactly like the real paper:

- State the number of marks.
- Use the real command words (describe, explain, evaluate, etc.).
- Vary the type – at least one short-answer and one extended-response.

After I have answered all three, please:

1. Mark my work against the official-style mark scheme.
2. Show me a model Grade A\*/A answer for each question.
3. Tell me where I lost marks and exactly what to add to get them.
4. Highlight any exam technique issues (timing, structure, keywords).

### Command words – learn them, love them

Command word	What it actually wants you to do
State / Identify	A one-line fact. No explanation needed. Do not waste time.
Describe	Say what happens, in order. No reasons required.
Explain	Give reasons. Use the word 'because'. Link cause to effect.
Compare	Point out similarities AND differences. Both, every time.
Evaluate	Weigh up strengths and weaknesses. Reach a supported conclusion.
Analyse	Break it into parts. Show how each part affects the whole.
Discuss	Present arguments on more than one side. Reach a judgement.

**Exam technique drill**

Ask your tutor: "Give me five questions that use five different command words on the same topic. Tell me how my answer should change depending on the command word." This is one of the most powerful exam-technique drills you can do.

## 9. Step 5 — Improve

*Turn every session into a plan for the next*

The students who improve fastest are not the ones who work longest — they are the ones who finish every session with a clear list of what went wrong and what to do about it. Your AI tutor can build this list for you.

### The improvement prompt

**PROMPT · End-of-session review**

Look back over our whole session today.

Please give me:

1. A summary of what I got right and what I got wrong.
2. My top three weaknesses, in order of priority.
3. For each weakness, one specific action I should take next time (e.g. 'Re-read pages 45–48 and do Q4 from 2023 paper 2').
4. A three-session revision plan for the rest of this week, each session being 30 minutes long.

Be honest. Don't be encouraging if I don't deserve it.

### Write it down

Do not just read the AI's response and close the tab. Copy the top three weaknesses and the next-session action into the Weakness & Reflection Log at the back of this booklet. This is the single highest-value minute of your whole session.

### Spaced review

Every Friday, ask your tutor to quiz you again on the topics you flagged as weaknesses earlier in the week. Then every month, do the same thing with everything you flagged that month. This is spaced repetition in action.

**WEEKLY · Friday recap**

This week I studied [list topics]. Quiz me on the areas I was weakest in, mixing questions from all of them. Keep going until I score at least 80 per cent on each topic.

## 10. Mathematics

Case study: integration by parts

A Level Mathematics demands rigorous proof, multi-step problem solving, and precise algebraic manipulation. Your AI tutor is excellent at generating infinite practice questions and breaking down complex methods step-by-step. Use it to work alongside you, not instead of you—always attempt the algebra yourself first.

### Full-topic tutor prompt

#### PROMPT · Integration by parts

Teach me Integration by Parts for Edexcel A Level Mathematics, targeting Grade A.

Cover all key scenarios in order:

1. The standard formula.
2. Applying limits (definite integration).
3. Dealing with cyclical integration (e.g.,  $e^x \sin x$ ).

For each scenario:

- Show one fully worked example with every line of algebra explained.
- Give me one guided problem where you prompt me step by step.
- Give me two independent problems to attempt on my own.

Finish with two exam-style problems worth 5–7 marks each.

### High-value maths drills

- **Show your workings:** "Mark my working, not just my final answer. Tell me which marks I would earn from the method even if my answer is wrong."
- **Spot the error:** "Show me three worked solutions with a deliberate error in each. I will spot the mistake and correct it."
- **Proof construction:** "Give me an exam-style mathematical proof question. Ask me to write the proof line-by-line, and correct my logic after each step."
- **Topic interleave:** "Give me five mixed questions combining calculus, trigonometry, and logarithms, so I cannot predict the method required."

#### The calculator trap

AI can easily perform complex calculations, but it sometimes struggles with the exact algebraic steps required by A Level mark schemes. Always check that the AI's method matches your textbook's method, especially for "show that" questions where the exact intermediate steps are where the marks are awarded.

# 11. Geography

Case study: Tectonic hazards

A Level Geography requires a deep understanding of complex physical systems, human impacts, and detailed contemporary case studies. Your AI tutor can help you evaluate synoptic links, drill your specific case study statistics, and structure top-band 20-mark essays.

## Full-topic tutor prompt

### PROMPT · Tectonic hazards

Teach me the impacts and management of Tectonic Hazards for AQA A Level Geography, targeting Grade A.

Please cover:

- The physical processes causing earthquakes and volcanoes at different plate margins.
- A detailed comparison of two recent case studies (one High Income Country, one Low Income Country).
- For each case study, include specific data (dates, magnitudes, economic costs, death tolls).
- An evaluation of the effectiveness of different management strategies (mitigation vs adaptation).

Then ask me to evaluate which is more important in determining the impact of a hazard: the physical magnitude or the human vulnerability. Mark my answer against the 20-mark essay criteria.

## Geography-specific drills

- **Case study pressure test:** "Test me on my specific case study of the 2011 Tohoku earthquake. Ask me for five specific statistics and evaluate how well I use them to support an argument."
- **Synoptic links:** "Give me a physical geography topic and a human geography topic. Ask me to write a paragraph explaining the synoptic links between them."
- **Data interpretation:** "Describe a complex data set (like a climate graph or a demographic table) in words. Ask me to analyse the data and suggest three geographical reasons for the patterns."

### Verify your case study

AI models sometimes mix up statistics between different natural disasters or geographical events. Always verify specific facts, dates, and figures (like GDP, magnitude, or death tolls) against your class notes or official sources before using them in an essay.

## 12. Psychology

Case study: Schizophrenia

A Level Psychology is incredibly content-heavy, requiring exact knowledge of studies, theories, and rigorous evaluation (AO3). Your AI tutor is perfect for drilling study details, applying knowledge to novel scenarios, and practicing the critical 'Issues and Debates' evaluation points.

### Full-topic tutor prompt

#### PROMPT · Schizophrenia

Teach me the biological explanations for Schizophrenia for AQA A Level Psychology, targeting Grade A.

Please cover:

- The dopamine hypothesis (original and revised versions).
- Neural correlates and genetic factors.
- Name at least three key researchers and outline their specific findings.

Then, give me three AO3 evaluation points (two strengths, one limitation) structured as 'Point, Evidence, Explain, Link' (PEEL) paragraphs.

Finish by giving me a 16-mark essay question and asking me to write the introduction and the first evaluation paragraph.

### Psychology-specific drills

- **AO1/AO3 split:** "Give me a 16-mark essay title. I will write the AO1 (description) part. Mark it out of 6, then challenge me to provide an AO3 (evaluation) point to match."
- **Issues and debates:** "Take the biological explanation of schizophrenia and ask me to evaluate it using the 'nature vs nurture' and 'reductionism vs holism' debates."
- **Research methods application:** "Describe a fictional psychology experiment to me. Ask me to identify the independent/dependent variables, the experimental design, and one potential confounding variable."

#### Keep studies accurate

AI can occasionally invent psychological studies, mix up sample sizes, or attribute the wrong findings to famous psychologists. Always double-check researcher names, dates, and exact methodology against your textbook before relying on them in an exam.

# 13. When the AI Is Wrong

*Fact-checking, hallucinations, and pushing back*

Every AI tool sometimes produces confident nonsense. The polite technical term for this is "hallucination." The key skill is not to avoid AI, but to catch it. Here is how.

## Three situations that need a sceptical eye

Watch out for	Why it's risky	What to do
Direct quotations from a named text or person	AI often invents plausible-sounding quotes.	Cross-check against the book, poem, or source.
Statistics, dates, numbers	AI tools can be confidently wrong about specifics.	Verify against textbook or BBC Bitesize.
Exam-board specific claims ("AQA wants you to...")	AI may confuse exam boards or outdated specifications.	Check your exam board's own website.

## The "are you sure?" prompt

If something feels off, push back. The best AI tools will often correct themselves — and even the less cautious ones will flag uncertainty if you ask.

### CHALLENGE · Push back

You said [repeat the claim]. I am not sure that is correct.

Please:

- Double-check that fact.
- Tell me how confident you are on a scale of 1-10.
- If you are below 8, rewrite your answer without that claim.
- Tell me where I could verify it for myself (a textbook chapter, a reliable website, or a person I could ask).

### Golden rule of verification

**Never write something in your A Level exam that you first learned from AI and never checked against another source. If there is a single sentence in this booklet to remember, it is that one.**

# 14. Weekly Revision Planner

Print this page, or copy it into your planner

## Maximising Sixth Form Study Periods

You are given unsupervised study periods because A Levels require extensive independent work. Don't waste them watching YouTube.

- **The 40-Minute Drill:** During a study period, pick a single topic you covered in class *that morning*. Use the "Test me" prompt (Step 3) to immediately check your recall.
- **Coursework (NEA) brainstorming:** If you are working on your NEA, use AI to bounce ideas around. Try the prompt: *"I am writing my A Level coursework on [Topic]. Act as an academic supervisor. Ask me five challenging questions about my proposed methodology to help me refine my thesis."* Remember: the AI cannot write the coursework for you, but it is an excellent sounding board.

Each week, plan seven sessions — one per day. Vary the subject, vary the step of the framework, and keep each session to around 30–45 minutes. Space out your topics. Return to old weaknesses at least once a week.

Day	Subject & topic	Step (1–5)	Time	Outcome / score
Mon				
Tue				
Wed				
Thu				
Fri				
Sat				
Sun				

### How to use it

Fill in the Subject & topic and Step columns in advance — that is your plan. Fill in Outcome / score after each session — that is your evidence. At the end of the week, see which subjects or steps you avoided. Those are the ones to schedule first next week.



## 16. Golden Rules for Your AI Tutor

*Pin this to your wall*

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1. Set up your tutor before every long session. Subject, exam board, target grade, topic. Every time.
  2. Use the five steps. Create, Learn, Test, Practise, Improve. Skipping one weakens the whole session.
  3. Testing is the point, not the side dish. If you haven't retrieved it, you haven't learned it.
  4. Always verify quotes, names, dates and numbers. AI hallucinates confidently. You are the fact-checker.
  5. Finish every session with three weaknesses and three next actions. Write them down.
  6. Treat the AI as your tutor, not your ghostwriter. If you could not write it from memory, you do not own it.
  7. Protect your privacy. No personal details, no photos of yourself, nothing from school systems.
  8. Tell a teacher or parent if anything ever feels wrong. You will not be in trouble for asking.
  9. Revise little, often, and honestly. Thirty minutes a day beats five hours on a Sunday.
  10. Remember: excellence, virtue, devotion. Your A Levels are a milestone. The habits you build now matter more.
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