BỘ GIÁO DỤC VÀ ĐÀO TẠO
MINISTRY OF EDUCATION AND TRAINING

RMIT UNIVERSITY

AI HANDBOOK FOR EDUCATORS

Practical Applications in Teaching and Educational Management



FOREWORD

Artificial intelligence (AI) is entering classrooms faster than many earlier technologies. From finding information, planning lessons and designing learning activities to developing digital resources, supporting assessment and managing classrooms, AI is opening up new ways of working for educators and education leaders. This handbook accompanies you on that journey with practical, accessible guidance that you can apply to everyday teaching, learning and management.

This handbook was developed jointly by RMIT University Vietnam and the Department of Teachers and Education Administrators, Ministry of Education and Training, with support from Aus4Skills and RMIT Vietnam. It aims to help educators approach AI practically, selectively and responsibly, in ways that suit Vietnam's educational context.

The handbook's six themes begin with foundational understanding and responsible AI use, then move through practical skills such as writing prompts, preparing lesson plans, designing assessments and developing digital learning resources. They also explore AI for learning support and management, and for developing educators' capabilitises. Each theme offers step-by-step guidance, examples, sample prompts and illustrations so that you can practise as you read.

A human-centred approach runs throughout the handbook. AI can provide valuable assistance, but educators retain responsibility for guiding and inspiring learners, exercising professional judgement and making the final decisions. We hope this handbook will be a trusted companion as you learn to use AI confidently, effectively, safely and with care for others.

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GENERAL INTRODUCTION

The rapid development of artificial intelligence, particularly generative AI, is having an increasingly visible impact on education. AI tools can support many everyday tasks, including finding and analysing information, planning lessons, creating questions, designing learning resources, providing feedback, managing classrooms and pursuing professional learning. They also introduce challenges involving fact-checking, personal data protection, equity, copyright and the educator's professional role.

This handbook draws on recognised Vietnamese and international guidance, competency frameworks and resources on digital transformation, digital competence and AI in education. These include the Ministry of Education and Training's digital competence frameworks, UNESCO's AI competency frameworks for teachers and students, and relevant reports and recommendations from the OECD and other international education organisations.

Building on this guidance, the handbook takes a practical, accessible and human-centred approach to responsible AI use. It treats AI as an assistant for preparing, organising and improving educational activities, rather than as a replacement for educators. Teachers need to check and adapt every AI-generated output and decide whether to use it in light of educational goals, students' characteristics, the school context and curriculum requirements.

The handbook is intended for educators and education leaders across all school levels, from early childhood to general education. Each theme introduces applications with examples from selected subjects or levels to make the approaches easier to understand and apply. These examples are illustrative and can be adapted to other subjects, levels and educational settings. Adjust the objectives, content, complexity and delivery to suit your learners, curriculum requirements and local conditions.

Objectives of the handbook

The handbook supports educators and education leaders in the following areas:

- Understanding the foundations of artificial intelligence (AI) and generative AI, including their concepts, operation, capabilities and limitations, and using them through appropriate tool selection and effective prompting.
- Applying AI to core teaching tasks, including lesson planning, lesson design, assessment and digital resource development.
- Using AI to support, personalise and manage learning, as well as selected school management tasks.
- Using AI to develop professional knowledge and digital competence in line with relevant guidance and competency frameworks for educators and learners.

- Identifying and preventing risks, including inaccurate information, bias, privacy breaches, copyright infringement, academic misconduct and excessive dependence on technology.
- Developing a human-centred approach in which educators guide, verify and adapt AI use, retain final responsibility and help students use AI safely and responsibly.

The handbook's content was proposed, developed and written by RMIT Vietnam specialists in AI applications in education. Further information about the project team is available at www.rmit.edu.vn/vi/eeai. The handbook was developed under the direction of, and with feedback and appraisal from, the Department of Teachers and Education Administrators, Ministry of Education and Training.

Structure of the handbook

The handbook has six chapters, progressing from foundational understanding to practical applications and professional capability development.

Chapter 1. An overview of effective and responsible AI use for educators. This chapter introduces AI and generative AI, common categories of educational AI tools, prompting techniques, educators' roles in the AI age, and principles of ethical, safe and responsible use.

Chapter 2. Using AI to develop lesson plans and teaching presentations. This chapter guides you through generating ideas, preparing lesson plans, creating presentations, designing learning activities, applying pedagogical approaches and checking content before using it in class.

Chapter 3. Using AI to design assessments. This chapter focuses on creating multiple-choice and extended-response questions, test matrices, answer keys, marking guides, rubrics and learning feedback. It also emphasises teacher verification and safeguards against misconduct in tests and examinations.

Chapter 4. Using AI to develop digital learning resources. This chapter introduces AI-assisted creation of images, posters, infographics, songs, stories, videos, simulations and learning games, with guidance on copyright, safety and ethics.

Chapter 5. Using AI for learning support, learning management and school administration. This chapter explores digital classrooms, lesson publishing, student interaction with AI assistants, progress monitoring, identifying students who need support and creating multimodal resources for independent learning.

Chapter 6. Professional learning and educator capabilities in the AI age. This chapter extends AI use to independent learning, voice conversations, document analysis with NotebookLM, deep research, practitioner research, professional development and digital competence for educators and learners.

With this structure, the handbook serves as a practical companion that you can read, use and adapt to your subject, school level and institutional context. Throughout, you are encouraged to experiment gradually, verify AI-generated results and use AI effectively, safely and responsibly.

Information security when using AI: Before uploading documents to an AI tool, remove sensitive personal information about yourself, colleagues or students. For example, delete or replace telephone numbers and home addresses with placeholders. Use only the minimum data genuinely needed for the educational purpose and comply with information security requirements.



CHAPTER

01

AN OVERVIEW OF EFFECTIVE AND RESPONSIBLE AI USE FOR EDUCATORS

Understanding AI, writing effective prompts and using AI safely and responsibly

CHAPTER 1

AN OVERVIEW OF EFFECTIVE AND RESPONSIBLE AI USE FOR EDUCATORS

AI is intended to support educators rather than replace them, helping them teach more effectively, inspire their students and connect more closely with each learner.

★ **IN THIS OPENING CHAPTER, WE WILL:**

- ✓ Explore AI and generative AI (GenAI), how they work and their limitations
- ✓ Survey common categories of AI tools used in education
- ✓ Develop effective prompting skills through a clear process
- ✓ Consider the changing roles of educators and education leaders
- ✓ Examine principles of ethical, safe and responsible AI use
- ✓ Explore how to guide and support students in using AI constructively

Chapter introduction

Few technologies in the history of education have reached classrooms as quickly as artificial intelligence. In a short time, tools such as ChatGPT, Gemini and Copilot have moved from research laboratories to the desks of millions of teachers worldwide. They have become familiar assistants for planning lessons, designing assessments, creating learning resources and personalising learning. In Vietnam, hundreds of thousands of educators and education leaders have also begun exploring, testing and using AI in their everyday work.

This is already happening. In the OECD's international TALIS 2024 survey, around one-third of lower secondary teachers across OECD countries reported using AI in their teaching, although rates varied considerably between countries (OECD, 2025).

This pace brings opportunities and challenges. Teachers now have a tool that can share repetitive, time-consuming work, leaving more time for interaction with students and inspiring them to learn. Yet powerful technology carries risks when used without understanding. Copying an incorrect AI answer without checking it, accidentally sharing a

student's personal data, or fostering dependence that discourages independent thinking can all have real consequences.

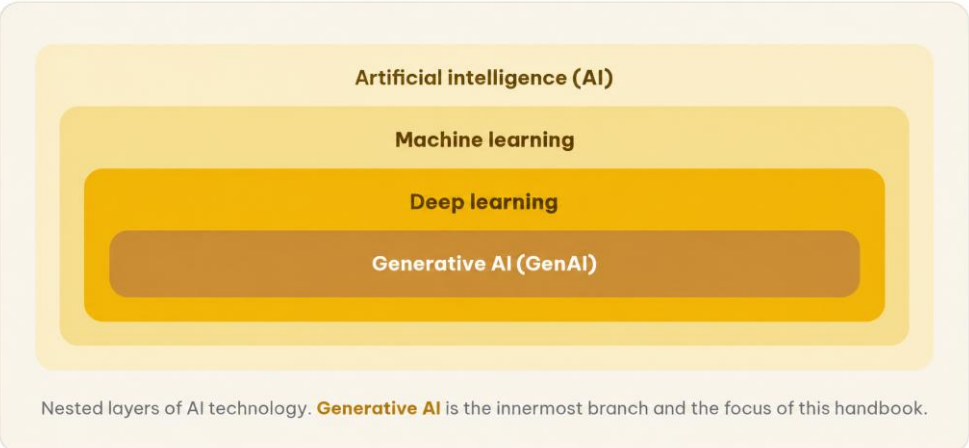
The handbook therefore rests on a simple principle: technology is valuable when people understand it, use it appropriately and recognise the responsibilities involved. Effective AI use is less about knowing the most tools than about asking appropriate questions, evaluating responses and keeping professional expertise and pedagogical judgement central. However capable AI becomes, it remains an assistant. The educator makes the final decision.

This chapter provides foundations for the rest of the handbook. Its concepts, skills and principles recur in later chapters as we explore specific applications, including lesson planning, assessment, digital resource creation and learning management.

1.1. What is artificial intelligence?

Artificial intelligence (AI) refers to computer systems designed to perform complex tasks that normally require human intelligence. In practical terms, these systems or programs can perceive, reason, act and adapt to different situations rather than simply execute a fixed sequence of instructions. AI comprises several nested layers of technology. Understanding this relationship helps you recognise the type of AI you are using and what to expect from it:

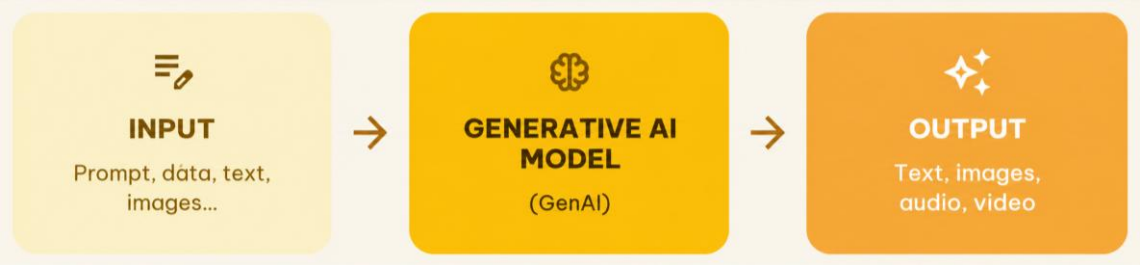
- **Artificial intelligence** (AI) is the broadest concept, encompassing techniques that enable computers to behave 'intelligently'.
- **Machine learning is a branch** of AI that enables computers to improve by learning from, or being trained on, large datasets rather than being explicitly programmed at every step. For example, a system can learn from thousands of emails to identify spam.
- **Deep learning is a further** branch of machine learning. It uses multilayer artificial neural networks to learn complex patterns from very large datasets.
- **Generative AI (GenAI) is a branch of deep** learning that can produce new content, such as text, images, audio or video, in response to a user's request. This handbook focuses on this type of AI because it is particularly useful in educators' work.



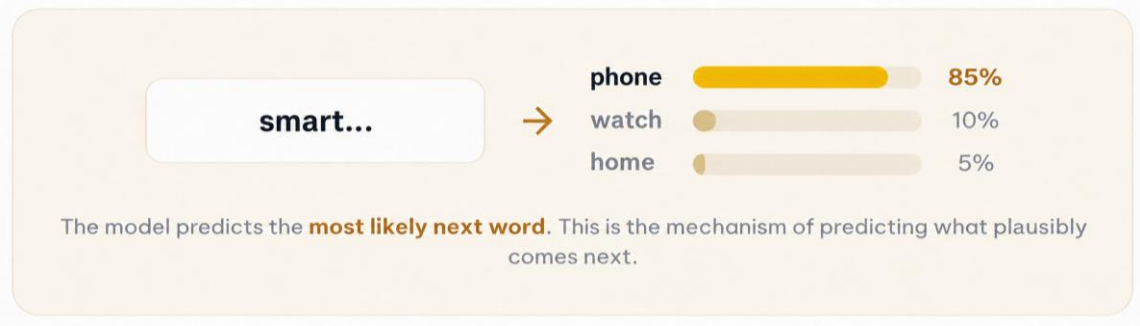
Nested layers of AI technology. **Generative AI** is the innermost branch and the focus of this handbook.

How does generative AI work?

A generative AI model can be understood as a vast statistical probability model trained on large amounts of data, including books, articles, websites and images. When you enter a prompt, it does not simply retrieve a ready-made answer. It predicts and selects components that fit together and match the request, combining them step by step to produce an output.



Consider a text example. Given 'smart...', the model estimates probabilities for the next word: 'phone' might have a probability of 0.85, 'home' 0.05 and 'watch' 0.10. It selects the most likely word to form 'smartphone', then predicts the following word, and so on. This process happens rapidly across billions of parameters.



Understanding this principle of predicting what plausibly comes next explains a crucial point: AI is optimised for linguistic plausibility, not factual accuracy. It can therefore write fluent, convincing text that still contains errors. It resembles a fluent speaker who occasionally invents a detail to keep the conversation flowing.

Limitations and concerns about AI

AI is powerful but imperfect. To use it thoughtfully, rather than trusting or rejecting it outright, educators need to recognise several inherent limitations:

- **Training data limitations. A** model only 'knows' what was included in its training data up to a particular point. It may lack recent information or knowledge of local Vietnamese contexts, and it may be less accurate in Vietnamese than in English.
- **AI hallucinations. AI can** confidently present invented or inaccurate information and cite sources that do not exist. Even for straightforward questions, general-purpose chatbots are not perfectly accurate, so every output needs checking.

- **Bias and unfairness. Because** AI learns from human-generated data, it can reproduce existing biases related to gender, region or social group. Some are obvious; others are subtle and difficult to detect.
- **Privacy and security.** Information entered into an AI tool may be stored and used to train models. Take particular care with students' personal data, including their names, results and family circumstances.
- **Age and cultural appropriateness.** AI responses are not always tailored to students' ages or Vietnamese cultural norms.

▲ LIMITATIONS & RISKS

The principle remains unchanged: teachers must check all AI-generated content using their professional expertise and reliable sources before using it. AI is an assistant, not an authority on truth, and the educator always retains final responsibility.

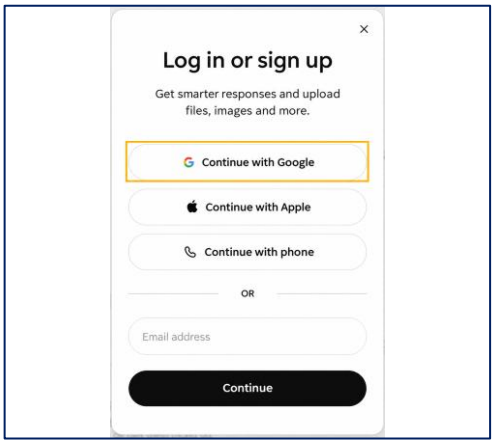
1.2. An overview of generative AI tools

The AI tool ecosystem changes rapidly. This section introduces widely used, useful tools with free plans for educators, incorporating updates available in 2026. You do not need to use every tool. Choose one or two that suit your subject and working habits, and learn to use them well. This is more effective than having only a superficial knowledge of dozens of tools.

Tool category	Examples	Educational strengths
General-purpose conversational assistants	Google Gemini, ChatGPT, Claude, Microsoft Copilot	Lesson planning, assessment design, explanations, brainstorming and voice conversations
Visual learning resource design	Canva, Adobe Express	Creating attractive slides, images, posters, games and worksheets
Automated presentation creation	Gamma, Google Gemini, Canva	Generating complete presentations from an outline or document
Document research	Google NotebookLM	Summarising and analysing documents; creating podcasts, mind maps and reports with citations
AI assistants for coding and task automation	Google Antigravity, Claude Cowork/Code, OpenAI Codex	Helping teachers process documents and complete computer-based tasks, and create simulations or learning games.
Education-specific platforms	MagicSchool, Upskii	AI toolkits for teaching preparation; AI assistants for teachers and AI tutors for students

Choosing and signing up for a tool

- **Quick sign-up.** Most tools let you sign in with a Google (Gmail) account in a few steps, without creating another password. Similar processes apply to ChatGPT, Gemini, Copilot, Canva, NotebookLM, Upskii, Gamma and Poe.
- **Cross-platform** access. Many tools offer both web and mobile versions, allowing flexible use, such as asking questions by voice on a phone during a lesson.



Setting up and using ChatGPT or Gemini

ChatGPT is a general-purpose conversational AI assistant that helped bring generative AI into widespread use. To practise with ChatGPT, you can register and complete the initial setup as follows:

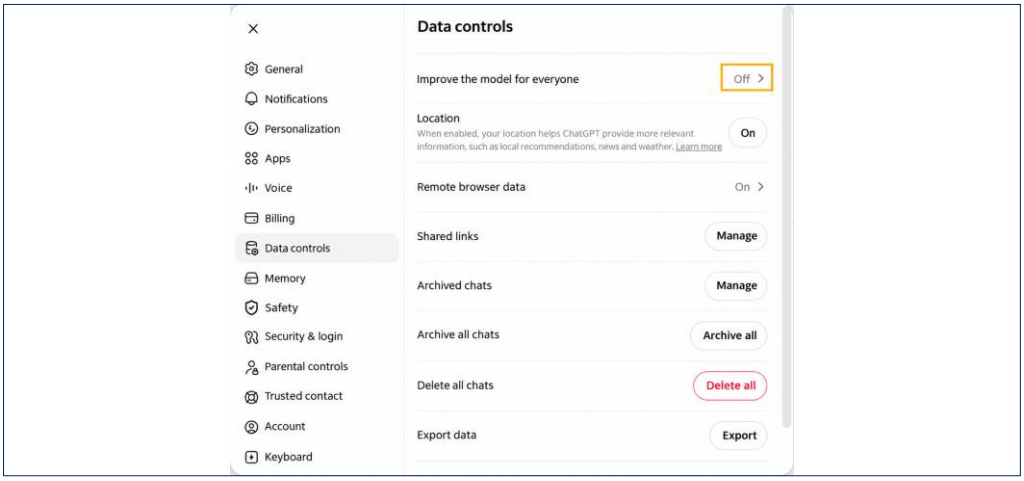
- **Step 1: Sign up or log in to ChatGPT**

Open https://chatgpt.com in your web browser. If you already have an account, sign in with the account you used previously. If you are new to ChatGPT, select 'Continue with Google' to sign in quickly with your Gmail account.

- **Step 2: Turn off 'Improve the model for everyone'**

Before using any AI tool, review its data and privacy settings. In ChatGPT, you can turn off 'Improve the model for everyone' to prevent your conversations from being used to train AI models. This reduces the risk of sensitive information being exposed or appearing in responses to other users.

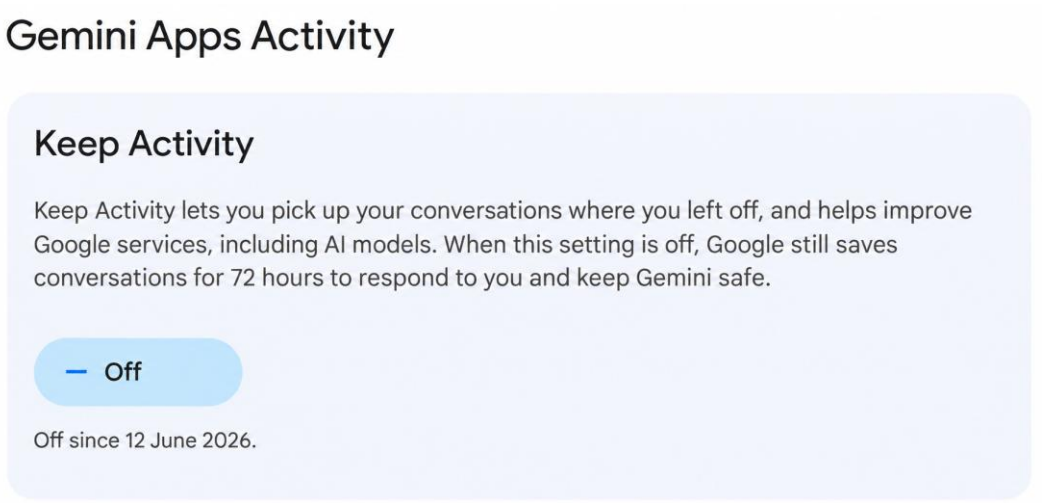
Open Settings, select Data controls, **find Improve** the **model for everyone and** switch it Off.



The principles and processes introduced for general-purpose conversational assistants are not limited to ChatGPT. You can apply similar approaches in Gemini, Claude and Microsoft Copilot.

If you use Gemini, you can turn off activity recording to prevent your data from being **used to train** AI models. Note that Gemini conversations will then no longer be saved in your chat history.

1. **Open the settings:** Visit myactivity.google.com/product/gemini, or open Gemini, select your profile picture and choose Activity.
2. **Turn off activity:** Find **Gemini Apps Activity** and select Turn off.
3. **Confirm:** Choose **Turn** off to stop saving activity from now **on, or Turn off and delete** activity to remove previous chats as well.

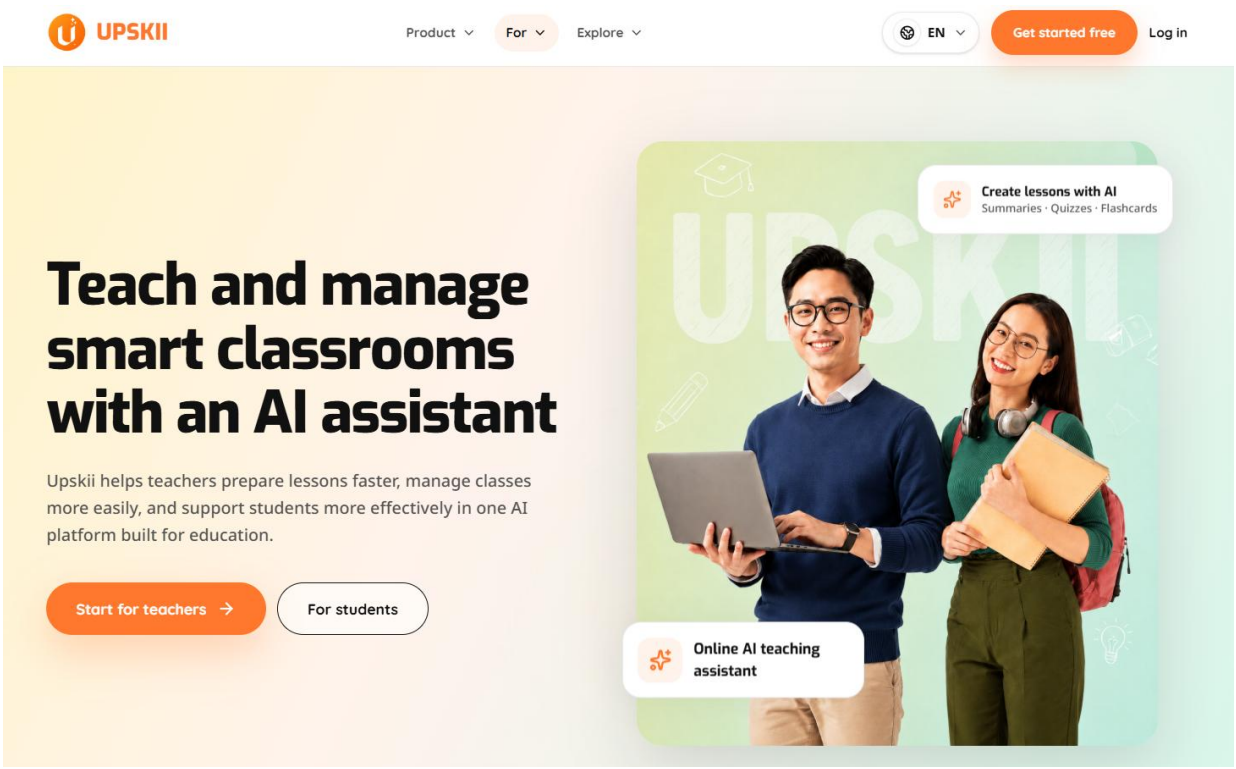


For Gemini for Workspace and NotebookLM, Google's current policy states that data is not used for model training unless users actively submit feedback.

Setting up and using Upskii

Alongside general-purpose assistants such as ChatGPT, teachers can use education-specific AI platforms such as Upskii. These bring several teaching tasks into one environment, including teacher-focused AI tools, lesson creation, question design, student support and classroom management.

Visit https://upskii.com and sign in with your existing account. If you do not have an account, **select 'Continue** with Google' to sign in with Gmail. Upskii's default interface is English. You can select the language settings icon in the menu bar to switch to Vietnamese.



Some AI features in Upskii require an API key. Select your account icon in the top-right corner, choose 'Connect **personal AI' and** follow the instructions. Once setup is complete, explore the AI Tools, Teacher AI Assistant, classrooms with an AI Teaching Assistant and other student support features.

A note before practising

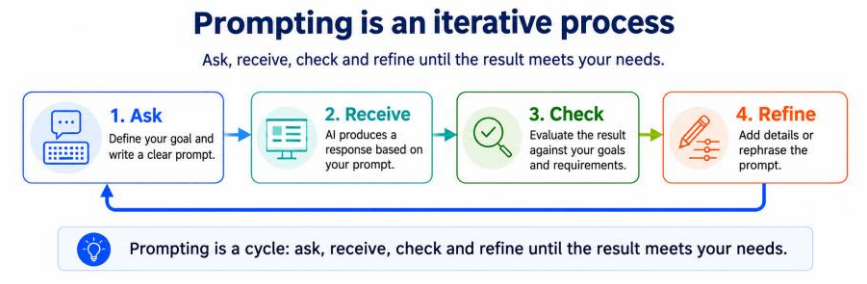
In the following sections, you will regularly enter prompts asking AI to generate ideas, analyse information, draft text or revise content. **Treat AI as** an assistant rather than an unquestionable source of information. Read, verify and edit every output before using it in class.

- **Sample prompts and practice data**

To support your practice, visit the handbook's resource collection at https://apps.rmit.edu.vn/r/dulieuthuchanh or scan the QR code alongside. It contains sample prompts and datasets for the practical activities in this handbook.

1.3. Effective prompting techniques

If you take one skill from this handbook, make it prompting. A prompt **is the** instruction and input you provide to an AI system. Prompt **engineering involves refining that** input to use AI effectively. The basic principle is simple: good outputs require good inputs. With the same tool, a vague prompt may produce an unhelpful result, while a carefully written prompt can produce something genuinely useful.



Where should you start?

Before typing, be clear about what you want. These five habits will help you write better prompts from the outset:

1. **Define the goal and choose an appropriate** tool. Do you need a lesson, an assessment or an image? Different goals may require different tools.
2. **Provide detail and sufficient context. Do** not leave AI guessing. Specify the subject, year level, learners and desired outcome to obtain a more relevant response.
3. **Break down large** requests. AI can follow a conversation, so divide a complex task into a sequence of prompts rather than putting everything into one request.
4. **Refine repeatedly. The** first prompt rarely produces a perfect result. Treat each response as a step in an ongoing conversation and adjust it gradually.
5. **Save and reuse effective prompts.** Over time, you can build a personal prompt bank for recurring tasks.

Common prompting techniques

Several techniques are useful to learn, each suited to different situations.

- **Zero-shot prompting (a direct request)**

This involves making a direct request without providing examples. It is the quickest approach and suits simple, familiar tasks that AI can readily handle.

SAMPLE PROMPT

- Suggest a lesson on photosynthesis.

- **Role prompting**

Ask AI to adopt a particular character, persona or style to narrow the context and shape the output. This is especially useful for creating engaging content that interests students.

SAMPLE PROMPT

- Imagine you are Isaac Newton. Summarise your first law of motion.

- **Reverse prompting**

If you are unsure how to begin, ask AI to help you write the prompt. This is particularly useful for beginners: instead of struggling to formulate the request, let AI suggest the information it needs.

SAMPLE PROMPT

- What do you need to know to help me create an excellent science lesson for a Year 2 class?

This technique is also useful when you want to follow the style of an existing resource. For example, if you see an appealing set of images and want to create something similar, upload an image and ask AI to write a prompt:

SAMPLE PROMPT

- Help me write a prompt to create a set of stickers like these, but replace the character with Kitty the cat and use the captions 'WONDERFUL', 'WELL DONE', 'GREAT WORK' and 'EXCELLENT!'.

- **Combining multiple elements in a prompt**

For complex tasks, combine the role, task, output format and examples in a clearly structured prompt. Specifying the output structure helps produce organised results that are ready to use:

SAMPLE PROMPT

- You are an explorer. Write an introduction to a Year 6 lesson on 'Earth's climate zones'. Include a narrative, landscape descriptions, questions and suggested answers, plus an image-generation prompt for each landscape described. Use this structure: Introducing the journey, Stop 1, Exploration questions, Key learning points, Suggested illustration.

Five elements of a good prompt

A good prompt usually includes the following five elements. You can use them as a guide across subjects and situations. If a prompt produces a poor result, it may be missing one of these elements:

Element	Guiding question	Example
Persona	What role should AI adopt?	'Act as a skilled tutor...'
Task	What do you want AI to do?	'...explain photosynthesis...'
Audience	Who is it for?	'...to a 14-year-old student...'
Context	What is the situation?	'...for Biology exam revision...'
Constraints	What instructions or limits apply?	'...in around 300 words, using a friendly tone.'

Together, these five elements form a complete and clear prompt:

SAMPLE PROMPT

- Act as a skilled tutor who can break down complex ideas and explain them clearly. Explain photosynthesis to a 14-year-old student preparing for a Biology exam. Write around 300 words in a friendly, educational tone.

Evaluating and improving a prompt

Prompting develops through repeated comparison and refinement. Consider these two ways of expressing the same goal:

WEAK PROMPT

- Find the three main causes of air pollution in large cities.

This prompt does not specify a role, audience, format or context, so the response is likely to be general and difficult to use immediately.

IMPROVED PROMPT

> Act as a Geography teacher preparing material for an upper secondary student presentation. Identify three main causes of air pollution in large cities. Describe each in two or three sentences, using accessible language suitable for placing directly on presentation slides.

The second prompt specifies a role, an audience, **a format (two or three** sentences) and a context (an **upper** secondary presentation). This is the kind of refinement worth practising regularly.

Suggested practice

Develop a complete prompt for your own subject or vocational area. Try to include all five elements:

- **Persona:** What role should AI adopt?
- **Task:** What do you want AI to do?
- **Audience:** Which learners is the content for?
- **Context:** In what circumstances will it be used?
- **Constraints:** Are there requirements for length, format, tone, difficulty or things to avoid?

Suggestions:

Begin with a familiar task, such as creating exercises, drafting an email, writing a discussion scenario, planning a learning project, designing group work, explaining a difficult concept or creating an exit ticket.

SAMPLE PROMPT

> Act as an experienced upper secondary Mathematics teacher. Explain 'The sign of a quadratic expression' to Year 10 students. Help them understand how to determine the sign before attempting exercises. Use a brief, accessible explanation and a summary table showing the cases for the discriminant Δ. Limit the response to around 250 words and avoid overly academic language.

AI-generated response:

A quadratic expression has the form $f(x)=ax^2+bx+c$, with $a \neq 0$. To determine the sign of the quadratic expression, we consider the **coefficient a** and the **discriminant** $\Delta = b^2 - 4ac$.

In simple terms: the sign of the quadratic expression tells us where the graph of the parabola lies above or below the horizontal axis. The points where it intersects the horizontal axis are the solutions of the equation $ax^2+bx+c=0$.

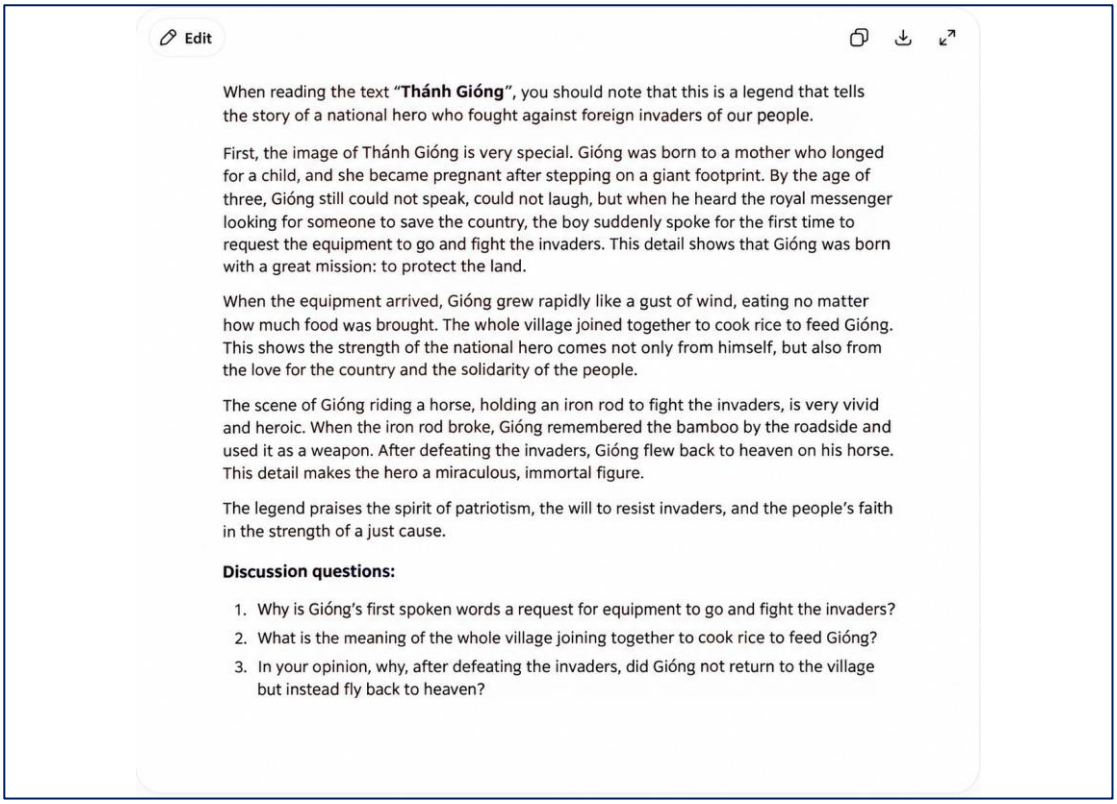
Case	Roots	Sign of the quadratic expression
$\Delta < 0$	No real roots	Always has the **same sign as a**
$\Delta = 0$	One repeated root x_0	Has the **same sign as a** except at x_0, where $f(x_0)=0$
$\Delta > 0$	Two distinct roots $x_1 < x_2$	**Same sign as a** outside the roots; **opposite sign** between them

For $\Delta > 0$:
"Same sign outside, opposite sign inside."

SAMPLE PROMPT

- Act as an experienced lower secondary Literature teacher. Guide Year 6 students through 'Thánh Gióng' in Unit 6, Stories of Heroes, in the Year 6 Literature textbook from the Connecting Knowledge with Life series. Help students understand the character of Thánh Gióng and the meaning of the legend. Use accessible language and include three open-ended discussion questions. Write around 250 words and avoid overly academic language.

AI-generated response:



Evaluating AI responses

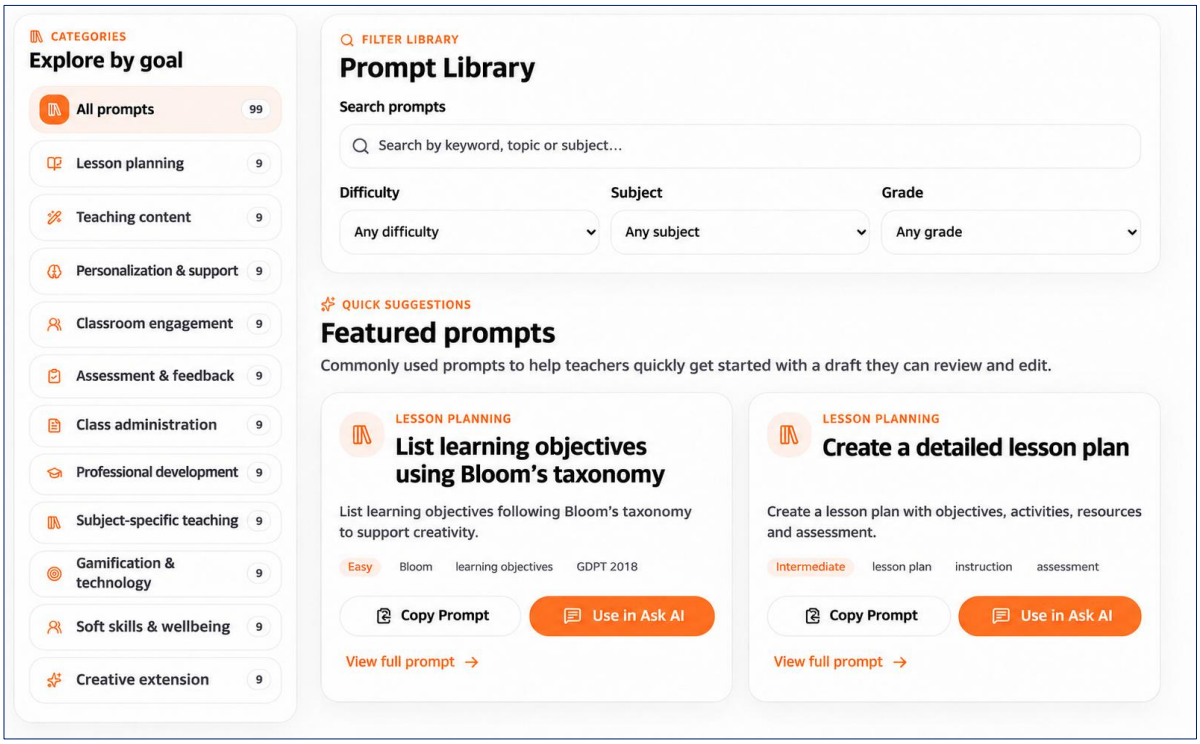
Because AI can hallucinate or produce biased and unfair responses, teachers must review outputs and make further adjustments where needed:

- Use subject expertise and critical thinking to assess the response's accuracy, reasoning and appropriateness.
- Consider whether the content suits the lesson objectives, classroom context and students you teach.
- Verify information against other reliable sources, such as textbooks, official materials, research publications or reputable news outlets.

1.4. A prompt library for teachers

Alongside writing your own prompts using the principles above, **you can explore Upskii's** educational prompt library at https://upskii.com/library.

The library brings together prompts designed for teaching and learning. They demonstrate effective approaches to familiar tasks such as planning lessons, creating resources, designing classroom activities, developing assessments, providing feedback and supporting students. Adapt the subject, year level, duration, learning objectives and student characteristics to your own classroom.



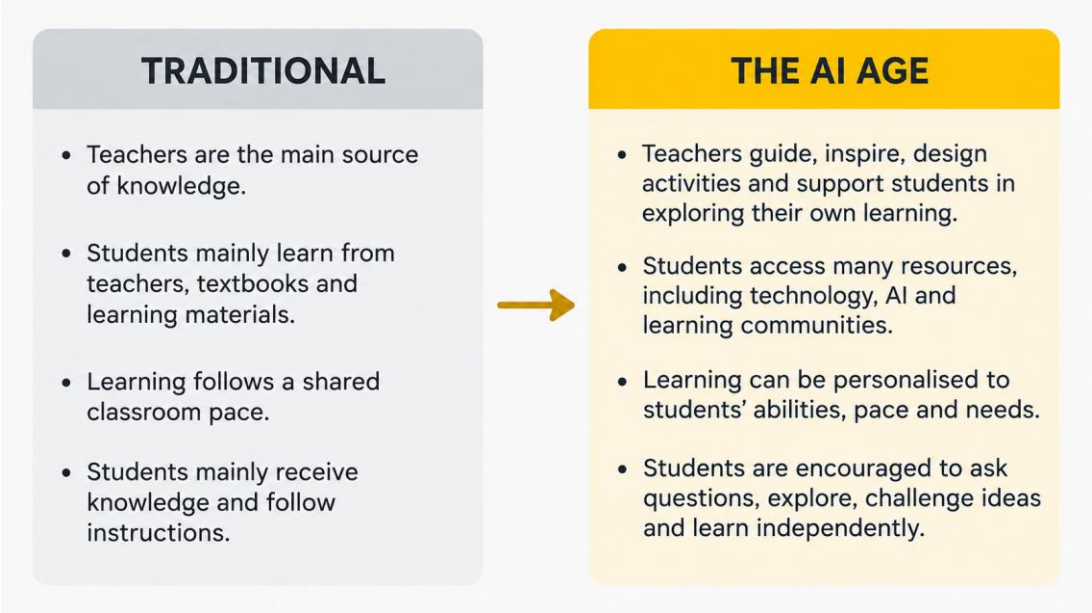
You can currently browse prompts by purpose, copy complete prompts or sign in to use them directly with Upskii's AI Assistant. Each has a short description and belongs to a category of common teaching tasks, including:

Category	Example prompts
Lesson planning	List learning objectives using Bloom's taxonomy; draft a detailed lesson plan; plan a 5E lesson; design a STEM lesson; pace a 45-minute lesson
Teaching content creation	Explain a complex concept; design a multiple-choice test; create worksheets; outline lesson slides; create a bilingual glossary
Personalisation and student support	Create three versions of an exercise; design step-by-step scaffolding; prepare a catch-up lesson; help quieter students participate
Classroom interaction and engagement	Organise Think-Pair-Share or a Gallery Walk; generate discussion questions; design a debate; create a role-play scenario
Assessment and feedback	Create a detailed marking rubric; provide constructive feedback; create an exit ticket; analyse errors; design a peer-assessment checklist
Classroom management and administration	Draft an excursion email; plan a parent meeting; write classroom rules; prepare deadline reminders
Professional learning and collaboration	Act as an expert reviewer; create a personal development plan; design a peer-observation checklist; outline an action research project
Subject-specific support	Create a real-world maths problem; design a safe science experiment; analyse a historical source; create an English speaking activity
Gamification and technology	Write classroom quiz rules; design a badge system; create a skill tree; teach digital citizenship when using AI
Social and emotional skills	Plan a growth mindset lesson; teach time management; prepare a lesson on empathy; manage pre-test stress
Further creative prompts	Create an evocative lesson opening; write a poster design brief; design a local community project; create AI expert role cards

These examples show that prompts can support much more than simple questions and answers. They can assist with lesson preparation, classroom activities, personalised learning tasks, assessment and professional learning. However, do not copy them mechanically. A sample prompt is a starting point. Better results usually come from adding your actual classroom context, reviewing AI's response, checking its content and editing it using your pedagogical expertise.

1.5. The roles of educators and education leaders

A common concern about AI is whether it will replace teachers. Both practice and international policy frameworks point to the same answer: no. AI shifts educators' roles towards contributions that machines cannot replace, including inspiration, guidance, support and human connection.



Teachers as guides and role models

In an AI-supported classroom, teachers model responsible technology use. Students learn a great deal by watching how their teachers use AI. Useful practices include:

- Learn to use AI tools confidently and demonstrate them in class rather than keeping the process hidden.
- Encourage students to use AI for independent learning, while emphasising evaluation and verification.
- Share a bank of prompts that have produced reliable results so students can learn from them.
- Invite students to predict and evaluate AI outputs before and after a task. For example: 'Let's see what feedback AI might offer on your writing.'

The roles of education leaders and institutions

Teachers use AI directly in classrooms, while leaders create conditions for effective and safe use. Leaders can:

- **Provide professional learning:** develop knowledge, skills and AI-integrated teaching approaches, while encouraging collaboration and experience sharing.

- **Improve teaching approaches:** adapt teaching practices to integrate AI-supported activities effectively.
- **Establish policies:** clarify when AI may and may not be used, provide safe tools, and arrange oversight and impact evaluation.
- **Invest in infrastructure:** improve equipment and ensure equitable access to the internet and AI tools so technology does not widen existing gaps.
- **Promote research and collaboration:** work with Vietnamese and international partners to identify approaches suited to Vietnam's educational context.

> • **NOTE**
>
> Vietnamese policy and guidance: Circular No. 02/2025/TT-BGDĐT, dated 24 January 2025, sets out the Digital Competence Framework for Learners. Official Dispatch No. 2250/BGDĐT-GDPT, dated 12 May 2025, implements the Guidance on Using AI in Teaching and Learning, available at ai.vnies.edu.vn. The Ministry of Education and Training is also developing a strategy for AI applications in education. These frameworks are discussed further in Chapter 6.

1.6. Principles of ethical and responsible AI use

Responsible AI use is essential if technology is to serve educational goals without causing harm. The following complementary sets of principles draw on guidance from Microsoft, UNESCO, the OECD, UNICEF and the EU. Use them as a checklist before introducing AI into teaching and learning.

> • **NOTE**
>
> A principle shared by most international guidance is keeping a 'human in the loop'. The U.S. Department of Education recommends keeping people central to every educational use of AI (U.S. Department of Education, 2023). UNESCO likewise stresses that AI cannot and should not replace teachers (Miao & Cukurova, 2024).

Six principles of responsible AI use

1. **Fairness:** Does AI treat all students fairly? Could it introduce bias or disadvantage a particular group?
2. **Reliability and safety:** Is the generated content trustworthy? Does the system protect learners' data, provide safe content and support emotional wellbeing?

3. **Privacy and security:** Does AI collect or share students' personal data? Is that data adequately protected?
4. **Inclusiveness:** Does the system support students with different needs, abilities and circumstances?
5. **Transparency:** Do teachers and students understand how AI produces results? Can information be traced and verified?
6. **Accountability:** Who is responsible for errors or misleading information? Is AI use clearly monitored and adjusted?

Five foundational ethical principles

- **Do no harm:** Avoid negative effects on learners' psychological, social and physical wellbeing.
- **Respect human dignity:** Preserve learners' autonomy and human worth throughout learning.
- **Digital ethics:** Help learners understand and use AI responsibly and critically.
- **Sustainability:** Use AI in environmentally and socially responsible ways.
- **Explainability:** Users should understand why AI produces a particular result or recommendation.

▲ LIMITATIONS & RISKS

Data minimisation should underpin every use of AI. Enter only non-sensitive, de-identified information that is necessary for the educational purpose. When requesting feedback suggestions, for example, remove student names and identifying details and replace distinctive information with hypothetical placeholders. This principle is reinforced by frameworks such as Europe's GDPR and the 13 Australian Privacy Principles (European Commission; Office of the Australian Information Commissioner). The EU AI Act prohibits AI-based emotion recognition in schools, so do not use cameras or microphones to infer students' emotions or concentration (European Commission). As data governance requirements tighten in Vietnam, check your school's or education department's policies before using public cloud tools.

A practical scenario: who is responsible?

▸ **EXAMPLE**

A teacher uses AI to create a test and gives it to the class without checking it carefully. During the test, students identify incorrect questions that cause confusion and undermine its reliability. Which principle does this concern, and who is responsible?

This is an accountability issue. Teachers retain final responsibility for content, including AI-generated material. They cannot simply blame AI: they must check, revise and respond promptly to errors. AI supports, but does not replace, human expertise and pedagogical judgement. Saving time must never come at the expense of reviewing quality.

• **NOTE**

Sustainability receives less attention than it deserves. Each AI query consumes electricity in data centres, and billions of queries have a real environmental impact. Use AI purposefully rather than for simple tasks you could complete more quickly yourself.

Recent research also highlights the electricity and water consumed by data centres running AI models, reminding us to use AI with restraint and clear purpose (Li et al., 2025).

1.7. Guiding students in using AI

Students will encounter AI inside and outside school, whether teachers permit it or not. Educators' task is therefore to guide students in using AI to support thinking rather than replace it. With guidance, students can use AI as a tutor; without it, they may turn it into a tool for copying answers.

How can teachers respond to AI misuse?

Students have already used AI to write assignments and essays instead of doing the work themselves. Some Literature teachers have identified AI-written analyses, asked students to redo them and advised limiting AI to outlining. AI may fail to analyse literary techniques deeply, leaving inconsistencies that careful reading can reveal. Alongside setting limits, teachers can take the following steps:

1. Teach effective and ethical AI use appropriate to the subject, such as using it only to develop an outline or suggest an approach.
2. Choose teaching and assessment methods that reveal each student's individual contribution.

3. Provide clear marking criteria stating which stages and degrees of AI assistance are permitted.
4. Agree on shared rules for AI use in student work.
5. Develop subject expertise and technological understanding to evaluate student work comprehensively.
6. Assess the learning process as well as the final product, using more direct assessment and tasks that require creativity and critical thinking.

> • **NOTE**
>
> *Where AI assistance is permitted, ask students to identify the tool, its purpose and the stages at which they used it. They should follow citation and referencing requirements, check and revise their work, and take responsibility for the final product.*

A practical technique: AI-supported independent revision

Rather than letting students copy AI answers, teach a constructive revision cycle in which AI serves as a practice partner. The process has four steps:

1. **Ask AI to summarise and generate questions without answers. For** example: 'Act as a Year 8 Biology teacher. Help me revise the circulatory system: summarise the key ideas and create six multiple-choice questions, with two easy, two medium and two difficult questions. Do not give the answers yet so I can try them first.'
2. **Students answer** independently, then submit their choices: 'My answers are 1C, 2B, 3A, 4B, 5A and 6B. Check them and explain each answer briefly so I can understand.'
3. **Read the feedback and ask** follow-up questions about anything unclear.
4. **Ask AI for a new set of** questions with gradually increasing difficulty.

> ◆ **PRACTICAL TIP**
>
> The key is that students think first and AI responds afterwards. This makes AI a personal revision tutor that reinforces knowledge and self-assessment instead of weakening independent thinking. Demonstrate the cycle in class.

Three guiding questions: purpose, age and limits

When guiding students, or your own children, in using AI, draw on a simple framework informed by UNESCO, UNICEF and Bloom's taxonomy. It centres on three questions:

- **Purpose:** Before choosing a tool, ask what the student wants to learn. With a clear purpose, AI supports meaningful learning. Without one, it can take over the thinking.

- **Age:** Match supervision to developmental stage. Younger children need close adult guidance. Older students may exercise greater judgement but still need clear boundaries.
- **Limits:** Decide when AI has provided enough support and students should continue independently. Just as a calculator can check a calculation without replacing learning mathematics, AI needs boundaries that protect core skills.

Helping students see both sides

An open discussion about AI's benefits and risks is often more effective than a ban. Students already recognise both through their own experience. Help them draw their own conclusions:

◆ PRACTICAL TIP

Benefits students recognise: AI can help develop ideas after an initial outline, save time, personalise learning pathways and support creativity and research.

▲ LIMITATIONS & RISKS

Risks students recognise: Dependence on AI may weaken independent research, synthesis and memory. Its information is not always accurate, and overuse can undermine communication and teamwork while increasing the risk of personal data exposure.

To identify the capabilities students need, consult UNESCO's AI Competency Framework for Students and the Digital Competence Framework in the Ministry of Education and Training's Circular No. 02/2025. Chapter 6 examines both frameworks in detail, outlining the knowledge, skills and attitudes learners need in the AI age.

Chapter conclusion

This opening chapter explored how AI and generative AI work through probabilistic prediction. This helps explain their usefulness, limitations and need for verification. The chapter also surveyed available tools, introduced five elements of an effective prompt and offered techniques for immediate practice.

More important than any tool is the educator's continuing role. That role is changing, not disappearing, and AI use needs to rest on ethics, responsibility and support for students. These foundations carry into the following chapters, where AI is applied to specific teaching tasks.

★ KEY TAKEAWAYS

✓ Generative AI predicts linguistically plausible content, not necessarily factual information. Always verify its outputs.

✓ A good prompt includes five elements: persona, task, audience, context and constraints.

✓ Prompting is iterative: ask, receive a response and refine repeatedly.

✓ Teachers retain final responsibility for all content, including AI-generated material.

✓ Guide students to use AI to support their thinking, not replace it.

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CHAPTER

02

USING AI TO DEVELOP LESSON PLANS AND TEACHING PRESENTATIONS

Step-by-step practice, from initial ideas to lesson plans, presentations and complete learning resources

CHAPTER 2

USING AI TO DEVELOP LESSON PLANS AND TEACHING PRESENTATIONS

Lesson preparation takes up a substantial part of teachers' time. AI can serve as a tireless colleague, helping generate ideas, structure lessons and create presentations, leaving more time for supporting students.

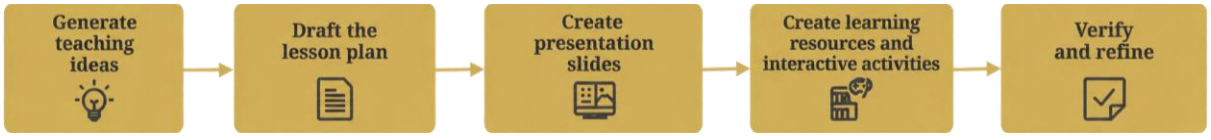
★ IN THIS CHAPTER, WE WILL:

- ✓ Create detailed lesson plans through a four-step AI-assisted process
- ✓ Build presentations step by step with Gamma and Canva, using illustrated guidance
- ✓ Create source-checked presentations with NotebookLM
- ✓ Design lessons using pedagogical approaches and the TPACK framework
- ✓ Explore inclusive design and teaching in low-technology settings
- ✓ Check and refine outputs, and avoid common mistakes in AI-assisted lesson preparation

Chapter introduction

An effective lesson starts with a well-designed plan. Yet preparing the plan, slides, activities, discussion questions and exercises can take hours per lesson. For teachers working across multiple classes or subjects, this is a continuing demand. Generative AI can be particularly useful here, helping you move from a blank page to a structured draft in minutes.

Whereas the opening chapter introduced foundations, this chapter offers practical, step-by-step processes with illustrations so that you can work through them as you read. One principle applies throughout: AI produces a draft, but the teacher remains the final author. Check every suggestion for accuracy, suitability for students and alignment with the General Education Curriculum before using it in class.



AI-assisted lesson preparation: a continuous process from ideas to finished resources.

Before exploring individual techniques, consider the tasks AI can support. This overview helps you decide what to delegate and what requires your own judgement:

Area	How AI can help
Generating lesson ideas	Suggesting ideas, approaches, starter activities and guiding questions
Preparing content and resources	Drafting lesson plans, discussion questions, homework and slides
Creating interactive learning tools	Designing games, worksheets, quizzes and simulations (see Chapter 4)
Assessment	Drafting tests, answer keys, marking criteria and feedback (see Chapter 3)
Personalising teaching and learning	Adjusting content to different levels and analysing needs to support individual students

- **NOTE**

Conversational assistants suitable for lesson preparation include ChatGPT, Microsoft Copilot, Google Gemini, Anthropic Claude and others. Choose a tool you are comfortable with. The processes in this chapter can be applied across tools.

2.1. Creating lesson plans with AI

A lesson plan does more than list content. It connects objectives, teaching approaches and the capabilities students need to develop. AI can act as a pedagogical assistant, generating ideas, structuring plans around learning outcomes and suggesting active learning tasks. Follow these four steps.

Step 1. Define the objectives and inputs

Before writing the prompt, identify the lesson topic, students' year level or proficiency, duration and core objectives for knowledge, skills and attitudes. Prepare reference materials, such as textbook pages or standard procedures, to attach where available.

Refer to Vietnamese guidance and lesson plan frameworks. Alongside learning outcomes and subject materials, attach the applicable guidance or lesson plan template so AI can follow the correct structure. Relevant documents include: Ministry of Education and Training Official Dispatch No. 2345/BGDĐT-GDTH, dated 7 June 2021, on guidance for developing school education plans at primary level (Appendix 3 provides lesson planning guidance); Ministry of Education and Training Official Dispatch No. 5512/BGDĐT-GDTrH, dated 18 December 2020, on developing and implementing school education plans (Appendix IV, Lesson Plan Framework); and Ministry of Education and Training Official Dispatch No. 3456/BGDĐT-GDPT, dated 27 June 2025, on guidance for implementing the Digital Competence Framework

for general education students and continuing education learners, which supports integrating digital competence requirements into lesson plans.

Step 2. Write a structured prompt

Use the structure introduced in Chapter 1, adding the output format: role, task, audience, context, format and constraints. Here is a complete prompt for a practical lesson:

SAMPLE PROMPT

▸ Act as an experienced teacher. Task: Prepare a lesson plan for 'Mechanical Technology: Manufacturing Processes for Components'.

Duration: 45 minutes.

Audience: Year 11 students.

Content requirements:

1. Learning objectives (knowledge, skills and attitudes).
2. Teaching and learning activities focused on demonstration and guided practice.
3. Timing: 10 minutes of theory, 10 minutes of teacher demonstration, 20 minutes of group practice and 5 minutes of review.
4. Safety considerations, where practical work is involved.

Format: Present a clear lesson sequence in a table.

This prompt structure works across subjects and vocational fields, from Literature and Science experiments to diagnosing a vehicle starting system, handling guest complaints in hospitality or programming a PLC to control traffic lights. Adjust the role, content and teaching approach. For example, adapt it for early childhood education as follows:

SAMPLE PROMPT

▸ Act as an experienced early childhood educator. Task: Plan an activity on 'Exploring **different** fruits'.

Duration: 25 minutes.

Audience: Five-year-old preschool children.

Requirements:

1. Set age-appropriate learning objectives.
2. Organise observation and hands-on exploration using real fruit.
3. Suggest a simple game in which children sort fruit by colour, shape or number of seeds.
4. Include a movement-to-music activity and open-ended questions that encourage children to observe, describe and share.
5. Use brief, accessible language suitable for five-year-olds.
6. Prioritise direct experience. AI supports the educator's preparation; children are not required to interact with a chatbot.

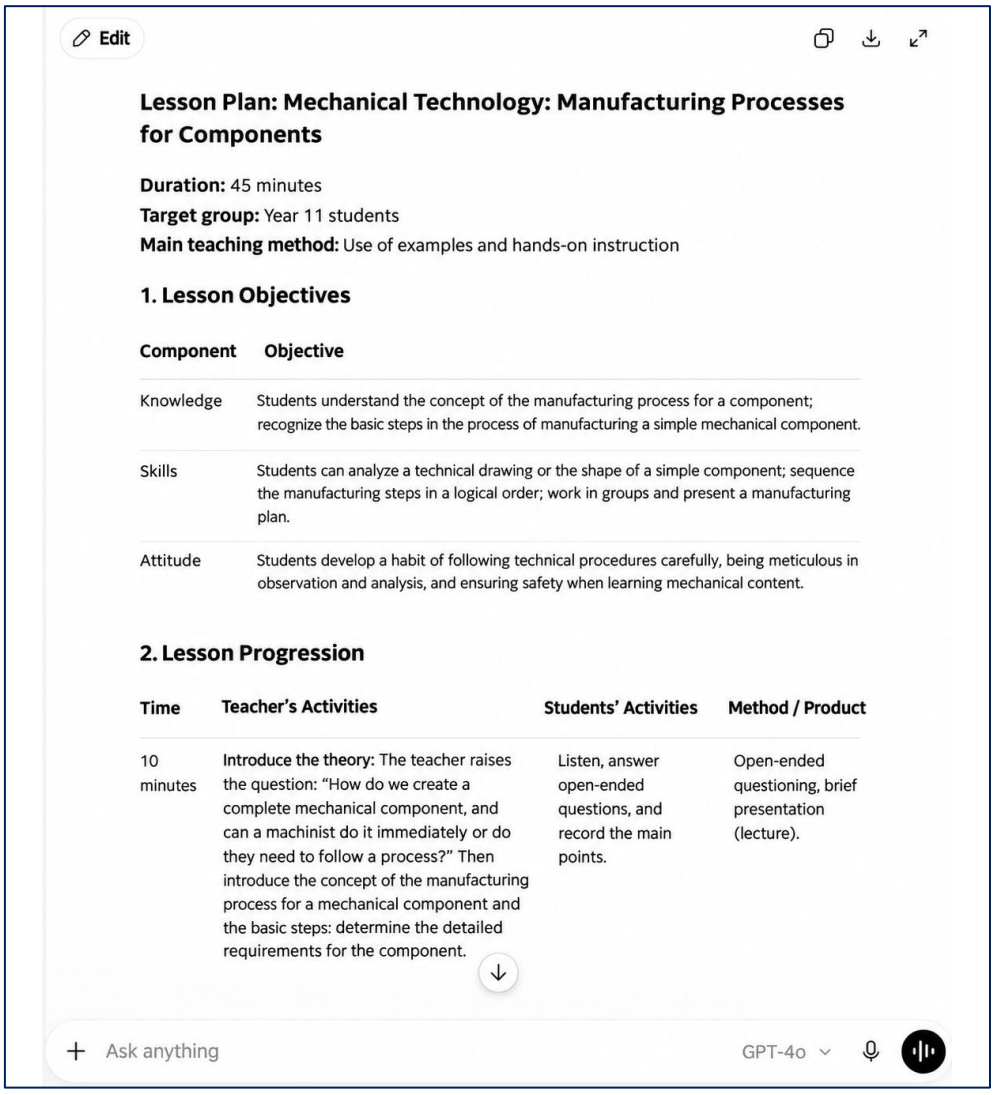
Format: Use a lesson-sequence table with timing, educator activities, children's activities and required resources.

Step 3. Interact and refine

Read AI's initial response and request changes where needed using short prompts such as 'Add practical activities', 'Reduce the theory', 'Include safety rules' or 'Use a local example'. A few rounds of refinement can make the result much better suited to your context.

Example AI-generated response:

A clearly structured lesson plan with objectives, safety considerations and a timed sequence of activities.



Step 4. Apply professional review

This step is essential. Use your subject expertise to verify specifications, procedures, facts and suitability before using the lesson plan. AI can speed up preparation, but the teacher is responsible for quality.

2.2. Creating presentations with Gamma

Once you have a lesson plan, the next step is creating slides. Gamma (gamma.app) is a leading AI presentation tool. It can turn an outline or passage of text into an attractive, editable presentation that can be exported as PowerPoint or PDF.

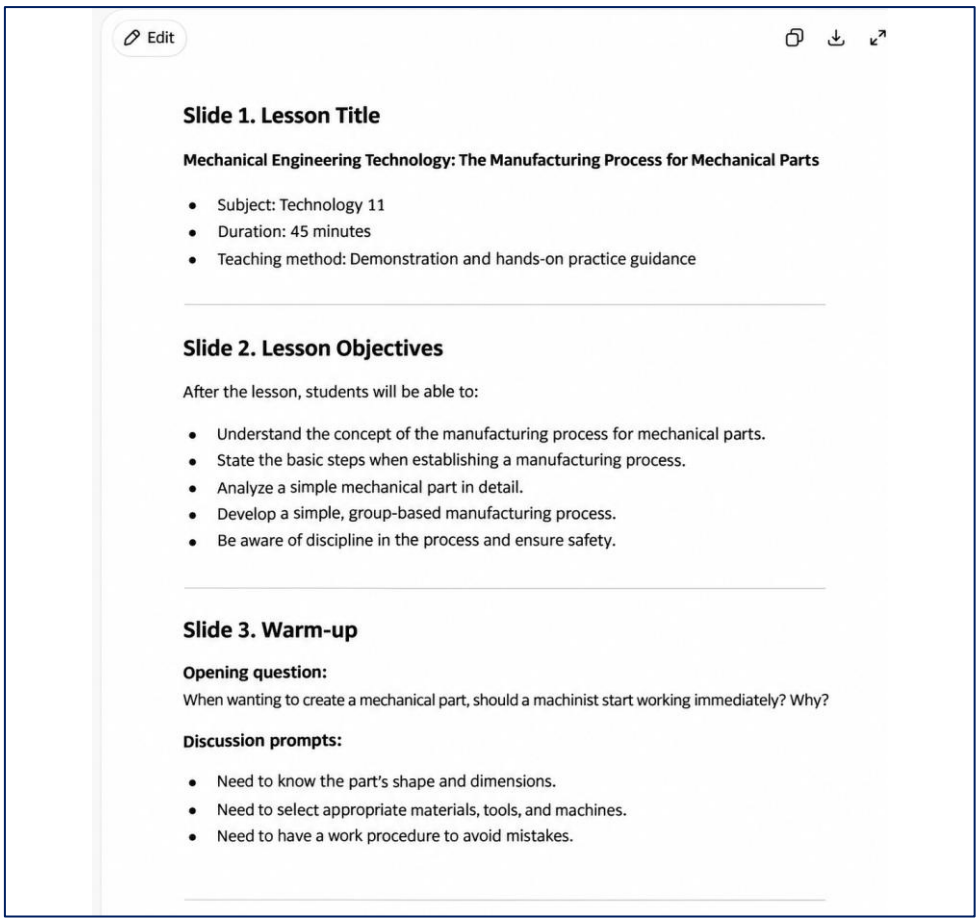
Step 1. Prepare the content

Using your lesson plan, or an existing lesson plan file, ask an AI assistant to prepare detailed presentation content for the desired number of slides. For example:

SAMPLE PROMPT

- Create a 10-slide teaching presentation outline based on the lesson plan above. Include clear objectives, the key subject content and simple consolidation quiz questions with answers.

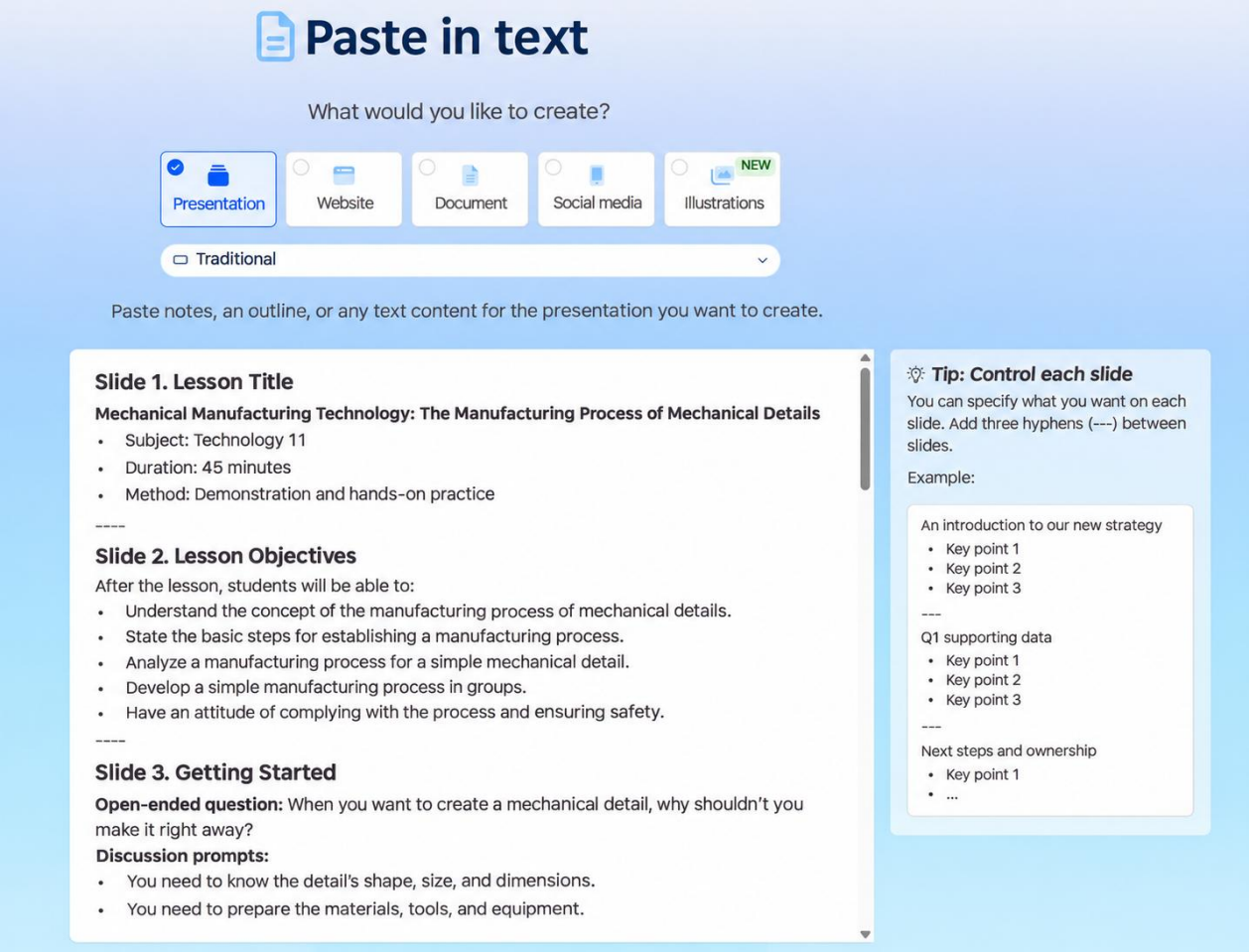
AI-generated response:



Step 2. Set up Gamma

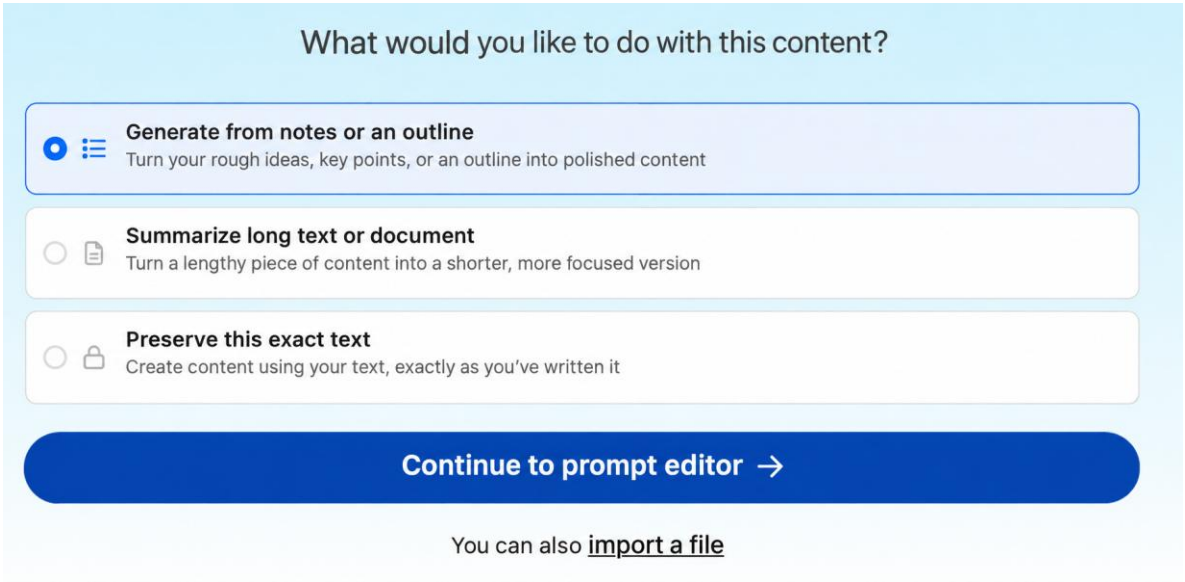
Visit gamma.app and sign in. 'Continue with Google' is a quick **option. On first** use, Gamma asks about your intended purpose; select the relevant options to continue.

On the home screen, choose Paste **in text and** paste the presentation content. Include only the relevant material and remove any extra text. Select **Presentation** and the Traditional **16:9** format.



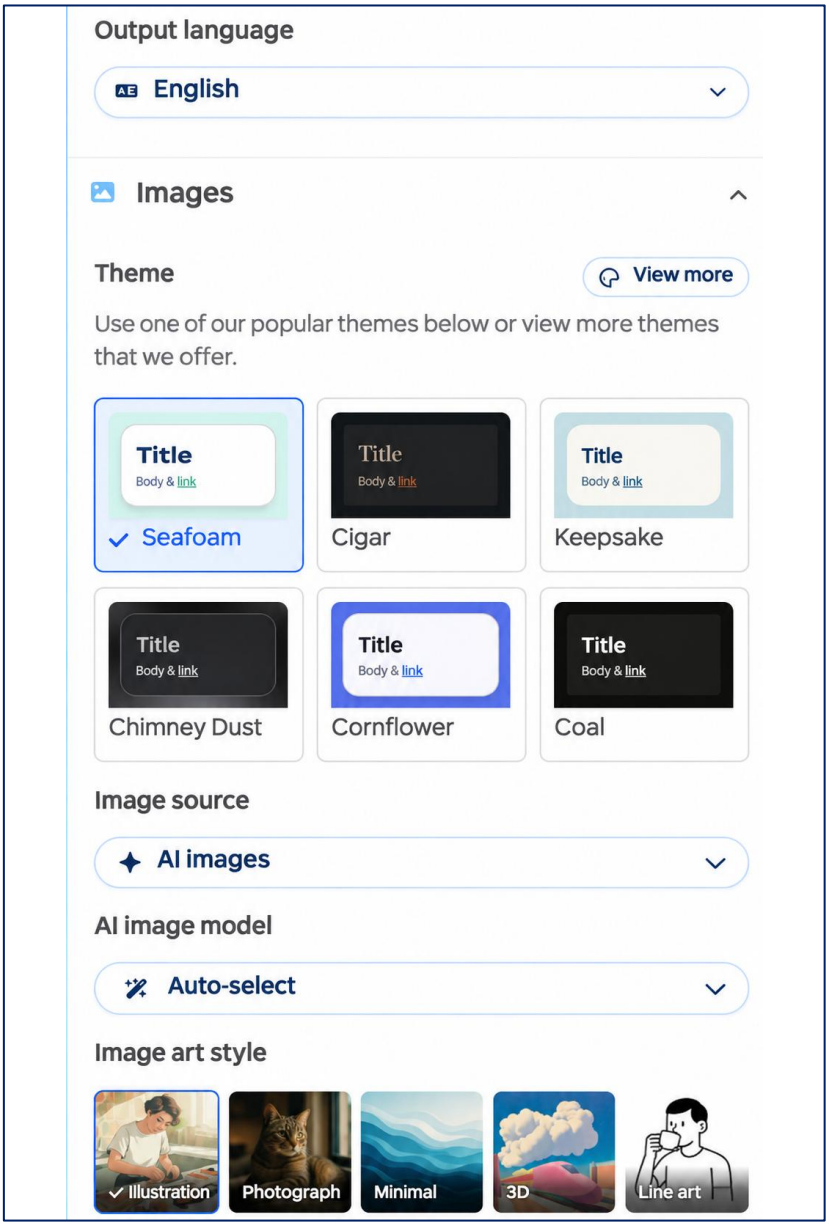
Step 3. Choose how to generate content

Gamma asks what you want to do with your content. Select 'Generate **from notes or an outline'**, then Continue.



Step 4. Check slide divisions and choose a theme

Gamma divides the content into slides. Check the divisions and adjust them if needed. Set the output language to English and select an appropriate educational theme, such as blue, grey or white.



Step 5. Refine and export

Gamma generates a complete presentation, as illustrated below. Review it throughout and make further changes where needed. You can also use 'Edit with AI', the chat box on the right, to request layout changes or replacement images.



Finally, export the presentation as **PowerPoint or PDF** so **you** can teach without an internet connection.

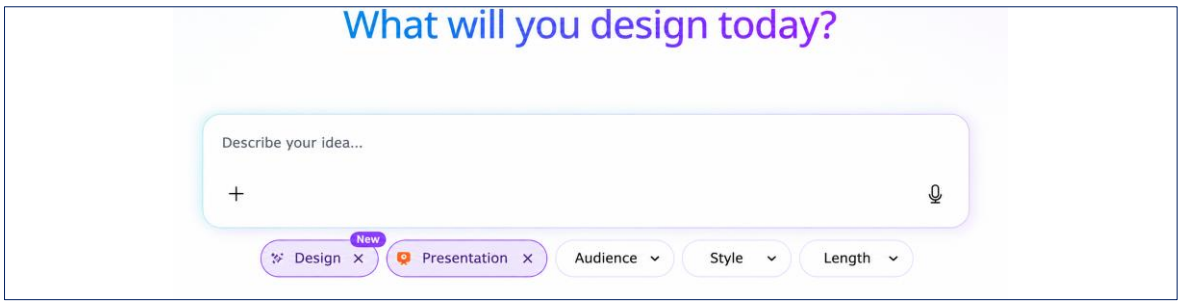


2.3. Creating presentations with Canva AI

Canva (Magic Studio) is useful for presentations rich in images and graphics. Follow this process to create a presentation with Canva AI:

1. Visit https://www.canva.com/ai and sign in. If available, use your institutional .edu email when applying for Canva for Education.

2. **Start a presentation:** Select Design, then choose Presentation.



3. **Set the audience and style:** Choose **an audience,** such as Instructional or Professional, **a style** such as Minimalist or Modern, and **the** length.

4. **Enter a detailed request:** Clearly describe the topic, number of slides, structure and desired style. This is the most important step.

5. **Generate and preview:** Canva creates an outline. When satisfied, select Generate design to create the full presentation, then Use Canva Editor to view all slides.

6. **Edit and finalise:** Revise the content, add the presenter's name and adjust fonts, colours, images and videos.

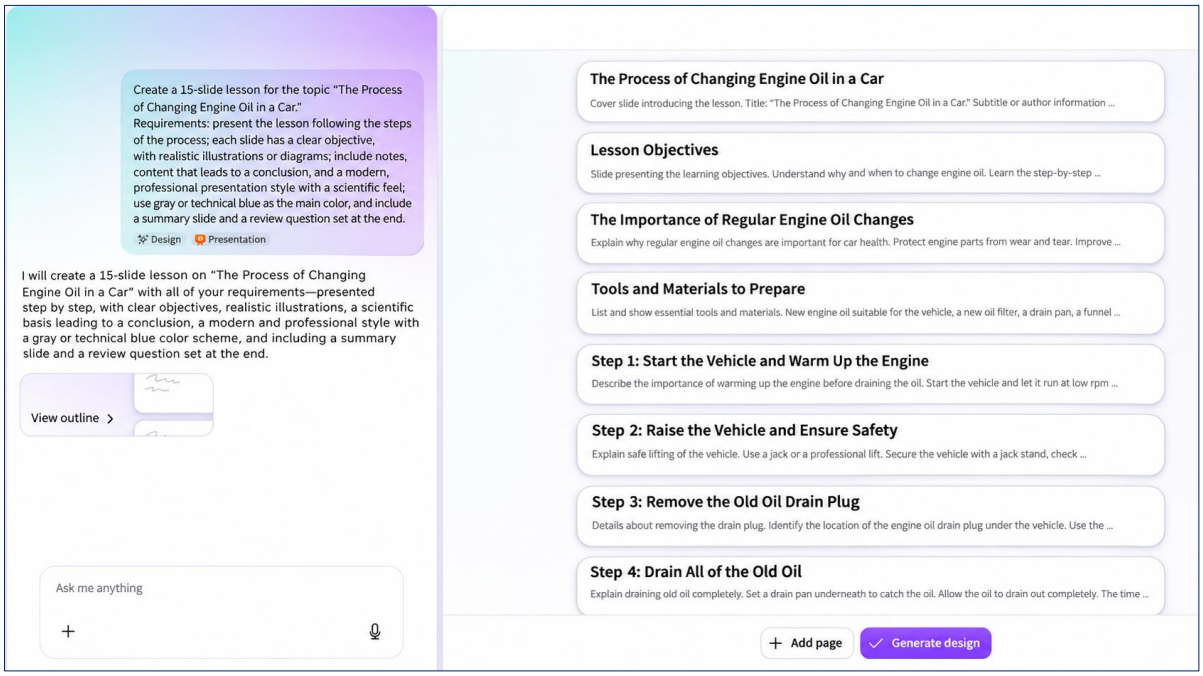
7. **Download or share:** Select Share, then Download, and choose a suitable format such as PDF or PowerPoint.

Try the following sample prompt:

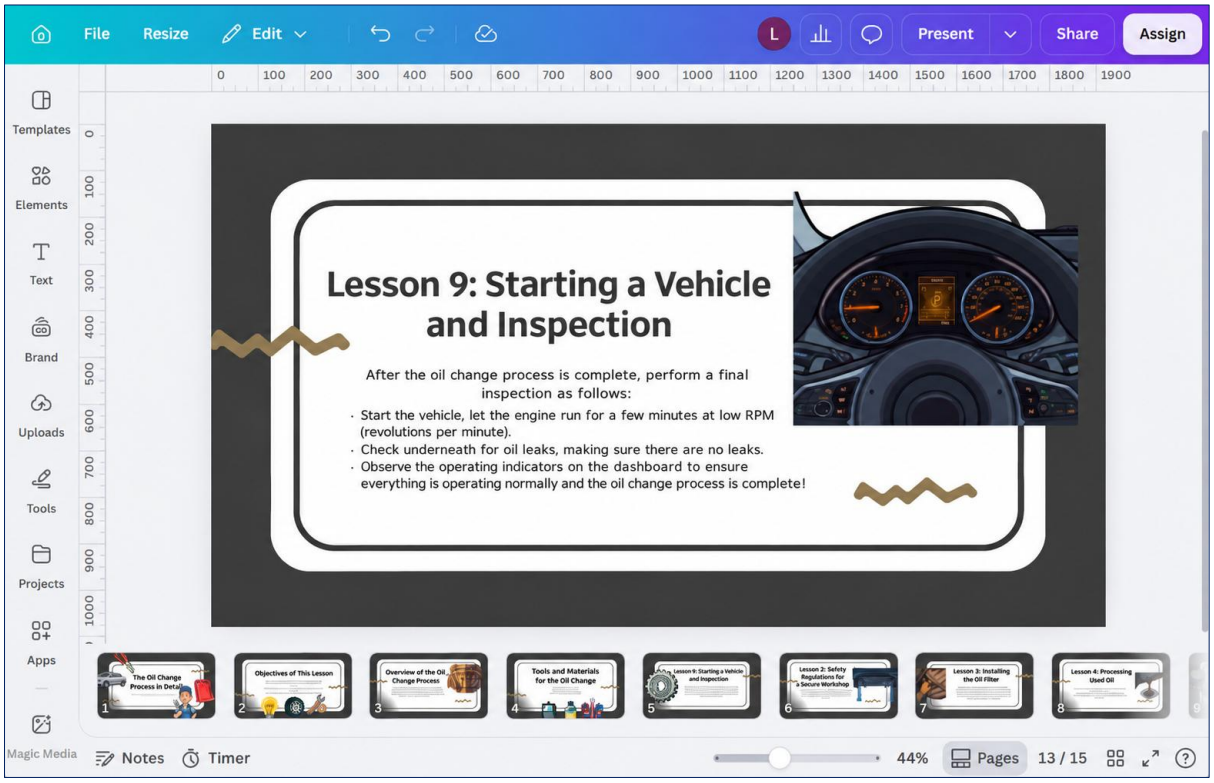
SAMPLE PROMPT

- Create a 15-slide lesson presentation on 'Changing a car's engine oil'.
  Requirements: Follow the procedure step by step. Give each slide a clear title and a realistic illustration or technical icon. Use a logical introduction, main section and conclusion, with a modern, professional style and a grey or technical blue background. Include a summary slide and revision questions at the end.

After you enter the prompt, Canva AI creates an outline to preview. Ask for adjustments if necessary. Once satisfied, select **Generate design** to create the complete presentation.



The Canva AI-generated presentation can be fully edited in Canva Editor:



The Canva AI-generated presentation can be fully edited in Canva Editor.

2.4. Creating source-checked slides with NotebookLM

Gamma and Canva are convenient for creating presentations quickly. However, much of their generated content may rely on AI's learned knowledge and may be inaccurate or insufficiently aligned with your teaching materials. For a more detailed presentation grounded in reliable sources, use NotebookLM to build an outline from verifiable reference materials. Follow this process:

Building a source-checked outline with NotebookLM

1. **Create a notebook in NotebookLM**

Visit https://notebooklm.google.com and sign in with Google. Create a notebook for your lesson and name it by subject, year level or topic, for example 'Year 8 Biology: **The circulatory** system'.

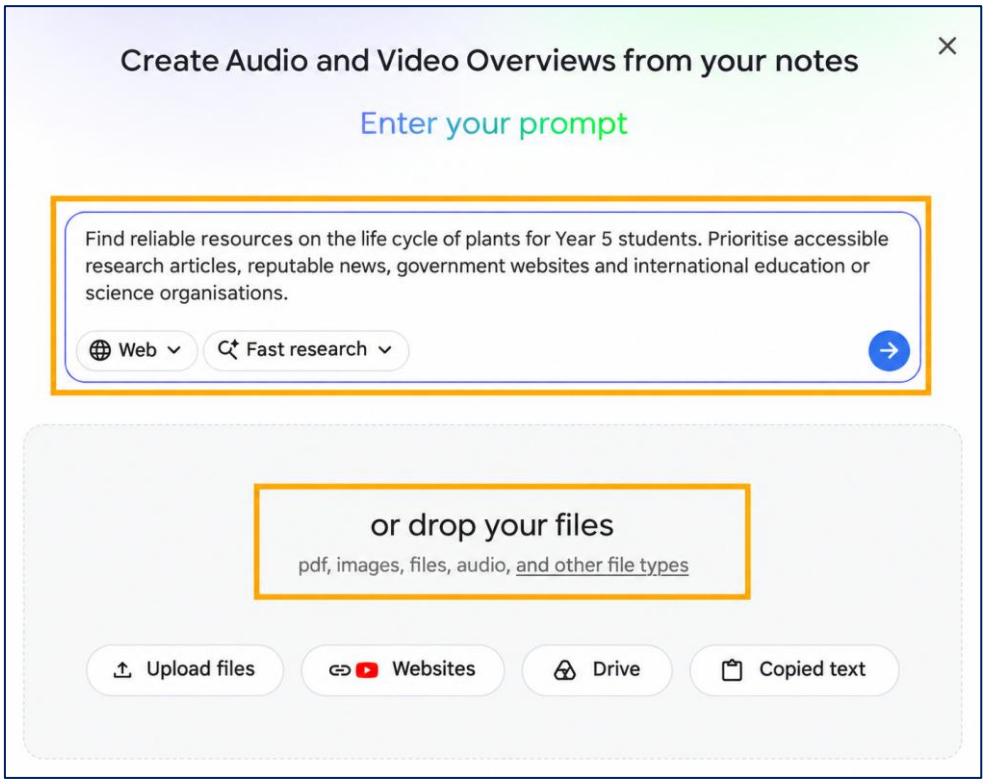


2. **Find or upload source materials**

Upload materials such as course texts, textbooks, articles or professional resources for AI to consult. If you do not yet have sources, enter a prompt requesting reliable references.

SAMPLE PROMPT

- Find reliable resources on 'The life cycle of plants' for Year 5 students. Prioritise accessible research articles, reputable news reports, government websites and international education or science organisations.



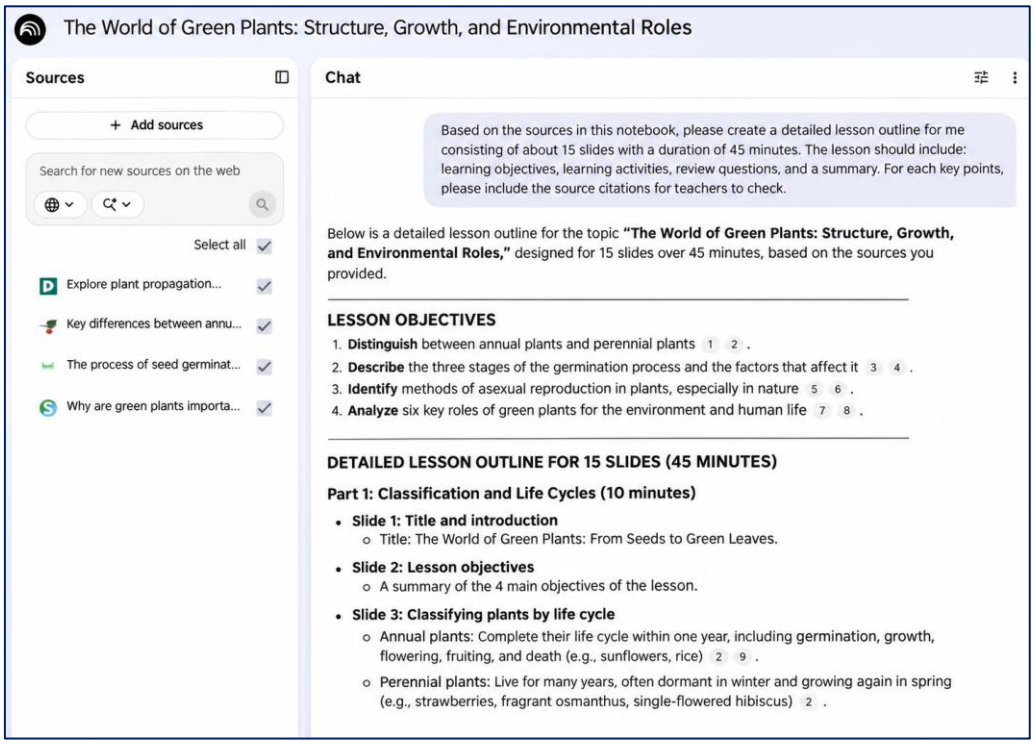
3. **Ask NotebookLM to create a lesson outline**

Once sources are available in the notebook, ask NotebookLM to create an outline based on them:

SAMPLE PROMPT

- Using only the sources in this notebook, create an outline for approximately 20 slides for a 45-minute lesson. Include learning objectives, key content, learning activities, quick checks for understanding and a conclusion. Add a source citation for each important point so the teacher can verify it.

NotebookLM creates an outline grounded in your sources, with citations for checking:



4. **Check and revise the outline**

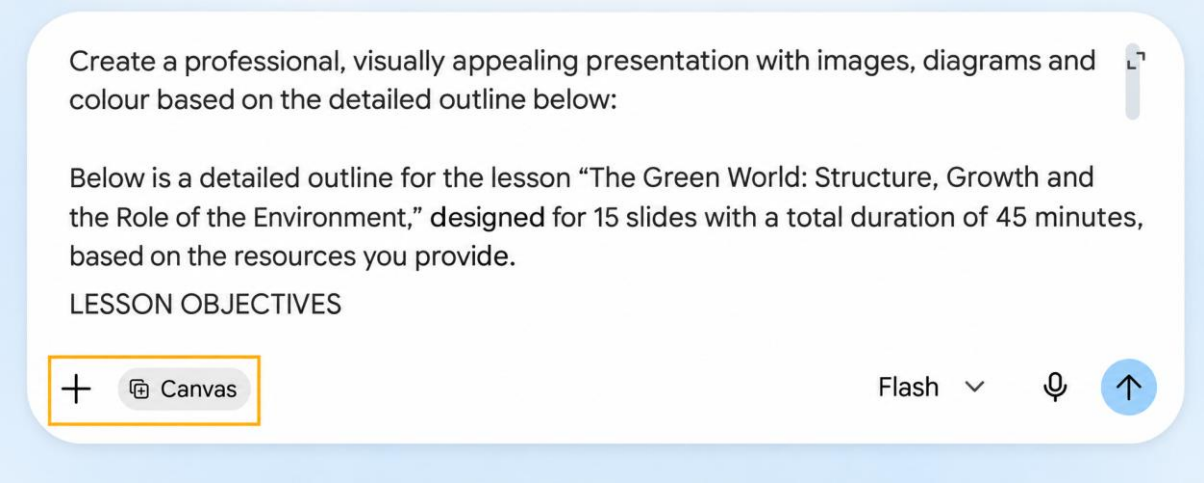
Read the outline, check the citations against the original materials and revise anything unsuitable. Do not use the AI-generated result without verification.

Creating slides with Gemini Canvas and refining them in Google Slides

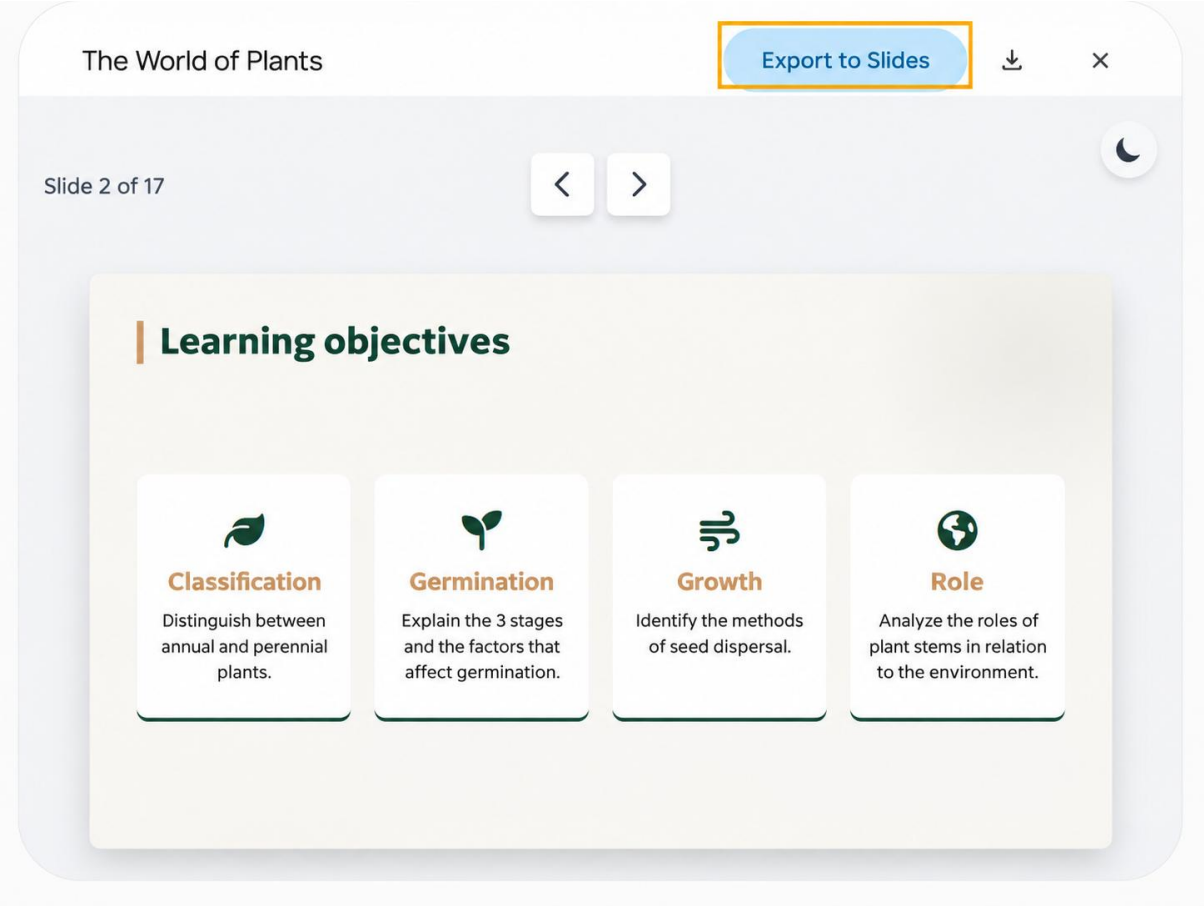
Turn your detailed outline into a full presentation using Gamma or Canva AI as described above. Alternatively, copy it into Google Gemini at https://gemini.google.com, enable Canvas **and** request a professional presentation with images, diagrams and colour.

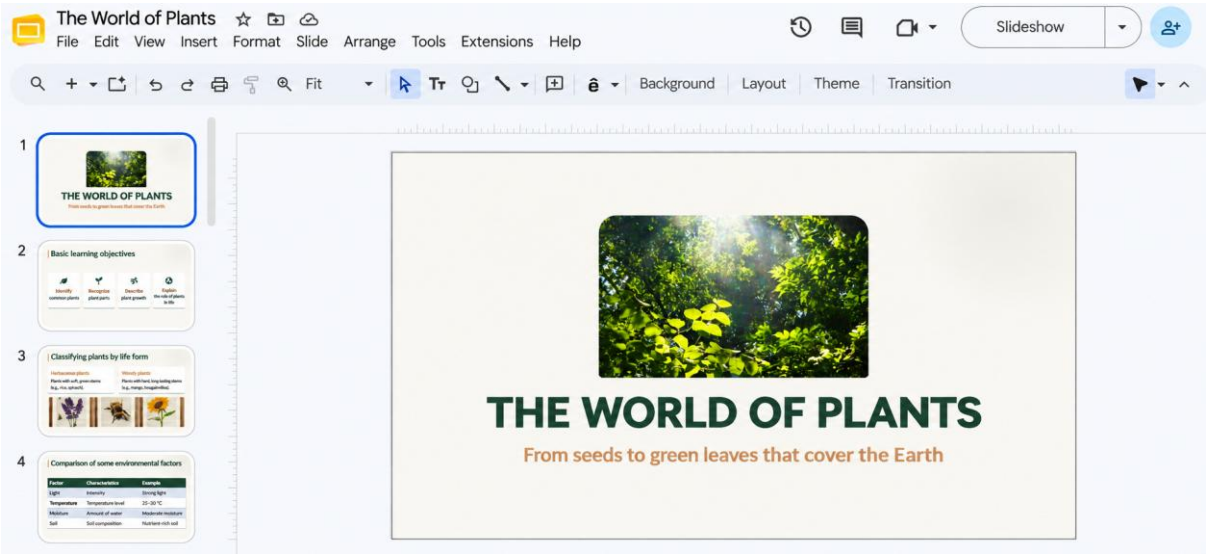
SAMPLE PROMPT

> Create a professional, visually appealing presentation with images, diagrams and colour based on this detailed outline: [Detailed outline]



After Gemini creates the slides, open them in Google Slides to continue editing the content, layout, images and colours as needed.





When the presentation is ready, download it as PowerPoint by selecting File **> Download > Microsoft PowerPoint** (.pptx).

◆ **PRACTICAL TIP**

AI can also edit existing PowerPoint, Word and Excel files. Tools such as Claude, Microsoft Copilot and Gemini for Google Workspace let you give natural-language instructions, such as 'Shorten this slide' or 'Add a column calculating the average', directly in an existing document.

• **NOTE**

What to do and avoid: Check every fact, quotation and figure against its original source, and keep AI grounded in materials you have actually read. Do not enter personal or confidential information into shared AI tools, trust automatically generated citations without checking them, or skip reviewing AI-generated images.

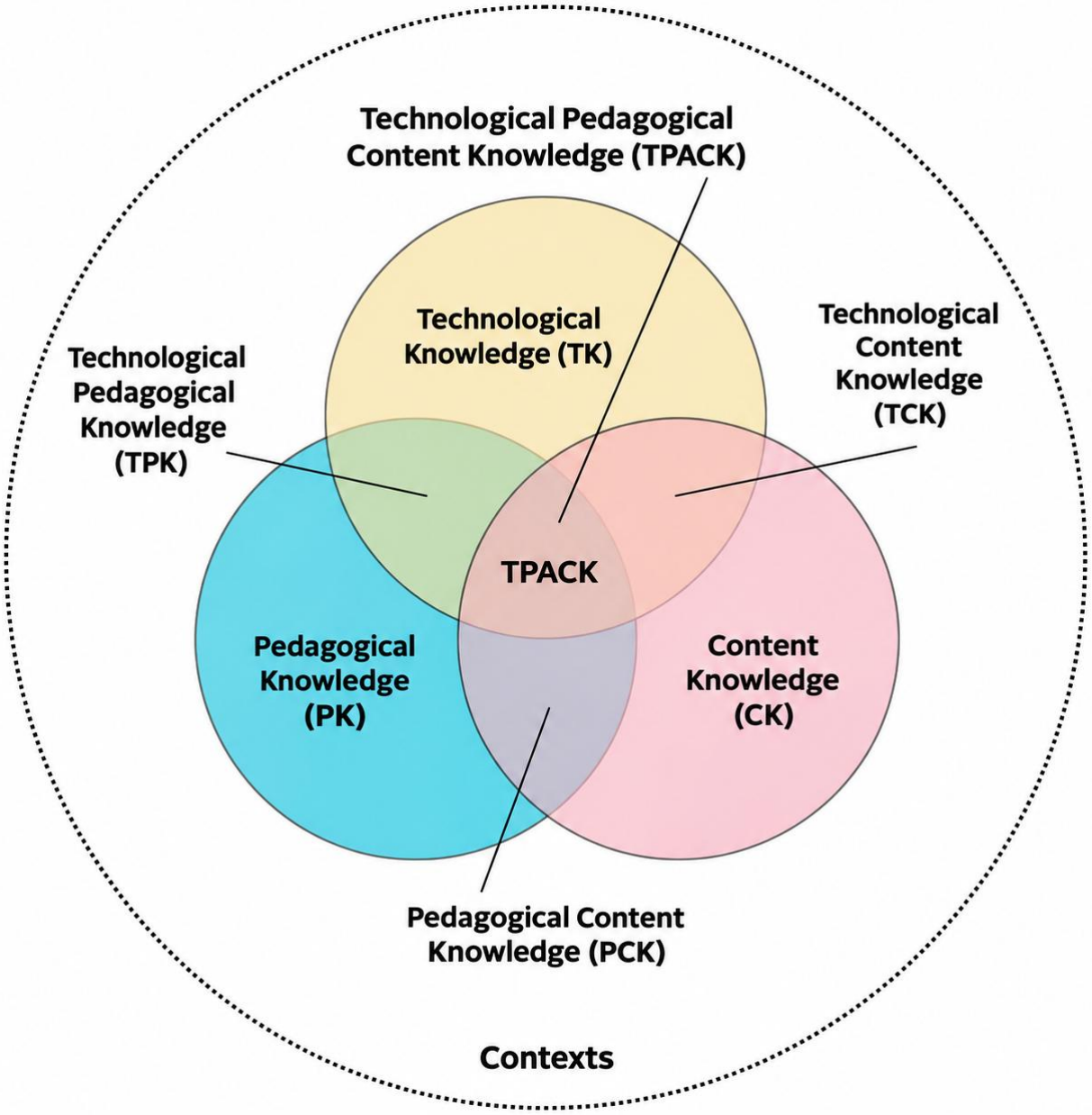
2.5. Designing lessons with pedagogy and TPACK

AI supports teachers' pedagogical thinking rather than replacing it. It can help you implement teaching approaches more effectively, creatively and flexibly.

TPACK is **a** theoretical framework for integrating technology appropriately into teaching. It focuses on the interaction of three core knowledge domains: **content, pedagogy and** technology. When using AI, it helps you ask which technology to use, what content to teach and which pedagogical approach to adopt.

- **Content Knowledge (CK):** Your subject expertise in the topic or discipline you teach.
    - **How AI can help:** It can explain concepts in simpler language, create relatable examples and suggest relevant illustrative situations.
- **Pedagogical Knowledge (PK):** Your knowledge of teaching methods, strategies and ways of organising learning activities.
    - **How AI can help:** It can design age-appropriate group tasks, discussion questions, learning games, worksheets and consolidation activities.
- **Technological Knowledge (TK):** Your understanding of the technological tools, software and platforms used in teaching. AI is now an important part of this domain.
    - **How AI** can help: It can suggest technologies that suit the lesson objectives, learners and teaching approach. It can also be used directly within a lesson to support teaching and learning activities.

The teacher's goal is to find an appropriate **intersection of** CK, PK and TK. Use AI as an assistant in designing effective learning activities that make content more accessible, engaging and meaningful for students.



The TPACK framework: the intersection of content, pedagogical and technological knowledge.

Practical activity:

Develop a detailed prompt specifying the content, **pedagogy and role of** AI.

SAMPLE PROMPT

▸ Act as an experienced upper secondary Literature teacher. I am **teaching** 'Tấm Cám' in **Year 10** Literature. Design an active learning activity using TPACK:

- **CK:** Students identify features of a magical fairy tale, analyse the character of Tấm and understand the significance of supernatural elements in the story.
- **PK:** Use group discussion, open-ended questions and opportunities to express individual perspectives.
- **TK:** Use an AI tool such as ChatGPT to generate discussion questions and debate scenarios, and Canva or Google Slides for students to present their findings as diagrams or posters.

Include activity objectives, classroom organisation, guiding questions, group tasks, assessment criteria for the learning products and suggestions for the teacher's concluding discussion.

AI-generated response:

Dear colleague, integrating the TPACK model (the relationship between content, pedagogy and technology) into teaching Tấm Cám is an excellent way to renew a familiar lesson.

Below is an active-learning design titled **"Debating with AI: Transformation and Justice in Tấm Cám",** based on the three elements CK, PK and TK.

1. Learning objectives

- **Content knowledge (CK):** Students identify features of a magical fairy tale; analyse changes in Tấm's actions through four transformations; understand the human and philosophical significance of the magical elements.
- **Pedagogical skills (PK):** Develop group collaboration, critical thinking in debate, presentation skills and the ability to defend a viewpoint.
- **Technological knowledge (TK):** Use AI to explore opposing perspectives, and Canva or Google Slides to turn ideas into visual diagrams or posters.

2. Group learning tasks

Divide the class into four groups for two main topics, with two opposing groups per topic to create debate.

- **Topic 1 (Groups 1 and 2): The meaning of the magical elements and the four transformations**
  - ***Task:*** Analyse Tấm's development from a passive girl who only cries for Bụt's help to a person who actively fights for happiness through her transformations (golden oriole, chinaberry tree, loom and thị fruit).
- **Topic 2 (Groups 3 and 4): Tấm's revenge at the end of the story**
  - ***Task:*** Debate Tấm's revenge against Cám and her mother. Does it undermine Tấm's essential goodness? Does it fit the traditional concept of justice that "good is rewarded and evil is punished"?

◆ **PRACTICAL TIP**

Anchor the prompt in a teaching approach you understand well. AI can then help put your expertise into practice instead of imposing a generic template. If you are unfamiliar with an approach, ask AI to explain it before requesting a lesson based on it.

2.6. Inclusive design and teaching in low-technology settings

AI is useful for adapting the same content to different proficiency levels. You might ask, 'Simplify this explanation for students who need more support', or 'Create a more challenging version for advanced students'. This can make differentiation more manageable in large classes.

AI is especially valuable within Universal Design for Learning (UDL), which offers multiple ways to access information and demonstrate learning while respecting learner diversity (CAST, 2024). This can support students with additional needs, literacy difficulties or those learning in a second language.

Using AI to design inclusive lessons

- Ask AI for different versions of the same content: a short version, one with pictures and keywords, and a full version for different levels.
- Allow students with reading difficulties to listen and speak rather than relying only on reading and writing.
- Let students choose different output formats: written work, a recorded presentation, a narrated infographic or a short video.

• **NOTE**

Use AI to broaden choices rather than impose a single format. For students with additional needs or language differences, do not treat brevity or unfamiliar phrasing as evidence of misconduct.

Designing online and offline pathways

Many classrooms in Vietnam, Southeast Asia and remote Australia lack reliable Wi-Fi or a device for every student. With a substantial digital divide still present (ITU, 2024), a well-designed lesson should offer two pathways: the same pedagogical idea in online and offline versions.

- An effective model is AI-assisted teacher preparation with paper-based student learning: use AI at home to create questions at three levels, then print and teach with them the following day.
- If the class has one projector, use AI collectively: check a response together, correct errors and formulate verification rules.
- Where internet access is very limited, maintain a folder of reviewed AI outputs on a USB drive or local computer for repeated use.

> ◆ **PRACTICAL TIP**
>
> In lesson plans, label each activity's equipment requirements: 'No internet needed', 'One device for the class', 'One device per group' or 'One device per student'. This helps colleagues select activities suited to their conditions.

2.7. Verification, refinement and common mistakes

An AI draft is a starting point, not a finished product. Before using it in class, check the following criteria and avoid common pitfalls:

- **Accuracy:** Is the subject content correct and current? Are there any hallucinations?
- **Learner suitability:** Do the language, difficulty and duration suit your students?
- **Curriculum alignment:** Does it meet the required outcomes of the 2018 General Education Curriculum?
- **Feasibility:** Do the activities fit the available facilities, class size and lesson time?
- **Your own contribution:** Have you added your teaching style, local examples and creative ideas?

Four common mistakes and how to address them

The first mistake is an overly general prompt. A request such as 'Plan a lesson about the environment' is likely to produce bland results. Include the subject, year level, duration, teaching approach and format.

The second is accepting the first draft. Initial outputs are rarely perfect. Treat them as a starting point for dialogue and refinement, not something to copy unchanged.

The third is skipping verification. Unquestioning trust is the greatest risk. Check all subject content before teaching it, especially numbers, facts and formulae.

The fourth is losing your own contribution. A wholly AI-generated lesson often lacks the specific context and relationships of your class. Add local examples, personal stories and your own teaching style.

Chapter conclusion

This chapter explored AI-assisted lesson preparation step by step: drafting lesson plans, building slides with Gamma and Canva, and designing lessons using pedagogy and TPACK. Each process is intended for practical use. Teachers remain the final authors, checking and refining each lesson and making it their own. AI can speed up preparation, but you determine whether the lesson connects with students. The next chapter explores AI-assisted assessment design.

★ KEY TAKEAWAYS

✓ Four steps for lesson planning: define inputs, write a structured prompt, refine and review.

✓ Develop an outline before generating a complete presentation.

✓ Ground prompts in pedagogy and TPACK so technology serves learning goals.

✓ AI creates the draft; teachers review, refine and retain authorship.

✓ Avoid vague prompts, accepting the first draft, skipping verification and losing your own contribution.

References

CAST. (2024). *Universal Design for Learning guidelines* (Version 3.0). CAST. https://udlguidelines.cast.org/

International Telecommunication Union. (2024). *Measuring digital development: Facts and figures* 2024. ITU.



CHAPTER

03

USING AI TO DESIGN ASSESSMENTS

Create varied tests, answer keys and assessment criteria aligned with the content and learners

CHAPTER 3

USING AI TO DESIGN ASSESSMENTS

Assessment requires particular care. AI can help you generate more varied questions quickly and develop answer keys, rubrics and feedback. Teachers must still decide whether an assessment measures the intended learning, suits students' abilities and is fair.

★ **IN THIS CHAPTER, WE WILL:**

- ✓ Explore the benefits and foundational principles of AI-assisted assessment
- ✓ Create multiple-choice and extended-response questions at different levels of Bloom's taxonomy
- ✓ Use source materials and test specifications to improve question quality
- ✓ Generate test matrices and question sets from learning objectives, key content and desired difficulty
- ✓ Create answer keys, marking guides and rubrics, and improve student feedback
- ✓ Create assessments containing mathematical and scientific notation
- ✓ Recognise AI's limitations and respond to misconduct in tests and examinations

Chapter introduction

Designing and marking assessments requires considerable care. The need for multiple test versions, differentiated tasks and more frequent assessment adds to the workload. With well-prepared inputs, generative AI can save time by creating varied questions in minutes, together with answers, marking guidance and feedback suggestions.

Assessment directly affects students and reflects teaching quality. An incorrect, misaligned or out-of-curriculum question can create misunderstandings or unfair outcomes. This chapter therefore emphasises quality assurance as well as question generation, recognising limitations that teachers must address through professional expertise.

Assessment is not limited to assigning end-of-term marks, or assessment of learning. It is also part of teaching itself, through assessment for learning. AI can support both, as the following sections explain.

3.1. Foundations of AI-assisted assessment

Before exploring techniques, consider the assessment challenges AI can help address. Understanding these benefits helps you focus your efforts:

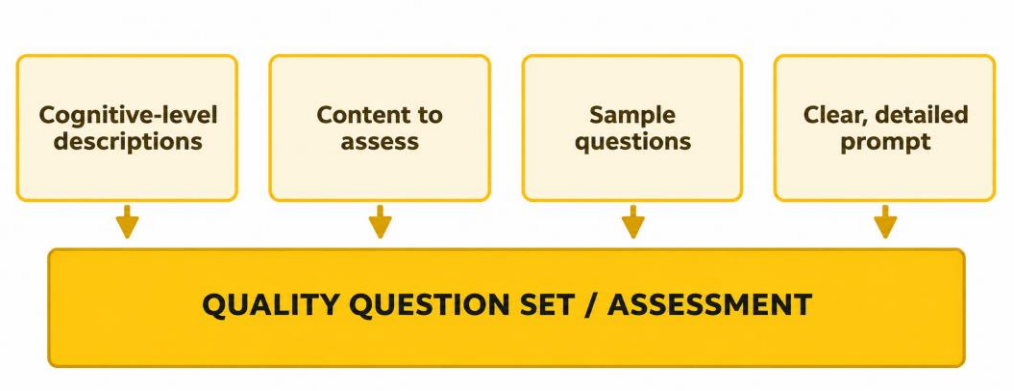
Teacher challenge	How AI can help
Time spent designing and marking tests	Generate questions and answers quickly, freeing time for other tasks
Multiple versions for a question bank	Create varied test versions from the same content
Differentiation by student ability	Adjust difficulty and create versions for different proficiency groups
Frequent assessment	Create quick checks more often to monitor progress
Support with comments and feedback	Suggest comments, marking criteria and personalised feedback

AI's greatest value is not replacing teachers' marking. It is reducing repetitive work so teachers can concentrate on judgements about students' thinking, creativity and progress.

The key principle: assessment quality depends on input quality

This is the chapter's central principle. The quality of AI-generated questions depends directly on the information teachers provide. With the same tool, a superficial prompt can produce generic or inaccurate questions, while a carefully prepared prompt with sufficient data can produce a much more usable draft.

Four inputs support a good assessment: a clear and detailed prompt, the content to assess, descriptions of cognitive levels and sample questions.



Forms of school assessment

School assessment records achievement and supports the learning process. Two broad forms are formative assessment and periodic assessment (Nguyễn Chí Trung et al., 2021).

- **Formative** assessment, also called ongoing assessment, takes place during learning. It helps teachers identify understanding, difficulties and progress so they can adjust

teaching promptly. Students also participate through self-assessment, peer assessment and feedback, recognising where they are and what to improve. This approach relates to assessment for learning and assessment as learning.

- **Periodic assessment** usually takes place after a lesson, topic, semester or learning period. It establishes the extent to which students have met required outcomes and records achievement at a particular time. Whereas formative assessment supports progress during learning, periodic assessment primarily summarises and confirms achievement afterwards. Both ongoing and periodic assessment may use comments or marks, depending on regulations, subject characteristics and required outcomes.

Effective assessment combines both forms. Ongoing assessment enables timely adjustments to teaching and learning; periodic assessment reviews achievement. Used purposefully, assessment becomes a means of supporting students and improving teaching rather than simply assigning marks.

Vietnamese assessment regulations. Primary teachers should consult Ministry of Education and Training Circular No. 27/2020/TT-BGDĐT, dated 4 September 2020, promulgating the Regulations on Primary Student Assessment. Lower and upper secondary teachers should consult Ministry of Education and Training Circular No. 22/2021/TT-BGDĐT, dated 20 July 2021, on the assessment of lower and upper secondary students.

Ongoing and periodic assessment have different purposes, forms and requirements. When using AI to draft questions, test matrices, specifications, answer keys or comments, teachers must follow required learning outcomes, professional procedures and school or authority regulations. AI outputs are drafts and do not replace authorised review and approval.

Considerations for AI-assisted assessment design

Whether designing formative or periodic assessment, AI needs clear and accurate input. Prepare the following four components before requesting a test:

- **A clear, detailed prompt:** Specify the subject, year level, textbook series, content, number of questions, question types and presentation format.
- **Content to assess:** Attach textbook pages or source materials to keep AI grounded.
- **Cognitive-level descriptions:** Define Remember, Understand, Apply and Advanced application clearly.
- **Sample questions:** Provide examples of the desired format and style.

▲ LIMITATIONS & RISKS

AI may generate plausible but inaccurate content, known as hallucinations, or inappropriate questions, examples and comments because of data bias. Teachers must carefully check every proposed test, answer key, rubric and feedback statement against

their expertise, textbooks, the subject curriculum and reliable sources before using it with students.

Classifying questions by cognitive level using Bloom's taxonomy

A well-designed test distributes questions appropriately across cognitive levels. AI needs explicit guidance here; otherwise it may generate mostly simple recall questions. Four levels commonly used in general education are:

Level	Student requirement
Remember	Recall or recognise previously learned knowledge and skills
Understand	Present and explain knowledge in one's own words
Apply	Use knowledge and skills to solve familiar or similar problems
Advanced application	Solve unfamiliar problems or respond flexibly with sound reasoning

◆ **PRACTICAL TIP**

Specify the number of questions at each level, for example 'Five Remember, three Understand and two Apply questions'. This directs the distribution and helps you control difficulty.

3.2. Developing multiple-choice tests

Multiple-choice tests are particularly suited to AI assistance. The approaches below progress from basic to more advanced, with better-grounded outputs as more input information is supplied.

A basic approach: specify the context and question requirements

At the simplest level, describe the subject, year level and lesson, together with the number and difficulty of questions:

• • • **SAMPLE PROMPT**

- I am a primary English teacher using Family and Friends 4: Class Book. Create a five-question multiple-choice test to revise Unit 2, 'The Concert'. Include easy, medium and difficult questions. Each question should have four options, A, B, C and D, with only one correct answer.

AI-generated response:

Mini Test: Unit 2 – The Concert

Choose the best answer A, B, C or D.

1. Easy – Vocabulary
What can you hear at a concert?
A. Music
B. A sandwich
C. A pencil
D. A chair

2. Easy – Vocabulary
Which one is a musical instrument?
A. Drum
B. Window
C. Schoolbag
D. Ruler

3. Medium – Grammar
There _____ many people at the concert yesterday.
A. is
B. are
C. was
D. were

4. Medium – Grammar
The children _____ songs at the concert last night.
A. play
B. played
C. playing
D. plays

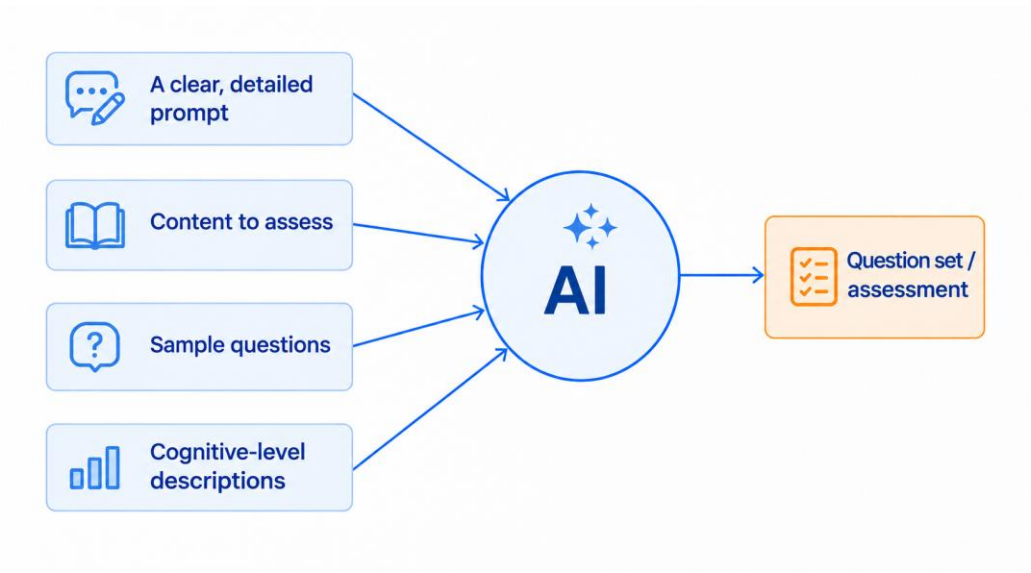
5. Hard – Reading comprehension
Read the sentence:
Tom went to the concert with his family. He liked the drums best because they were loud and exciting.
What did Tom like best?
A. The songs
B. The drums
C. The guitar
D. The tickets

Answer Key

1. A
2. A
3. D
4. B
5. B

A better approach: attach source materials and cognitive-level descriptions

Attach lesson content and a cognitive-level description table to align the test with the textbook and objectives. Organise the prompt into clear sections.



Section labels help AI recognise the purpose of each part. For prompts with several requirements, use Markdown heading markers (#) to create a hierarchy:

- **Use # for major sections:** #CONTEXT, #INSTRUCTIONS, #DATA and #REQUIREMENTS.

- **Use ## for subsections:** ##Lesson content and ##Cognitive-level descriptions and examples.

This separation helps AI distinguish context, evidence, tasks and output format, making responses more focused.

SAMPLE PROMPT

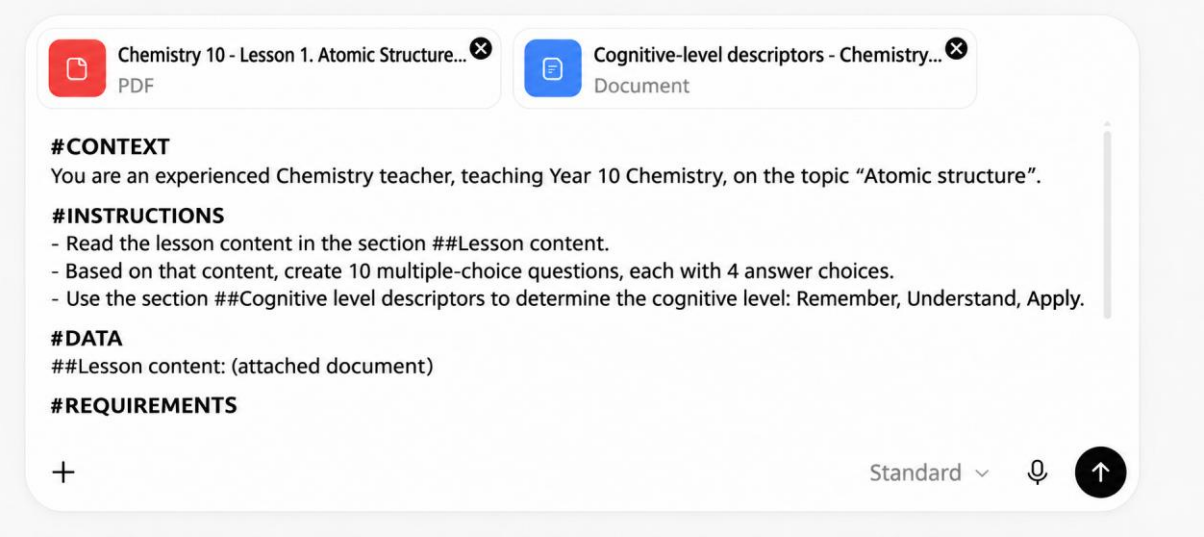
#CONTEXT
You are an experienced Chemistry teacher teaching 'Atomic structure' in Year 10 Chemistry.

#INSTRUCTIONS
- Read the material under ##Lesson content.
- Create ten multiple-choice questions with four options each, based on that content.
- Use ##Cognitive levels to classify questions as Remember, Understand or Apply.

#DATA
##Lesson content: (attached material)
##Cognitive-level descriptions and examples: (attached material)

#REQUIREMENTS
- Ten questions: five Remember, three Understand and two Apply.
- Use only the attached content; examples may be varied.
- Present the test in a .docx file.

Working in ChatGPT:



AI-generated response:

YEAR 10 CHEMISTRY TEST

Test 1. Atomic structure – Content: Structure of the atom

Structure: 10 multiple-choice questions, including 5 Recognition questions, 3 Comprehension questions, 2 Application questions. Each question has 4 options A, B, C, D and only 1 correct answer.

Question 1 (Recognition). The structure of an atom consists of which two parts?

A. The nucleus and the electron shell.
B. Protons and neutrons.
C. Protons and electrons.
D. Neutrons and electrons.

Question 2 (Recognition). The atomic nucleus is mainly formed by which particles?

A. Electrons and neutrons.
B. Protons and electrons.
C. Protons and neutrons.
D. Electrons, protons and neutrons.

Question 3 (Recognition). The electron in an atom has a relative electric charge of

A. +1.
B. 0.
C. -1.
D. +2.

Question 4 (Recognition). The symbol for a proton is

A. n.
B. p.
C. e.
D. A.

Question 5 (Recognition). The mass number A of an atom is determined by

A. the total number of protons and electrons.
B. the total number of neutrons and electrons.
C. the total number of protons and neutrons.
D. the difference between the number of protons and neutrons.

For formal mid-semester or end-of-semester tests, ask AI to follow the subject team's test matrix and specifications. Attach the complete matrix, specifications, teaching content and cognitive-level descriptions so AI can follow the intended distribution.

• NOTE

More advanced approaches involve more supporting information and produce better-grounded assessments. This illustrates the principle that good inputs support good outputs.

Building a question bank quickly

AI can generate multiple versions from the same content, helping build a question bank and reduce selective cramming and copying. Once you have a satisfactory question set, use a short prompt:

• • • SAMPLE PROMPT

- Based on the five multiple-choice questions above, create ten more on the same topic. Keep the cognitive levels but change the data and examples.

AI-generated response:

Additional Mini Test: Unit 2 – The Concert

Choose the best answer A, B, C or D.

1. Easy – Vocabulary
What do people usually do at a concert?
A. Listen to music
B. Cook dinner
C. Do homework
D. Clean the classroom

2. Easy – Vocabulary
Which one is a musical instrument?
A. Guitar
B. Desk
C. Book
D. Hat

3. Easy – Vocabulary
Who plays music in a concert?
A. A musician
B. A doctor
C. A farmer
D. A pilot

4. Easy – Vocabulary
What can you see on a concert stage?
A. A band
B. A bed
C. A fridge
D. A toothbrush

5. Medium – Grammar
There _____ a big concert at school yesterday.
A. is
B. are
C. was
D. were

6. Medium – Grammar
The band _____ very well last night.
A. play
B. played
C. plays
D. playing

7. Medium – Grammar
There _____ many drums on the stage.
A. was
B. were
C. is
D. am

8. Medium – Grammar
Mai _____ the piano at the concert yesterday.
A. play
B. plays
C. played
D. playing

9. Hard – Reading comprehension
Read the sentence:
Lucy went to the concert with her friends. She liked the guitar best because it sounded beautiful.
What did Lucy like best?
A. The drums
B. The piano
C. The guitar
D. The stage

10. Hard – Reading comprehension
Read the sentence:
Ben watched a school concert yesterday. His sister sang a song, and his brother played the drums.
Who played the drums?
A. Ben
B. Ben's sister
C. Ben's brother
D. Ben's teacher

Answer Key
1. A
2. A
3. A
4. A
5. C
6. B
7. B
8. C
9. C
10. C

3.3. Developing extended-response assessments

Ask AI for tasks at different levels, with suggested structures and key points. This is especially useful in subjects such as Literature, History and Civic Education.

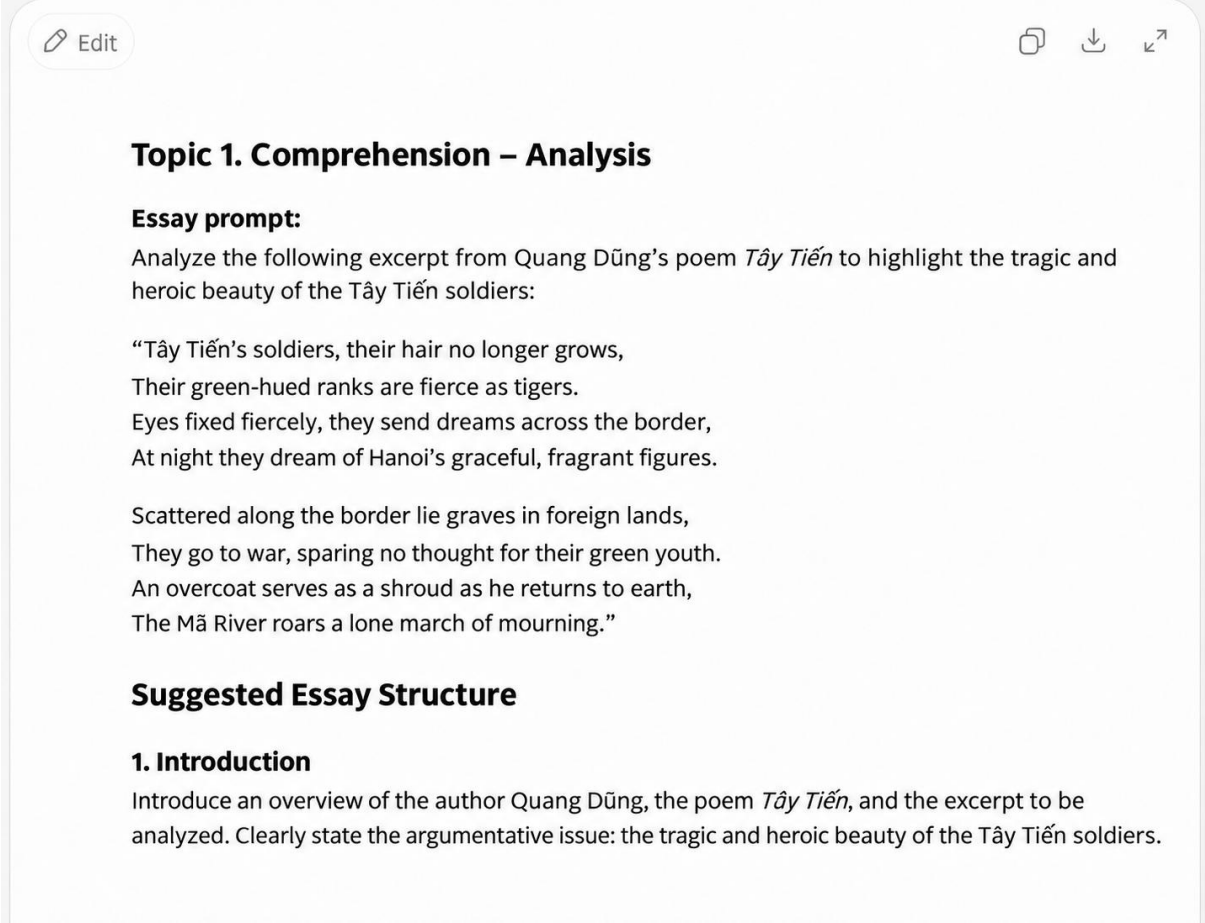
SAMPLE PROMPT

- Act as an experienced Literature teacher. Write three extended-response assessment tasks for Year 12 students focused on Quang Dũng's 'Tây Tiến'.
  - Task 1 (Understand and Analyse): Analyse a passage to highlight the soldiers' tragic and heroic qualities.

- Task 2 (Apply and Compare): Compare the portrayal of soldiers in 'Tây Tiến' and 'Đồng chí'.
- Task 3 (Advanced application and Argument): Use the portrayal of soldiers to discuss the younger generation's ideals in life.

Include a suggested structure and the key points for each task.

AI-generated response:



Edit

Topic 1. Comprehension – Analysis

Essay prompt:

Analyze the following excerpt from Quang Dũng's poem *Tây Tiến* to highlight the tragic and heroic beauty of the Tây Tiến soldiers:

"Tây Tiến's soldiers, their hair no longer grows,
Their green-hued ranks are fierce as tigers.
Eyes fixed fiercely, they send dreams across the border,
At night they dream of Hanoi's graceful, fragrant figures.

Scattered along the border lie graves in foreign lands,
They go to war, sparing no thought for their green youth.
An overcoat serves as a shroud as he returns to earth,
The Mã River roars a lone march of mourning."

Suggested Essay Structure

1. Introduction

Introduce an overview of the author Quang Dũng, the poem *Tây Tiến*, and the excerpt to be analyzed. Clearly state the argumentative issue: the tragic and heroic beauty of the Tây Tiến soldiers.

Edit

Exercise 2. Application – Comparison

Task:
Compare the depictions of soldiers in the poem *Tây Tiến* by Quang Dũng and the poem *Đồng chí* by Chính Hữu. From that, make observations about the beauty of the soldiers in resistance poetry against the French.

Suggested Structure for the Composition

1. Introduction
Introduce a general overview of the two authors and their works. Clearly state the discussion issue: the depictions of soldiers in *Tây Tiến* and *Đồng chí* both share points of similarity and also have their own distinctive features.

2. Main Body

a. General Overview of the Two Works

- *Tây Tiến* is written with a romantic and lyrical tone, portraying the image of soldiers in the Tây Bắc mountain and forest region as heroic and passionate, yet also imbued with a sense of poetry.
- *Đồng chí* depicts soldiers who are peasants by origin, with a simple and rustic beauty, closely bonded in comradeship within the army.

Edit

Topic 3. Advanced Application – Discussion

Assignment:
From the image of the soldier in Quang Dũng's poem *Tây Tiến*, please present and discuss your reflections on the ideal of living among today's youth.

Suggested Structure for the Essay

1. Introduction
Introduce the image of the soldier in Quang Dũng's poem *Tây Tiến*. Lead into the discussion by posing the question: the ideal of living among today's youth.

2. Body

a. Explanation of the Question

- The ideal of living is a noble goal, a guiding direction that helps people live a meaningful life.
- For young people, the ideal of living helps each person identify a goal, overcome difficulties, and contribute to the community.
- The ideal of living does not necessarily have to be something overly grand, but can begin with studying diligently, living responsibly, loving others, and being willing to make contributions.

AI can quickly propose essay tasks and outlines, but assessing extended responses still requires teachers' expertise in literary interpretation, reasoning and creativity. AI should therefore support task development and draft answer guidance rather than replace professional judgement.

3.4. Creating answer keys, marking guides and assessment criteria

A complete assessment needs answers and marking guidance. Ask AI to create these alongside the questions, or to develop answers and mark allocations for an existing assessment. For extended responses, request explicit criteria and corresponding marks.

Developing an assessment rubric

A rubric makes expectations transparent for teachers marking work and students assessing themselves. AI can help draft a clear rubric with several performance levels:

SAMPLE PROMPT

- #CONTEXT: You are a Digital Technologies teacher asking students to design a Scratch game to revise content from another subject.

  #INSTRUCTIONS: Develop a product assessment rubric covering subject knowledge, programming and creativity. Describe each criterion at four levels: Excellent (4), Good (3), Satisfactory (2) and Not yet achieved (1).

  #REQUIREMENTS: Present four to six criteria in a table, covering subject knowledge, programming skills, interface and interaction, creativity and completeness.

AI generally returns a table like the shortened example below, which you can adapt:

Below is a rubric for assessing a Scratch game project used to reinforce knowledge from another subject.

Criteria	Excellent – 4 points	Good – 3 points	Satisfactory – 2 points	Not yet achieved – 1 point
1. Subject knowledge content	Accurately reviews and reinforces key lesson content; asks questions/ sets tasks that are varied and engaging, helping players also consolidate their knowledge clearly.	Covers key lesson content accurately and appropriately; includes some questions/tasks that help reinforce knowledge.	Has content related to the lesson but is still simple; includes few questions or has some points that are not yet accurate.	Content is unclear, contains errors, or misses much of the necessary knowledge; the learning objectives are not yet clearly demonstrated.
2. Game idea and creativity	The idea is engaging, has a storyline or a new way of playing; effectively combines gameplay with learning content.	The idea is appropriate, shows creativity; the gameplay is fairly novel and engaging.	The idea is somewhat familiar, with few new elements; the learning content is included but not yet naturally.	The idea is basic, lacks creativity; the game is not yet closely linked to the learning objectives.
3. Programming skills in Scratch	Effectively uses multiple blocks such as control, loops, variables, operators, messages (broadcasts); the program runs logically with few errors.	Uses an appropriate number of blocks; the game operates steadily and is interactive, with minor errors.	The program runs but uses relatively few blocks; it is still simple; errors affect some parts of the gameplay.	The program has many errors, does not run, or has not yet clearly demonstrated basic programming skills.
4. Interface, sound, and interaction	The interface is attractive, clear to see; characters, background, and sound are appropriate; player interactions are clear and convenient.	The interface is fairly clear; characters, background, or sound are appropriate; player interactions are easy to understand.	The interface is still simple or not yet consistent; interactions are not yet truly smooth.	The interface is confusing or excessively plain; players find it difficult to understand how to interact.

3.5. Creating assessments with teacher-specific tools

Alongside general-purpose conversational tools such as ChatGPT, Gemini and Copilot, education-specific platforms can make assessment creation more convenient. Upskii, for example, lets **teachers** build assessments from a test matrix, generate questions with AI, edit content and export a Word document.

Rather than starting from a blank page, configure the subject, year level, topic, question count, question types, cognitive levels and matrix distribution. AI then proposes a corresponding set of questions, helping align the assessment with its objectives rather than generating isolated items.

Teachers retain final quality control. Edit questions, options and answers directly, request replacements for unsuitable items, then download a Word file for further formatting, printing or storage. The platform can shorten preparation time while preserving professional review and adaptation.

Suggested process:

- **Step 1: Define the assessment objectives**

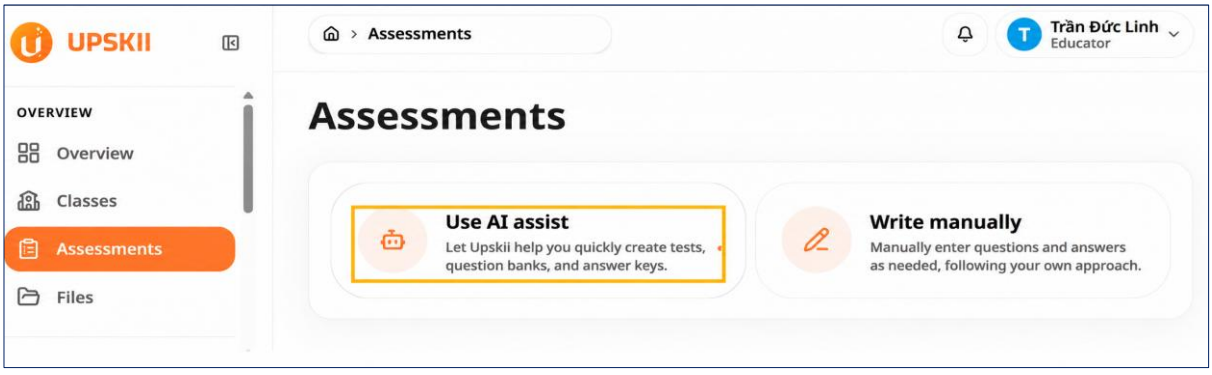
Before using AI, identify the content, duration, expected question count, question types and cognitive levels where relevant. Clearer information supports more appropriate questions.

- **Step 2: Sign in to Upskii**

Visit https://upskii.com and choose '**Continue with** Google' to sign in with Gmail. If you have not **connected your** personal AI service, select the account icon in the top-right corner and follow the setup instructions.

- **Step 3: Configure the assessment**

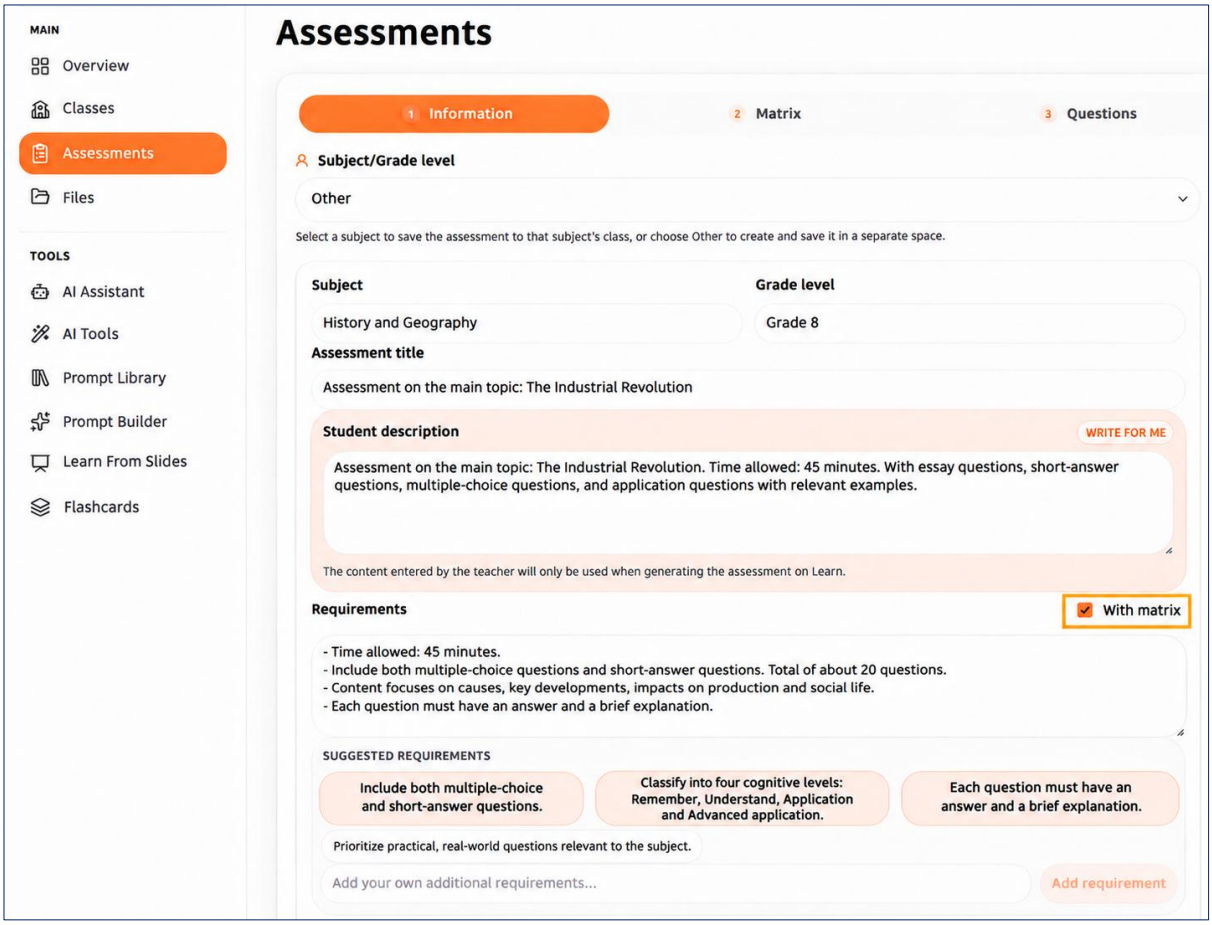
In the left navigation menu, select Assessments. You can write questions manually or use AI. For this activity, **select** Use AI assist.



Enter the subject, year level, assessment title and content. Select With matrix if you want **to** configure a question matrix. For example:

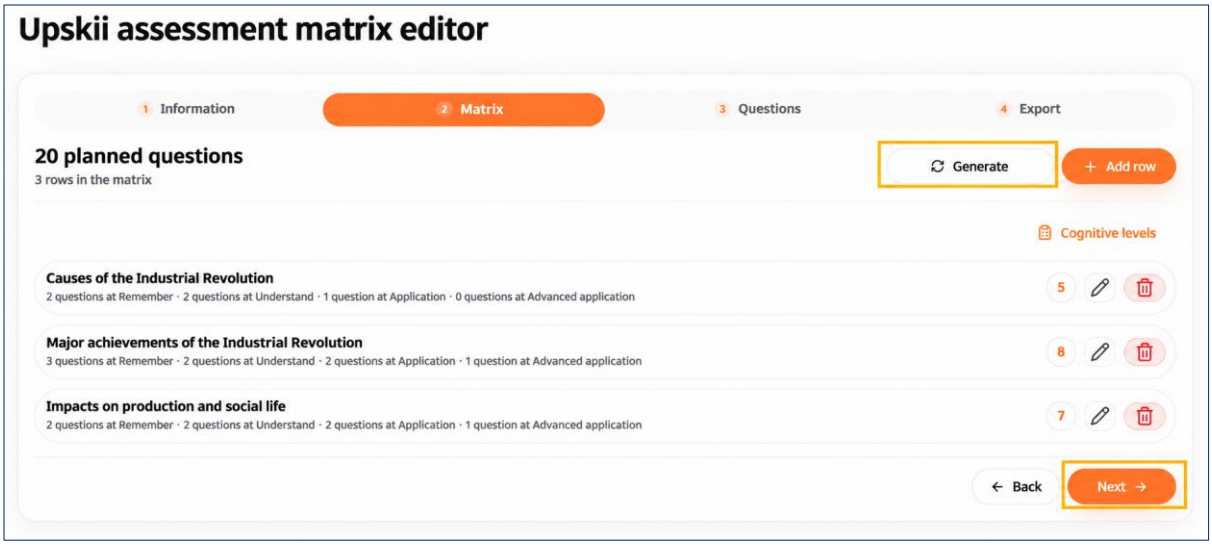
- **Subject:** History and Geography
- Year level: Year 8
- **Assessment title:** Industrial Revolution topic test
- **Student description:** Industrial Revolution topic test. Time allowed: 45 minutes. For extended responses, write clearly and concisely and include appropriate examples.
- **Requirements:** A 45-minute test with approximately 20 multiple-choice and short extended-response questions. Focus on causes, major achievements and impacts on production and society. Provide an answer and brief explanation for each question.

This configuration tells the system how many questions to create, the content they should cover and their cognitive-level distribution. Complete the relevant fields, **then** select Next.

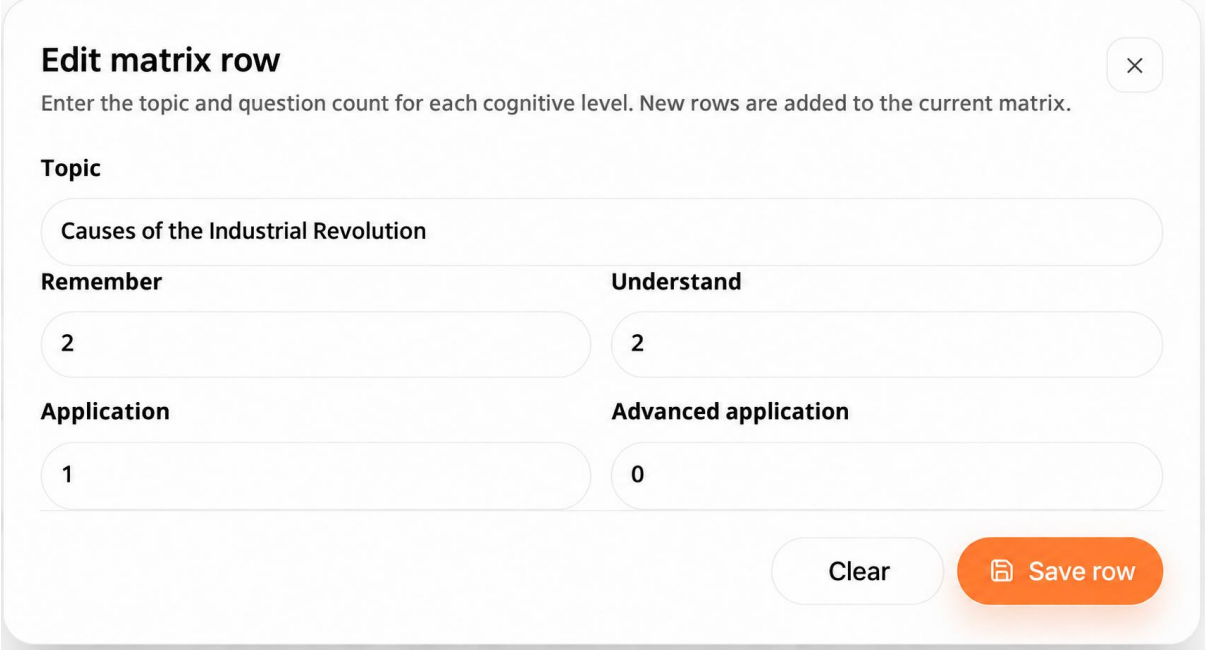


- **Step 4: Generate a test matrix with AI**

On the matrix screen, select Generate **or Regenerate to** request a proposed configuration.



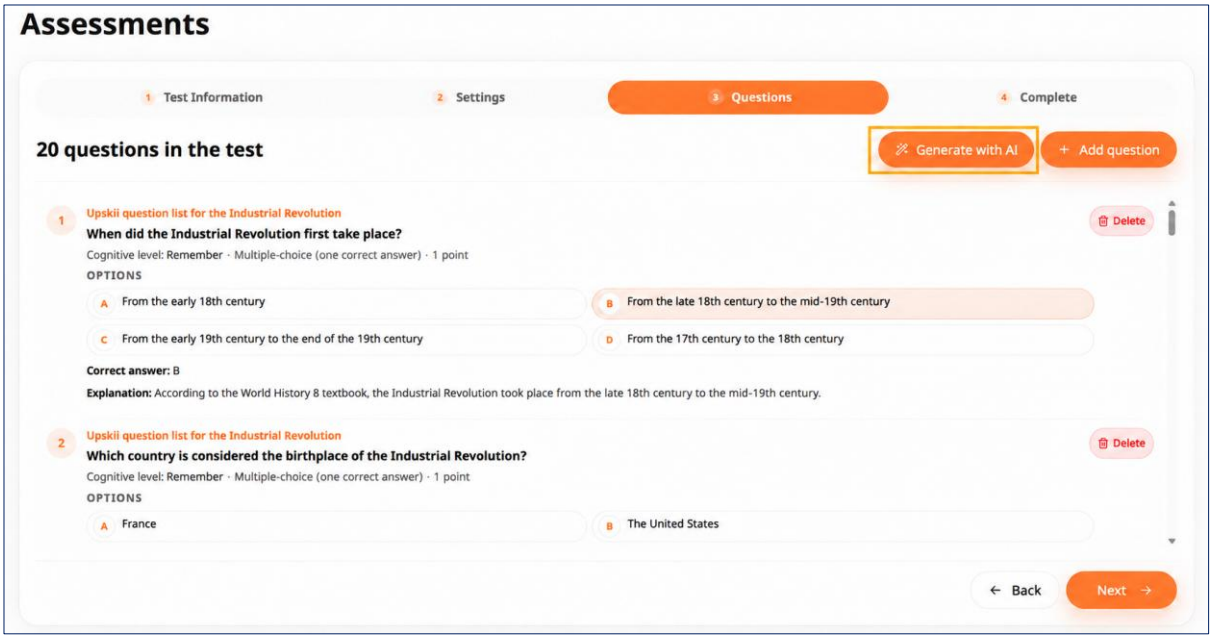
Review the matrix and use the pencil icon to adjust it if needed, including the number of Remember, Understand, Application and Advanced application questions for each topic.



Once satisfied with the matrix, **select** Next.

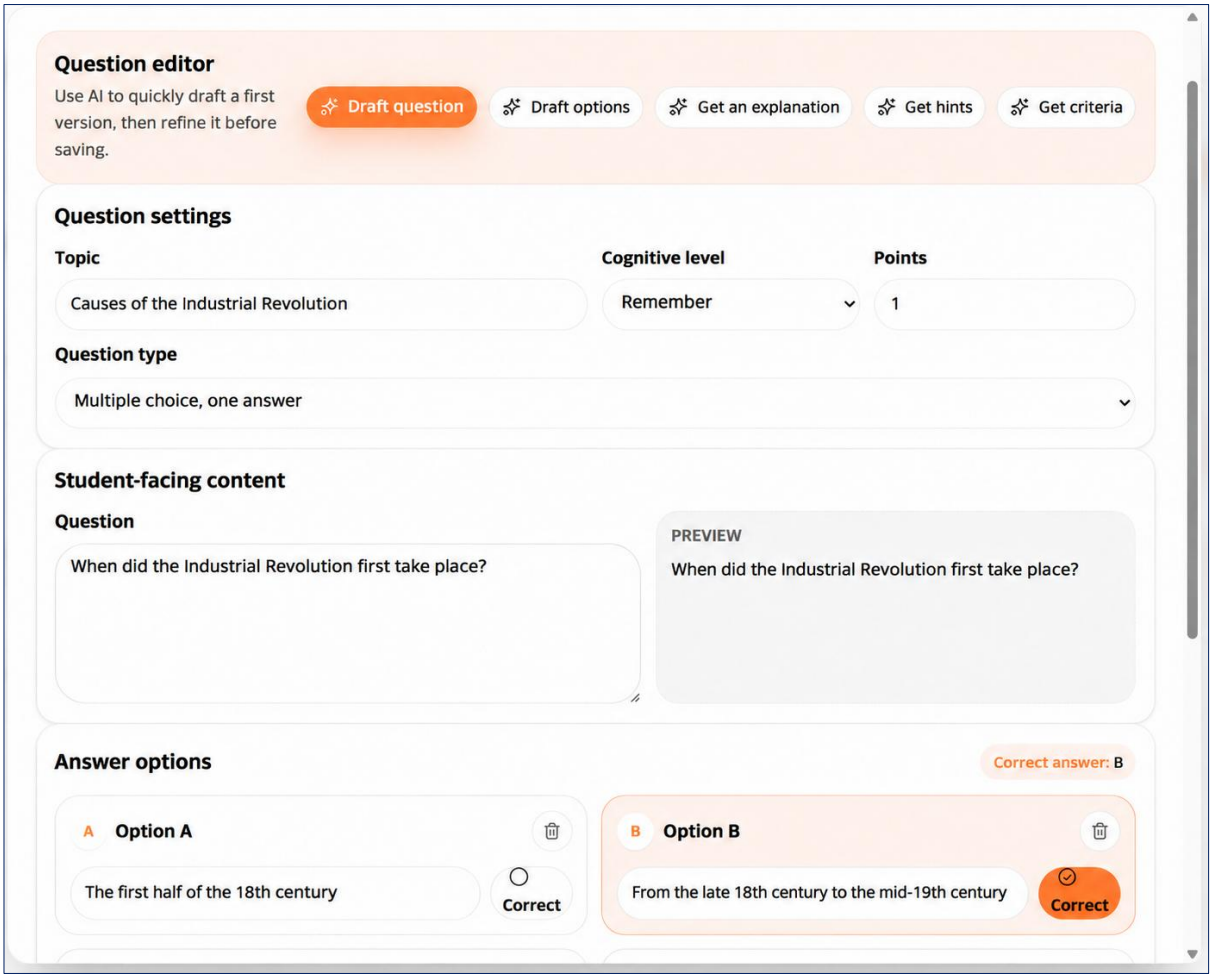
- **Step 5: Generate questions from the matrix**

Select Generate with AI to create questions that follow the configured matrix. The **system** produces questions, options and answers according to the assessment format you selected.



- Step 6: Review, edit directly or request replacement questions

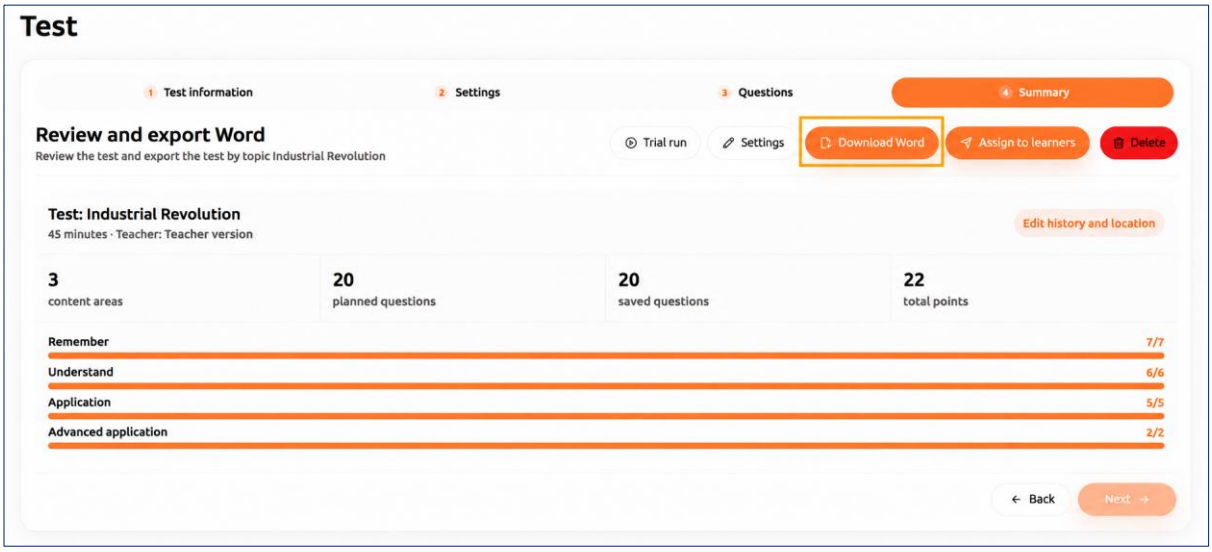
Read every question and check factual accuracy, learner suitability, clarity of options and correctness of answers. Upskii lets you edit questions, options and answers directly. Select a question to open the editing controls shown below:



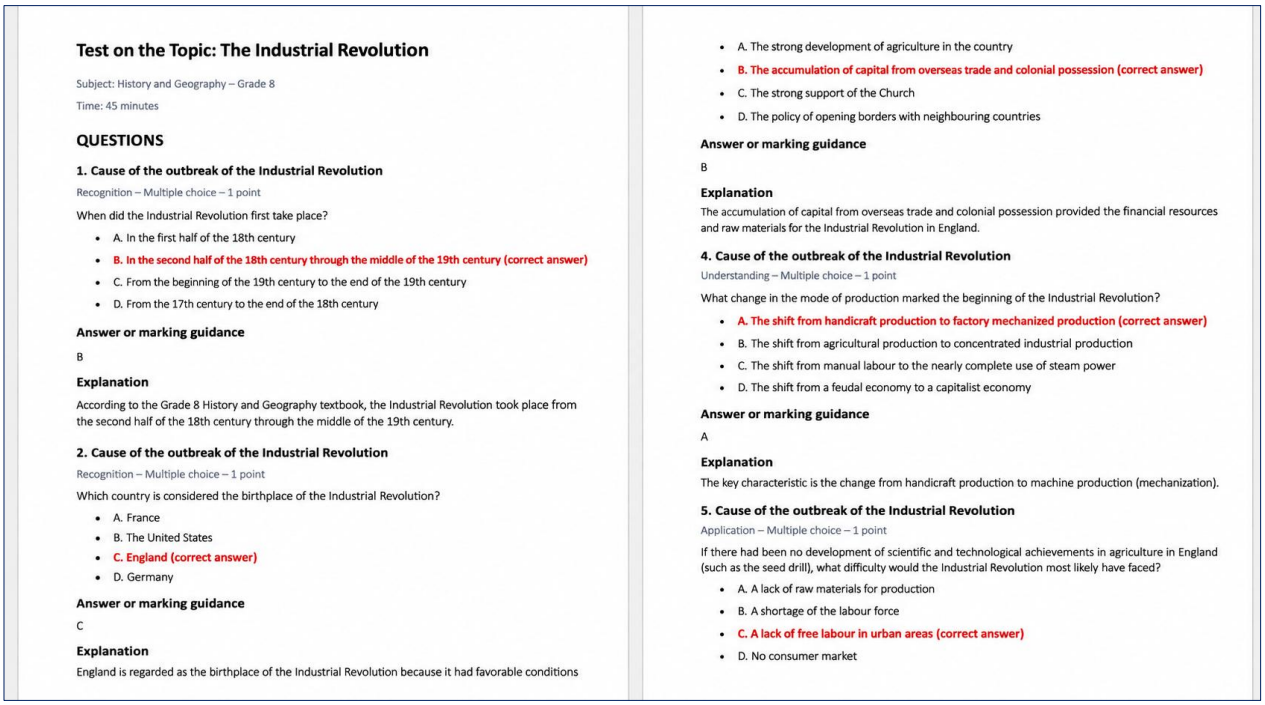
If a question is unsuitable, too easy, too difficult, repetitive or misaligned with the objectives, ask AI to replace it. This saves rewriting time while retaining the assessment's overall structure.

- **Step 7: Export the assessment to Word**

At the final step, download a Word file for further formatting, printing, storage or sharing in line with school requirements.



The exported Word document contains the questions, answers or marking guidance, and explanations for each item. You can continue editing it as needed.



Test on the Topic: The Industrial Revolution

Subject: History and Geography – Grade 8

Time: 45 minutes

QUESTIONS

1. Cause of the outbreak of the Industrial Revolution

Recognition – Multiple choice – 1 point

When did the Industrial Revolution first take place?

- A. In the first half of the 18th century
- **B. In the second half of the 18th century through the middle of the 19th century (correct answer)**
- C. From the beginning of the 19th century to the end of the 19th century
- D. From the 17th century to the end of the 18th century

Answer or marking guidance

B

Explanation

According to the Grade 8 History and Geography textbook, the Industrial Revolution took place from the second half of the 18th century through the middle of the 19th century.

2. Cause of the outbreak of the Industrial Revolution

Recognition – Multiple choice – 1 point

Which country is considered the birthplace of the Industrial Revolution?

- A. France
- B. The United States
- **C. England (correct answer)**
- D. Germany

Answer or marking guidance

C

Explanation

England is regarded as the birthplace of the Industrial Revolution because it had favorable conditions

- A. The strong development of agriculture in the country
- **B. The accumulation of capital from overseas trade and colonial possession (correct answer)**
- C. The strong support of the Church
- D. The policy of opening borders with neighbouring countries

Answer or marking guidance

B

Explanation

The accumulation of capital from overseas trade and colonial possession provided the financial resources and raw materials for the Industrial Revolution in England.

4. Cause of the outbreak of the Industrial Revolution

Understanding – Multiple choice – 1 point

What change in the mode of production marked the beginning of the Industrial Revolution?

- **A. The shift from handicraft production to factory mechanized production (correct answer)**
- B. The shift from agricultural production to concentrated industrial production
- C. The shift from manual labour to the nearly complete use of steam power
- D. The shift from a feudal economy to a capitalist economy

Answer or marking guidance

A

Explanation

The key characteristic is the change from handicraft production to machine production (mechanization).

5. Cause of the outbreak of the Industrial Revolution

Application – Multiple choice – 1 point

If there had been no development of scientific and technological achievements in agriculture in England (such as the seed drill), what difficulty would the Industrial Revolution most likely have faced?

- A. A lack of raw materials for production
- B. A shortage of the labour force
- **C. A lack of free labour in urban areas (correct answer)**
- D. No consumer market

3.6. Using AI to draft student comments and feedback

Drafting feedback is a valuable but underused application. Good feedback is specific and constructive and identifies how to improve, but writing it for a whole class takes time. AI can suggest a framework for you to personalise:

SAMPLE PROMPT

- Suggest three constructive comments on a Year 9 student's argumentative essay. Its strength is clear reasoning, but its evidence needs improvement. Each comment should identify a strength, an area for improvement and one specific action.

AI-generated response:

Below are 3 concise feedback comments with a constructive tone:

1. Your essay has a clear and coherent argument, and the ideas are arranged fairly logically, which helps readers follow your line of reasoning. However, the evidence is still not really rich, so the persuasiveness of the essay is not yet high. In your next draft, you should add at least 1–2 specific pieces of evidence from literature, life, or social reality for each main point.
2. You have identified and presented the essay topic in the right direction, with an argument and a reasonable way of developing related ideas. What needs improvement is that the evidence is still somewhat general and not sufficiently typical to make the argument stand out. You could create a small table with "main point – appropriate evidence – the meaning of the evidence" before writing to make the essay more concise.
3. The essay demonstrates good critical thinking and argumentation; the main ideas are stated fairly clearly and not overly rambling. However, some sections are still lacking specific evidence or the evidence has not been analyzed in depth. You should choose typical evidence, then write an additional 1–2 explanatory sentences to clarify why that evidence supports your argument.

▲ LIMITATIONS & RISKS

Never upload student-identifying information when using AI to support feedback. De-identify the work and treat the AI response as a draft to edit for the individual student.

3.7. Creating content with mathematical and scientific notation

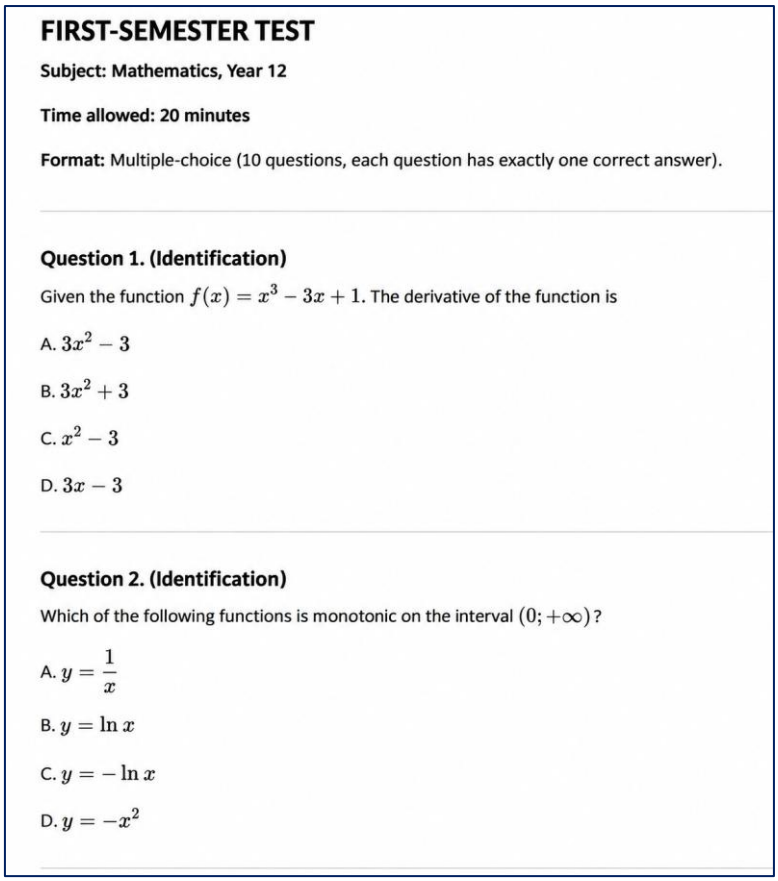
Copying Mathematics, Physics or Chemistry content from AI into a document can cause formula display errors. Some platforms offer tools to address this. A straightforward alternative is LaTeX with Overleaf. Follow these steps:

1. Ask AI to create content containing formulae. Check and revise as needed.

SAMPLE PROMPT

- You are an experienced secondary Mathematics teacher. Create a first-semester Year 12 Mathematics test with ten multiple-choice questions: two Remember, three Understand, three Apply and two Advanced application questions. Provide the test as text.

AI-generated response:



FIRST-SEMESTER TEST

Subject: Mathematics, Year 12

Time allowed: 20 minutes

Format: Multiple-choice (10 questions, each question has exactly one correct answer).

Question 1. (Identification)

Given the function $f(x) = x^3 - 3x + 1$. The derivative of the function is

A. $3x^2 - 3$

B. $3x^2 + 3$

C. $x^2 - 3$

D. $3x - 3$

Question 2. (Identification)

Which of the following functions is monotonic on the interval $(0; +\infty)$?

A. $y = \frac{1}{x}$

B. $y = \ln x$

C. $y = -\ln x$

D. $y = -x^2$

2. Ask AI to convert the content into LaTeX for Overleaf.

SAMPLE PROMPT

- Format this in LaTeX for Overleaf. Use \usepackage[english]{babel} for English-language support.

AI-generated response:

```latex
\documentclass[12pt,a4paper]{article}

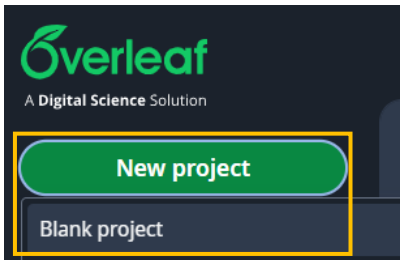
\usepackage[english]{babel}
\usepackage[utf8]{inputenc}
\usepackage[T5]{fontenc}
\usepackage{amsmath,amssymb}
\usepackage{geometry}
\usepackage{enumitem}
\geometry{margin=2cm}

\setlength{\parindent}{0pt}

\begin{document}

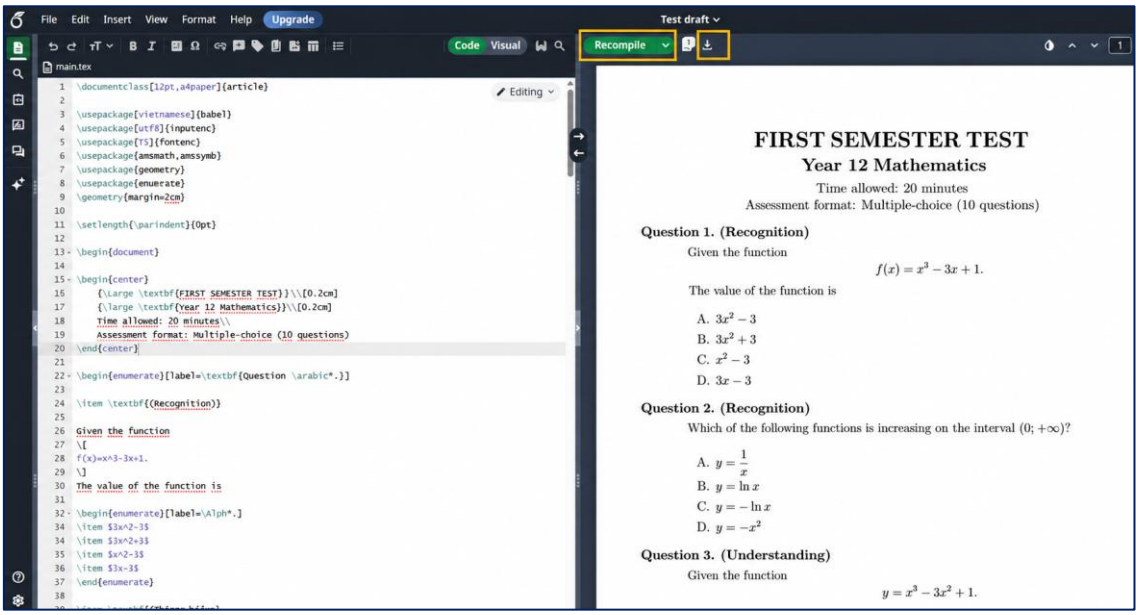
\begin{center}
   {\Large \textbf{FIRST SEMESTER TEST}\\[0.2cm]
   {\Large \textbf{Subject: Year 12 Mathematics}\\[0.2cm]
   Duration: 20 minutes\\
   Format: Multiple choice (10 questions)
\end{center}
```

3. Visit https://overleaf.com and sign in with Google if needed. Select New Project > Blank Project, then copy and paste the LaTeX into the editor.





4. Select Compile or Recompile to generate **a** PDF **with** correctly formatted formulae. Use the adjacent Download button to **save the** PDF.



3.8. Limitations, risks and transparency in AI-assisted assessment

Understanding AI's limitations helps you use it as an assistant without depending on it uncritically. In question generation, pay particular attention to the following:

- AI may produce plausible but inaccurate content (hallucinations), or inappropriate examples and comments because of data bias.
- Questions may not follow sound multiple-choice design or may fall outside textbook content.
- Questions may not measure the intended assessment objectives.
- Apply and Advanced application questions are often weaker than simple recall items.
- Questions may be ambiguous or poorly suited to students' real circumstances.

▲ LIMITATIONS & RISKS

AI is limited in evaluating qualitative aspects such as students' circumstances, emotions and interactions. It is not appropriate for every learning product, particularly artistic or creative work and tasks requiring direct observation. Combine AI-assisted quantitative assessment with teachers' observation-based qualitative judgement. People must remain central to assessment.

Assessment for learning and responding to misconduct

These limitations matter even more when students can also use AI to complete work. The boundary between the student's and AI's contributions can become unclear. A sustainable response is to assess the process, clarify permitted AI use and develop students' academic responsibility rather than rely on detection technology. Possible measures include:

1. Build teachers' and students' AI understanding, including lessons on ethics and responsible use.
2. Assess the process as well as the final product.
3. Design tasks that prohibit AI or permit only a clearly specified level of assistance.
4. Where AI is involved, define clear assessment criteria and identify the stages at which it may be used.
5. Use more direct assessment, oral questioning and tasks requiring critical thinking and individual creativity.

Making permitted AI use transparent

The contest between student AI use and teachers' detection software has proved ineffective. Research shows that AI-text detectors produce false positives, can be evaded and particularly disadvantage writers who use English as an additional language (Liang et al., 2023). International approaches are therefore moving from prohibition towards transparency about permitted AI use.

One example is the AI Assessment Scale (AIAS), developed by Perkins, Furze and colleagues, translated into more than 30 languages and used across school and higher education settings (Perkins et al., 2024). Its five levels give institutions, teachers and students a shared language for specifying AI's role in each task:

Level	Name	AI's role and student requirements
1	No AI	Work is completed independently, often in a supervised classroom assessment.
2	AI Planning	AI supports brainstorming and outlining; students develop the final product themselves.
3	AI Collaboration	AI contributes drafts and revisions; students must evaluate, edit and take responsibility for the content.
4	Full AI	AI may be used throughout; assessment focuses on prompting and directing AI effectively.
5	AI Exploration	Students create with AI to address unfamiliar problems beyond conventional approaches.

Label each task clearly with its AIAS level. A cautious starting point is often Level 2, focusing on critical thinking. Requiring Level 1 for every assessment may be ineffective, limit equitable access to technology and create an excessive supervision burden (Perkins et al., 2024).

◆ **PRACTICAL TIP**

Instead of relying on detector scores, gather three kinds of evidence of students' thinking: the final product, a process record such as drafts or chat history, and a short oral or written explanation. For students learning in an additional language, polished writing alone is not evidence of misconduct. Distinguish language support from replacement of thinking.

Chapter conclusion

This chapter developed a process for AI-assisted assessment, from preparing good inputs and classifying cognitive levels to creating multiple-choice questions, extended-response tasks, answers, rubrics and feedback. Better-prepared inputs lead to better-aligned, more usable assessment drafts.

Teachers remain responsible for quality and central to assessment, particularly in qualitative areas where AI is limited. Balancing AI's speed with pedagogical judgement, and focusing on students' progress, can make assessment more manageable and supportive.

★ KEY TAKEAWAYS

✓ Assessment quality depends on clear prompts, source materials, cognitive-level descriptions and sample questions.

✓ Specify the number of questions at each cognitive level to control difficulty.

✓ AI can support questions, answers, rubrics and feedback, but do not upload student-identifying information.

✓ Teachers must address AI's limitations in higher-order questions and qualitative assessment.

✓ Address misuse through process-based assessment and transparent criteria.

References

Nguyễn Chí Trung, Kiều Phương Thùy, & Trần Thị Mai. (2021). Assessing lower secondary students' qualities and competencies in Digital Technologies.

Liang, W., Yuksekgonul, M., Mao, Y., Wu, E., & Zou, J. (2023). GPT detectors are biased against non-native English writers. *Patterns*, 4(7), 100779. https://doi.org/10.1016/j.patter.2023.100779

Perkins, M., Furze, L., Roe, J., & MacVaugh, J. (2024). The Artificial Intelligence Assessment Scale (AIAS): A framework for ethical integration of generative AI in educational assessment. *Journal of University Teaching and Learning Practice*, 21(6).



CHAPTER

04

USING AI TO DEVELOP DIGITAL LEARNING RESOURCES

Step-by-step guidance for creating images, audio, interactive books, videos and classroom games

CHAPTER 4

USING AI TO DEVELOP DIGITAL LEARNING RESOURCES

A vivid image, an enjoyable song or an interactive game can make an abstract concept memorable. AI helps educators create these resources through natural-language instructions, even without design or programming expertise.

★ IN THIS CHAPTER, WE WILL:

- ✓ Create lesson illustrations, posters and infographics with AI
- ✓ Create music and educational songs to support learning
- ✓ Develop illustrated stories, storybooks and learning videos
- ✓ Create simulations and learning games through vibe coding without advanced programming skills
- ✓ Identify and follow copyright, safety and ethical considerations when creating digital resources

Chapter introduction

Engaging digital resources help capture attention and stimulate interest. Creating an attractive illustration, video or interactive game once required design, video-editing or programming skills beyond most teachers' expertise. Generative AI lowers this barrier: describing an idea in natural language can produce resources that previously required specialist assistance.

This is the handbook's most practice-intensive chapter. It provides illustrated, step-by-step guidance for creating images, music, interactive books, videos, games and simulations. AI supports your creativity rather than replacing it. The tool supplies material, while your pedagogical ideas and individual contribution make it educationally valuable.

★ NOTE

Use AI as a starting point, not a copying tool. Add your voice, feeling and style to make the content your own. Reviewing, adapting and developing AI suggestions also strengthens your creative thinking.

Before exploring the techniques, consider why it is worth learning these resource-creation tools:

- **Save time:** Create an image, video or game in minutes rather than hours.
- **Visualise abstract concepts:** Illustrate processes and phenomena that are hard to observe or photograph.
- **Engage students:** Multimedia and interaction add variety to classroom learning.
- **Develop students' digital competence:** Involving learners in creation also builds digital and creative capabilities.
- **Access free options:** Many platforms offer free plans or education concessions suitable for schools.

4.1. Creating lesson illustrations

Images are easy to create and useful across many lessons. Popular tools include **ChatGPT,** with strong image generation and editing through Image **2; Canva** AI, convenient for adding images directly to **posters or** slides; and Google Gemini, with its Nano Banana image model. Beginners can start with ChatGPT or Canva AI to create illustrations, posters, flashcards and visual discussion starters.

Important considerations for AI images

- Do not use photographs of real people without permission, and avoid creating imitations of identifiable people's faces.
- Choose a clearly illustrative style, such as cartoons, infographics or drawings, so viewers do not mistake it for a real photograph.
- Avoid asking AI to copy a distinctive artist's style, brand or copyrighted character.
- Use safe descriptions appropriate to education and students' ages.
- Always review images before use, especially embedded text, scientific details, maps, charts, historical figures and sensitive content.

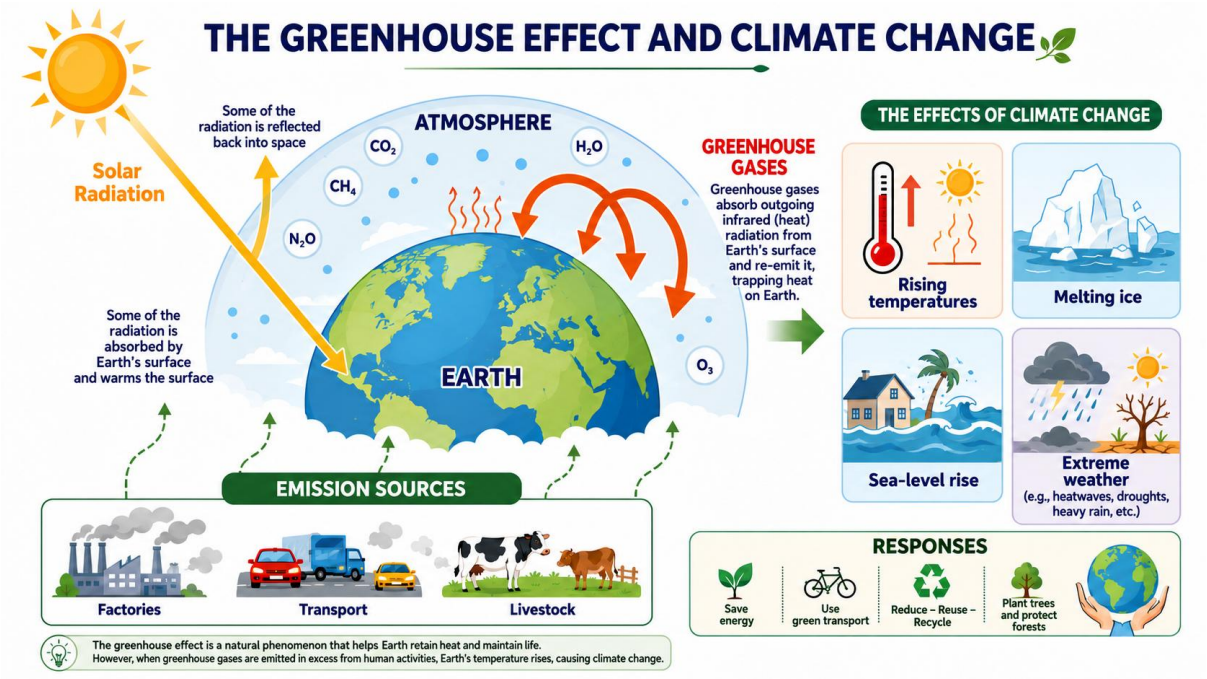
Method 1: Generate an image directly from a prompt

An effective image prompt usually specifies four elements: the main subject, its action or setting, the style (3D, infographic, cartoon or photorealistic) and supporting details such as lighting, viewpoint and dominant colours.

SAMPLE PROMPT

- Create an educational illustration on climate change for Year 10 Geography extension studies. Use a modern infographic style, a white background and clear colours. Show increased greenhouse gases, selected emission sources, rising temperatures, melting ice, sea-level rise and extreme weather, together with a few responses. Use brief English labels and a logical layout suitable for teaching slides.

AI-generated response:



Method 2: Reverse prompting from a reference image

Learn to write prompts by analysing existing images or diagrams, whether your own or previously AI-generated. Instead of starting from scratch, ask AI to examine a reference image's layout, style, lighting, colour and visual details, then suggest a prompt that could produce something similar.

The process has three steps:

1. Choose a high-quality reference image. Open a tool that can analyse images, such as ChatGPT or Gemini, upload it and ask for a detailed image-generation prompt.

Reference image for practice:



SAMPLE PROMPT

- Analyse this image's layout, sequence of steps, illustration style, colours and information design. Then write a detailed prompt for creating a similar image.

Working in ChatGPT:



Analyse this image's layout, sequence of steps, illustration style, colours and information design. Then write a detailed prompt for creating a similar image.

AI-generated response:

2. Detailed Prompt for Creating a Similar Image

Prompt:

Create an educational infographic in English on the topic **"Wastewater Treatment Process."** Use a circular layout, with a cream or white background, a modern, clean sttle, easy to use in a lecture slide.

At the center of the image, place a large, prominent title in uppercase, bold, dart green:
"WASTEWATER TREATMENT PROCESS."

Above the title, include an illustrative water droplet effect in green and a small leaf so the theme of the environment is clear.

Around the title, arrange 8 circular frames equally spaced in a circular ring, connected to each other by soft, curved arrows to show the sequential process in a clockwise direction. Each circular frame has a green border or green fill and, inside, a simple, clear illustration, in a realistic practical style, with clean outlines, light colours, fresh but not overly bright, and no clutter.

The steps include:

1. **COLLECTION** – illustrate wastewater flowing from pipes; behind it are residential houses and a factory.
2. **SCREENING** – illustrate a bar screen that traps solid waste such as plastic bags, leaves, and floating debris on the water flow.
3. **SEDIMENTATION** – illustrate a sedimentation tank containing water, with a layer of sludge/settled solids at the bottom.
4. **BIOLOGICAL TREATMENT** – illustrate an aeration tank with bubbles, microorganisms shown as small icons, and air pipes supplying air.
5. **DISINFECTION** – illustrate water passing through a UV lamp or a disinfection tank that emits green light for germ inactivation.
6. **CLEAN WATER** – illustrate clean water flowing out to a river or lake, or into green water.
7. **REUSE** – illustrate treated water being used to water plants or irrigate landscaped areas.
8. **SLUDGE TREATMENT** – illustrate a sludge tank and stabilized sludge that has been treated at the facility.

Each step has a step number in sequence inside a small circular badge at the top of the frame, with white numbers on a green background. Place the step name below or nene the circular frame, using English labels, in a bold, sans-seriaf font that is easy to read and consistent in size. Ensure the English text uses proper capitalization, correct spelling, and clear wording, with no typographical errors.

2. Ask AI to change details for the new image.

SAMPLE PROMPT

- Revise the prompt so the subject changes from wastewater treatment to agricultural pest management. Keep the clear, accessible presentation suitable for an educational illustration.

AI-generated response:

Below is the **revised version** of the prompt, which transitions from a **wastewater treatment process** to a **detailed agricultural pest management process** for a crop, while still keeping the presentation clear, direct, and suitable for an educational illustration:

Prompt:

Create an educational infographic in **English** about the topic **"Agricultural Pest Management Process."** Use a circular layout, with a light cream or white background, a modern, clean style, easy to read and suitable for a lecture slide.

Place at the center a large title, in uppercase, bold font, in green or dark green:
"AGRICULTURAL PEST MANAGEMENT PROCESS."
The area above the title should feature an illustrative image of a leaf or crop plant combined with a mall pest insect, clearly showing the topic of agriculture and plant protection.

Surrounding the title are **8 circular frames** evenly arranged around the circle, connected to one another by curved, soft arrows to show a sequential, cyclical process in the clockwise direction. Each circular frame has a green or light-green border, and inside is a semple, clear illustration, realistic in context, with clean outriis, bright yet harmonious colors.

The steps include:

1. **DETECTION** – illustrate farmers observing the crop to identify signs of pest feeding or disease symptoms.
2. **IDENTIFICATION** – illustrate the harmful pest, plant disease, or disease-causing agent, helping to identify the cause of the damage.
3. **ASSESSMENT OF INFESTATION LEVEL** – illustrate several plants with different levels of infestation, from light to heavy.
4. **FIELD SANITATION** – illustrate removing diseased leaves, collecting and disposing of crop residues, and cleaning the growing area.
5. **BIOLOGICAL CONTROL METHODS** – illustrate the use of natural enemies, such as releasing beneficial insects or applying biopesticides.
6. **PESTICIDE APPLICATION** – illustrate farmers spraying plant-protection pesticides correctly, using protective equipment, and in compliance with the label instructions.
7. **POST-TREATMENT MONITORING** – illustrate checking the crop after treatment to see whether the pest population has decreased.
8. **RECOVERY AND PREVENTION** – illustrate healthy, well-growing plants, fertilizing, properly caring for the crop, and applying measures to prevent re-infestation.

3. Check whether the revised image prompt is appropriate, make any further adjustments, then ask AI to generate the image.

SAMPLE PROMPT

- Create a new image based on this prompt.

AI-generated response:



Starting with a wastewater treatment reference, we have created an agricultural pest management illustration with a similar structure but appropriately adapted details.

> • **NOTE**
>
> *When using someone else's image as a reference, respect intellectual property requirements. Do not copy or modify the original without permission, and acknowledge the source appropriately in teaching materials or presentations.*

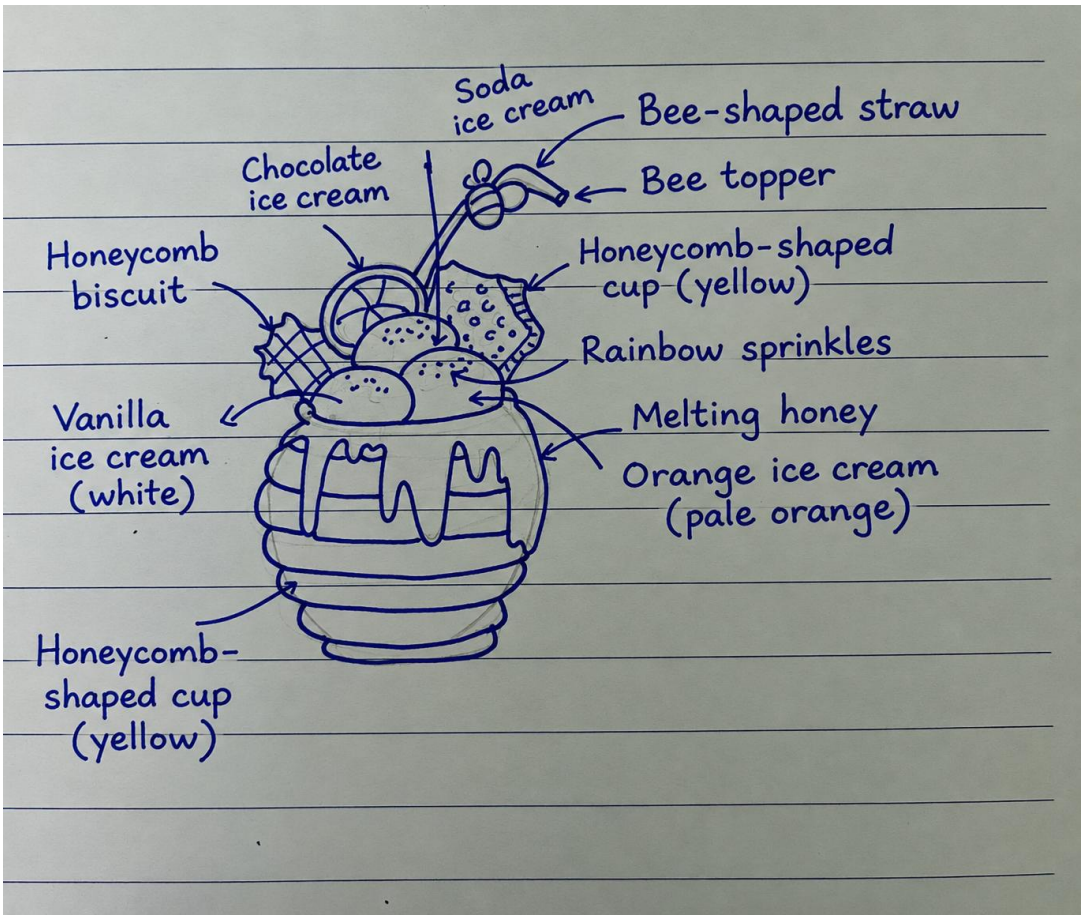
Method 3: Turn a sketch into a realistic image

Teachers and students can also begin with a simple sketch on paper, a board or a computer, then use AI to develop a finished image.

The process has two steps:

1. Sketch the idea by hand or digitally, showing the main components.

   Practice example, sketched by a teacher participating in the 2025 training programme:

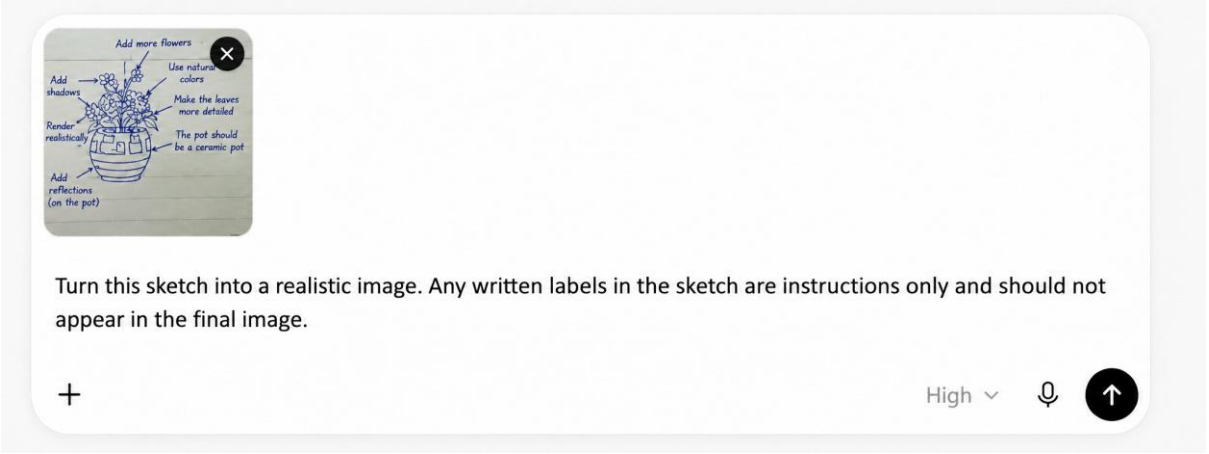


2. Upload the sketch to an image-generation or editing tool such as ChatGPT. Ask it to retain the main composition while creating a realistic image, or specify another style such as 2D or 3D illustration.

SAMPLE PROMPT

- Turn this sketch into a realistic image. Any written labels in the sketch are instructions only and should not appear in the final image.

Working in ChatGPT:



AI-generated response:



This technique helps AI stay closer to the original idea because the sketch provides a visual guide alongside the text prompt. The human contribution is clear: the learner imagines, chooses the composition and sketches the idea; AI helps develop the colour, materials, lighting and style.

Students, especially younger children, often enjoy seeing their drawings become vivid images. The activity encourages creativity, confidence in sharing ideas and learning through experience.

4.2. Creating music and educational songs

Turning safety rules, formulae, terminology or procedural steps into an enjoyable song can support memory, interest and access to complex content. Melody, rhyme and repetition may help retain information more effectively than rote memorisation alone.

AI tools can help you:

- Create starter songs that help students begin a lesson positively.
- Compose encouraging songs for group work, games and learning tasks.
- Create English songs for preschool and primary children to learn vocabulary naturally and enjoyably.
- Compose songs on familiar themes such as seasons, animals, occupations, festivals, road safety and environmental protection.
- Turn ideas, vocabulary lists or lesson content into lyrics without needing songwriting experience.

Gemini's integrated music-generation feature can create a complete song, including vocals and accompaniment, from a written request. Its understanding of Vietnamese educational contexts lets teachers draft and refine factually accurate lyrics, then request singing and musical arrangement in the same conversation.

Creating a learning song with Gemini:

1. **Sign in with your Google account at** http://gemini.google.com/.
2. **Write four to** eight simple, rhyming lines. To save time, ask Gemini to draft the lyrics first, then check and edit them to match the lesson accurately.

SAMPLE PROMPT

- Help me write short, cheerful, rhyming song lyrics about washing hands before eating, for preschool children.

AI-generated response:

Clean Hands, Happy Meals

(A fun, cheerful tune: La la la...)
It's mealtime now!
Clean hands, where should we start?
Let's go wash our hands together!

Use fragrant soap, a little white foam,
White foamy bubbles, rub them on our hands.
Germs are bad, they run away, run away!
Clean, fresh hands, food tastes extra good!
(Food tastes extra good!)

3. **Ask Gemini to create** the song. Once the lyrics are ready, request vocals and accompaniment, specifying your preferred musical style.

SAMPLE PROMPT

- Create a complete cheerful song with vocals and instrumental accompaniment using these lyrics: [Paste lyrics here].

AI-generated response:

This is a cheerful song for children, created with complete vocals and a lively, engaging background track. You can click the play button right in the chat window to listen to the full, upbeat melody!



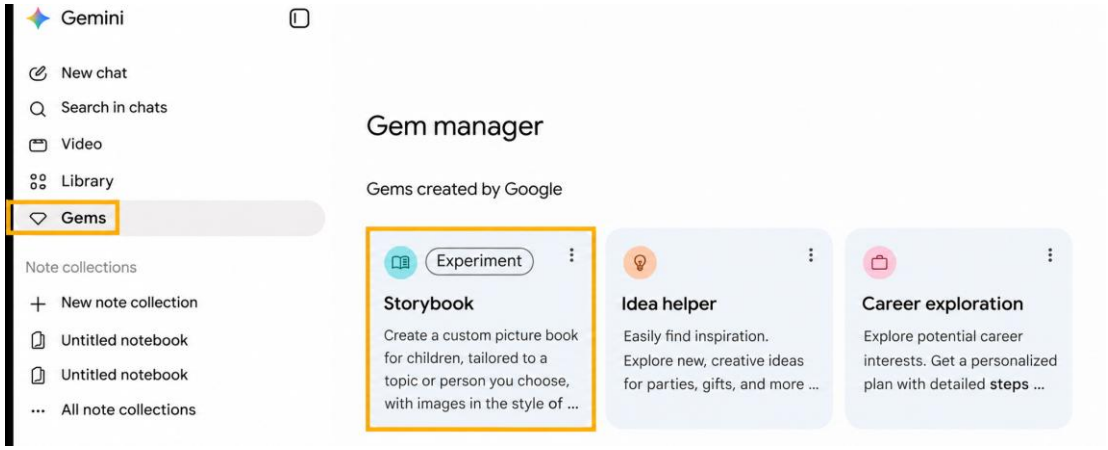
4.3. Creating storybooks

A storybook is a multimedia digital format combining text, images, narration and interaction, like a digital flipbook. It is useful for visualising procedures, with one illustrated step per page, and for presenting scenarios and engaging learners.

Google Gemini includes Storybook. Provide an idea and it can develop the storyline, divide it into pages, and create illustrations and narration.

Creating a storybook with Gemini:

1. Open Storybook through the Gem manager, as shown below.

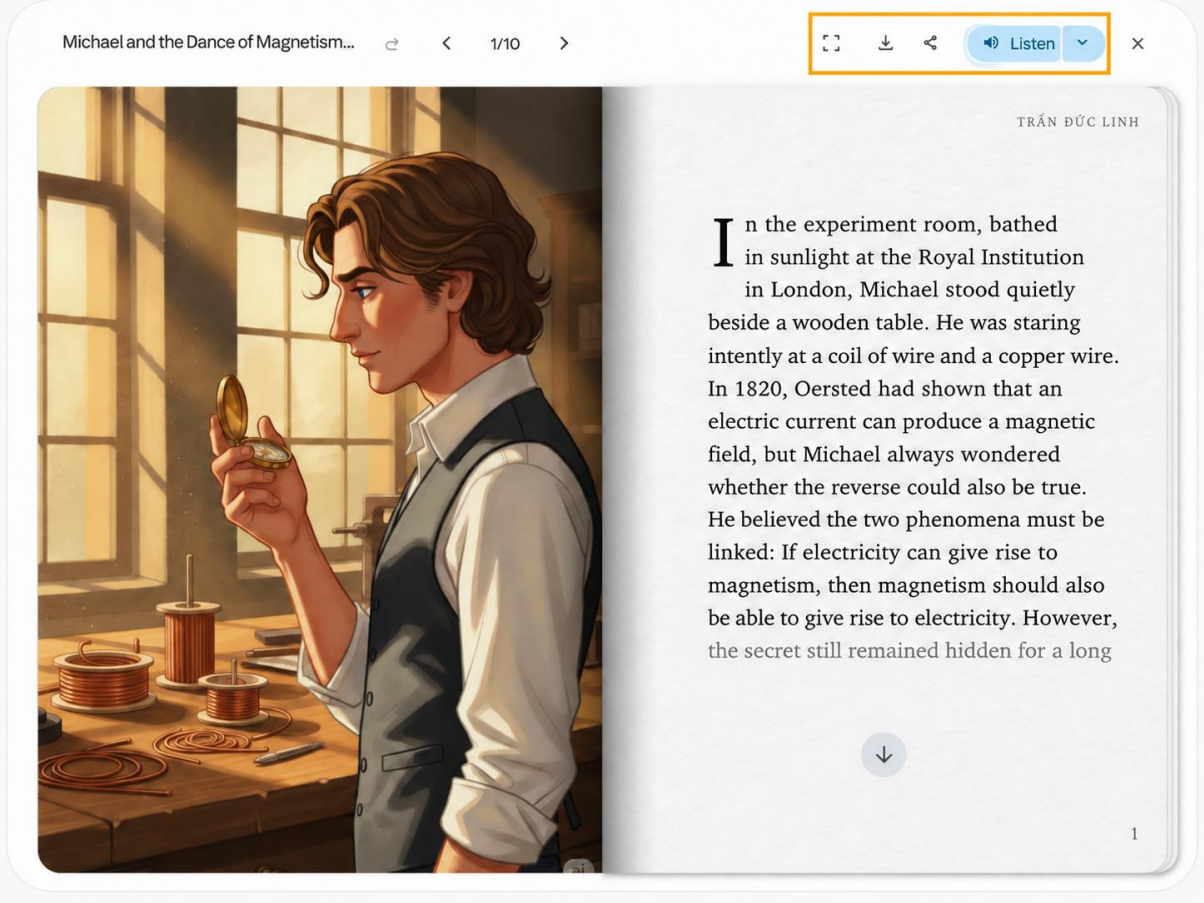


2. Choose a sequential or narrative topic, such as a step-by-step process or a story illustrating a concept, then ask AI to create a storybook.

SAMPLE PROMPT

- Tell a short story for school students about Michael Faraday and his discovery of electromagnetic induction. Begin with his curiosity about magnets and electric current, then describe experiments using a coil, a magnet and a galvanometer. Each page should reinforce that induced current occurs only when the magnetic flux through the coil changes.

AI-generated response: After a few minutes, Gemini produces a narrated flipbook. Share the link with students or download the complete content as a PDF.



4.4. Creating illustrative videos with AI

Video is useful for demonstrating procedures, actions, phenomena and practical skills. AI video generation requires substantial computing resources, so high-quality tools generally offer limited free use or require a paid plan.

The following activity illustrates video creation with Gemini Omni. Note that this video-generation feature currently requires a Gemini Pro account.

Creating a video with Gemini:

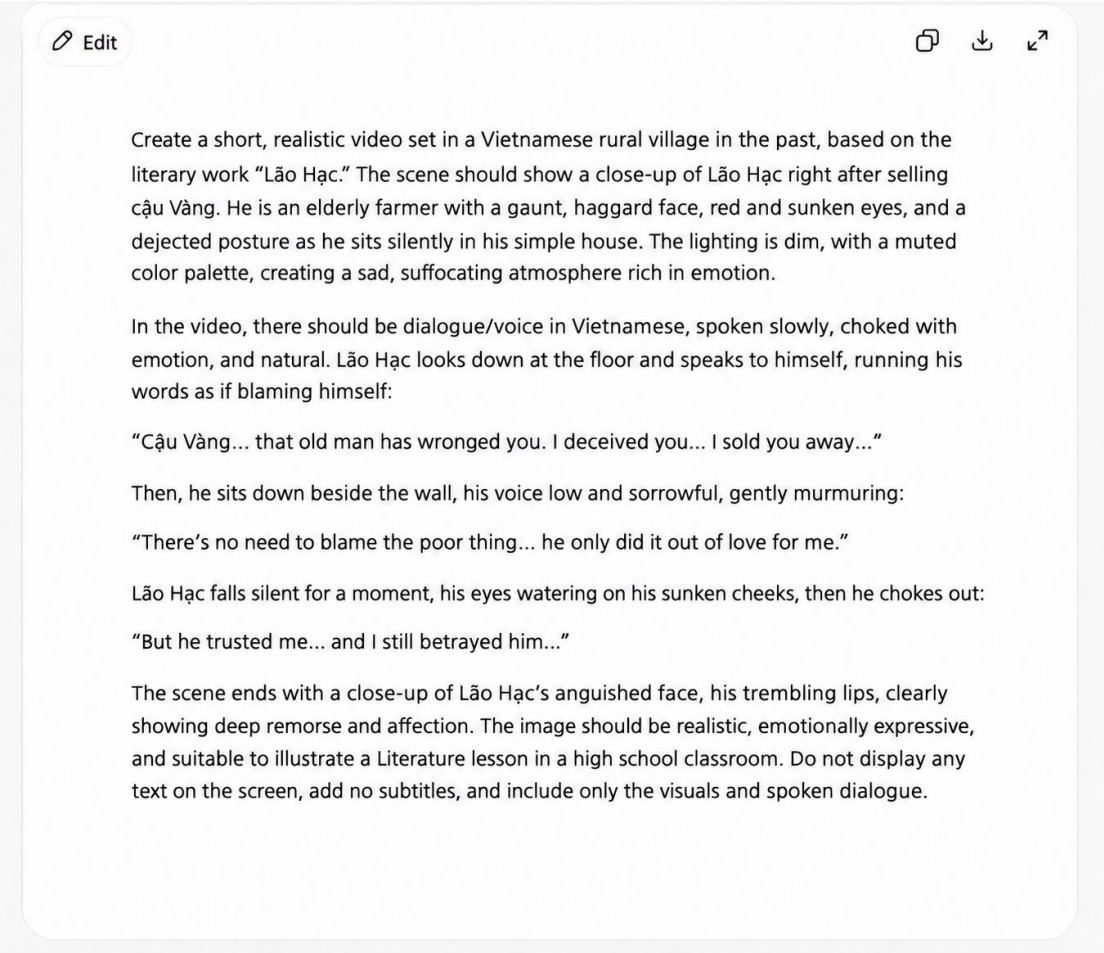
- **Step 1. Use AI to write a video scenario**

First, ask ChatGPT, Gemini or a similar tool to describe the scenario. Specify the setting, characters, key actions, emotions, dialogue or narration where relevant, visual style and learning objective.

SAMPLE PROMPT

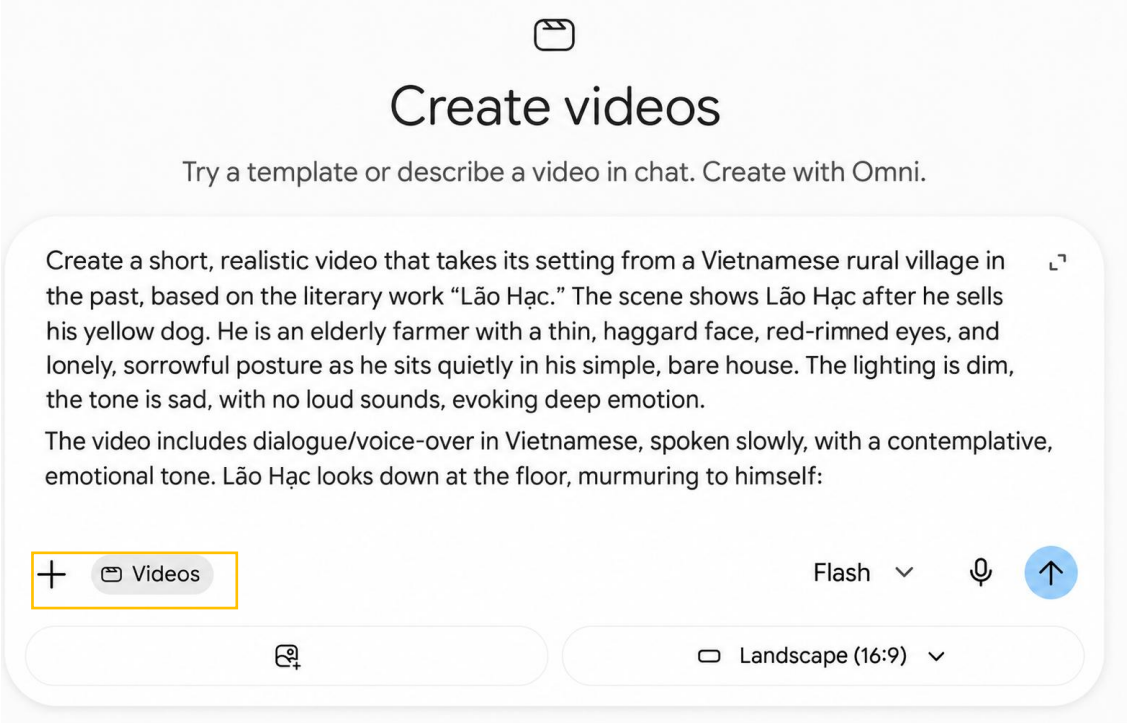
▸ Write a short video scenario illustrating Lão Hạc after he sells his dog, cậu Vàng, for use in a Literature lesson. Describe the setting, his emotions, camera pacing and a brief Vietnamese conversation between Lão Hạc and the teacher.

AI-generated response: Review and adapt the scenario. For example, ask it not to include television station logos to avoid copyright problems. Adjust the duration, visual style and dialogue to suit your students.

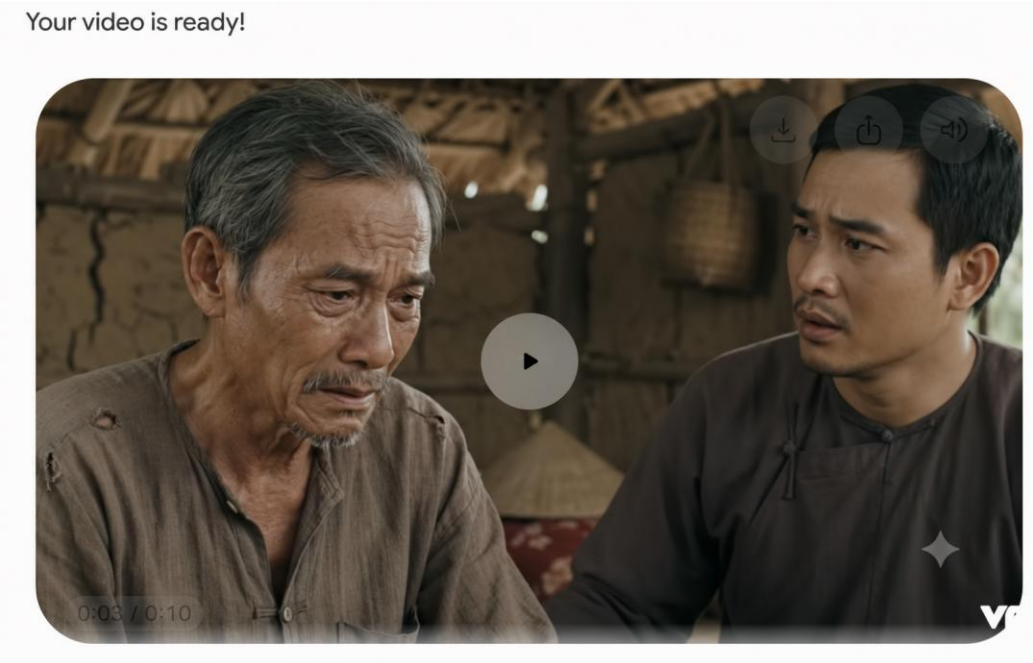


- **Step 2. Generate the video in Gemini**

Enter the scenario in Gemini and enable video generation.



AI-generated response:



▲ LIMITATIONS & RISKS

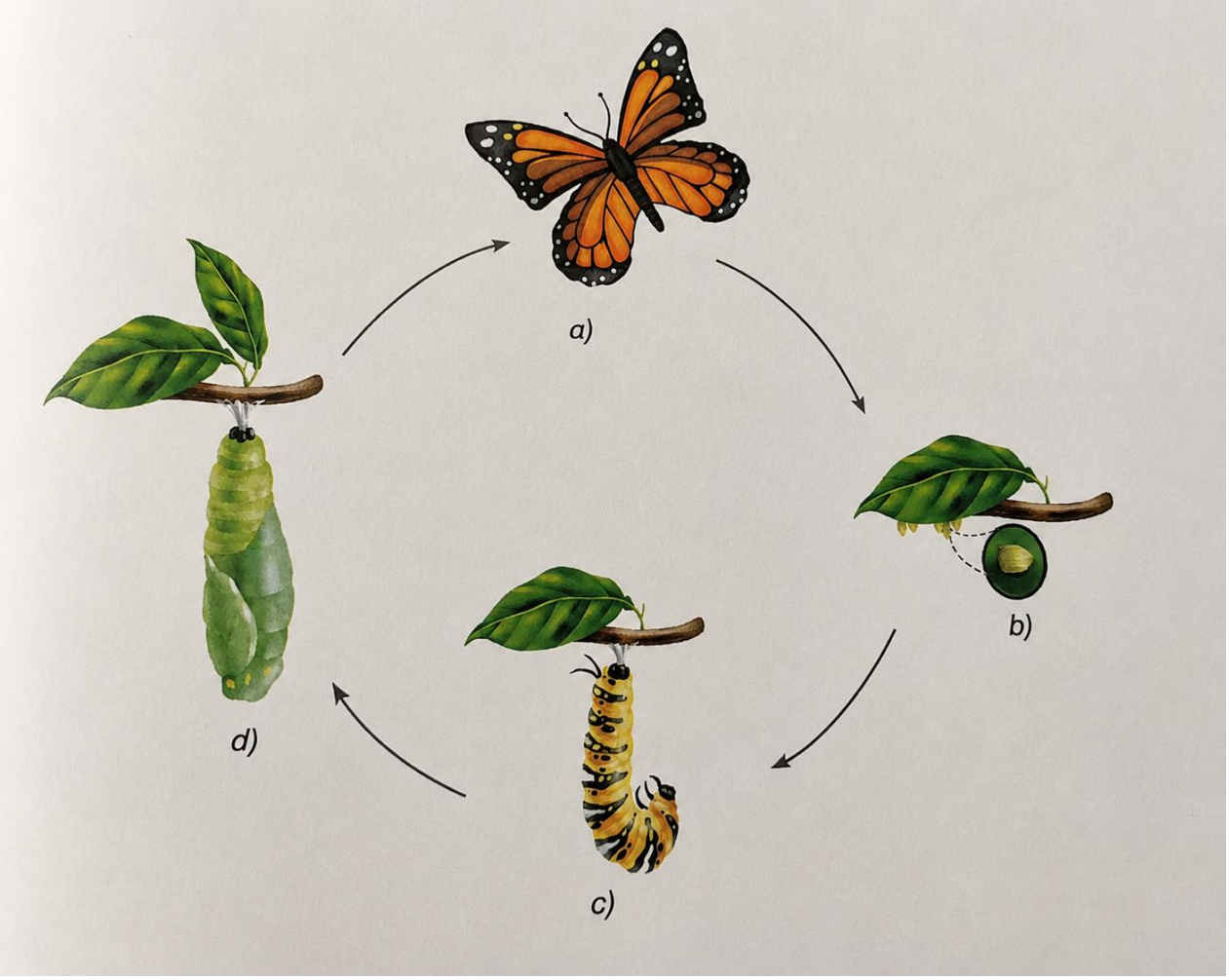
AI-generated videos are becoming increasingly realistic and can be difficult to distinguish from recorded footage. Do not misuse these tools or create or share unlawful, misleading, false or copyright-infringing videos. Before classroom use, review accuracy, age appropriateness and alignment with learning objectives. Teach students to use AI video responsibly as well.

Animating textbook illustrations. Choose an educationally useful image or sequence, photograph or scan it clearly within the permitted scope of use, and use it as a reference for gentle movement, detail enlargement, labels or narration. Keep the scenario aligned with the textbook. Invented movement should not be mistaken for a documented event or phenomenon. Compare every detail with the original page before showing the video.

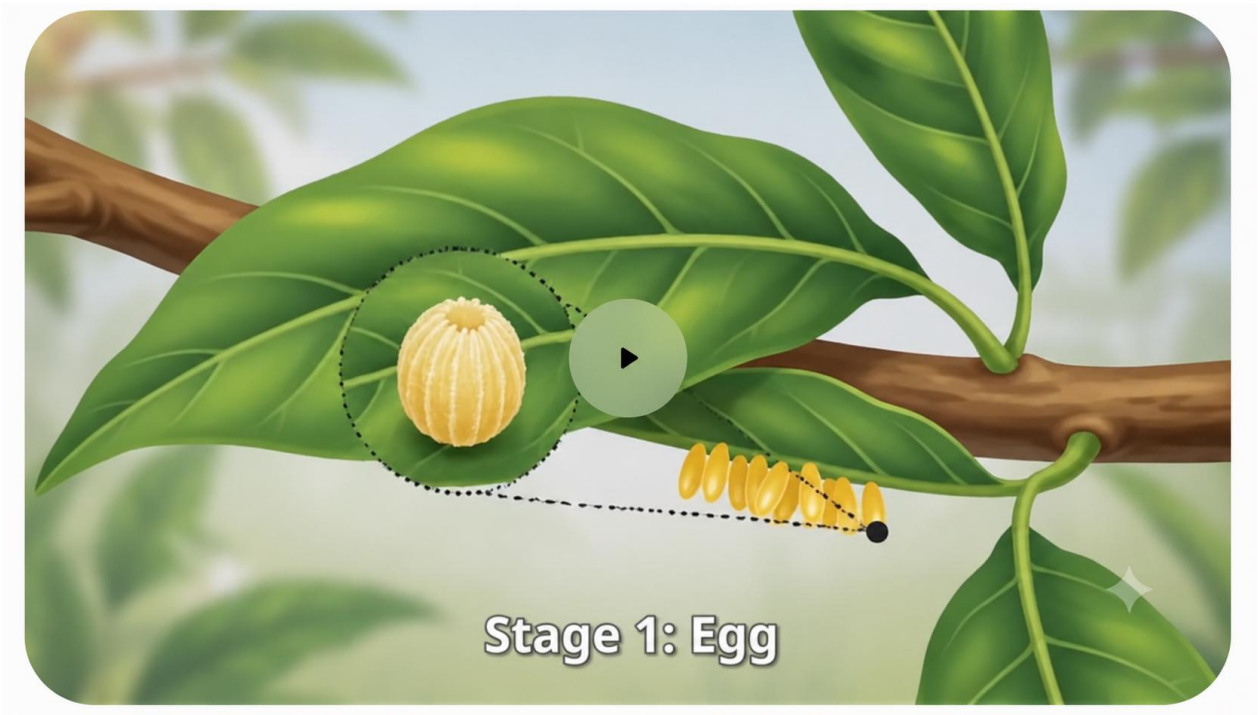
SAMPLE PROMPT

Using the attached butterfly life-cycle illustration, create a short video highlighting the egg, caterpillar, pupa and adult butterfly stages in sequence, with brief narration. Make it engaging and ensure all English text is spelled correctly.

Attached image: Year 5 Science textbook, Connecting Knowledge with Life series (Vũ Văn Hùng et al., 2024), Vietnam Education Publishing House.



AI-generated response:



- **NOTE**

Before uploading textbook images or other copyrighted content to an AI tool, check the copyright information, permitted uses and the tool's terms. Use only what is genuinely necessary for teaching. Do not remove, conceal or misrepresent authorship, source or copyright information. Acknowledge the source and author, and identify any AI-generated or AI-modified content. Prioritise open educational resources or materials licensed for the intended use, adaptation and sharing.

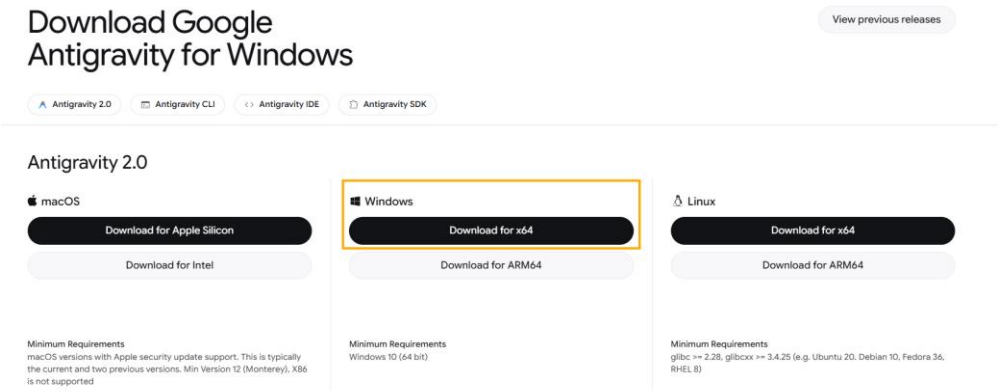
4.5. Creating simulations and learning games

Vibe coding lets educators create small websites, games, simulations and interactive activities without writing the code themselves. You describe the idea and AI helps generate the code. Educational simulations can illustrate processes, provide safe practice for risky situations, reinforce knowledge and engage learners.

Google Antigravity is an agent platform for building applications and automating workflows. It enables people without programming experience to prototype solutions and automate professional tasks through natural-language instructions. For example, it can create small HTML-based learning tools. Save the file locally and open it in a browser for offline use without publishing a website.

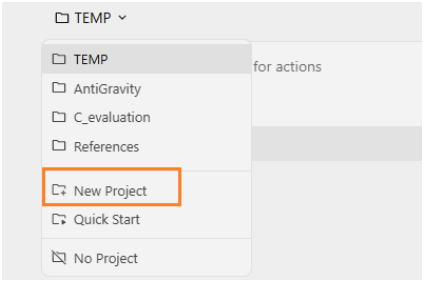
Installation:

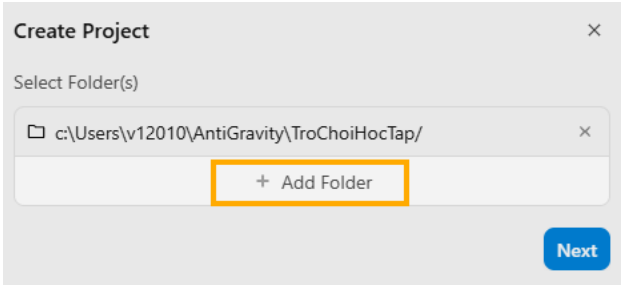
Download and install Antigravity from antigravity.google. Versions are available for Windows, macOS and Linux.



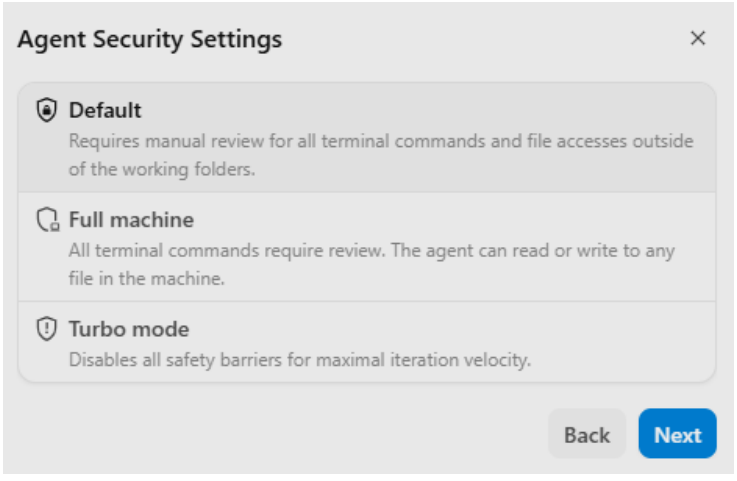
Creating an application with Google Antigravity

1. Create **a dedicated** project folder on your computer for the application's files. This is a safety measure: Antigravity is an AI agent that can carry out multiple steps to read, change or delete files within its working folder.





Keep Default **mode,** which requires approval for access outside the working folder, and select Next.

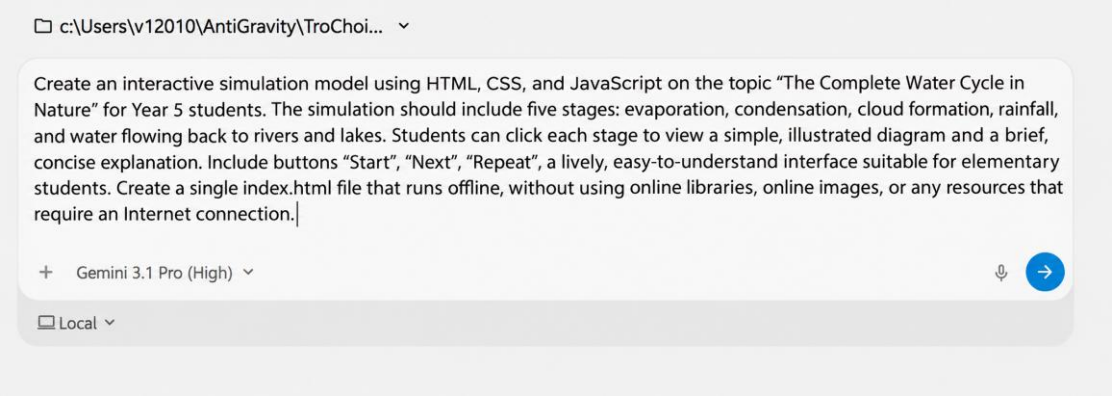


2. Open Antigravity and select the project folder. Describe the game or simulation, including the topic, learners, question count or interaction steps, correctness feedback and interface **style. Request** a single HTML file that runs offline. Try the following sample prompt:

SAMPLE PROMPT

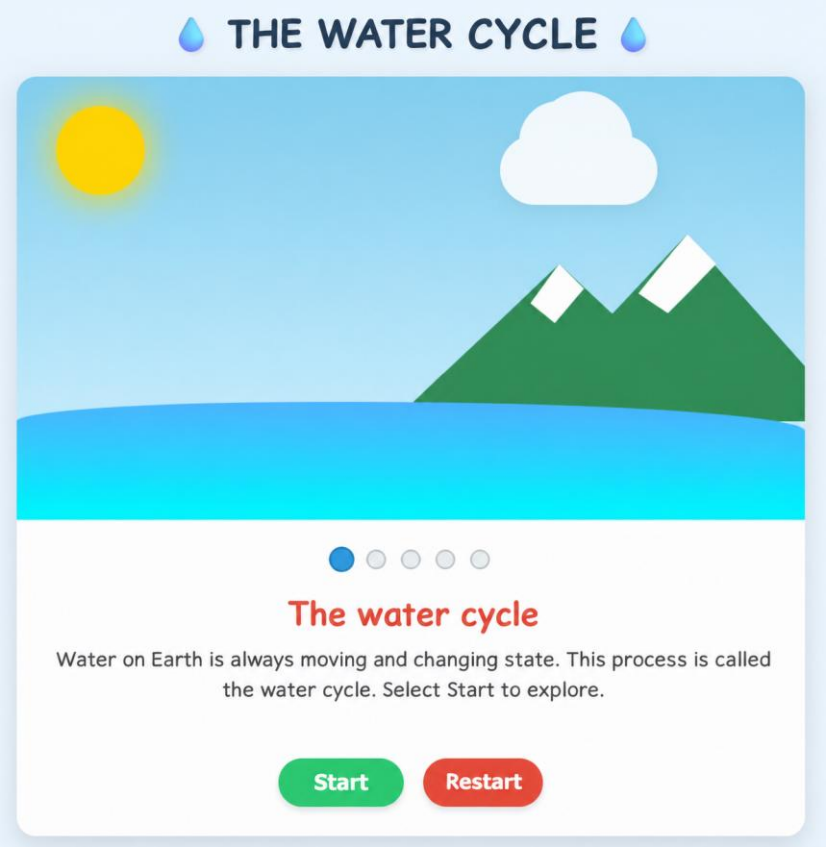
- Create an interactive HTML, CSS and JavaScript simulation of the water cycle for Year 5 students. Include evaporation, condensation, cloud formation, rain and water flowing into rivers and lakes. Students should be able to select each stage to see a simple illustration and brief explanation. Include Start, Next and Restart buttons. Make it engaging and accessible for primary students. Create a single index.html file that works offline without online libraries, images or other internet-dependent resources.

The screenshot below shows the prompt in Antigravity. For complex requests, select a capable model such as Gemini 3.1 Pro or Claude Opus 4.6. Antigravity may first propose a plan for review; proceed only if you are satisfied with it.



3. When generation is complete, open index.html in a browser and test it. Ask AI to adjust the interface, content or difficulty if needed.

AI-generated response:



4. Save the HTML file locally. Double-click it to open it in a browser whenever needed, including without internet access.

4.6. Copyright, safety and ethics

The ease of creating content brings responsibilities. When creating and using AI-assisted digital resources, remember:

- **Copyright:** Do not modify, publish or redistribute copyrighted material without the author's permission.
- **Distinctive styles:** Avoid copying a protected artist's or brand's distinctive style. Prefer general, neutral styles.
- **Personal image rights:** Do not create or edit identifiable people's faces without permission.
- **Student safety:** Review images, music, videos and games before use and ensure they are age-appropriate.
- **Transparency:** Where appropriate, tell students when a resource is AI-generated so they learn responsible use.
- **Data security:** Take care when uploading documents or students' personal information to AI platforms.

Language considerations in AI-generated content

Many AI tools perform better in English because English-language training data is more abundant and better represented. For lower-resource languages, local languages and dialects, AI may translate words accurately while missing nuance or context, or flatten cultural and linguistic differences (Lovenia et al., 2024). Check that the language is natural and appropriate to students' cultural context, region and proficiency. Simple classroom approaches include:

- Treat AI text as a language draft, not the final authority. Teachers should adapt vocabulary and phrasing to the classroom context.
- Try a 'translate and critique' activity: Students submit a Vietnamese passage to AI, then identify phrasing in the translation that sounds unnatural or contextually wrong.

Combining open educational resources with AI

UNESCO defines Open Educational Resources (OER) as teaching, learning and research materials in any format that are in the public domain or openly licensed for free access, reuse, adaptation and redistribution (UNESCO, n.d.). They help reduce costs and enable translation and localisation for your class.

To combine OER with AI, choose an open resource and ask AI to summarise it or adjust its reading level. Localise the examples, retain the appropriate licence and share it with your subject team. For example, adapt a water-cycle OER for Year 4 by simplifying vocabulary and using local examples of seasonal rainfall or saltwater intrusion.

• NOTE

Distinguish 'free to view' from 'permitted to adapt and redistribute'. Check licences, acknowledge sources and recognise AI's limitations when processing copyrighted material.

Chapter conclusion

This chapter explored practical ways to create images, music, narration, dialogue, interactive books, videos, games and simulations. Each resource type follows a process you can try yourself. The purpose is to make learning more engaging, not to showcase technology.

Creative possibilities bring responsibilities for copyright, safety and ethics. AI provides material, but your pedagogical ideas and review determine its educational value.

★ KEY TAKEAWAYS

✓ AI-assisted resources include images, music, storybooks, videos, simulations and games.

✓ Image prompts specify the subject, setting, style and supporting details.

✓ Vibe coding supports game and simulation creation without prior programming knowledge.

✓ AI supports your creativity. Add your own contribution and review all content.

✓ Respect copyright and personal image rights, and protect students' safety.

References

Lovenia, H., Mahendra, R., Akbar, S. M., et al. (2024). *SEACrowd: A multilingual multimodal data hub and benchmark suite for Southeast Asian languages.* arXiv. https://arxiv.org/abs/2406.10118

UNESCO. (n.d.). *Open educational resources* (OER). UNESCO. https://www.unesco.org/en/open-educational-resources

Vũ Văn Hùng, Phan Thanh Hà, Hà Thị Lan Hương, Nguyễn Thị Hồng Liên, Ngô Diệu Nga, Nguyễn Thị Thanh Phúc, & Đào Thị Sen. (2024). Year 5 Science (Connecting Knowledge with Life series). Vietnam Education Publishing House.



CHAPTER

05

AI FOR LEARNING SUPPORT AND SCHOOL MANAGEMENT

From separate tools to integrated AI platforms for classrooms and schools

CHAPTER 5

USING AI FOR LEARNING SUPPORT, LEARNING MANAGEMENT AND SCHOOL ADMINISTRATION

A well-designed lesson needs to reach students, support their learning and allow teachers to monitor progress and provide timely help. Integrating AI throughout this cycle can improve preparation and deepen understanding of learners' needs.

★ IN THIS CHAPTER, WE WILL:

- ✓ Distinguish standalone AI tools from AI-integrated learning platforms
- ✓ Explore specialist AI tools for preparing learning resources and classroom activities
- ✓ Build an AI-supported digital classroom, add lessons and publish content for students
- ✓ Examine how students study, complete tasks and interact with a lesson-based AI assistant
- ✓ Monitor progress to identify students needing support and plan suitable interventions
- ✓ Create multimodal independent-learning resources from slides, text and voice
- ✓ Identify limitations, risks and ethical considerations in school AI platform use

Chapter introduction

Earlier chapters introduced lesson planning, question generation, digital resources, assessment support and interactive content. These tasks do not stand alone in practice. A designed lesson must be delivered, assigned and monitored, with support for students who encounter difficulties and adjustments based on their learning.

AI-integrated education platforms can connect these stages in one environment: preparation, resource creation, class organisation, task assignment, student support, progress monitoring

and intervention suggestions. National systems such as Singapore's Student Learning Space also follow this integrated approach (Ministry of Education Singapore, 2023).

This chapter considers AI as part of a teaching and learning-management ecosystem rather than an isolated content tool. It focuses on a more connected workflow while preserving the central principle: teachers review content, make pedagogical decisions and retain final responsibility.

5.1. From standalone tools to AI-integrated learning platforms

We often use separate tools for particular needs: one for lesson planning, another for questions, another for resources and an assistant for feedback. Each can efficiently support part of the teaching process.

As AI use becomes routine, this one-tool-per-task approach has limitations. Teachers manage multiple accounts, store content in different places, copy between platforms and struggle to identify final versions or track individual learning. Leaders also find it harder to consolidate learning data, monitor progress and identify groups needing support.

Lesson plans, questions and digital resources become valuable when used in class, assigned to students, monitored and adjusted. Integrated platforms support this cycle. They can be understood as learning management systems (LMS) with AI, but what matters is how AI fits the workflow:

1. The teacher creates a class on the digital learning platform.
2. AI helps develop lessons, questions, activities and materials.
3. The teacher reviews, edits and controls the visibility of each section.
4. The lesson is published for students within the same digital classroom.
5. Students study, complete tasks, record progress and ask the AI assistant questions.
6. The system records learning data and presents summaries or dashboards.
7. The teacher uses this information to provide timely support.

This approach strengthens rather than diminishes teachers' roles by providing better information. AI can draft content, identify possible support needs and suggest interventions, but teachers judge whether decisions are accurate, appropriate and humane.

> • **NOTE**
>
> The more functions a platform integrates, the more carefully it must be used. Treat AI outputs and system indicators as information to interpret, not definitive conclusions.

Content, comments and interventions need to be considered in the actual classroom context.

5.2. Specialist teacher AI tools and custom chatbots

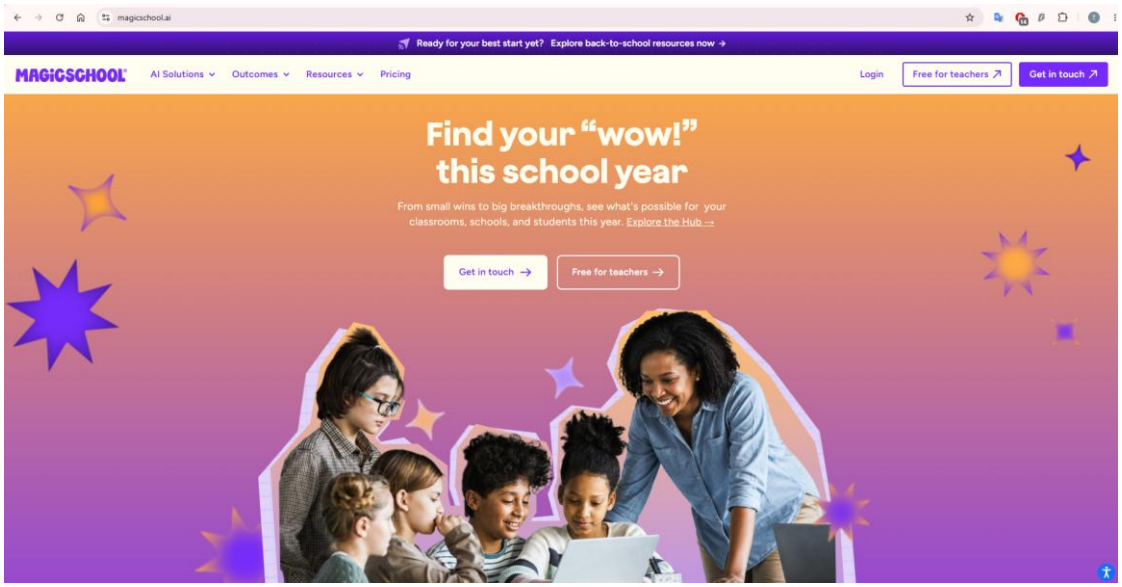
Before exploring integrated learning management, try specialist tools for teachers. These are essentially preconfigured chatbots that support familiar tasks such as lesson plans, assessment questions, worksheets, group activities, differentiated exercises and parent communications.

MagicSchool is one **example.** Its tools are organised by teaching need, so teachers do not have to write long prompts from scratch. Choose a tool, enter details such as subject, year level, topic, duration, objectives or output requirements, then review AI's draft.

This approach offers three benefits. It lowers the entry barrier for teachers unfamiliar with prompting through guided forms. Its educational context can produce more relevant outputs by asking for year level, cognitive level, question type or assessment purpose. It also provides an idea library: even an imperfect draft gives teachers a structure to revise, expand and personalise.

Suggested MagicSchool practice:

1. Visit https://www.magicschool.ai/ and sign in with an existing account or use Google sign-in.



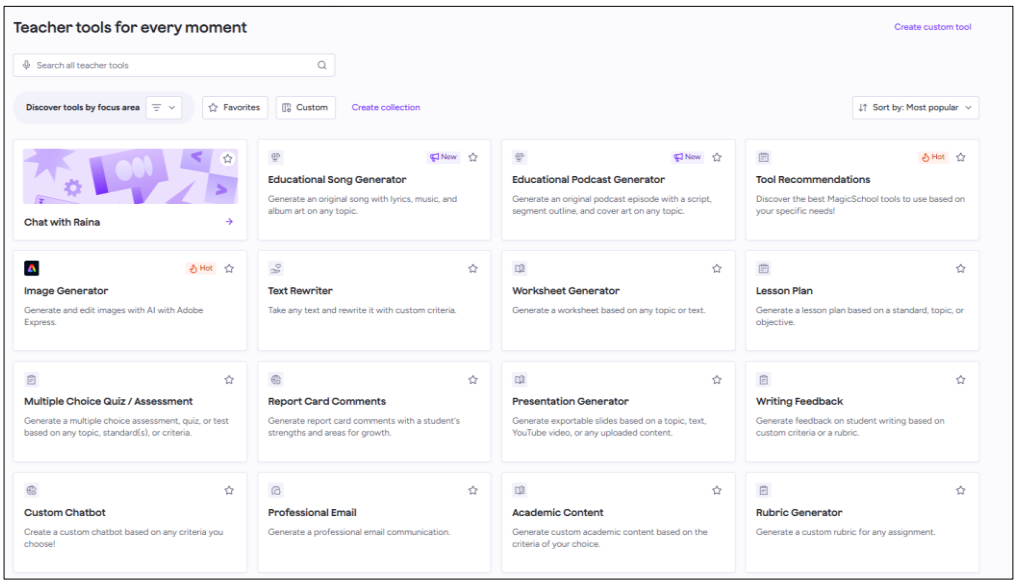
2. **Explore useful options under AI Tools:**

    a. **Lesson Planning:** Create detailed lesson plans for any topic.

b. **Assessment Generator:** Create multiple-choice and extended-response questions.

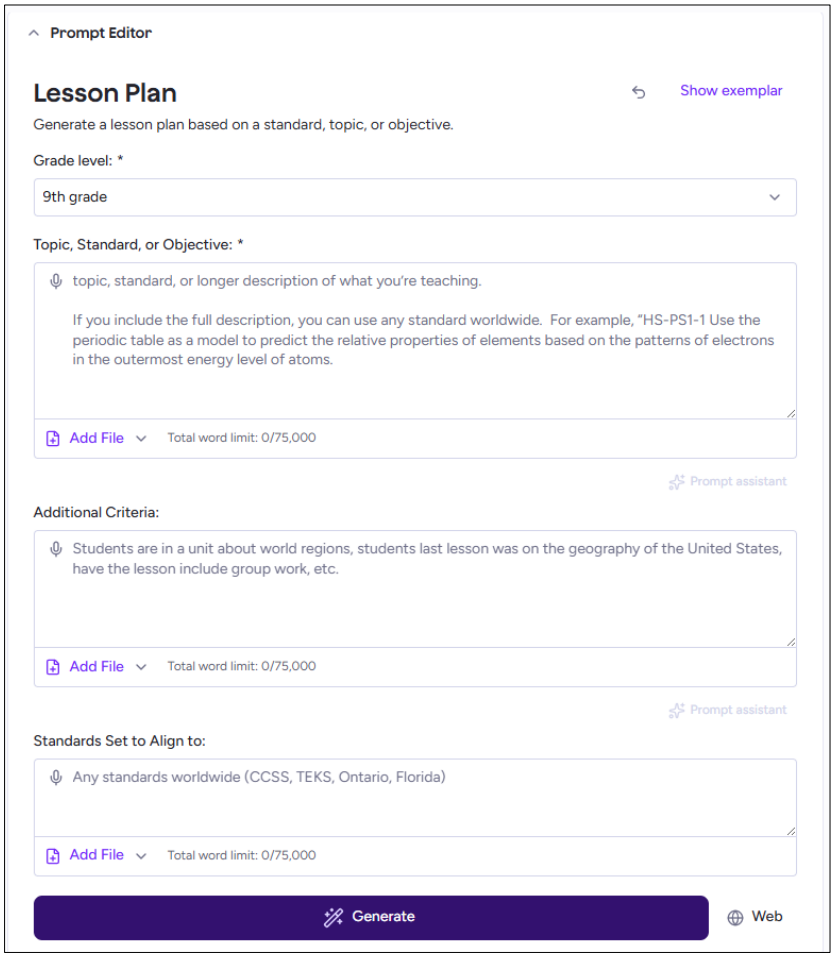
c. **Rubric Generator:** Develop rubrics for projects and assignments.

d. Explore other tools as well.



3. Try a tool such as **Lesson Planning.**

The tool asks for basic information so AI can create a suitable lesson plan.



Typical fields include:

- **Grade level:** Select the students' year level.
- **Topic, Standard, or Objective:** Enter the topic, curriculum standard or learning objective.
- **Additional** Criteria: Specify requirements such as lesson duration, activity types, AI use, group work or assessment.
- **Standards Set to Align to:** Where relevant, enter the curriculum, competency standards or guidance to follow.
- Select Generate to **create** the lesson plan.

Practice example: Enter the following details.

Grade level: 9th grade

Topic, Standard, or Objective:

Year 9 Technology. Topic: Career pathways in engineering and technology. Design a 45-minute lesson in which students identify engineering career groups, examine how personal interests and abilities relate to occupational requirements, and create a simple personal career map.

Additional Criteria:

This lesson is for Year 9 students in Vietnam. Include a starter activity, groups of four, an AI-supported activity exploring career information, guidance on verifying AI information and an exit assessment. Present a table with timing, teacher activities, student activities, learning products and assessment methods.

After completing the fields, select Generate. **AI** produces a detailed lesson plan like the example below. Read and adapt it to your classroom context, actual lesson time, students' abilities and available equipment.

Career Guidance in the Field of Engineering and Technology (Year 9) - 45-Minute Lesson (Designed Using Backwards Planning)

Learning Objectives

By the end of the lesson, students will be able to:

- Identify at least 4 major career groups in the field of engineering and technology.
- Analyze the connection between personal interests, abilities, and career requirements for each occupation.
- Create a simple "personal career map" that illustrates 2 suitable careers, explains why they are suitable, and outlines the next steps to learn more about those careers.

Assessment

At the end of the lesson, students will submit a "personal career map" (one A4 page or a slide) that includes the names of 2 careers, an explanation of why they are suitable (a combination of interests and abilities), and a plan to find information (at least one reliable source, not using generative AI). The assessment will be based on 3 criteria with specific evidence: the ability to search for and verify information (detailed assessment using a simple rubric: Career Identification 30%, Suitability Analysis 40%, Information Source Verification 30%).

Key Points

- Common career groups in engineering and technology: Mechanical Engineering – Automation, Electrical – Electronics, Information Technology, and Materials Technology,
- The connection between personal interests, abilities, and job requirements (professional competencies/soft skills).
- How to use AI to find career information responsibly: verify information using reliable sources.
- Skills for concise presentation and for creating a personal career map.

Opening

- The teacher introduces the lesson objectives and the final product (a personal career map).
- Hook: Show 2–3 images/a short video about appealing careers (e.g., a robot engineer, a game programmer, an electrical engineer, a material specialist) and ask: "Which careers in engineering and technology are shown? Why do you think so?"
- Form groups: divide the class into 4 groups of students (pre-arranged).

Introduction to New Material

- Briefly explain the 4 main career groups in engineering and technology (each group in 2 concise sentences), and give examples of specific careers within each group.
- Guide the analysis: the connection between interests (e.g., enjoying assembly, liking to solve problems), abilities (e.g., mathematics, drawing, logical thinking, manual skills), and career requirements (e.g., the working environment, etc.).
- Introduce the use of AI to support career information search: how to ask effective questions (e.g., "Please describe the job, required skills,

▲ LIMITATIONS & RISKS

Specialist AI tools can create resources quickly, but speed does not guarantee quality. Check factual accuracy, curriculum alignment, language, difficulty, examples and assessment requirements before classroom use.

Custom Chatbot

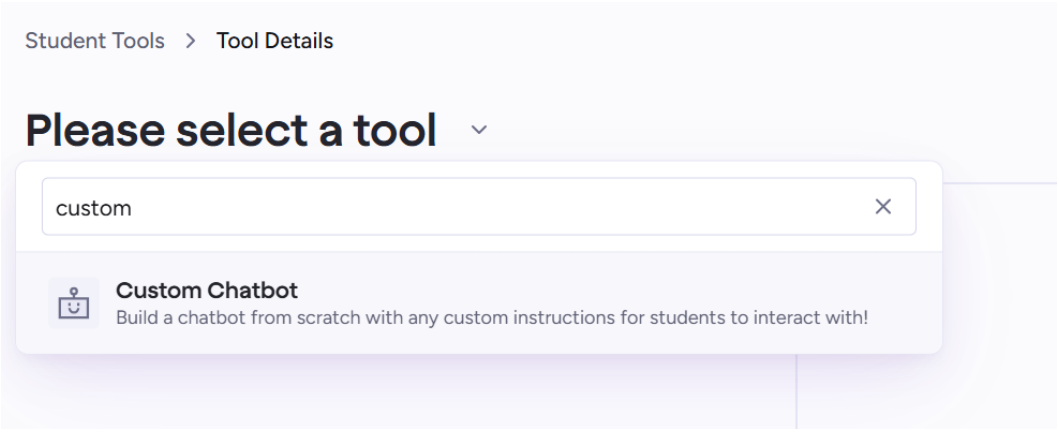
Alongside ready-made tools, MagicSchool lets you create a chatbot for a specific classroom purpose. Unlike a static test or worksheet, it can hold a conversation: role-playing a historical figure, conducting a scholarship interview, guiding problem-solving through hints or helping students practise speaking and argumentation.

MagicSchool deploys custom chatbots through Rooms, dedicated spaces students can access. Students interact with the chatbot you designed within the role and scope you set.

Creating and deploying a chatbot in MagicSchool

1. Create a Room and add Custom Chatbot

   From the main screen, select Magic **Students,** then **Rooms** and **Create Room.** Find and select Custom Chatbot in the tool **selection** window.

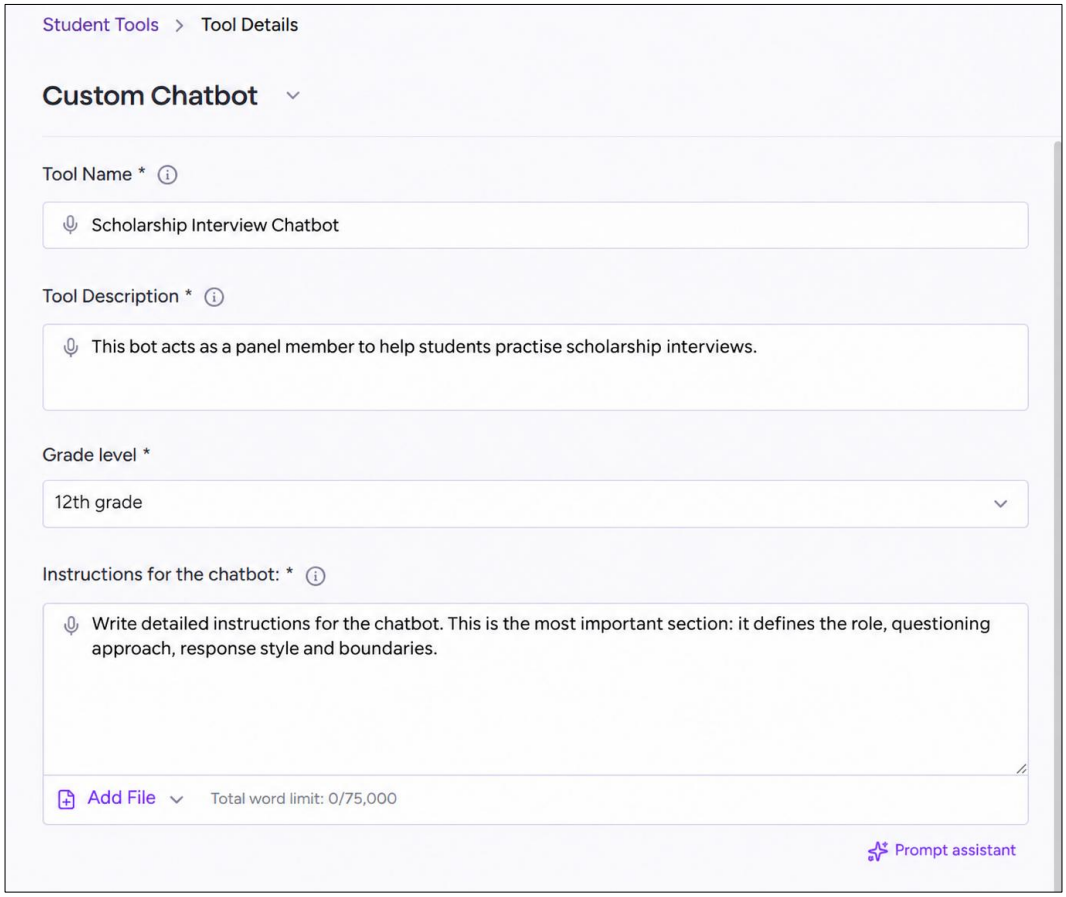


2. **Configure the** chatbot's basic information:
   - **Tool Name:** Name the chatbot, for example Scholarship Interview Chatbot.
   - **Tool Description:** Briefly describe its purpose, for example 'This bot acts as a panel member to help students practise scholarship interviews.'
   - **Grade Level:** Select an appropriate level, such as 12th grade.
   - **Instructions for the chatbot:** Provide detailed instructions. This is the most important section: it defines the role, questioning approach, response style and boundaries.

SAMPLE PROMPT

> You are the principal of an upper secondary school in Vietnam, serving on a scholarship selection panel. Interview a student to explore their academic capabilities, creativity and problem-solving. Ask one question at a time, remain friendly and encouraging, and base each follow-up question on the student's previous answer.

- **Knowledge Base:** Upload relevant materials where available, such as the scholarship description, selection requirements, assessment criteria or lesson content, to ground the questions.



3. **Save, test and share the chatbot**

   Select Save to **room.** Test the chatbot as a student to check its role, scope, age appropriateness and alignment with learning objectives. Then share the link with students.

Chatbot quality depends heavily on the role instructions. The more clearly you specify the context, task, questions and response principles, the more consistently it can maintain its role and support learning.

You can also create custom chatbots on other platforms, such as Gemini **Gems** or Poe at https://poe.com.

▲ LIMITATIONS & RISKS

AI chatbots can still make mistakes or depart from their roles. Test them carefully, set explicit boundaries, remind students that they are practice tools rather than authorities, and monitor conversations so you can intervene. Do not replace teachers' guidance, assessment or care with a chatbot.

Specialist tools and custom chatbots provide useful starting points for drafting ideas and supporting learning. To connect these with a complete classroom workflow, you need an environment linking lessons, students, interactions and progress data. The next section explores this.

5.3. Building a digital classroom with an AI assistant

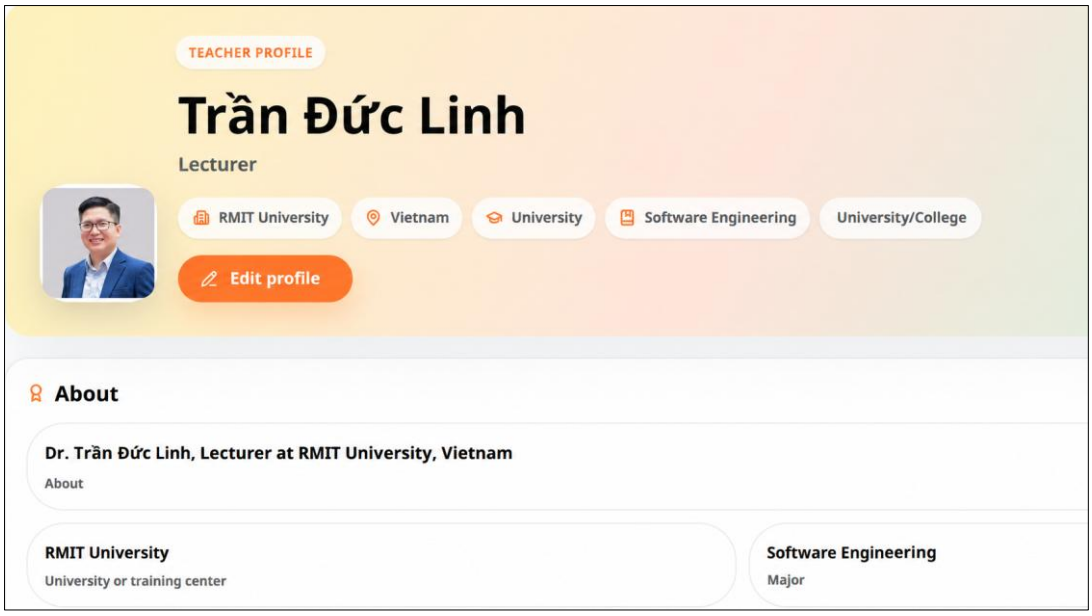
Integrated platforms let teachers organise a digital classroom as well as create content. The following activities use Upskii as an example to show how AI can operate alongside learning materials, students and progress data in one environment.

Creating a digital classroom

- **Step 1: Sign in and complete setup**

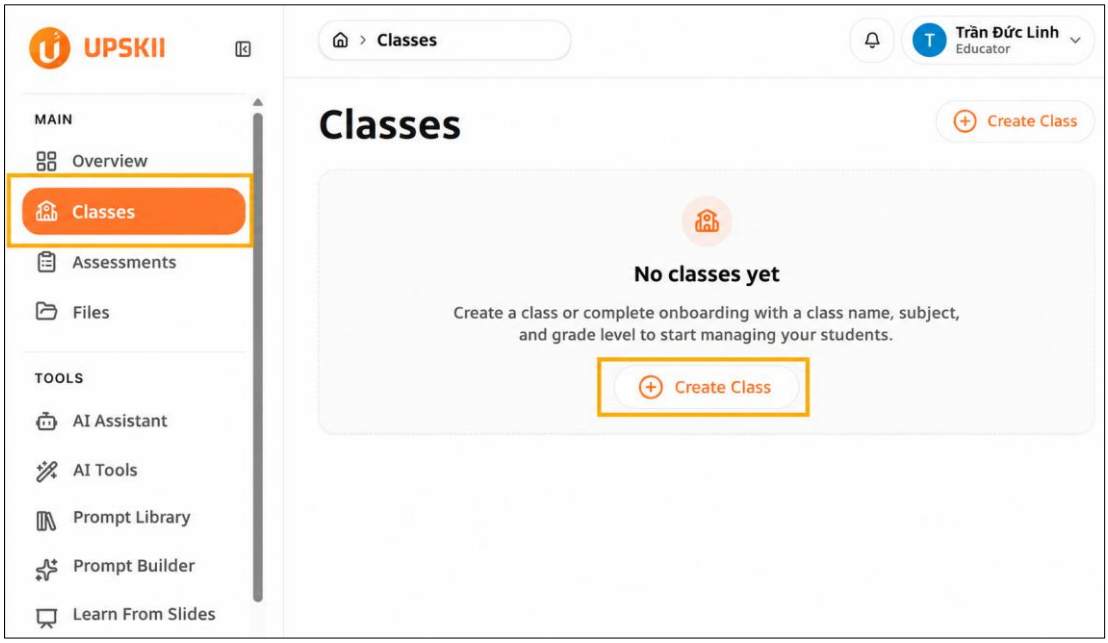
Visit https://upskii.com and sign in with Google. If you have not connected your personal AI service, select the account icon at the top right and follow the setup instructions.

Before creating a class, most platforms let teachers set up or update their profile, including language, country or region, year levels and subjects. These details help the system display relevant functions and generate lesson plans, questions, activities and resources suited to the teaching context.



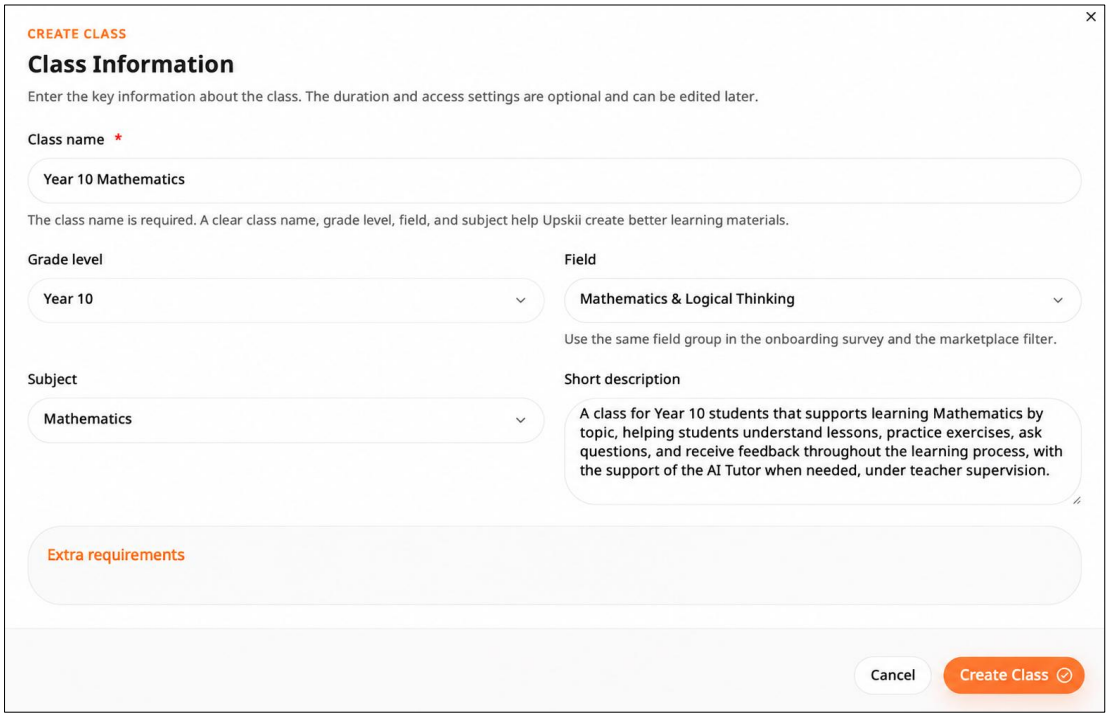
- **Step 2: Create a class**

Select Classes **in the** left sidebar, then **Create** Class.

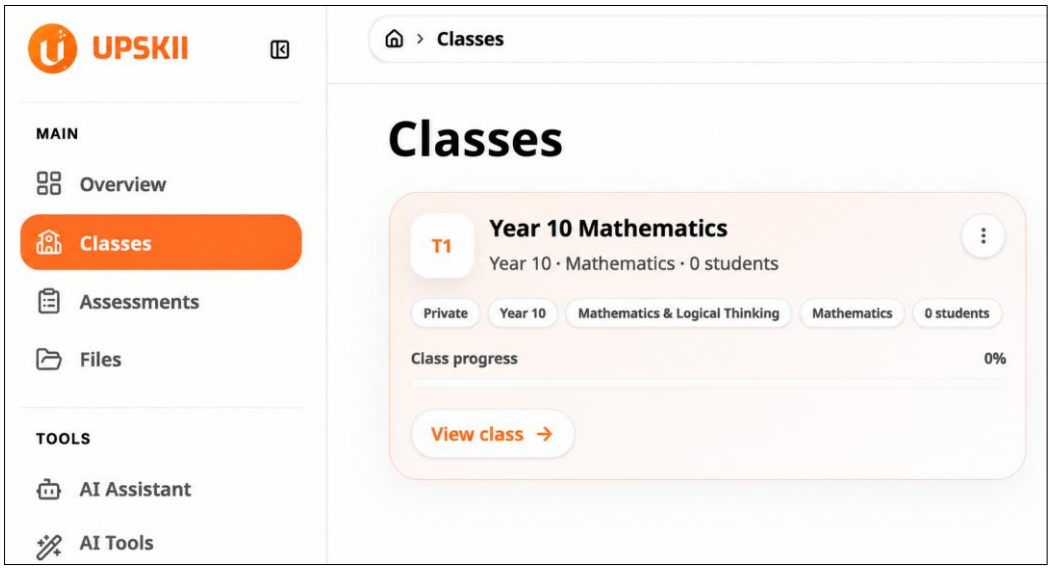


Enter the main class details:

- **Class name:** Choose a short, recognisable name, such as Year **10** Mathematics.
- **Grade level:** Select the appropriate level, such as Year 10.
- **Field:** Choose the relevant subject area, such as Mathematics **& Logical** Thinking.
- **Subject:** Select the main subject, such as Mathematics.
- Short description: Explain the class's purpose and support in a few lines. For example: 'A topic-based Mathematics class for Year 10 students, supporting understanding, practice, questions and feedback, with an AI tutor where needed and ongoing teacher guidance.'



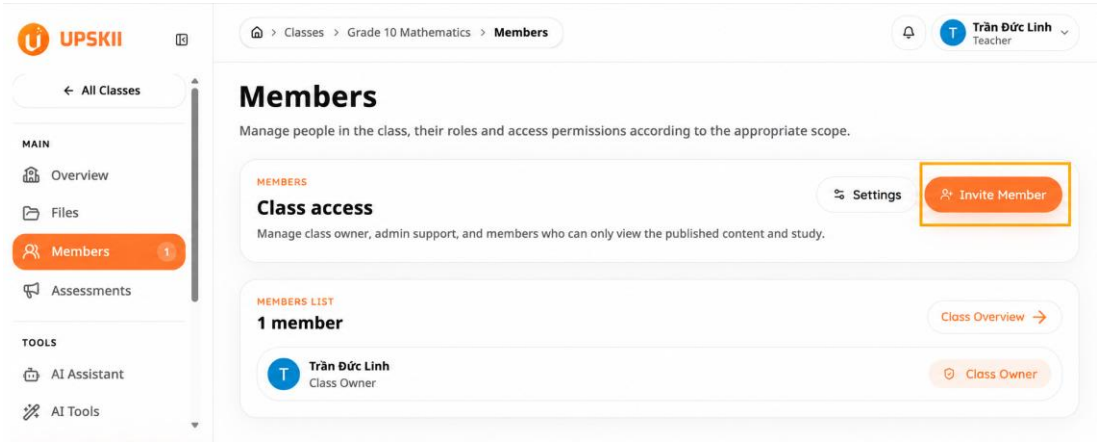
Select Create class. New classes **are** usually private, with no students or lessons. This gives teachers space to prepare content before publishing it for learners.



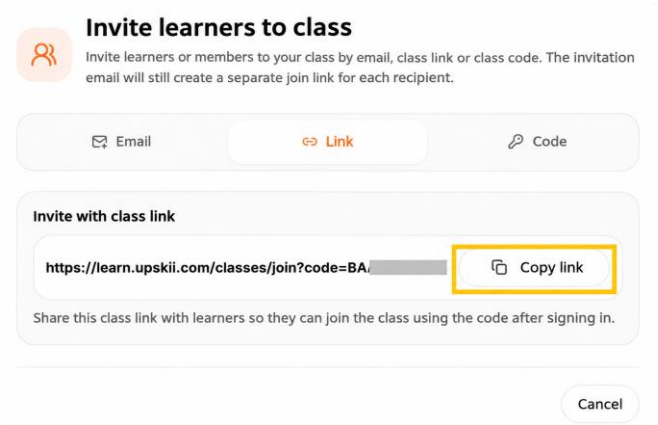
- **Step 3: Invite students**

Once the class exists, invite students through email, a class code or a joining link. In Upskii:

- Open the class, select **Members,** then **Invite Member.**



- Choose email, link or class code. A link is the simplest option.



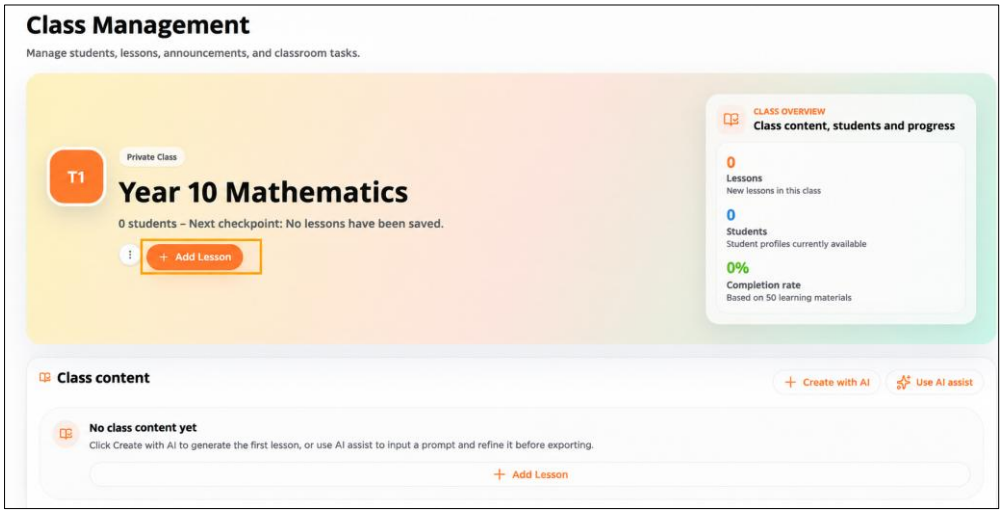
- Send students the joining link and ask them to sign in with a Google or Gmail account.
- Check pending requests on the student page and approve the correct students for your class.

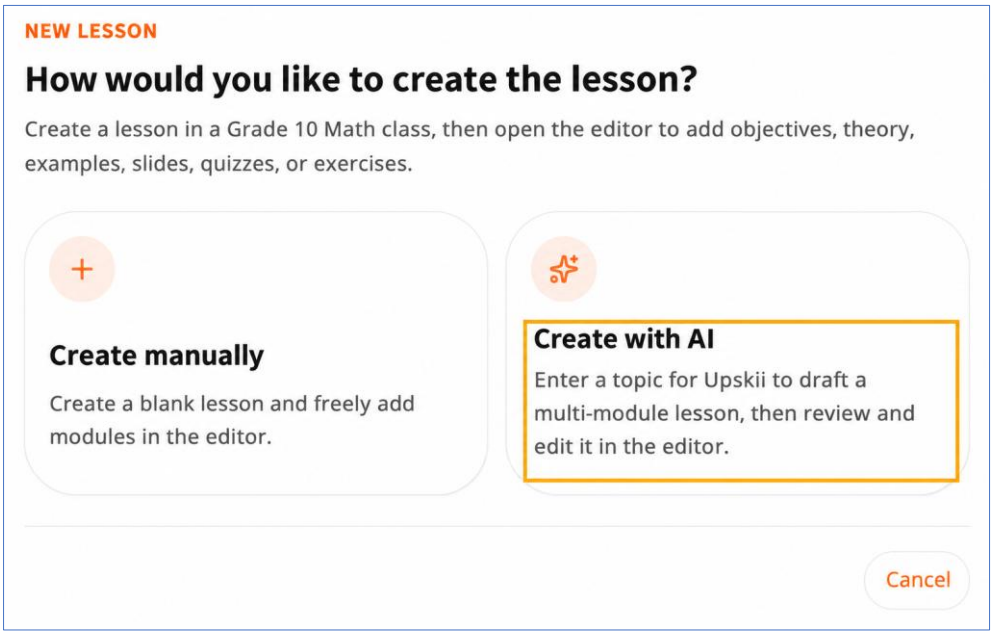
Creating AI-assisted lessons and reviewing them before publication

Add lessons manually or generate an initial draft with AI. AI is useful when you need a starting structure to develop further.

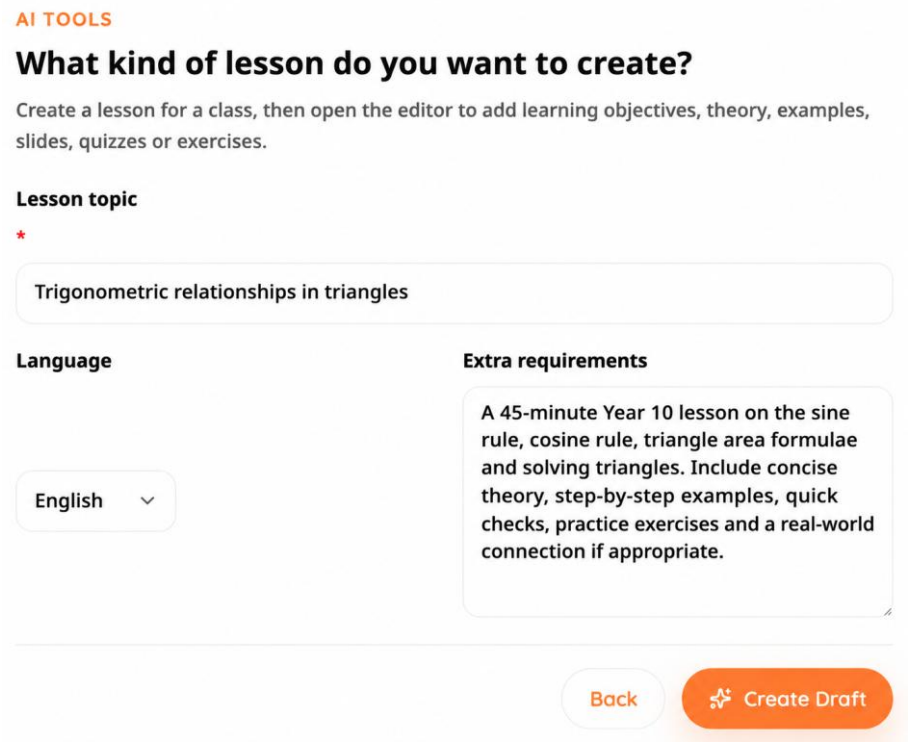
Suggested practice:

- **Step 1:** Open the class management page, select **Add** lesson, **then** Create with AI.

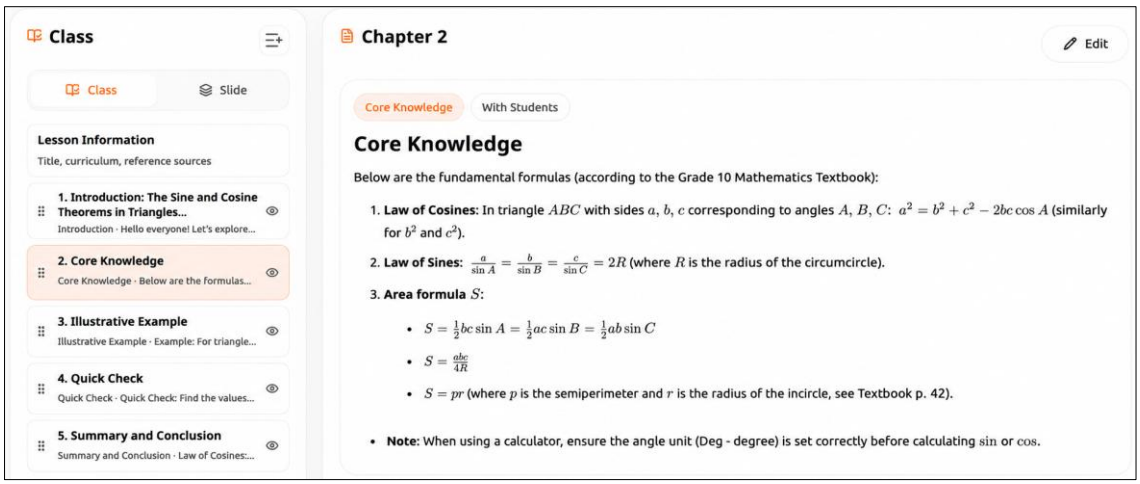




- **Step 2:** Enter a topic such as 'Trigonometric relationships in triangles' and choose an output language, such as English. Under Extra requirements, specify duration, learners, key content and desired lesson components to make the result more relevant.



The system may draft familiar components such as an introduction or starter, core *knowledge*, *supporting examples*, *quick quiz*, *summary and homework. This structure* suits both classroom lessons and online or independent learning. The example also shows clearly formatted mathematical notation.



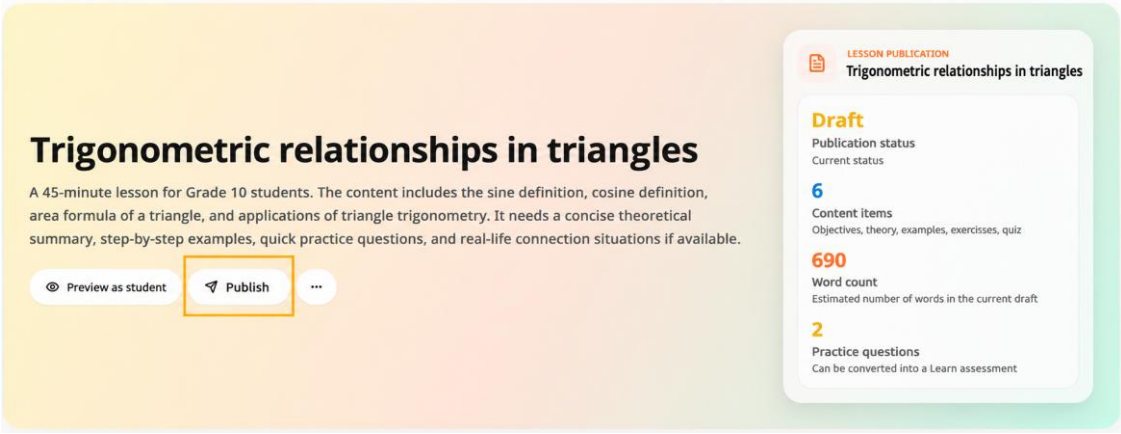
- **Step 3:** Review the lesson before making it visible to students.

Treat AI-generated content **as an initial** draft, not something to publish immediately. Read it throughout, check accuracy, revise wording, add examples, adjust questions and decide what students should see. Edit manually or with AI. Use the eye icon to show or hide individual sections before publication.

When reviewing, consider:

1. **Learning objectives:** Do they suit the curriculum, students and available time?
2. **Core content:** Are concepts, formulae, terminology, examples and explanations accurate?
3. **Language:** Is it clear, accessible and age-appropriate?
4. **Questions and answers:** Are the questions clear and the answers and explanations sound?
5. **Visibility:** What should students see beforehand, during class or only later?
6. **Publication:** Publish only when the content has been checked and is ready for student access.

Once satisfied, select Publish to make the lesson visible in the current class.



- **NOTE**

AI may produce inaccurate content, unsuitable questions or misleading answers. Teachers remain the final reviewers. Hide drafts, reorder sections or divide lessons according to the class's progress. Controlling what students see and when is part of instructional design.

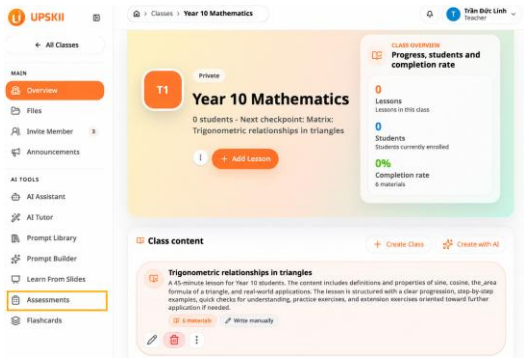
Creating, assigning and providing feedback on student work

Digital classrooms also let teachers create tests or exercises and assign them directly. Chapter 3 covered assessment generation, matrix configuration and question editing. Here the focus is assignment delivery: setting deadlines, collecting work, providing feedback and connecting results with progress monitoring.

Create a test as a lesson section or a standalone task. Describe the subject, topic, question count, types and cognitive levels for an AI draft, then check the content, answers and marks before assignment.

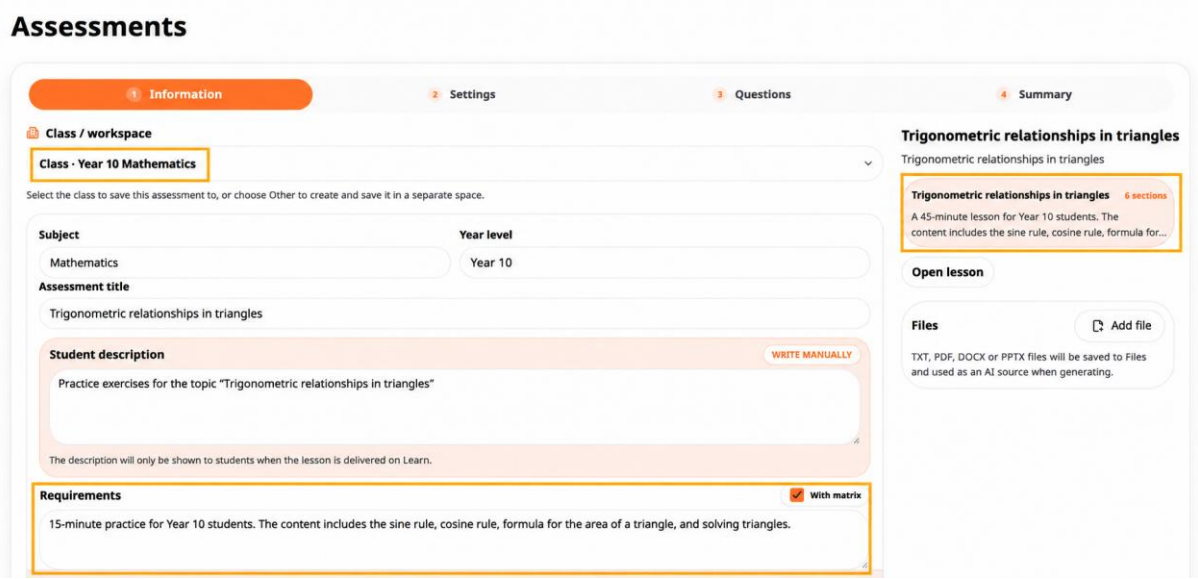
Suggested practice:

- **Step 1:** In the current class, select Assessments in the left **navigation** menu, then Use **AI** assist.



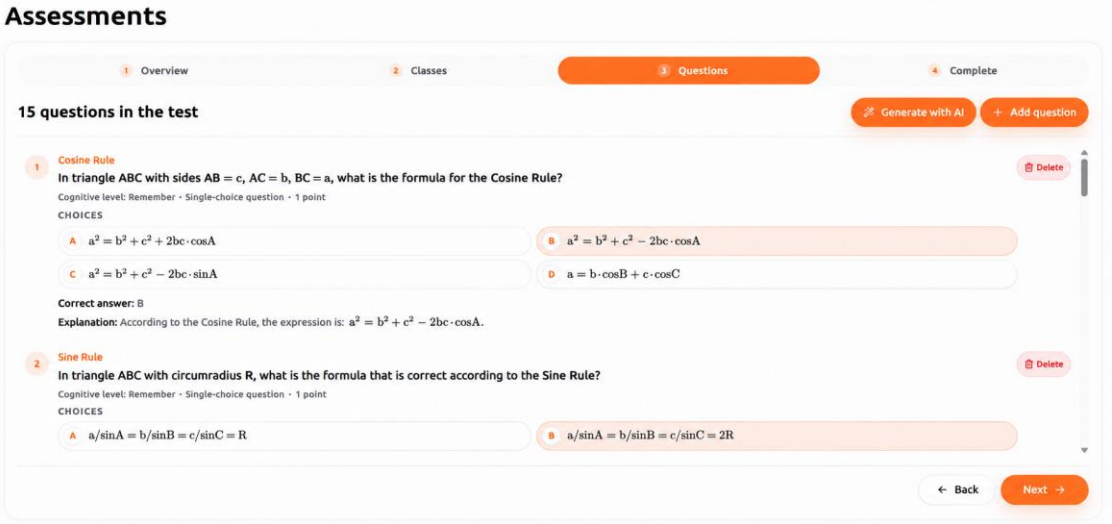
- **Step 2:** Check and enter the class, subject, year level, assessment title, student description and requirements. For example: 'A 15-*minute practice task for Year 10 on the sine rule, cosine rule, triangle area formulae and solving* triangles.'

The class or space name identifies the current classroom. On the right, choose a lesson if you want AI to refer to its content. As **explained** in Section 3.5, select **With matrix** to generate a cognitive-level distribution and then create questions from it.

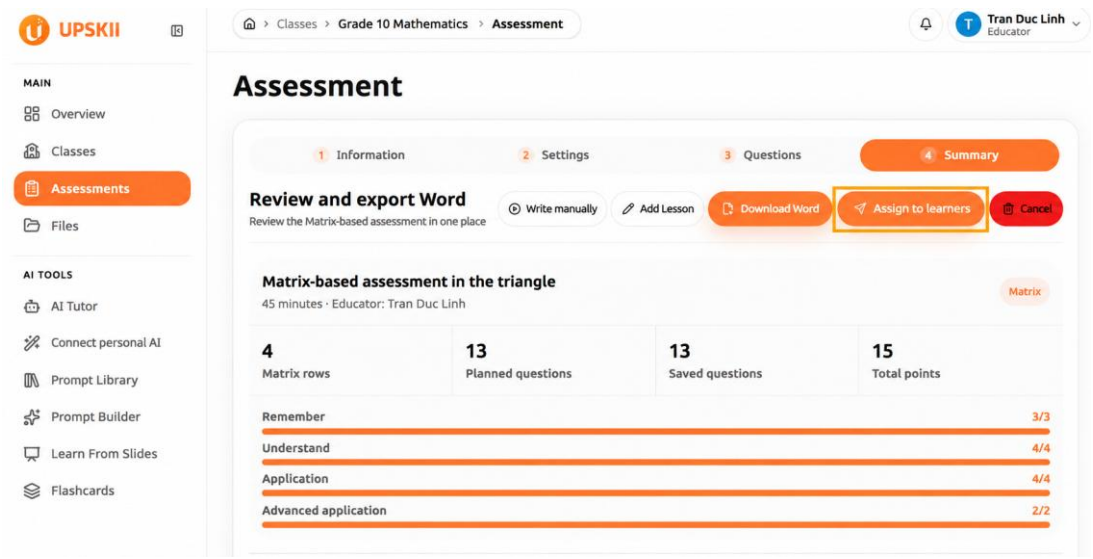


- Step 3: Review before finalising and assigning

Check every AI-generated question. For multiple-choice items, review the correct answer, distractors and explanation. For extended responses, check the task, learner suitability, marking criteria and feedback wording. Select questions to edit manually, or request revisions or replacements.



Once satisfied, select Assign to learners. **Students** receive a notification and see the task in their classroom space.



- Step 4: Confirm results and feedback

Multiple-choice questions can be marked automatically with near-immediate results, saving time and providing timely feedback.

For extended responses, AI can suggest comments, strengths, areas for improvement or performance levels against criteria. Teachers must still read the work, check suggestions, edit wording and approve feedback before releasing it.

This initial feedback support is useful in large classes. Professional expertise, fairness and final decisions remain the teacher's responsibility.

- **NOTE**

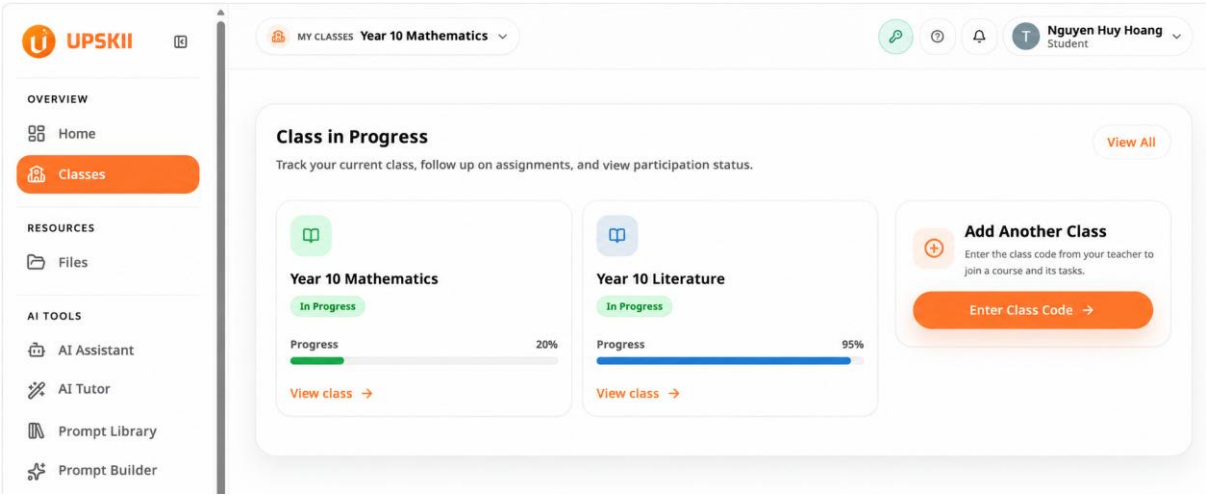
Treat AI-generated assessments, answers, criteria and comments as drafts. Before assignment or release, check accuracy, curriculum alignment and fairness of marks. For homework, state clear rules on AI use so students do not use it to do the work for them.

5.4. AI-supported learning and learning management

After classes, lessons and assessments are established, AI can continue supporting their operation. Students can ask a lesson-based tutor questions, practise independently and learn from slides or documents. Teachers can use classroom-aware AI tools and progress dashboards to identify support needs.

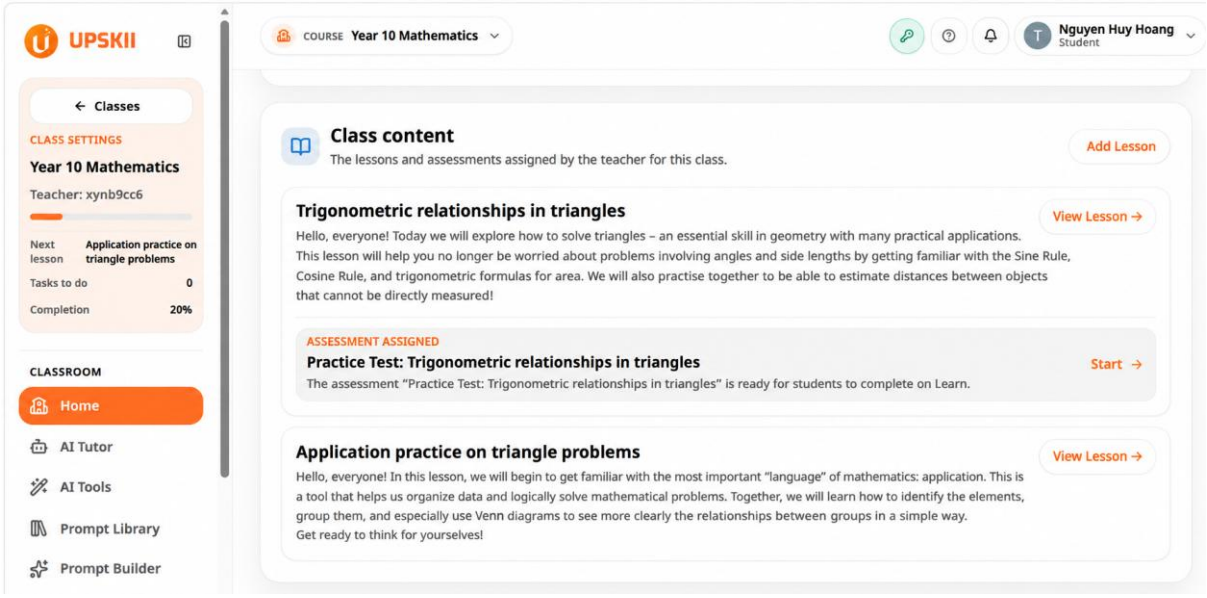
Students learning with an AI tutor

Once approved to join a class, students can access their learning space. Their interface differs from the teacher's, with functions for viewing lessons, completing assignments, consulting the AI tutor and tracking personal progress.

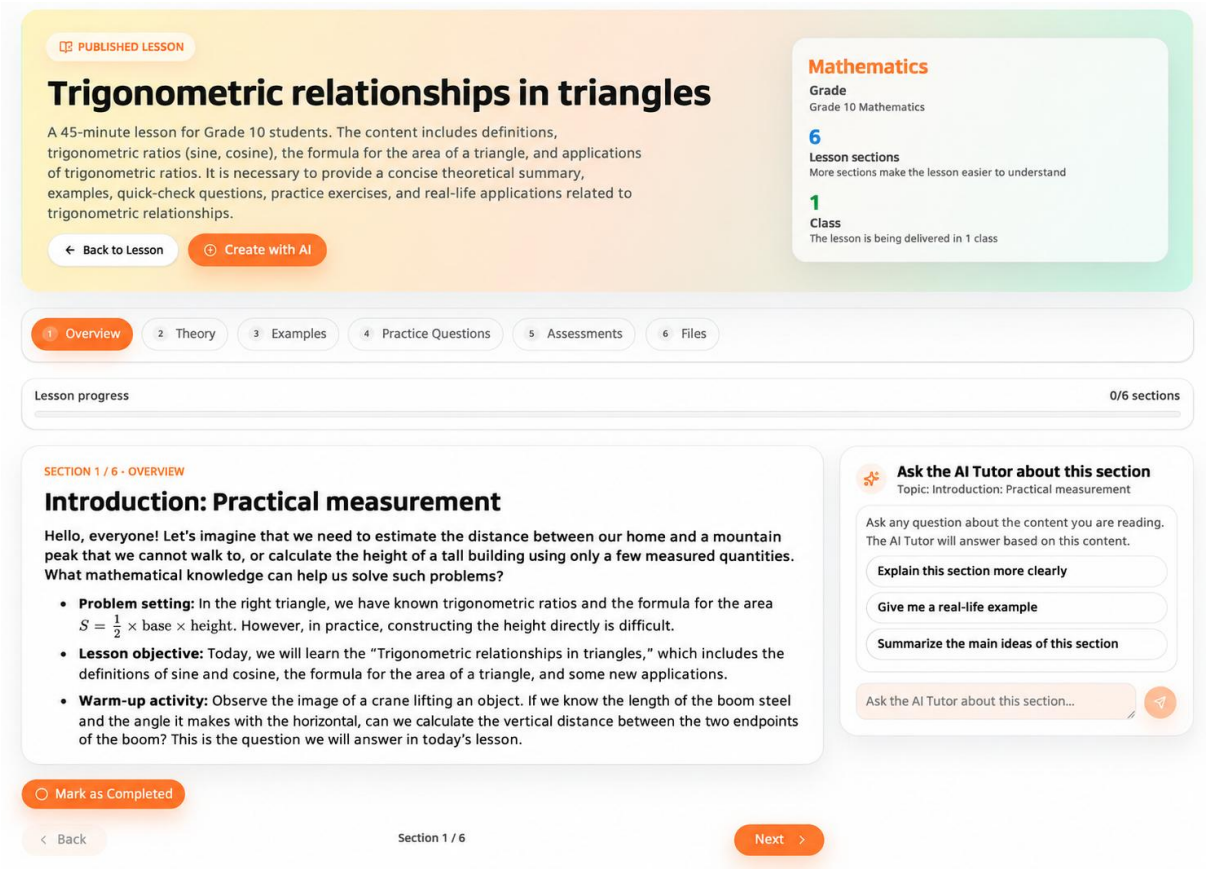


Viewing classes and assigned content

After signing in, students see the classes they have joined. Within each, they can open published lessons, teaching content, exercises, tests and assigned tasks.

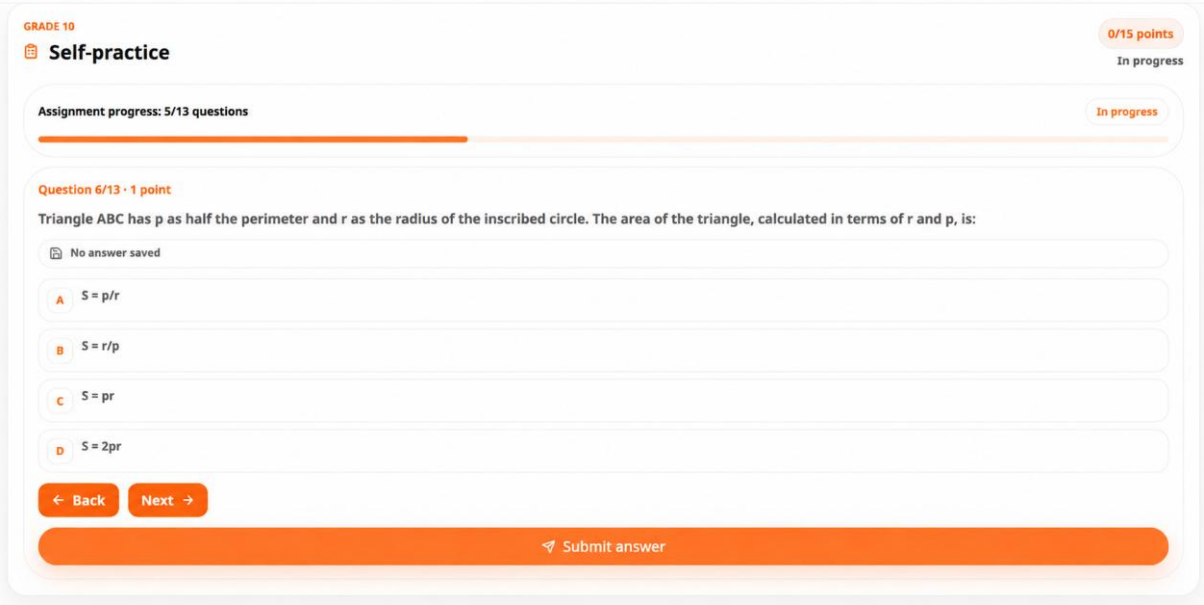


Students open individual lesson sections to read, view examples, complete quick checks or undertake the teacher's tasks.



Completing tasks and receiving feedback

Students can complete multiple-choice questions, quick quizzes and short written responses. The system may provide immediate feedback on multiple-choice answers, helping them recognise errors and read explanations.



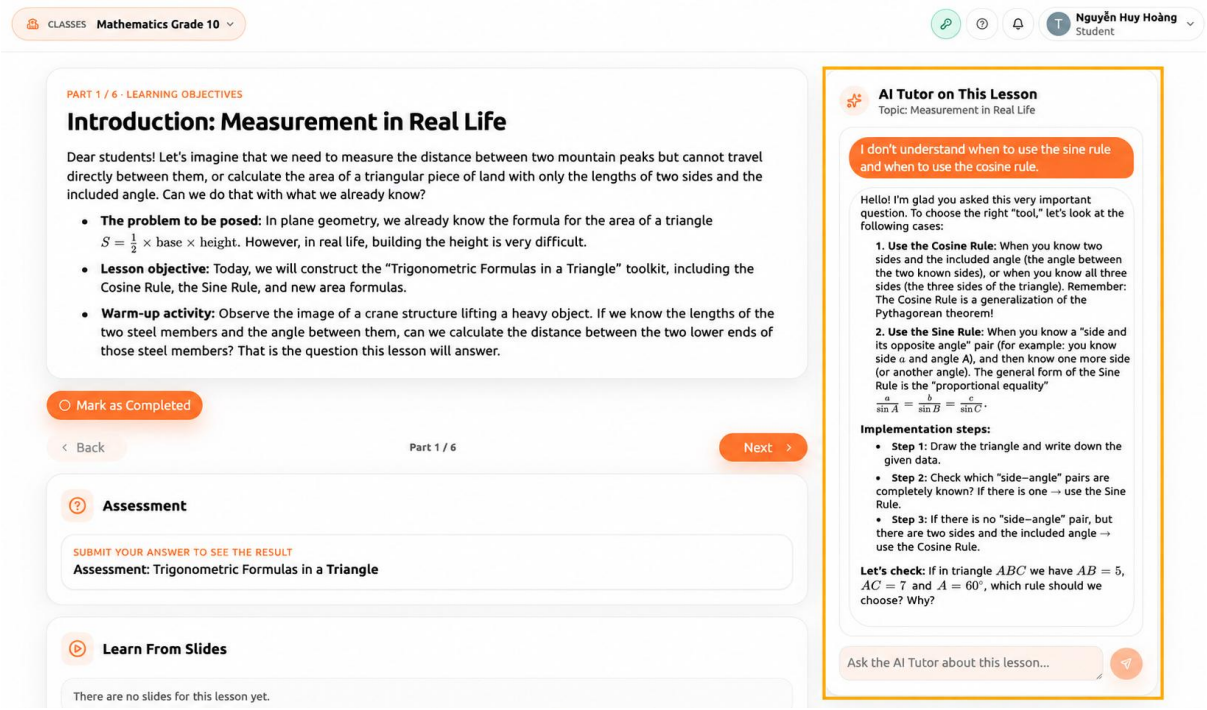
Asking the AI tutor questions within the classroom context

An integrated platform lets students ask questions while learning rather than only read static content. Because the tutor operates within the class context, responses can refer to the teacher's lessons, materials, examples and requirements.

For a lesson on **trigonometric relationships in triangles,** students might ask:

- I do not understand when to use the sine rule and when to use the cosine rule.
- Explain the cosine rule in simpler language with an easy example.
- Based on this lesson, give me a similar example of finding the third side when two sides and the included angle are known.
- I answered the triangle-area question incorrectly. Explain the solution step by step.
- Create three practice questions on trigonometric relationships in triangles, but do not show the answers yet.

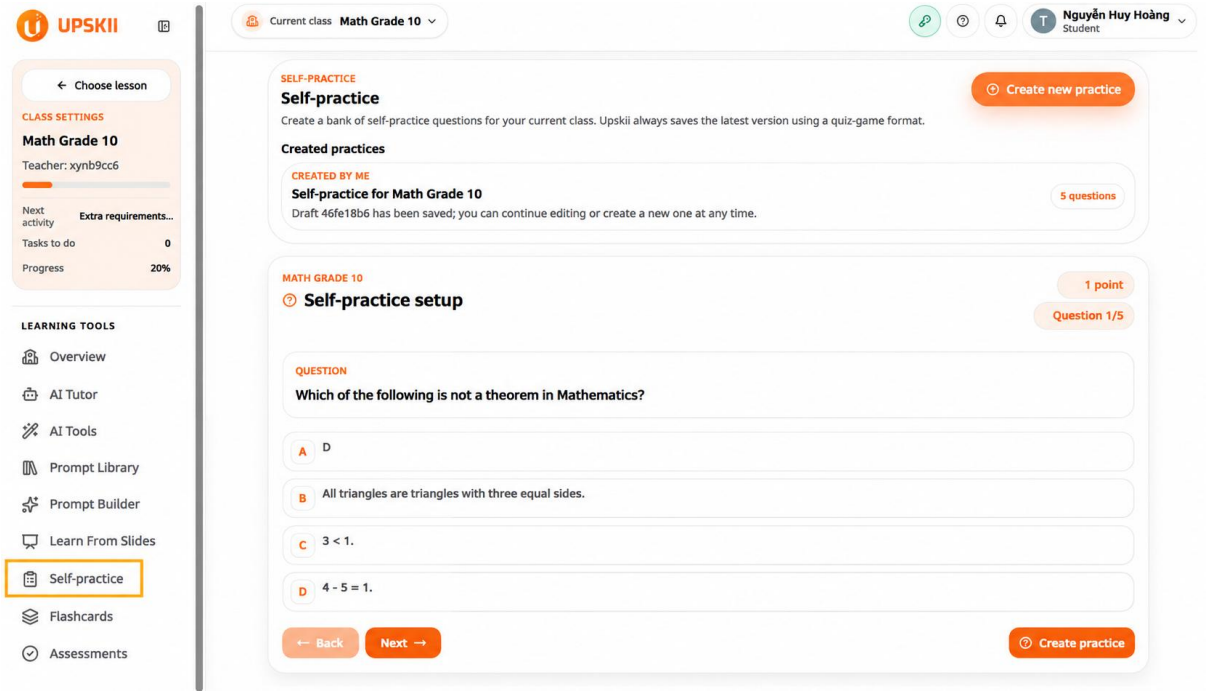
Upskii's education-focused tutor supports students within the lesson rather than only giving general answers. It can rephrase explanations, suggest practice steps and ask students questions to check their understanding. This differs from a general chatbot interaction in which students may simply receive a one-way answer.



Tracking progress and practising independently with AI

Students can see completed and unfinished lessons, submitted work and quiz results. This helps them identify what to study next and prepare for class.

Beyond assigned tasks, students can generate practice questions from a particular lesson or the class's wider content. This makes revision more accessible and self-directed, especially at home or when revisiting unclear material, and supports personalisation.



- **NOTE**

Make clear that AI provides hints, explanations and learning support, not completed work on students' behalf. Important content should be checked against textbooks, notes or the teacher.

Suggested classroom activity

Try a short activity:

1. Students open one section of a lesson.
2. Each asks the AI tutor about something they do not understand.
3. Students record the response.
4. They evaluate what was useful and what needs further verification.
5. The teacher selects examples for whole-class discussion.

This develops questioning, verification and explanation in students' own words alongside AI-supported learning.

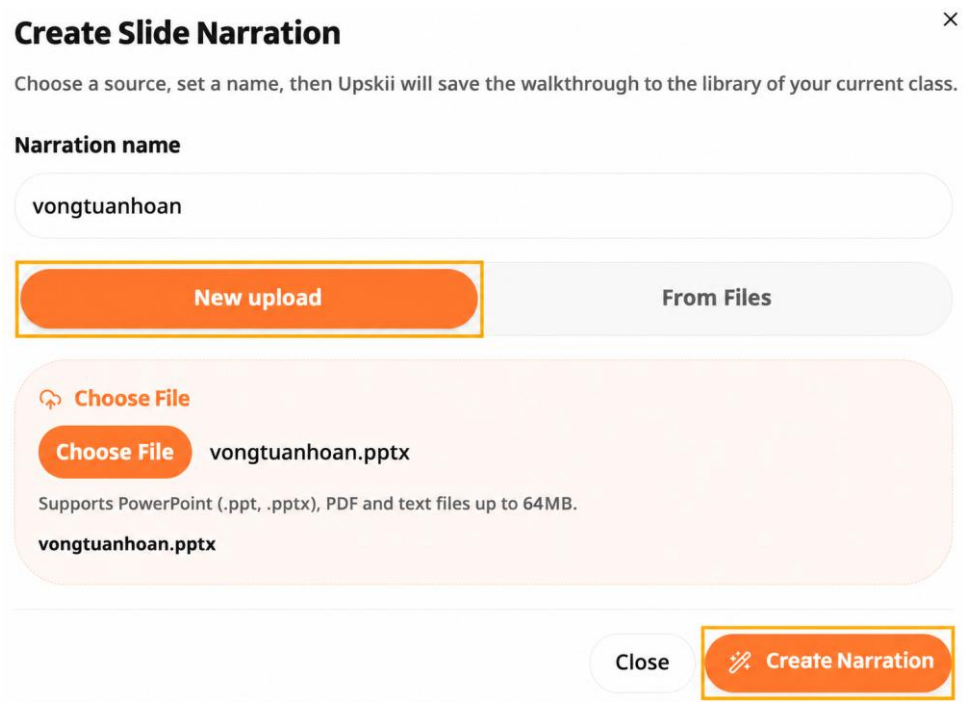
Creating learning resources from slides with AI narration

Some platforms can turn teaching slides into independent-learning resources. Upload slides, let AI read them, draft narration for each slide and convert it into speech. Students can then view the slides while listening to step-by-step explanations.

This is useful for short independent lessons, revision or catch-up work. Instead of sharing only a static PowerPoint or PDF, combine visuals, text and audio.

Main interface steps

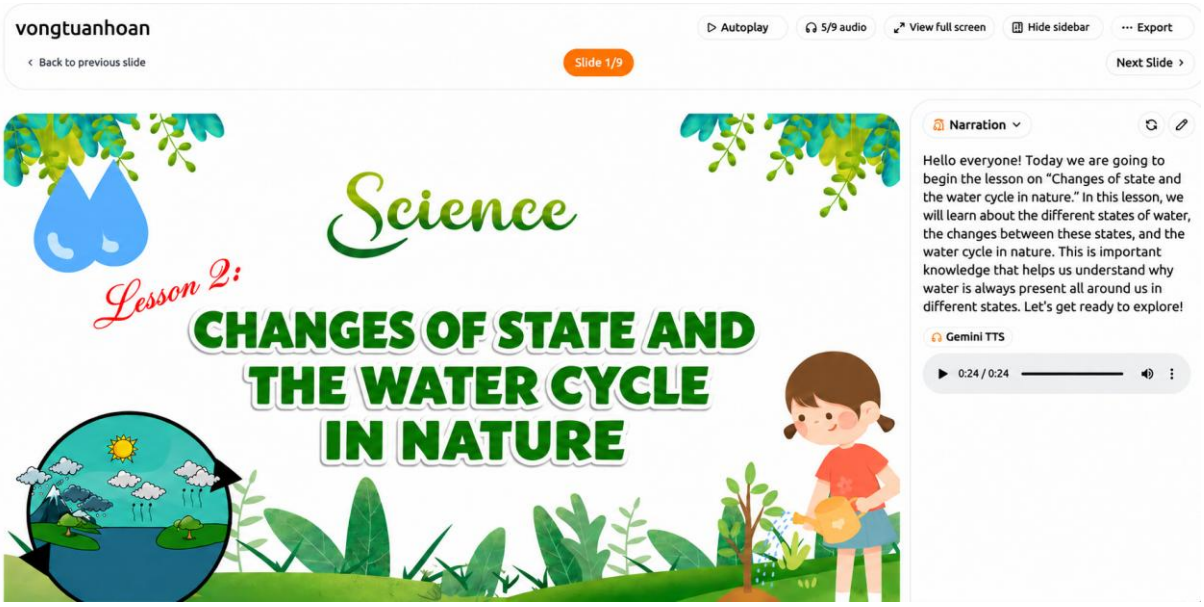
From the platform's home screen, **choose** Learn from **Slides, then** Create narration to begin.



Upload a new file or choose a saved one. PowerPoint and PDF are supported. The example uses a short presentation on changes **of state and the natural water** cycle.

Select Create narration. AI **processes** the slides, extracts key information, drafts a script and generates audio. Processing time depends on slide count and content complexity.

The finished interface shows the slide centrally, with controls for audio playback, navigation, full-screen viewing and information visibility. The generated narration appears on the right so you can read and listen alongside the slide.



AI may do more than read the slide text verbatim. It can introduce the topic, describe images, explain key ideas and guide learners through the content. For a water-cycle opening slide, it might describe children caring for plants and ask why water appears around us in different states. This can support both teachers and students.

Use case 1: Teachers creating independent-learning resources

Use narrated slides for preparation before class, revision afterwards or catch-up learning. Choose a short deck with clear objectives, generate the narration, then listen to or read it carefully. Once checked, assign it with a specific task, such as:

- Listen and record three key ideas.
- Pause at each slide and answer: 'What is this slide's main point?'
- Note one question to ask the teacher in class.
- Complete a short quiz after listening to the full narration.

◆ PRACTICAL TIP

Narrated slides work best for short, clearly structured lessons with specific objectives. Do not assign a lengthy deck to listen to in one sitting. Divide it into five- to ten-minute segments, each with a question or learning task.

Use case 2: Students learning independently with narrated slides

Narrated slides can be easier to follow than a presentation file alone. Students can open each slide, listen, pause, replay and move on at their own pace.

This helps with home revision, catching up after absence and preparing for new lessons. Audio can make content more accessible, especially for students who find lengthy reading difficult or need explanations repeated.

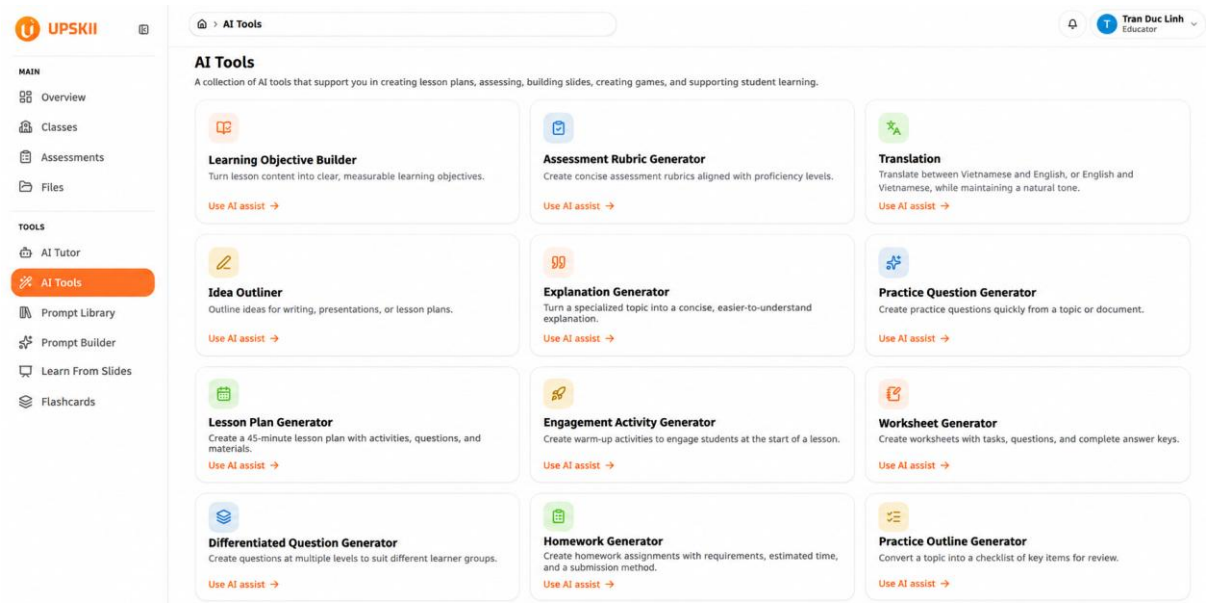
▲ LIMITATIONS & RISKS
Listen to all narration before assigning it, especially scientific terminology, formulae, proper names, historical events and important figures. Help students understand AI's limitations, particularly hallucinations, and build habits of checking textbooks, reliable sources or the teacher.

Using classroom-aware AI tools

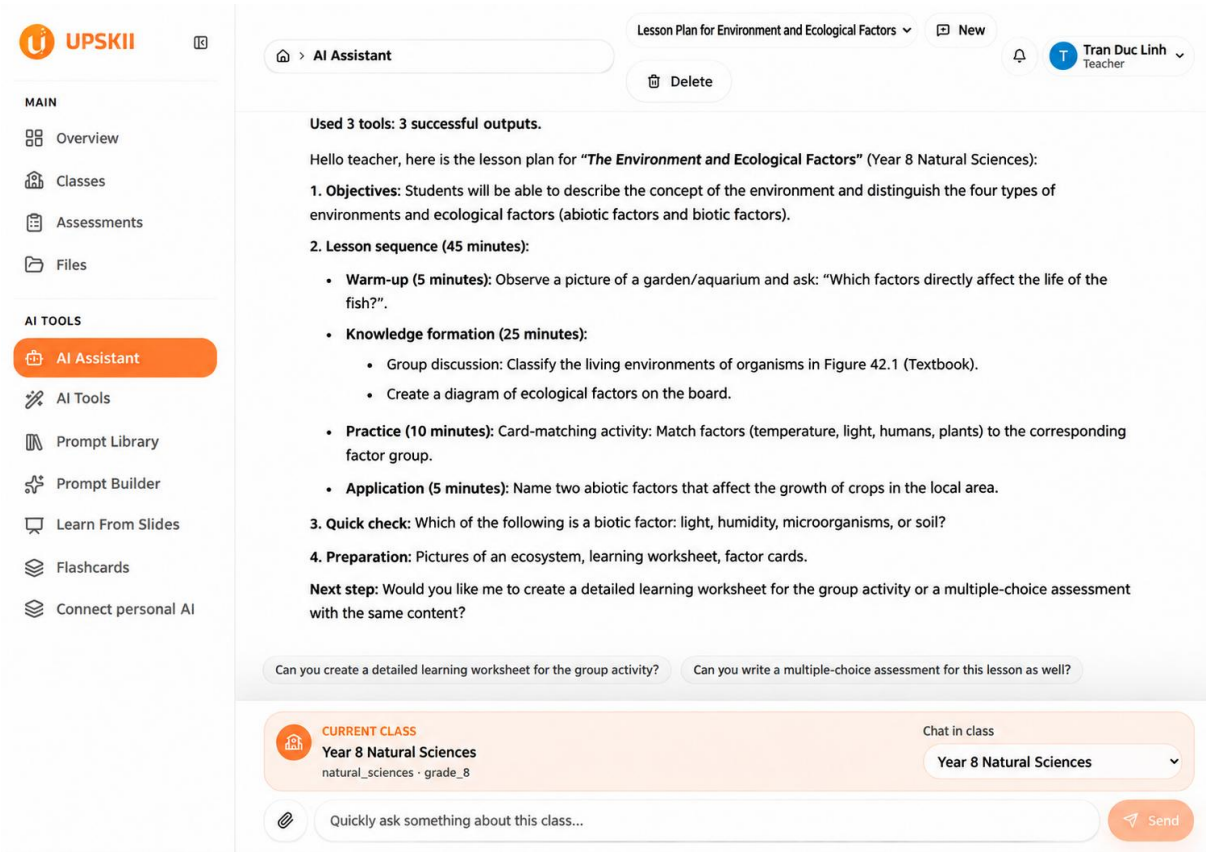
Upskii also offers teacher and student toolkits, similar to specialist platforms such as MagicSchool. These tools operate within the current class context. They can refer to published lessons, assigned questions, uploaded materials, progress and current student interactions, producing more specific responses connected to actual teaching and learning.

The platform offers nearly 30 classroom-aware teacher tools for tasks such as:

- Creating revision questions from the current lesson.
- Designing consolidation activities for students who have not finished.
- Rewriting an explanation in more accessible language.
- Suggesting feedback on student work.
- Proposing a short support plan for students making slower progress.
- Summarising content that many students find difficult.



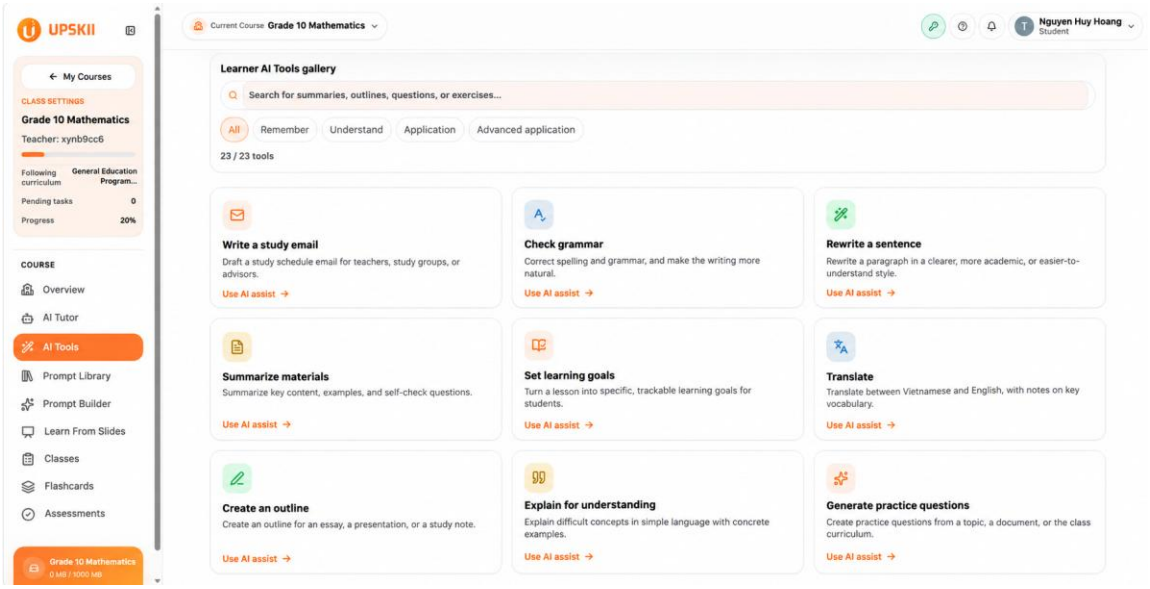
In the example below, the **Lesson Plan** tool is used within a Year 8 **Natural Sciences** class. The assistant retrieves lesson content and proposes activities and a teaching sequence.



Students also have access to nearly 20 tools, including:

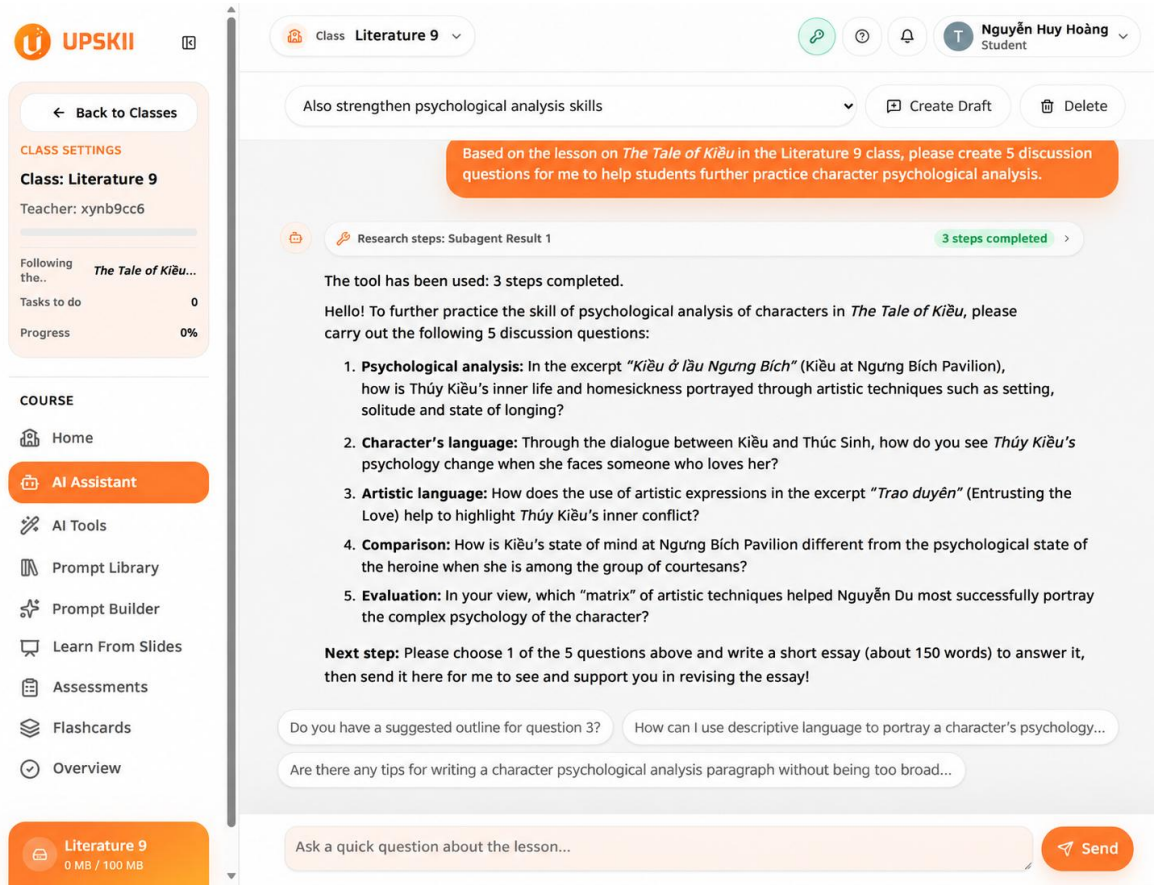
- Summarising the current lesson.
- Creating flashcards from lesson content.
- Generating easy, medium and difficult practice questions.
- Explaining a concept with a relatable example.

- Suggesting a study approach or revision plan for a particular lesson.



Instead of asking a general chatbot, 'Create questions about The Tale of Kiều', a student can ask the class tool: 'Based on the Truyện Kiều lesson in Year 8 Literature, create five consolidation questions to help me practise analysing characters' psychology.'

The response can be more relevant because it draws on the class's specific lessons, activities and learning data as well as general knowledge.



- **NOTE**

Classroom-aware tools can help quickly but still require review. AI proposes initial options; it does not decide teaching content, assessment or interventions.

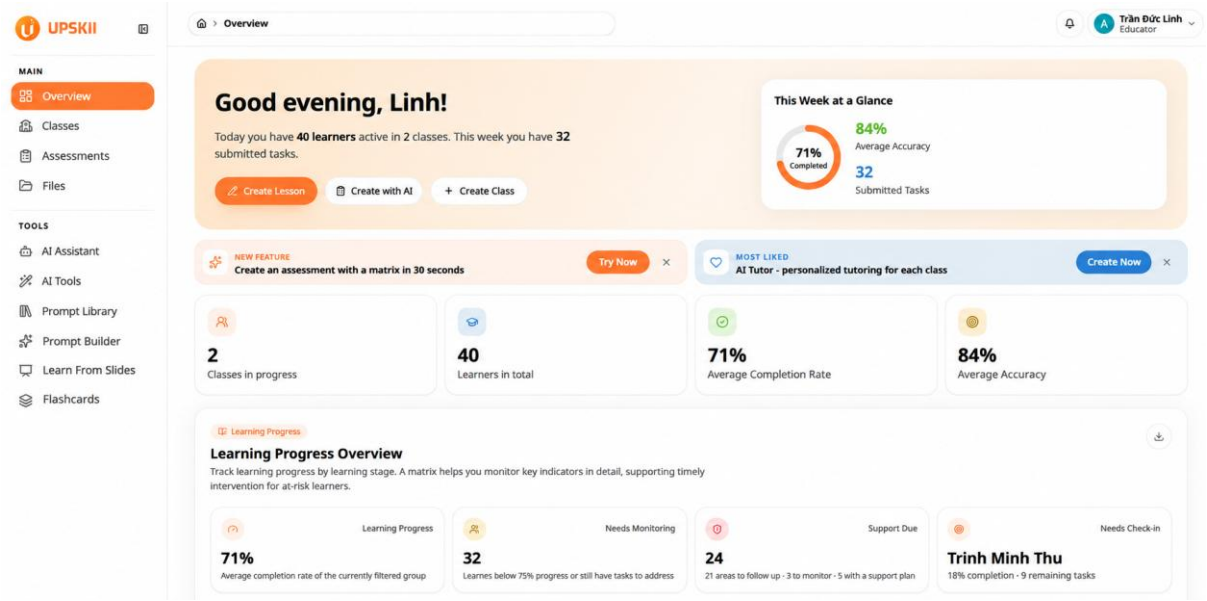
Monitoring learning progress through dashboards

Integrated platforms can record and summarise learning data. As students join classes, view lessons, take tests, submit work and mark activities complete, the system can consolidate this information in a teacher dashboard.

Rather than waiting for a major test or the end of a semester, teachers can monitor learning as it happens. This supports early identification of difficulties, overdue tasks and appropriate interventions.

Classroom overview

The overview shows key indicators such as class and student counts, submitted tasks, average completion and average accuracy. It provides a broad picture before you explore individual students.

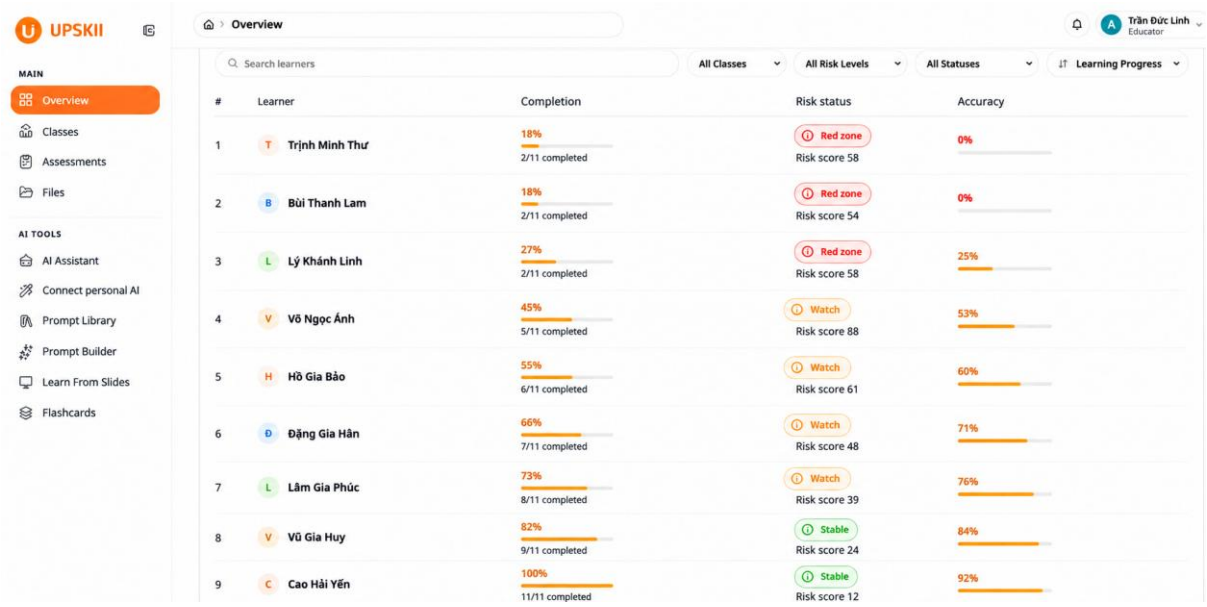


In the example, the teacher has two classes, 40 **students, 32 submitted** tasks, 71% average completion and 84% average accuracy. Below, a learning-progress **summary highlights** students who may need monitoring or additional support.

Viewing students by support need

Scroll to the progress summary to view students' completion, risk status and accuracy. Search by name, filter by class, risk or status, or sort by progress.

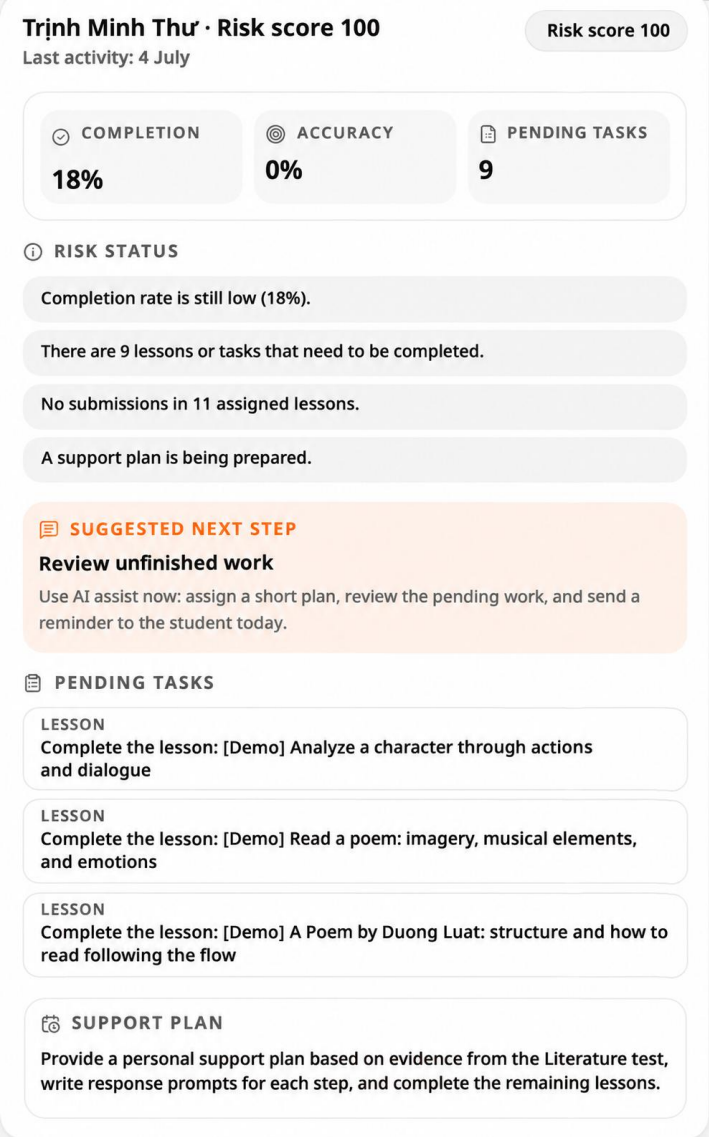
Some students in the example are flagged **red** because of low completion, such as 2 of 11 lessons, or low accuracy. These indicators are intended to identify potential difficulties early, not label students.



Viewing individual progress and intervention suggestions

Select a student to view completed and missing work, accuracy, recent activity and reasons for risk flags. Some platforms suggest interventions, such as prioritising important tasks, setting a short study plan or adding notes for the teacher and student.

This helps teachers move from monitoring numbers to making pedagogical decisions. Rather than reassigning everything incomplete, prioritise key tasks, discuss the reasons privately and review progress after a few days.



What can teachers monitor?

- Each student's lesson completion rate.
- Work completed, not started or in progress.
- Accuracy on questions and tests.
- The number of submitted tasks.
- Students with limited progress or interaction.
- Students flagged for monitoring or support.
- Lessons, tasks or question types that many students find difficult.

From data to pedagogical action

Data becomes useful when it informs appropriate action. When a student may need support:

1. Check which lessons or tasks are incomplete.
2. Identify recurring errors or areas of difficulty.
3. Speak privately to understand the reasons, such as misunderstanding, lack of equipment, forgotten tasks or personal difficulties.
4. Assign a short, manageable task to help the student restart.
5. Prioritise important lessons rather than requiring everything to be redone.
6. Review progress after a few days.
7. Work with the homeroom teacher, parents or support services if difficulties persist.

- **NOTE**

Low progress, low accuracy and risk flags are signals for teacher consideration, not final judgements about ability or attitude. Use them to ask educational questions: What is difficult? Why is work incomplete? What support would help?

5.5. Considerations for school AI platform implementation

AI-supported teaching and learning management involves pedagogy, ethics, data and equitable access as well as technology. Platforms collecting more learning data require clear rules and appropriate oversight.

Review content before use

AI creates lessons, questions, feedback and explanations quickly, but teachers must review them. Errors, unsuitable examples or ambiguous questions directly affect learning. Review sensitive topics such as history, culture, ethics, sexuality, health and social issues particularly carefully.

Protect student data

Platforms may record names, emails, progress, results, activity time and learning interactions. All require protection. Teachers and schools need to know what is collected, why, who can access it and how long it is retained.

Do not upload unnecessary information about family circumstances, health, sensitive observations or personal matters unrelated to learning. Follow school data-security requirements before implementation.

Keep decisions with the teacher

AI can flag support needs, suggest catch-up plans and summarise classroom activity, but it cannot fully understand human circumstances. Low platform activity may reflect limited equipment, poor connectivity, illness, family pressure or difficulty using the system rather than lack of effort. Treat AI as an early-warning tool, not a decision-maker (U.S. Department of Education, 2023).

Ensure equitable access

Not every student has a personal device, reliable internet or a suitable study space. Consider these circumstances when assigning digital work. Provide classroom time, group options, paper alternatives or reasonable extensions where needed.

Provide training and consistent processes

For subject-team or school-wide implementation, establish shared guidance on accounts, access, class naming, assignments, learning data, feedback and incident response rather than leaving every teacher to work differently.

- **NOTE**

Begin school AI implementation by identifying the pedagogical or management problem to solve, rather than listing a tool's features. Clear goals improve tool selection and workflow design.

Chapter conclusion

This chapter explored how AI can support a connected teaching and learning-management process: specialist tools, digital classrooms, reviewed lessons, student interaction with assistants and progress dashboards. These offer more flexible, data-informed classroom organisation.

The key is how teachers use features to serve learning goals, not the number of features available. AI can reduce repetition, draft quickly, provide timely support and offer useful data. It cannot replace teachers' understanding, professional judgement or educational responsibility.

Used appropriately, integrated AI platforms can make students' learning journeys more visible, support personalisation and connect teaching, assessment and management. People must remain central, data must be protected, and important decisions must be checked through professional expertise and care for students.

★ **KEY TAKEAWAYS**

✓ Standalone tools address individual tasks; integrated platforms connect the teaching workflow.

✓ Specialist teacher tools can draft lesson plans, questions, worksheets and activities quickly.

✓ Treat AI-generated lessons as drafts and review them before publication.

✓ Students can use AI to ask questions, revise and deepen understanding, not to do the work for them.

✓ Progress data can identify support needs early, but must not label students.

✓ AI narration can support independent learning, but teachers must check it before assignment.

✓ School implementation requires attention to data security, privacy, equitable access and teachers' final authority.

References

Ministry of Education Singapore. (2023). *Artificial intelligence in education.*

U.S. Department of Education, Office of Educational Technology. (2023). Artificial intelligence and the future of teaching and learning: Insights and recommendations.



CHAPTER

06

EDUCATOR DEVELOPMENT IN THE AI AGE

Using AI for independent learning, research and sustainable professional development

CHAPTER 6

PROFESSIONAL LEARNING AND EDUCATOR CAPABILITIES IN THE AI AGE

Good teachers continue learning. AI can provide a personal research assistant and resource library, finding current information, analysing documents and producing cited reports to support deeper teaching preparation and professional learning.

★ IN THIS CHAPTER, WE WILL:

- ✓ Ask questions, practise and seek help through voice conversations
- ✓ Use NotebookLM to analyse and work with academic and teaching materials
- ✓ Use deep research to produce structured reports with source citations
- ✓ Apply AI to research and professional development
- ✓ Explore digital competence frameworks for educators and learners to guide teaching and learning
- ✓ Discuss ways to strengthen educator capabilities in the AI age

Chapter introduction

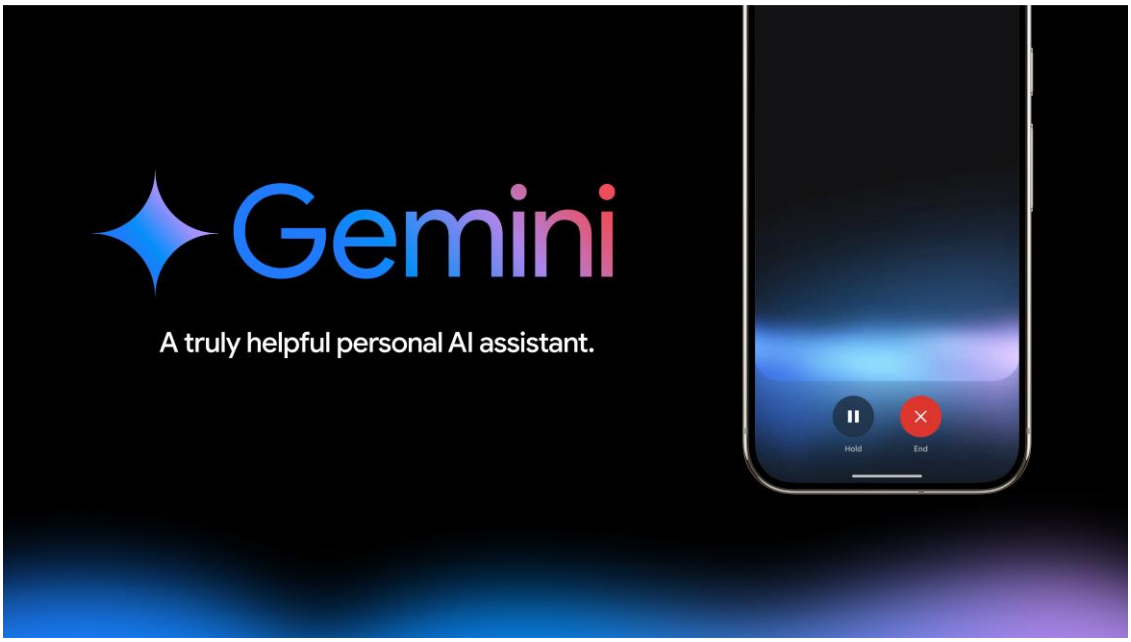
Teaching requires continuing learning. Quality lessons depend on current, verified knowledge, while practitioner reports and educational research require searching, selecting and synthesising information. These time-consuming activities are areas where AI can provide useful research assistance.

As Chapter 1 emphasised, AI models have two inherent information limitations: their training data is not continuously updated, and they can hallucinate. This chapter therefore focuses on source verification as well as powerful research tools. The distinction between thoughtful and uncritical AI use lies in how carefully sources are checked.

6.1. Voice conversations and assistance

AI can now converse naturally by voice and use camera or screen input. This enables real-time interaction as a teaching assistant or tutor.

On a phone with Google Gemini



1. **Install the app:** Download Google Gemini for Android or iOS.
2. **Start voice mode:** Open the app and select the **Gemini Live** icon at the bottom right to begin a natural voice conversation without typing.
3. **Enable camera or screen sharing when needed:** Use the camera icon to show an object or exercise and receive real-time visual assistance.

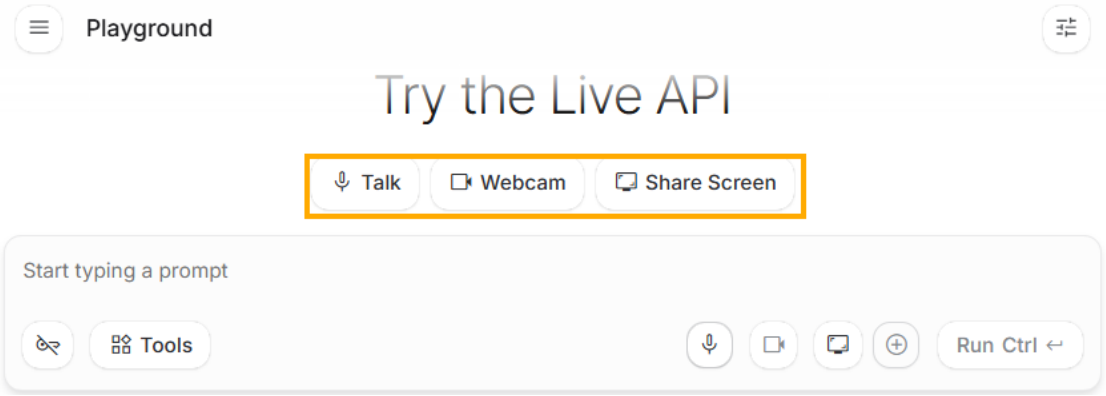
Live speech translation

Google recently announced **Gemini 3.5 Live** Translate, supporting near-real-time speech translation across more than 70 languages. For general users, it is available through Live translate in Google Translate. Open the app, select Live translate, choose languages and listen through headphones or the phone speaker. It can support international workshops, conversations with overseas guests, understanding foreign-language instructions and language practice.

On a computer with Google AI Studio Live Session

1. **Open** aistudio.google.com/live?model=gemini-3.1-flash-live-preview in a browser.
2. **Enable the microphone:** Allow browser microphone access and select the start control for a real-time voice conversation.

3. **Share a webcam or screen:** Select the webcam or a screen window so AI can see what you are doing and provide visual support.



Possible applications:

- **Expert discussion:** Use voice to examine ideas, practise an interview or discuss a professional topic in depth without typing.
- **Role-play:** Ask AI to play a historical figure, a demanding customer or a native-speaking language teacher in a lesson or group discussion.
- **One-to-one tutoring:** Show an exercise or drawing through the camera or screen and request step-by-step guidance rather than an immediate answer.
- **Technology guidance:** Share your screen and ask for help using complex software or design tools such as Canva or Photoshop.
- **Multilingual assistance:** Use live translation as a language bridge during online meetings with international partners.

▲ SAFETY NOTE

Before enabling a camera or sharing your screen, check what is visible to avoid exposing personal or sensitive information. Close unrelated windows, hide notifications and conceal student names, marks, emails, phone numbers, account details and internal documents. With students, use camera or screen sharing only where genuinely necessary and consistent with school policy.

6.2. Analysing and interacting with documents using NotebookLM

NotebookLM is Google's AI tool for reading, summarising, analysing and asking questions about supplied documents. Responses are generally grounded in the notebook's sources and include citations, reducing the risk of unsupported inference or invented information.

Chapter 2 used NotebookLM to build lesson outlines and source-checked slides. Here, explore its wider role as an assistant for reading, analysing **and transforming documents for** teaching and professional learning.

NotebookLM can help you:

- **Work with different sources:** PDF, DOCX, TXT, Google Docs, Google Slides, websites, YouTube videos with speech or captions, and audio files.
- **Summarise and question documents:** Read textbooks, training materials, circulars, official dispatches, reports and research papers efficiently.
- **Create resources and visualise knowledge:** Generate mind maps, quizzes, flashcards, data tables, infographics, podcasts and video overviews.
- **Present content:** Produce reports and slide decks grounded in the notebook's sources.

Suggested teacher practice:

1. Open NotebookLM and create a notebook

Visit https://notebooklm.google.com and sign in with Google. Create a notebook with a clear subject and topic name, such as 'Year 7 Natural **Sciences: Metabolism and energy transformation in** organisms'.

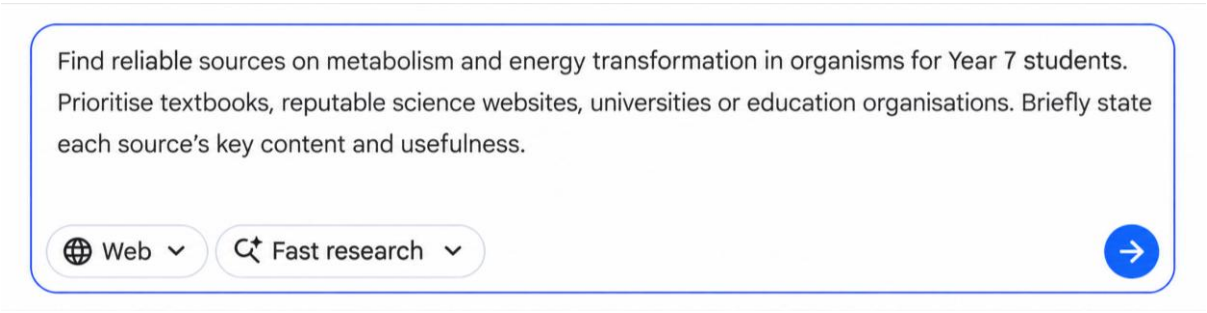
2. Add source materials

Upload textbooks, teaching guides, readings or reliable sources on metabolism and energy transformation. If you need more material, use NotebookLM's source search and assess reliability before importing results.

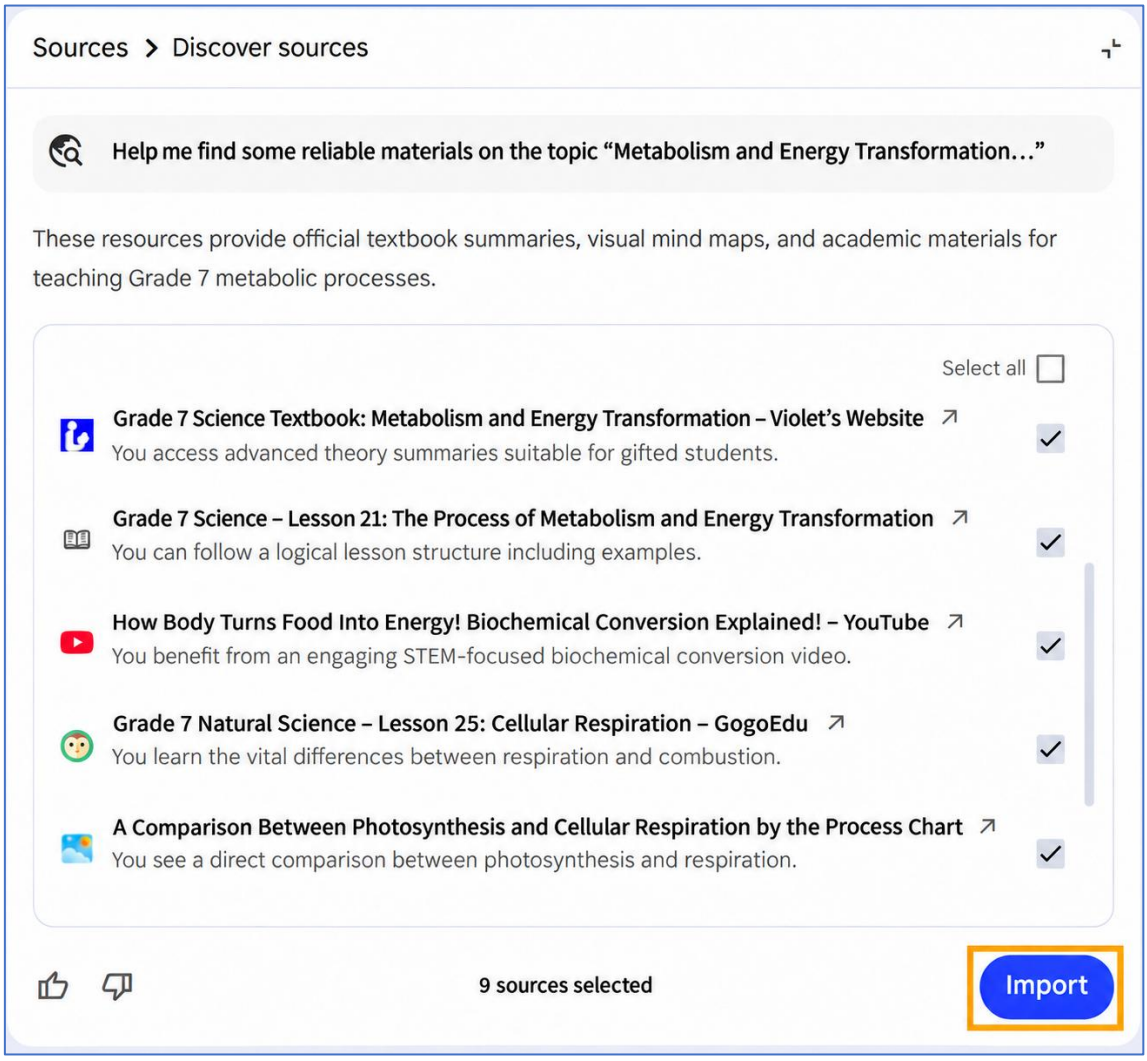
SAMPLE PROMPT

- Find reliable materials on metabolism and energy transformation in organisms for Year 7 students. Prioritise textbooks, reputable science websites, universities and education organisations. Briefly describe each source's main content and why it is useful for this lesson.

Working in NotebookLM:

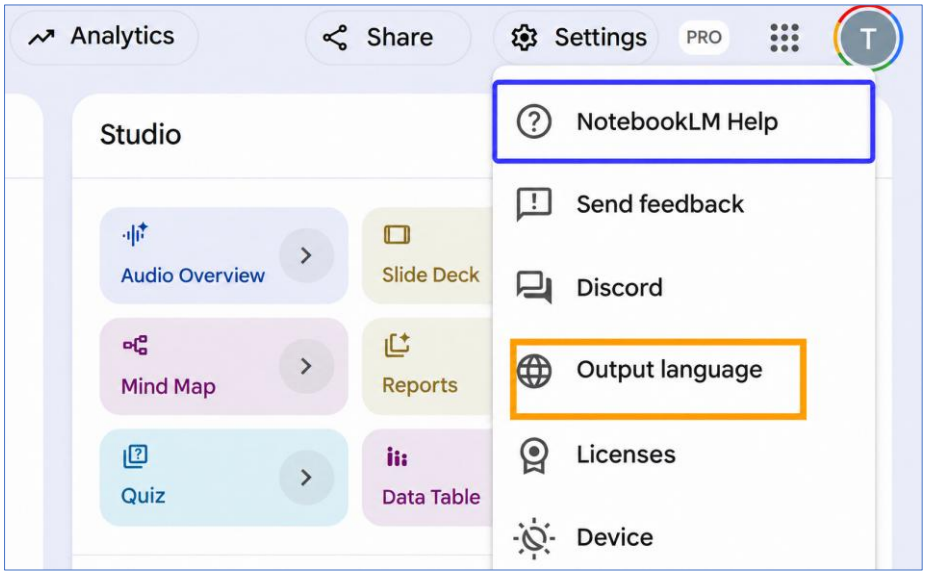


AI-generated response:



3. Ask questions and synthesise information

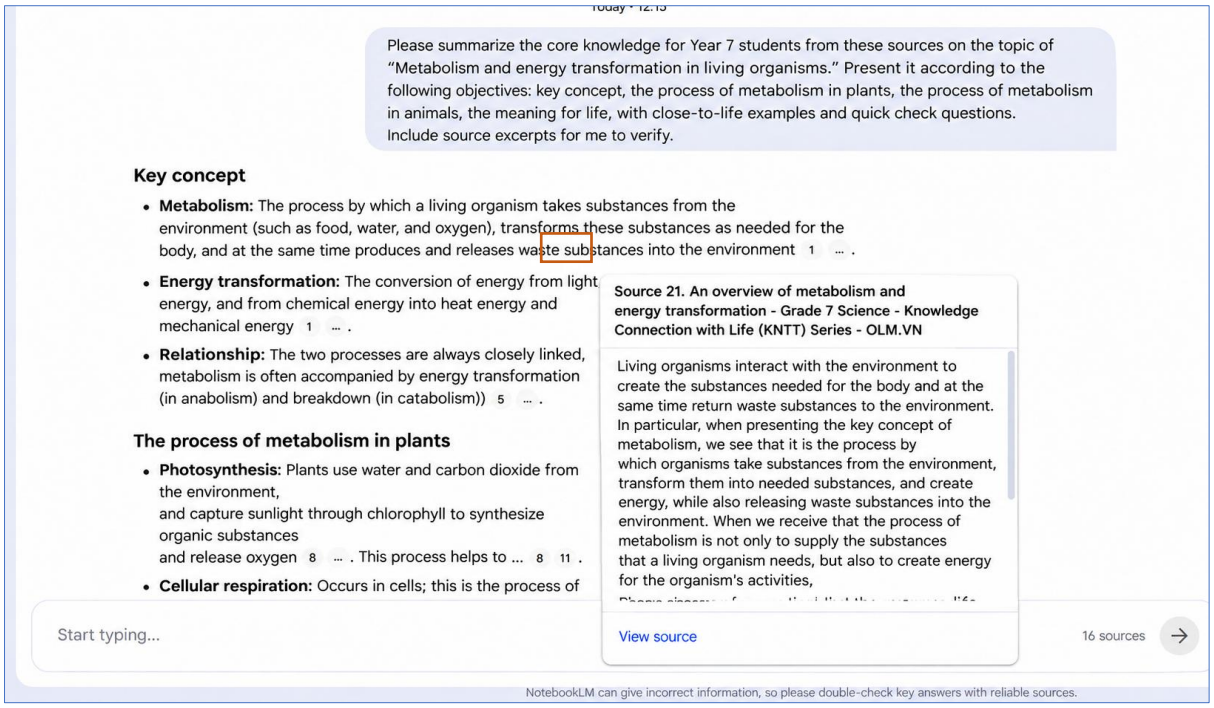
Once sources are processed, ask NotebookLM to summarise, explain or extract information. Before prompting, select Settings **> Output** language and choose a language, such as English.



SAMPLE PROMPT

- Summarise the essential Year 7 knowledge on metabolism and energy transformation in organisms from these sources. Use these sections: key concepts, plant metabolism, animal metabolism, significance for life, relatable examples and quick-check questions. Include citations for verification.

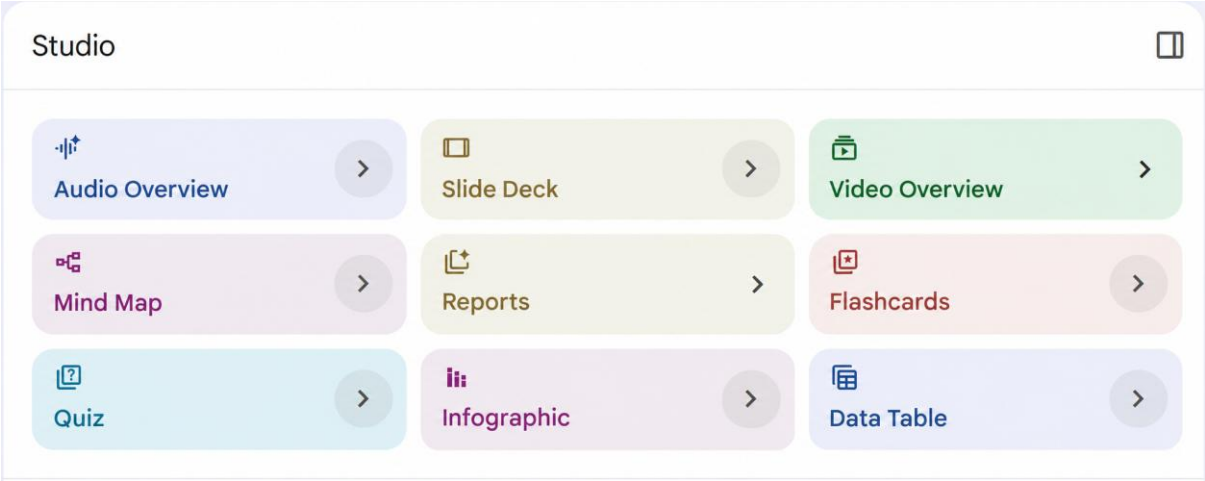
AI-generated response:



Note: NotebookLM usually displays citations in its responses. Select the numbered references to compare them with the original source before using the content in a lesson.

4. Create learning resources in Studio

After processing, the Studio panel **offers** tools such as Audio Overview, Slide Deck, Video Overview, Mind Map, Reports, Flashcards, Quiz, Infographic and Data Table.

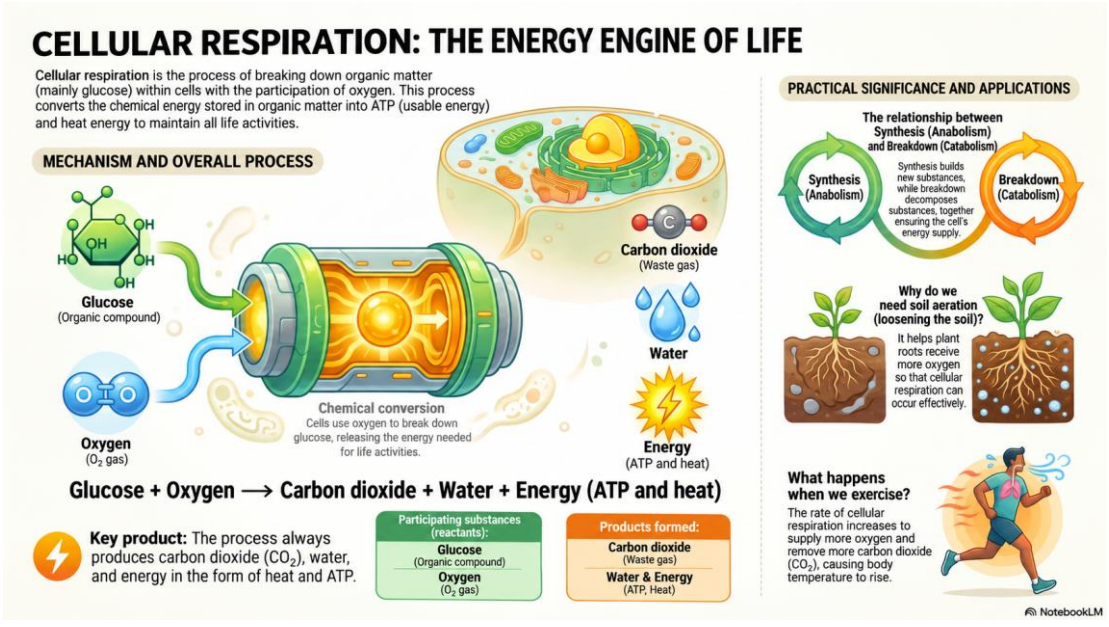


You do not need to use every function in one session. Choose tools that suit the learning purpose:

• **Mind Map:** Organise concepts such as metabolism, energy transformation, photosynthesis, cellular respiration and the role of energy in living organisms.

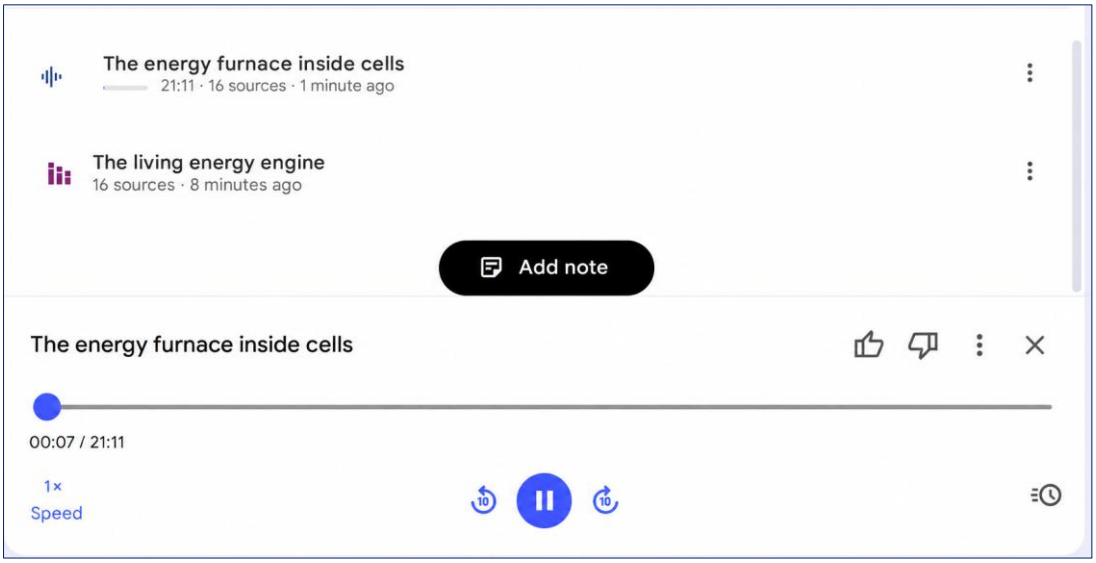
- **Quiz:** Create an exit check for understanding.
- **Flashcards:** Help students revise important concepts.
- Infographic: Illustrate a topic such as 'How do metabolism and energy transformation support life and growth?'.

AI-generated response:



- **Audio or Video Overview:** Create a podcast or short revision video for use before or after class.

AI-generated Audio Overview:

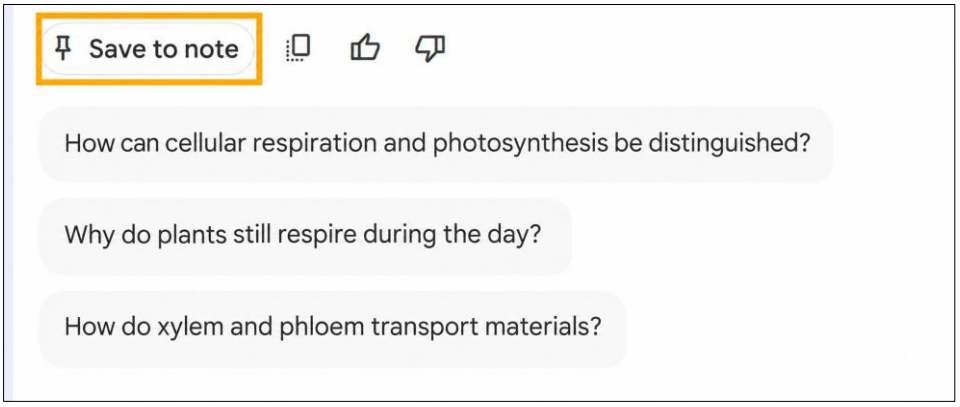


- **Reports or Data Table:** Organise information into text or tables for further teacher editing.

NotebookLM can also create **slide decks** from documents. Downloaded slides are often page images, making individual text and layout changes more difficult than in a conventional editable PowerPoint.

5. Save useful outputs as notes

Select Save to note to keep useful responses, **summaries** or ideas. Reuse them for lesson plans, worksheets, revision questions or resources to share with colleagues.



6. Review and edit before use

Before classroom use, check citations against original sources, adapt the language to students and remove inaccurate or unsuitable content.

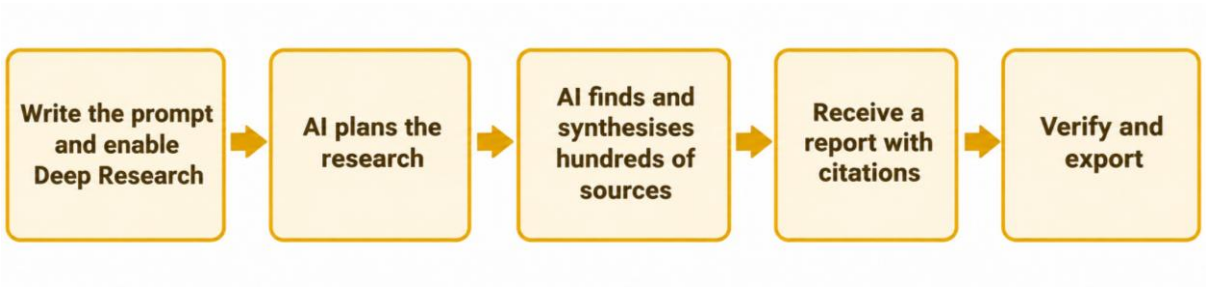
◆ **PRACTICAL TIP**

Begin with a small notebook containing a few reliable sources. Try questions and answers, mind maps, quizzes and flashcards first. Once comfortable, add podcasts, video overviews, infographics and slide decks to diversify your resources.

6.3. Deep research

Deep Research is an agentic AI feature that conducts multi-step web research, searching hundreds of sources over approximately 5 to 30 minutes to produce a detailed, structured report with citations and a source list. It can support specialist lesson preparation, practitioner reports and research literature reviews.

How Deep Research works:



Applications of deep research:

- Synthesising and analysing information from multiple sources.
- Finding and selecting academic literature.
- Defining research scope and questions.
- Evaluating source reliability.
- Planning with evidence.

Typical structure of a Deep Research report

A Deep Research report generally has a clear structure that can inform lessons or practitioner reports:

- **Executive summary:** The report's main findings.
- **Titled sections:** Analysis of different aspects, supported by data and evidence.
- **In-text citations:** Claims linked to specific sources for checking.
- **Reference list:** Sources collected at the end for verification.
- **Additional formats:** Options such as a webpage or infographic.

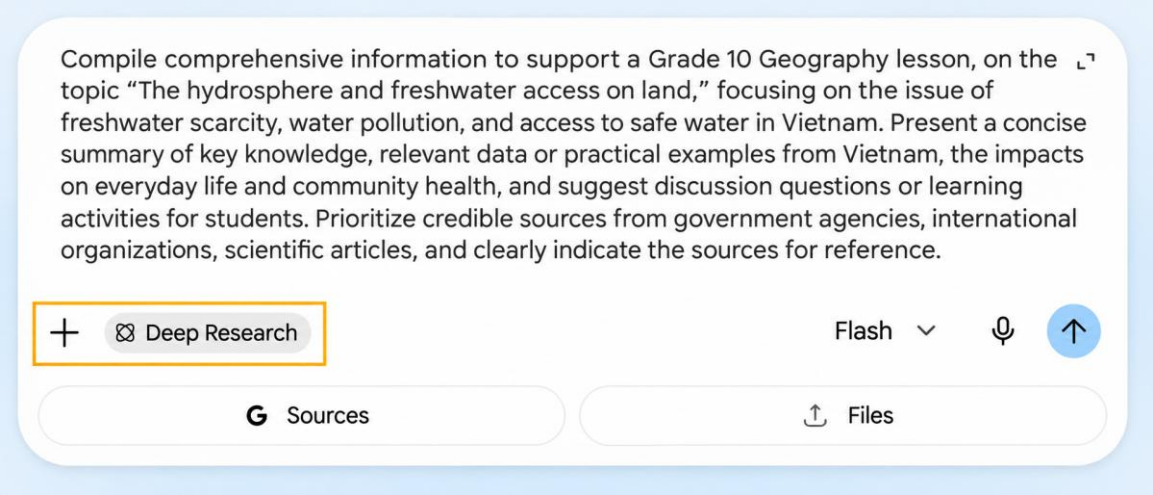
Using deep research

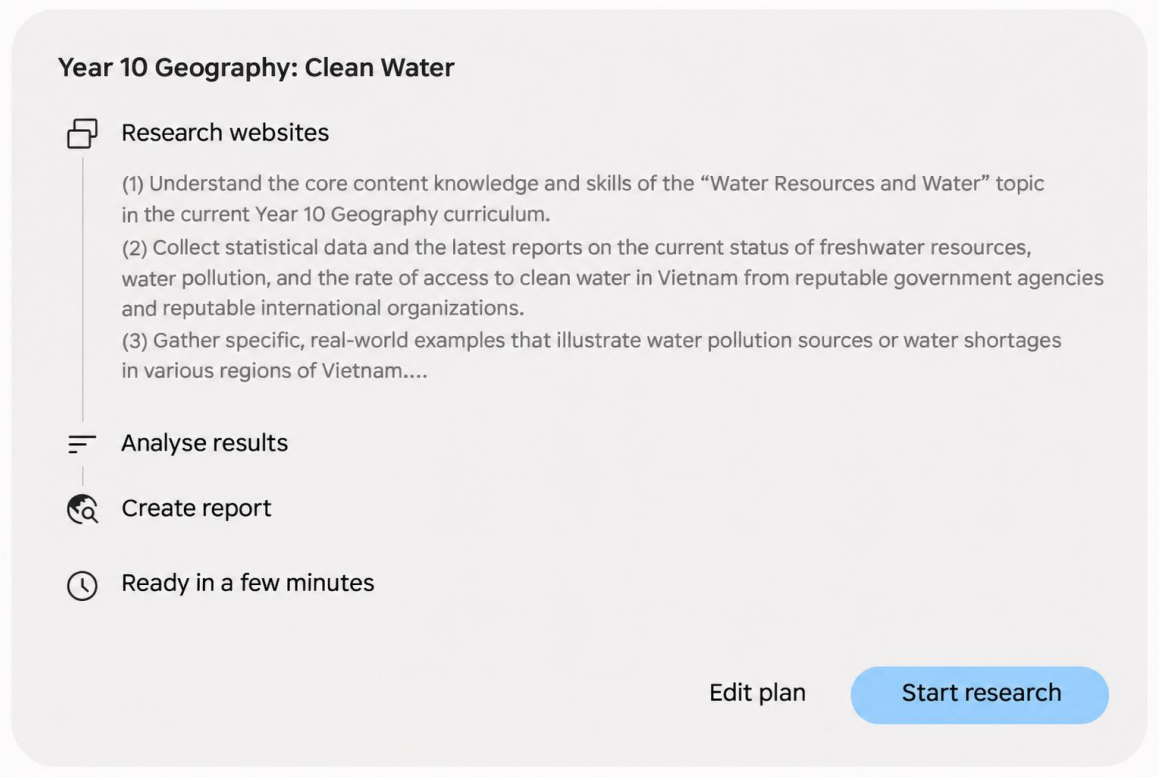
1. Write a detailed request and **enable Deep** Research.
2. Review the proposed research plan, request changes if necessary and select Start research.
3. Wait while AI searches and reads multiple sources.
4. Review the report and request further research where needed.
5. Export the document, create another format such as a webpage or infographic, and share the link.

SAMPLE PROMPT

- Compile information for a Year 10 Geography lesson on 'The hydrosphere and inland waters', focusing on freshwater, water pollution and access to clean water in Vietnam. Briefly explain background concepts, recent data or real-world examples, effects on livelihoods and public health, and suggested discussion questions or learning activities. Prioritise reliable government, international organisation and scientific sources, and provide references.

Working in Gemini:





AI-generated response:



Using deep research to verify information

Verification is another important application. One process is to generate content, ask AI to use Deep Research to check it, then consult the cited sources yourself. This uses AI to help check AI's own output.

SAMPLE PROMPT

- Help me fact-check this claim: 'Children only need clean water to wash their hands; soap is not necessary. Frequent washing with soap can weaken the skin's defences.' Use Deep Research and prioritise reliable sources such as the Ministry of Health, WHO, UNICEF, CDC and official health education materials. Identify what is correct, incorrect or misleading, which sources support the findings and how the statement should be revised.

Open the cited sources to check the result. If health authorities recommend soap and clean water, especially before eating, after using the toilet, coughing, sneezing or contact with dirt, the original claim can be judged inaccurate and potentially misleading.

PRACTICAL TIP

Deep research is also useful in everyday life, for example developing a detailed travel plan with costs or synthesising information.

Applications in research

Keeping up with studies and reviewing literature for practitioner reports or educational research takes time. AI can assist by:

- **Automating searches:** Finding articles and studies on a specific topic.
- **Summarising quickly:** Providing an initial overview of a lengthy article to help you decide whether to read it closely.
- **Synthesising across documents:** Combining information from several sources to build an overview of a field.

A simple literature-review process is to define the topic and research question, gather sources using Deep Research or academic tools, import them into NotebookLM for questions, comparisons and key-point extraction, then write the synthesis. Most importantly, verify every original source before citing it.

LIMITATIONS & RISKS

AI can invent article titles, authors and citations. In academic research, always trace references back to the original documents to confirm their existence and content.

6.4. Using AI for professional development

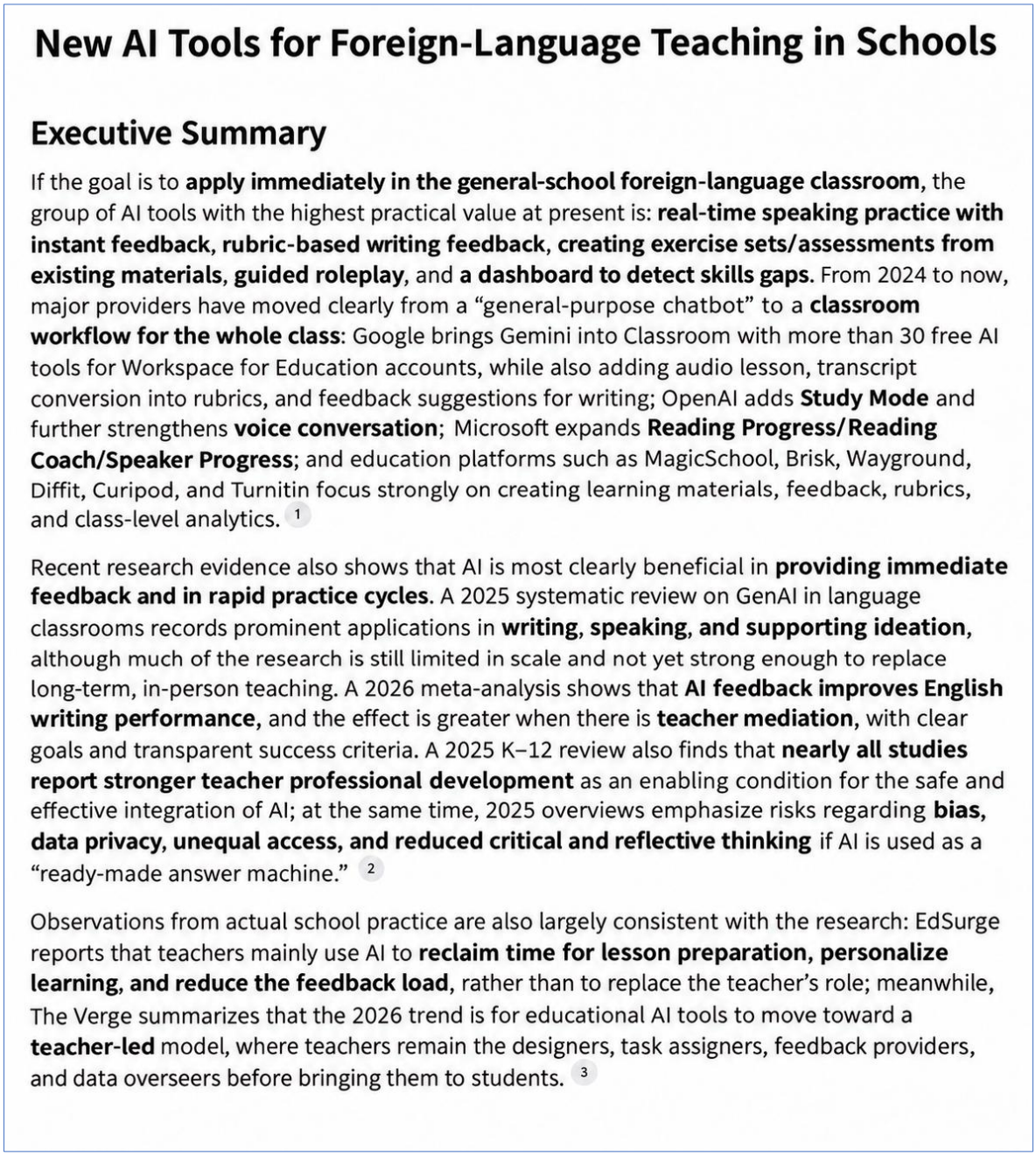
Using AI for self-directed learning, sharing and professional improvement is a core capability for contemporary educators. It can support:

- **Independent learning:** Becoming familiar with a new topic, teaching approach or regulatory document.
- **Educational research:** Defining questions, reviewing literature and selecting credible academic sources.
- **Reports and practitioner reflections:** Synthesising multiple sources into a structured, cited report.
- **Information evaluation:** Distinguishing credible information from misinformation and assessing data reliability.

SAMPLE PROMPT

> I teach foreign languages at school level. Summarise recent AI tools and features for language teaching, such as speaking practice, pronunciation and grammar feedback, dialogue creation, exercise design, writing feedback and personalisation. For each category, provide a classroom example, benefits, limitations and verification steps. Prioritise reliable information from 2024 onwards. Present an accessible table with practical recommendations for teachers.

AI-generated response:



New AI Tools for Foreign-Language Teaching in Schools

Executive Summary

If the goal is to **apply immediately in the general-school foreign-language classroom**, the group of AI tools with the highest practical value at present is: **real-time speaking practice with instant feedback, rubric-based writing feedback, creating exercise sets/assessments from existing materials, guided roleplay**, and **a dashboard to detect skills gaps**. From 2024 to now, major providers have moved clearly from a "general-purpose chatbot" to a **classroom workflow for the whole class**: Google brings Gemini into Classroom with more than 30 free AI tools for Workspace for Education accounts, while also adding audio lesson, transcript conversion into rubrics, and feedback suggestions for writing; OpenAI adds **Study Mode** and further strengthens **voice conversation**; Microsoft expands **Reading Progress/Reading Coach/Speaker Progress**; and education platforms such as MagicSchool, Brisk, Wayground, Diffit, Curipod, and Turnitin focus strongly on creating learning materials, feedback, rubrics, and class-level analytics. [1]

Recent research evidence also shows that AI is most clearly beneficial in **providing immediate feedback and in rapid practice cycles**. A 2025 systematic review on GenAI in language classrooms records prominent applications in **writing, speaking, and supporting ideation**, although much of the research is still limited in scale and not yet strong enough to replace long-term, in-person teaching. A 2026 meta-analysis shows that **AI feedback improves English writing performance**, and the effect is greater when there is **teacher mediation**, with clear goals and transparent success criteria. A 2025 K–12 review also finds that **nearly all studies report stronger teacher professional development** as an enabling condition for the safe and effective integration of AI; at the same time, 2025 overviews emphasize risks regarding **bias, data privacy, unequal access, and reduced critical and reflective thinking** if AI is used as a "ready-made answer machine." [2]

Observations from actual school practice are also largely consistent with the research: EdSurge reports that teachers mainly use AI to **reclaim time for lesson preparation, personalize learning, and reduce the feedback load**, rather than to replace the teacher's role; meanwhile, The Verge summarizes that the 2026 trend is for educational AI tools to move toward a **teacher-led** model, where teachers remain the designers, task assigners, feedback providers, and data overseers before bringing them to students. [3]

Important considerations:

The more powerful AI research tools become, the more important verification is. Remember:

- **Check cited sources:** Open and read them to confirm that the information exists and is accurate.
- **Watch for hallucinations:** AI can invent convincing-looking sources and figures.
- **Prioritise credible sources:** Government bodies, international organisations, research journals and reputable news outlets.
- **Avoid plagiarism:** Follow citation requirements and provide a reference list.

6.5. Digital competence frameworks for educators and learners

International organisations and education ministries have published AI competency frameworks and educational guidance. These help you situate your practice and learn from different approaches. The table summarises selected examples:

Organisation / country	Selected document	Focus
UNESCO	AI competency frameworks for teachers and students (2024)	Competencies, ethics and human-centred approaches
OECD	Digital Education Outlook 2026	Effective uses of generative AI in education
European Union	AI literacy framework for learners (2025); ethical AI guidance for educators (2026)	AI literacy and ethical use
United States	Artificial Intelligence and the Future of Teaching and Learning (2023); AI4K12 Five Big Ideas in AI	Human oversight; student AI literacy
Australia	Australian Framework for Generative Artificial Intelligence in Schools (2023)	Safe and responsible generative AI use
China	Guide to Using Generative AI in Primary and Secondary Schools (2025)	Supporting teaching and learning; preventing misuse and misconduct
Vietnam	Circular No. 02/2025 on the Digital Competence Framework for Learners; Circular No. 18/2026 on the Digital Competence Framework for Teachers and Education Administrators	Digital competence for learners and educators, with a dedicated AI domain

Despite differences in presentation, these frameworks share a human-centred approach, attention to ethics and safety, recognition of AI competence within digital competence and an emphasis on teachers' irreplaceable role.

Ministry of Education and Training digital competence frameworks

Digital competence for teachers and education administrators:

In 2026, the Ministry of Education and Training issued Circular No. **18/2026/TT-BGDĐT with the Digital Competence Framework for Teachers and Education Administrators** in Early Childhood, General and Continuing Education. It informs training programmes, professional learning materials and guidance, and helps educators assess their own capabilities and learning needs.

The framework has six domains and 20 component competencies, described at three levels: Basic, Proficient and Advanced. The domains are:

Competence domain	Core content
1. Teaching and education in digital environments	Designing, implementing, organising and managing educational activities with digital technology; supporting learning, personalisation and collaboration
2. Assessment	Using digital technology to design assessment, analyse results, provide feedback and improve teaching
3. Empowering learners	Improving access, inclusion, problem-solving and active participation in digital environments
4. Digital technology skills	Finding, evaluating and managing information and data; creating digital content; protecting information and using technology responsibly
5. Professional development	Organisational communication, professional collaboration, and developing, using, sharing and managing digital resources
6. Artificial intelligence (AI)	Applying and integrating AI in teaching, learning support and professional development effectively, ethically and with a human-centred approach

The AI domain emphasises four component competencies: a human-centred mindset, AI ethics, AI pedagogy and AI for professional development. AI is therefore more than a preparation or resource-creation tool. It brings new expectations for pedagogy, verification, ethical responsibility and guiding students' appropriate use.

Digital competence for learners:

Circular No. 02/2025/TT-BGDĐT establishes the Digital Competence Framework for Learners, giving schools and teachers a clearer basis for developing digital competence across learning activities.

The framework has six domains and 24 component competencies, organised across four proficiency levels from basic to highly specialised, with eight stages. The domains are:

Competence domain	Core content
1. Data and information literacy	Searching, filtering, evaluating and managing digital data and information
2. Communication and collaboration in digital environments	Interacting, sharing, working in teams and participating in online communities
3. Digital content creation	Creating, editing and sharing digital content
4. Safety	Protecting data, devices, health and digital environments
5. Problem-solving	Using digital technology to address problems in learning and everyday life
6. Artificial intelligence applications	Understanding and using AI appropriately and responsibly

UNESCO AI competency frameworks

UNESCO published two important AI competency frameworks in 2024, one for teachers and one for students. They protect teachers' rights, emphasise human agency and promote sustainability. They provide global reference points for national frameworks and teacher education programmes.

AI competency framework for teachers:

UNESCO's teacher framework contains 15 competencies across five dimensions and three progression levels: Acquire, Deepen and Create. The five dimensions are:

- **Human-centred mindset:** Upholding human agency and social responsibility in AI use.
- **Ethics of AI:** Understanding and applying ethical principles and responsible AI practices.
- **AI foundations and applications:** Understanding the basics to use, evaluate and apply AI.
- **AI pedagogy:** Designing and organising effective AI-integrated teaching and learning.
- **AI for professional learning:** Using AI for independent learning, sharing and professional improvement.

AI competency framework for students

UNESCO's student framework outlines the knowledge, skills and attitudes needed to understand, use and evaluate AI critically and responsibly. It helps teachers design activities that develop practical use alongside understanding of AI's nature, limitations and ethical implications, consistent with Chapter 1.

6.6. Strengthening educator capabilities in the AI age

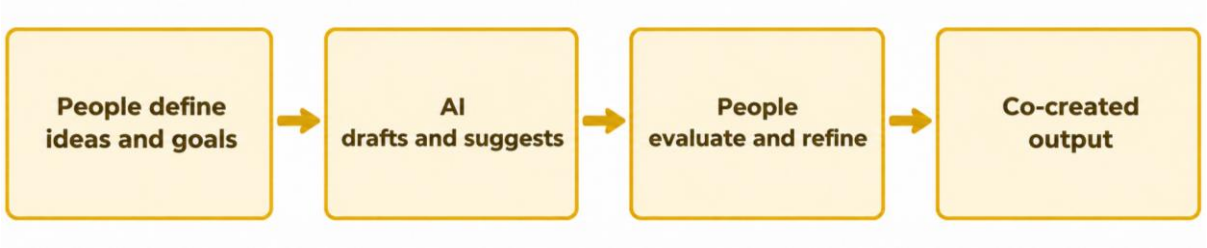
The handbook's central goal is not familiarity with a large number of tools. It is a way of learning and working that involves choosing appropriate tools, asking good questions, checking outputs, designing meaningful learning and guiding students' responsible AI use.

Develop your digital and AI capabilities sustainably through UNESCO's Acquire, **Deepen and Create** progression:

1. **Acquire:** Select one or two tools and use them regularly for familiar tasks such as lesson planning, assessment and activity design. Practise prompting each day.
2. **Deepen:** Explore resource creation, chatbots and deep research. Build a personal prompt bank and consistently verify and evaluate outputs.
3. **Create:** Design AI-integrated activities using TPACK, guide students' responsible use, share experience with colleagues and contribute to educator communities.
4. **Keep learning:** Participate in educator training and professional events such as Innovative Educators Day. Learn from specialists and colleagues, follow tool updates, Ministry of Education and Training guidance and resources from organisations such as UNESCO, and adapt your practice accordingly.

Human-AI co-creation

This progression reflects the handbook's guiding idea of human-AI **co-creation. People establish** the ideas, purposes and values. AI expands possibilities, offers suggestions and drafts. People then evaluate, select and refine the result. AI supports creative work without taking over human agency.



This applies to teachers and students alike. Educators can work more efficiently while retaining authorship, professional expertise and final responsibility. Students need to learn how to develop ideas with AI without losing independent thought.

Teachers as guides and role models

To encourage constructive co-creation, teachers guide responsible AI use as well as use it themselves. A feedback cycle helps students learn through using, observing and evaluating AI:

- Model constructive AI use as a learning tool in class.

- Let students predict and evaluate AI outputs before and after a task.
- Encourage feedback on the tool's reliability and usefulness for independent learning.
- Share a bank of prompts that have produced reliable results.

▸ **EXAMPLE**

A teacher might say: 'Let's see how Gemini responds to your writing, then evaluate together whether its feedback is useful.' This turns AI into an object of critical inquiry rather than a way to copy answers.

Handbook conclusion

The final chapter brought together frameworks and approaches for responding to technological change: the Ministry of Education and Training's digital competence frameworks, UNESCO's AI competency frameworks and human-AI co-creation. These foundations help keep the practical skills in earlier chapters relevant as tools change.

AI is intended to support educators in teaching effectively, inspiring learners and connecting with students. People must remain central: teachers define educational goals, understand learners, choose approaches, verify information and take responsibility for final decisions. AI can suggest, assist and extend creativity, but it can also be inaccurate, biased or inappropriate. Educators therefore need to evaluate and select outputs, not simply operate tools.

Continuing to learn, maintaining professional judgement and guiding independent, creative and responsible learners matter as much as technical proficiency. Teaching is often described as lighting a fire rather than filling a vessel. Used with understanding, ethics and care, AI can help kindle students' interest in learning. We wish you confidence and creativity as you continue this work.

★ **KEY TAKEAWAYS**

- ✓ Tools change, but capabilities and ways of thinking endure.
- ✓ AI applications are now an explicit digital competence domain for educators and learners.
- ✓ Technology integration must serve pedagogical goals, not the reverse.
- ✓ People and educational purposes must remain central to every use of AI.
- ✓ In co-creation, AI assists while people initiate, guide and retain responsibility.
- ✓ AI can make mistakes. Teachers verify information, judge suitability and make final decisions.

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ACKNOWLEDGEMENTS

This handbook was developed jointly by RMIT University Vietnam and the Department of Teachers and Education Administrators, Ministry of Education and Training, to support effective, safe and responsible AI use in teaching, learning and education management. We gratefully acknowledge Aus4Skills for its partnership and support in developing this resource. We also thank the specialists, educators and education leaders who shared their experience and practical feedback, helping make the handbook more relevant to schools and classrooms. We warmly welcome further comments on its content.



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