

WHY THIS MOMENT

From Prompt to Production

Using AI agents to build better course materials

A teaching need becomes a resource you can inspect, improve, and use.

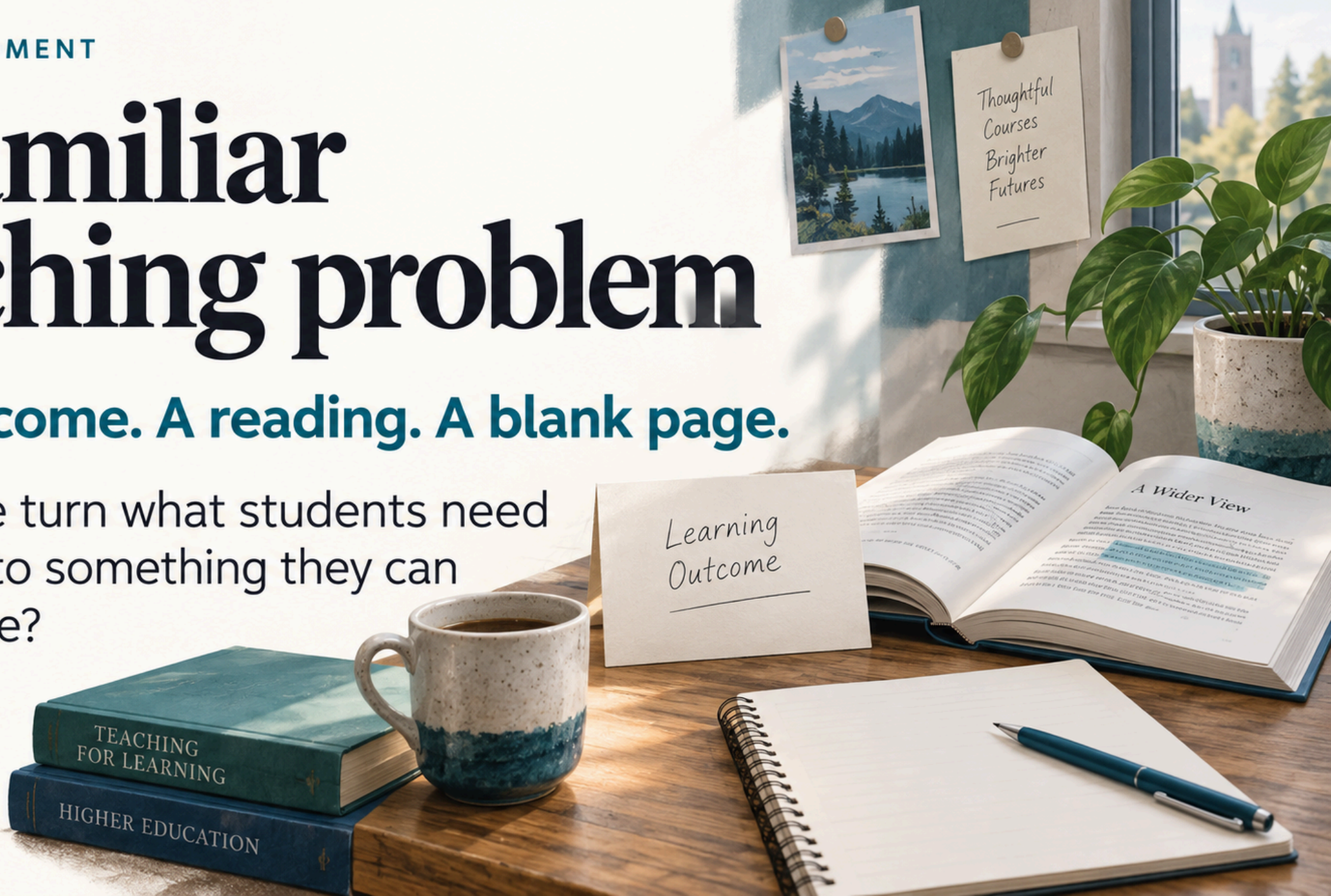


WHY THIS MOMENT

A familiar teaching problem

One outcome. A reading. A blank page.

How do we turn what students need to learn into something they can actually use?



WHY THIS MOMENT

What has changed?

The tools can do more of the production work.

Current systems can combine language, files, images, code, and tools within a longer workflow.

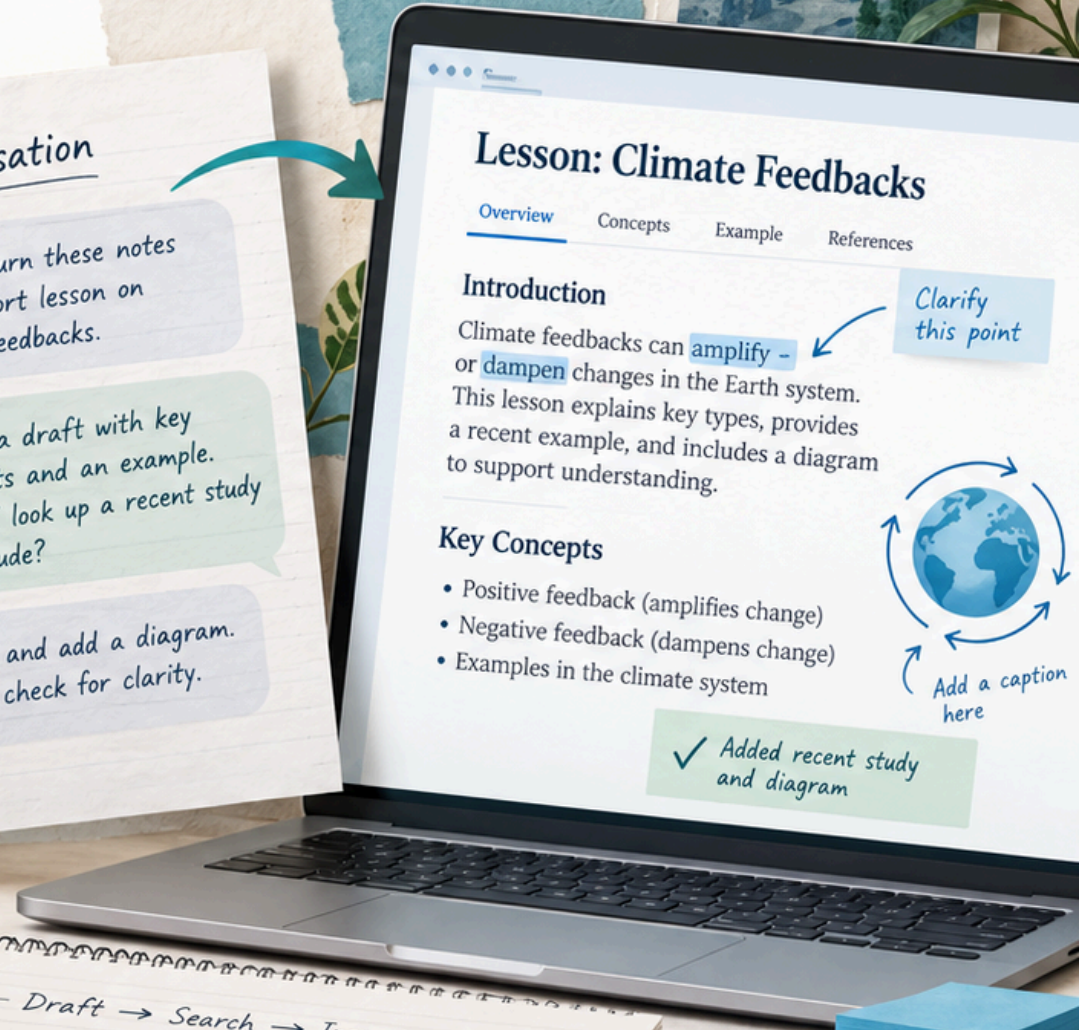
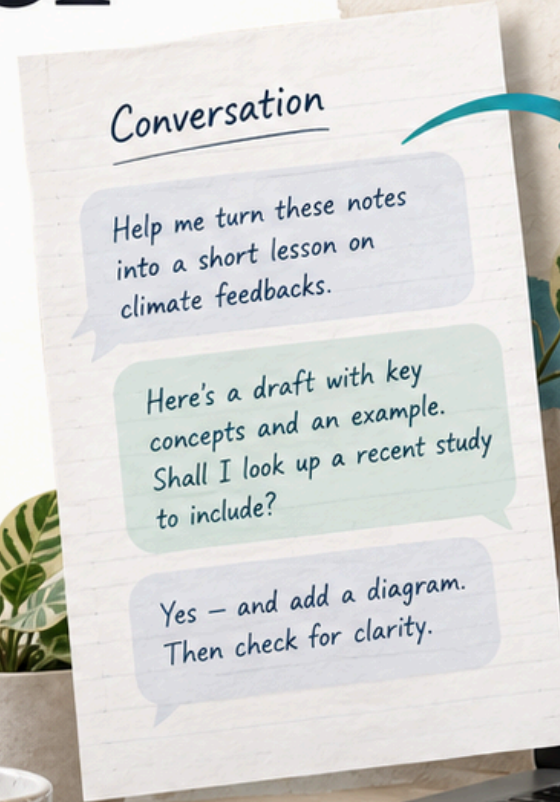


WHY THIS MOMENT

From an answer to an artifact

The useful shift is in the workflow.

A system can draft, use tools, inspect results, and revise. A chat window may support that workflow too.



Draft → Search → Inspect → Revise

HOW THE TECHNOLOGY WORKS

What is a language model?

It learns patterns that help it generate language.

Training on large amounts of text, including code, shapes how a model responds to new context.

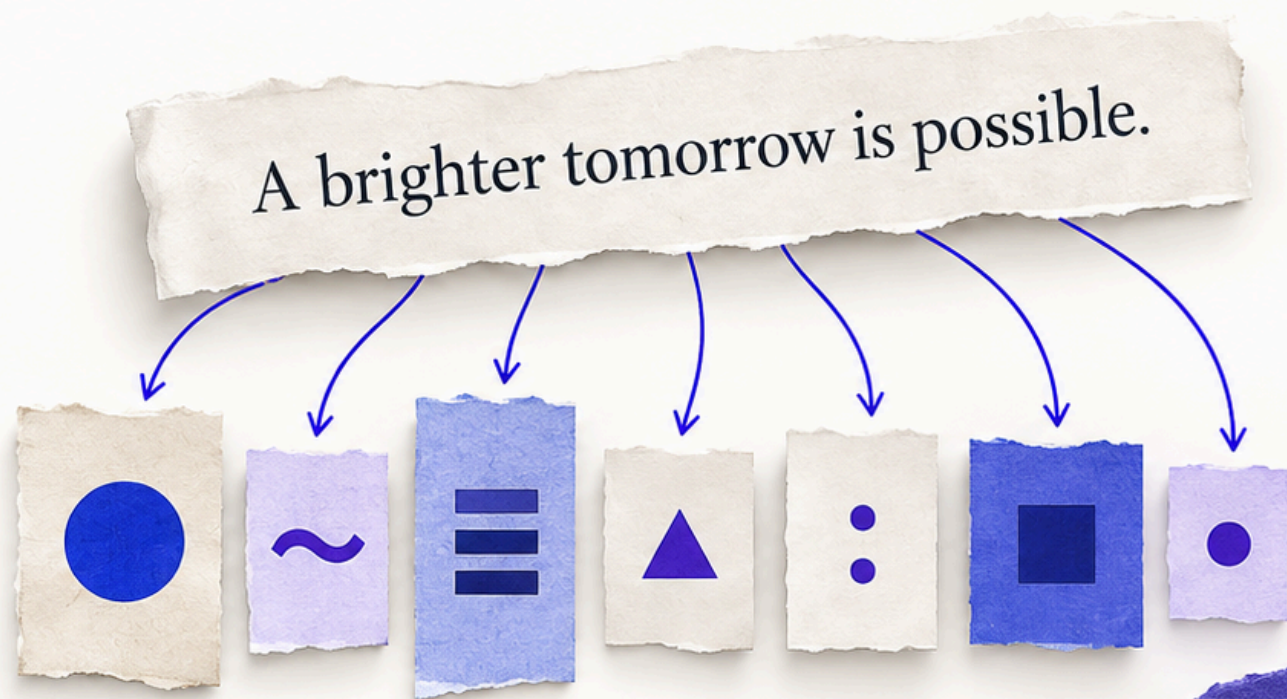


HOW THE TECHNOLOGY WORKS

Text becomes tokens

Words are not the only building blocks.

Tokens can represent words, parts of words, or punctuation. The model works with sequences of these units.

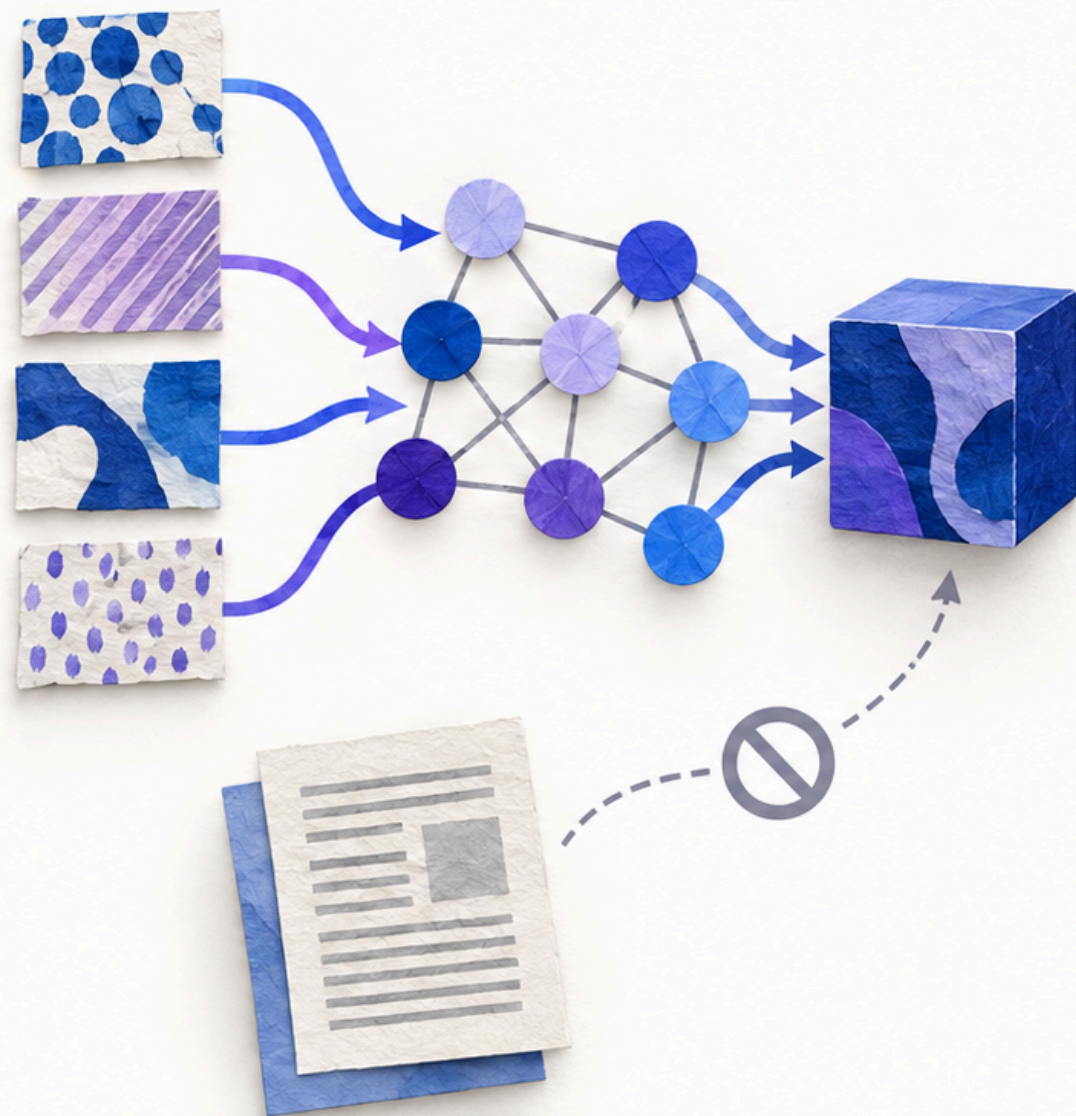


HOW THE TECHNOLOGY WORKS

Training changes the model

Examples gradually adjust numerical parameters.

The resulting patterns influence future responses. This is different from opening a source document to look up a fact.

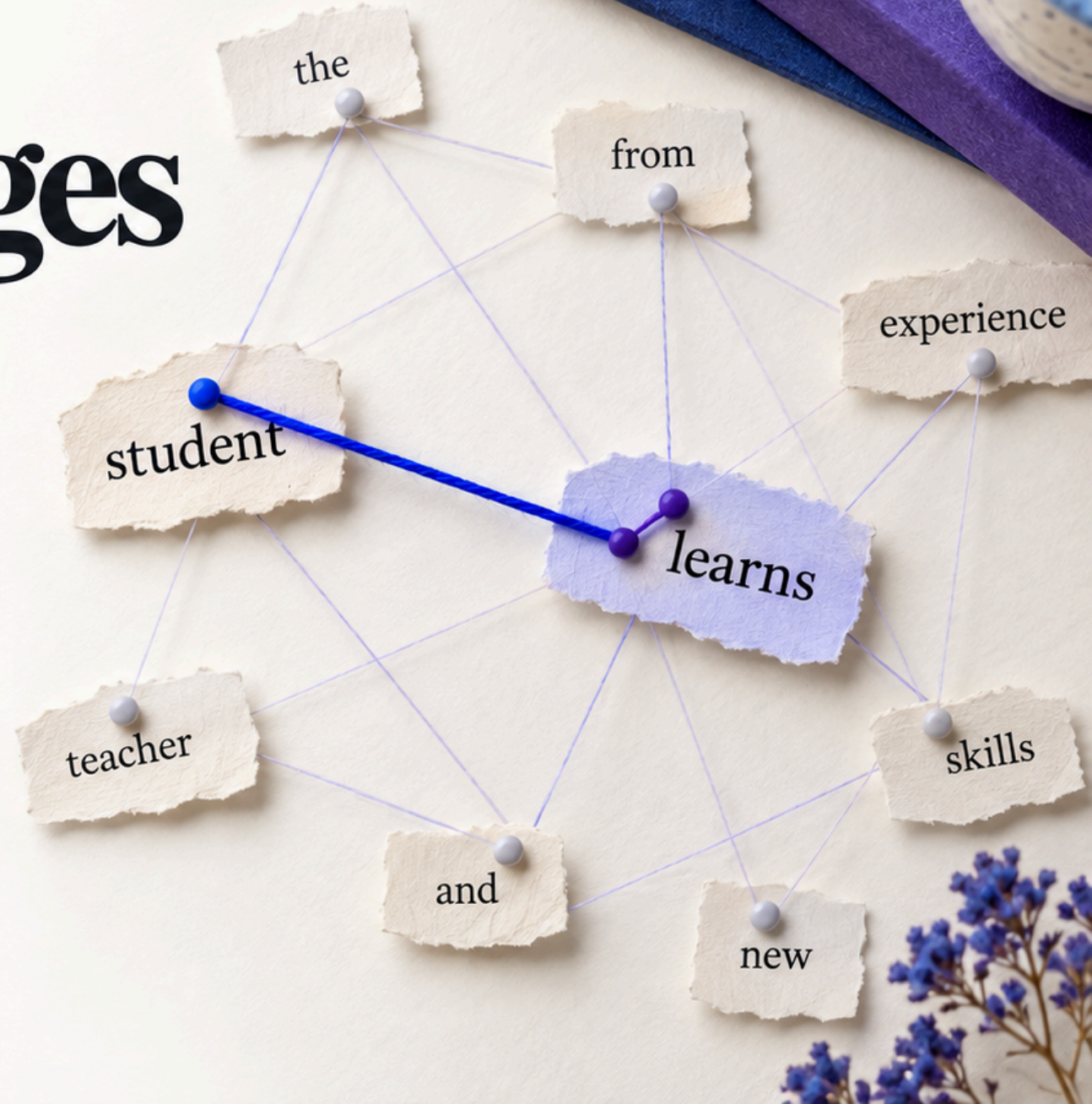


HOW THE TECHNOLOGY WORKS

Context changes what matters

**Meaning depends on
relationships.**

Transformer models use attention to weigh relationships among tokens in the available context.

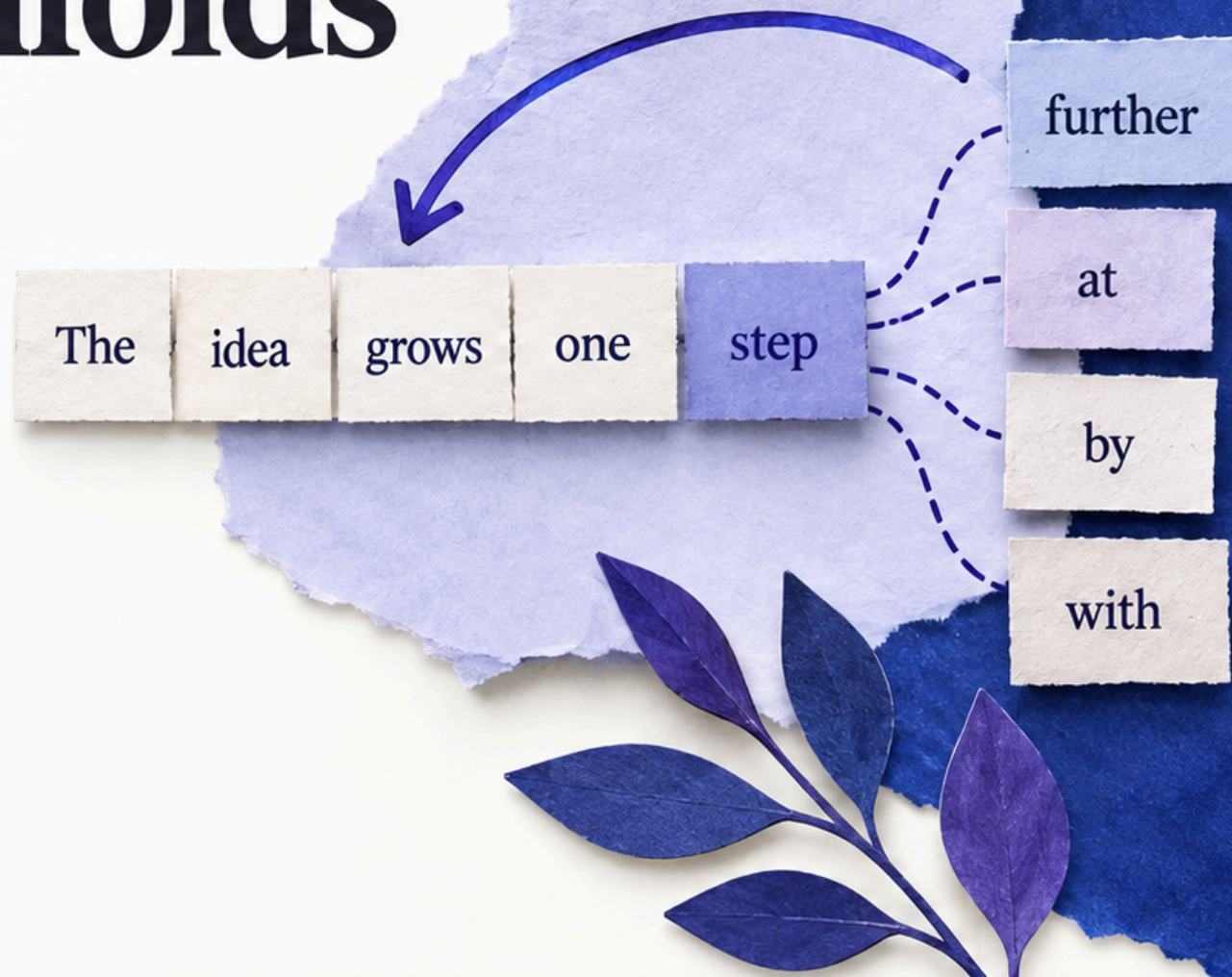


HOW THE TECHNOLOGY WORKS

A response unfolds piece by piece

**The model estimates
possible next tokens.**

It selects a continuation, adds it to the
sequence, and repeats. Useful reasoning
can emerge within this process.



HOW THE TECHNOLOGY WORKS

How does it become an assistant?

Different training stages shape different behaviours.

Broad training develops patterns.
Further training can improve instruction following, usefulness, and other desired behaviours.



HOW THE TECHNOLOGY WORKS

Fluent does not mean verified

A convincing sentence can still be wrong.

An answer may invent a citation, miss a condition, or produce instructions that fail when someone tries them.



HOW THE TECHNOLOGY WORKS

Context is the working material

Your brief changes the task the model sees.

Readings, examples, requirements, and the conversation help shape the next response. Relevant context matters more than a large pile of files.



HOW THE TECHNOLOGY WORKS

A file is context, not a new degree

Supplying a reading usually
does not retrain the model.

Saved files and project memory can
carry information forward, but
availability and use depend on
the system.



HOW THE TECHNOLOGY WORKS

An agent adds an action loop

Plan. Use a tool. Inspect. Revise.

The model helps choose steps; software executes tools. The loop can produce files and other artifacts that need human review.



BUILD WITH A PURPOSE

Start with the learning

The first question is what students should be able to do.

A polished resource becomes useful when it helps learners produce evidence of that capability.



START WITH A NEED

Define the win

TRY THIS

Describe the learners, the learning outcome, and the evidence you want to see.

MAKE A three-line design brief

CHECK Could another instructor use it?



BUILD WITH A PURPOSE

What can an agent help make?

Think in artifacts you can open and inspect.

Reading guides, cases, rubrics, slide decks, question banks, and small interactive resources can share the same brief.



BUILD WITH A PURPOSE

Two ways into the workspace

Cursor and Antigravity are examples, not the whole idea.

The transferable pattern is a course folder, a clear task, a reviewed plan, an artifact, and a test.



BUILD WITH A PURPOSE

Cursor + Antigravity

The workspace around the model

An agent harness connects an AI model to your files, tools, instructions, and review controls.



Use your institution's approved tools:
Copilot, ChatGPT, or another supported option.

Features depend on your account and permissions.



BUILD WITH A PURPOSE

Check the account first

Personal accounts (free or paid) may use your content for model training.

It depends on the service, plan, and settings.

-  Use an institution-approved account.
-  Follow your institution's AI and data policies.
-  Keep sensitive information out unless explicitly authorized.

Student records • grades • confidential research

For practice: use synthetic or approved non-sensitive material.



BUILD WITH A PURPOSE

A prompt can become a design brief

Give the work a purpose and boundaries.

Learners, outcomes, approved inputs, format, and review criteria make the request more useful than a topic alone.



START WITH A NEED

Give the agent a brief

TRY THIS

Write the course context, approved sources, constraints, and review criteria in one reusable file.

MAKE

COURSE_BRIEF.md

CHECK

Are the requirements specific?



BUILD WITH A PURPOSE

Give the work a home

Files make the process
visible and reusable.

Keep source material, drafts, review findings, and accepted versions easy to find. A folder helps the next revision begin.



BUILD WITH A PURPOSE

Roles divide the work

A researcher, writer, and critic notice different things.

Each needs the same purpose, a bounded task, and a distinct output. The educator connects the results.



START WITH A NEED

Give each role a job

TRY THIS

Assign a researcher, writer, and critic different tasks. Give each role an output and a review criterion.

MAKE A three-role workflow

CHECK Who checks the evidence?



BUILD WITH A PURPOSE

More voices can share a blind spot

Agreement is not independent evidence.

Agents may repeat the same assumptions. Compare their claims with sources, student tasks, and the artifact itself.



START WITH A NEED

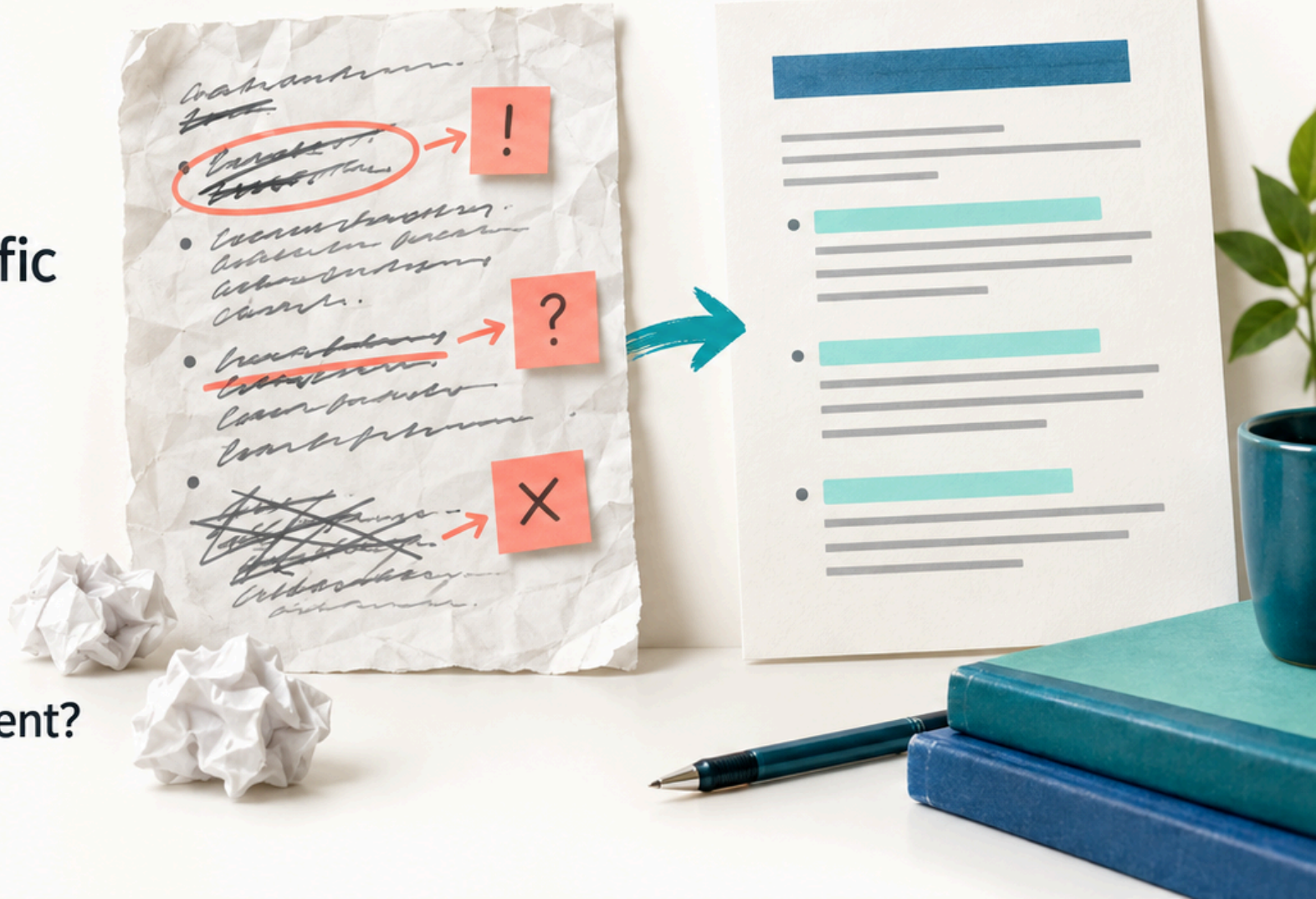
Critique, then revise

TRY THIS

Ask a critic to find three specific weaknesses. Revise the draft and explain what changed.

MAKE A stronger second version

CHECK Can you see the improvement?



BUILD WITH A PURPOSE

Give every revision a reason

First draft: choose a proposal.

Better task: use two observations, explain a tradeoff, and name a limitation.



DESIGN THE LEARNING

Generate options before choosing

AI can make it easier to
explore alternatives.

The teaching decision is which
idea fits the learners, the outcome,
and the time you actually have.



Generate more than one idea

TRY THIS

Generate ten ways to teach one difficult concept. Vary the medium, participation, and classroom setting.

MAKE An idea menu

CHECK Are the ideas meaningfully different?



DESIGN THE LEARNING

Bloom's asks for visible thinking

A verb is only the beginning.

Look at the whole task: what students explain, apply, analyse, evaluate, or create, and what would count as evidence.



DESIGN FOR LEARNING

Use Bloom's with evidence

TRY THIS

Turn a vague outcome into observable student work. Try an explanation, an analysis, and a justified design.

MAKE Three outcome-and-task pairs

CHECK What will students actually do?



UDL: vary the response

TRY THIS



Design two ways students can demonstrate the same outcome. Use shared criteria and identify essential requirements.

MAKE

Equivalent response options

CHECK

Are the expectations comparable?



DESIGN THE LEARNING

Keep the goal; vary the route

**Different formats can reveal
comparable learning.**

A written argument and a narrated diagram may share reasoning criteria. If writing itself is the outcome, the format matters.



Research needs an evidence trail

Generation can help organise an inquiry.

Claims become usable when you can follow them to real sources, check their meaning, and preserve disagreement.



Comparison matrix			
Claim	Source A	Source B	Source C
Evidence	●	●	●
Interpretation	●	●	●
Agreements	●	●	●
Disagreements	●		●

RESEARCH WITH EVIDENCE

Build a source ledger

TRY THIS

Record each source's title, author, year, link, and relevant passage. Open every source before using it.

MAKE

A verified source ledger

CHECK

Can you trace every claim?



RESEARCH WITH EVIDENCE

A possible gap is a question

**Missing from this source set is
not missing from the world.**

A proposed gap needs a wider search,
disciplinary judgment, and a question
worth investigating.



RESEARCH WITH EVIDENCE

Find a gap worth testing

TRY THIS

Ask what your source set does not answer. Turn one possible gap into a question and a follow-up search.

MAKE A tentative gap statement

CHECK Is it a gap or a search limit?

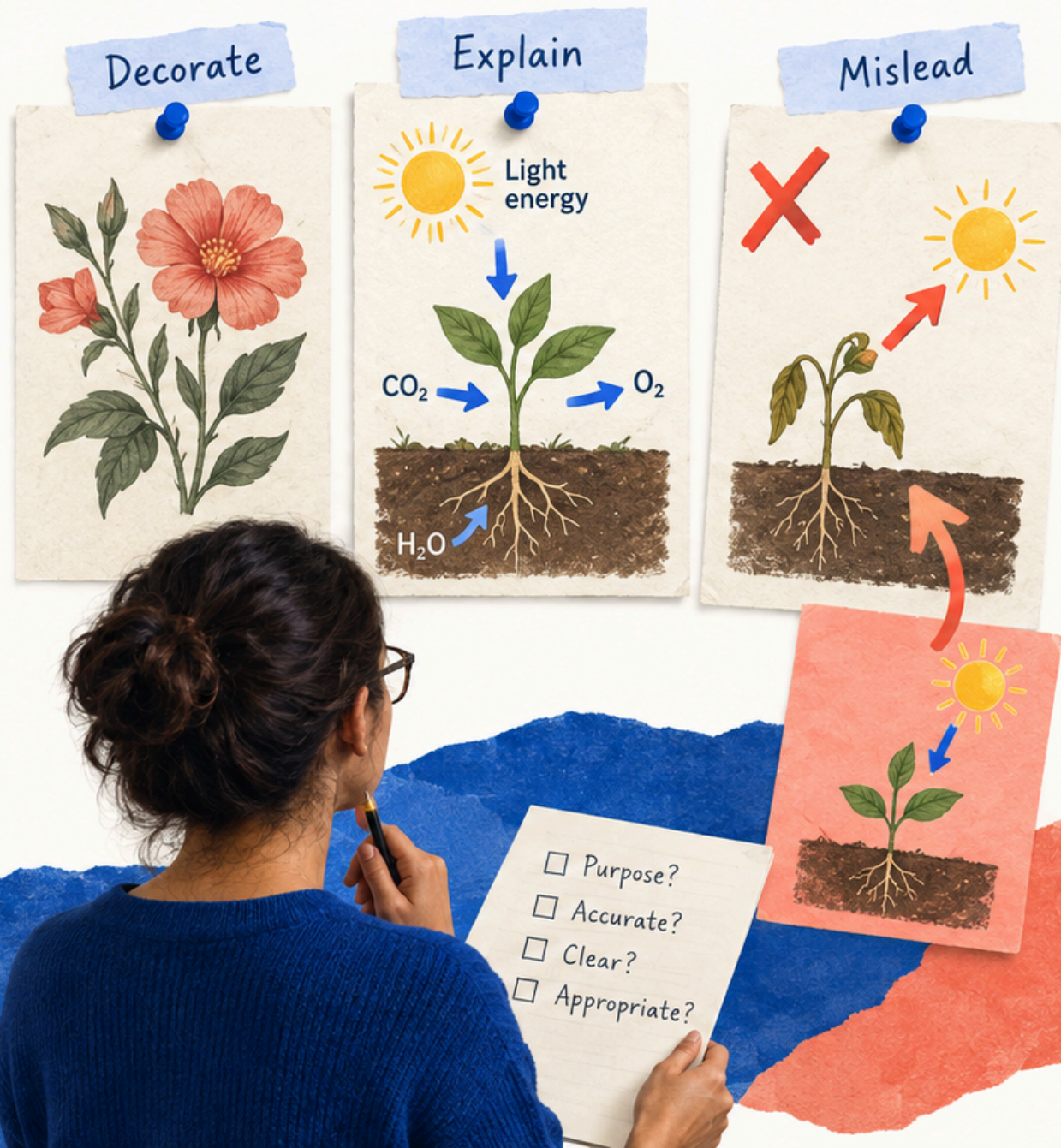


MAKE IDEAS VISIBLE

A visual makes a teaching claim

Images can explain, decorate, or mislead.

Choose the relationship learners need to notice. Check diagrams against sources, and use an appropriate image or multimodal tool.



MAKE VISUAL MATERIALS

Brief the image before making it

TRY THIS

Specify the learning purpose, subject, composition, style, and what the visual must get right.

MAKE An image design brief

CHECK What should learners notice first?



MAKE IDEAS VISIBLE

Iteration needs a stable purpose

Accuracy, clarity, and style
are different questions.

Changing one thing at a time
makes it easier to tell whether
the visual became more useful
for learning.



MAKE VISUAL MATERIALS

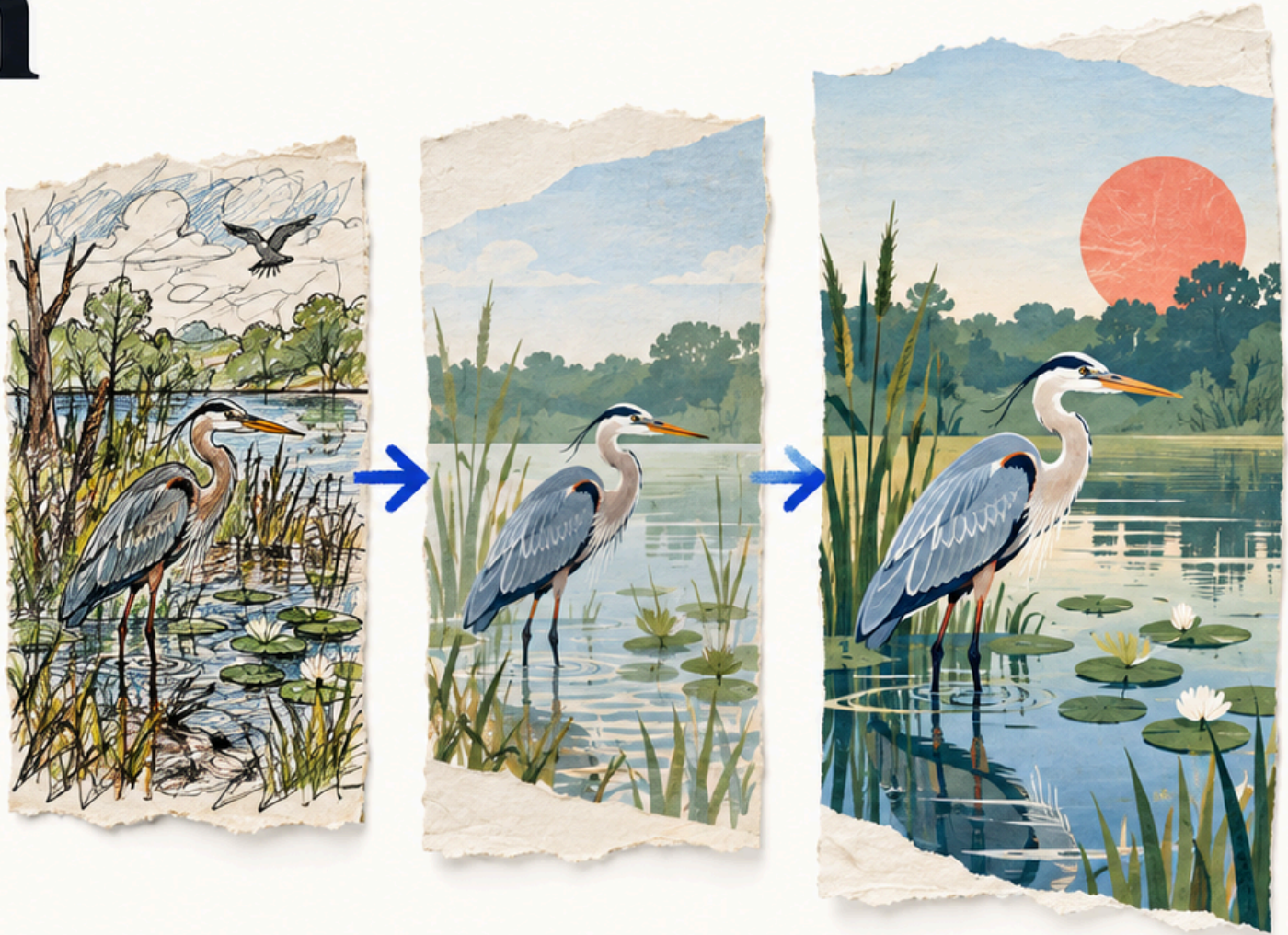
Improve it in three passes

TRY THIS

Refine the visual for accuracy, then clarity, then style. Change one thing at a time and compare versions.

MAKE An iteration strip

CHECK Which change improved learning?



MAKE IDEAS VISIBLE

Teach the story before building slides

**The sequence should help
someone understand.**

Begin with a question, introduce a concept, show an example, invite a decision, and return to the learning goal.



MAKE VISUAL MATERIALS

Storyboard the lesson slides

TRY THIS

Plan six slides around one question. Give each slide a single message, a visual idea, and a teaching move.

MAKE A six-slide storyboard

CHECK Does the sequence tell a story?

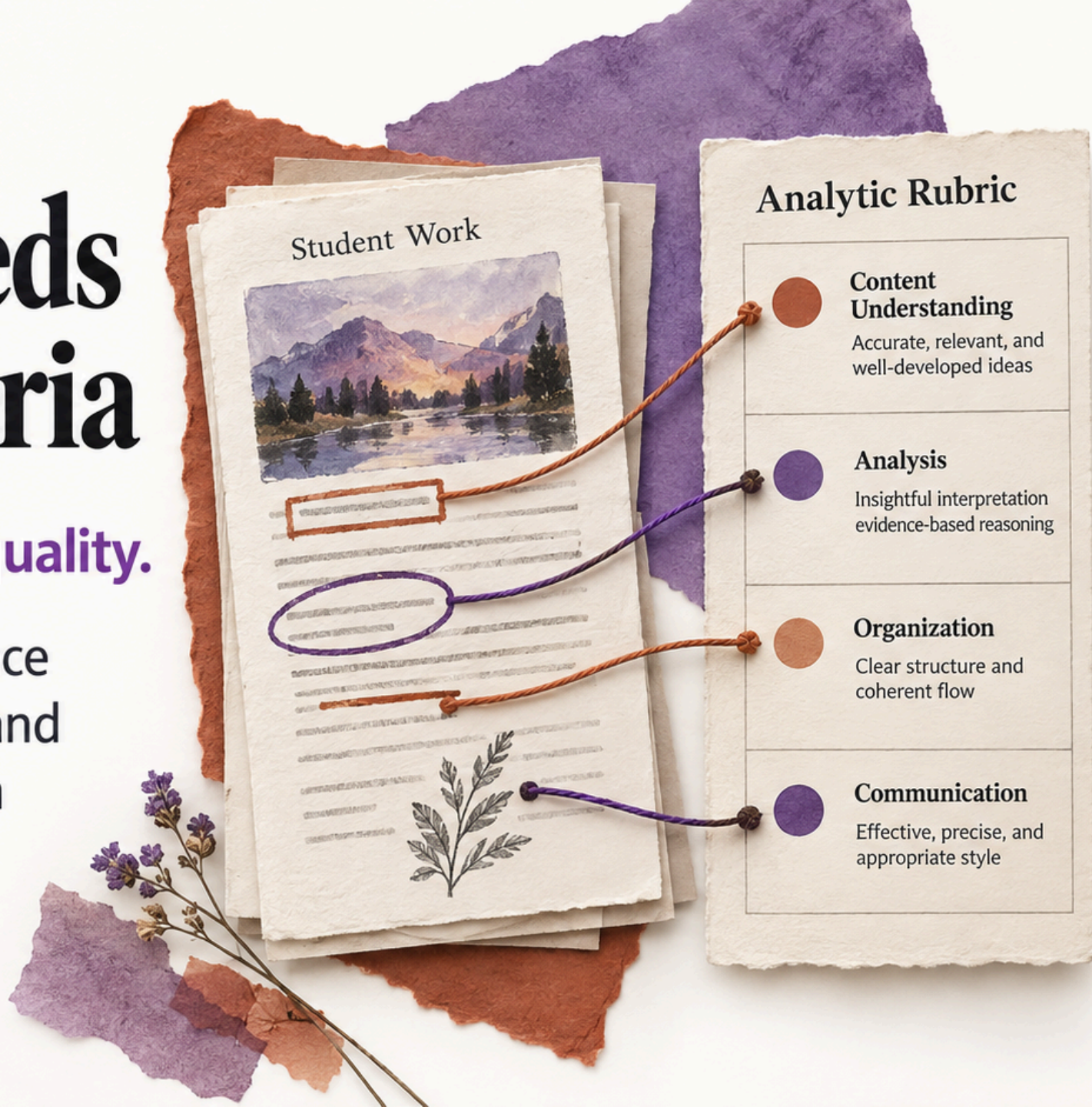


ASSESS THE LEARNING

Assessment needs observable criteria

A rubric describes evidence of quality.

Distinct criteria and clear performance descriptions help students understand the task and help instructors explain their judgments.



ASSESS AND FACILITATE

Build a rubric from evidence

TRY THIS

Start with the outcome and student task. Draft distinct criteria and observable descriptions of quality.

MAKE An analytic rubric

CHECK Can students tell levels apart?



Cases need a consequential choice

A good case gives students something to reason about.

Evidence, competing priorities, and a justified decision create room for discussion beyond guessing the instructor's preferred answer.



ASSESS AND FACILITATE

Create a case with a decision

TRY THIS

Build a fictional case with competing priorities, enough evidence, and a decision students must justify.

MAKE A discussion case

CHECK Is there room for reasoned disagreement?



BUILD AN EXPERIENCE

A resource can respond

Code can turn teaching ideas into small experiences.

A local page can reveal feedback, change a display, or guide a decision. Start with a resource simple enough to inspect.



BUILD SOMETHING USABLE

Build a one-page module

TRY THIS



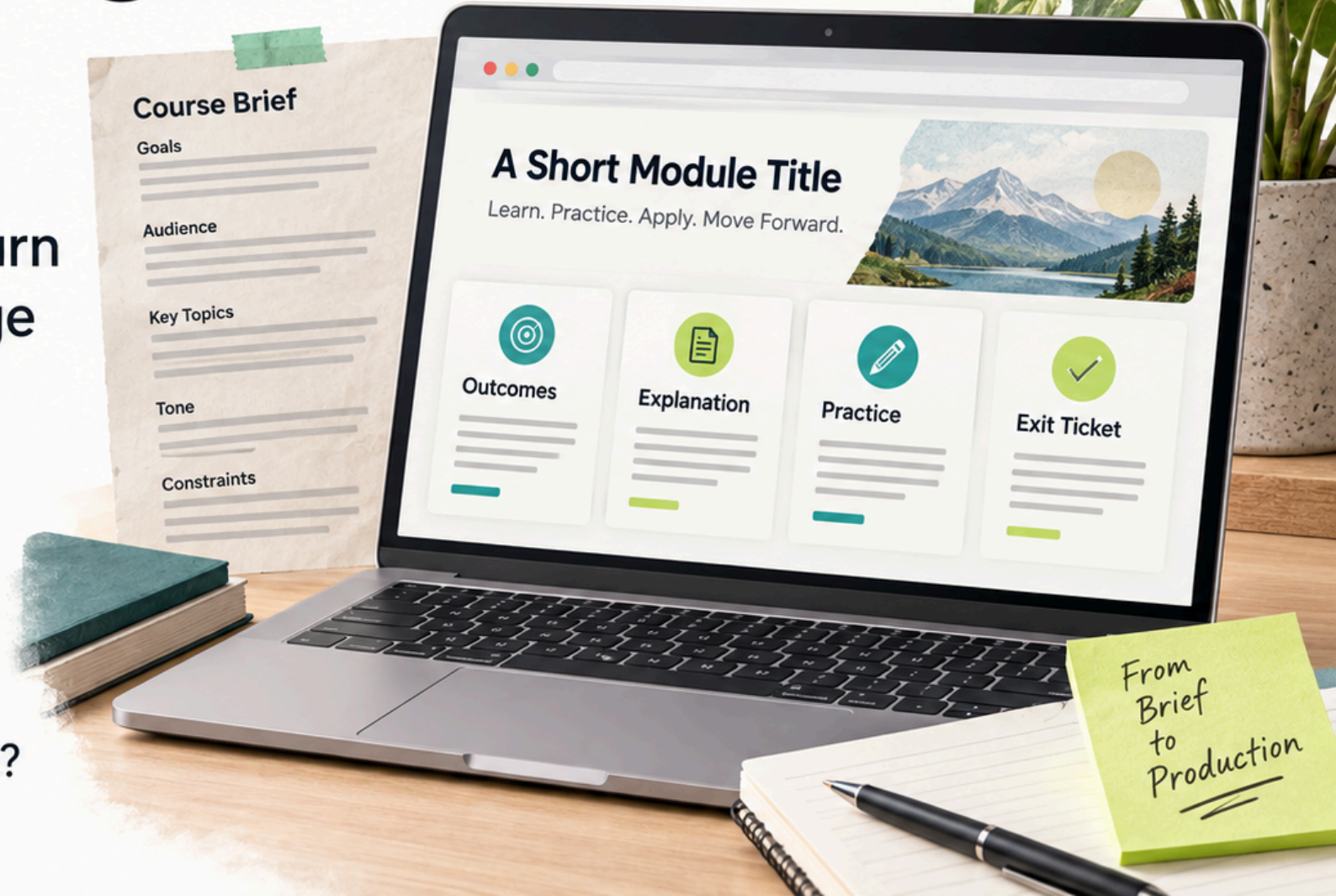
Ask Cursor or Antigravity to turn your brief into a local web page with outcomes, explanation, practice, and an exit ticket.

MAKE

A working HTML module

CHECK

Can a student follow it alone?



BUILD AN EXPERIENCE

Interaction should reveal thinking

A click is not evidence of learning by itself.

Ask learners to predict, choose, explain, or revise. The interaction should make a useful relationship visible.



Build a branching scenario

TRY THIS

Turn a case into three decision points with consequences and feedback. Map every path before generating the page.

MAKE A branching learning activity

CHECK Can every path reach a useful debrief?



BUILD AN EXPERIENCE

Data can invite better questions

A chart is the start of interpretation.

Keep the source rows, units, filters, and limitations visible. Ask what the display supports and what it cannot establish.



BUILD SOMETHING USABLE

Let students explore data

TRY THIS

Use a small synthetic dataset to build a filterable chart and interpretation questions. Check the chart against the source rows.

MAKE A classroom data explorer

CHECK What could the display mislead about?



WHAT REMAINS OURS

The educator sets the standard

A system can draft, compare, and critique.

Faculty decide what counts as evidence, what the task should assess, and whether the result belongs in their course.



WHAT REMAINS OURS

Four ways the work can go wrong

Accuracy. Alignment. Access. Information handling.

A wrong claim, the wrong task, an unusable resource, or an inappropriate input can undermine an otherwise polished result.



WHAT REMAINS OURS

Verification changes with the artifact

Use a check that can reveal
the actual problem.

Open the citation. Recalculate the
table. Try the wrong answer.
Walk every branch.



WHAT REMAINS OURS

Keep trust visible

Make the basis of the material inspectable.

Explain how it was developed, which sources support it, and what students are expected to do with it.



WHAT REMAINS OURS

Spend time where judgment matters

Easier drafting can change where the work goes.

More attention can go to specifying the task, reviewing evidence, trying the student experience, and improving the result.



WHAT REMAINS OURS

Reuse the process, not just the answer

A good workflow becomes a teaching asset.

Keep the brief, sources, prompts, criteria,
and change notes so the next term starts
from something understandable.



WHAT REMAINS OURS

One repeatable production pattern

Brief. Plan. Build. Critique. Revise. Review.

The steps stay useful even when the model, interface, or tool changes.



WHAT REMAINS OURS

Three possibilities for next week

**A reading guide. A calibrated rubric.
A branching case.**

Choose one resource where a better question, clearer evidence, or a useful interaction would improve the learning experience.



WHAT REMAINS OURS

What would make this worth using?

Judge the learning experience, not just the polish.

Look for clearer student work, fewer avoidable barriers, sound evidence, and a resource you can maintain.



WHAT REMAINS OURS

Make the first build small

One outcome. One artifact. One group of learners.

Finish one iteration that you can inspect, explain, and improve before expanding the project.



WHAT REMAINS OURS

Better materials begin with better judgment

**AI can help turn an idea
into a usable resource.**

The educator keeps the purpose,
the evidence, and the final
teaching decision.

