



Innovate IECC: Create • Engage • Transform

Today's flow: Explore powerful AI tools to transform your teaching materials into engaging, accessible student resources.

Popular AIs & the “Freemium Rotation”

Use multiple AIs to stretch free features

Perplexity

Search-chat that answers with **citations**; great for first-pass research.

Claude

Thoughtful long-context writer; makes clean **outlines/tables** and live-editable **Artifacts**.

ChatGPT

Versatile generalist for **drafting, rewriting, and quick code**.

Copilot (Microsoft 365)

Microsoft chat that can browse/summarize and do light Microsoft integrations

Gemini

Google-native model tied to **Drive/Docs/Sheets**; solid for **images/charts** and brainstorming.

Grok

Real-time, **X-aware** model for trending topics and quick sentiment reads. cs, structured outputs, live-editable **Artifacts**

Perplexity (cited research fast)

Take your existing materials and transform them into multiple engaging formats:

Video Overviews

- Web-cited answers with live links (pin/save)
- Follow-ups that refine scope & terms
- Focuses (e.g., academic/coding/video) + file/URL intake
- Collections to group findings for a class/topic
- Use it for: source lists, pro/con briefs, quick literature scans, reading questions

Self-healing plastic stronger than steel

Perplexity

Images

Videos

Sources · 6

Steps

bloengineer

Revolutionary Smart Plastic: Self-Healing, Shape-...

MIT News | Massachus...

New lightweight material is stronger than steel | MIT...


reddit

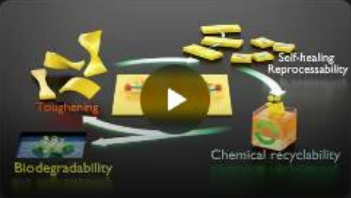
Breakthrough Smart Plastic: Self-Healing, Shape-Shiftin...


Electronics For You - O...

Self-Healing Recyclable Plastic For Industry -...

Science







Self-Healing Plastic Stronger Than Steel: Recent Breakthroughs

Recent advances in materials science have led to the development of ultra-durable plastics that not only heal themselves but also outperform steel in strength metrics—especially when reinforced with carbon fibers. The standout innovation is known as **Aromatic Thermosetting Copolyester (ATSP)**, developed by researchers at Texas A&M University and other institutions.

Key Features of ATSP

- Self-Healing and Shape Recovery:** ATSP exhibits self-healing capability, which means it can autonomously repair micro-cracks and restore its original shape when exposed to specific thermal conditions. This property is especially beneficial for aerospace and automotive industries, extending the material's lifespan and reducing maintenance costs. bloengineer +1
- Stronger Than Steel:** When reinforced with discontinuous carbon fibers, ATSP's mechanical performance surpasses traditional metals. It is several times stronger than steel while also being lighter than aluminum—ideal for structural applications in critical fields such as defense and aerospace. electronicsforu +2
- Recyclability and Sustainability:** ATSP is recyclable; it maintains its chemical stability and resilience even after repeated cycles of damage and self-healing. Its adaptability also supports circular economy principles in manufacturing. bioengineer +1
- Smart Material Properties:** The material belongs to the vitrimer class—combining thermoset-like rigidity with the flexibility of thermoplastics. Its unique polymer chemistry enables molecules to rearrange at certain temperatures, which is the basis for its healing and shape memory behavior. bioengineer

Scientific Evaluation and Industrial Applications

- Testing and Proof:** ATSP withstood hundreds of mechanical stress-healing cycles during lab tests without structural degradation. In some cases, its durability improved after repeated

Ask a follow-up...

Q

🔗

🔍

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🗑️

NotebookLM: Your Content, Transformed

Take your existing materials and transform them into multiple engaging formats:

Video Overviews

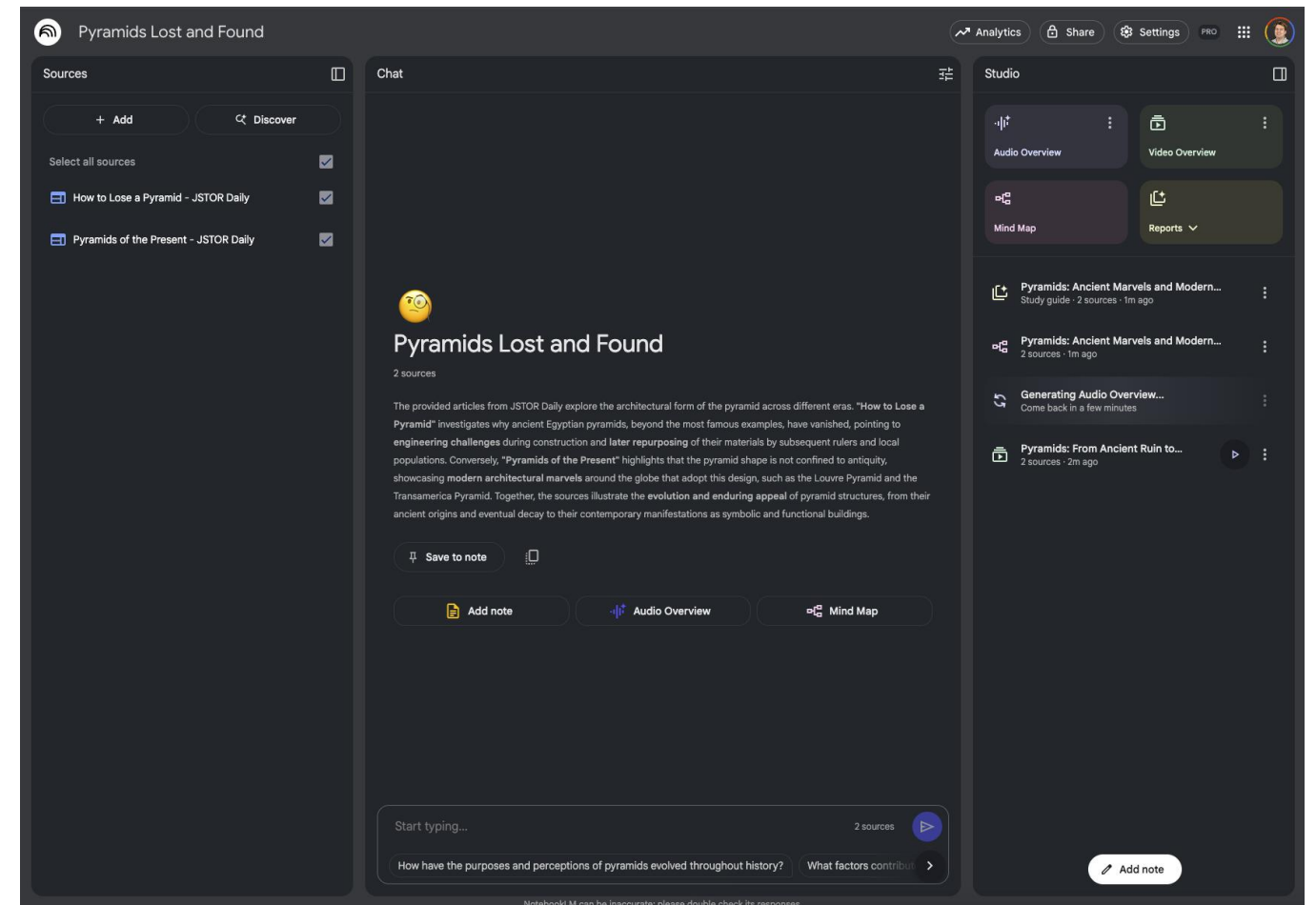
Studio-quality narrated slides automatically generated from your PDF content

Audio Overview

Interactive podcast-style discussions students can "join" and engage with

Study/Mind Maps

Auto-organized concept visualizations for effective review and reinforcement



THE WHERE WE WERE

Pyramids of the Present

We associate pyramids with ancient civilizations, but contemporary humans appear to have an affinity for the peaked structures as well.



The Louvre Museum in Paris Getty

Share

By: Ashley Gardini | May 13, 2025 3 minutes

The icon indicates free access to the linked research on JSTOR.



Mini-Playbook: NotebookLM in 3 Steps

01

Upload your content

Start with existing lesson plans, articles, or book chapters

NotebookLM analyzes and understands your content in seconds

02

Generate Video + Audio Overviews

Narrated slides summarize key concepts visually

Interactive audio discussions provide deeper engagement

03

Create Study Maps

Export different versions for differentiated instruction

Provide students with personalized learning paths

Pro tip: Start with content students find most challenging—transform struggle points into strengths.

Veio 3: Bring Concepts to Life



Prompt 3×8-second clips

Create visual sequences showing cause → event → effect relationships



Assemble in Google Flow

Combine clips and add simple narration to clarify concepts



Export 30-second explainer

Share directly in class or upload to your LMS for student access



Perfect for: Abstract concepts, historical events, scientific processes

The Baroque Period

An Interactive Journey Through Musical History (1600-1750)

Welcome to the Baroque Era

The Baroque period (1600-1750) was a time of musical innovation, emotional expression, and ornate complexity. Today, you'll explore the masters who shaped Western classical music and discover the techniques that still influence composers today.

Quick Knowledge Check

Which composer is known as the "Master of the Baroque"?

- ☐ Wolfgang Amadeus Mozart
- ☐ Johann Sebastian Bach
- ☐ Ludwig van Beethoven
- ☐ Frédéric Chopin

Submit Answer

Claude Artifacts: Instant Materials

Interactive Quizzes

Generate assessment materials with immediate feedback

Adjust difficulty levels on the fly based on student needs

Differentiated Reading

Create three difficulty levels from the same source material

Support diverse learning needs while maintaining core content

Role-Play Scenarios

Build interactive simulations students can explore

Edit live in the artifact pane to customize for your class

Time-saver: Generate a week's worth of differentiated materials in minutes, not hours.

Claude Artifacts: Games

Gamification

*Turn your problem set into a
playable challenge with
instant checks*

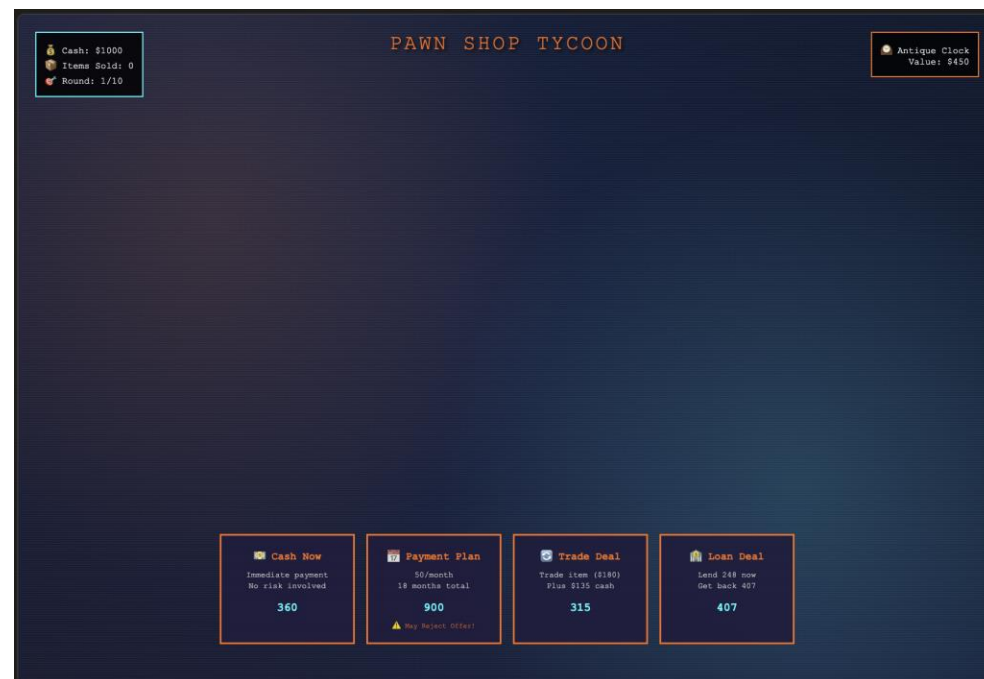
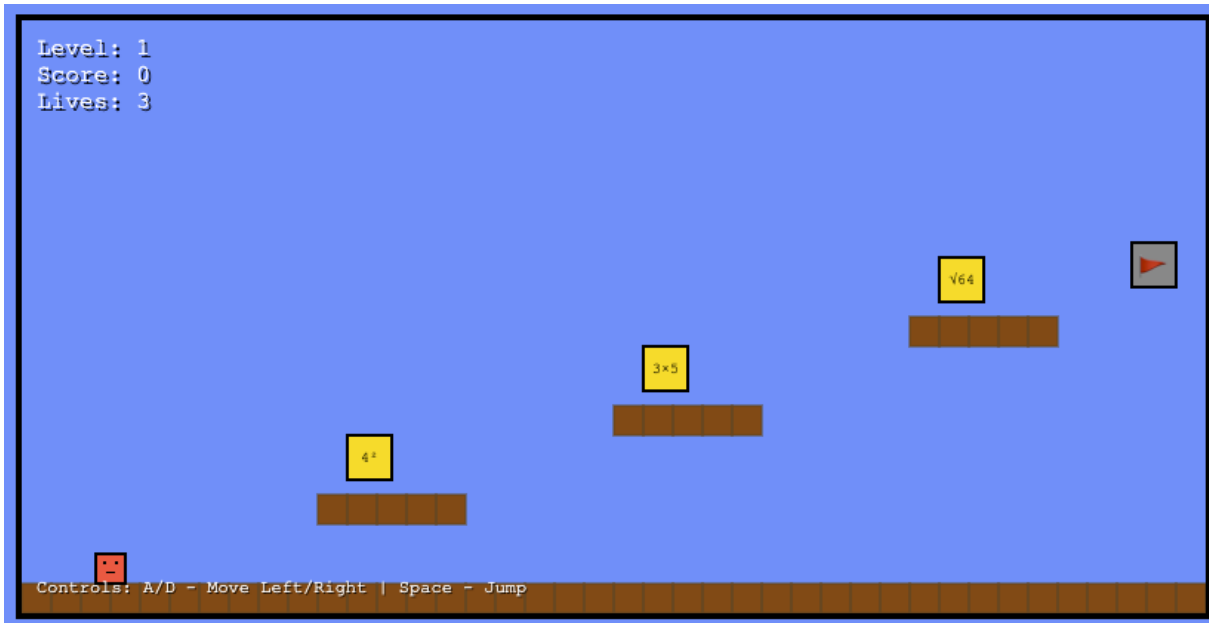
"Fun" Learning

*Supports mixed-ability groups
without rewriting content*

Platformer Game

Build interactive simulations students can explore

Edit live in the artifact pane to customize for your class



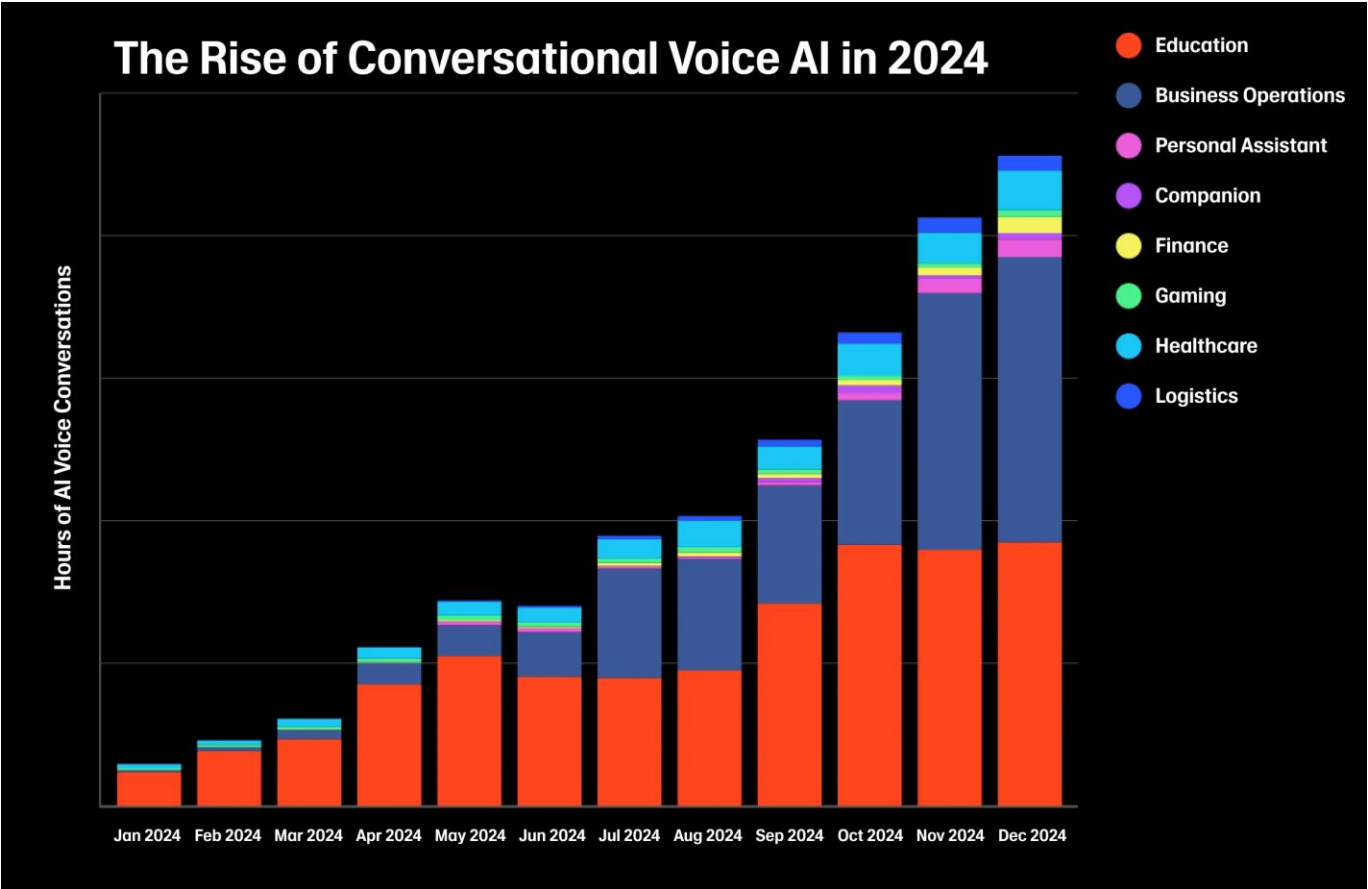
ElevenLabs: Authentic Voices

Transform text into natural-sounding audio for enhanced learning:

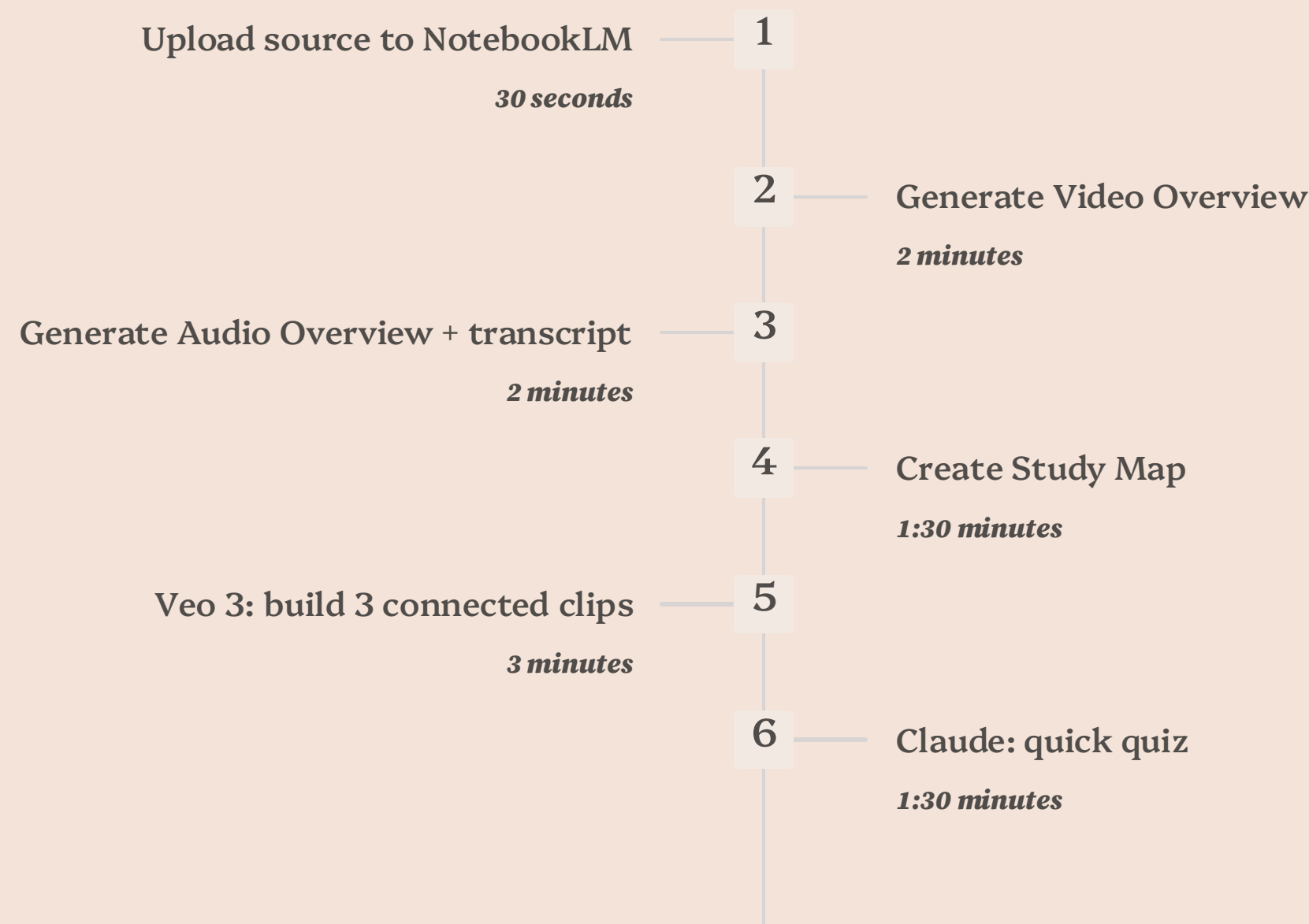
- *Create professional narration in ~30 seconds*
- *Support multiple languages for diverse learners*
- *Use character voices for historical or literary perspectives*
- *Export MP3 files for easy attachment to LMS or NotebookLM*

✅ **Accessibility win: Audio versions of content support students with reading difficulties and diverse learning preferences.**

Example: Create a "time traveler" character to narrate historical events from a first-person perspective.



The Power Stack: 10-Minute Lesson Recipe



In just 10 minutes: From a single source to 7 classroom-ready resources that work together!

You Pick the Topic

One subject → seven classroom-ready outputs

You name the subject.

Any course

Live demonstration

We pull one source. Article/PDF/webpage

Watch the pipeline build your content.

Leave with resources tailored to your specific teaching needs



Our goal: You walk away with practical solutions for your most challenging teaching moments.

Accessibility by Design (QM 8.3 / 8.4)

These tools help you meet Quality Matters standards while saving time:

Multiple Format Support

- ***Captions: NotebookLM Video Overview***
- ***Transcripts: Audio Overview (Interactive)***
- ***Alt text: Auto-descriptions for visuals***

Inclusive Design

- ***Differentiated reading levels***
- ***Multiple means of engagement (UDL)***



- ❏ ***Built-in compliance: These tools automatically incorporate accessibility features, helping you meet standards without extra work.***



Resources

- ***CETL AI Resources:*** <https://iecc.edu/node/2714>
- ***Student Resources (Development):*** <https://iecc.edu/node/3231>
- ***Semester based AI course in Canvas***
- ***IECC CETL: email Mike Conn or myself***