



HALVES PRESENTATION

GHOST OF JOSEPH PRIESTLEY

Presented by Team **Ghaist**

Turn a stranger from 1791 into someone
worth knowing





TEAM



NA CHEN
Programmer



SHIWEI HONG
Producer



YUHUAI HUANG
Programmer



AGNES ZHANG
Artist



JERRY ZHENG
Programmer



TEAM



Michael Christel
Instructor



Scott Stevens
Instructor



**Shirley
Saldamarco**
Consultant



PROJECT CONTEXT

Invented carbonated water

Friend of Ben Franklin



150+ works on science, religion and education



Discovered Oxygen

1733 - 1804

WHO IS PRIESTLEY?



CLIENTS



Jeff Johnstonbaugh

The Director of the Priestley-Forsyth Memorial Library



Harry Lewis

Subject Matter Expert on Priestley's History



TARGET AUDIENCE



**12 to 16 Years Old
Teenagers**



DESIGN CONSTRAINTS



MEMORIAL LIBRARY



8 X 8 SPACE



10K

10K BUDGET



PROJECT VISION



**Turn a stranger from two hundred years ago,
into someone you actually want to know.**





We don't tell them about Priestley,
we let them meet him.



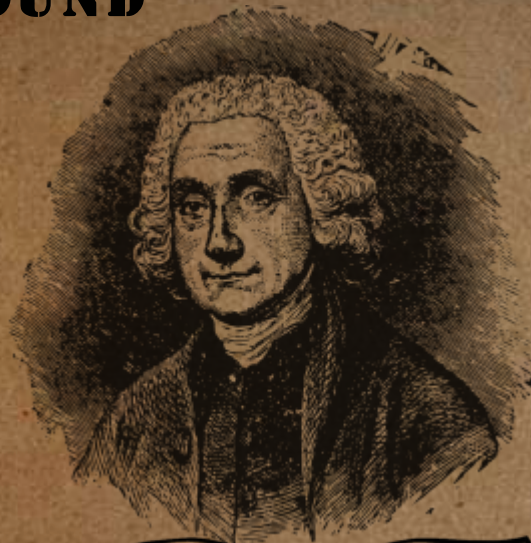


EXPERIENCE WALKTHROUGH

STORY BACKGROUND



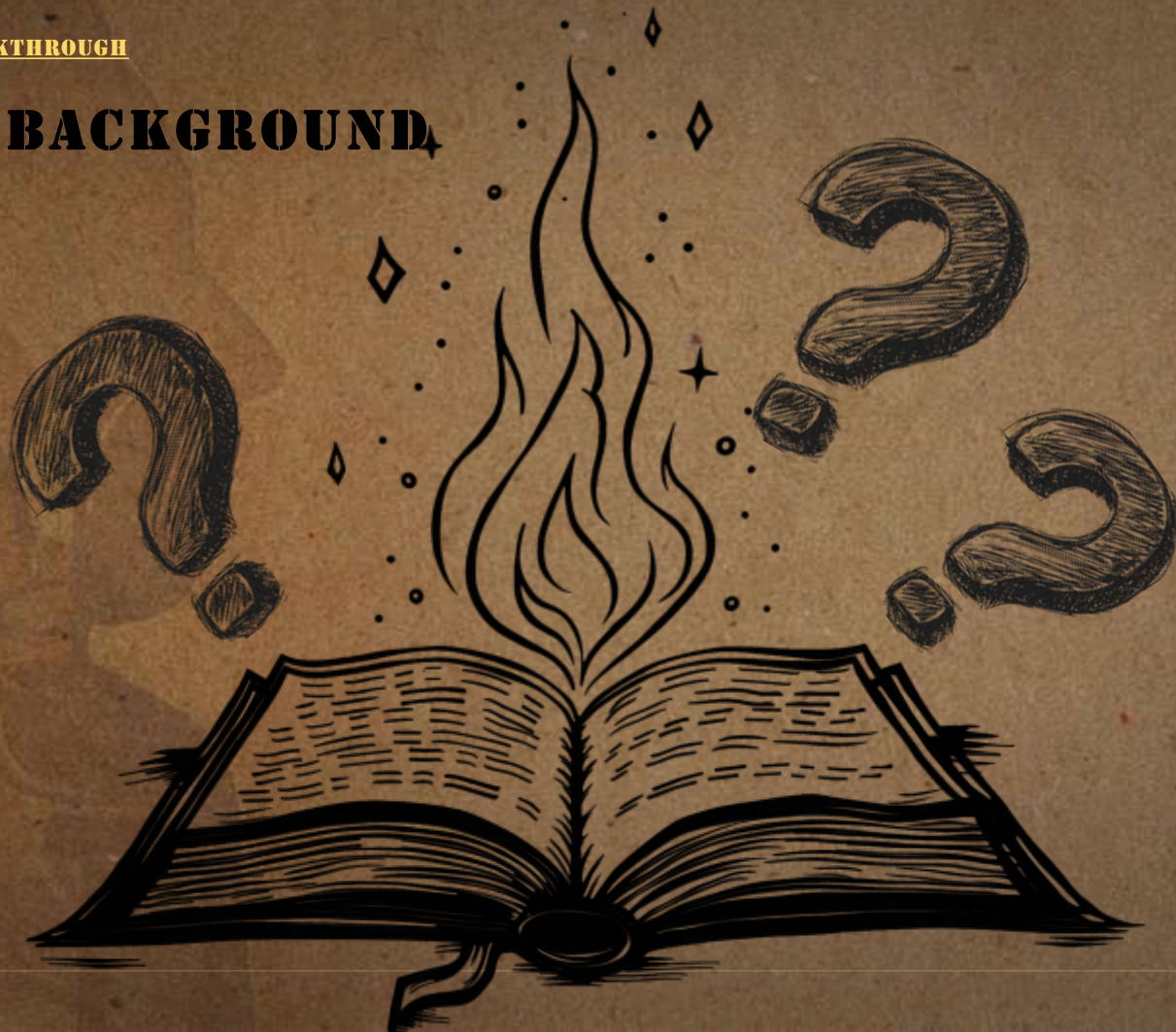
Hidden secret





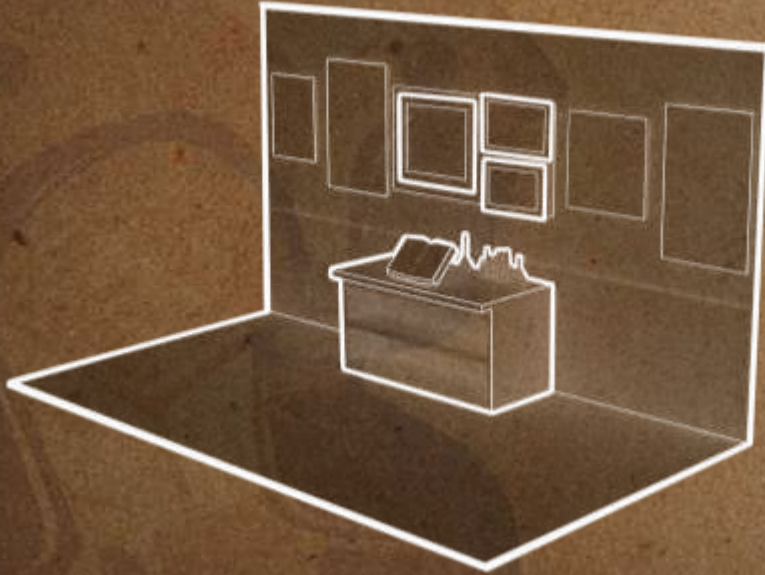
EXPERIENCE WALKTHROUGH

STORY BACKGROUND





PHASE 1 - WHAT IS THAT?



The installation



Someone is calling



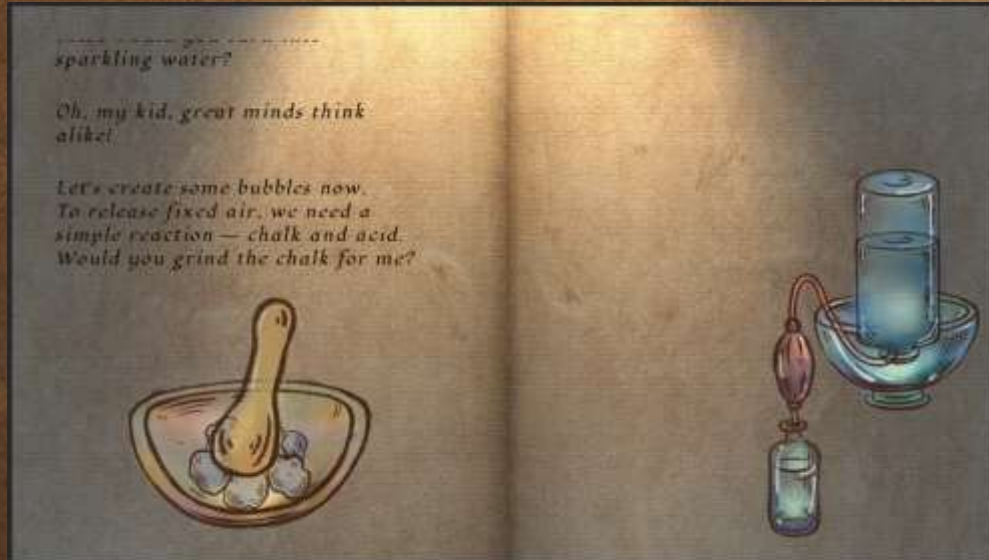
PHASE 2 - WHAT DO I DO?



Touch the diary



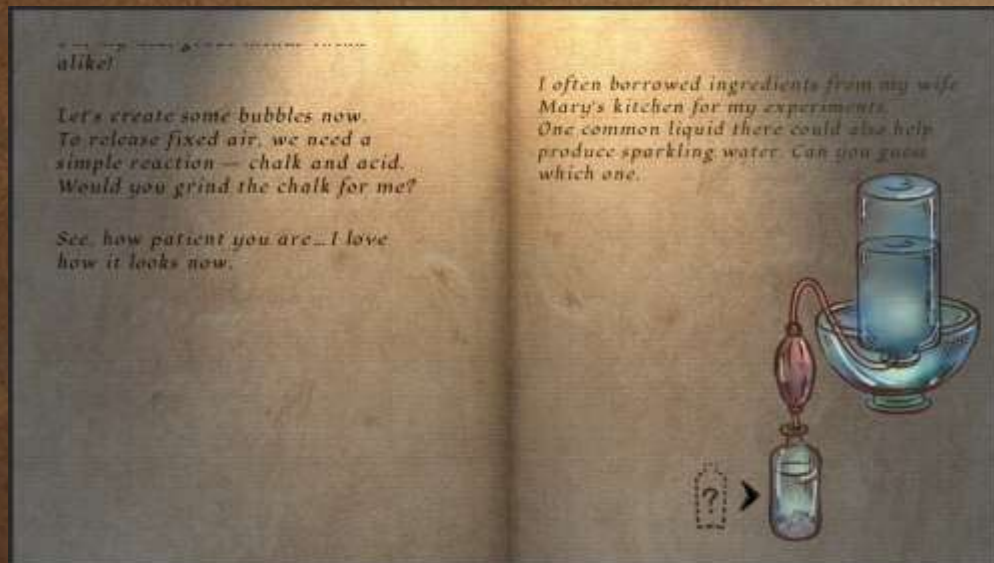
PHASE 3 - WAIT, HE INVENTED SODA?



Help with experiment



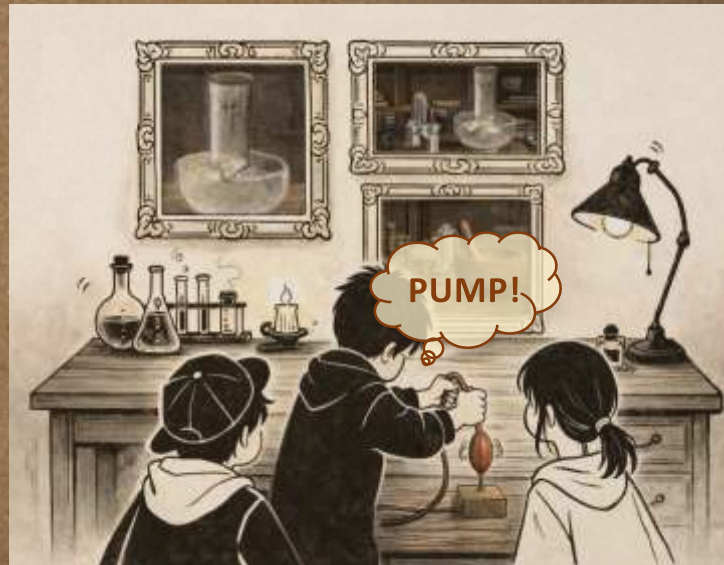
PHASE 4 - IS IT... VINEGAR?



Yes or No mystery



PHASE 5 - PUMP THE BLADDER



Pump the bladder



PHASE 6 – THE END



Repair the faded painting



EXPERIENCE WALKTHROUGH

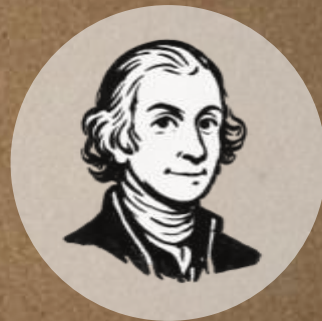
EXPERIENCE DESIGN APPROACH



ATTRACT



ENGAGE



DISCOVER



BEYOND A TALKING HEAD

AI talking head?



People don't know Priestley

They wouldn't even know what to ask him





DESIGN DECISION - INSTALLATION

MEET PRIESTLEY

From **conversation** to **encounter**:
why we built **a world**, not a chatbot.

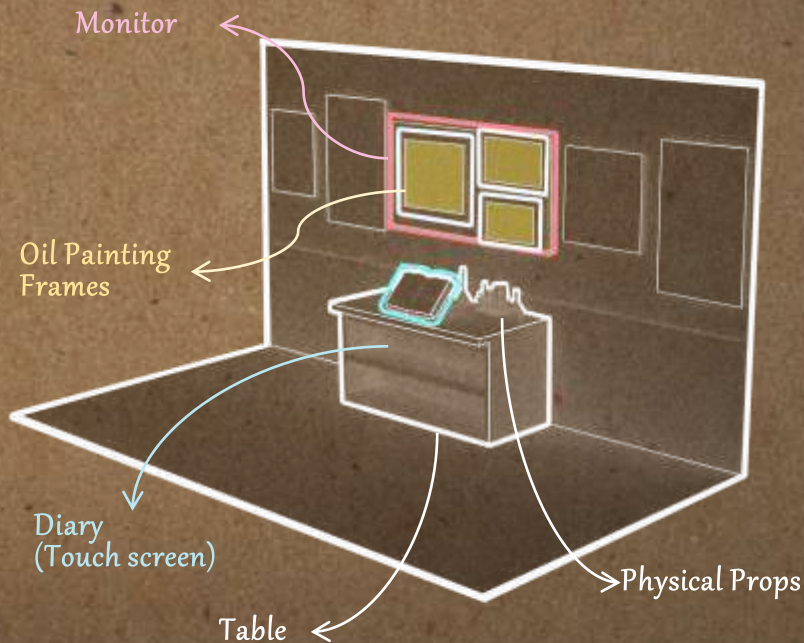




DESIGN DECISION - INSTALLATION

A CORNER OF PRIESTLEY'S LIFE

An installation where teenagers meet him through his **diary**, his **experiments**, and the defining moments of his life.





FROM HANDWRITING TO VOICE

- Kids today are not familiar with cursive
- Unstable Handwriting recognition

Hey, this is
Jerry

4 ey this §
Jerry





CARBONATION EXPERIMENT ITERATION



THE FULL EXPERIMENT

Full scientific process, and meet
Priestley as your technical consultant.





THE WRONG CENTER

We were teaching chemistry, but our goal was to **introduce a person.**

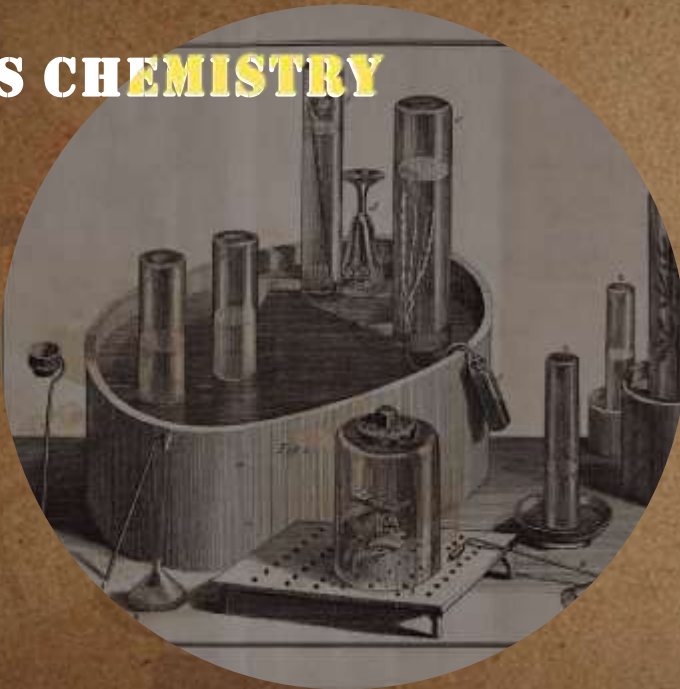
- Gameplay is too long.

- Weak Challenge in mechanics.

- Goal mismatch.



LESS CHEMISTRY



MORE PRIESTLEY





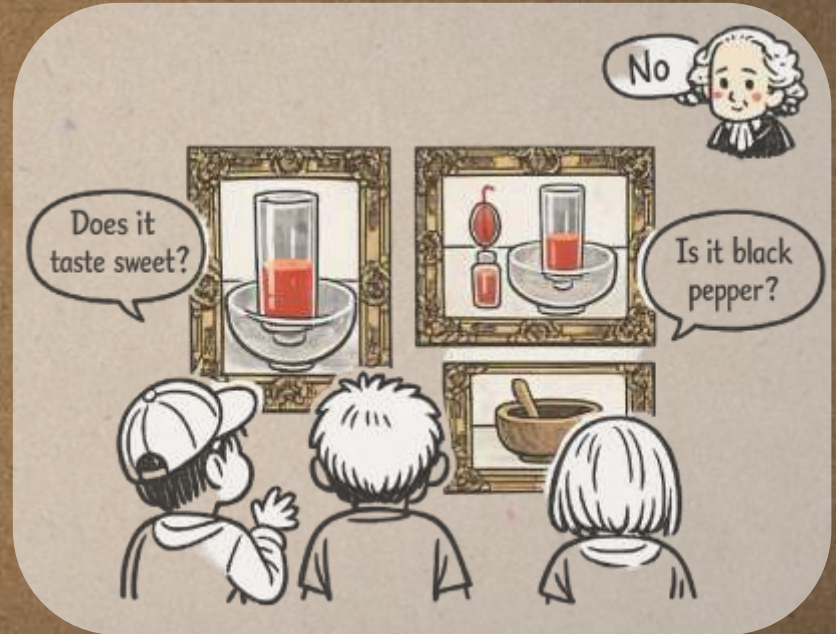
We needed something **engaging**,
while revealing **Priestley's personality**.





THE YES-OR-NO MYSTERY

- Priestley presents a riddle
- Players ask yes-or-no questions
- Priestley could only answer
yes-or-no, plus a hint
- Keep talking until riddle solved





WHAT THIS SOLVES?

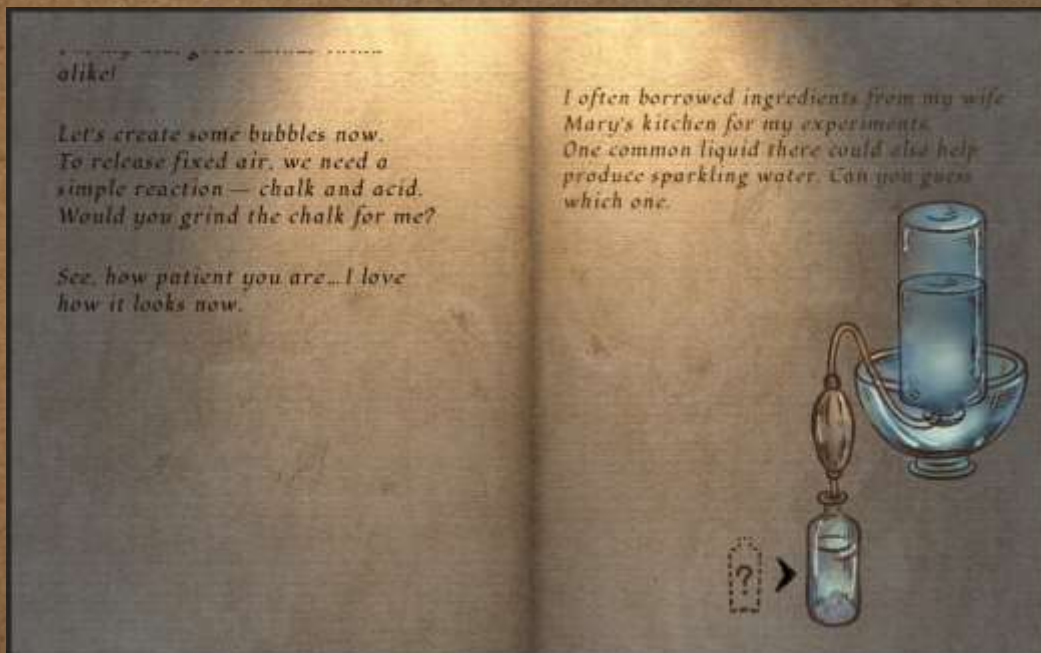
Puzzle



Conversation
(fits LLM)



Know more
about Priestley





BEHIND THE SCENES - FULLY LOCAL TECH STACK



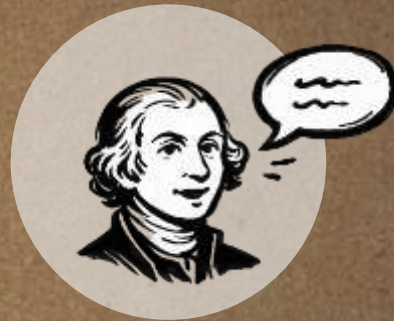
The Ear

Players speak to Priestley using
Audio-Speech-Recognition service



The Brain

A Llama-3-8B Large Language Model
generates Priestley's response



The Mouth

Players hear from Priestley through a
local text-to-speech model



WHAT WE HEARD AND CHANGED

- What we have learned from Quarter and Playtests





QUARTER CRITICS

- Handwriting input is too risky
- Why should people care about Priestley
- Reduce the scope and find the core mechanics

WHAT WE IMPROVED

- Voice-based interaction
- They care because we made Priestley interesting and relatable
- Yes-or-No Mystery



PLAYTEST WITH TARGET AUDIENCE

- **The Yes-or-No Mystery gameplay was established within the playtesters**
- **The installation drew attention before the experience even started**
- **Teenagers walked away knowing Priestley's scientific achievements**





WHAT WE NEED TO KEEP ITERATING

- Stronger opening guidance
- Puzzles need better scaffolding
- Better Transitions between scenes





TIMELINE

THREE LEVELS PLAN



Level 1

Carbonation Experiment



Level 2

Oxygen Experiment



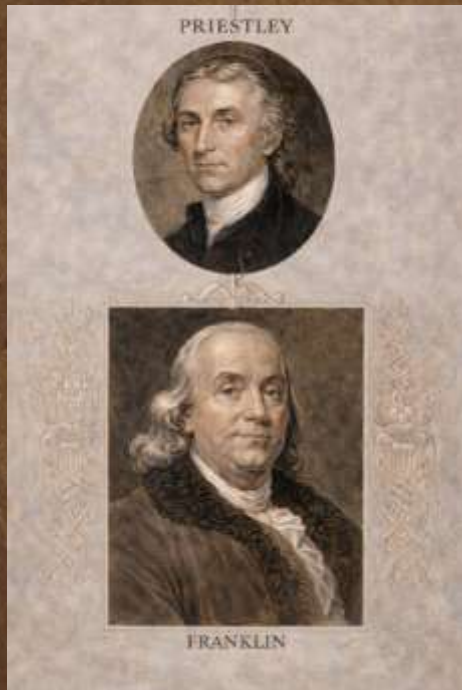
Level 3

Birmingham Riot



TIMELINE

MORE THAN A CHEMIST



Friend with Ben Franklin



Theologian



Refugee



MILESTONES PLACEHOLDER





SUMMARY

VISION

Turn a stranger from 1791 into someone you actually want to know

GOAL

In 15 minutes, take 12 to 16 years old audiences from "Who is Priestley?" to "I want to learn more about him."

AUDIENCE

12 - 16 years old teenagers
From 1 on 1 to small group
(3 - 5)

DELIVERABLE

An installation ready to run at the library with zero internet dependency

A faint, stylized illustration in the background on the left side of the page. It depicts a person's profile facing right, with a circular object, possibly a hat or a bowl, positioned near their head. The illustration is rendered in a light, textured style that blends with the background.

THANK YOU!



MORE

HOW PRIESTLEY'S PERSONALITY COMES THROUGH CONVERSATION

Scripted Reactions

Real-time LLM Responses

End-of-level Monologue



MORE

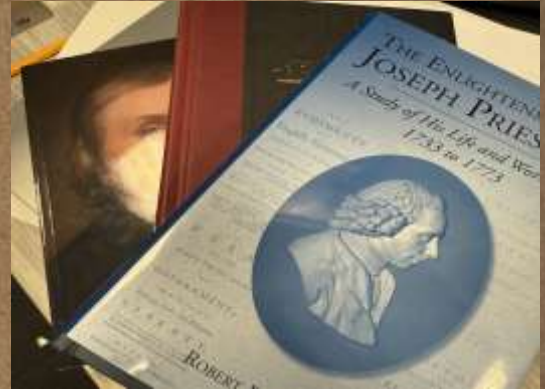
HOW DO WE LEARN PRIESTLEY



Field Trip



Subject Matter Expert



Historical Research



MORE

WHY PLAYERS STAY

Yes-or-No Mystery

Group Discussion

Priestley's Character