ESCAPE
FROM THE CLASSROOM

THE POTENTIAL OF EDUCATIONAL ESCAPE ROOMS IN A POST-PANDEMIC WORLD

DR PANAGIOTIS FOTARIS

PRINCIPAL LECTURER , UNIVERSITY OF BRIGHTON

GAME IT NOW SEMINAR, 10/12/2021

ABOUT ME

- Principal Lecturer in Digital Games Development at the University of Brighton
- Educational escape room researcher (588 citations)
- Chair of the 21st European Conference on e-Learning (ECEL 2022)
- Chaired 14th & 15th European Conference on Games Based Learning (ECGBL 2020, ECGBL2021)
- Workshop organiser

PURPOSE OF THIS KEYNOTE

- Introduce educational escape rooms
- Present a framework and the tools you need to get started
- Inspire you

COMPANY TRAINING DAY VS. ESCAPE ROOM TRAINING

WHAT IS AN ESCAPE ROOM?

- A **live-action team** activity
- involving being **locked in a room**,
- **discovering clues** and
- **solving puzzles**
- within a **set period of time**
- in order to **escape** from a fictitious situation.

IN-PERSON ESCAPE ROOM

REC
LIVE
REMOTE PLAY
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Escape Experie...
and 2 more
5
You
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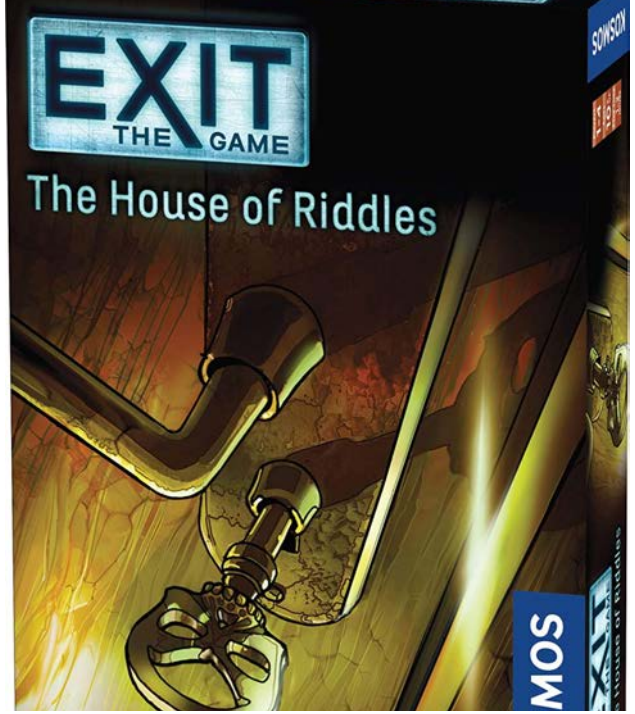
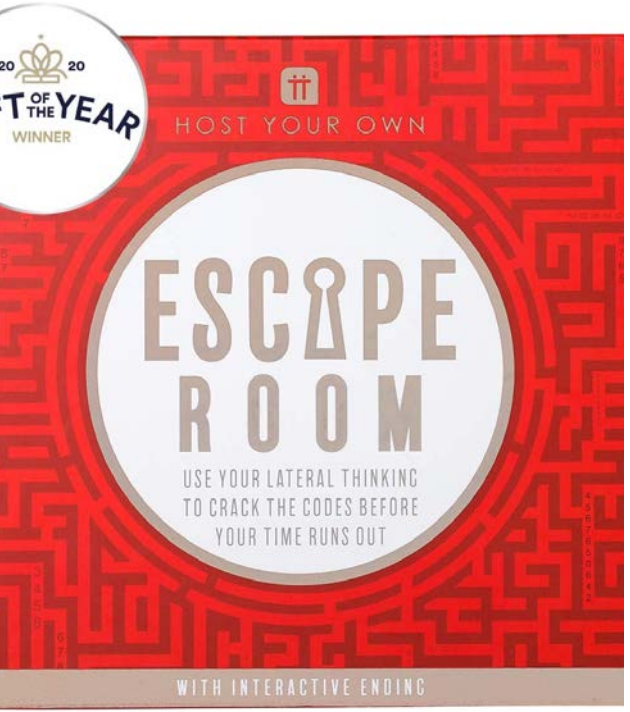
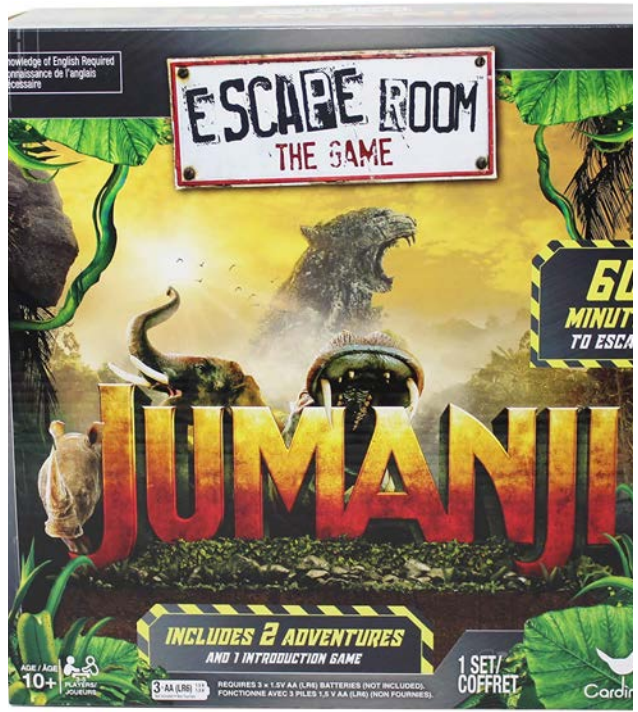
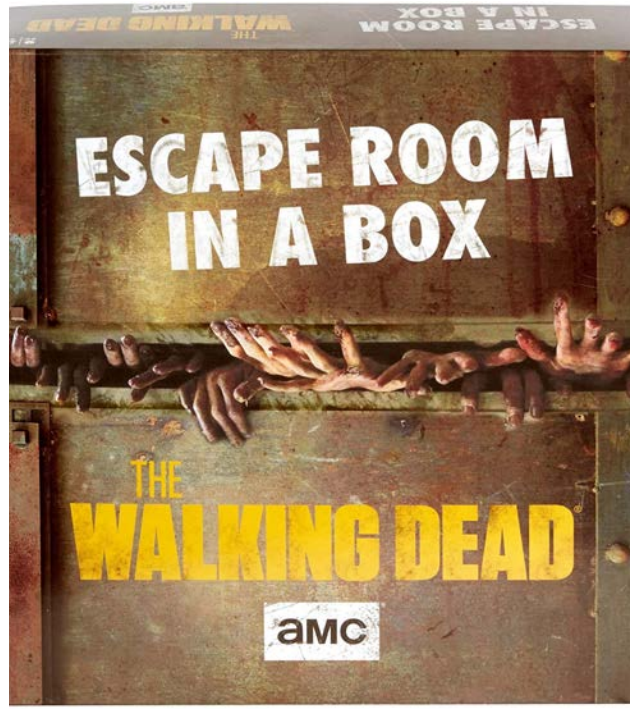
Nathan Akers
Zack Akers
nick akers
Escape Experience

TABLETOP GAME

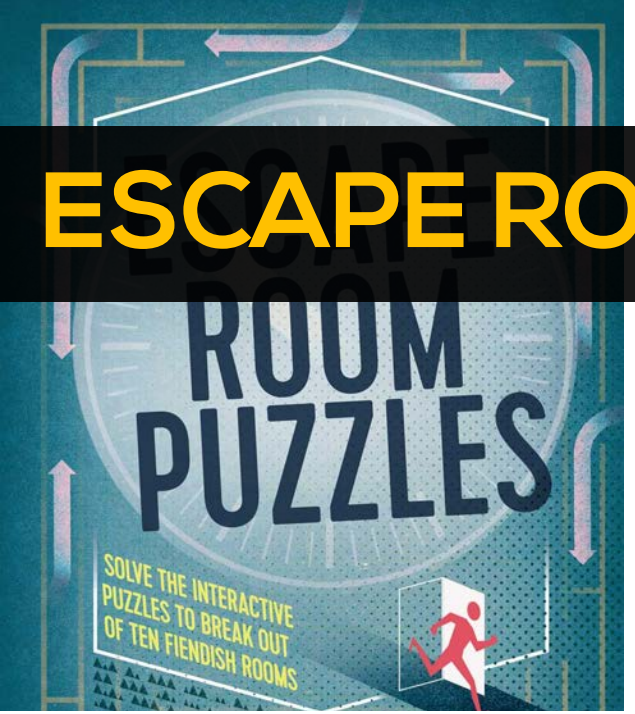


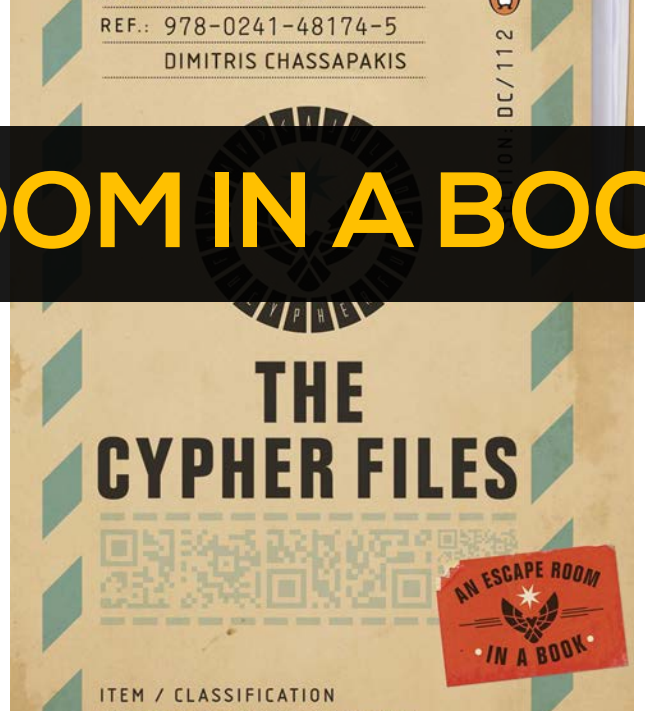


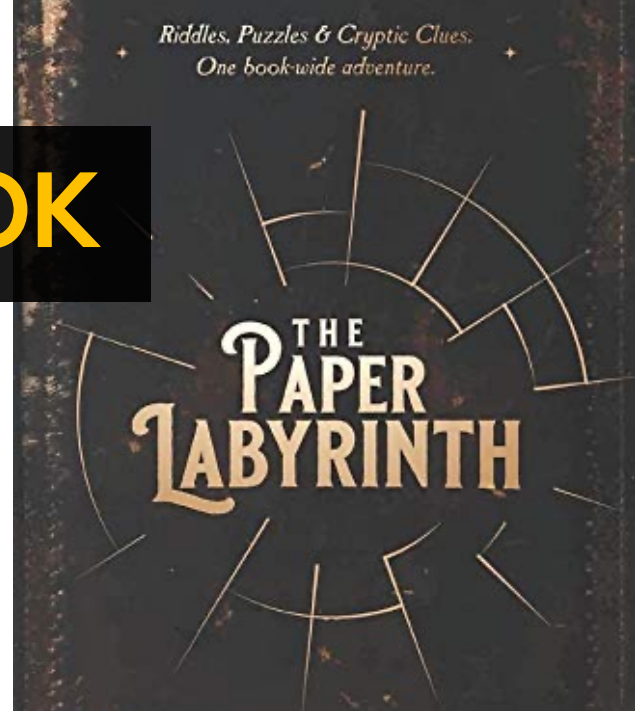


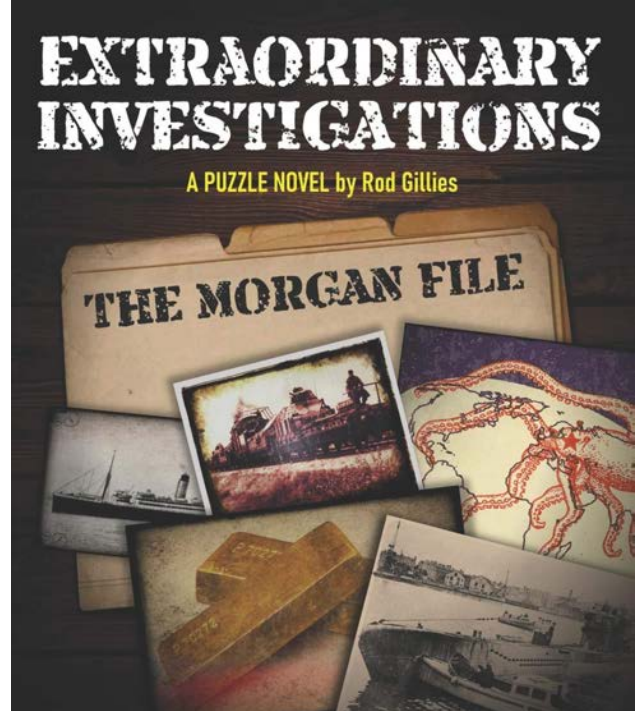


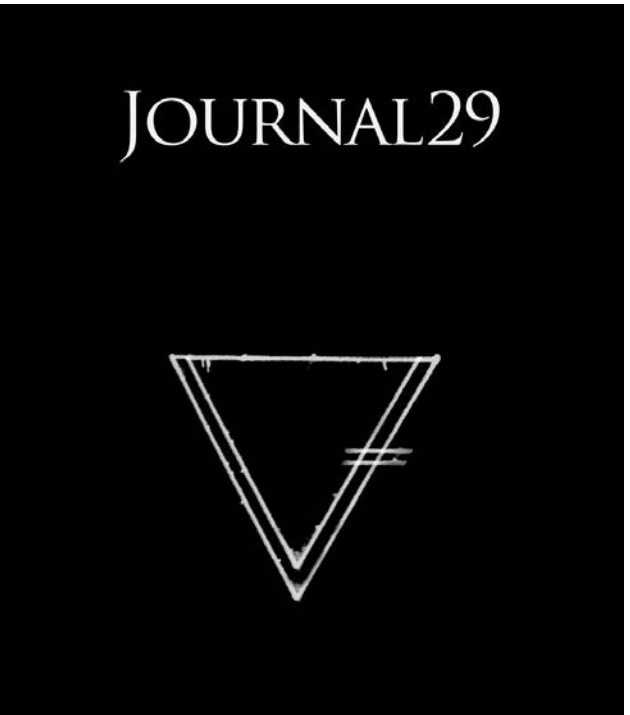
ESCAPE ROOM IN A BOOK

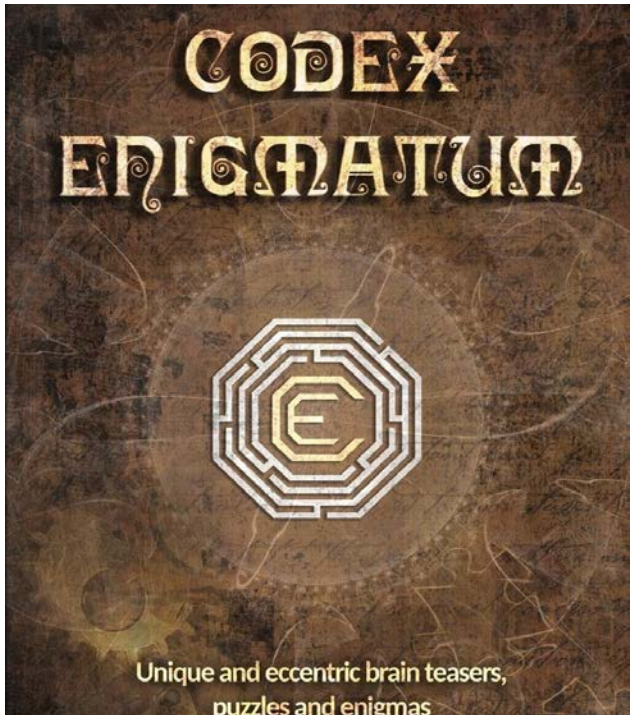


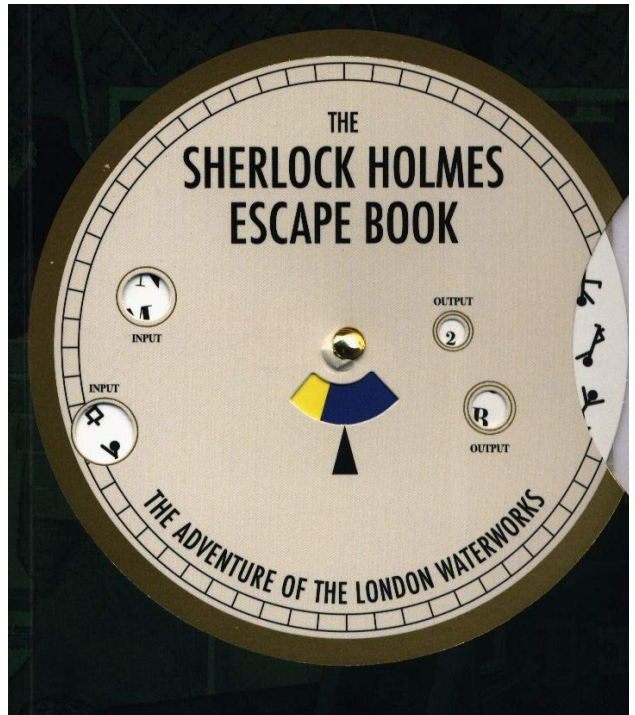


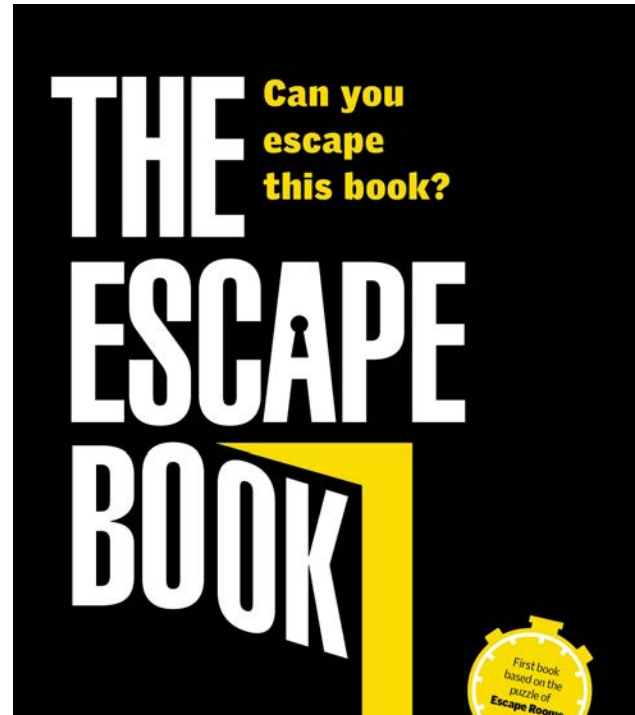










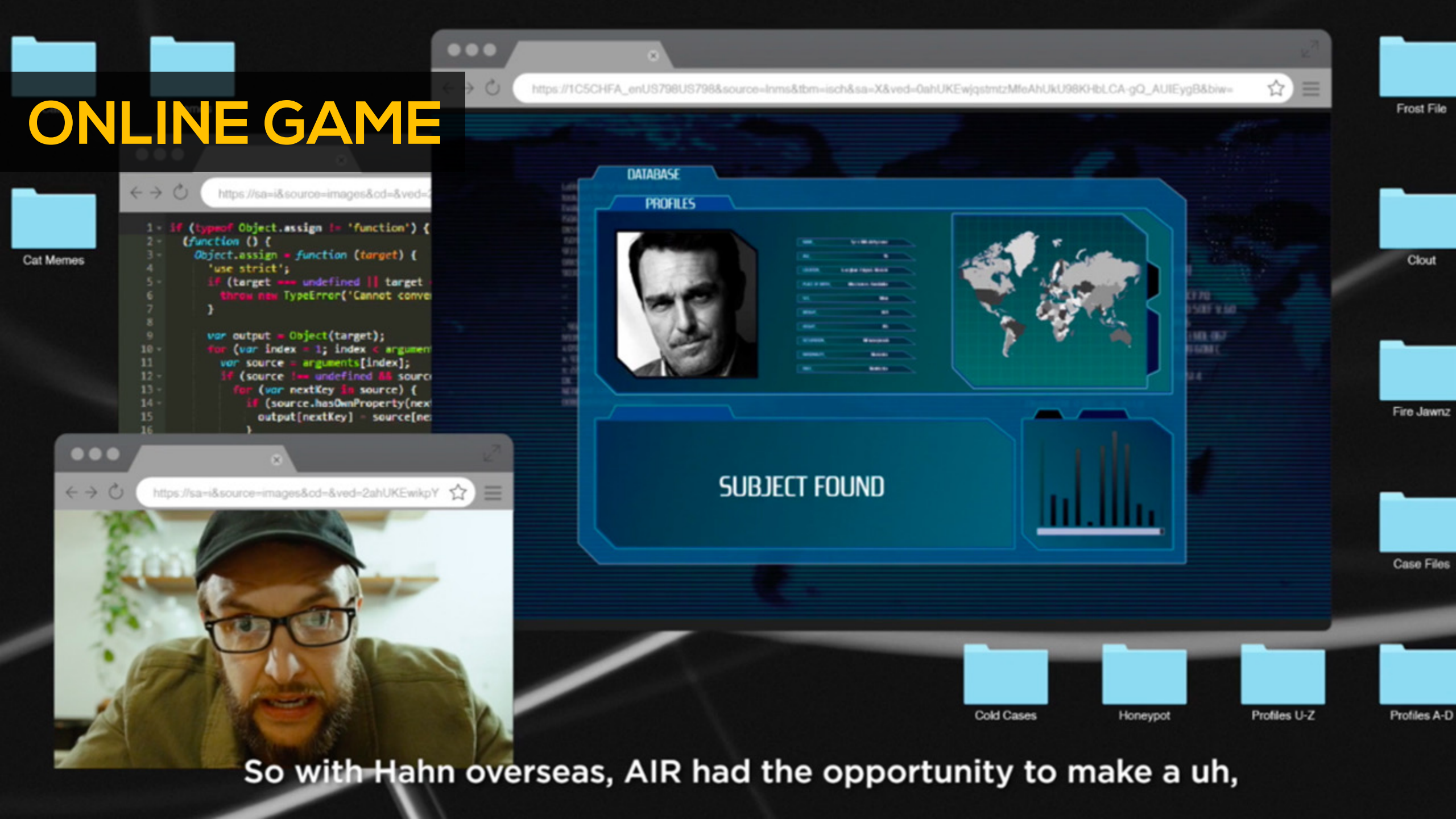


ESCAPE ROOM IN A POSTCARD

ESCAPE ROOM IN A T-SHIRT

PRINT AND PLAY ESCAPE ROOM

ONLINE GAME



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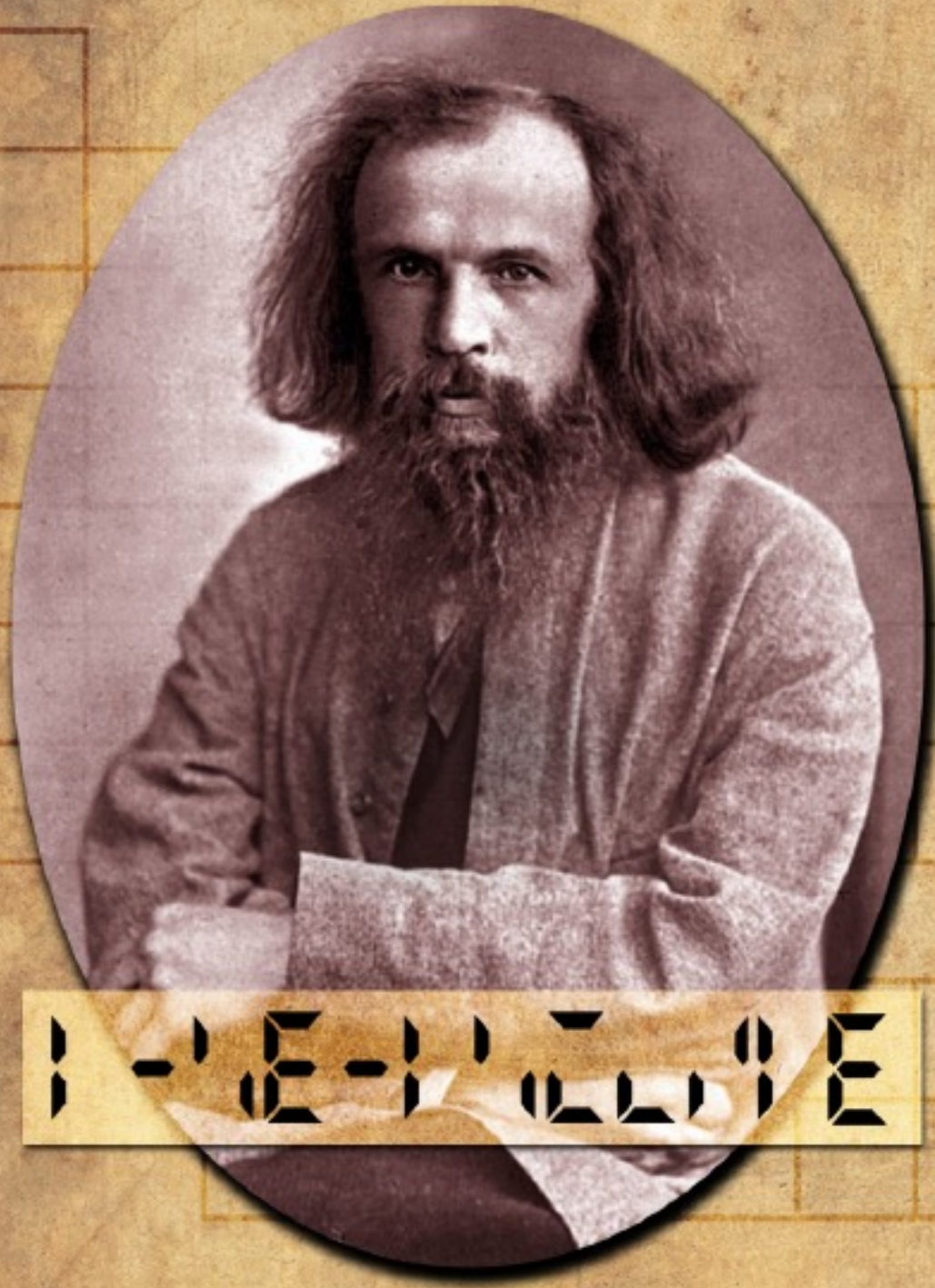
PLAYTIME



"LOOK FOR PEACE AND CALM IN WORK; YOU WILL FIND IT NOWHERE ELSE."

--DMITRI MENDELEEV

Image taken from "Wish You Were Here"
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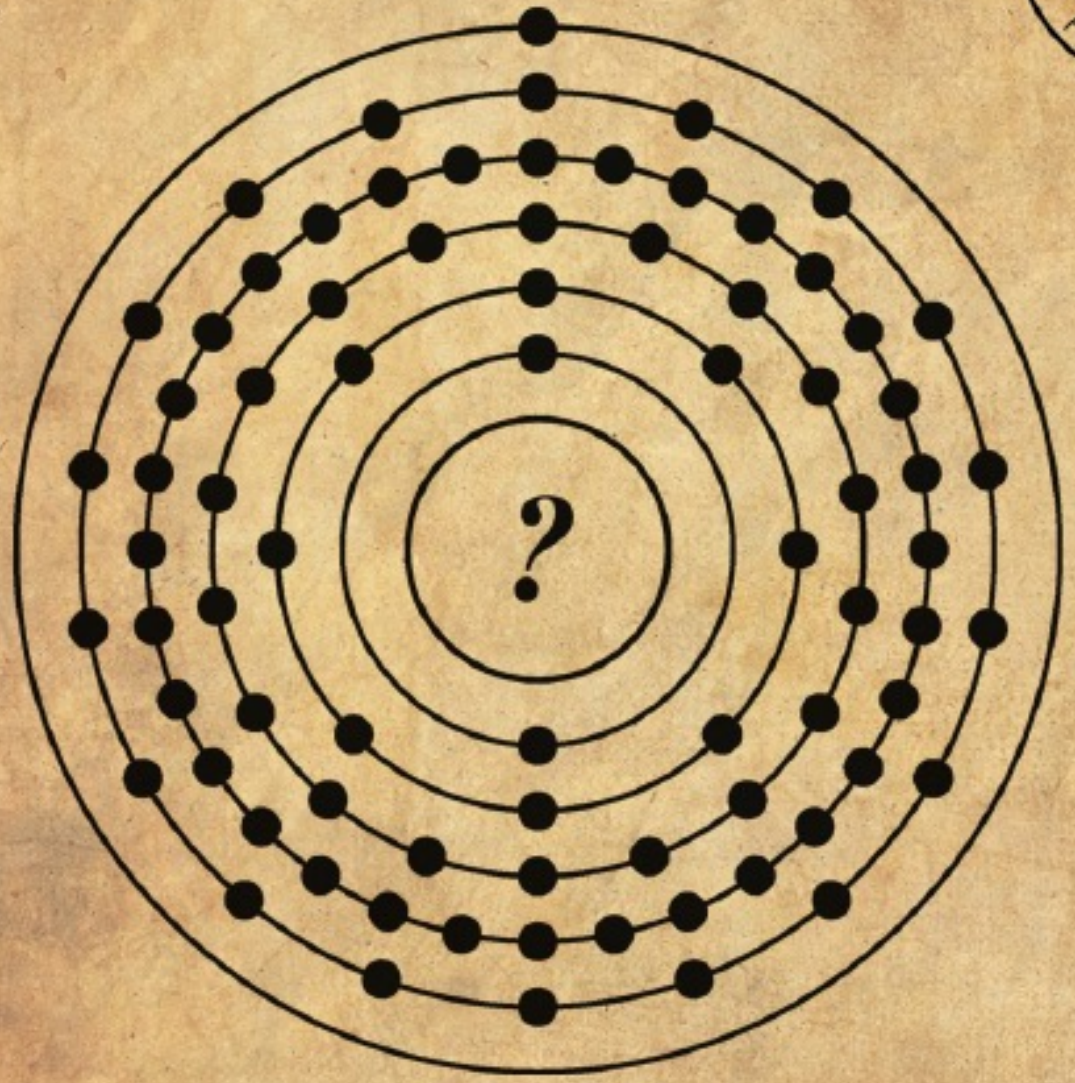


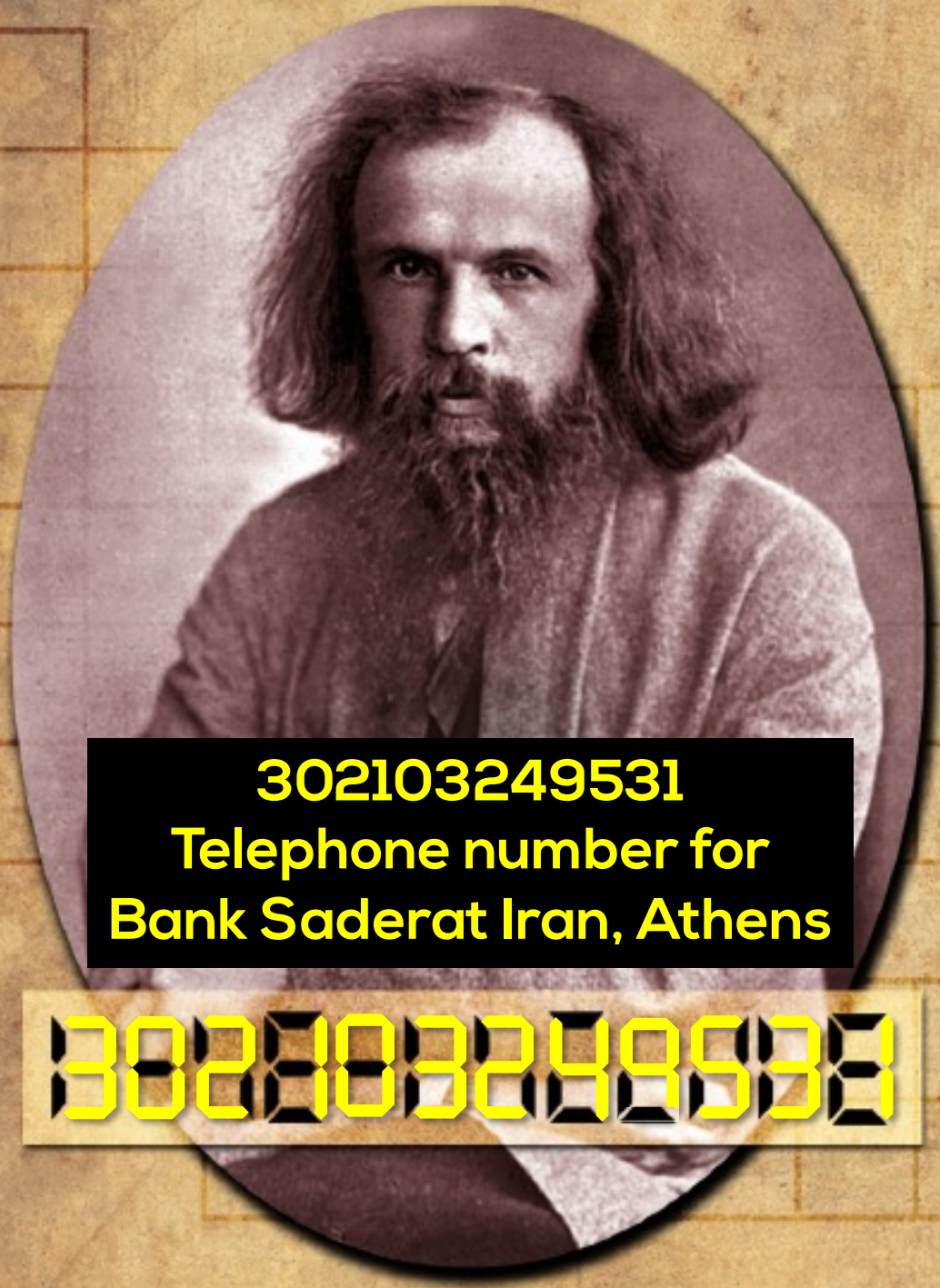
FC MnPSc'TiB CPMgMgPVBBe

CaOFK CHAr, AlHMnHeB MnPSc

LiHSi KHTiB AlB. F OHTiB

KCaPMgBSi HeScCa SiPCa

HeMn LiOPFLiB...



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AND CALM IN WORK;
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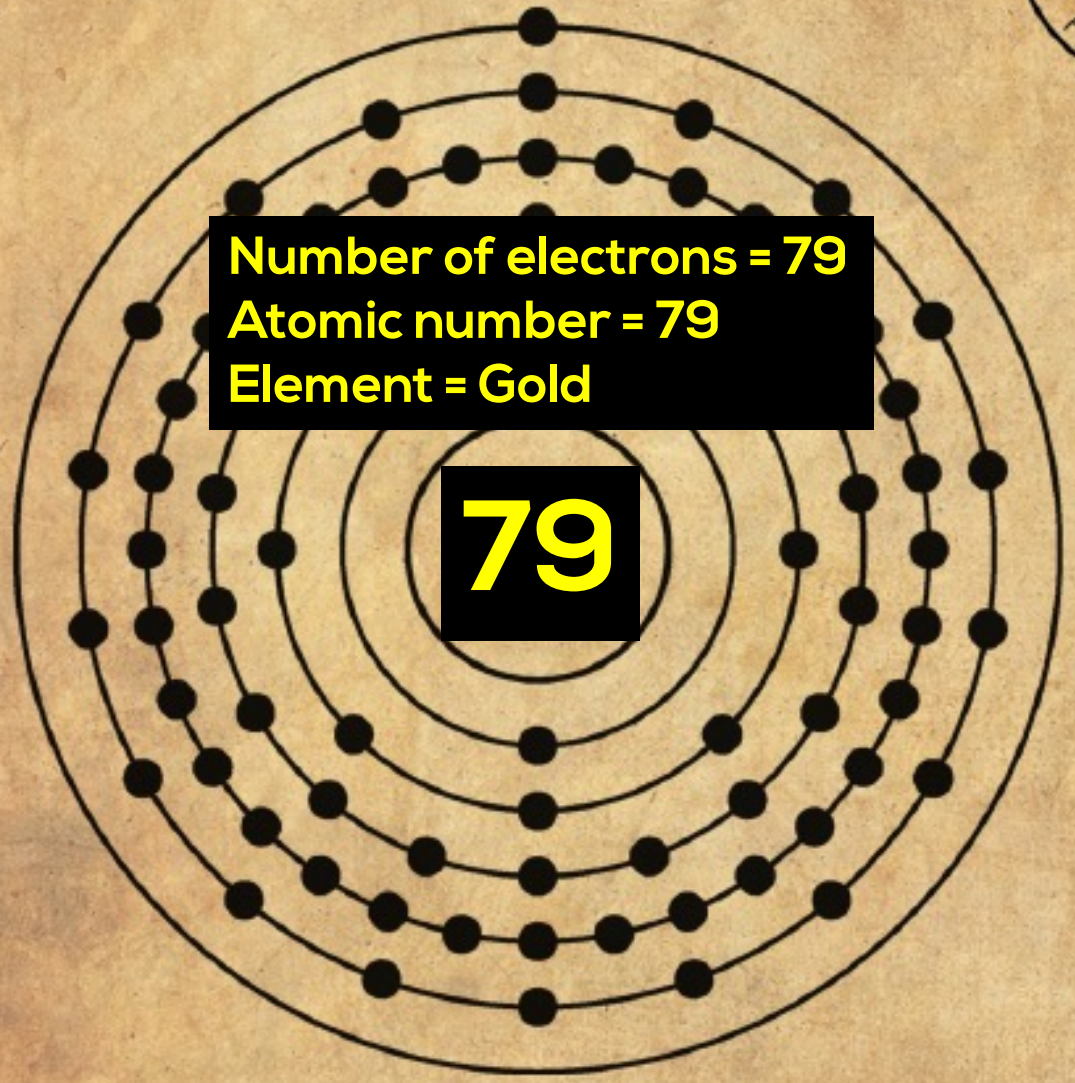
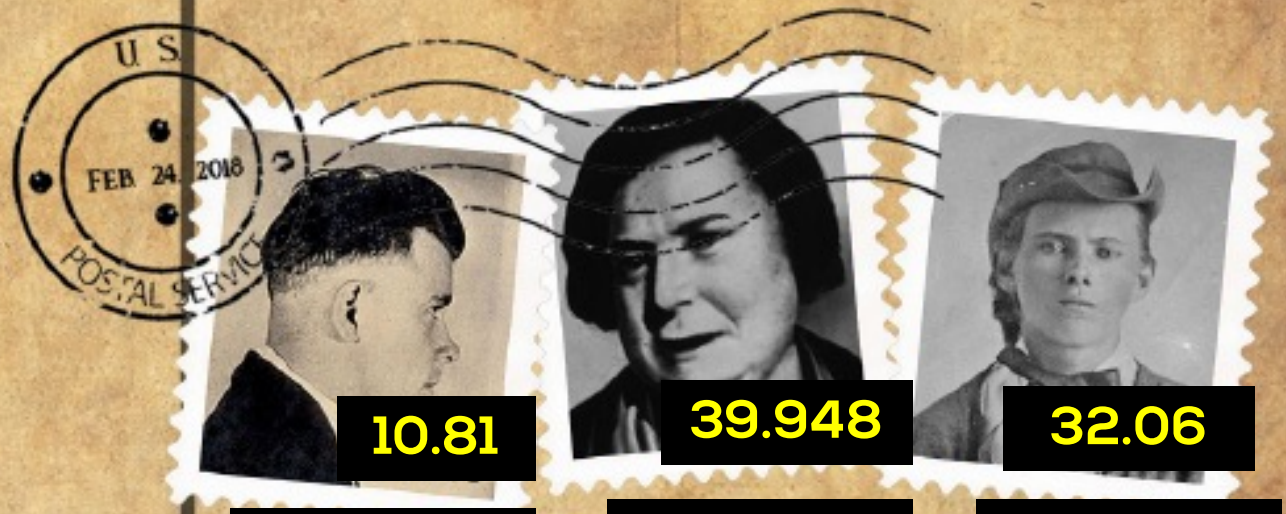
--DMITRI MENDELEEV

Periodic Table of Elements





Atomic weight of Boron (B)

Atomic weight of Argon (Ar)

Atomic weight of Sulfur (S)

F C MnPSc'TiB CPMgMgPVBBe

F = Atomic symbol of Fluorine
Atomic number = 9
9th Letter in the alphabet = I

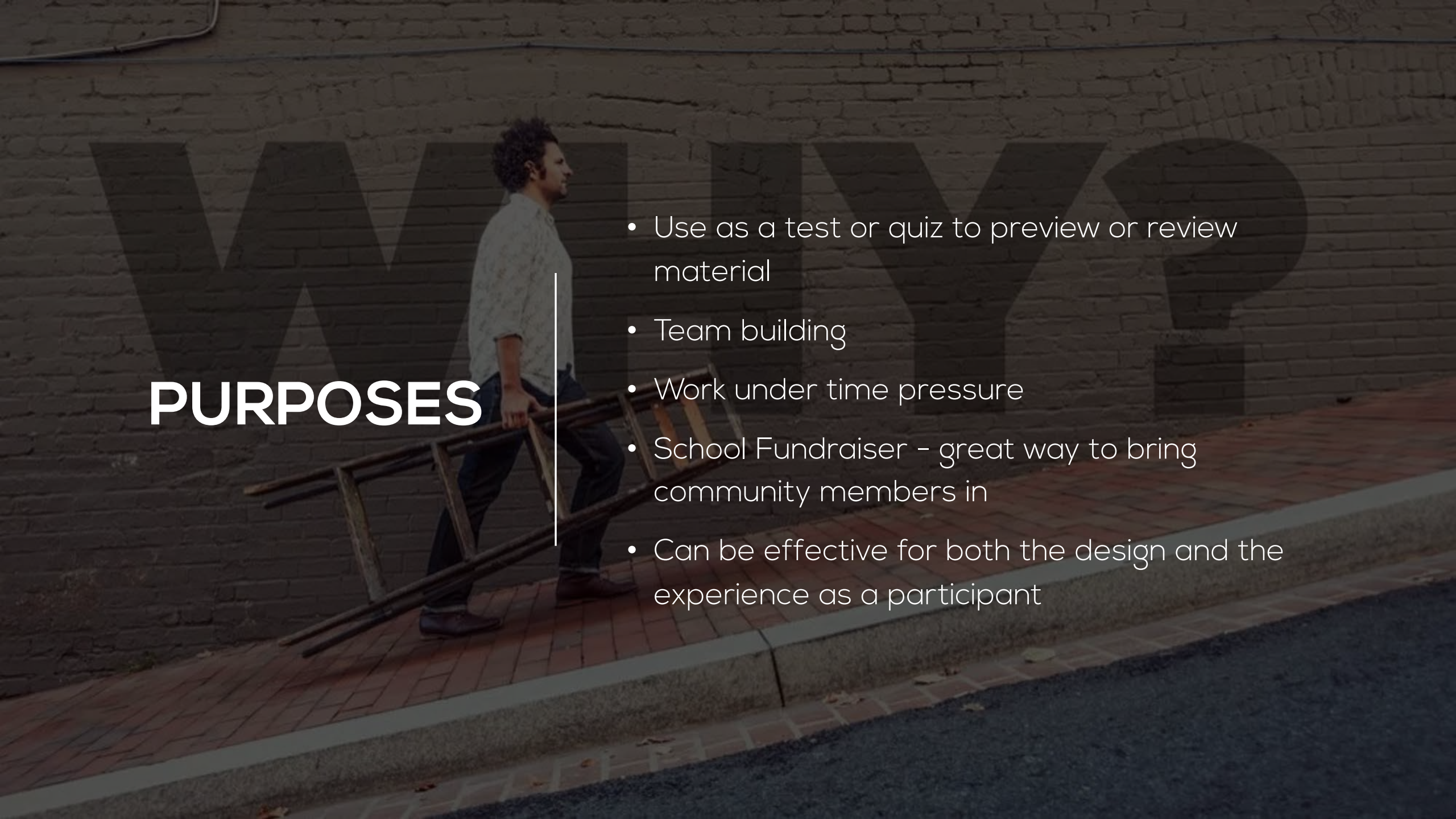
KCaPMgBSi HeScCa SiPCa

HeMn LiOPFLiB...

EDUCATIONAL ESCAPE ROOM

An **instructional method** requiring learners to:

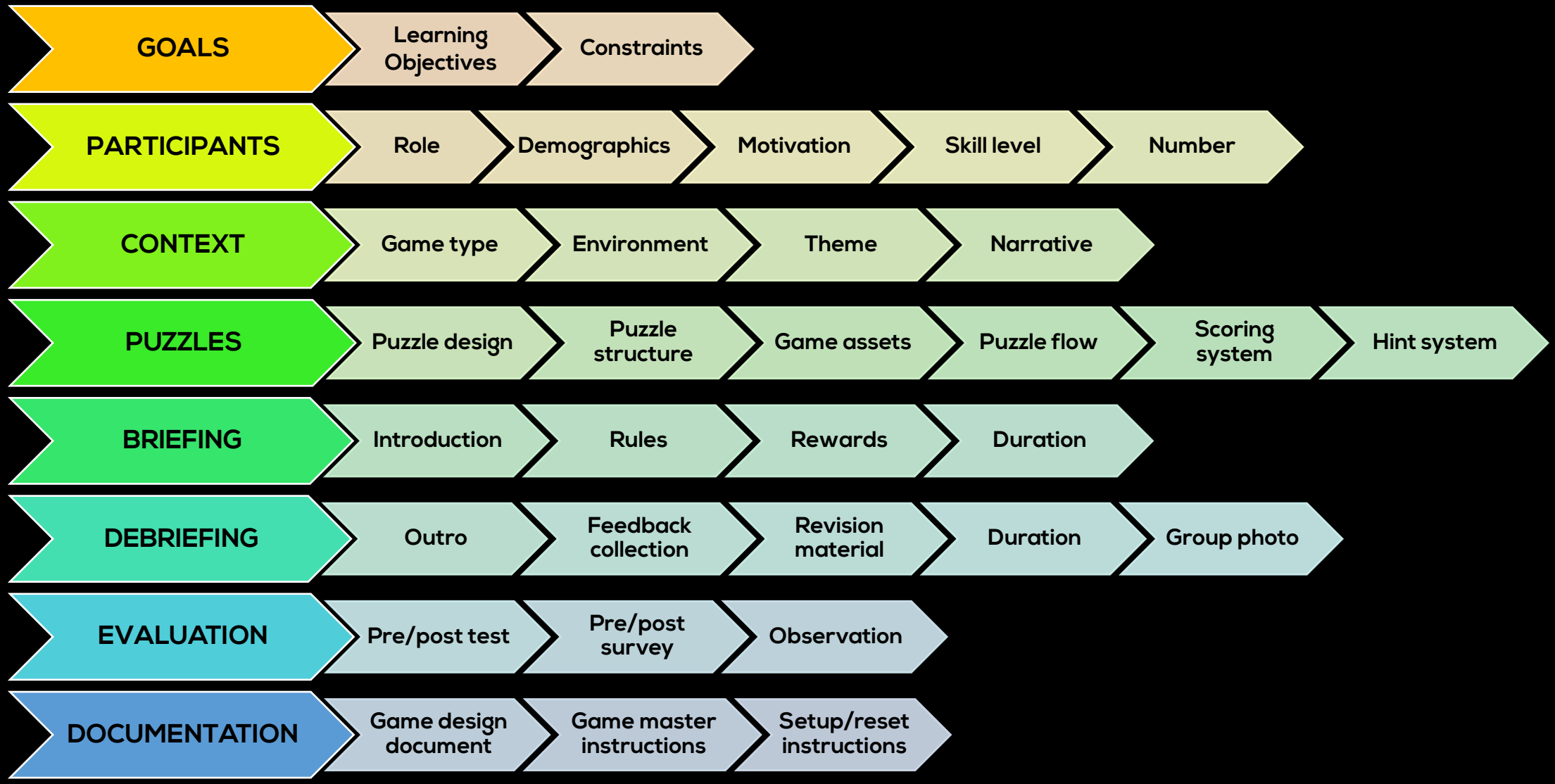
- participate in **collaborative or solo playful activities**
- explicitly designed **for domain knowledge acquisition** or **skill development**
- so that they can accomplish a specific **goal** (e.g., escape from a room or break into a box)
- by **solving puzzles** linked to unambiguous **learning objectives**
- in a **limited amount of time**.



PURPOSES

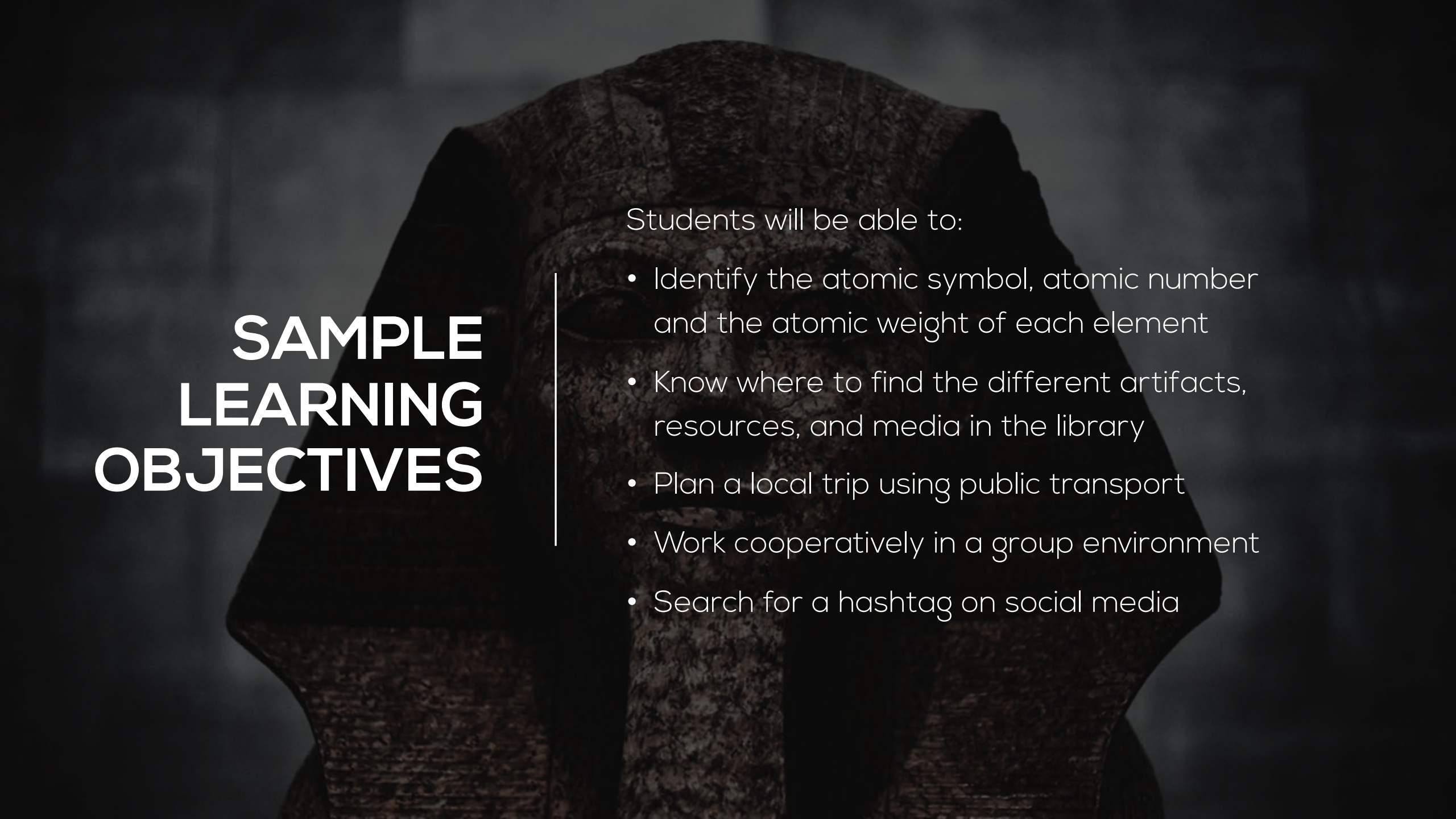
- Use as a test or quiz to preview or review material
- Team building
- Work under time pressure
- School Fundraiser - great way to bring community members in
- Can be effective for both the design and the experience as a participant

WHERE TO START: ROOM2EDUC8 FRAMEWORK



GOALS

- What is the overall purpose of the game?
- What are the learning objectives this game is going to support?
- Are the learning objectives SMART (Specific, Measurable, Attainable, Relevant, Time-focused)?
- How many learning objectives are sufficient without overloading participants?
- How will the designer know when the game is successful?



SAMPLE LEARNING OBJECTIVES

Students will be able to:

- Identify the atomic symbol, atomic number and the atomic weight of each element
- Know where to find the different artifacts, resources, and media in the library
- Plan a local trip using public transport
- Work cooperatively in a group environment
- Search for a hashtag on social media

CONSTRAINTS

- Time
- Space
- Scale
- Budget
- Equipment
- Disabilities
- Language

PARTICIPANTS

Identify who the game is specifically for

- Demographics
- Educational needs
- Attitude towards subject matter & playing for learning
- Player types
- Disabilities
- Number of players
- Roles (Students as players / designers / observers)

GAME TYPE & ENVIRONMENT

- **Game type**
  - Escape room (physical/digital/hybrid/remote)
  - Breakout game
  - Escape room in a box/book/postcard/t-shirt
- **Environment**
  - Classroom
  - Lab
  - Library - great for larger escape rooms that you want to keep up for longer

CONTEXT

- **Theme:** a concept that sets a room's tone, look and feel (e.g., present, literary, sci-fi, historical, dystopian, mystery, horror, heist, detective, exploration, etc.)
- **Setting:** the place and time where the game is set (e.g., lab, dungeon, museum, library, office etc.)
- **Narrative:** what occurs as you play and unfolds slowly and in subtle ways
- **Story format:** standalone, episodic

PUZZLES

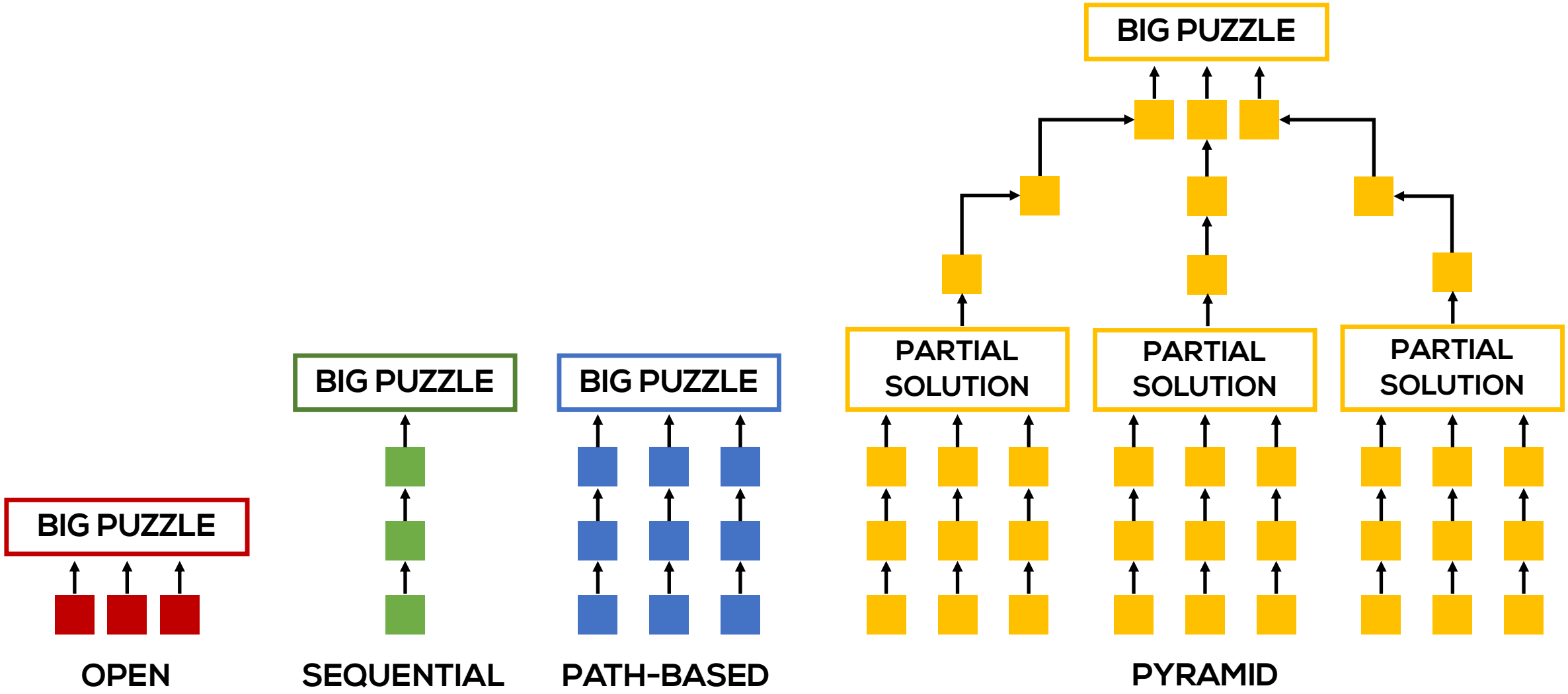
- Hidden objects
- Locks
- Encrypted / password-protected documents
- Pattern recognition
- Physical (undoing knots, moving objects, magnets, mirrors, jigsaw puzzles)
- Teamwork (requiring multiple minds / bodies)
- Spatial (using maps, coordinates, overlays)
- Numbers (counting, equations, basic math puzzles)
- Text (crosswords, missing-letter puzzles, riddles)
- Technology (QR codes, Augmented/Virtual Reality)
- Light (black light clues)
- Sound (repeating audio patterns)
- Red herrings (AVOID!!!)

PUZZLE DESIGN PRINCIPLES

Puzzles should:

- Give more access or information
- Appeal to a wide range of player skill levels
- Make the goal easily understood
- Make it easy to get started
- Increase difficulty gradually
- Use a variety of challenges
- Provide hints
- Fit in with the story and setting
- Advance the story of the room

PUZZLE STRUCTURE



PUZZLE FLOW

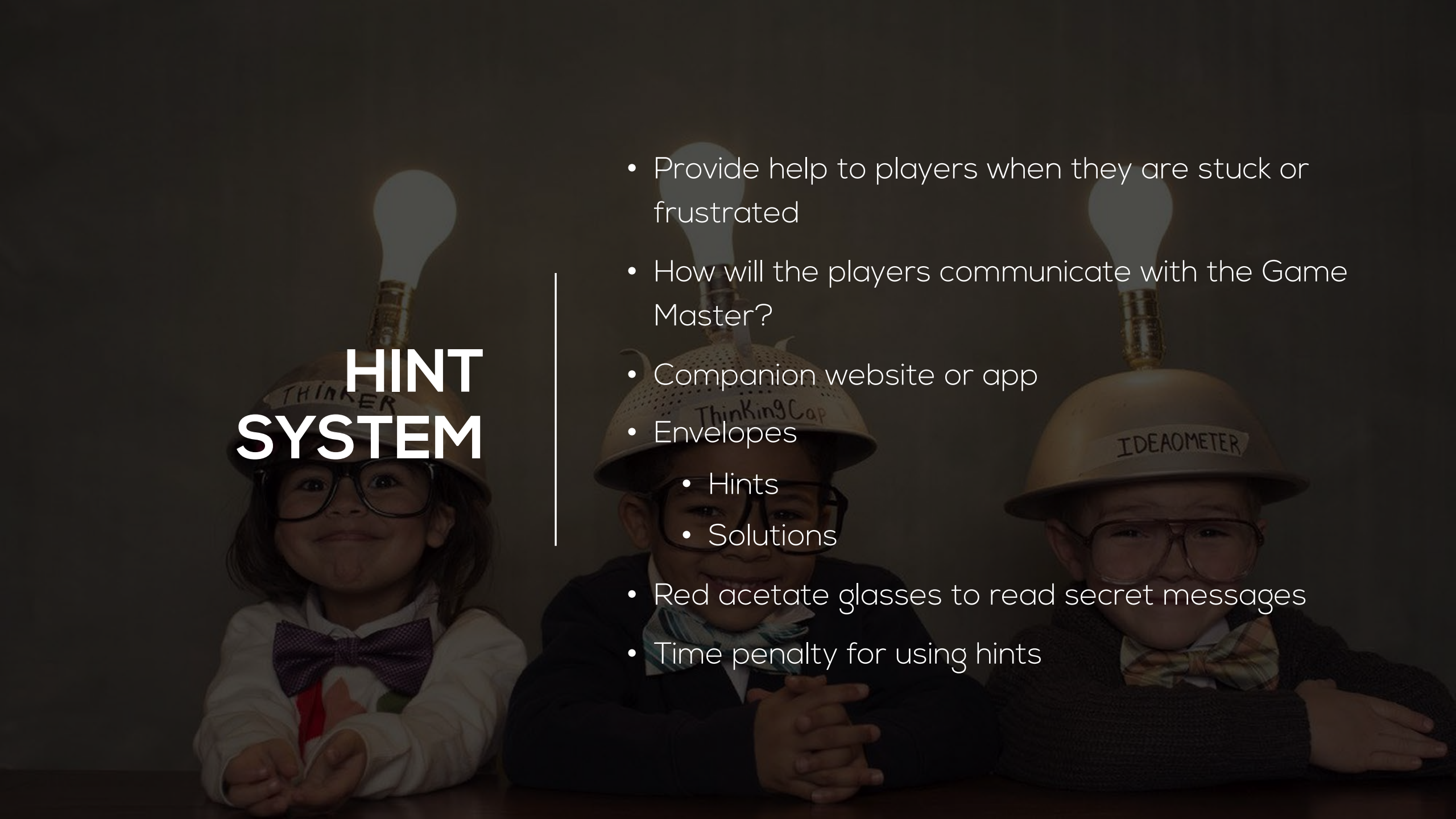
- Provide details of each individual puzzle and its location in the room
- Show the flow of the room (i.e., the order in which puzzles must be completed)
- Useful for checking for consistency in the room design, sharing the design with others, and resetting the room

GAME ASSETS

- The assets to be manipulated in order to solve the puzzles (crosswords, riddles, sudokus, hidden clues, etc.)
- Game tech (website, app, projector, UV lights, fog machine, loudspeaker, camera, monitor, etc.).
- Lock boxes, containers, vials, envelopes, etc.
- Locks or other blocking elements (padlocks, maglocks, combination / directional locks, multi-lock hasps, chains)
- Stopwatch
- Narrative elements (video, audio, printed documents, etc.)
- Soundtrack and props that embody the theme or setting
- Game master and/or actors

GAME ASSET TIPS

- Produce assets that can be reused and/or are cheap to replace
- Produce refill pack with replacements for elements that are used during gameplay (spares)
- Design puzzle assets that allow for easy localisation
- Use a variety of props so that players are challenged in different ways as they move through the escape room
- Don’t forget the soundtrack



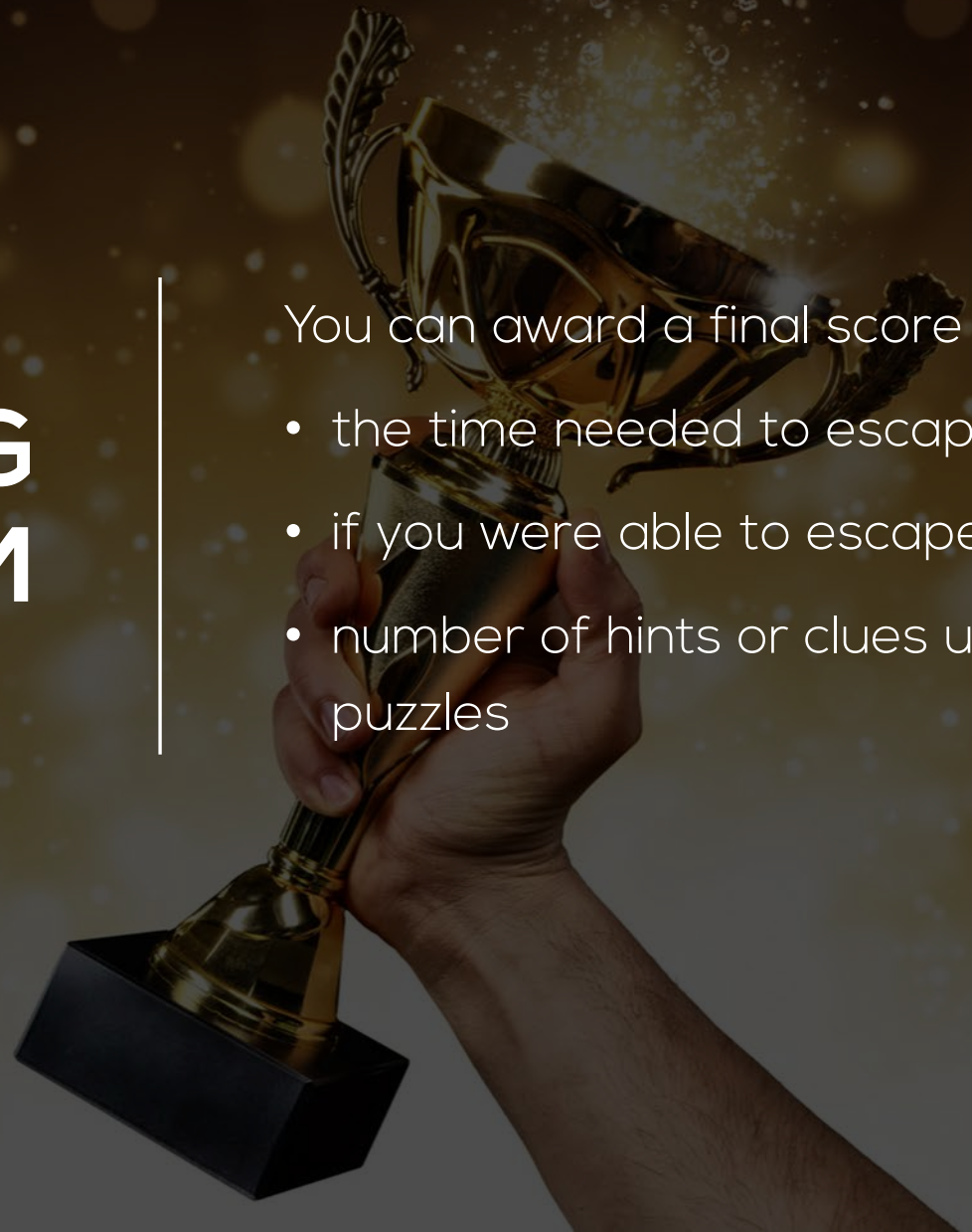
HINT SYSTEM

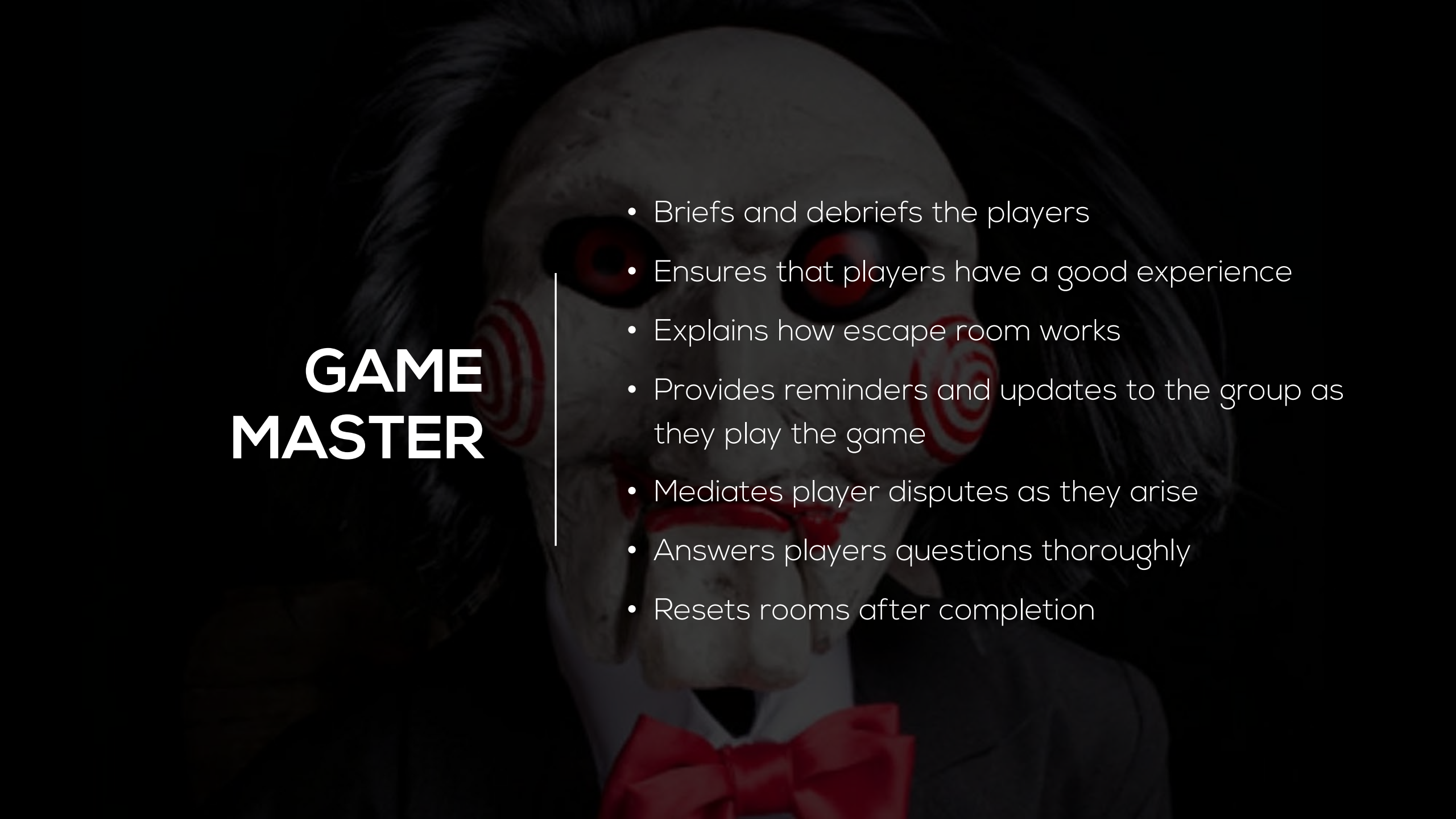
- Provide help to players when they are stuck or frustrated
- How will the players communicate with the Game Master?
- Companion website or app
- Envelopes
  - Hints
  - Solutions
- Red acetate glasses to read secret messages
- Time penalty for using hints

SCORING SYSTEM

You can award a final score based on:

- the time needed to escape from the room
- if you were able to escape
- number of hints or clues used to solve the puzzles



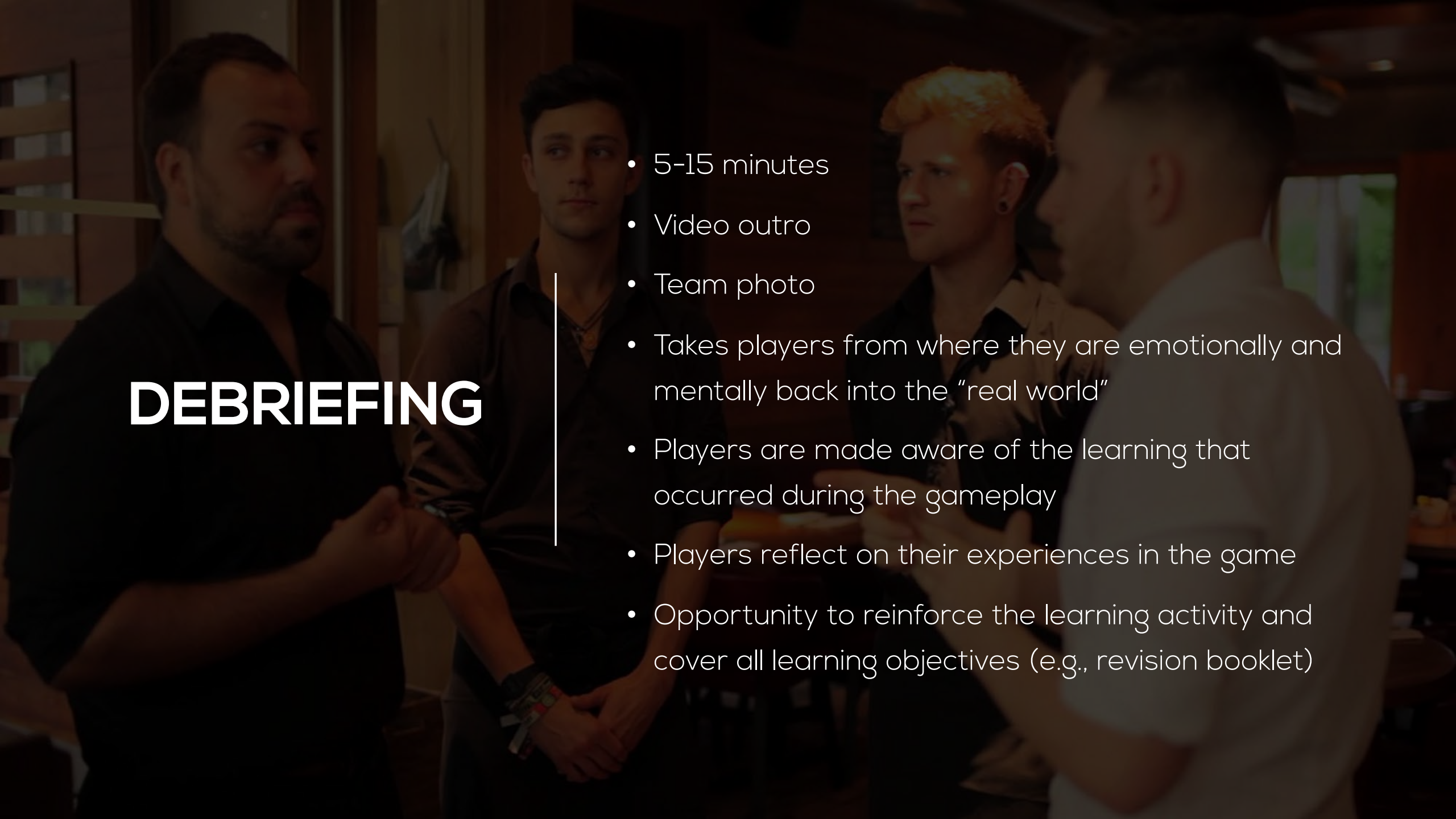


GAME MASTER

- Briefs and debriefs the players
- Ensures that players have a good experience
- Explains how escape room works
- Provides reminders and updates to the group as they play the game
- Mediates player disputes as they arise
- Answers players questions thoroughly
- Resets rooms after completion

BRIEFING

- 5-10 minutes
- Informs players about the game's rules, goals, backstory, and theme
- Gets players excited
- Pre-written script
  - Read out
  - Provided to players to read
- Video intro
  - Provides a richer experience
  - Sets the tone of the room



DEBRIEFING

- 5-15 minutes
- Video outro
- Team photo
- Takes players from where they are emotionally and mentally back into the “real world”
- Players are made aware of the learning that occurred during the gameplay
- Players reflect on their experiences in the game
- Opportunity to reinforce the learning activity and cover all learning objectives (e.g., revision booklet)

EVALUATION

- Did the room meet its goals, objectives, and learning outcomes?
- What aspects of the room contributed to or detracted from this?
- How can the learning experience be improved?

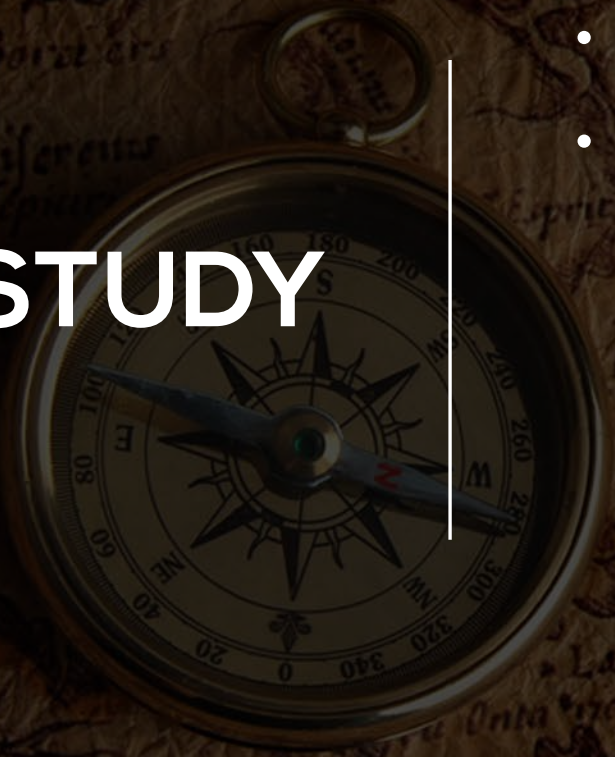
EVALUATION METHODS

- Pre- / post- / delayed-post test
- Pre-post survey
- Interviews
- Focus groups
- Observation (in situ / video surveillance)

DOCUMENTATION

- **Game design document**
  - Information needed to build the game
  - Helps to refine scope and production needs
- **Game master instructions**
  - Information required to run the game
- **Setup and repack instructions**
  - Instructions about setting up / resetting the game

CASE STUDY



- 8 escape rooms developed using this framework
- Survey and Focus group used for evaluation (n = 40)
- Findings
  - Detailed framework
  - Easy to apply
  - Easy to allocate development roles
  - Everyone can instantly see how tasks are moving through the process
  - Allows efficient time management

“I’ve learned that people
will forget what you said,
people will forget what you did,
but people will never forget
how you made them feel.”

– Maya Angelou

TOOLS

- Google Forms
- Telescape Live
- Twine
- Breakout EDU
- Room Escape Maker
- https://wke.lt/w/s/77EGS4
- https://wke.lt/w/s/5q6_uq

FURTHER READING

Fotaris, P. & Mastoras, T. (2019). **Escape rooms for learning: A systematic review,** Proceedings of the 12th European Conference on Games Based Learning (ECGBL 2019), pp. 235-243

Nicholson, S. & Cable, L. (2021). **Unlocking the potential of puzzle-based learning**. Corwin

Walsh, A. (2017). **Making Escape Rooms for Educational Purposes: A Workbook**. Innovative Libraries.

Kroski, E. (2018). **Escape Rooms and Other Immersive Experiences in the Library**. ALA Editions

Chassapakis, D. (2017) **Journal 29: Interactive Book Game**. Primedia eLaunch LLC.

Hamer-Morton, J. (2020). **The Wexell Escape Room Story Book**. Wellbeck Publishing.

Gillies, R. (2020). **Extraordinary Investigations: The Morgan File: A Puzzle Novel**.

Get in touch

p.fotaris@brighton.ac.uk
www.linkedin.com/in/fotaris