Can You Escape?

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Durham Public Schools
7th and 8th Grade

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Introduction

I. Description of Course

Can You Escape?

Do you love puzzles and adventure? Have you ever wanted to participate in or create an escape game? In this course you will get to do both! Work and strategize together to solve puzzles and decipher codes in order to "escape" before the other groups do. Then, work together to create your own escape game! Do you have what it takes to "break out"? Join us and find out!

II. Rationale

In this unit, students will be learning about what it takes to become an escape room designer, what it is like to participate in an escape room, and how to create an escape room. They will participate in many relevant, authentic learning experiences that will challenge them intellectually and academically but also socially and creatively.

The overarching essential question that the students will be navigating throughout the unit is *how does exploration lead to discovery*? This open-ended framework of having the unit built about a concept will push the students to think deeply, analyze, critically-think, collaborate, and make connections. Throughout the unit, the students will experience these concepts in a variety of ways to lead them to the eventual generalization and understanding that *exploration leads to discovery*.

Students will read and analyze complex texts including informational articles, images/art, and videos. These texts have sophisticated vocabulary as well as advanced concepts and are designed to challenge the gifted reader. Students' connections to the text, each other, and the greater world will stem from these advanced texts.

In addition to continued literacy development, the students will be pushed to think reflectively and express their thoughts and ideas in writing. Students will also participate in collaborative discussions where they will need to justify and support their reasoning with evidence.

III. Differentiation for Gifted Learners

A. Dimensions of Differentiation

1. Content - Students will read a variety of complex informational texts surrounding the field of game design and escape rooms throughout the unit. These readings are sophisticated and use advanced concepts and vocabulary. The students will also analyze and discuss images, artwork, and videos. Optical illusion artwork and cryptology used during the Visual Thinking Strategy lesson are unfamiliar to the students and may express/illustrate concepts that are not usually a part of the curriculum at this grade level.

2. Process - Throughout the unit, students will participate in rigorous critical thinking as they analyze the concept of "exploration" through grouping and regrouping. Students will work collaboratively and must use higher-order thinking, critical thinking, and out of the box thinking skills. The Visual Thinking Strategy lesson used on day two of the unit is an open-ended thinking and inquiry strategy which allows students to share unique perspectives. It is also a student-led lesson which empowers and challenges the students giving them multiple avenues to show their knowledge whether through discussion, writing, artwork, and/or engineering. Lastly, students will work through a variety of activities from reading and writing to problem-solving and engineering.

3. Product - For the students' performance task assessment, they will be given a variety of materials to create their own escape games. Their end products will vary depending on what materials they choose to use, the flow of puzzles/riddles in their escape game, and the narrative that their escape game is built around.

4. Learning Environment - The students will work in flexible groups that change depending on the lesson/activity including whole-class learning, small group, larger group, paired, and independent learning. Lessons will also shift from teacher-led to student-led with authentic,

relevant student-driven learning being the predominant focus of the unit.

B. Features of Differentiation

1. Complexity - written and visual texts used in this unit are advanced and use sophisticated vocabulary
2. Challenge - collaborative learning occurs throughout the unit; students will be challenged by peers and must work together to make decisions and create their escape game; students will be challenged to justify their reasoning with evidence

3. Depth - conceptual learning will encourage students to think critically, analyze, make connections, and
4. Creativity - hands-on, student-driven activities in the unit are designed and engineered by students
5. Acceleration - unit is intended for 8 hours of instruction; pacing of lessons must occur swiftly in order for unit to be completed during intended amount of time; appropriate time for reflection is embedded in the unit

IV. Population of Gifted Children Unit is Intended For

This unit is designed to reach gifted students from all ethnicities and socioeconomic backgrounds. Students who are already familiar with escape rooms/games and game design will be challenged to use their prior knowledge to enhance their learning. Students who are not already familiar with escape rooms/games and game design will receive the prerequisite information and will be supported in their discovery of new information. Hands-on and collaborative learning will push all students to use their unique talents to analyze, design, and create.

Other opportunities for students to access their prior knowledge and experiences are embedded throughout the unit. For example, during the Visual Thinking Strategy lesson, students will be analyzing an image of a hidden room at the Biltmore Estate in the mountains of North Carolina. Students who are familiar with this estate will be able to use and share their knowledge and experiences to enhance their analysis of the image.

Music and videos are also incorporated into this unit so that students who are visual and auditory learners will also engage with the material. Collaborative learning occurs throughout all components of the unit which will provide opportunities for students who are less confident to be supported as well as opportunities for leaders to step up.

Goals and Outcomes

1. Content Goals and Outcomes
    a. Goal One: To develop an understanding of what escape rooms/games are, what game design is, and how an escape room/game is created.
    b. Students will be able to
        i. an escape room/game is a mental and physical adventure based game in which players solve a series of puzzles and riddles using clues, hints, and strategy to complete the objectives at hand
        ii. escape room designers must create a specific sequencing of puzzles in order for the escape room to flow properly and work effectively
        iii. escape room designers utilize a variety of skills and tools when creating an escape room
        iv. collaboration and teamwork are vital to successfully complete an escape room challenge
    c. Common Core Standard Alignment
        i. CCR Anchor Standard RL.1 – Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
            1. RL.7.1 Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
            2. RI.7.3 Analyze the interactions between individuals, events, and ideas in a text.
2. Process Goals and Outcomes
    a. Goal Two: To develop collaborative problem-solving skills with applications to escape room/game design.

b. *Students will be able to*

   i. think critically, imagine, and problem solve

   ii. justify and support reasoning with evidence

   iii. think critically and evaluate

   iv. design, sequence, and construct

   v. prepare for and participate effectively in a collaborative discussion with diverse partners

c. Common Core Standard Alignment

   i. CCR Anchor Standard RI.1 – Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

      1. RI.7.1 Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

      2. 7 C.1 Use creative strategies to make decisions and solve problems.

      3. 7 C.2 Use analytical strategies to understand situations and make appropriate decisions.

      4. R.W.7.5 Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation.

3. Concept Goals and Outcomes

   a. Goal Three: To understand that exploration leads to discovery

   b. *Students will be able to*

      i. make sense of the world it is necessary to organize incoming sensations into information which is meaningful

      ii. understand that exploration is a thorough analysis of a subject or theme

      iii. understand that exploration leads to new information being discovered

      iv. transfer their knowledge about the concepts of exploration and discovery to topics other than escape rooms/games

c. Common Core Standard Alignment
    i. SL.7.1 Engage effectively in a range of collaborative discussions (one on one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.
        1. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.
        2. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.\
        3. Acknowledge new information expressed by others and, when warranted, modify their own views.

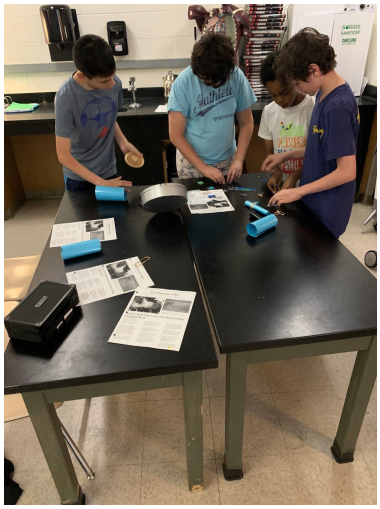
Assessment Plan

Students will be formatively assessed throughout the unit informally through observations and discussion notes and formally through the use of exit tickets, graphic organizers, and reflective check-ins. The students will be assessed summatively through the use of an authentic, standards-based performance task.

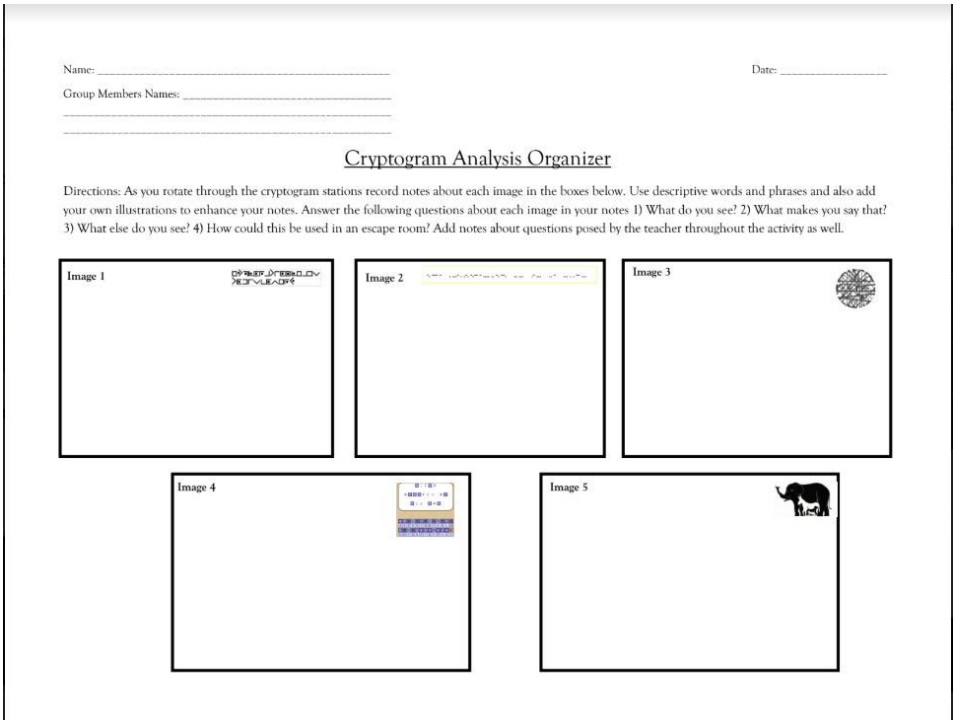
Formative Assessments

A variety of approaches will be used to formatively assess the students throughout the unit.

1. Informal
    a. Participation in class discussions
    b. Observations about ability to navigate collaborative conversations and product development



2. Formal
    a. Graphic organizers



Name: _____ Date: _____

Group Members Names: _____

_____

_____

Cryptogram Analysis Organizer

Directions: As you rotate through the cryptogram stations record notes about each image in the boxes below. Use descriptive words and phrases and also add your own illustrations to enhance your notes. Answer the following questions about each image in your notes 1) What do you see? 2) What makes you say that? 3) What else do you see? 4) How could this be used in an escape room? Add notes about questions posed by the teacher throughout the activity as well.

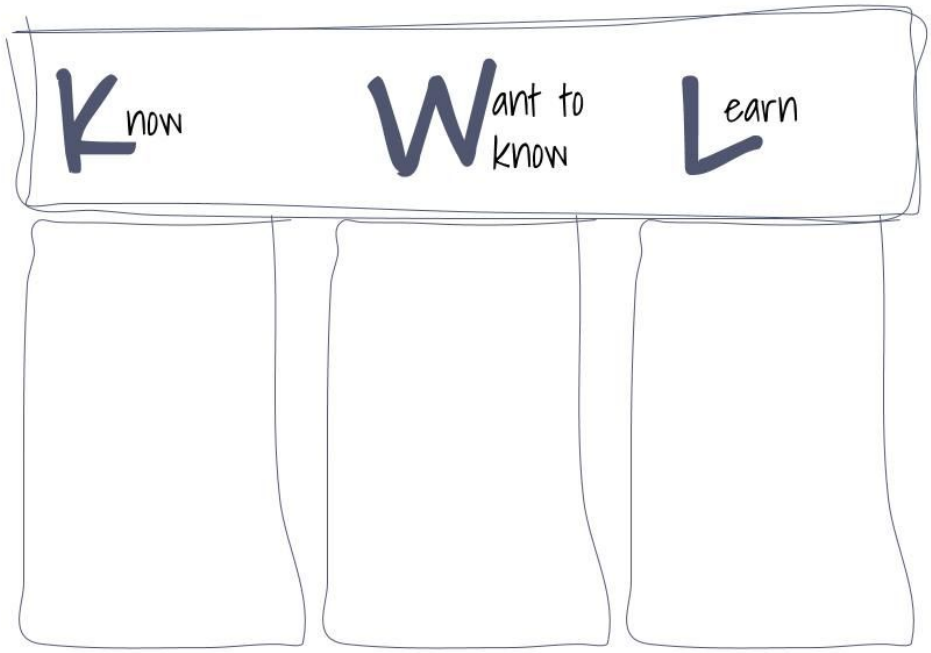
Image 1

Image 2

Image 3

Image 4

Image 5



b. Student Creative Problem Solving packet

Can You Escape?

Name: _____

Group Members:

•
•
•

DURHAM PUBLIC SCHOOLS
Spark Camp!

Ambrose Duke Spark Camp 2019 1

Creative Problem Solving: Escape Room/Game Challenge

1) The Mess: You are a game designer who is part of team of game designers who are trying to enter the competitive world of escape games. UnBULLievable Escape Rooms is a premier escape room company in Durham that wants to add a new escape game to their collection and are looking for innovative ideas from game designers. UnBULLievable Escape Rooms is accepting proposals for the new escape game addition to the company.

Proposals must include a description of the narrative that the escape game will be built around, a material list, and a map/flow chart that shows the sequencing of how the puzzles/riddles will unfold in the escape game in order for the customers to escape/breakout. The game designer teams with the top proposals will go through to the next round and will submit a model of their escape game. The UnBULLievable Escape Rooms Board of Directors will decide on the top proposals that will make it to the finalist round and then will chose the winning model. The winning team's escape game will be built as the newest attraction at UnBULLievable Escape Rooms for the 2020 year and will receive $10,000.

2) Data Finding: Identify the knowns and the unknowns of the situation. Consider the who, what, when, why, where, and how of the situation. Use *divergent thinking* to brainstorm all of the known facts in the space below.

Now use *convergent thinking* to select the most important facts. Circle them.

Ambrose Duke Spark Camp 2019 2

Problem Finding: Explore data and facts to find all possible issues and all opportunities. Consider many problem statements

In what ways might we ...

Use the following ALoU chart below to brainstorm all of the factors for each possibility

ALoU

Idea	Advantages	Limitations and How to Overcome Them	Unique Features

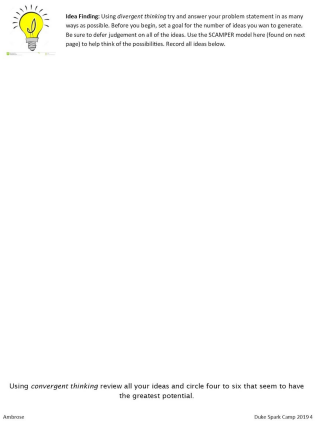
Using *convergent thinking*, create a problem statement below. What do you hope to ultimately accomplish with your escape room/game design?

_____

_____

_____

Ambrose Duke Spark Camp 2019 3



Idea Finding: Using *divergent thinking* try and answer your problem statement in as many ways as possible. Before you begin, set a goal for the number of ideas you wan to generate. Be sure to defer judgement on all of the ideas. Use the SCAMPER model here (found on next page) to help think of the possibilities. Record all ideas below.

Using *convergent thinking* review all your ideas and circle four to six that seem to have the greatest potential.

SCAMPER

Substitute

What can you substitute? What can be used instead? Who else instead? What other ingredients? Other material? Other process? Other power? Other place? Other approach? Other sounds? Other forces?

Instead of … I can …

Combine

What can you combine or bring together somehow? How about a blend, an alloy, an assortment, an ensemble? Combine units? Combine purposes? Combine appeals? Combine ideas?

I can bring together … and … to

Adapt

What can you adapt for use as a solution? What else is like this? What other idea does this suggest? Does past offer a parallel? What could I copy? Who could I emulate?

I can adapt … in this way … to …

Modify, **M**agnify, **M**inify

Can you change the item in some way? Change meaning, color, motion, sound, smell, form, shape? Other changes?

What can you add? More time? Greater frequency? Stronger? Higher? Longer? Thicker? Extra value? Plus ingredient? Duplicate? Multiply? Exaggerate?

What can you remove? Smaller? Condensed? Miniature? Lower? Shorter? Lighter? Omit? Streamline? Split up? Understate?

I can change … in this way … To …

Put to Other Uses

How can you put the thing to different or other uses? New ways to use as is? Other uses if it is modified?

I can re-use … in this way …by …

Eliminate

What can you eliminate? Remove something? Eliminate waste? Reduce time? Reduce effort? Cut costs?

I can eliminate … by …

Rearrange

What can be rearranged in some way? Interchange components? Other pattern? Other layout? Other sequence? Transpose cause and effect? Change pace? Change schedule?

I can rearrange … like this … such that …

* SCAMPER was defined by Robert Eberle, after an initial list from brainstorming originator Alex Osborn.

Action Plan

Task	Who/Role	Check when complete

Reflection

Think back on your experience during Spark Camp and answer the following reflection questions using as much detail and specificity as possible.

- What went well with your escape room/game creation and implementation?
- What could have gone better with your escape room/game creation and implementation?
- How is the concept of "exploration" revealed in your escape room/game?
- How is the concept of "discovery" revealed in your escape room/game?
- How does exploration lead to discovery?

Peer Feedback

Use the following sentence starters to complete your peer feedback notecard about the peer group's escape room/game that you explored.

Positives	Questions I have	Needs to improve
What really impressed me was…	What are…?	One suggestion would be…
The most outstanding aspect of your escape room/game was…	What do…?	I think you should add…
The strongest aspect of your escape room/game is…	What is…?	Next time you should…
It had a really big impact on me when…	Should you…?	Consider deleting…
I most enjoyed exploring… in your escape room/game	How does…?	I think a better choice may be…
The concept of exploration was show in your escape room/game by…	Could the concept of exploration be included more in…?	One problem I see/encountered…
In your escape room, I discovered…	Could the concept of discovery be in cluded more in…?	The concept of exploration could be included more by…
The concept of discovery was shown in your escape room/game by…	Did you consider…?	The concept of discovery could be included more by…

c. reflective questioning

Cryptogram Reflection

1. How did your exploration of the image lead to your discovery of new images/meanings?

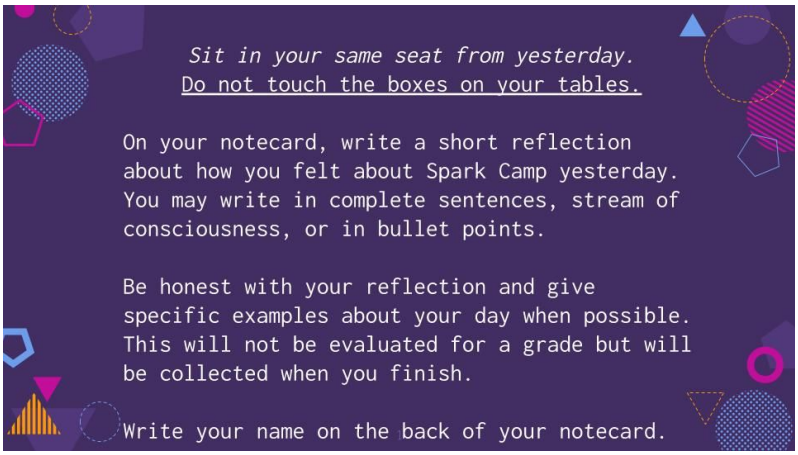
2. What challenges did you face as you explored each puzzle/code?

3. What challenges might you encounter when incorporating these into your escape room design?

4. How did your understanding of the images change the more you explored them?

5. What did you learn about exploration as you completed the speed rounds with the cryptogram images?

2



Summative Assessment

Performance Task - You are a game designer who is part of a team of game designers who are trying to enter the competitive world of escape games. UnBULLievable Escape Rooms is a premier escape room company in Durham that wants to add a new escape game to their collection and are looking for innovative ideas from game designers. UnBULLievable Escape Rooms is accepting proposals for the new escape game addition to the company. Proposals must include a description of the narrative that the escape game will be built around, a material list, and a map/flow chart that shows the sequencing of how the puzzles/riddles will unfold in the escape game in order for the customers to escape/breakout. The game designer teams with the top proposals will go through to the next round and will submit a model of their escape game. The UnBULLievable Escape Rooms Board of Directors will decide on the top proposals that will make it to the finalist round and then will chose the winning model. The winning team's escape game will be built

as the newest attraction at UnBULLievable Escape Rooms for the 2020 year and will receive $10,000.


MAKE IT
BREAK

Lesson Plans

I. Taba

TEACHER NAME			Lesson #
Madison Ambrose			1
MODEL	**CONTENT AREA**	**GRADE LEVEL**	
Taba	**ELA**	**7th and 8th Grade**	
CONCEPTUAL LENS		**LESSON TOPIC**	
Exploration		**Escape Rooms**	

LEARNING OBJECTIVES *(from State/Local Curriculum)*

CCR Anchor Standard RL.1 – Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

- RL.7.1 Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

CCR Anchor Standard RI.1 – Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

- RI.7.1 Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

THE ESSENTIAL UNDERSTANDING *(What is the overarching idea students will understand as a result of this lesson?*	**THE ESSENTIAL QUESTION** *(What question will be asked to lead students to "uncover" the Essential Understanding)*
Exploration leads to discovery.	***How does exploration lead to discovery?***

CONTENT KNOWLEDGE **(What factual information will students learn in this lesson?)**	PROCESS SKILLS **(What will students be able to do as a result of this lesson?)**
● Students will know that exploration leads to discovery ● Students will know that an escape room, also known as an "escape game", is a mental and physical adventure based game in which players solve a series of puzzles and riddles using clues, hints, and strategy to complete the objectives at hand ● Red Bull, the energy drink company, stages the Escape Room world championships each year ● Escape rooms include “exploring a strange world made real then the satisfaction of discovery as patterns suggest themselves” ● Completing an escape game requires active participation where players will move and collaborate with each other as they explore the room discovering new codes and riddles.	· inference · analyze · organize by attribute and/or property · synthesize information · compare/contrast attributes · provide and justify evidence · work collaboratively · create generalizations

GUIDING QUESTIONS

What questions will be asked to support instruction?

Include both “lesson plan level” questions as well as questions designed to guide students to the essential understanding

Pre-Lesson Questions:	**During Lesson Questions:**	**Post Lesson Questions:**

• What did you see in the videos?
• What did you know about escape rooms?
• What did you see that relates to the concept of exploration?
• What did you see that relates to the concept of discovery?
• What does "exploration" mean to you?
• What do you know about escape rooms?
• How is the act of exploration related to escape rooms and escape games?
• What does "discovery" mean to you?
• How is discovery related to escape rooms/games?
	• What aspects of "exploration" are written about in the article?
	  ○ Why do you say that?
	• What did you read about in the article that relates to exploration?
	  ○ Why do you say that?
	• Which of the words/phrases go together as they relate to some aspect of the concept "exploration?"
	• Who explores?
	• Where do they explore?
	• What do they explore?
	• How do they explore?
	• What does their exploration lead to?
	• What discoveries does their exploration reveal?
	• How is the concept of exploration related to escape rooms and games?
	• What are similarities and differences among groups?
	  ○ Why do you say that?
	• Which groups could you subsume under another group?
	  ○ Why do you say that?
	• What is discovered in this article?
	  ○ Why do you say that?
	• In the article, how are discoveries revealed through exploration of the escape rooms/games?
		• What do you know about the concept of "exploration?"
		• What do you know about the concept of "discovery?"
		• How are the concepts of "exploration" and "discovery" related to escape rooms and escape games?
		• What is the relationship between "exploration" and "discovery?"
		• What is a generalization you might make after reading this article that articulates the relationship between exploration and discovery?
		• What is something that could be true about exploration?
		• What is something that could be true about discovery?
		• How does exploration lead to discovery?

	○ What makes you say that?	

DIFFERENTIATION

(Describe how the planned learning experience has been modified to meet the needs of gifted learners. Note: Modifications may be in one or more of the areas below. Only provide details for the area(s) that have been differentiated for this lesson.

Content	Process	Product	Learning Environment
The reading used in this lesson is sophisticated and uses advanced concepts and vocabulary.	Students will participate in rigorous critical thinking as they analyze the concept of "exploration" through grouping and regrouping. Students will work collaboratively and must use higher-order thinking, critical thinking, and out of the box thinking skills.		

PLANNED LEARNING EXPERIENCES

(What will the teacher input? What will the students be asked to do? For clarity, please provide detailed instructions)

Engage and Connect - *This phase focuses on piquing students' interest and helping them access prior knowledge. This is the introduction to the lesson that motivates or hooks the students.*

To engage the students, the teacher will have the following slide show playing on loop on the board as the students enter the classroom and find their seats:

https://docs.google.com/presentation/d/1y6qZJKKm18BIVSL5MbCRXmvMiCvEi72NRP5GNzr3uk8/edit?usp=sharing

Begin class by playing the following videos on escape rooms for the students:

- Crash Course: https://www.youtube.com/watch?v=SKvgI-A3qQ8
- 10 Best Tips and Tricks for Escape Rooms https://www.youtube.com/watch?v=zwgaTYOx0RI
- The teacher will ask the students to discuss using the following pre-lesson questions:
    - *What did you see in the videos?*
    - *What did you know about escape rooms?*
    - *What did you see that relates to the concept of exploration?*
    - *What did you see that relates to the concept of discovery?*
    - *What does "exploration" mean to you?*
    - *What do you know about "exploration?"*
    - *What do you know about escape rooms?*
    - *How is the act of exploration related to escape rooms and escape games?*
    - *What do you know about discovery?*
    - *How is discovery related to escape rooms/games?*

Explore - *In this phase, the students have experiences with the concepts and ideas of the lesson. Students are encouraged to work together without direct instruction from the teacher. The teacher acts as a facilitator. Students observe, question, and investigate the concepts to develop fundamental awareness of the nature of the materials and ideas.*

- **Listing**
- Students will read "Get me out of here! Why escape rooms have become a global craze" by Simon Osborne. The article explains what escape rooms re and how they work as well as why they are so popular globally.
- While students read, they should make a list of words and/or phrase which relate to some aspect of the concept of "exploration." After the students have finished reading the article and making their lists, students will share out their lists and the teacher will create a comprehensive list on the board.

Explain - *Students communicate what they have learned so far and figure out what it means. This phase also provides an opportunity for teachers to directly introduce a concept, process, or skill to guide students toward a deeper understanding.*

- **Grouping and Labeling**

- Students will be put into groups of 4-5 students each.
- In their groups, students will select 20 words from the comprehensive list on the board. In their student groups they will create smaller word groups based on similarities.
- Teacher will ask: *Which of the words/phrases go together as they relate to some aspect of the concept "exploration?"*
- Expectations
    - There must be at least four different groups
    - Each group must have at least 3 words/phrases
    - No word can be used more than once; member of only one group
- The teacher will move around checking in on student groups; teacher will guide students with necessary questions but will allow student groups to come up with their own conclusions
- As students finish, the teacher will instruct student groups to come up with labels for the word groups to indicate how the words in the group are related to the concept "exploration"
- Students will explain their reasons to the teacher and class. The teacher will ask:
    - *What are similarities and differences among groups?*
- Teacher will ask students to defend their choice of label and the reasons for the words being grouped as they are.
    - *Why do you say that?*
- Students will share their labels and reasons for groupings with the whole class.
    - *What makes you say that?*
- Teacher will ask the following during-lesson questions:
    - *What aspects of "exploration" are written about in the article?*
        - *Why do you say that?*
    - *What did you read about in the article that relates to exploration?*

§ *Why do you say that?*

Elaborate —*Allow students to use their new knowledge and continue to explore its implications. At this stage students expand on the concepts they have learned, make connections to other related concepts, and apply their understandings to the world around them in new ways*

- **Subsuming, Regrouping, Renaming**
- Students are challenged to regroup items. The new groups must be categories with new labels.
- Expectations
    - Items can be used in more than one category (group)
    - New labels must be assigned for the categories (groups)
    - Groups must have at least three words per group since words can be used in multiple groups
    - Categories must be based on some aspect of the concept "exploration"
- Student groups will share their categories (labels with some examples of words)
- Teacher will ask:
    - *Which groups could you subsume under another group?*
    - *What is discovered in this article?*
        - *Who explores?*

- *Where do they explore?*
- *What do they explore?*
- *How do they explore?*
- *What does their exploration lead to?*
- *What discoveries does their exploration reveal?*
- *How is the concept of exploration related to escape rooms and games?*

Evaluate: *This phase assesses both learning and teaching and can use a wide variety of informal and formal assessment strategies.*

4) Generalizing

- Students will be asked to create a statement (generalization) which represents the relationship between the concept "exploration" and the concept "discovery"
- Teacher will ask:
  - *What is the relationship between "exploration" and "discovery?"*
  - *How are "exploration" and "discovery" related to escape rooms and escape games?*
  - *What is a generalization you might make after reading this article that articulates the relationship between exploration and discovery?*
  - *What is something that could be true about exploration?*
  - *What is something that could be true about discovery?*
  - *How does exploration lead to discovery?*
- Students will then be introduced to the performance task for the Spark Camp:
  - You are a game designer who is part of team of game designers who are trying to enter the competitive world of escape games. UnBULLievable Escape Rooms is a premier escape room company in Durham that wants to add a new escape game to their collection and are looking for innovative ideas from game designers. UnBULLievable Escape Rooms is accepting proposals for the new escape game addition to the company. Proposals must include a description of the narrative that the escape game will be built around, a material list, and a map/flow chart that shows the sequencing of how the puzzles/riddles will unfold in the escape game in order for the customers to escape/breakout. The game designer teams with the top proposals will go through to the next round and will submit a model of their escape game. The UnBULLievable Escape Rooms Board of Directors will decide on the top proposals that will make it to the finalist round and then will chose the winning model. The winning team's escape game will be built as the newest attraction at UnBULLievable Escape Rooms for the 2020 year and will receive $10,000.
- The students will work in their performance task groups to complete step one- "mess finding" of the CPS lesson plan.

The Guardian

Get me out of here! Why escape rooms have become a global craze

There are now almost 1,500 escape rooms in the UK, including versions from Doctor Who and Sherlock. What's the appeal?

Simon Usborne

Mon 1 Apr 2019 07.40 EDT

In 60 minutes - and the clock has just begun ticking - Prof Blacksheep will have hacked the computer mainframe in the abandoned lab of his arch-nemesis, Mr Q, who is a mouse. The professor, who accidentally turned himself into a sheep during an experiment to gain animal superpowers, wants to do more dark stuff with genes and unleash a global internet supervirus. My job, as a secret agent, is to stop it and save the world after first shrinking myself to mouse size to get into the lab.

I've had simpler nights out in north London, where I am confined to the basement of a former nightclub. My other mission, beyond the whole sheep-hacking thing, is to explore the rise of the escape room. After five years of steep growth - there are now almost 1,500 escape rooms across Britain - this upstart entertainment hybrid is mutating into something mainstream.

Eleven days from now, Red Bull, the energy drink more commonly associated with extreme sports, will stage the Escape Room world championships in Shoreditch, London. Four-strong teams from 23 countries will travel to the event, which will culminate in Omni's Escape, a room that will have an ethical theme involving artificial intelligence, designed by Scott Nicholson, a professor of gaming in Ontario, Canada.

Meanwhile, entertainment giants are realising that escape rooms can give new life to their worlds and characters. Doctor Who rooms have just arrived in Bristol, Leeds, Oxford, Manchester, Reading and Birmingham; an official BBC Sherlock escape room opened in London in December, featuring original footage of the show's stars. "Pretty much all the major entertainment companies with significant intellectual property are looking at escape rooms now," says Ken Ferguson, a blogger and consultant who helped create the Red Bull event.

I find Prof Blacksheep at clueQuest, an escape room company run by four Hungarian brothers. I am joined by one half of the British team for the Red Bull championships; Sarah Dodd and Sharan Gill are a power couple who have completed more than 1,500 games around the world. They will be showing me Origenes, clueQuest's newest game, based in King's Cross, London. The company opened its first room in Tottenham in 2013, when it was only the second such facility in London. There are now 136 games at more than 50 venues in the capital, including one in a former church just over the road.

At clueQuest. Photograph: David Levene/The Guardian

Origenes starts in the Shrink-o-mat, where we have to work out how to shrink ourselves and gain access to the lab. It looks like a bathroom on Starship Enterprise. There are flashing lights, mysterious wheels and cogs, miles of exposed circuitry, and compartments bearing strange symbols. Bolted to all the MDF, which has been artfully rendered as grimy steel, a screen shows the countdown clock.

As an escape room newbie, I have no idea where to begin. I've never really been into gaming, puzzles - or locked rooms - and have an aversion to organised fun (call it stag fatigue; happily I'm now deep into the Netflix and soft-play stage of life). But I'm, well, game - and glad to be in a team of pros. "We always start a room by just trying things," says Dodd, who was a doctor before her move into gaming. Gill, a civil engineer, reaches inside some of the boxes attached to the wall. "So if you put your hand in this one you can feel a handprint and in here I can feel bumps," she says. "Is it ... a pattern?"

As Dodd and Gill do their thing, working around each other like fast-forwarded detectives at a movie murder scene, I can begin to see the appeal. There is the childlike thrill of exploring a

strange world made real. Then the satisfaction of discovery as patterns suggest themselves. The bumps Gill feels match the combination lock on the far wall, it turns out. There are several more around the room, and a different bump - or button - is depressed in each one. Together they produce a string of numbers, but what is the order? And what do we do with it? I feel immediately immersed in the story, however silly it is. "If I read a book I can't be the protagonist or touch it," Dodd says. "In escape rooms I can."

The escape room trend is late to bloom in the UK, yet has roots in the Dungeons & Dragons craze that started in the 1970s, and the adventure games that were big on British television in the 1980s. Now Get Out of That (1981) and the sci-fi themed The Adventure Game, which started in 1980, pre-dated the most successful adventure show of them all: The Crystal Maze, which first aired in 1990.

That trend fed into computer gaming, which had spawned "escape the room" titles in Japan. In 2007, Takao Kato, a 34-year-old publishing employee, launched his first Real Escape Game in Kyoto. Teams were given an hour to decipher clues and find hidden objects to get out. "I wondered why interesting things didn't happen in my life, like they did in books," Kato, a manga fan, told the Japan Times in 2009. "I thought I could create my own adventure, a story, and then invite people to be a part of it."

As the rooms spread across Asia and America, Hungary emerged as Europe's escape room crucible when, in 2011, Attila Gyurkovics, a former social worker, launched the Parapark franchise. Escape rooms in Budapest multiplied in empty buildings with low rents and cool cellars. The country has a heritage of puzzling: Ernő Rubik sold his first cube in Budapest in 1977. In 2012, Attila Nagy and Csaba Vinkler, two thirtysomething Hungarians, opened Britain's first escape room in north London. HintHunt is now a global chain.

Escape rooms quickly appealed to a nostalgic generation of Brits who had grown up watching Crystal Maze and playing low-fi computer games. "People were also starting to move away from their screens," says Zoltan "Zoli" Papp, 31, one of the brothers from Budapest who launched clueQuest. PLAN52, its first game, involved a similar mix of clues and puzzles with a secret-agent theme. Gigi, Zoltan's brother, a puzzle fiend and former PE teacher, led the design. ClueQuest has welcomed more than 55,000 groups through its imaginatively locked doors.

Sarah Dodd and Sharan Gill play Origenes. Photograph: David Levene/The Guardian

Dodd and Gill, who have been together for five years, caught the escape room bug in 2016. They, too, were looking for something new that didn't involve a screen, to celebrate Dodd's birthday. They were into games and puzzles, but the visceral thrill of escape rooms immediately seduced them. "I can also get out of the house with friends and have a drink afterwards. It's not solitary," Dodd says, adding: "Ultimately, humans like escapism and adventure, and to challenge themselves ... and we gain most satisfaction from doing these things in a group of friends."

Dodd has hit pause on her NHS career to become an escape room consultant, podcaster and writer. She co-founded the UK Escape Room Industry Conference, which welcomed more than 450 owners to its second event in London last October. She advises Houdini's Escape Room Experience, which started in Southampton in 2016, and has just won a contract to open rooms within more than 40 bowling alleys operated by the Tenpin company.

As they did in Budapest, escape rooms often thrive in spaces that may not be otherwise viable. They have sprung up in castles, pubs, warehouses and disused underground stations. Startup costs can be low for those willing to put in the hours. Last June, Nick Scott, a former set builder, launched Cave Escape in a vacant shop in a former lace factory in Nottingham. "It's something people can come and do that isn't sitting in a cinema for two hours in silence," he says.

Papp says his rooms unite generations, often drawing teens from their screens into family activities. Groups of adults arrive with memories of The Crystal Maze. The show gave the escape

room trend a boost in 2016 when a temporary live experience opened in north London, complete with an Aztec zone, retro bomber jackets and a gold ticket-filled Crystal Dome. Two new Crystal Maze experiences have just opened in central London and Manchester.

Nick Moran came from an immersive theatre background; he launched Time Run, an elaborately produced escape room with a time-travel theme, in east London, in 2015. Thousands played, including Stephen Moffat and Sue Vertue, the couple behind Hartswood Films. They showed up one evening with Mark Gatiss, the co-creator of Sherlock, which Hartswood makes for the BBC. "They all loved it," Moran recalls. "They didn't have plans for a new season any time soon and had wanted to make a live experience. So we sat in a room and talked."

Moran launched Sherlock: The Game Is Now after almost two years of development, offering players the chance to emulate the detective. He says he is surprised that it has taken this long for the trend to go fully mainstream. While many incorporate sophisticated technology - the room I am in is controlled by more than 40 computers - the trend is not driven by it. As Moran puts it, they're "a decisively offline social experience".

Elsewhere, museums and schools are exploiting escape rooms as interactive alternatives to historical reenactment or creepy waxworks of old sailors. Nicholson, the academic who designed the Red Bull game, has created an escape-room-inspired game for Canadian schools about the country's electoral system. "Escape rooms have something other group activities don't have because they are not about competition but collaboration," he says. "We now want to design games that can make a real difference."

At clueQuest, Dodd and Gill welcome mainstream attention if it dispels some of the myths around escape rooms. They are not scary, Dodd says, and very few have an explicit horror theme. The couple were disappointed in Escape Room, Hollywood's latest take on the trend, in which six players end up in a series of death traps. The film jarred uncomfortably with a real tragedy, coming out just weeks after five teenage girls died in a fire in a Polish escape room in January. All the doors at clueQuest have a release button and are never genuinely locked. "I don't like being scared and I'm claustrophobic," Dodd says. "That's not what it's about."

I have promised Papp that I will not reveal the secrets of the Origenes game. But I can report that it is captivating yet fiendishly difficult. Only 20% of teams succeed, even with hints from the control room. Dodd's and Gill's brains work on a different level from mine, spotting patterns and remembering sequences with startling ease. With their help - a lot of it - I shrink myself and gain access to the lab. Our task there is to understand and manipulate an array of giant objects in search for codes. There is a giant padlock, a giant floppy disc and a lot of clever lighting and moving parts. With 17 minutes to spare, we manage to save the world (you're welcome). Slightly breathless, and more energised than I have felt doing anything that isn't actual sport, I return to the Shrink-o-mat to get back to human size - and reality.

Topics
- Games
- features

Can You Escape?

Name: _____

Group Members:

-
-
-

Creative Problem Solving: Escape Room/Game Challenge

1) The Mess: You are a game designer who is part of team of game designers who are trying to enter the competitive world of escape games. UnBULLievable Escape Rooms is a premier escape room company in Durham that wants to add a new escape game to their collection and are looking for innovative ideas from game designers. UnBULLievable Escape Rooms is accepting proposals for the new escape game addition to the company.

Proposals must include a description of the narrative that the escape game will be built around, a material list, and a map/flow chart that shows the sequencing of how the puzzles/riddles will unfold in the escape game in order for the customers to escape/breakout. The game designer teams with the top proposals will go through to the next round and will submit a model of their escape game. The UnBULLievable Escape Rooms Board of Directors will decide on the top proposals that will make it to the finalist round and then will chose the winning model. The winning team's escape game will be built as the newest attraction at UnBULLievable Escape Rooms for the 2020 year and will receive $10,000.

2) Data Finding: Identify the knowns and the unknowns of the situation. Consider the who, what, when, why, where, and how of the situation. Use *divergent thinking* to brainstorm all of the known facts in the space below.

Now use *convergent thinking* to select the most important facts. Circle them.

II. Visual Thinking Strategy

TEACHER NAME		Lesson #
Madison Ambrose		2
MODEL	**CONTENT AREA**	**GRADE LEVEL**
Visual Thinking Strategy	ELA	7
CONCEPTUAL LENS	**LESSON TOPIC**	
Exploration	Escape Room	

LEARNING OBJECTIVES *(from State/Local Curriculum)*

SL.7.1 Engage effectively in a range of collaborative discussions (one on one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.

a. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.

b. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed. Acknowledge new information expressed by others and, when warranted, modify their own views.

THE ESSENTIAL UNDERSTANDING *(What is the overarching idea students will understand as a result of this lesson?*	**THE ESSENTIAL QUESTION** *(What question will be asked to lead students to "uncover" the Essential Understanding)*
Exploration leads to discovery.	*How does exploration lead to discovery?*
CONTENT KNOWLEDGE (What factual information will students learn in this lesson?)	**PROCESS SKILLS** (What will students be able to do as a result of this lesson?)

Students will know: ● that to make sense of the world it is necessary to organize incoming sensations into information which is meaningful ● a cryptogram is a text written in code ● Morse code, pigpen cipher, and snotes are ways to create hidden messages ● A cryptogram can be used to create a clue for an escape room – words can be directions or used in alpha locks; numbers can be used in numeric locks ● exploration is a thorough analysis of a subject or theme ● exploration leads to new information being discovered	Students will be able to: · Analyze · Decipher · Inference · Evaluate · Draw conclusions · Work collaboratively · Prepare for and participate effectively in a collaborative discussion with diverse partners · Think critically, imagine, and problem solve · Justify and support reasoning with evidence

GUIDING QUESTIONS

What questions will be asked to support instruction?

Include both "lesson plan level" questions as well as questions designed to guide students to the essential understanding

Pre-Lesson Questions:	During Lesson Questions:	Post Lesson Questions:

· What is an optical illusion? · How do you solve or discover the meaning in an optical illusion? · How can someone explore an optical illusion? · Why do people enjoy exploring and solving optical illusions? · How can an optical illusion be used as a clue/puzzle in an escape room? · What did you see in the video? · How did the OK Go band and production crew create the optical illusions in the video? · How is the OK Go video set up similar to an escape room? · What did you see in the video this time that you missed during the first viewing? · What are new ideas for how the OK Go band and production crew may have created the optical illusions in this music video? · How did your further exploration of the video lead to your discovery of new information? · How else is the video similar to an escape room? · How did the behind the scenes video confirm your ideas of how the optical	· What do you see in the image? · What do you see that makes you say that? · What else do you see? · How does this image connect to our topic of escape rooms? The first three questions are asked for several rounds until students have become repetitive. Allow for a FULL discussion before moving to the next questions. · What is going on in the image? · Who agrees with that observation or has a different idea? · Why do you think that? · How could this be used in an escape room? · Where is the setting of this image? · Who agrees with that observation or has a different idea? · Why do you think that? · How did your exploration of the image lead to your discovery of new images/meanings? · Who agrees with that observation or has a different idea? · What is hidden in this image? · Who agrees with that observation or has a different idea? · Why do you think that? · How could this be used in an escape room?	· What do you see in the image? · What do you see that makes you say that? · What else do you see? · Who agrees with that observation or has a different idea? · Why do you think that? · Why is this puzzle/code effective? · How is the puzzle/code created? · How could this puzzle/code be used in an escape room? · Why do you think that? · How did your exploration of the image lead to your discovery of new images/meanings? · What challenges did you face as you explored each puzzle/code? · What challenges might you encounter when incorporating these into your escape room design? · How did your understanding of the images change the more you explored them? · What did you learn about exploration as you completed the speed rounds with the cryptogram images? · How could these cryptograms be used in an escape room?

illusions in the video were made? · What new information about the video did you discover in the behind the scenes video? · What all do you think goes into creating full scale optical illusions like the ones in the music video? · How can you use what you have learned about the creation of the setting for this video in the creation of your escape rooms? · What is a cryptogram? · Why do people use coded text?		· How does **exploration** lead to **discovery**?

DIFFERENTIATION

(Describe how the planned learning experience has been modified to meet the needs of gifted learners. Note: Modifications may be in one or more of the areas below. Only provide details for the area(s) that have been differentiated for this lesson.

Content	Process	Product	Learning Environment
The optical illusion artwork used in this lesson is unfamiliar to the students and may express/illustrate concepts that are not usually a part of the curriculum at this grade level.	VTS is an open-ended thinking and inquiry strategy which allows students to share unique perspectives.		This is a student led lesson.

PLANNED LEARNING EXPERIENCES

(What will the teacher input? What will the students be asked to do? For clarity, please provide detailed instructions)

Engage and Connect - *This phase focuses on piquing students' interest and helping them access prior knowledge. This is the introduction to the lesson that*

motivates or hooks the students.

As the students enter the room, the music video "The Writing's On the Wall" by OK Go will be muted and queued up on the white board.

Begin by having a whole class discussion using the pre-lesson questions.

1. What is an optical illusion?
2. How do you solve or discover the meaning in an optical illusion?
3. How can someone explore an optical illusion?
4. Why do people enjoy exploring and solving optical illusions?
5. How can an optical illusion be used as a clue/puzzle in an escape room?
6. How would you use exploration and discovery when working with an optical illusion?
7. What makes using exploration and discovery enjoyable when working with an optical illusion?

Play the OK Go video without sound that has been queued up on the white board. After the video has played, have the students discuss.

1. What did you see in the video?
2. How did the OK Go band and production crew create the optical illusions in the video?
3. What do you think they discovered as they created this the optical illusions in the video?
4. What do you think they explored as they create the video?
5. How is the OK Go video set up similar to an escape room?

After the students have had time to discuss, play the video one more time and allow them to watch and explore for new optical illusions that they

may have missed during the first viewing.

1. What did you see in the video this time that you missed during the first viewing?
2. What are new ideas for how the OK Go band and production crew may have created the optical illusions in this music video?
3. How did your further exploration of the video lead to your discovery of new information?
4. How else is the video similar to an escape room?

After the students have had time to discuss, play the behind the scenes video for "The Writing's on the Wall" by OK Go without sound. After the

video has played, have the students discuss.

1. How did the behind the scenes video confirm your ideas of how the optical illusions in the video were made?

2. What did you discover about the optical illusions as you explored them in the video?
3. What new information about the video did you discover in the behind the scenes video?
4. What all do you think goes into creating full scale optical illusions like the ones in the music video?
5. How is exploration and discovery used when crating full scale optical illusions like the ones in the music video?
6. How can you use what you have learned about the creation of the setting for this video in the creation of your escape rooms?

Explore - *In this phase, the students have experiences with the concepts and ideas of the lesson. Students are encouraged to work together without direct instruction*

from the teacher. The teacher acts as a facilitator. Students observe, question, and investigate the concepts to develop fundamental awareness of the nature of the

materials and ideas.

Project the Biltmore Estate billiard room image on the board.

Instruct the students to look at the image for 2 minutes in silence. After 2 minutes of focused observation, ask students:

1. What do you see in this image?
2. What do you see that makes you say that?

(The first two questions are asked of individual students for multiple rounds. Allow each student who volunteers to answer both questions.

Paraphrase the students' responses as needed. Point to the space or object in the picture to which the student is referring as needed. Give no opinion

or judgement about what the student says until you reach the next set of questions below.)

After several rounds when the discussion wanes, ask the next question

1. What else do you see?
2. This is followed with: What do you see that makes you say that?
3. How does this image connect to our topic of escape rooms?

Now that several rounds of the foundational observation questions have occurred, this may be followed with questions such as:

1. What is going on in the image?
2. Who agrees with that observation or has a different idea?
3. Why do you think that?
4. How could this be used in an escape room?
5. Where is the setting of this image?

6. Who agrees with that observation or has a different idea?
7. Why do you think that?

Explain - *Students communicate what they have learned so far and figure out what it means. This phase also provides an opportunity for teachers to directly introduce*

a concept, process, or skill to guide students toward a deeper understanding.

After the students have responded to the prompting question, the teacher refers to the Biltmore room image and asks the following questions:

1. How did your exploration of the image lead to your discovery of new images/meanings?
2. What is hidden in this image?
3. Who agrees with that observation or has a different idea?
4. Why do you think that?
5. How could this be used in an escape room?
6. Where might you place clues for escaping from this room?
7. How might you use exploration to help you make the determination about where to place clues in an escape room?
8. What might those clues look like?
9. What can you use for clues?

Students are divided into small groups for the next learning experience.

Elaborate *—Allow students to use their new knowledge and continue to explore its implications. At this stage, students expand on the concepts they have learned,*

make connections to other related concepts, and apply their understandings to the world around them in new ways

In their small groups, students will rotate through cryptogram speed rounds. The students will rotate and discuss in their small groups and each

individual student will be responsible for filling out their own cryptogram analysis organizer. There will be five stations, each with a different

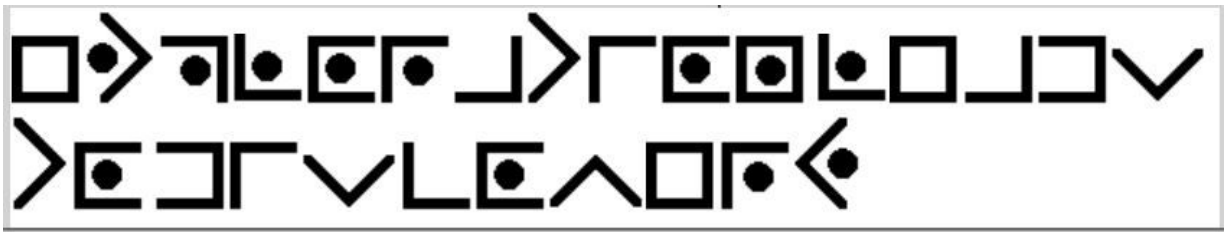
image for the student to analyze. The students will be given 3 minutes at each station to explore and discuss the image with their small group.

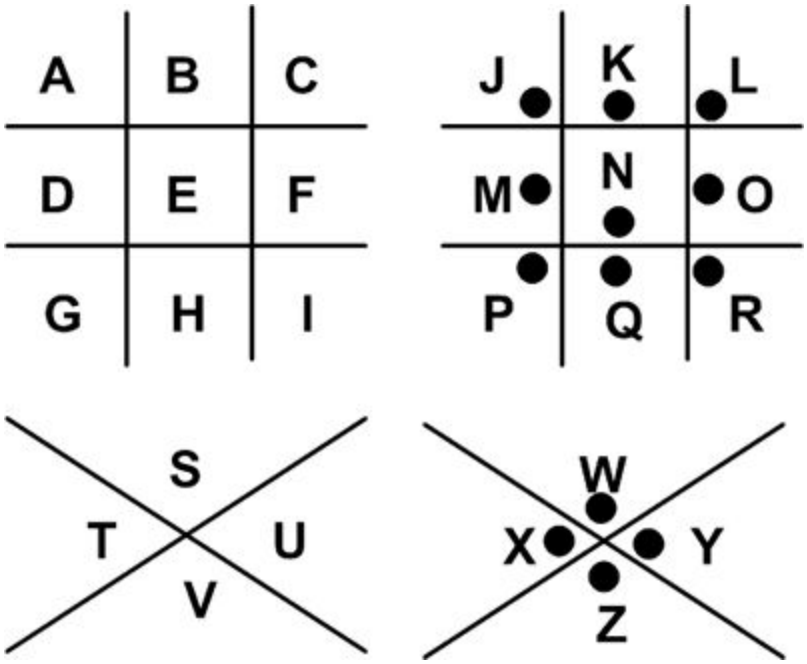
The optical illusion art speed round stations will be made up of the following images displayed on tablets or touch screen Chromebook with the

capacity to fold down into a tablet. The images will not have their title revealed to the students and will instead be labeled with numbers 1-5 for

reference.

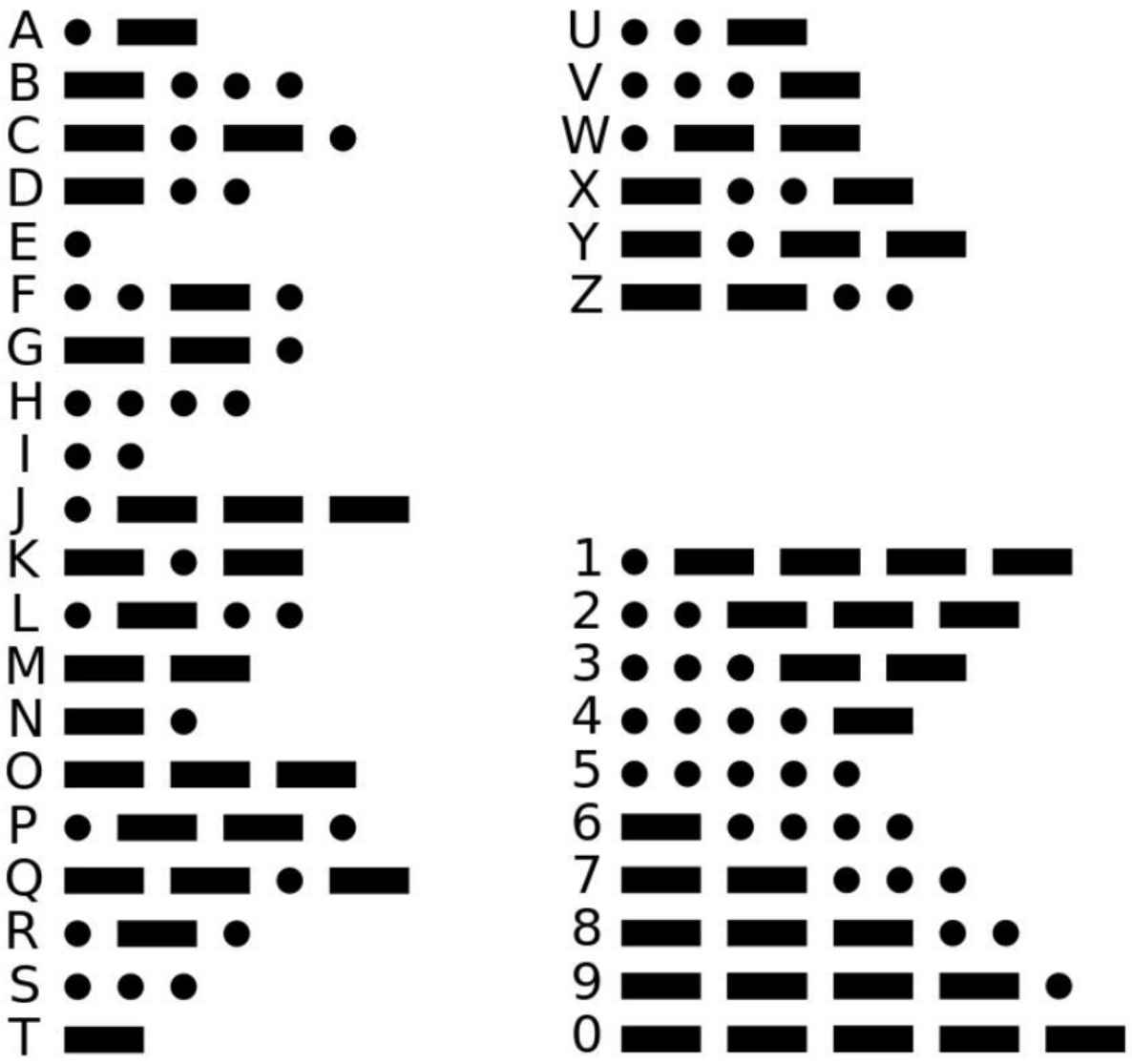
1. Pigpen Cipher



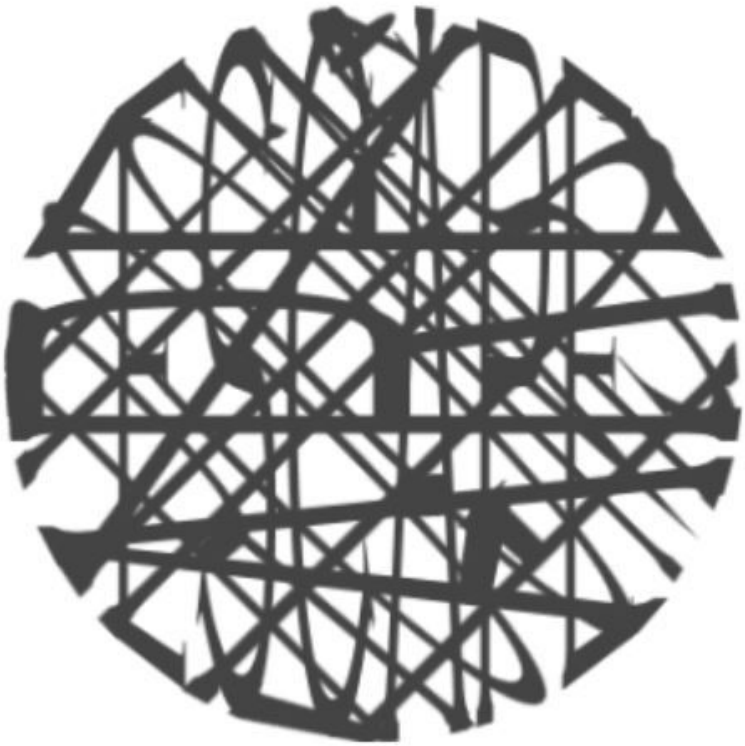


2. Morse Code

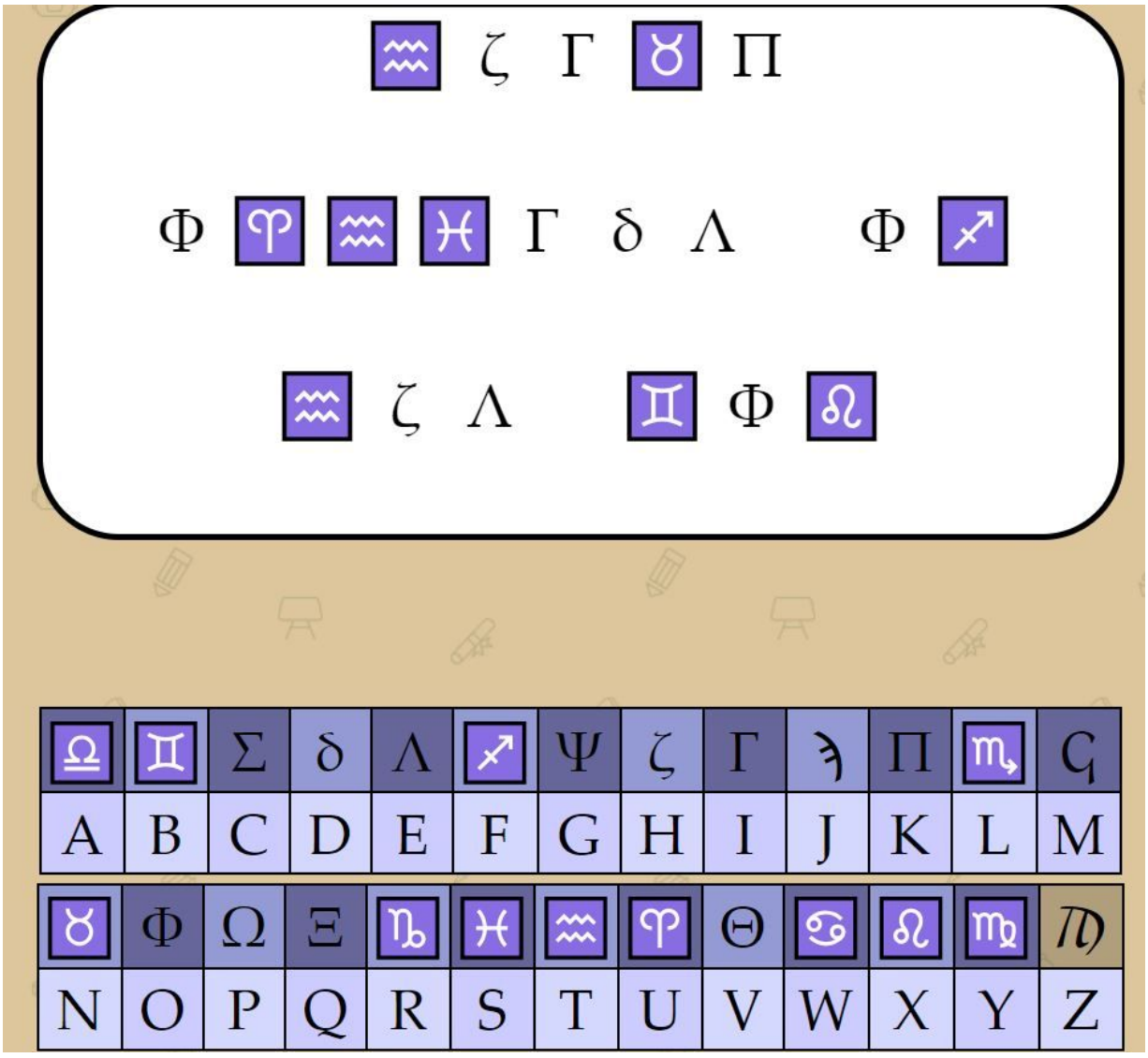
-. --- - . ...- . .-. -.-- - .... .. -. --. .. ... .- ... .. - ... . . -- ...



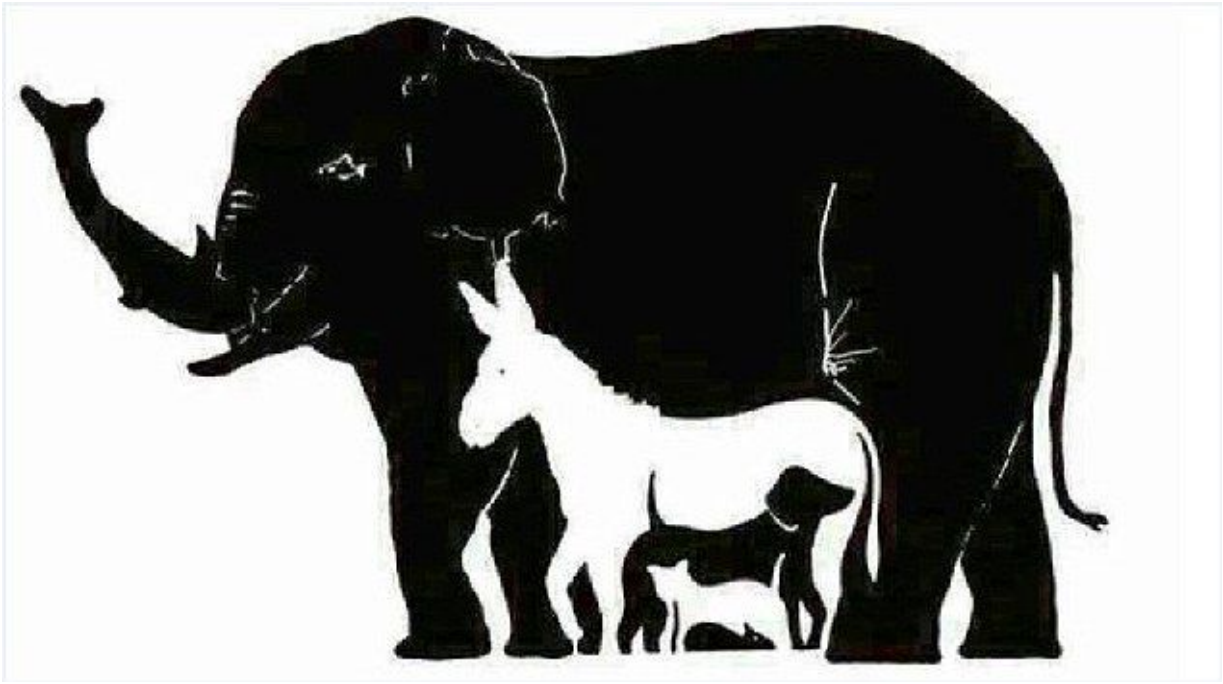
3. Snote



4. Secret Message



5. How Many Animals?



At each station, students will analyze the image. Students will be able turn the tablet so that the image is upside down or to the side and will be

able to zoom in on parts of the image using the pinch and zoom feature on the tablet. VTS strategies will be used by each small group. Each student

will fill out their cryptogram analysis organizer.

Questions:

1. What do you see?
2. What do you see that makes you say that?
3. What else do you see?
4. How could this be used in an escape room?

After several rounds of foundational questions, the teacher asks small groups to include the following:

- Who agrees with that observation or has a different idea?
- Why do you think that?
- Why is this puzzle/code effective?
- How is the puzzle/code created?
- How could this puzzle/code be used in an escape room?
- Why do you think that?

Each group, based on their discussion answers the following question:

1. How did your exploration of the image lead to your discovery of new images/meanings?

Evaluate: *This phase assesses both learning and teaching and can use a wide variety of informal and formal assessment strategies.*

After the students have completed the speed round rotations of the cryptogram images, the groups will come back together to have a class discussion. Begin with the following questions:

1. How did your exploration of the image lead to your discovery of new images/meanings?
2. What challenges did you face as you explored each puzzle/code?
3. What challenges might you encounter when incorporating these into your escape room design?
4. How did your understanding of the images change the more you explored them?
5. What did you learn about exploration as you completed the speed rounds with the cryptogram images?

Go through each image with the class. Ask student volunteers to share by answering the following questions about each image. Students may use

their analysis organizers to aid in their discussion. What did your group see initially when you saw this image?

1. How did your understanding of the images change the more you explored them?
2. What did you learn about exploration as you completed the speed rounds with the cryptogram images?
3. How could these cryptograms be used in an escape room?

Reveal the answer of each of the cryptograms to the students. Have a student walk the group through how to use the key to decipher the code.

1. Pigpen Cipher

Answer: Exploration leads to discovery.

2. Morse Code

Answer: Not everything is as it seems.

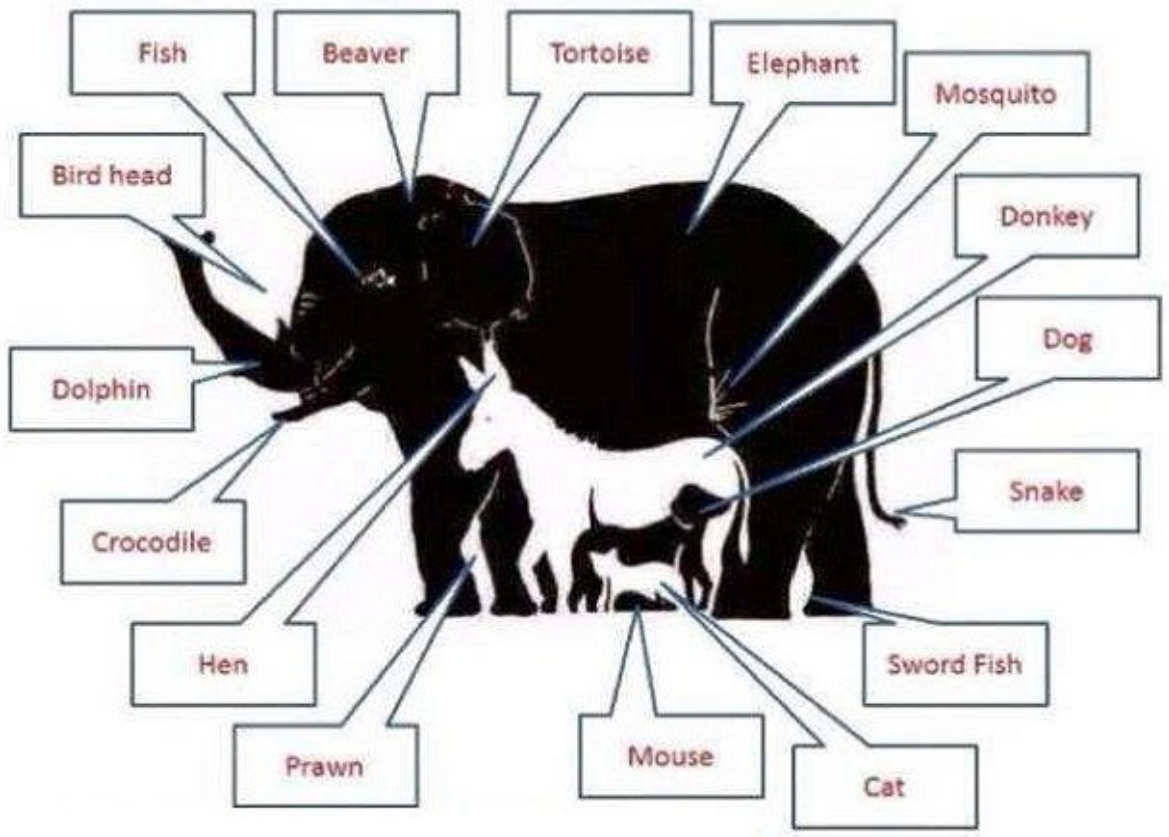
3. Snote

Key: Escape rooms are fun!

4. Secret Message

Key: Think outside of the box.

5. How many animals? Answer 16



Final Assessment:

Based on the images we have seen today and the discussion you have had about the images, how would you respond to the following question:

1. How does exploration lead to discovery?

Name: _____ Date: _____

Group Members Names: _____

_____

_____

Cryptogram Analysis Organizer

Directions: As you rotate through the cryptogram stations record notes about each image in the boxes below. Use descriptive words and phrases and also add your own illustrations to enhance your notes. Answer the following questions about each image in your notes 1) What do you see? 2) What makes you say that? 3) What else do you see? 4) How could this be used in an escape room? Add notes about questions posed by the teacher throughout the activity as well.

Image 1

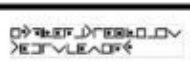
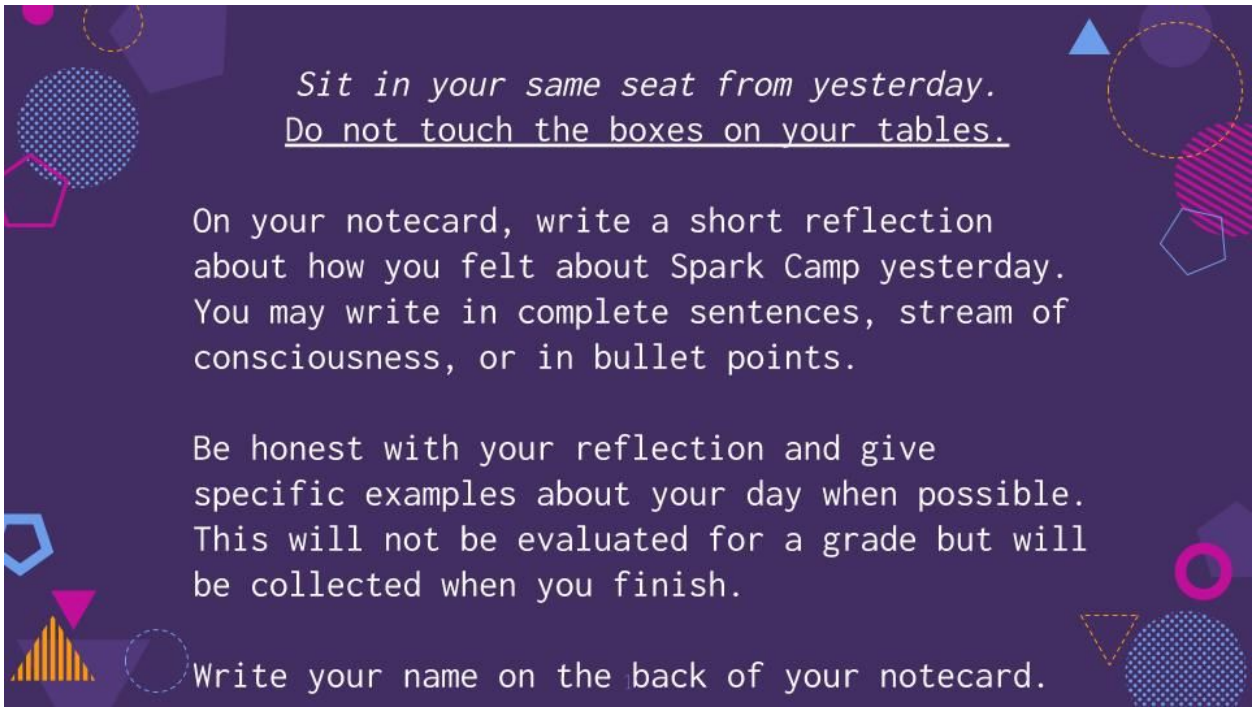


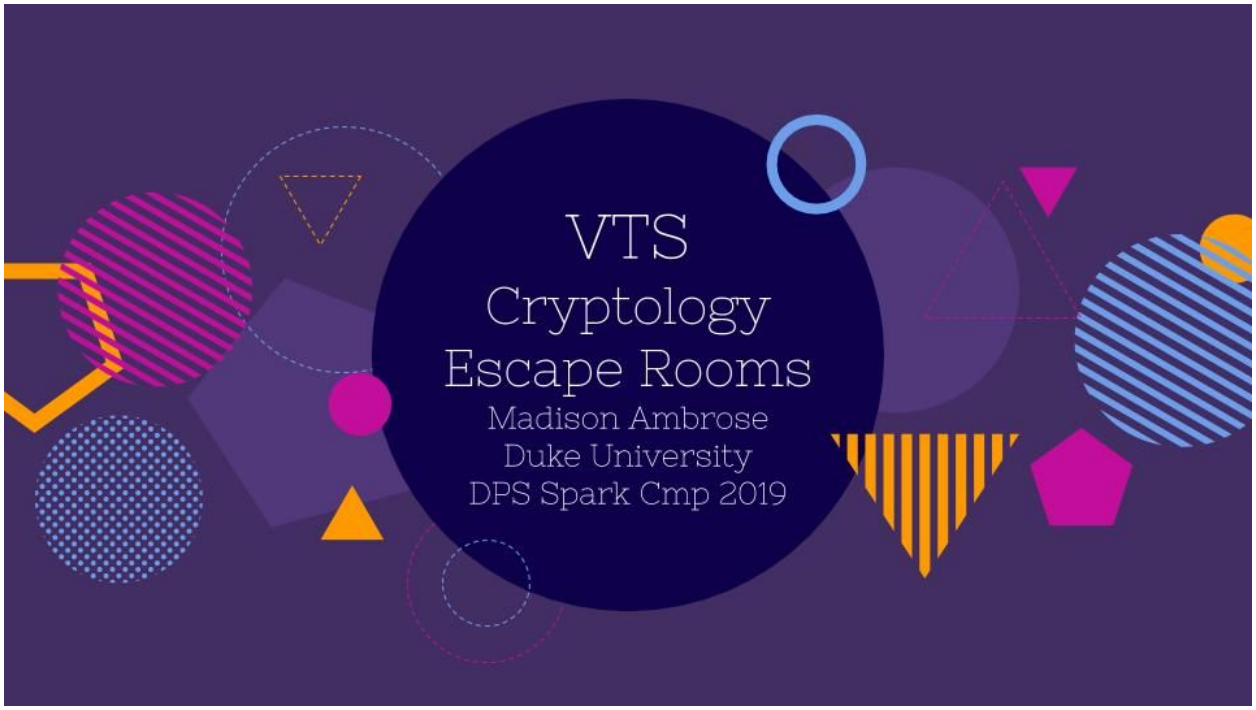
Image 2

Image 3

Image 4

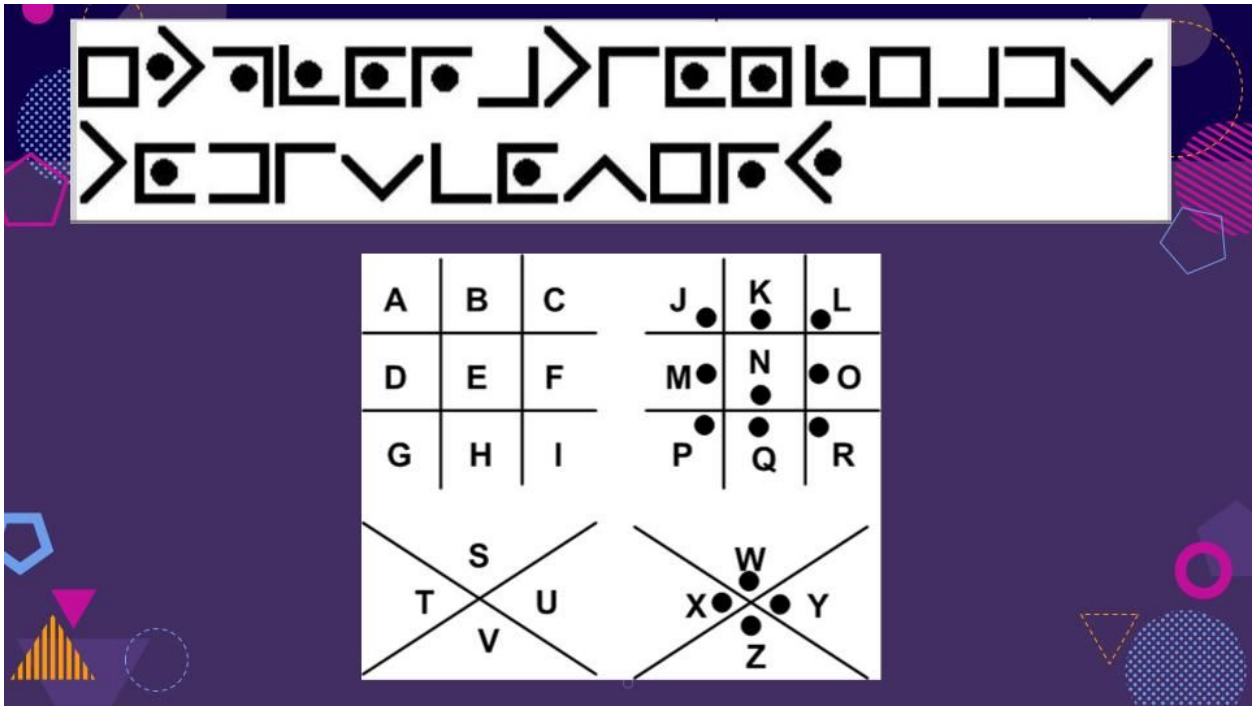
Image 5


Sit in your same seat from yesterday.
Do not touch the boxes on your tables.
On your notecard, write a short reflection about how you felt about Spark Camp yesterday. You may write in complete sentences, stream of consciousness, or in bullet points.
Be honest with your reflection and give specific examples about your day when possible. This will not be evaluated for a grade but will be collected when you finish.
Write your name on the back of your notecard.


VTS
Cryptology
Escape Rooms
Madison Ambrose
Duke University
DPS Spark Cmp 2019


THE WRITING'S ON THE WALL
vevo
3


4


A B C
D E F
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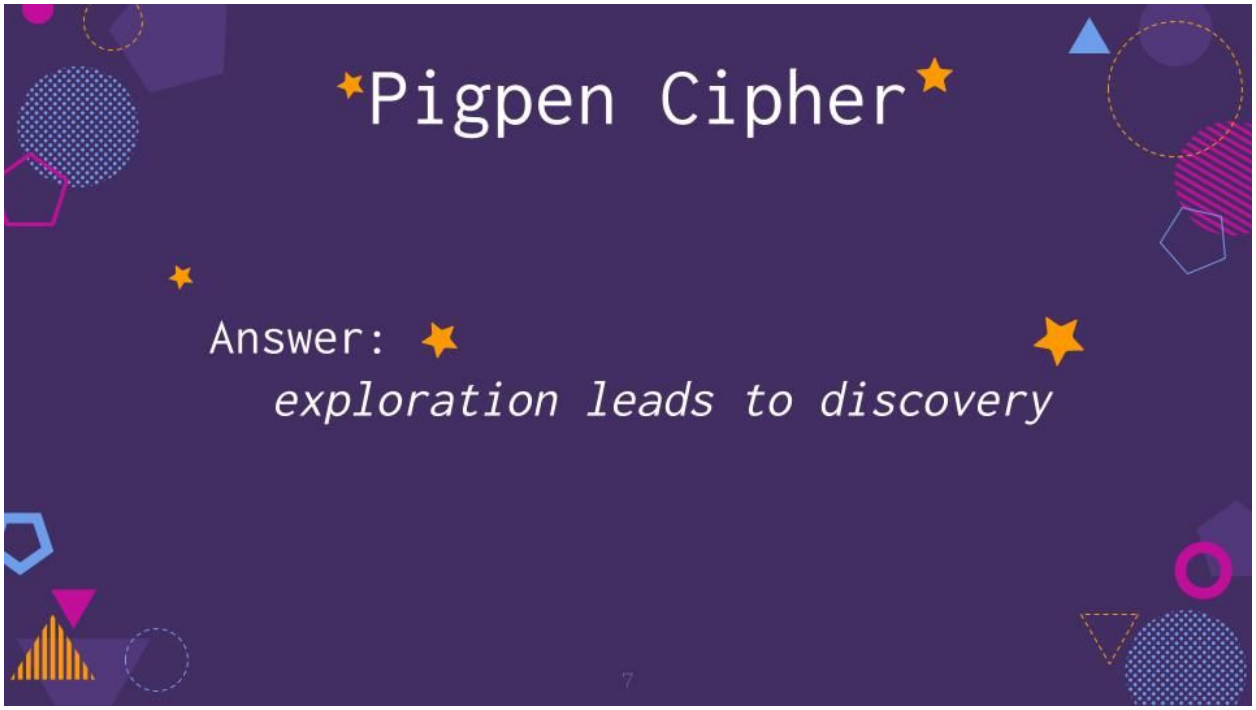
S T U V
W X Y Z


Pigpen Cipher
Answer:
exploration leads to discovery


A B C D E F G H I J K L M N O P Q R S T
U V W X Y Z
1 2 3 4 5 6 7 8 9 0

Morse Code

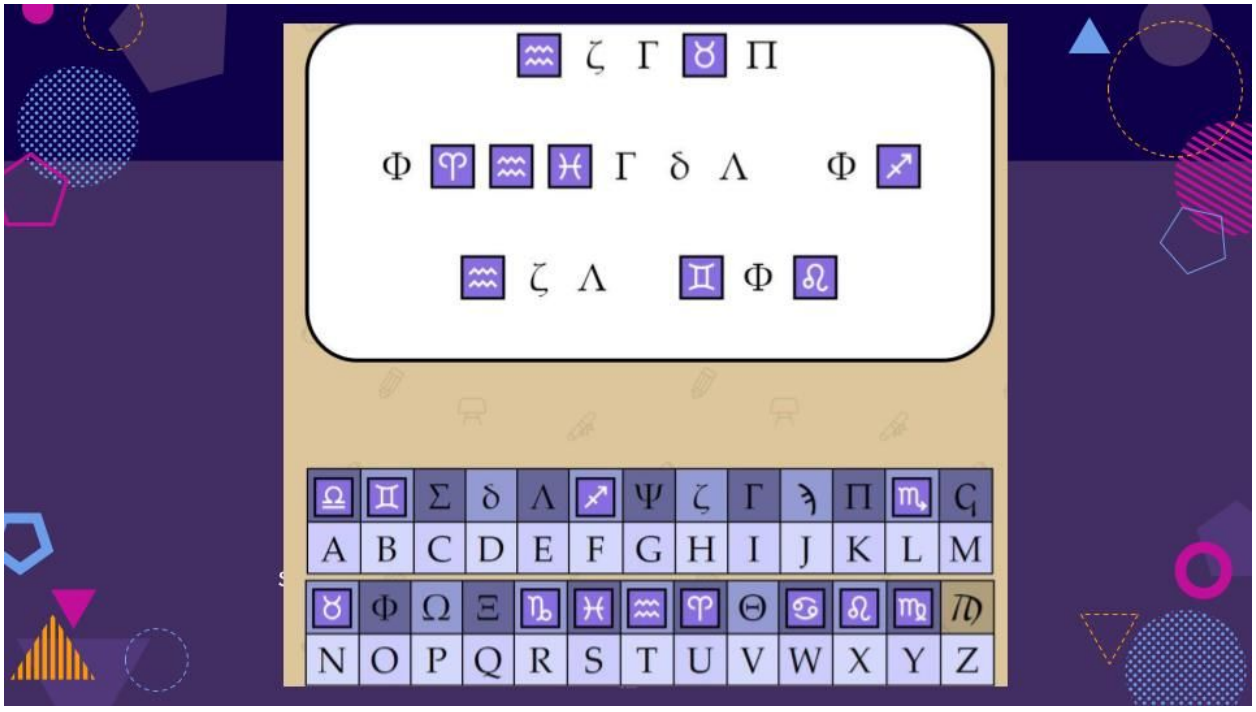
Answer:

not everything is as it seems

9

10


Snote
Answer:
escape rooms are fun!


A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z

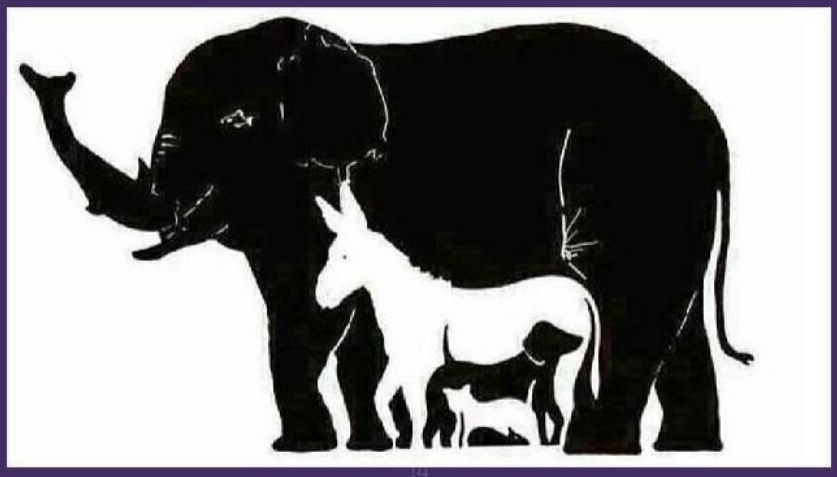
Secret Message

Answer:

think outside of the box

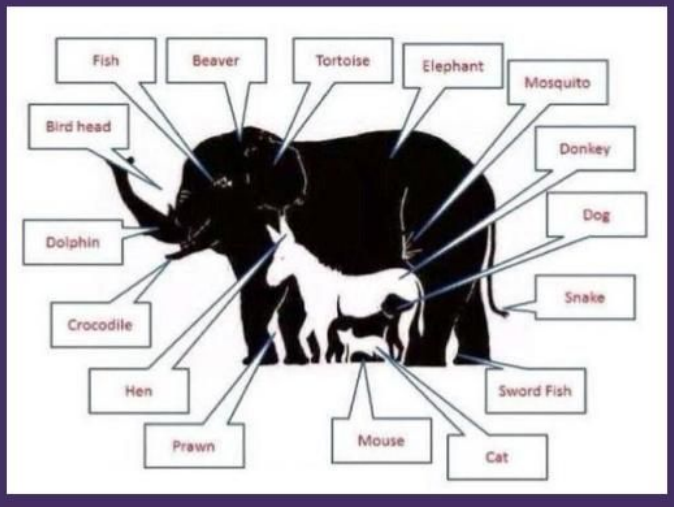
13

How many animals?



14

How many animals?



How does exploration lead to discovery?

Cryptogram Reflection

1. How did your exploration of the image lead to your discovery of new images/meanings?

2. What challenges did you face as you explored each puzzle/code?

3. What challenges might you encounter when incorporating these into your escape room design?

4. How did your understanding of the images change the more you explored them?

5. What did you learn about exploration as you completed the speed rounds with the cryptogram images?

2

III. Bruner

TEACHER NAME			Lesson #
Madison Ambrose			3
MODEL	**CONTENT AREA**	**GRADE LEVEL**	
Bruner	**ELA**	**7th and 8th Grade**	
CONCEPTUAL LENS		**LESSON TOPIC**	
Exploration		**Escape Room Designer**	
LEARNING OBJECTIVES *(from State/Local Curriculum)*			

RI.7.3 Analyze the interactions between individuals, events, and ideas in a text.

SL.7.1 Engage effectively in a range of collaborative discussions (one on one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.

a. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.

b. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.

c. Acknowledge new information expressed by others and, when warranted, modify their own views.

THE ESSENTIAL UNDERSTANDING ***(What is the overarching idea students will understand as a result of this lesson?***	**THE ESSENTIAL QUESTION** ***(What question will be asked to lead students to "uncover" the Essential Understanding)***
Exploration leads to discovery	How does exploration lead to discovery?
CONTENT KNOWLEDGE **(What factual information will students learn in this lesson?)**	**PROCESS SKILLS** **(What will students be able to do as a result of this lesson?)**

Students will know that	Students will be able to
● exploration leads to discovery ● an escape room, also known as an "escape game", is a mental and physical adventure based game in which players solve a series of puzzles and riddles using clues, hints, and strategy to complete the objectives at hand ● escape rooms must be built around a narrative ● escape room designers must work within a budget ● escape room designers must create a specific sequencing of puzzles in order for the escape room to flow properly and work effectively ● escape room designers utilize a variety of skills and tools when creating an escape room ● collaboration and teamwork are vital to successfully complete an escape room challenge ● a cryptologist is a person who studies the writing and solving of codes ● an escape room writer is a person who crafts the narrative that the escape room/game is built around ● an escape game designer is a person who creates mini games that include codes, riddles, and puzzles for the escape room who also works with the engineer to sequence the flow of the escape room ● a gaming engineer is a person who works on the construction of the escape room/game in coordination with the game designer	· analyze need · create · access, organize, and synthesize information · utilize inquiry · think critically · evaluate · design and construct · sequence · problem-solve · work collaboratively

GUIDING QUESTIONS

What questions will be asked to support instruction?

Include both "lesson plan level" questions as well as questions designed to guide students to the essential understanding

Pre-Lesson Questions:	**During Lesson Questions:**	**Post Lesson Questions:**

• What do game designers do?
• What is an escape room?
• Who creates an escape room?
• What do escape room designers do?
• What skills might an escape room designer use?
• What are spaces in which escape room designers work?
• What are some of the methods that escape room designers use to create escape rooms?
• How important is the sequencing of puzzles for an escape room to flow effectively?
• How important is exploration of the scene and narrative for discovering how to successfully escape or breakout?
	• How do you think escape room designers use exploration?
	• How do you think escape room designers use discovery?
	• How might an escape room represent exploration?
	• How might escape rooms represent discovery?
	• How might exploration be related to discovery?
	• How does someone become an escape room designer?
	• How do escape room designers act?
	• What are escape room designers' characteristics/dispositions?
	  ○ Why do you say that?
	• What do escape room designers need to know?
	• What kind of narrative does an escape room need to be built around?
	• How does an escape room designer create an atmosphere that encourages exploration and discovery?
	• How many escape rooms does an escape room business typically run at one time?
	• How does an escape room designer create the narrative that an escape room is built around?
	• How much time is a team typically given to complete an escape room?
	• How does an escape room designer sequence the puzzles of an escape room so that it flows effectively?
	• How does an escape room designer effectively lead customers to explore the escape room in order for them to discover how to break out?
	• How does a team work collaboratively to complete an escape room?
	• How much money does it take to build an escape room?
	• How do escape room designers navigate issues or challenges that
		• What did you learn about being an escape room designer?
		• What skills are most critical for escape room designers?
		  ○ Why are these the most critical skills?
		• What obstacles or challenges did you encounter when completing your escape room?
		• How did the narrative add to the escape room experience?
		• How important was the act of exploration in your discovery of new information, puzzles, and avenues to escape?
		• How important was team work when your group completed your escape room?
		• What obstacles/challenges do you think you will encounter when creating your own escape room?
		• How important is exploration when working as an escape room designer?
		• How important is discovery when working as an escape room designer?
		• How does exploration lead to discovery?

	arise when customers are completing an escape room? • What happens if customers do not break out?	

DIFFERENTIATION

(Describe how the planned learning experience has been modified to meet the needs of gifted learners. Note: Modifications may be in one or more of the areas below. Only provide details for the area(s) that have been differentiated for this lesson.

Content	Process	Product	Learning Environment
The readings in this lesson are sophisticated in concept and use advanced vocabulary.	Students will work collaboratively in an authentic situation that will challenge them to achieve a goal that requires creativity, higher-order thinking, critical thinking, and out of the box thinking to complete the sequence of puzzles in the escape room.	The students will be given a variety of materials to create their own escape games. Their end products will vary depending on what materials they choose to use, the flow of puzzles/riddles in their escape game, and the narrative that their escape game is built around.	

PLANNED LEARNING EXPERIENCES

(What will the teacher input? What will the students be asked to do? For clarity, please provide detailed instructions)

Engage and Connect - *This phase focuses on piquing students' interest and helping them access prior knowledge. This is the introduction to the lesson that motivates or hooks the students.*

As the students enter the classroom they will sit in groups. On, under, and around their tables will be a breakout box as well as other materials for an escape room and there will be a taped perimeter around their desks. The students will be instructed to not touch the materials until told to do so.

The students will be given a KWL chart and will be instructed to complete the K and W parts of their chart for the topic of escape rooms or the job of an escape room designer.

Lists could include:

- What an escape room is
- Personal experience of completing an escape room
- Materials used in an escape room
- Types of puzzles found in an escape room
- Questions will vary based on the students' prior knowledge of the topic

After 5 minutes, the teacher will ask for volunteers to share what they put on their chart. As the students discuss their KWL charts, the teacher will record their responses on a large piece of poster paper so that the entire class is able to see the master chart. The teacher will ask the students to elaborate on their responses when needed.

After the students have filled out the K and W portions of their KWL chart and discussed their responses, show the following video clips to the students. Have them add information to the L section of their KWL chart. Have them also add new questions that they have to the K part of their KWL.

- History of Escape Rooms - https://www.youtube.com/watch?time_continue=57&v=yxZ9k5hsI_s
- The Design Process - https://www.youtube.com/watch?time_continue=4&v=szkxUjQSC6s
- Creating the Perfect Team for an Escape Room - https://www.youtube.com/watch?time_continue=74&v=odwlYGi2tak
- Bringing the Design to Life - https://www.youtube.com/watch?time_continue=53&v=emnMOCFd6-s

The teacher will also embed the following pre-lesson questions throughout the engage and connect portion of the lesson:

- What do game designers do?
- What is an escape room?
- Who creates an escape room?
- What do escape room designers do?
- What skills might an escape room designer use?
- What are spaces in which escape room designers work?
- What are some of the methods that escape room designers use to create escape rooms?
- How important is the sequencing of puzzles for an escape room to flow effectively?

- How important is exploration of the scene and narrative for discovering how to successfully escape or breakout?

Explore - *In this phase, the students have experiences with the concepts and ideas of the lesson. Students are encouraged to work together without direct instruction from the teacher. The teacher acts as a facilitator. Students observe, question, and investigate the concepts to develop fundamental awareness of the nature of the materials and ideas.*

The teacher will split the students into groups of four. Each student will take one of the following interviews with an escape room designer and will conduct a silent, close reading of the text:

- https://whatnerd.com/interview-with-escape-room-designer/
- https://www.escapefront.com/escape-room-puzzle-design-bh1/
- https://medium.com/@femfreq/freq-13-how-to-make-an-escape-room-953d8ce9eb56
- https://www.redbull.com/in-en/interview-with-dr-scott-nicholson

After reading the article, students will fill out the L portion of their KWL chart. They will get back into their groups and will share with each other about what they read and what they added to their KWL chart.

After the escape room designer interview jigsaw, the students will share out what they added to the L column of their KWL chart with the whole class and the teacher will record their responses on the large KWL chart.

The teacher will ask the following during lesson questions:

- How do you think escape room designers use exploration?
- How do you think escape room designers use discovery?
- How might an escape room represent exploration?
- How might escape rooms represent discovery?
- How might exploration be related to discovery?
- How does someone become an escape room designer?
- How do escape room designers act?
- What are escape room designers' characteristics/dispositions?
    - Why do you say that?
- What do escape room designers need to know?
- What kind of narrative does an escape room need to be built around?
- How does an escape room designer create an atmosphere that encourages exploration and discovery?
- How many escape rooms does an escape room business typically run at one time?
- How does an escape room designer create the narrative that an escape room is built around?
- How much time is a team typically given to complete an escape room?
- How does an escape room designer sequence the puzzles of an escape room so that it flows effectively?
- How does an escape room designer effectively lead customers to explore the escape room in order for them to discover how to break out?

- How does a team work collaboratively to complete an escape room?
- How much money does it take to build an escape room?
- How do escape room designers navigate issues or challenges that arise when customers are completing an escape room?
- What happens if customers do not break out?

The students will then complete a breakout box challenge created by the teacher. The teacher will explain to the students that the breakout box is a smaller version of an escape room that is often used in classrooms. Instead of trying to escape from the room, the students' goal will be to break into the box. Each student will assume a role of a person that might be included in an escape room design team

- Cryptologist – a person who studies that writing and solving of codes
- Escape Room Writer – a person who crafts the narrative that the escape room/game is built around
- Escape Game Designer – a person who creates mini games that include codes, riddles, and puzzles for the escape room who also works with the engineer to sequence the flow of the escape room
- Gaming Engineer – a person who works on the construction of the escape room/game in coordination with the game designer

The teacher will set the scene by reading the narrative with the students. She will explain the rules as well.

Rules:

- You must work together as a group to solve the breakout box challenges.
- You may use clues that are on your desk, under your desk and within the taped perimeter around your group
- You are not allowed to randomly enter in codes for the locks to unlock them; you must use the clues and puzzles to solve the locks
- You have 2 hint cards that you may hold up if your group gets stuck and the teacher will give you a hint (not the answer)
- After opening a lock, you must place it on the lock chart and are not allowed to touch it again

The escape room will follow the following flow/sequencing:

- **Set the Stage:**
  - News Article
  - Read as a class to set purpose
  - Students will complete a series of activities within their group to find the DNA code that will defeat the "Yellow Dust" taking over the world.
  - "time" (last word of article) will be underlined twice to lead the students to the *clock safe*
- **Activity One: Clock Safe**
  - Inside the clock will be a puzzle in pieces with 3 pieces missing, a blacklight flashlight, and "Poetry in DNA analogies" (leads to 5 letter lock attached to desk with key)
  - Students will put the puzzle together and find there are 3 puzzle pieces missing.
  - They will need to complete other activities in order to find the **three missing pieces** and identify the **DNA Escape Code**.

- On the puzzle will be the question, "What is the DNA Code?" Leading students to understand they are looking for the missing puzzle pieces that will provide them with the escape code.
- One of the letters for the DNA code will be given on the puzzle.
- The short article "**Poetry Written in DNA**" will also be in the clock with the puzzle pieces which will provide the **next clue**.

- **Activity Two: "Poetry Written in DNA"**
  - Continuing from activity one, students will need to complete the analogy created in the article.
  - **Pyramid : Hieroglyphs :: Language : Legacy :: _____ : Communicate**
  - Clue is **Alien** which will lead students to the **5 letter lock** attached to the desk
  - Attached to the lock is the **key to the Dictionary (use a zip tie to loop through key and lock arm)**
  - Students must then find the dictionary which will be underneath one of their desks
    - hint - You must discover the book that holds the key by exploring the space above, below, and around you.
- **Activity Three: Dictionary**
  - Inside of the dictionary will be the New Yorker story "Invasion from Outer Space," another puzzle piece, and a puzzle pod.
  - The students will have to read the New Yorker story and use the blacklight flashlight to discover the quotes with missing pieces written in uv light at the end of the story.
    - "The people were warned to "_ _ _ _ touching the substance from outer space."
    - "The cells reproduced by _ _ _ _ _ fission"
    - "We have been invaded by nothing, by emptiness, by _ _ _ _ _ _ dust."
  - The boxed letters will spell out B, B, A, which will be the code to the puzzle pod.

- **Activity Four: Puzzle Pod**
  - Inside of the puzzle pod will be a small piece of paper that reads "How quickly does the dust multiply?"
  - The students will have to go back to the New Yorker story "Invasion from Outer Space" to find the line - "A single cell, placed in a brightly illuminated test tube, divides at such a rate that the tube will fill in about forty minutes. An entire room, in strong light, will fill in six hours."
  - 406 is the code for the black lockbox
- **Activity Five: Black Lockbox**
  - Inside of the black lockbox will be the last puzzle piece and a pouch that is locked with the four letter combination lock.
  - The students will have to finish putting the puzzle together and then use the Pigpen cipher on the back of the news article from the beginning to solve the cryptogram on the puzzle which will spell out STAR
  - STAR is the code for the four letter lock
  - Inside of the pouch locked by the four letter lock will be card that says "We escaped the alien invasion!"

Students will be given 30 minutes to complete the breakout box challenge. Once they have opened their breakout box, they will hold up their "We Broke Out" card. The students will then each complete a reflection about their experience while waiting for the other group's to finish.

Questions for reflection:

- What did you find to be the most challenging part about completing the breakout box challenge?
- What did you find to be the easiest part about completing the breakout box challenge?
- How important was teamwork to completing the breakout box challenge?

Explain - *Students communicate what they have learned so far and figure out what it means. This phase also provides an opportunity for teachers to directly introduce a concept, process, or skill to guide students toward a deeper understanding.*

The teacher will give the students time to finish their reflections individually. Then the teacher will have student volunteers share their reflections.

As a group, the teacher will ask the post lesson questions:

- What did you learn about being an escape room designer?
- What obstacles or challenges did you encounter when completing your escape room?
- How did the narrative add to the escape room experience?
- How important was team work when your group completed your escape room?
- What obstacles/challenges do you think you will encounter when creating your own escape room?
- How important is exploration when working as an escape room designer?
- How important is discovery when working as an escape room designer?

Students will respond to the questions orally as a class. The teacher will record their reflections and responses on the L column of the large KWL chart.

Elaborate *—Allow students to use their new knowledge and continue to explore its implications. At this stage, students expand on the concepts they have learned, make connections to other related concepts, and apply their understandings to the world around them in new ways*

The teacher will go back over the students' performance task for the Spark Camp.

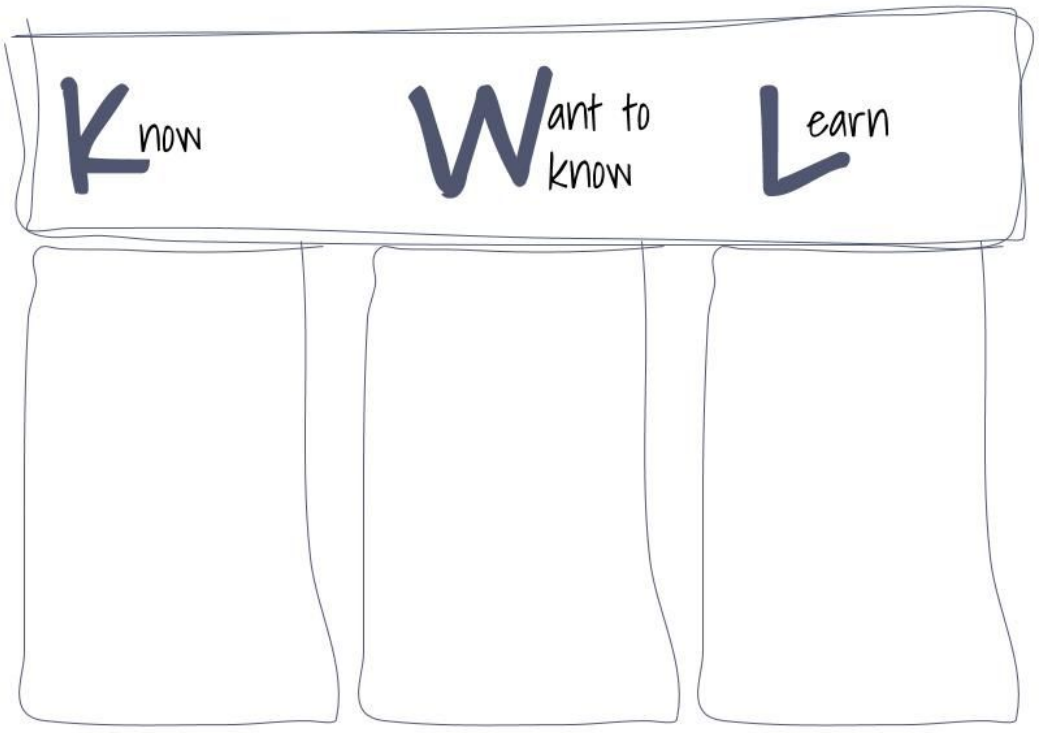
· You are a game designer who is part of team of game designers who are trying to enter the competitive world of escape games. UnBULLievable Escape Rooms is a premier escape room company in Durham that wants to add a new escape game to their collection and are looking for innovative ideas from game designers. UnBULLievable Escape Rooms is accepting proposals for the new escape game addition to the company. Proposals must include a description of the narrative that the escape game will be built around, a material list,

and a map/flow chart that shows the sequencing of how the puzzles/riddles will unfold in the escape game in order for the customers to escape/breakout. The game designer teams with the top proposals will go through to the next round and will submit a model of their escape game. The UnBULLievable Escape Rooms Board of Directors will decide on the top proposals that will make it to the finalist round and then will chose the winning model. The winning team's escape game will be built as the newest attraction at UnBULLievable Escape Rooms for the 2020 year and will receive $10,000.

The students will work in their teams to create and submit their escape game proposals to be reviewed by the "UnBULLievable Escape Rooms Board of Directors". (Problem Finding and Idea Finding from CPS Lesson)

Evaluate: *This phase assesses both learning and teaching and can use a wide variety of informal and formal assessment strategies.*

Finally, before leaving, the students will complete an exit ticket – How does exploration lead to discovery?



GAMING (HTTPS://WHATNERD.COM/CATEGORY/GAMING/)

Interview With an Escape Room Designer: An Inside Look at Escape Room Design

We sat down with escape room designer Owen Spear to learn how he designs escape rooms and to get his thoughts on the current escape room trend.

By Dave LeClair (https://whatnerd.com/author/dleclair/) *Apr 30, 2019*

Recently, we ran through a fantastic escape room called "Fractured: Remember Me" in Melbourne. After escaping, we had a chance to sit down with Owen Spear, the designer of the room, to learn a bit more about his background, how he designs his escape room puzzles, and plenty of other escape room tidbits.

WhatNerd: How did you get into designing escape rooms?

Owen Spear, Escape Room Melbourne (http://www.escaperoom.com.au/): I went to Budapest with my ex-partner about six years ago when they had just begun (they started in 2011) and we heard about these escape rooms, and I finally got around to doing one. I thought it would be like a couple of Sudokus in a room and you know, like, some brain teaser or something.

I think it was kind of an average room, but it was incredible and as soon as we finished we're like super excited. We were like, "Let's build one in Australia." We looked it up and there were none here yet, so we started designing it and we came back to Australia and managed to be the first, which was cool!

Left to right: Nuwan (video production & editing), Owen Spear (lead designer), Torben (tech wizard & builder)

WN: What were you doing before you got into escape rooms?

OS: I was just finishing my Master's to be a clinical psychologist so I just started building escape rooms and working as a psych at the same time, which is a coincidence.

WN: How do you feel about where escape rooms are right now? Do you see them as a long-term trend or do you see them as a fad?

OS: Escape rooms aren't showing any signs of slowing yet, and it's been eight years now.

I think they're gonna keep being popular because if you think about corporate team-building and how incredibly boring most corporate team-building is, you can send someone to an escape room and it's genuinely fun and genuinely builds bonds between people. I think that will end up being the bread and butter of escape rooms.

I think they're going to have to advance. There are people either going on the tech side or they're going down the acting/interesting phenomenon side of things.

WN: I heard of the one [down in Melbourne] that's "*The Legend of Zelda* meets escape room" where you have these different masks that you wear with unique abilities.

OS: I haven't done it yet but I've heard that it's a bit less puzzly, but the story is very immersive. I think escape rooms are going to eventually have to keep doing different things. They can't be the classic open-the-locks-and-find-the-thing.

"Fractured" kind of walks the line with a little bit of a narrative while having the puzzles. Our first room has something like 12 locks in it whereas Fractured has three or four. That's where escape rooms are trying to head. A little bit is away from this unlock-the-box/find-the-item/use-the-item/unlock-another-box. I think they're going to keep going.

WN: The biggest issue that I've seen with escape rooms, compared to other entertainment activities, is that it's hard to get repeat customers. What do you think is the solution to that?

OS: When the next Flemington room opens, we'll have seven rooms that people can use. That's a lot of repeating.

You can just keep building rooms and it's rare that someone will do them all. We have Escape Room Melbourne "groupies" who will do every single one of our rooms; as soon as we open one, they'll do it. They're sort of dedicated to our company, but it's rare that you'll get somebody who does all seven of your rooms.

There are other alternatives I've never bothered with, but some people will have rooms in two parts. Usually you can't finish in the first try so you have to go back a second time to finish it off. The other alternative I've heard of is, you make decisions along the way that fundamentally change how the room unfolds. You'll open a different area which means you've got to have a separate area, but it's sort of like using the same space for a different thing. We were going to use the old Flemington room, but then change it so that it had gone through an apocalypse after the original setting.

But you're right, you can't replay it like you can laser tag or *Mario Kart* or whatever, I guess that's true. But it doesn't seem to matter too much, and they're pretty successful. There are nearly 30 [escape room] companies now in Melbourne.

WN: Can you give us a quick overview of your process from starting a puzzle to finishing a puzzle?

OS: I would come up with an interesting mechanism for an item. So I'm walking around a shop or a market somewhere and I see a little old billiard set, like a tiny one, and I'm like, "This is cool. I want that item in my room. How can I make it into a puzzle?" I think about the properties of it. It involves balls that move. Then I would think the balls could roll around. In the place where they roll, what if they left an imaginary line and that was how it worked? If someone got instructions on how a billiards game went and then you think of an output, a number is the easiest. That's why everyone uses locks. It's so easy to come up with a number answer.

I'll think about what would be interesting. I think about what information it holds or what information you could glean from that thing, and then make a prototype, test it, see how people find it, refine it, and then repeat over and over and over again until it's refined.

WN: Let's say you have a puzzle that you've designed, sticking with the billiards table as an example, would you already have a room theme for that or do you go the other way and come up with the puzzle first?

OS: No, I always have a room theme. I start with a room theme, and then I'd wander up to shops. I'd start with the theme idea, and then I'd look for items for it. I'd find something cool and think, "How can I turn that into a puzzle?" For example, I want a projector, that would be cool. When you stand in front of the projector, you create a silhouette. Okay, that could make the person use their own body to form shapes. Then you just run with that and work it, work really hard over and over. Each puzzle will see around 50 changes.

WN: What would you say are the most frustrating and most rewarding parts of watching somebody work on one of your rooms?

OS: Rewarding? Teams where they get it, and I appreciate that.

Most frustrating is the opposite of that, where teams just don't get it. I find it uncomfortable when a team can't solve puzzles. I feel like I've made it too hard. There are puzzles I've refined for literally 80 hours and they didn't make [the cut as a puzzle in the room]. Some I've worked on for 30, 40, or 50 hours that don't make it in a room and I just have to be like, "Oh well."

WN: Do you hang onto those for use in another room or do you just scrap the idea?

OS: I've tried to reinsert them in other rooms and they end up getting kicked out again. Like the first puzzle I ever made I thought was really cool. I thought it was really fun, but it just pissed everyone off. It's not working when you're making all these changes to make it easier and easier. I thought it would be really good, but it turned out it wasn't and I just had to dumb it down over and over.

WN: What are your favorite types of puzzles?

OS: I find the best puzzles you can design are multi-stage procedural puzzles. A lot of rooms draw on these quick fix puzzles, which is like one person gets to go, "Ahh! The thing goes there!" I like multi-stage procedural puzzles where about ten logic leaps are required, which means everyone can get involved.

If I can make a puzzle that has many steps involving many people, that's the hardest to come up with but my favorite kind.

WN: Do you have any specific stories or instances of players where you just had to sit back and laugh?

OS: When you finish the first room, we have you find this elixir, this potion that's like tonic water with glow-in-the-dark pink stuff in it. It glows from UV light. You find it and go, "Cool, we found it." [One person's] team thought it was a spirit to drink, so they drink this glow-in-the-dark liquid that's from those glow-in-the-dark sticks.

The worst I've ever seen was a group of seven twenty-year-old women who were led by this really bossy woman. Any time one of them would say the right answer, she would push them out of line. They required 36 hints and took 2 hours and 10 minutes. I ended up just saying, "Hey, that girl there actually had the right idea, run with her." I was laughing by the end. They were the last team of the day so there was no rush, and I just kept it running for the story.

WN: Was there a conscious decision to not put a timer in "Fractured" so the players aren't distracted by it?

OS: A lot of escape rooms boast about having lower success rates. I think a lower success rate just means you made clunky, unintuitive puzzles. I don't think they should be about winning and losing. I think they should be about using your brain in interesting ways and connecting with your friends to work together.

But the timer thing, I'm not really against it. I mean, people use it in other rooms to check how they're going. I find there's a real tension between gamifying something and making it feel authentic. If you have a timer in the room, every time you look at it you feel like you're in a game. Did you know you're in a game? I suppose you could make it part of the narrative.

WN: If budget wasn't a concern, do you have a dream escape room that you would like to design?

OS: You know Melbourne housing prices are so ridiculous, it is a fantasy to imagine opening an escape room in a house—but [my dream would be] a whole-house escape room, rather than just a room in an existing house.

I would love to be able to build in something that existed. I'd love an old mill or an old bakery. Just something that was already kind of creepy and odd, where I just add the puzzles. With unlimited money, they do this already in China. If public liability didn't matter, I'd do rooms that filled with water and you literally had water slowly filling in.

I'd love to have one in a truck so you were driven around and you didn't know where it would end up. It could potentially stop at different spots and you could jump out to grab stuff.

Another one I would like to do is buy a place where you would do a holiday escape room, so you solve a mystery over an entire weekend. It would have stuff that would get you to explore the area. A little bit like geocaching combined with escape rooms.

WN: Do you see virtual reality working its way into escape rooms?

OS: Someone will do it and I don't like it. For me personally, I like escape rooms because it's getting you off your couch into the real world. The only way virtual reality would work in a room is if you developed a sci-fi theme where virtual reality made sense.

FREQ #13: How to Make an Escape Room

Feminist Frequency Follow
Mar 17, 2017 · 9 min read

Art by Rory Frances

Laura E. Hall wants you to get out; she really does. As an escape room designer, she's created numerous live-action mysteries where teams of intrepid players sealed in a real-life room must rifle through clues and solve puzzles in hopes of getting out before time runs out. Although she's created escape rooms for franchises like Resident Evil and Adidas, she's also the co-founder of 60 Minutes to Escape, a company that runs an award-winning escape room in Portland, Oregon where you uncover the truth about a missing spy. Her work isn't limited to spaces with four walls, either; she also designs games for computers, tabletops and even streets. She talked to FREQ about the unique challenges of building puzzles that people inhabit, what happens to the people who enter them, and where they intersect with the world of virtual reality.

HOW TO MAKE AN ESCAPE ROOM

Interview by Laura Hudson

FREQ: Who do you imagine as your audience when you're designing escape rooms, and how does that influence the way you make them?

Laura Hall: It's actually very diverse. We've had families coming through, corporate team-building, teenagers' birthday puzzles. We get really hardcore puzzle-solving people and people who have no puzzle-solving experience whatsoever. It really is difficult to balance it for everybody, which is why we have hints. You can challenge people, but ultimately the goal is fun and if they aren't having fun, then what's the point? There's an art to hinting people, and what we teach our staff to do is direct people's attention towards something, but never to tell them the answer, because it's so much more satisfying if they get it themselves. I also try not to put a proctor or helper in the room because that changes how people behave—they look to the person for permission before they touch or move things, and if there's no one there, they forget they're being observed so they're much braver. Sometimes that means they break things, but that's a given.

FREQ: Both video games and escape rooms can be interactive puzzle-solving experiences—escape rooms were even inspired by video games. So what makes the real-life version different, both for players and for designers like you?

Hall: With a video game you can stop it and leave it and come back at any time. It's an experience that you have while seated in front of a flat screen, and it's not very physically taxing. When people are actually in a real physical space, it's very different. It's very important to have people cross a threshold so they're entering a different world. You dim the lights; you direct people's attention. It affects you physiologically as well. Your heart starts racing, your adrenaline kicks in, and you enter that flow state where information falls away. A lot of people say that they don't notice that the time has passed. Your brain is processing everything as pure information, the same way you forget when you're reading subtitles—you're just doing the thing. It's actually very difficult to keep people's attention on what that they need to pay attention to. In one of our rooms we have a hint system with an alarm that blares when a hint is sent through, and people do not hear it sometimes. You can play the alarm over and over and over, but they tune it out completely.

Hall's "Resident Evil" escape room

FREQ: How do you move people through a space the way you want them to go, or draw their attention to certain places?

Hall: I think of it in terms of video game design. You need to make sure that anything that's in the room is there on purpose. I don't enjoy red herrings, because my design philosophy is that I'm not going to waste someone's time. In puzzle design in general, there's no words, ideally. You need the design to inherently tell people what something is, how to use it, and how to solve it without being instructed. There's a lot of overlap in the design techniques with any space or entertainment piece that you need to be moved through, where you're drawing someone through with a story: immersive theater like *Sleep No More*, theme park designs, and museums as well. There are best practices established in those fields, and escape rooms draw on those. The additional thing is the time constraint, which changes how people behave in that space.

FREQ: How do you decide how difficult to make the puzzles, or the whole experience? I know some escape rooms have very high failure rates.

Hall: That's a design choice, just like having red herrings. There are escape rooms that are very, very successful, but they only have a 2% escape rate. It's designed to keep you out, so it's a real achievement if you can make it out in that amount of time. That's different from what I want to do. In the rooms I design, I would love it if everybody got out. What we're aiming for is immersion—the idea that you can forget yourself for an hour and be in that world. I think that's really valuable. It needs to challenge you, but it's you and your team versus yourselves, not you versus the room.

FREQ: I'm really curious about the group dynamics of these experiences. Do players tend to break down into specific roles when they get inside the room?

Hall: Yes, you do see people start to form into roles, and it's interesting to see the dynamics that come out, in personalities and in groups. You get some people who want to touch everything, some people who just step back and just observe everything—and that role is equally important, because you need someone who knows what's happening on both sides of the room at once. Sometimes people will look around and find something, and then quietly use it without telling anybody.

One thing we see all the time is that someone will figure something out and start to speak up, but someone else will say, "Eh, it's not that." And it almost always *is* that, but the person isn't bold enough to push it. There's no penalty for trying everything, but they won't. So you really have to practice as a team to acknowledge when someone makes a suggestion, and try it before you move on. But people often just move on without trying it.

FREQ: Out of curiosity, what sort of gender breakdown do you see with that sort of dynamic, with people talking over other people or dismissing them?

Hall: Generally, yes, it is men. [laughs] They are generally more aggressive in asserting their opinion. We see this dynamic in corporate team-building a lot, if someone on the team is in a position of power, like a boss, or there's a company culture that really values everyone being the smartest person in the room. As opposed to athletic teams, which are always very supportive of each other and oriented towards teamwork, because there's no coach in that situation. They're all players.

From Hall's "Resident Evil" escape room

FREQ: So how does one become an escape room designer? How did you get into it?

Hall: I've always been interested in mystery stories and detective work since I was a kid. I thought I would be a detective when I was that age, or a writer. In a way, what I do now is both. In college, I discovered ARGs [alternate reality games]. The first one was for the movie *AI*, and after that the major one was I Love Bees, which was connected to the release of *Halo 2*. People unlocked all these coordinates and dates and times, and it turned out there was a pay phone at each one, and on that date and time it would ring, so people were coordinating all over to get to them. It was so different from how I'd experienced the internet until that time; Facebook was just coming out, and the idea that social networks could be facilitated by the internet was really exciting at that point. I got involved in community moderation [for ARGs] and was really interested in onboarding new players, archiving, making sure everything on the wiki had footnotes. I eventually realized that I could get paid for that, which lead me to the advertising agency I worked for [Wieden + Kennedy].

Then I met all these other people in Portland that I knew from ARGs, and we'd heard about escape rooms, so we took a road trip up to Seattle where one had just opened up. We were all theater people and video game designers and puzzle makers, and on the way back we realized we could actually do what we had just experienced, and we could do it our way. We wanted something that had a lot of story and character interactions and immersion, which wasn't a thing yet in that generation of puzzle rooms. So we went for it. We had no idea what we were doing, but somehow it happened and it worked really well.

FREQ: You recently gave a talk at the Game Developers Conference about the similarities between designing for escape rooms and virtual reality. What interests you about VR, particularly in relation to escape rooms?

Hall: The types of puzzles that work in an escape room are very limited, because of the physical limitations, and also just for safety reasons. In video games you can do anything. A padlock with a 15-digit passcode? Sure. Something falls from the ceiling and doesn't injure anyone? Perfect. In virtual reality, the immersion and the fact that you're no longer constrained by physical limitations means you can do magic. There isn't even a lot of language yet to describe the feelings you can only feel in VR. The truly interesting stuff lies in room-scale experiences—that's where the stories that are only possible in VR will

happen. But nobody has room for that in their house. It's asking quite a lot to ask people to devote that much floor space to it. Maybe we'll start to see arcades again because of that, because you have to have a dedicated space.

FREQ: What do you think about the VR games and experiences that have been released so far?

Hall: You see a lot of VR that's horror-based, that speaks in brain languages: claustrophobia and vertigo and jump scares, rollercoasters and zombies. So many of the things you see about VR are people being afraid of it, ripping off their helmets, running into furniture. You really are giving yourself over and your brain cannot tell the difference; that's the point. And it's cool to be able to evoke that, but it can be a lot more than that. I always hear people ask [about VR], "Is it scary?" And I'm afraid that will exclude people, or that people are going to exclude themselves because they think it's only scary stuff, or that [developers] will only make scary stuff. But it can be much more complicated than that, and I hope we start seeing that. There's a lot of storytelling potential in VR because we're at a point technologically where our imagination and technology are almost neck and neck. We've caught up to what we've been dreaming about. What I think will be really cool is when people grow up with VR, who have internalized all the language of communication built into it—I want to see what they're going to make.

Mind Gaming

Want to ace the escape room? Get some tips from a creator

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Written by Red Bull Staff · 15 November 2018

Read our exclusive interview with Dr Scott Nicholson, the design-mastermind of the Red Bull Escape Room World Championship.

Dr Scott Nicholson, Professor of Game Design and Development and Director of the BGNlab at Wilfrid Laurier University in Brantford, Ontario, Canada, is the mastermind behind the Red Bull Escape Room World Championship. Nicholson led a team of game design students in creating challenges for the championship that add the physical and mental aspects to that of telling a story and challenging the gamers in various skills. To improve the player experience, last year's competitors Ken Ferguson and Wie-Hwa Huang were hired as advisers.

A visiting professor at MIT from 2011 to 2012, for Scott escape rooms are "intellectual activities that require teamwork and communication, and have an emphasis on stories and puzzles". With an emphasis on the mind, this form of games has become a focus in popular culture; not only do they let you take on a role in life that is new and can build empathy for others, but also do the teams require a variety of skills and ways of thinking, which makes diverse teams a necessity on the way to success.

The mission for the last stage of Red Bull Mind Gamers is called 'Omni's Escape' – can you give us some insight about this game, which will decide the 2019 world champions?

This escape room was inspired by hacking concepts, designed to challenge the participants in six problem solving skills: creativity, logic, visual thinking, musicality, memory and strategy. Communication is critical, and speed is of the essence. Respectively in teams of four, the mind gamers will work closely together throughout the game and express their brightest mind skills to solve the mysterious story about White Hat Laboratories and a fictitious hacker training camp.

What was on your mind when you started the design process for this final challenge?

When I took on this project, it was important to me that there be some type of a real-world connection with the content in the room. At WLU Brantford, our degree program in game design is about changing the world through games, and it was important for me that our team of students were able to explore how to incorporate learning outcomes into a recreational game. Another goal was to apply my "Ask Why" model to the game. We started with a learning outcome and a story that was inspired by the Mind Gamers movie, and worked on each challenge so that it advanced the story and made sense within the world. The other goal was to have both physical and mental aspects to many of the challenges, inspired by challenges on reality television.

What differentiates this escape room from others?

Rather than an escape room based upon solving puzzles, we wanted to create a room that was about creating interesting experiences that are not what would be in a typical escape room and that would be interesting for a spectator to watch. We recognized that we were creating a spectator sport with this escape room, so wanted to focus on challenges that would be more active and visual, and that would keep the team working together during most challenges. This means we de-emphasized searching and quiet cerebral puzzles, avoided using padlocks and black lights, and instead thought about ways to embrace the concept behind Red Bull vitalizing the body and mind.

How and when did you get into games? What's your first memory about gaming?

Games have been important to me for my entire life. Like most of us, I started life playing to understand the world around me, and I have managed to keep my playful self active as an adult. My first memory about gaming is growing up with the Atari 2600. Far too many hours were spent holding a rubberized joystick and moving pixels around on a screen. I also always asked for board games for the holidays, even though they were rarely played in the house. I would set them up for multiple players and play the game by myself, which is still something I do to this day when figuring out a complex game.

Dr Scott Nicholson

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Escape rooms are an unusual, extraordinary subject to study – when did you start your scientific approach and why?

I was first exposed to Escape Rooms when I was in Singapore giving workshops on gamification to government employees, and I was surprised to see these escape room facilities in one shopping mall after another. A group of librarians learned of my interest in them and went to one with me. I immediately knew they were of interest because of my prior work with live action games. My first game designs and publications were for live-action roleplaying games and I have developed many live-action simulations for training and teaching, so I saw escape rooms as another type of live-action gaming.

Escape rooms aren't something novel – they are an evolution of other types of games and activities such as point-and-click games, live-action games, haunted houses, reality television and puzzle hunts. The advantage of realizing that escape rooms are an evolution of other forms of interactive activities is that it provides us with many design lessons from these other areas useful in the creation of engaging escape rooms.

You are a huge fan of Disney. Does that affect the way you design? How does this influence show in your designs?

There are two lessons I've taken from my regular visits to the Disney parks that I use in my own design of games (and of classes). The first is the integration of narrative and the use of environmental storytelling to convey the narrative. Every Disney attraction has an underlying narrative that creates consistency throughout the experience. Even if visitors aren't told directly about the narrative, it exists as a design guide so that the attraction has a consistent look and feel. This was an inspiration behind my "Ask Why" model for escape room design, where you ask "why" about every element in the room to ensure it fits in with the world and narrative. The second lesson is to incorporate a spirit of playfulness within the activity with subtle winks to observant players. Disney does this with their "hidden Mickeys" where there are small Mickey logos embedded throughout the attractions. I enjoy putting in small winks and nudges to those who are observant. For example, one of the challenges we developed that didn't make it into the final escape room had players finding and playing a series of tones on whistles. The whistles were to be fashioned like plastic toys from a cereal box, which is inspired by a tool used for hacking pay phones – a whistle from a box of Captain Crunch.

At the Red Bull Escape Room World Championship

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Do you think escape room designs add an extra reality experience to the world of gaming?

Most games have players control an avatar within the game world. One of the reasons that virtual reality is growing in popularity is the concept of "embodiment," where the players have a more full-body experience in the game than with other screen-based games. Live action games, such as escape rooms (and sports), are unique in gaming in that the player and the avatar are one and the same. Putting a fishbowl over your head and looking at screens does not compare to physically being in a space with friends working together to overcome challenges. It's not only important for the mind, but also lets you take on a role in life that is new; in this way, escape rooms can build empathy for others. Escape rooms are powerful portals to history and other places in the world, and can be seen as interactive museums as well as puzzle-based games.

Why are people fascinated by escape rooms?

One of the attractions to escape rooms is that they are a cooperative experience. In other forms of gaming, we have seen a growth in games that require players to work together against the game. With escape rooms, players are put in a space together and have to rely upon each other's skills to succeed. The fact that players are physically together in the same space makes the game more intense than if each player was safely behind a screen controlling an avatar. When the door locks and the timer starts, players realize that all they have is each other to make it through this challenge. Another attraction about well-designed escape rooms is that they offer a variety of challenges, so that each person on the team has the chance to be the hero at some point during the game. Diverse teams perform better than teams with the same type of people, so escape rooms offer an opportunity to bring a group of people together who don't share much in common but allow them to succeed as a team.

What different player types (observer, logical thinker, the group-former etc.) do you see in escape rooms? Which player types/skill personalities does a perfect team need?

There are a few key skills that are useful in most escape rooms. First is someone who is detail-oriented for searching; younger players are good additions to teams as strong searchers, as they look at the world with different eyes than older players who make assumptions about how the world works. Second is someone who is good at managing tasks and team members. Most rooms have multiple challenges that can be tackled at the same time, and one person needs to be able to understand what is complete and no longer important, what is currently an active challenge that needs to be solved, and what room elements have not yet been explored. This person will lead the communication between team members and ensure that people are working on tasks that match their skills and interests. Third are individuals good at different types of puzzles, such as someone strong with mathematics, logic, and patterns, someone good with words and being able to read under pressure, and someone good with physical manipulation of puzzles and putting things together in different ways.

Dr Scott Nicholson

What inspires you the most when designing?

Putting the player at the centre of the design is the most important thing to me. At heart, I'm a social scientist, which means I'm focused on the impact of what I've created on players. I've realized that game design is, at heart, an application of experience design, where the player experience drives every other design decisions. When I'm making a game to change the world, I think about how the player will be motivated to engage with the activities through the experiences that are created. When designing, I regularly ask the question "Does this design decision move the player closer or further away from the desired experience?" By asking this question, I then have a way of making design decisions and justification for each choice I have made as a designer.

Do you have any favourite escape room games?

In order to avoid spoiling games by naming them, I will instead talk about a few moments in Escape Room games that I have fond memories of. I enjoy games that allow players to do physical activities that are playful and allow for deeper immersion in the story, like crawling around tunnels while playing the role of a mouse escaping a house, climbing up and down the sides of a pirate ship or running around a two-story house looking for lost pets. My favourite moment in a game was when we were in a mafia-themed game and realized that we needed to cheat at a casino game in order

to continue on with the challenge. I appreciated this because it required players to embrace their roles in the game and think outside the box.

What would you tell to encourage people to join the Red Bull Mind Gamers project?

One exciting thing about the Red Bull Mind Gamers project is that it is an adventure! For many people, they don't have the chance to participate in something that could lead to a global adventure; the redbullmindgamers.com website allows anyone to take those first steps and to test themselves. It's like a real-life movie where the players are answering the call to action, and the adventure is real and waiting!

Which games from the Red Bull Mind Gamers platform do prepare you best to try an escape room?

Each of the puzzles can help players build their mental skills in different ways, and I would suggest that players looking to be competitive be able to play all of the games! Another skill to develop using the platform is communication, where one player watches another person control the game and gives verbal instructions that the controller must follow to overcome the challenges. Being versatile and being able to communicate clearly are valuable skills for not only escape rooms, but also for life!

More MIND GAMING

EscapeFront

Menu

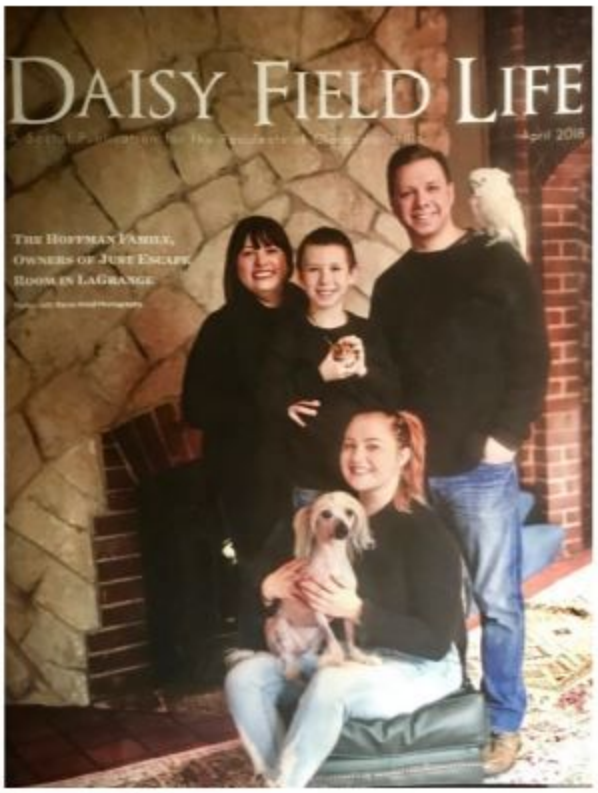
Escape Room Puzzle Design: An Interview With Brian Hoffman

May 21, 2018 by Chris Hanson

(Last Updated On: March 17, 2019)

This week, we're excited to share an interview with Brian Hoffman, puzzle master and owner of family-run, Just Escape Room in La Grange, IL. Brian reveals his approach to escape room puzzle design.

Enjoy!



Brian and his family

Can You Provide Me With A Little History Of Just Escape Room And What Inspired You To Start An Escape Room Business?

My family started with an escape room that opened near us in West Chester, Ohio 4 years ago. It was the type of activity that everyone loved: grandmother, high schooler, 6-year-old and we all had a blast. We went on to do another 60 + rooms around the world. Eventually, my wife was looking at going back to work, I had a background in control systems and IT, and it dawned on us that we could create an escape room. We started creating a business plan and running the numbers. In parallel, I had created most of the puzzles for our first to rooms in my garage, and five months later we opened our doors. The business has grown nicely ever since.

How Did You Learn How To Design Puzzles For Your Escape Rooms? Did You Have Any Previous Experience With Puzzle Design?

The escape room was my first entry into puzzle design. The only thing I was armed with is the vast number of puzzles I had tested myself against (escape rooms, books puzzles, online puzzle hunts, online and board games, etc.). I knew what my family enjoyed and what we didn't. When creating the puzzles for Just Escape, I took the features I liked best from past experiences and kept out the ones I didn't enjoy.

This included:

- The puzzle flow – pattern of quick wins vs. harder challenges
- Focus on unique things not seen before.
- Surprise. Reveals that are unexpected.
- Keep the excitement throughout the game, eliminate dead spots.
- People like to win, make sure they have a chance to win
- The best puzzles are the one that you look back at and say "I should have gotten that sooner."

What Is Personally The Most Challenging Aspect For You When It Comes To Escape Room Puzzle Design? What About Running An Escape Room Business Overall?

Puzzle design biggest challenge – Game Balance: Designing a room that both escape room veterans and newbies love and feel like it was an appropriate challenge. I always find it interesting how the slightest change in a prop or clue can dramatically change how fast it is played. In one room we changed a small version of the prop for a bigger one and that change allowed people to solve it ten mins faster. That caused us to add another puzzle to fill in that ten mins and get the right balance.

ER business overall challenge: For me it is time. Finding time to run the business, build new rooms, maintain existing rooms, advertise, create growth plans and execute those plans, etc. It

doesn't help that this is a hobby company for us and I have a full-time day job also ☺

When Designing Puzzles And Their Accompanying Stories And Sets, Do You Find Yourself Having To Quickly Toggle Between Left (Logical) And Right-Brained (Creative) Thinking?

Set design is one of my biggest challenges. I can build almost anything electronic or mechanical, but don't have the same skills in making the set look amazing. This is one area where I need to lean on others for help.

We were lucky in hiring game masters. One of our game masters is an amazing artist, and another is a solid actor. Both were amazingly helpful in set design and voiceover work.

I am still looking for great contractors that can come in and help bring set design to the next level. Further, I am still learning on how to best communicate the design I have in my head to these contractors for quoting purposes.

As A Puzzle Maker, Do You Ever Find Yourself Feeling Frustrated And Reluctant To Compromise When A Puzzle Doesn't Quite Transfer From Your Head To Real Life? If So, How Do You Decide When To Compromise And To What Extent?

I have a storage unit of puzzles that didn't make it into the final product. Most of them were ambitious technology props that were not consistent enough to go into the room. Some of them were cool puzzles but did not fit well into the story.

My biggest challenge is that I love unique technology that folks haven't seen before. I tend to lean toward tech or physical puzzles vs. paper. Unfortunately, that also means that many puzzles never

make it to prime time. I'm ok with that because the ones that do make it out end up being pretty cool.

When Taking On The Overwhelming Task Of Designing An Escape Room, In Your Opinion, Is It Best To Start With The Story And Build A Puzzle Around That, The Converse, Or Something Else?

Here's my approach:

1. I collect a huge library of puzzle ideas, Physical, perspective, logic, pattern, old games, riddles, electronic sensors, science projects, and interesting ways to hide information, etc.
2. I come up with a story or concept theme that is interesting, and I haven't heard of before. I am not only thinking about the story but also the game flow. I try to challenge myself with a way to build on the classic escape room flow of entering a room, find the secret room, and find the way out. I love trying to find new ways of moving teams through the physical space in different ways.
3. With the story in place, I then start slotting puzzles that fit with the story theme. I create the puzzle flowchart and a room layout.
4. With a story, puzzle flow, and room layout I then sketch out set design. I may need to adapt earlier puzzles or flow to accommodate other design choices.
5. I go into construction. I try to build as much of the puzzles and props offsite and then install into the room. In parallel, I am building the base of the room, walls, electrical, control panel, doors, painting, etc.
6. Then I install puzzles and do initial testing. Making sure the puzzles are stable and work consistently.
7. Beta testing. Test with at least six teams of differing size and skill levels. Make adjustments as needed for the game
8. Launch game with a hyper care period to fix or adapt if any bugs are revealed.

Regarding Sprinkling In Easy Wins And Feel Good Moments, Have You Found A Formula That Works? Is There A Magic Number Or Ratio (Time Spent Or Quantity) That You Feel Hits The Perfect Sweet Spot Between Boredom And Frustration?

I like to ramp up the energy at the start of the game. This usually means an early phase of easy wins that results in a surprise reveal. I equate it to the same equation online games use to hook people. The first levels are easy, and the players acquire things quickly.

From there I go into phase 2 which the players now know what to expect, and they go out and solve a bunch of medium difficulty puzzles. This phase at a slightly slower pace with slightly higher difficulty. Teams feel a sense of accomplishment at each win because they had to fight for it. The risk is that this can become frustrating for the team and the energy level could go down as frustration raises. To counter this, I try to put another major secret reveal in the phase. Something that gives the team a whole new set of props to explore. This helps keep the energy level high.

In the final puzzle phase, I put the most difficult puzzle chain. Ideally, the team gets to this point with – ten mins left. The clock ticking and the closeness to finishing the game provides the heightened energy level. Ideally, the final puzzle solution triggers a theatrical climax (lights, sounds, etc.). I don't always achieve this.

On JustEscapeRoom.Com, You Mention That Your Rooms Require Players To Use All Of Their Senses. Does This Include Smell And Taste? If So, How Do You Accomplish This?

I have stayed away from taste so far (because it is either gross or a reset nightmare) although all other senses are fair game. This goes back to finding unique ways to transfer information. For example, there are a wealth of scented oils out there: everything from blue slushy to skunk. You just need to find a way to build it into a puzzle. I can't reveal more without giving away too much info ☺

On Forums, When Owners Ask Design Or Puzzle Building Questions, You Tend To See Answers Like "It Depends" Since Each Situation Is So Different. Given This, Are

There ANY Universal Truths That Can Be Generalized Across All Escape Rooms?

Here are the major principles I use:

- Avoid red hearings. Everyone hates them.
- When told the answer to the puzzle, people should feel like they should have gotten it. If they are saying I would have never have gotten that it is a flaw in the design
- Tech adds a great effect when it works. When it doesn't, it adds great frustration.
- Don't repeat puzzles. The first time is new, the second time feels like busy work.
- Be unique. If you're going to use common puzzles, put a new twist on them. Don't just make someone solve a sudoku puzzle. Make them do it with a checkerboard or a giant version etc. Anything different than the norm. This goes with the room story also.
- Mix your puzzle types. This allows the diversity of the group to shine vs. having the same person solve all of the puzzles.

How Do You Use Customer Feedback And Data To Inform Your Design Decisions And Business Decisions Overall?

Absolutely critical. We recently got our first 4-star review (Previously we were all 5 star). Tracing back the reason it was because we had gotten so busy we weren't able to give the full greeting and post-game celebration we had been doing previously. These customer interaction moments are just as important as the game to have people leave loving the experience. We immediately put in changes to address the issues.

Multipart Question Time: Have You Ever Heard Of Anyone Pulling Off An Escape Room Theme Aimed To Help People Empathize With Folks Dealing With Depression And Mental Illness? Autism And Intellectual Disability Too For That Matter? Do You Think Abstract Or Symbolic-Based Themes Like This Are Feasible Without

Being A Total Drag For Customers? How Might You Design Puzzles For A Room That Tackles Less Concrete Subject Matter Like This?

I love this idea and haven't heard of it before. It sounds like a great way to grow awareness for a cause and would probably generate some PR. If I would to go after a room like this, I might try to put the players in the mind of the hero character who has the disability. The goal would be to overcome the challenges that these folks face to be successful in life. I would probably look to partner with an organization familiar with the cause to make sure I was sensitive to the issues and to help me pick the puzzles that fit the theme. You would also need to donate some of the profits to the cause. Perhaps you could use the pay for hints approach with the money raised for hints donated to the cause. Just some thought off the top of my head.

From A Puzzle & Design Perspective, What's Something That You Think Escape Room Owners Put Too Much Money & Energy Into That Most Customers Don't Really Care About?

Just like video games, gameplay trumps the story/set. Having a great story motivates people to pick your room. Having a great set gives the room great bonus points. At the end of the day, the room needs to have great puzzles and flow otherwise none of the other stuff matters.

The other calculus I am always wrestling with is how much to invest in set design. The perfectionist in me wants a phenomenal set. The practical side of me realizes that there are diminishing returns. I don't necessarily generate more traffic with a $100k room vs. a $10k room. There is a sweet spot in there somewhere that is hard to nail. It depends on where you're located, how much competition is around. What kind of foot traffic you have, etc.

What Mistakes Do You See Escape Room Owners Making That Is Perhaps The Most Avoidable While Also Being

Highly Detrimental? This Can Be From A Puzzle/Design Perspective, Overall Business Or Both.

Hmm, good question. Some common mistakes I see:

- Seeing escape rooms as easy money and not putting the time into creating a great game. Just throwing something together.
- Not getting a location that allows them to grow. Getting boxed in with no space for a new room.
- Not seeing how other local room owners can be a partnership vs. a competitor.

The Changing Times

Durham, North Carolina — Wednesday, June 26, 2019 — 2 pages five cents

Photo Left: Alien weapon attacks Forest of Dean in United Kingdom
Photo Above: Alien weapon spreads to Atlantic Ocean off of Ireland

Aliens Will Take Over the World If Not Stopped Soon

By Spark News Staff

On Monday, May 27, 2019, aliens descended upon Earth and unleashed an extraterrestrial weapon never before seen by humans on Earth.

This extraterrestrial weapon was first released in England and in a matter of weeks, all of Europe was engulfed by the rapid replication of this alien weapon. Those who did not evacuate were smothered by the growing "Alien dust" as it is colloquially known as amongst humans.

The British monarchy has gone underground for the time being and Parliament has been disbanded. Europe has been quarantined - no one, including police and other intergovernmental agencies are allowed to enter the continent.

The alien weapon is a rod-shaped unicellular organism that nourishes itself and replicates through photosynthesis.

The spread of the alien weapon went undetected for the first few days because of the diminutive nature of the individual organisms. But as the extraterrestrial organism continued to replicate, a fine yellow dust seemed to cover all of England and then out to the rest of Europe.

Efforts to stop the replication of this alien weapon have not yet been effective. The weapon expanded throughout Europe and suffocated those who did not evacuate in time.

Neighboring countries have began evacuations, but unless a solution is found, the entire Earth will soon be engulfed in this Alien dust.

Students at DPS's Spark Camp have been tasked with the challenge of creating a multicellular organism that can fight back this extraterrestrial weapon.

If these students cannot find a solution, all of humanity on Earth will be doomed. Will they find a solution in time?

Problem Finding: Explore data and facts to find all possible issues and all opportunities. Consider many problem statements

In what ways might we …

Use the following ALoU chart below to brainstorm all of the factors for each possibility

ALoU

Idea	Advantages	Limitations and How to Overcome Them	Unique Features

Using *convergent thinking*, create a problem statement below. What do you hope to ultimately accomplish with your escape room/game design?

Idea Finding: Using *divergent thinking* try and answer your problem statement in as many ways as possible. Before you begin, set a goal for the number of ideas you wan to generate. Be sure to defer judgement on all of the ideas. Use the SCAMPER model here (found on next page) to help think of the possibilities. Record all ideas below.

Using *convergent thinking* review all your ideas and circle four to six that seem to have the greatest potential.

SCAMPER

Substitute

What can you substitute? What can be used instead? Who else instead? What other ingredients? Other material? Other process? Other power? Other place? Other approach? Other sounds? Other forces?

Instead of … I can …

Combine

What can you combine or bring together somehow? How about a blend, an alloy, an assortment, an ensemble? Combine units? Combine purposes? Combine appeals? Combine ideas?

I can bring together … and … to

Adapt

What can you adapt for use as a solution? What else is like this? What other idea does this suggest? Does past offer a parallel? What could I copy? Who could I emulate?

I can adapt … in this way … to …

Modify, Magnify, Minify

Can you change the item in some way? Change meaning, color, motion, sound, smell, form, shape? Other changes?

What can you add? More time? Greater frequency? Stronger? Higher? Longer? Thicker? Extra value? Plus ingredient? Duplicate? Multiply? Exaggerate?

What can you remove? Smaller? Condensed? Minature? Lower? Shorter? Lighter? Omit? Streamline? Split up? Understate?

I can change … in this way … To …

Put to Other Uses

How can you put the thing to different or other uses? New ways to use as is? Other uses if it is modified?

I can re-use … in this way … by …

Eliminate

What can you eliminate? Remove something? Eliminate waste? Reduce time? Reduce effort? Cut costs?

I can eliminate … by …

Rearrange

What can be rearranged in some way? Interchange components? Other pattern? Other layout? Other sequence? Transpose cause and effect? Change pace? Change schedule?

I can rearrange … like this … such that …

* SCAMPER was defined by Robert Eberle, after an initial list from Brainstorming originator Alex Osborn.

IV. Creative Problem Solving

TEACHER NAME		Lesson #
Madison Ambrose		4
MODEL	**CONTENT AREA**	**GRADE LEVEL**
Creative Problem Solving (CPS)	English Language Arts	7th and 8th Grade
CONCEPTUAL LENS	**LESSON TOPIC**	
Exploration	Escape Rooms/Games	

LEARNING OBJECTIVES *(from State/Local Curriculum)*

- 7 C.1 Use creative strategies to make decisions and solve problems.
- 7 C.2 Use analytical strategies to understand situations and make appropriate decisions.
- R.W.7.5 Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation.
- R.S.L..7.1 Engage effectively in a range of collaborative discussions (one on one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.
  - Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.
  - Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.
  - Acknowledge new information expressed by others and, when warranted, modify their own views.

THE ESSENTIAL UNDERSTANDING *(What is the overarching idea students will understand as a result of this lesson?*	**THE ESSENTIAL QUESTION** *(What question will be asked to lead students to "uncover" the Essential Understanding)*
Exploration leads to discovery.	How does exploration lead to discovery?

CONTENT KNOWLEDGE (What factual information will students learn in this lesson?)	PROCESS SKILLS (What will students be able to do as a result of this lesson?)
Students will know that: · exploration leads to discovery · an escape room (also known as an escape game) is a mental and physical adventure based game in which players solve a series of puzzles and riddles using clues, hints, and strategy to complete the objectives at hand · completing and creating an escape room/game requires collaboration · to make sense of the world it is necessary to organize incoming sensations into information that is meaningful · exploration is a thorough analysis of a subject or theme · exploration leads to new information being discovered · a problem is a condition that is not acceptable · a solution is a human-made resolution to a problem · divergent thinking creates many possibilities/solutions/answers · convergent thinking narrows possibilities/solutions/answers · SCAMPER is an acronym that helps with brainstorming and stands for substitute, combine, adapt, modify magnify minify, put to other uses, eliminate, reverse.	**Students will be able to:** · assemble, arrange, and combine · manipulate and adapt · create and design · plan · sequence · generate new ideas and improve · justify and defend · evaluate · prioritize · compare and contrast · problem solve · work collaboratively · explore · discover

GUIDING QUESTIONS

What questions will be asked to support instruction?

Include both "lesson plan level" questions as well as questions designed to guide students to the essential understanding

Pre-Lesson Questions:	During Lesson Questions:	Post Lesson Questions:

• What is an escape room/game? • What do you think of when you hear "exploration"? • What do you think of when you hear "discovery"? • What are divergent and convergent thinking? • What is a situation that presents a challenge, an opportunity, or is a concern that you want to do something about? • What information and materials are needed to create an escape room? • What are ideas for different types of escape rooms/games? • Will the escape game be room sized? box sized? • What games, riddles, and puzzles will be included? • What roles will each game designer take on? cryptologist? writer? engineer? • What story will the escape	• What are the knowns and unknowns of the situation? • What other information is needed to create an escape room/game? • Who is involved in creating an escape room/game? • What is involved in creating an escape room/game? • When are escape rooms/games completed? • How much time is needed to create and complete an escape room/game? • Where are escape rooms/games created? • Why are escape rooms/games created? • How is the concept of "exploration" connected to escape rooms/games? • How is the concept of "discovery" connected to escape rooms/games? • In what ways might we change and improve our ideas? • What ideas/answers can be revised, combined, and refined? • Whom will your escape room/game effect? • How might your team win over the UnBULLievable Escape Board of Directors? • What major obstacles might your team encounter? • What might prevent exploration and/or discovery as it relates to escape room/game design, creation, and completion? • How might those obstacles be overcome? • How can these problems be prevented? • What criteria need to be considered to evaluate escape room/game ideas for success? • Which escape room/game ideas have the greatest potential? • What sources of assistance, resistance, and acceptance are needed for	• What went well with your escape room/game creation and implementation? • What could have gone better with your escape room/game creation and implementation? • How is the concept of "exploration" revealed in your escape room/game? • How is the concept of "discovery" revealed in your escape room/game? • How does exploration lead to discovery?

room/game be built around? • What will your team need to construct your escape room/game?	implementation of your escape room/game ideas? • How might you best gain support for your escape room/game idea?	

DIFFERENTIATION

(Describe how the planned learning experience has been modified to meet the needs of gifted learners. Note: Modifications may be in one or more of the areas below. Only provide details for the area(s) that have been differentiated for this lesson.

Content	Process	Product	Learning Environment
Content for this learning experience represents above grade level material for this group of students. The content has higher level vocabulary and the concepts are sophisticated and advanced for the level at which it is being taught.	Students will work collaboratively and must use higher-order thinking, critical thinking, and out of the box thinking.	The students will be given a variety of materials to create their breakout box challenge. Their end products will vary depending on what materials they choose to use and how they construct their final product.	

PLANNED LEARNING EXPERIENCES

(What will the teacher input? What will the students be asked to do? For clarity, please provide detailed instructions)

Engage and Connect - *This phase focuses on piquing students' interest and helping them access prior knowledge. This is the introduction to the lesson that motivates or hooks the students.*

1) Mess Finding and 2) Data Finding (will occur after the Taba lesson 1 on Day 1 of Camp)

- The teacher will begin by asking the following pre-lesson questions:
    - What is an escape room/game?
    - What do you think of when you hear "exploration"?
    - What do you think of when you hear "discovery"?
    - What are divergent and convergent thinking?
- The teacher will introduce the performance task for the students:
    - You are a game designer who is part of team of game designers who are trying to enter the competitive world of escape games. UnBULLievable Escape Rooms is a premier escape room company in Durham that wants to add a new escape game to their collection and are looking for innovative ideas from game designers. UnBULLievable Escape Rooms is accepting proposals for the new escape game addition to the company. Proposals must include a description of the narrative that the escape game will be built around, a material list, and a map/flow chart that shows the sequencing of how the puzzles/riddles will unfold in the escape game in order for the customers to escape/breakout. The game designer teams with the top proposals will go through to the next round and will submit a model of their escape game. The UnBULLievable Escape Rooms Board of Directors will decide on the top proposals that will make it to the finalist round and then will chose the winning model. The winning team's escape game will be built as the newest attraction at UnBULLievable Escape Rooms for the 2020 year and will receive $10,000.
- Students will be placed into groups of 4-5 students for a total of 4 student groups.
- The teacher will give each student a copy of the CPS packet that they will use to brainstorm ideas, narrow their ideas, and choose their idea for their escape room/game for the UnBULLievable Escape Rooms challenge.
- In their groups, students will generate all of their ideas for their escape room/game. They should include all of the possibilities, including wild ones, and consider the following:
    - size – will the escape game be room sized? box sized?
    - games/riddles- what games, riddles, and puzzles will be included?
    - roles – what roles will each game designer take on? cryptologist? writer? engineer?
    - narrative – what story will the escape room/game be built around?
    - props/materials – what will your team need to construct your escape room/game?
- The teacher will ask the students the following pre-lesson questions to guide the teams in their brainstorming:
    - What information and materials are needed to create an escape room?
    - What are ideas for different types of escape rooms/games?
    - Will the escape game be room sized? box sized?
    - What games, riddles, and puzzles will be included?
    - What roles will each game designer take on? cryptologist? writer? engineer?
    - What story will the escape room/game be built around?
    - What will your team need to construct your escape room/game?
- On chart paper, the students will create a master list of their ideas for the UnBULLievable Escape Rooms challenge.

Explore - *In this phase, the students have experiences with the concepts and ideas of the lesson. Students are encouraged to work together without direct instruction from the teacher. The teacher acts as a facilitator. Students observe, question, and investigate the concepts to develop fundamental awareness of the nature of the materials and ideas.*

3) Problem Finding (This will occur after the VTS lesson 2 on day 2 of the Spark Camp)

- The teacher will give the students back their CPS packets from the day before.
- Students will take list from Data Finding section of packet and will put it through the ALoU matrix in their CPS packet. They will list their ideas for their escape room/game down the left column and then brainstorm the advantages, limitations and how to overcome them, and unique features for each.

· The students will then create a problem statement about what they hope to accomplish with their escape room/game.

- The teacher will ask the following during lesson questions during the matrix creation and problem statement creation to help guide the students' understanding and development of their escape room/game design:
    - What are the knowns and unknowns of the situation?
    - What other information is needed to create an escape room/game?
    - Who is involved in creating an escape room/game?
    - What is involved in creating an escape room/game?
    - When are escape rooms/games completed?
    - How much time is needed to create and complete an escape room/game?
    - Where are escape rooms/games created?
    - Why are escape rooms/games created?
    - How is the concept of "exploration" connected to escape rooms/games?
    - How is the concept of "discovery" connected to escape rooms/games?

Explain - *Students communicate what they have learned so far and figure out what it means. This phase also provides an opportunity for teachers to directly introduce a concept, process, or skill to guide students toward a deeper understanding.*

4) Idea Finding (This will occur after Bruner lesson plan 3 on day 3 of the Spark camp)

- The teacher will give the students back their CPS packet from the day before.
- The students will use the SCAMPER method (listed below) and the accompanying during lesson questions to help generate more new ideas for their escape room/game.
    - Substitute
        - What can you substitute? What can be used instead? Who else instead? What other ingredients? Other material? Other process? Other power? Other place? Other approach? Other sounds? Other forces?
        - Instead of … I can …
    - Combine

        - What can you combine or bring together somehow? How about a blend, an alloy, an assortment, an ensemble? Combine units? Combine purposes? Combine appeals? Combine ideas?
        - I can bring together … and … to
    - Adapt
        - What can you adapt for use as a solution? What else is like this? What other idea does this suggest? Does past offer a parallel? What could I copy? Who could I emulate?
        - I can adapt … in this way … to …
    - Modify, Magnify, Minify
        - Can you change the item in some way? Change meaning, color, motion, sound, smell, form, shape? Other changes?
        - What can you add? More time? Greater frequency? Stronger? Higher? Longer? Thicker? Extra value? Plus ingredient? Duplicate? Multiply? Exaggerate?
        - What can you remove? Smaller? Condensed? Miniature? Lower? Shorter? Lighter? Omit? Streamline? Split up? Understate?
        - I can change … in this way ... To …
    - Put to Other Uses
        - How can you put the thing to different or other uses? New ways to use as is? Other uses if it is modified?
        - I can re-use … in this way … by …
    - Eliminate
        - What can you eliminate? Remove something? Eliminate waste? Reduce time? Reduce effort? Cut costs?
        - I can eliminate … by …
    - Rearrange
        - What can be rearranged in some way? Interchange components? Other pattern? Other layout? Other sequence? Transpose cause and effect? Change pace? Change schedule?
        - I can rearrange … like this … such that …
- The teacher will also ask the following during lesson questions:
    - In what ways might we change and improve our ideas?
    - What ideas/answers can be revised, combined, and refined?
    - Whom will your escape room/game effect?
    - How might your team win over the UnBULLievable Escape Board of Directors?
    - What major obstacles might your team encounter?
    - What might prevent exploration and/or discovery as it relates to escape room/game design, creation, and completion?
    - How might those obstacles be overcome?
    - How can these problems be prevented?
- Students will then choose 4-6 ideas that have the most potential.

Elaborate —*Allow students to use their new knowledge and continue to explore its implications. At this stage students expand on the concepts they have learned, make connections to other related concepts, and apply their understandings to the world around them in new ways*

5) Solution Finding (This will occur during the CPS lesson plan 4 on day 4 of the Spark Camp)

- The teacher will give the students back their CPS packet from the day before.
- The students will use the matrix in their CPS packet to determine what criteria are needed for evaluating their escape room/game ideas. The students will then put their ideas through the matrix and choose the best idea that has the most potential.
- The teacher will ask the following during lesson questions to guide the students through this step of the creative problem solving plan.
    - What criteria need to be considered to evaluate escape room/game ideas for success?
    - Which escape room/game ideas have the greatest potential?

6) Acceptance Finding

- The students will work through the following during lesson questions in their CPS packet and then use their answers to help them choose their final escape room/game idea.
- The students will use the Action Plan document and Flow Chart document to aid in their design of their escape room/game.
- The students will then create their escape room/game and present it to the UnBULLievable Board of Directors.
- Each student group will partner with another student group and will complete each other's escape room/game.

Evaluate: *This phase assesses both learning and teaching and can use a wide variety of informal and formal assessment strategies.*

- Each student will complete a reflection about their experience answering the following post lesson questions:
    - What went well with your escape room/game creation and implementation?
    - What could have gone better with your escape room/game creation and implementation?
    - How is the concept of "exploration" revealed in your escape room/game?
    - How is the concept of "discovery" revealed in your escape room/game?
    - How does exploration lead to discovery?
- Students will be encouraged to be specific and detailed in their reflections.
- Each student will also fill out a notecard about the other group's escape room/game that they completed at the end. They will use the following sentence starters to provide positive and constructive feedback for the other group

- Students will end by having a class discussion surrounding the question:
    How does exploration lead to discovery?

Acceptance Finding: To ensure successful implementation of your idea, it is necessary to gain maximum acceptance, particularly from the UnBUL-Lievable Escape Games Board of Directors. Consider the following questions:

1. Whom will my escape room/game idea effect?

2. How might I gain their acceptance?

3. What major obstacles will I confront?

4. How might these obstacles be overcome?

5. What might go wrong?

6. How can such problems be prevented?

7. How might I best gain support for my escape room/game idea?

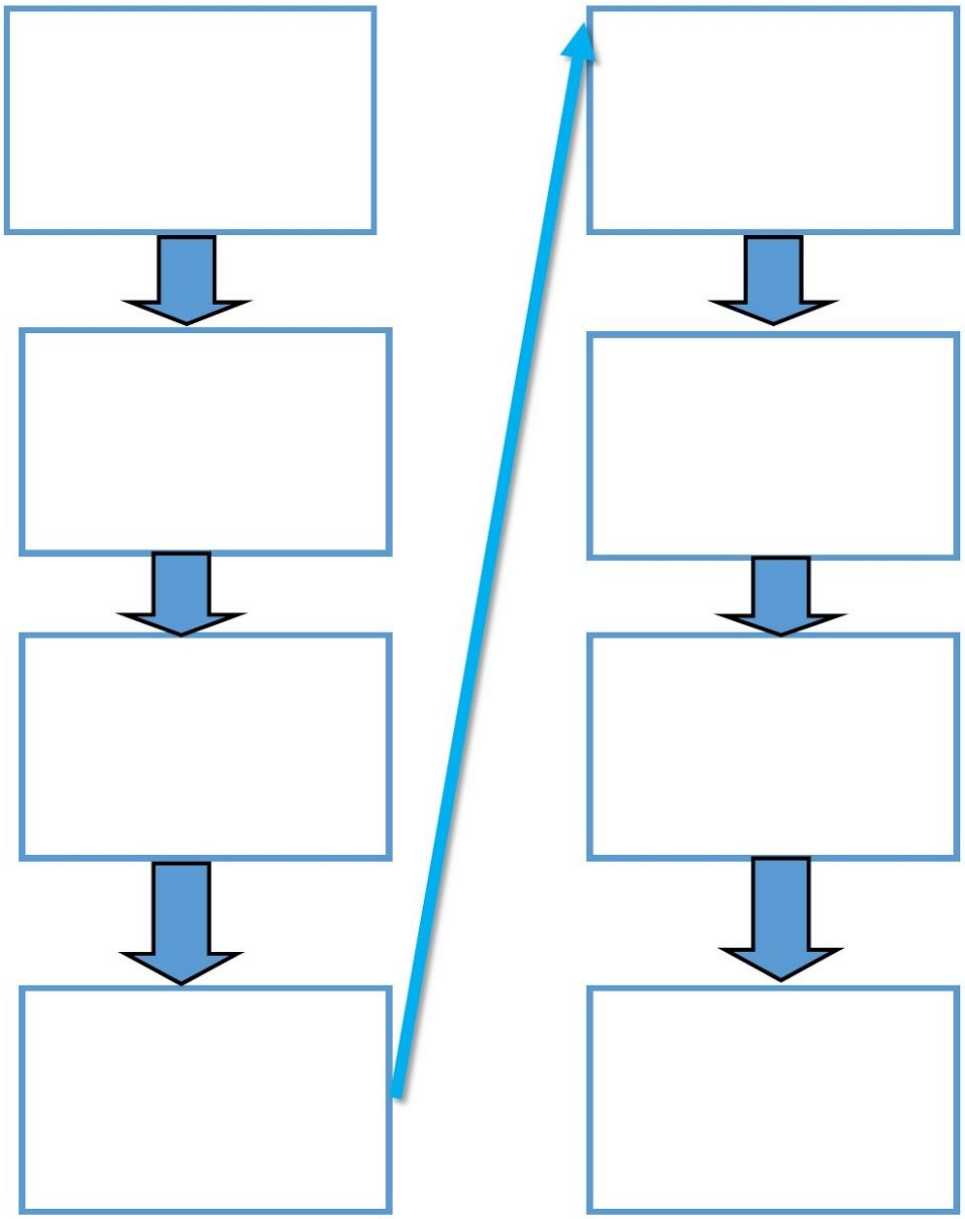
Use *divergent thinking* to list all the responses that come to mind when answering the above questions. Use *convergent thinking* to select the responses that you believe will ensure success.

Gather the best thoughts from your acceptance finding and develop a sequential plan of action. Establish who will be responsible for each task. Draft out a map of how your escape room/game will be sequenced. Use the following pages if necessary.

Action Plan

Task	Who/Role	Check when complete

Map/Flowchart: Sequencing of Escape Room/Game



Reflection

Think back on your experience during Spark Camp and answer the following reflection questions using as much detail and specificity as possible:

- What went well with your escape room/game creation and implementation?
- What could have gone better with your escape room/game creation and implementation?
- How is the concept of "exploration" revealed in your escape room/game?
- How is the concept of "discovery" revealed in your escape room/game?
- How does exploration lead to discovery?

Peer Feedback

Use the following sentence starters to complete your peer feedback notecard about the peer group's escape room/game that you explored.

Positives	Questions I have	Needs to improve
What really impressed me was…	What are…?	One suggestion would be…
The most outstanding aspect of your escape room/game was…	What do…?	I think you should add…
The strongest aspect of your escape room/game is…	What is…?	Next time you should…
It had a really big impact on me when…	Should you…?	Consider deleting…
I most enjoyed exploring… in your escape room/game.	How does…?	I think a better choice may be…
The concept of exploration was show in your escape room/game by…	Could the concept of exploration be included more in…?	One problem I see/encountered…
In your escape room, I discovered…	Could the concept of discovery be included more in…?	The concept of exploration could be included more by…
The concept of discovery was shown in your escape room/game by…	Did you consider…?	The concept of discovery could be included more by…

Ambrose Duke Spark Camp 2019

VI. Unit Resources

- 10 Best Tips and Tricks for Escape Rooms
  https://www.youtube.com/watch?v=zwgaTYOx0RI
    - Comedic 12 minute video that goes over Mark Rober's top 10 tips and tricks for completing escape rooms successfully.
- Crash Course History of Escape Games
  https://www.youtube.com/watch?reload=9&v=SKvgI-A3qQ8
    - Fast-paced 2.11 minute video that details the history of escape rooms/games from the video game Myst to the explosion of escape rooms in Europe and North America.
- /@femfreq. (2017, March 17). FREQ #13: How to Make an Escape Room - Feminist Frequency. Retrieved from
  https://medium.com/@femfreq/freq-13-how-to-make-an-escape-room-953d8ce9eb56
    - Interview with escape room designer Laura E. Hall.
- Hanson, C. (2019, March 17). Escape Room Puzzle Design: An Interview With Brian Hoffman. Retrieved from
  https://www.escapefront.com/escape-room-puzzle-design-bh1/
    - Interview with escape room designer Brian Hoffman.
- Interview With an Escape Room Designer: An Inside Look at Escape Room Design. (2019, July 02). Retrieved from
  https://whatnerd.com/interview-with-escape-room-designer/
    - Interview with escape room designer Owen Spear.
- Pigpen Cipher. (n.d.). Retrieved from
  https://crypto.interactive-maths.com/pigpen-cipher.html
    - Free online pigpen cipher generator.
- Red Bull Mind Gamers. (n.d.). Retrieved from
  https://mindgamers.redbull.com/articles/escape
    - Videos about the history of escape rooms, the design process, creating the perfect team, and bringing the design to life created by the team at the Red Bull World Escape Room Championship.
- SCPhillips.com. (n.d.). Retrieved from
  https://morsecode.scphillips.com/translator.html

    - Free online morse code generator.
- Staff, R. B. (2018, November 16). Interview with Dr Scott Nicholson: Red Bull Escape Room World Championship. Retrieved from https://www.redbull.com/in-en/interview-with-dr-scott-nicholson
    - Interview with game designer Dr. Scott Nicholson
- The Writing's On the Wall. (n.d.). Retrieved from http://okgo.net/2014/09/05/the-writings-on-the-wall-official-video/ https://www.youtube.com/watch?time_continue=3&v=m86ae_e_ptU
    - A music video created by the band OKGO that is full of optical illusions that stems the discussion in the opening of the VTS lesson.
- The Writing's On the Wall BTS – From the Trenches. (n.d.). Retrieved from http://okgo.net/2014/06/24/the-writings-on-the-wall-bts-from-the-trenches/
    - Behind the scenes video for OKGO's music video "The Writing's On the Wall."
- What is a Snote. (n.d.). Retrieved from https://snotes.com/snotes-ideas-successes/what-is-a-snote/
    - Free online Snote generator.
- Usborne, S. (2019, April 01). Get me out of here! Why escape rooms have become a global craze. Retrieved from https://www.theguardian.com/games/2019/apr/01/get-out-how-escape-rooms-became-a-global-craze
    - Informational article about the global spread of escape rooms.