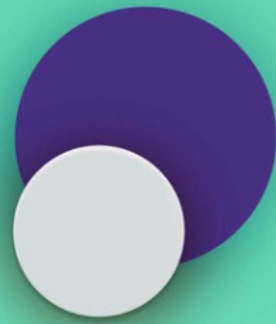




Co-funded by
the European Union

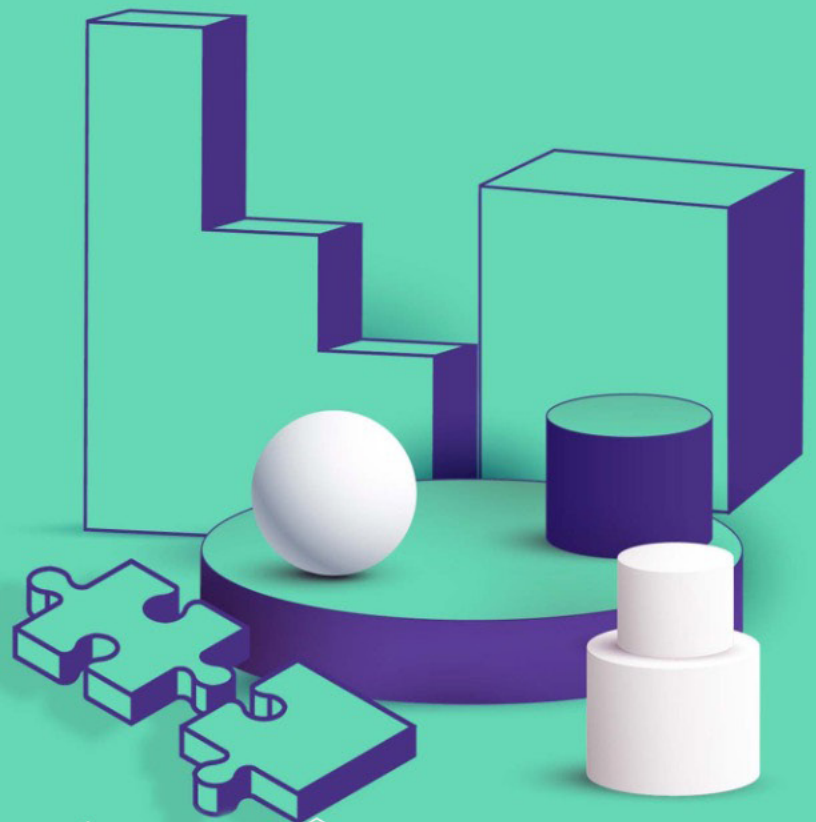
DESPO



DIMENSION 3
PRINTED PUZZLES FOR
NEW THERAPEUTIC OPPORTUNITIES

PROJECT NUMBER: 2021-1-ES01-KA220-ADU-000035313

Professional Manual for Puzzles



PARTNERS



THE ARABIAN NIGHTS THE PALACE OF SHAHRIAR	5
THE ARABIAN NIGHTS THE CAVE OF WONDERS	21
AROUND THE WORLD IN 80 DAYS	30
COLAPESCE	43
THE LAST VOYAGE OF OUR LADY OF MERCY	53
THE SEARCH OF MOSCOW'S GOLD	59
FLYING THE FLAG	69
THE EXIT WITHIN	77
FOGAÇA	83
CASTLE OD EUROPE	91

THE ARABIAN NIGHTS

THE PALACE OF SHAHRIAR



DESCRIPTION

The Arabian Nights is a popular collection of traditional medieval tales from the Middle East. The theme will include an oriental-themed design, as well as quizzes reminiscent of the most popular stories in the collection (for example, opening Ali Baba's cave). We have considered its choice due to the centuries-old influence of Eastern culture in Spain during the Middle Ages.

This puzzle is focused on the general story of the Arabian Nights, where Sherezade is locked in a palace telling stories to the sultan Shahriar.

OBJECTIVES OF THE PUZZLES

Hand eye coordination, social inclusion, screw-unscrew, basic maths, braille

3D MODEL

The palace is divided into the following sections: base, floor 01, floor 02, towers, palace box and props.

BASE

- Agrabah_Palace_Base_01_01
- Agrabah_Palace_Base_01_02
- Agrabah_Palace_Base_01_03
- Agrabah_Palace_Base_02_01
- Agrabah_Palace_Base_02_02
- Agrabah_Palace_Base_02_03
- Agrabah_Palace_Base_03_01
- Agrabah_Palace_Base_03_02
- Agrabah_Palace_Base_03_03OOR

FLOOR 01

- Agrabah_Palace_1f_01
- Agrabah_Palace_1f_02
- Agrabah_Palace_1f_03

Height 44.2 cm
Width 60 cm
Depth 45 cm



STORYTELLING

*In the vastness of the greatest ocean of sun and sand,
the mysterious city of Agrabah rises.
Its dunes are full of magic and hope,
but investigating them will be worth the effort.*

*If you aspire to fulfil your desires,
search for the cave of wonders,
find clues in a pragmatic way,
and free the genie from the magic lamp.*

*But remember,
brute force or external tools will not solve this mystery.
Only your imagination and tenacity will free the genie
from captivity.*



FLOOR 02

- a. Agrabah_Palace_2f

TOWERS

a. Tower1

- i. Tower1_P1
- ii. Tower1_P2
- iii. Tower1_P3

b. Tower2

- i. Tower2_P1
- ii. Tower2_P2
- iii. Tower2_P3

c. Tower3

- i. Tower3_P1
- ii. Tower3_P2
- iii. Tower3_P3 (x4)
- iv. Tower3_P4
- v. Tower3_P5
- vi. Tower3_P6

d. Tower4

- i. Tower4_P1
- ii. Tower4_P2
- iii. Tower4_P3

e. Tower5

- i. Tower5_01
- ii. Tower5_02
- iii. Tower5_03
- iv. Tower5_04
- v. Genie_Figure

PALACE_BOX

- a. Palace_Box_01
- b. Palace_Box_02
- c. Palace_Box_03
- d. Palace_Box_04
- e. Palace_Box_Key

PROPS

- a. Agrabah_Palace_CTower_01
- b. Agrabah_Palace_CTower_02
- c. Agrabah_Palace_CTower_03
- d. Agrabah_Palace_CTower_04
- e. Agrabah_Palace_CTower_05
- f. Agrabah_Palace_CTower_06
- g. Agrabah_Palace_CTower_07
- h. Agrabah_Palace_CTower_08
- i. Agrabah_Palace_CTower_09

COINS

a. u

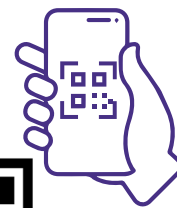
- i. coin100
- ii. coin200
- iii. coin300
- iv. coin400
- v. coin500
- vi. coin600
- vii. coin700
- viii. coin800
- ix. coin900

b. d

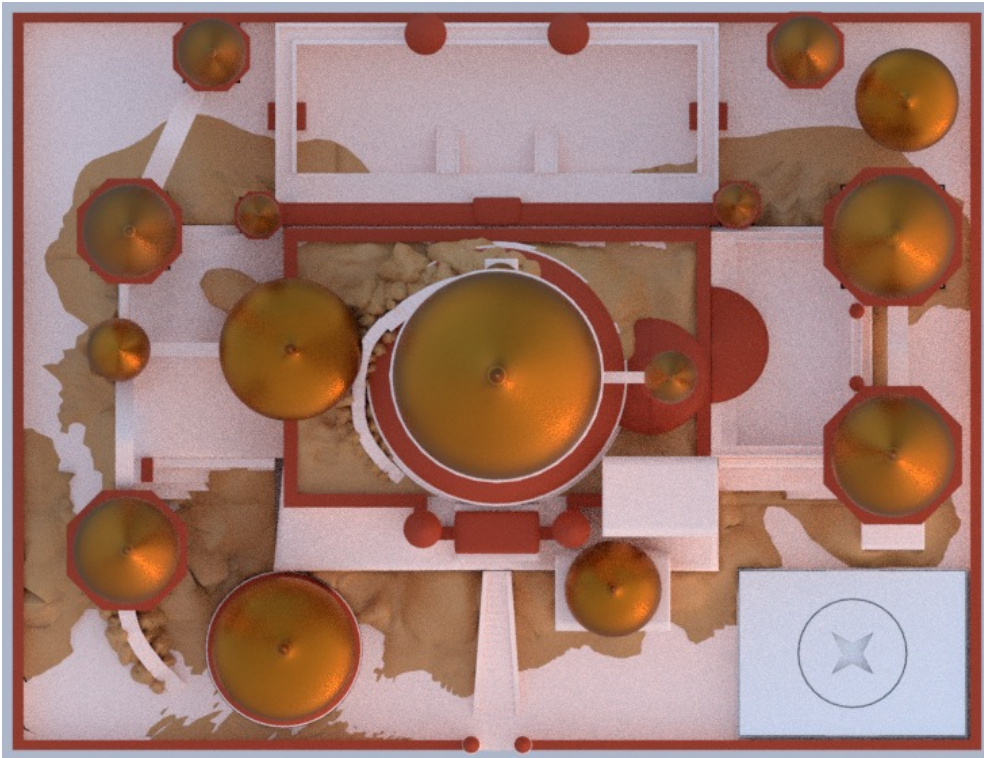
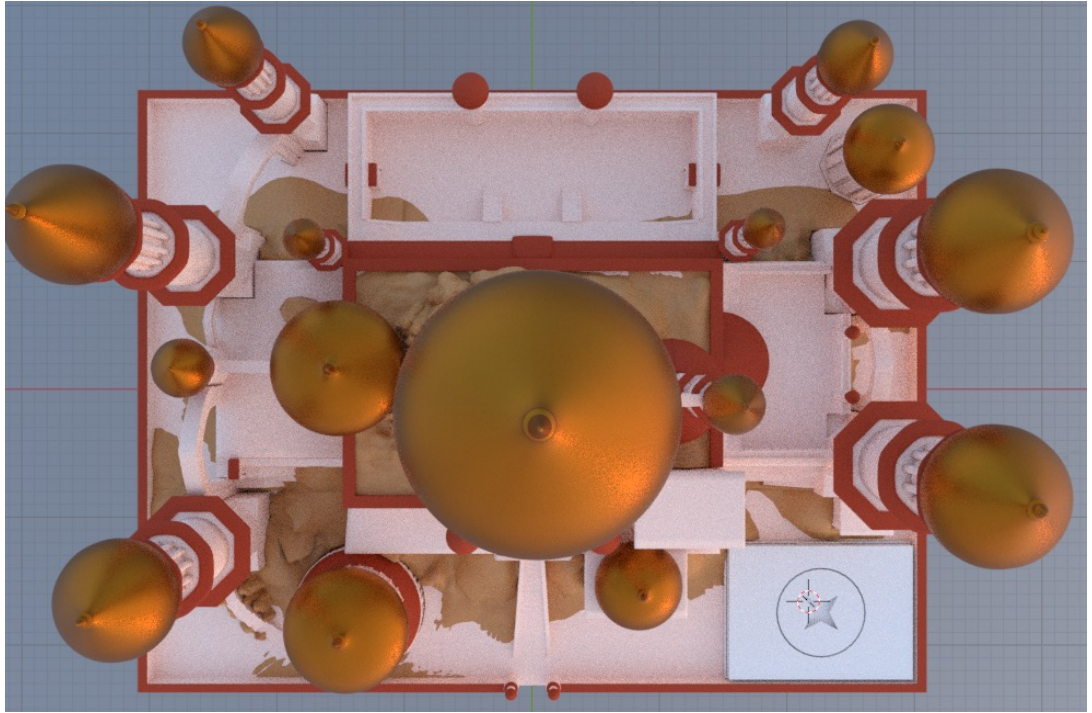
- i. coin10
- ii. coin20
- iii. coin30
- iv. coin40
- v. coin50
- vi. coin60
- vii. coin70
- viii. coin80
- ix. coin90

c. c

- i. coin0
- ii. coin1
- iii. coin2
- iv. coin3
- v. coin4
- vi. coin5
- vii. coin6
- viii. coin7
- ix. coin8
- x. coin9



DOWNLOADABLE MATERIAL



TOP VIEW



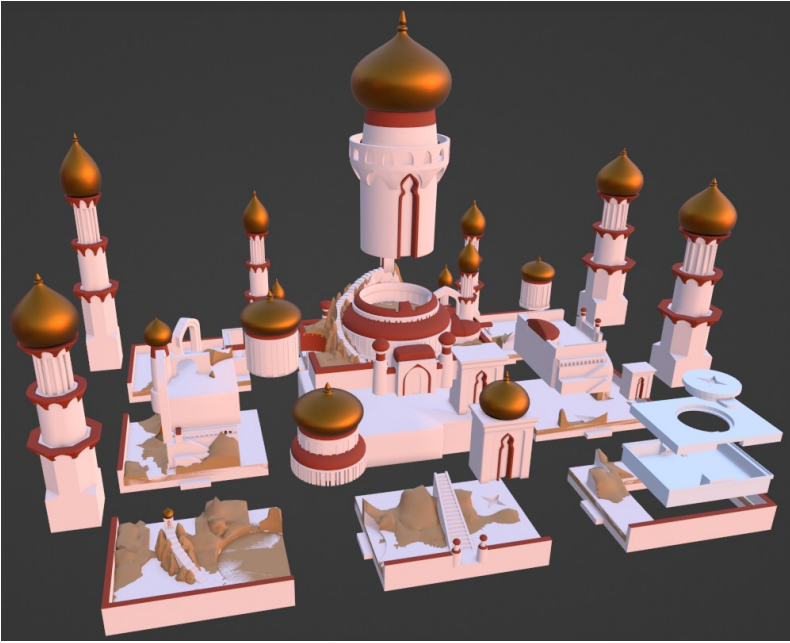
SIDE VIEW



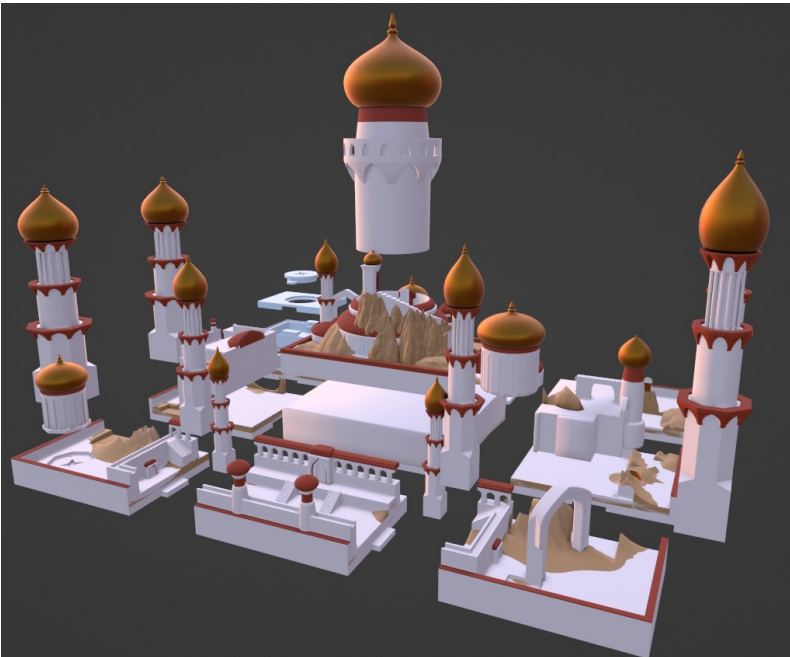
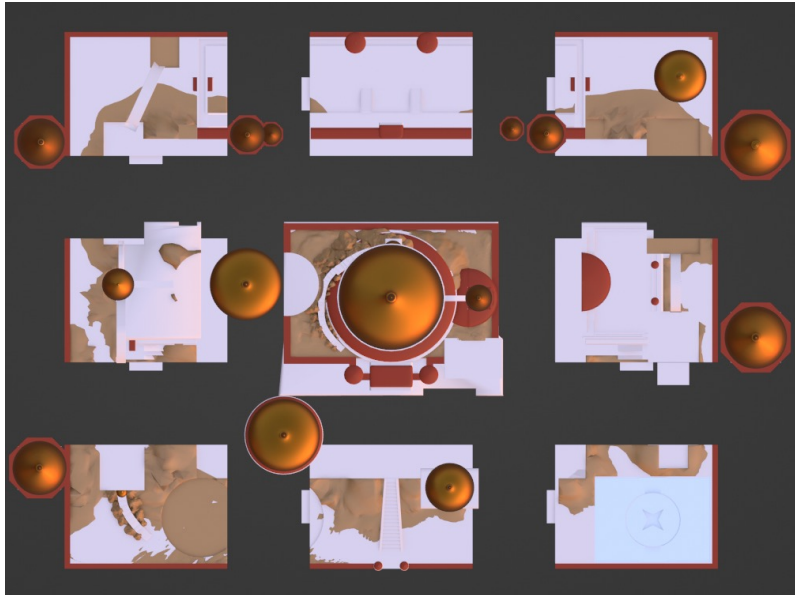


FRONT VIEW





EXPLODED VIEW



TOWERS



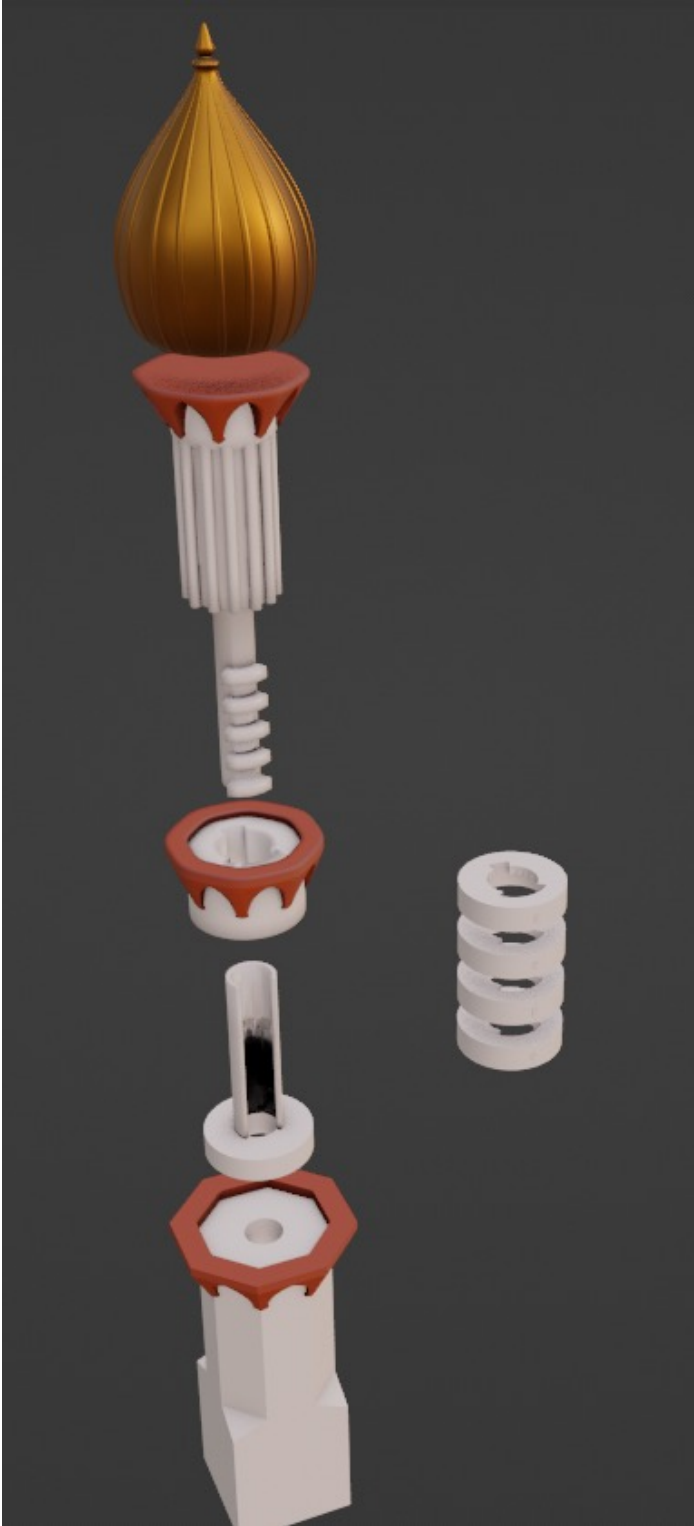
TOWER 02



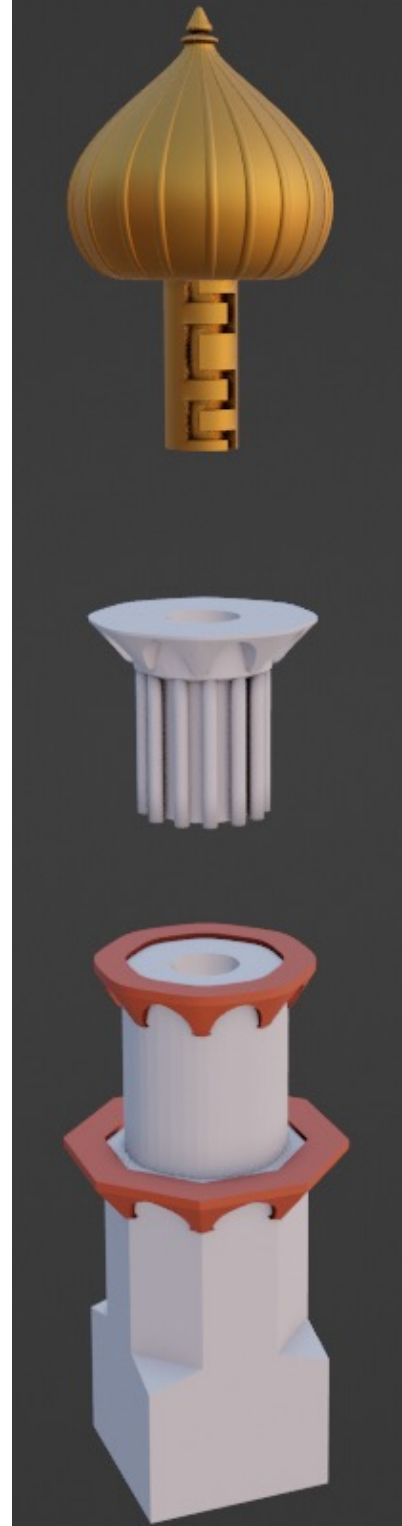
TOWER 01



TOWER 03



TOWER 04





TOWER 05



STEPS FOR ASSEMBLING THE PUZZLE

All pieces should be printed once, except those models that include in this manual an (xN), being N the number of copies you need to print.

Before start, take the coins 300, 60 and 5, and glue a 1mm magnet in the socket, they should now be ready to work. To prepare the fishing rod, you can use a thread or a wire and glue some magnets to one of the ends of the thread.

STEP 1 Print all the collectables. The magic lamp should be introduced in a box of your choice that allows putting three lockers. The locker L01 must use the combination 365 and the locker L02 must use the combination XAZF. The locker L03 must use the combination down, left, down, right, up, right.

Now you should start printing the models from the Palace folder.

STEP 2 Print and glue all pieces from 2_Palace (Agrabah_Palace_Base_01_01 to Agrabah_Palace_Base_03_03), the same way you did with the cave base. This structure should be glued together. We recommend having another base to glue it on top and therefore increase its resistance. If you want, you can use the Cave of wonders puzzle as base.

STEP 3 Take Agrabah_Palace_1f_01 and introduce it on the socket from Agrabah_Palace_Base_02_01, pasting it with glue. Then do the same with Agrabah_Palace_1f_02. It should be placed on Agrabah_Palace_Base_02_02 and Agrabah_Palace_Base_02_03 and glued together. Finally, take Agrabah_Palace_1f_03 and glue it with Agrabah_Palace_Base_02_04.

STEP 4 Find Agrabah_Palace_2f and glue it on top of Agrabah_Palace_1f_02.

STEP 5 Tower 1. Take Tower1_P1 and Tower1_P2, then glue them together. Introduce Tower1_P1 into Agrabah_Palace_Base_02_04 and glue them together as well. Finally, take Tower1_P3 and put it on top of Tower1_P2. You need to solve the maze in order to attach it properly to the rest of the

tower. Inside of this puzzle you should put the paper with an X written in Braille.

STEP 6 Tower 2. Take Tower2_P1 and Tower2_P2, then glue them together. Glue Tower 2 to Agrabah_Palace_Base_01_01. Screw Tower2_P3 to Tower2_P2 to attach the dome to the tower properly. Inside of this tower you should put a map and the piece of paper with an A written in Braille. Also put [P3], [P7], [P8], [P9] inside.

STEP 7 Tower 3. Glue Tower3_P2 on top of Tower3_P1. Introduce the four Tower3_P3 pieces on the rail of Tower3_P2. Next, introduce Tower3_P4 on the rail. Paste Tower3_P6 on top of Tower3_P5. Take Tower3_P5 and introduce through the inner part of the rail while all Tower3_P3 and Tower3_P4 are properly aligned to let the piece pass through. Glue Tower 3 on the Agrabah_Palace_Base_03_01's socket. Inside of this tower you will have to introduce the letter Z written in Braille.

STEP 8 Tower 4. Take Tower4_P1 and Tower4_P2, then glue them together. Introduce Tower4_P1 into Agrabah_Palace_Base_03_04's square socket and glue them together as well. Finally, take Tower4_P3 and put it on top of Tower4_P2. You need to solve the zigzag maze in order to attach it properly to the rest of the tower. Put some coins inside as well as the letter F in Braille.

STEP 9 Tower 5. Glue Tower5_02 and Tower5_03 together. Take Tower5_01 and glue it on Agrabah_Palace_2f. Put Genie_Figure inside of the tower. Lock it with Tower5_02. Finally, screw Tower5_04 onto Tower5_01

STEP 10 The box. Take Palace_Box_01 and glue it on Agrabah_Palace_Base_01_03. Take Palace_Box_04 and put it below Palace_Box_02, then put Palace_Box_03 on Palace_Box_02's circular socket and glue Palace_Box_03 and Palace_Box_04 in this position, allowing the piece to rotate around Palace_Box_02's hole. Take the rod and the remaining coins and

put them inside of the box. Lock the box with Palace_Box_Key. Finally, put Palace_Box_Key in Agrabah_Palace_Base_01_02's socket.

STEP 11 Additional props. Some additional towers can be glued in their respective sockets.

- Agrabah_Palace_CTower_01 in Agrabah_Palace_Base_01_01
- Agrabah_Palace_CTower_02 in Agrabah_Palace_Base_03_03' star socket
- Agrabah_Palace_CTower_03 in Agrabah_Palace_Base_03_01' medium square socket
- Agrabah_Palace_CTower_04 in Agrabah_Palace_Base_03_03' medium square socket
- Agrabah_Palace_CTower_05 in Agrabah_Palace_Base_03_01' small square socket
- Agrabah_Palace_CTower_06 in Agrabah_Palace_Base_03_03' smallsquare socket
- Agrabah_Palace_CTower_07 in Agrabah_Palace_1f_01
- Agrabah_Palace_CTower_08 in Agrabah_Palace_2f' small square socket
- Agrabah_Palace_CTower_09 in Agrabah_Palace_1f_03

HOW TO SOLVE THE PUZZLE

First, start with the palace.

Tower 1. Solve the maze and get the letter X1.

Tower 2. Unscrew the dome. Get a map and get letter A2.

Tower 3. Solve the cryptex by aligning the shapes so all of them make sense. Check the marks on the pieces to ensure all of them are properly aligned. You obtained the letter Z3.

Tower 4. Solve the zigzag maze. Get the more coins and the letter F4.

Find Palace_Box_Key and use it to open the box. Obtain the remaining coins. Use the fishing rod to know which one are magnetized. Only 300, 60 and 5 are magnetized.

Solve locker L1 with XAZF.

Solve locker L2 with 365.

Open the box.

Use the map and [P6] to find the solution to the directional locker. Introduce down, left, down, right, up, right. Open locker L03 and obtain the magic lamp.

Go back to the palace, unscrew the dome of Tower 5, use the base of the lamp to open the secret compartment inside the tower and obtain the figure of the genie.

HOW TO RETURN THE PUZZLE TO ITS ORIGINAL STATE SO IT IS READY AGAIN TO BE SOLVED

Put the genie back to the inside of Tower 5. Close the secret compartment with the magic lamp and screw the dome of Tower 5.

Put the magic lamp in the box with three lockers.

Put the dome of Tower 4 by solving the maze in reverse. Leave inside some coins and the letter F4 in Braille.

Put the dome of Tower 1 by solving the maze in reverse. Leave inside the letter X1

Put the dome of Tower 2 by screwing the dome. Inside you should leave the [P3], [P7], [P8], [P9] and the letter A2 in Braille.

Put all Tower3_P3 and Tower3_P4 on the rail, align them and then introduce Tower3_P5 through the hole in Tower 3. You should leave inside the letter Z3 in Braille.

Put the remaining coins and the rod inside Palace_Box_01, close it with Palace_Box_Key and then return Palace_Box_Key to its socket in Agrabah_Palace_Base_01_02

WHAT BENEFITS CAN BE OBTAINED WITH ITS USE?

Hand eye coordination

Social inclusion

Screw-unscrew

Basic maths

Braille

TECHNOLOGY

FDM FOR MECHANICAL PARTS AND IN GENERAL.

PROPS AND COLLECTABLES CAN BE PRINTED IN SLA OR FDM

IF YOU HAVE A PRINTER, WHAT MODEL IS IT?

FLASHFORGE CREATOR V3
FLASHFORGE ADVENTURE 4
ELEGOO JUPITER

MATERIAL

PLA 1.75, 04

COLOR

PREFERABLY WHITE FOR ALL THE PIECES

SHOULD THE PIECE BE RESISTANT OR BE SUBJECTED TO STRESS?

LATCH STOPS FROM THE TOWERS

DO YOU HAVE TO PAINT THE MODEL?

THE STATUES AND TOWER3_P3 PIECES MUST BE PAINTED. THE REST OF THE MODEL, ALTHOUGH IT'S NOT NECESSARY TO PAINT IT, IT WOULD BE VERY NICE.

NUMBER OF PIECES OF WHICH THE PUZZLE IS COMPOSED:

50 + 30 COINS

SPECIFICATION FOR FACILITATOR



Description of the use of the puzzle and purpose of the puzzles

The puzzle has two sections, the outer section (palace) and the inner section (cave of wonders). The puzzle will consist of the following phases:

Phase 1 - The towers. 4 towers will contain a test each and must be solved in order to continue advancing.

-Tower 1: Grabbing the roof of one of the towers, you must make rotation movements, up and down to extract the dome and access the interior of the tower. In essence it is a maze-like exercise that practices the ability to screw, unscrew, coordination and patience. The reward is a puzzle piece and a fishing rod.

-Tower 2: Similar to tower 1 but in this case you will have a zigzag maze around the cylindrical surface of the tower. The reward is a piece.

-Tower 3: the walls of the tower are made up of gears that have to be aligned like the combination of a padlock in order to open the roof cover. This combination is obtained by doing a small mathematical calculation test written at the base of the escape box or on a scroll inside another of the two towers. you

get two pieces

-Tower 4: You must use the magnetic fishing rod to get a key.

Phase 2 - Open the cave of wonders.

The pieces obtained have two letters each piece in Latin script and its counterpart in braille. You must form the word "Open sesame" and use the combination in braille on the back of the escape box.

By entering the correct combination, it will allow you to open the escape box as if it were a music box. Inside we will have a representation of the cave of wonders. We will have a diorama with the head of a panther surrounded by riches and sand. In its jaws will be the magic lamp.

-The objective is to open the mouth with the key obtained in one of the towers.

Phase 3 - Release the genie

The base of the lamp is in turn a key to release the genie.

-The roof of the central nave of the palace of Agrabah must be unscrewed.

-Then you will have to place the lamp inside and use the base of the lamp to open a secret compartment where the figure of the genie of the lamp is located.

LIST OF MATERIALS REQUIRED TO BE USED IN ORDER TO PRINT ONE UNIT OF THE PUZZLE (GLUE, PAINTING, MARKER PENS, MAGNETS, PRINTED PAPER)

ACCURACY AND DEFINITION REQUIRED. (QUALITY) LOW, MID OR HIGH.

0,3 MM

AT LEAST 3 MAGNETS OF 1CM AND ANOTHER MAGNET FOR THE ROD (IT CAN BE A 1CM MAGNET OR USE SEVERAL SMALLER MAGNETS).

LOCKERS:

L01 - 3 NUMBER COMBINATION LOCKER (365)

L02 - 4 LETTERS COMBINATION LOCKER (XAZF)

L03 - DIRECTIONAL COMBINATION LOCKER (DOWN, LEFT, DOWN, RIGHT, UP, RIGHT).

NON RIGID GLUE OR SIMILAR. RECOMMENDED MATERIAL:

[HTTPS://WWW.BOSTIK.COM/SPAIN/ES/CATALOG/PRODUCT/CONSTRUCTION/EMEA/SPAIN/PRODUCT-H505-SEAL-N-BOND-CRYSTAL/](https://www.bostik.com/spain/es/catalog/product/construction/emea/spain/product-h505-seal-n-bond-crystal/)

MARKERS TO PAINT ON THE SURFACE.

A SMALL BOX TO PUT THE MAGIC LAMP INSIDE. (SLIGHTLY BIGGER THAN A RING BOX). IT SHOULD ALLOW TO PUT 3 LOCKERS, OR ONE LOCKER AND IN THAT CASE YOU SHOULD ALSO BUY A MULTI LOCKER LIKE:

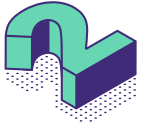
[HTTPS://WWW.AMAZON.ES/MAND%C3%ADBULA-ETIQUETADO-SEGURIDAD-ADMINISTRACI%C3%B3N-ENCLAVAMIENTO/DP/B09CMDWF38/REF=SR_1_1?__MK_ES_ES=%C3%85M%C3%85%C5%BD%C3%95%C3%91&CRID=C71QM7UI9KDH&KEYWORDS=MANDIBULA+DE+SEGURIDAD+MULTIPLE&QID=1687804466&SPREFIX=MANDIBULA+DE+SEGURIDAD+MULTIPLE%2Ccaps%2C90&SR=8-1](https://www.amazon.es/mand%C3%ADBULA-ETIQUETADO-SEGURIDAD-ADMINISTRACI%C3%B3N-ENCLAVAMIENTO/dp/B09CMDWF38/ref=SR_1_1?__mk_es_es=%C3%85M%C3%85%C5%BD%C3%95%C3%91&CRID=C71QM7UI9KDH&keywords=mandibula+de+seguridad+multiple&qid=1687804466&sprefix=mandibula+de+seguridad+multiple%2Ccaps%2C90&sr=8-1)

PAPER MATERIALS:

[HTTPS://DRIVE.GOOGLE.COM/DRIVE/FOLDERS/1D2_-IXMRM3NEXQOSCKQ8XX9MGOQ_F8CJ?USP=DRIVE_LINK](https://drive.google.com/drive/folders/1D2_-IXMRM3NEXQOSCKQ8XX9MGOQ_F8CJ?usp=drive_link)

THE ARABIAN NIGHTS

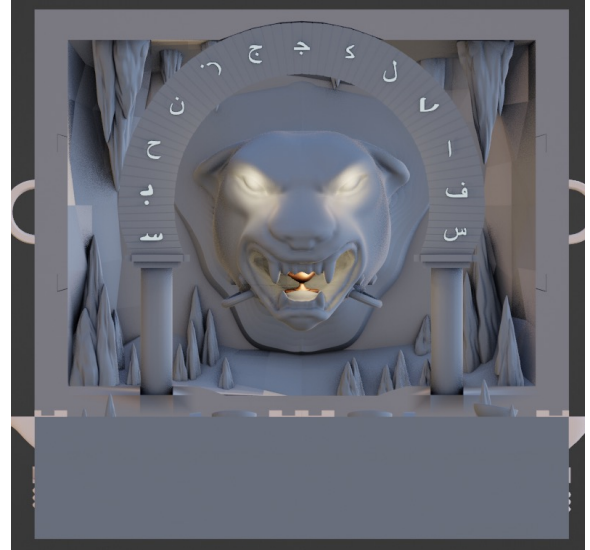
THE CAVE OF WONDERS



DESCRIPTION

The Arabian Nights is a popular collection of traditional medieval tales from the Middle East. The theme will include an oriental-themed design, as well as quizzes reminiscent of the most popular stories in the collection (for example, opening Ali Baba's cave). We have considered its choice due to the centuries-old influence of Eastern culture in Spain during the Middle Ages.

This puzzle is focused on the story of Ali Baba and the 40 thieves and its relation with the Aladdin story added later on to the collection of stories in the Arabian Nights.



OBJECTIVES OF THE PUZZLES

Hand eye coordination, image association

3D MODEL

The palace is divided into the following sections: base, floor 01, floor 02, towers, palace box and props.

BASE

- Agrabah_Cave_Base_01_01
- Agrabah_Cave_Base_01_02
- Agrabah_Cave_Base_01_03
- Agrabah_Cave_Base_01_04
- Agrabah_Cave_Base_02_01
- Agrabah_Cave_Base_02_02
- Agrabah_Cave_Base_02_03
- Agrabah_Cave_Base_02_04
- Agrabah_Cave_Base_03_01
- Agrabah_Cave_Base_03_02
- Agrabah_Cave_Base_03_03
- Agrabah_Cave_Base_03_04

STORYTELLING

*In the vastness of the greatest ocean of sun and sand,
the mysterious city of Agrabah rises.
Its dunes are full of magic and hope,
but investigating them will be worth the effort.*

*If you aspire to fulfil your desires,
search for the cave of wonders,
find clues in a pragmatic way,
and free the genie from the magic lamp.*

*But remember,
brute force or external tools will not solve this mystery.
Only your imagination and tenacity will free the genie
from captivity.*

Height 32 cm
Width 60 cm
Depth 45 cm



COVER

- a. Agrabah_Cave_Cover_01_01
- b. Agrabah_Cave_Cover_01_02
- c. Agrabah_Cave_Cover_01_03
- d. Agrabah_Cave_Cover_01_04
- e. Agrabah_Cave_Cover_01_05
- f. Agrabah_Cave_Cover_01_06
- g. Agrabah_Cave_Cover_02_01
- h. Agrabah_Cave_Cover_02_02
- i. Agrabah_Cave_Cover_02_03
- j. Agrabah_Cave_Cover_02_04
- k. Agrabah_Cave_Cover_02_05
- l. Agrabah_Cave_Cover_02_06
- m. Agrabah_Cave_Cover_02_07
- n. Agrabah_Cave_Cover_02_08

PANTHER FACE

- a. Panther_01
- b. Panther_02
- c. Panther_03
- d. Panther_04
- e. Panther_05

CENTRAL ARCH

- a. Cave_Arch_01
- b. Cave_Arch_02
- c. Cave_Arch_03
- d. Cave_Arch_04
- e. Cave_Arch_05
- f. Cave_Arch_06
- g. Cave_Arch_07

STATUE

- a. Statue_01 (x3)
- b. Statue_02 (x3)
- c. Statue_03 (x3)

COLLECTABLES

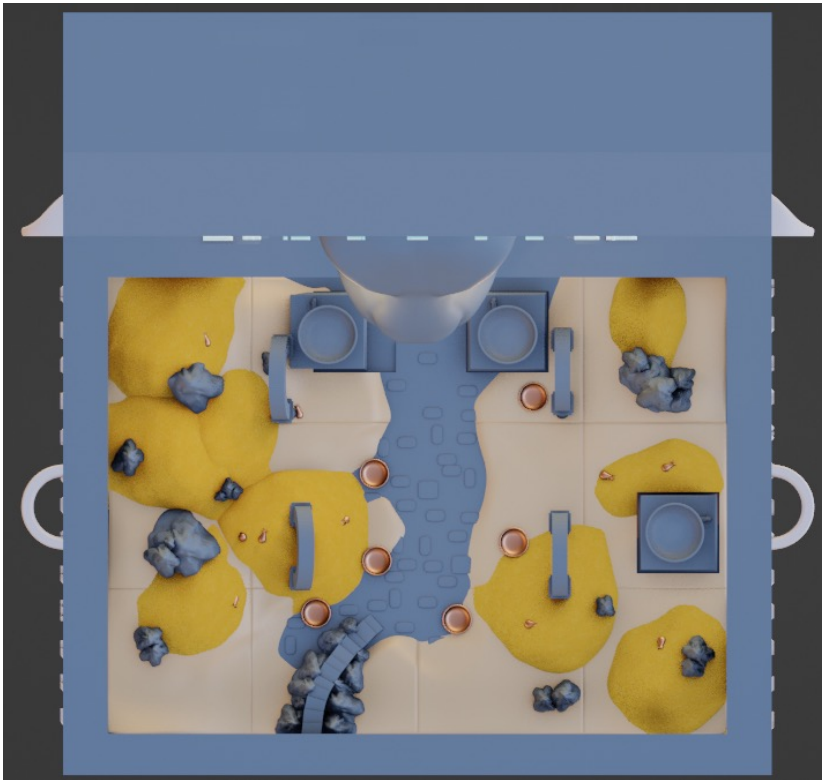
- a. Decipher
- i. Cave_Decypher_01
- ii. Cave_Decypher_02
- iii. Cave_Decypher_03
- b. MagicCarpet
- c. MagicLamp



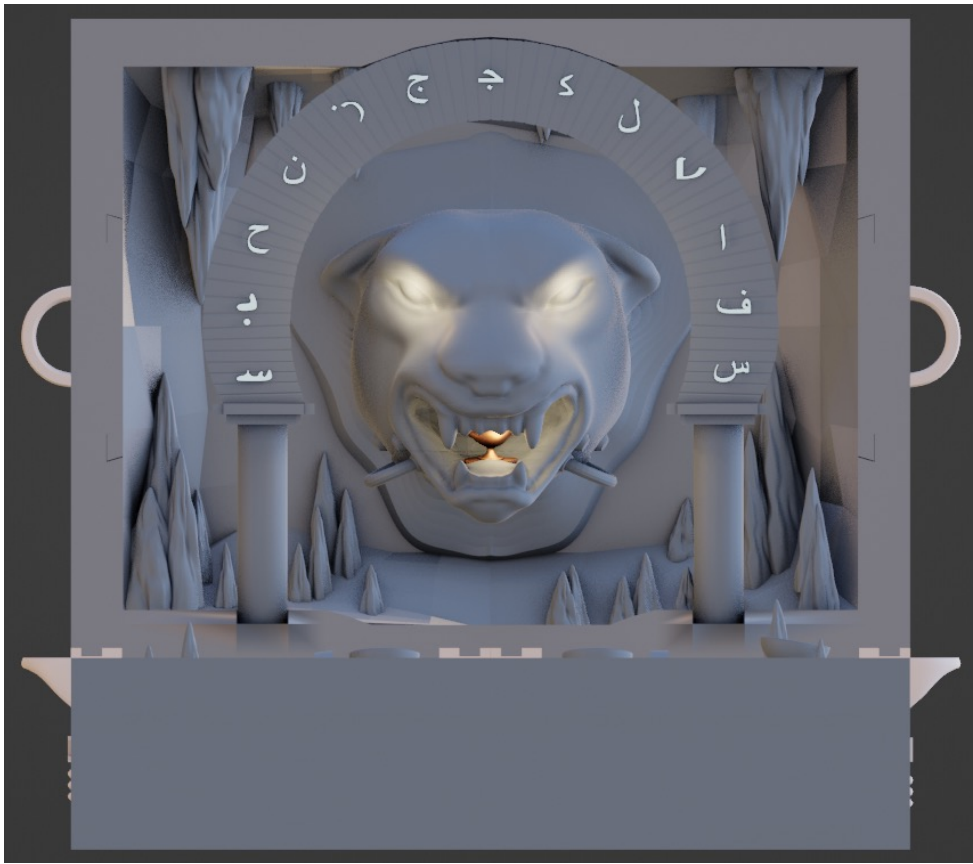
DOWNLOADABLE MATERIAL



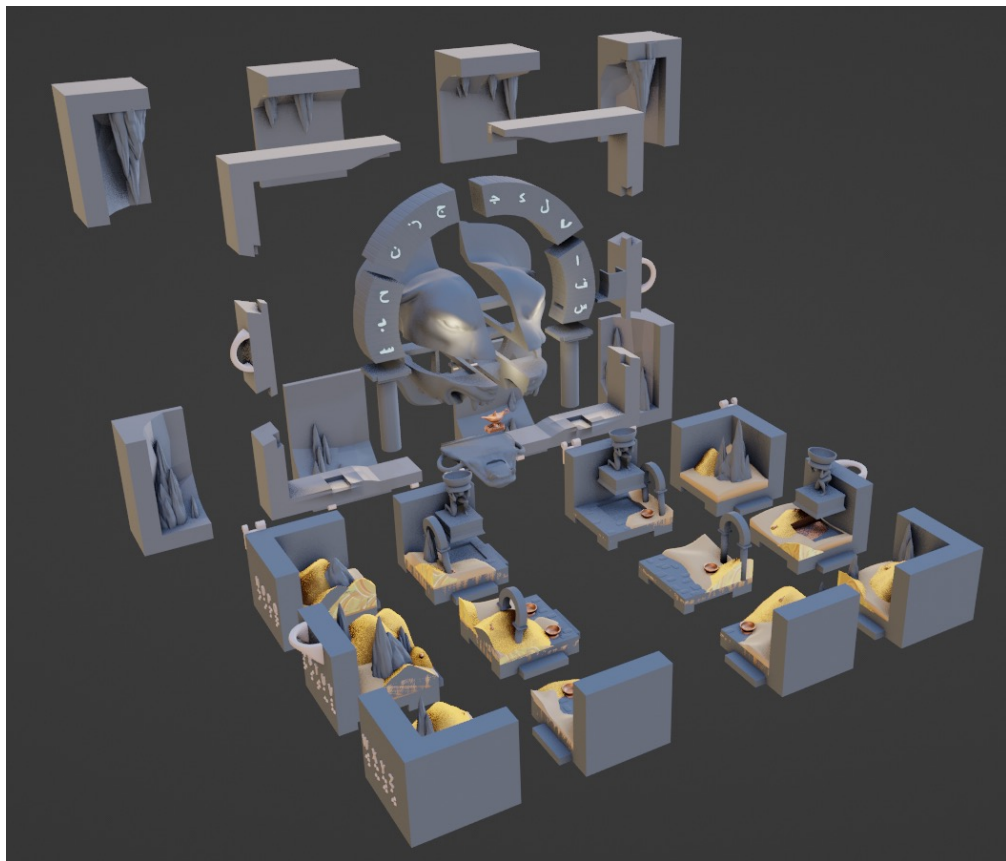
TOP VIEW



SIDE VIEW



FRONT VIEW



EXPLODED VIEW

STEPS FOR ASSEMBLING THE PUZZLE

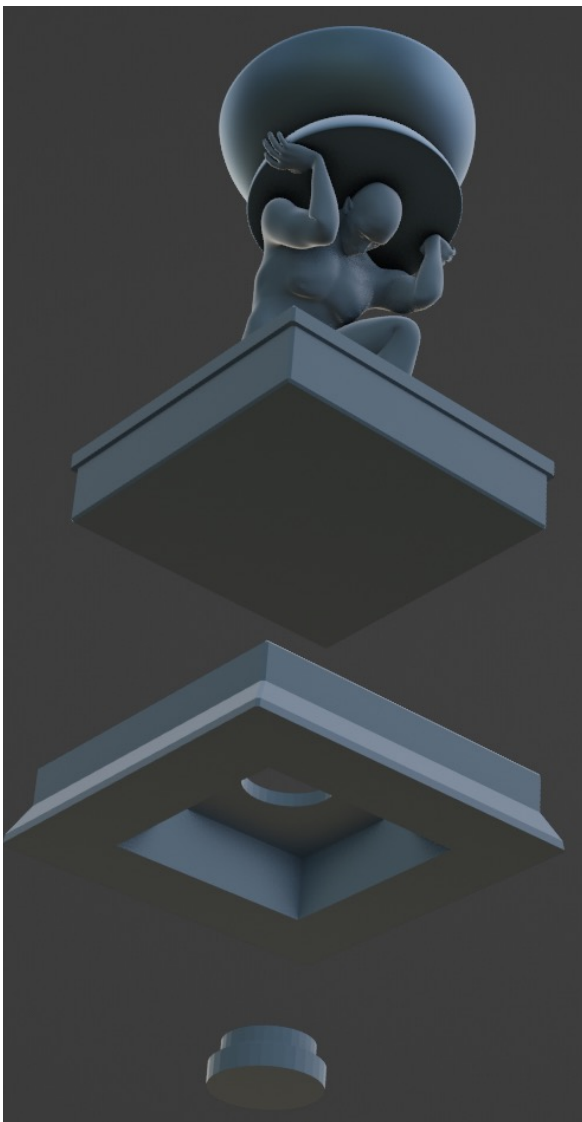
All pieces should be printed once, except those models that include in this manual an (xN), being N the number of copies you need to print.

STEP 1 Take all Agrabah_Cave_Base_0R_0C models from the 1_Cave/1_Base folder and glue them together, where R is the row position of the model and C is the column where it should be placed. Step 2. Then, go to the Cover folder and glue all the Agrabah_Cave_Cover_0R_0C models the same way you did with the base.

STEP 3 The panther pieces (Panther_0N) 01 to 04 should be glued together as well. Use a bit of support or cut some filament from the spool and introduce it in the hinge that connects Panther_05 to the rest of the face. Now the mouth should be properly attached to the panther's face. The panther should be directly glued to the inside of the cover cover from step 2.

STEP 4 Glue Cave_Arch_01 to Cave_Arch_06 and insert Cave_Arch_07 into Cave_Arch_06. Put the piece paper with arab letters [P1] inside of that hidden compartment. Then glue this piece (Cave Arch) to the cover from Step 2.

STEP 5 Print 3 copies of Statue_01 to Statue_03. Introduce Statue_03 from the bottom of Statue_02, the glue Statue_03 with Statue_01 through the hole in Statue_02. The 3 pieces should be attached and allow the statue to rotate around the base. That way, when you rotate the statue, you should be able to see a hidden number in a very specific colour. Paint the number "1" in blue in the first statue, "2" in red in the second statue and "3" in yellow in the last statue.



STEP 6 Configure the following

lockers:

L01 - (directions): Put a blue sticker in the up direction, a red sticker on the left side, a yellow on the right one and a green one on the down direction. Set the solution to up, left and right.

L02 - (3 numbers): set the solution to 593

L03 - (directions): set the solution to down, left, down, right, up, right

L04 - (4 letters): set the solution to ALJN

STEP 7 Print all the collectables.

The magic lamp should be introduced in the mouth of the panther. Once inside, put the locker L01, L02 on one side of the mouth of the panther and L03 and L04 on the other side of the mouth of the panther to close it with the lamp being locked inside. The Cave_Decipher_01 to 03 should be left inside of the box. Put the piece of paper [P6] and [P10] in side of the MagicCarpet, then also leave it inside of the box. Also put [P3], [P7], [P8], [P9] inside.

The cave should now be complete.

HOW TO SOLVE THE PUZZLE

This puzzle has 4 exercises that can be solved in parallel.

First open the cage to reveal the cave o wonders.

Inside the cage, rotate the statues. You will see colours and numbers in each of them. The are used to solved the directional locker. The answer is blue, red, yellow, which will be translated into up, left and right. The locker L01 should be released.

Take the paper from the inside of the magic carpet and count the number of items in the scene. The answer is 593. Open locker L02

Take the directions document [P06] and use it to solve the second directional locker L03. Find the secret compartment in the main arch and find a piece of paper. Decipher the text with the pieces Cave_Decypher_01 to Cave_Decypher_03 and the arab leter in the main arch. The solution is aljn. Open locker L04

The mouth of the panther should now be released and you should be able to retrieve the magic lamp.

HOW TO RETURN THE PUZZLE TO ITS ORIGINAL STATE SO IT IS READY AGAIN TO BE SOLVED

1. Put the lamp on the mouth of the panther.
2. Put the lockers of lockers in each side of the mouth of the panther.
3. On the left one, introduce L01 and L02. Reset the password.
4. On the right one, introduce L03 and L04. Reset the password.
5. Hide P06 and P10 inside of the magic carpet. Leave the magic carpet inside of the box.
6. Set the position of the statues to default, that is with the numbers hidden.
7. Hide the arab text inside of the hidden compartment of the main arch.
8. Leave the latin alphabet inside of the box
9. Close the box

SPECIFICATION FOR FACILITATOR

Description of the use of the puzzle and purpose of the puzzles

The puzzle is meant to be used for image association, memory and some motor tuning.

Please have in mind that the main exercises require interpretation and lateral thinking but introducing the solution requires some motor skills to manipulate the lockers in the right way. In some cases you might need to leave the user solve the riddles but a facilitator might need to intervene to introduce the solution.

Another version of the puzzle can be created to assemble the pieces of the puzzle in its correct position to work on visual processing and some easy hand eye coordination that only require to put some blocks together but in order.

WHAT BENEFITS CAN BE OBTAINED WITH ITS USE?

Hand eye coordination

Social inclusion

Basic maths

Lateral thinking

TECHNOLOGY

FDM FOR MECHANICAL PARTS AND IN GENERAL.

PROPS AND COLLECTABLES CAN BE PRINTED IN SLA OR FDM.

IF YOU HAVE A PRINTER, WHAT MODEL IS IT?

FLASHFORGE CREATOR V3
FLASHFORGE ADVENTURE 4
ELEGOO JUPITER

MATERIAL

PLA 1.75, 04

COLOR

PREFERABLY WHITE FOR ALL THE PIECES.

SHOULD THE PIECE BE RESISTANT OR BE SUBJECTED TO STRESS?

ONLY THE HINGES OF THE BOX.

NUMBER OF PIECES OF WHICH THE PUZZLE IS COMPOSED:

52



LIST OF MATERIALS REQUIRED TO BE USED IN ORDER TO PRINT ONE UNIT OF THE PUZZLE (GLUE, PAINTING, MARKER PENS, MAGNETS, PRINTED PAPER)

ACCURACY AND DEFINITION REQUIRED. (QUALITY) LOW, MID OR HIGH

0.3 MM

AT LEAST 3 MAGNETS OF 1MM AND ANOTHER MAGNET FOR THE ROD (IT CAN BE A 1CM MAGNET OR USE SEVERAL SMALLER MAGNETS).

LOCKERS:

L01 - DIRECTIONAL COMBINATION LOCKER

L02 - 3 NUMBER COMBINATION LOCKER (593)

L03 - DIRECTIONAL COMBINATION LOCKER

L05 - 4 LETTERS LOCKER (ALJN)

2 MULTI LOCKER LIKE: [HTTPS://WWW.AMAZON.ES/MANDIBULA-ETIQUETADO-SEGURIDAD-ADMINISTRACION-ENCLAVAMIENTO/DP/B09CMDWF38/REF=SR_1_1?__MK_ES_ES=%C3%85M%C3%85%C5%BD%C3%95%C3%91&CRID=C71QM7UI9KDH&KEYWORDS=MANDIBULA+DE+SEGURIDAD+MULTIPLE&QID=1687804466&SPREFIX=MANDIBULA+DE+SEGURIDAD+MULTIPLE%2CAPS%2C90&SR=8-1](https://www.amazon.es/mandibula-etiquetado-seguridad-administracion-enclavamiento/dp/B09CMDWF38/ref=sr_1_1?__mk_es_es=%C3%85M%C3%85%C5%BD%C3%95%C3%91&CRID=C71QM7UI9KDH&keywords=mandibula+de+seguridad+multiple&qid=1687804466&sprefix=mandibula+de+seguridad+multiple%2Ccaps%2C90&sr=8-1)

NON RIGID GLUE OR SIMILAR. RECOMMENDED MATERIAL:

[HTTPS://WWW.BOSTIK.COM/SPAIN/ES/CATALOG/PRODUCT/CONSTRUCTION/EMEA/SPAIN/PRODUCT-H505-SEAL-N-BOND-CRYSTAL/](https://www.bostik.com/spain/es/catalog/product/construction/emea/spain/product-h505-seal-n-bond-crystal/)

PAPER MATERIALS:

[HTTPS://DRIVE.GOOGLE.COM/DRIVE/FOLDERS/1D2_-IXMRM3NEXQOSCKQ8XX9MGOQ_F8CJ?USP=DRIVE_LINK](https://drive.google.com/drive/folders/1D2_-IXMRM3NEXQOSCKQ8XX9MGOQ_F8CJ?usp=drive_link)

AROUND THE WORLD IN 80 DAYS



DESCRIPTION

1872, much has already happened. Yohannes IV is crowned Emperor of Ethiopia in Axum, the first imperial coronation in that city in over 200 years. The Metropolitan Museum of Art opens in New York City. King Oscar II ascends the throne of Sweden-Norway. Another extraordinary event took place. Today, London, 2 October, reading the news, the gentlemen of the Reform Club, discover that in India, a railway has been opened, it crosses the whole country in a few minutes. But the club members do not believe it is possible. Only one of them believes, John Fogg. He accepts the challenge and travels the length of the globe, and on his return he finds 20,000 pounds. Together with his faithful butler, he is about to embark for Italy. But in order to succeed, Mr John is looking for companions to help him overcome the challenges that await him. Will you be able to travel the world together with Mr Fogg and get the reward?

AIM OF THE PUZZLE:

Exercise social transversal skills (e.g. conflict resolution), communicative and cognitive (e.g. problem solving, planning, logical reasoning);

Activate processes of inclusion and cooperation among peers.



STORYTELLING

1872, much has already happened. Yohannes IV is crowned Emperor of Ethiopia in Axum, the first imperial coronation there in over 200 years. The Metropolitan Museum of Art opens in New York City. King Oscar II ascends the throne of Sweden-Norway. Another extraordinary event took place. Today, London, 2 October, reading the news, the gentlemen of the Reform Club, discover that in India, a railway has been opened, it crosses the whole country in a few minutes. But the club members do not believe it is possible. Only one of them believes, John Fogg. He accepts the challenge and travels the entire globe, and on his return he will find 20,000 pounds. Together with his faithful butler, he is about to embark for Italy. But in order to succeed, Mr John is looking for companions to help him overcome the challenges that await him. Will you be able to travel the world with Mr Fogg and get the reward?



Height 400mm
Width 200mm
Depth 200cm

3D MODEL:

The whole puzzle consists of twenty-three pieces: Italy, Egypt, India, Japan, USA, UK.

ITALY CONSISTS OF SIX PIECES:

- 1_Drawer
- 1_Division
- 1_Box
- 1_Knob (3 pieces to print)
- 2_Knob (3 pieces to print)
- 1_Pizza

EGYPT CONSISTS OF FOUR PIECES:

- 1_Labyrinth
- 1_Tooth
- 1_Pyramid
- 1_Top of the Pyramid

INDIA CONSISTS OF SIX PIECES:

- 1_Base (to be printed 12)
- 2_Base Centre
- 3_Base Side
- 1_Drawer
- 1_Lid
- 1_Cassette (six to be printed)
- 2_Tassel (three to be printed)
- 3_Tassel
- 4_Wallet
- 5_Wallet
- 6_Wallet
- 7_Wallet

JAPAN CONSISTS OF TWO PIECES:

- 1_Trapdoor
- 1_Torii arch

USA CONSISTS OF FIVE PIECES:

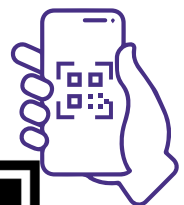
- 1_Stem (to be printed 3 times)
- 2_Longest stem
- 1_Basket
- 1_Bottom basket
- 1_Basket frame

THERE ARE 11 PIECES:

- 1_Money bag
- 1_Money Bag (to be printed 10 times)

THREE-PIECE HOT AIR BALLOON

- 1_Right side balloon
- 2_Balloon left side
- 1_Hook (to be printed twice)

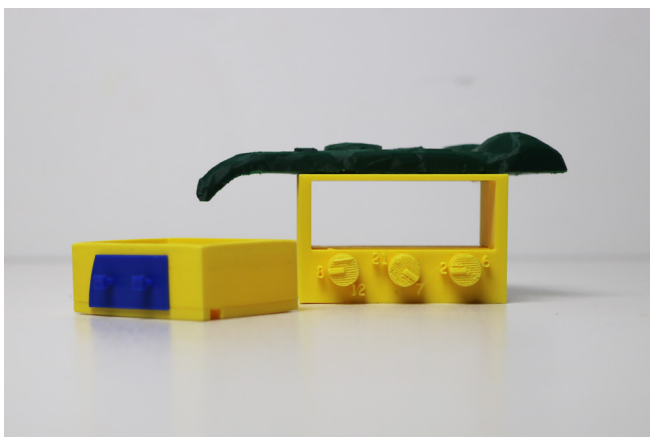
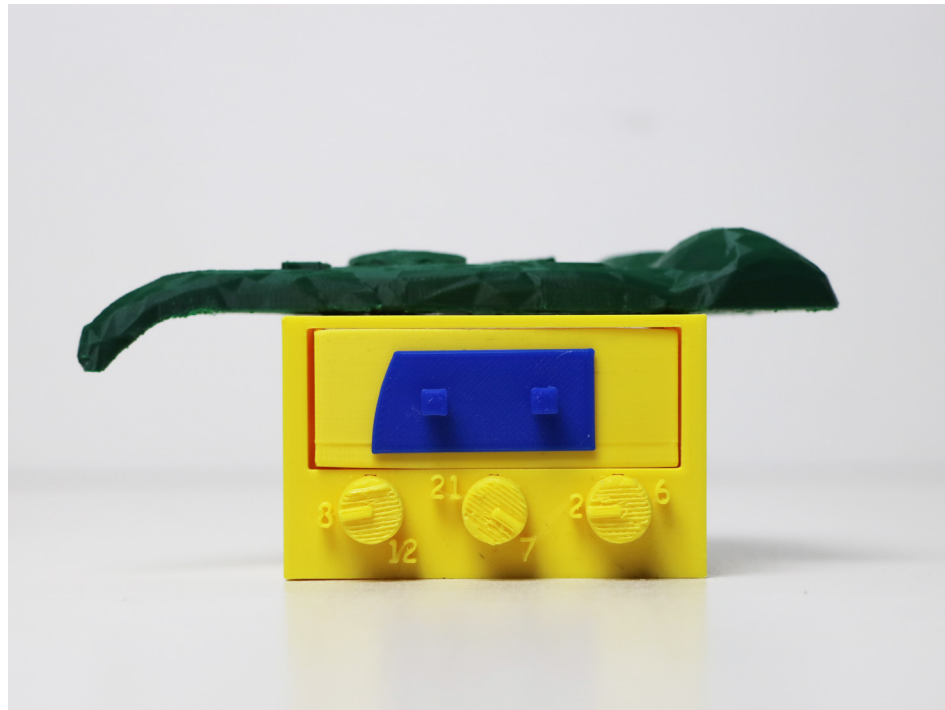


DOWNLOADABLE MATERIAL

ITALY



FRONT VIEW



EXPLODED VIEW

EGYP



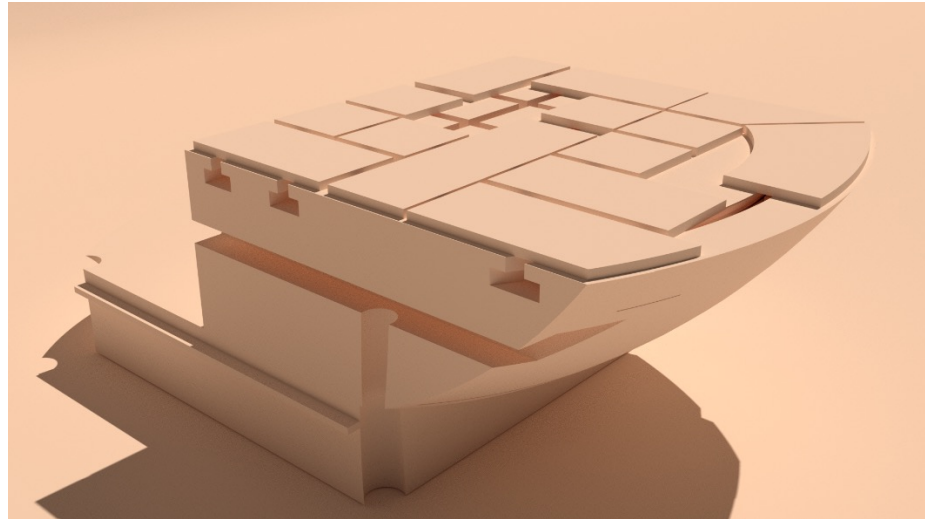
FRONT VIEW

PYRAMID (MAZE)

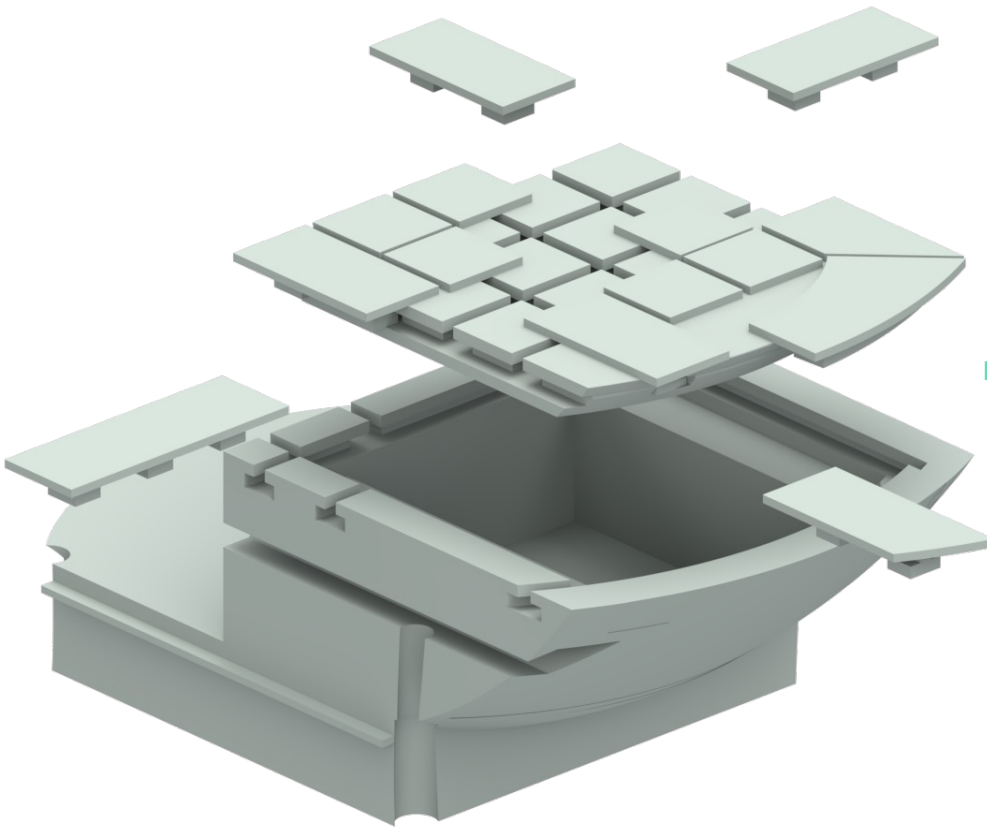
INDIA



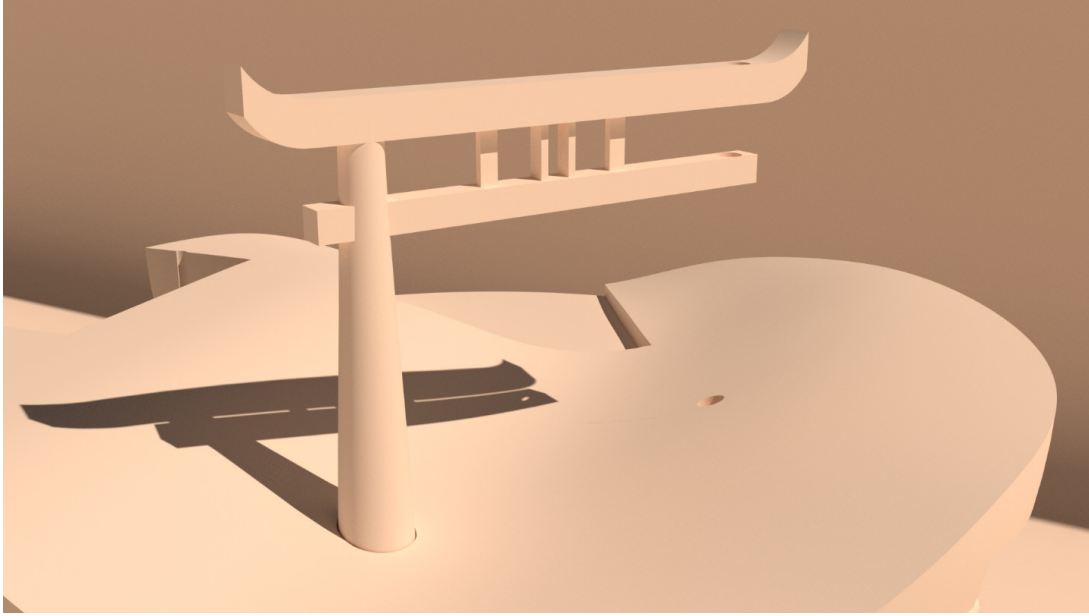
PERSPECTIVE
VIEW



EXPLODED VIEW



JAPAN

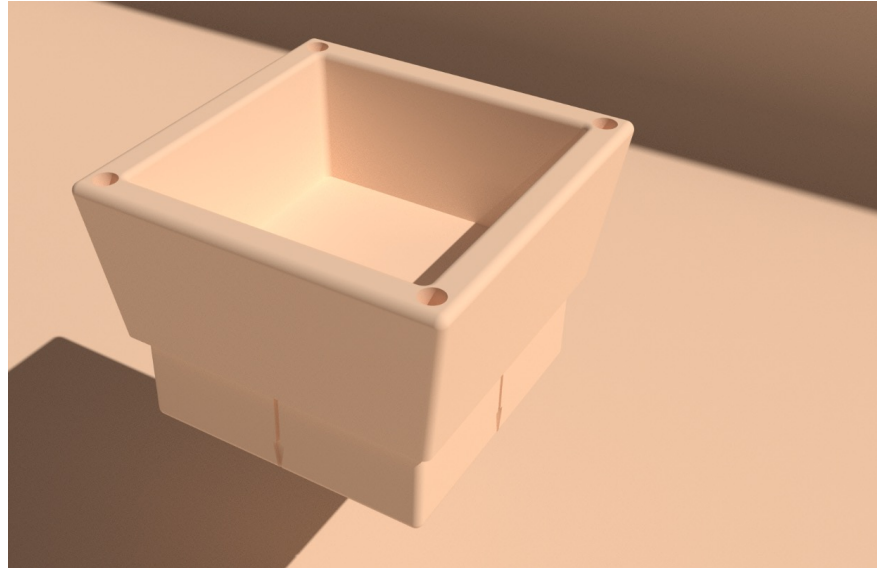


EXPLODED VIEW
TORII ARC

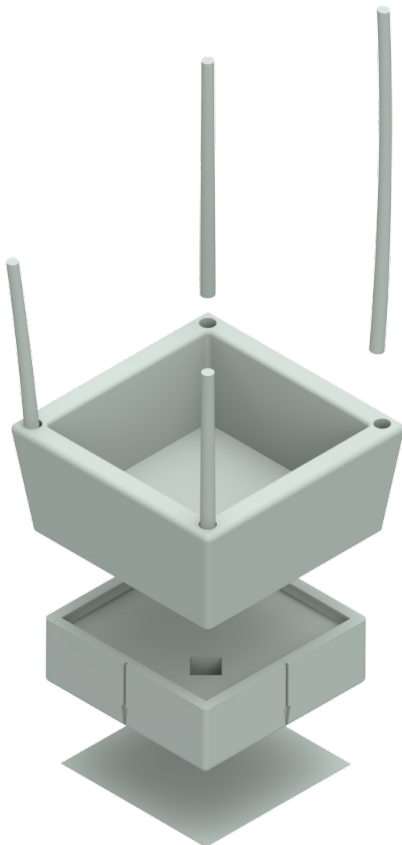


EXPLODED VIEW
TORII ARC

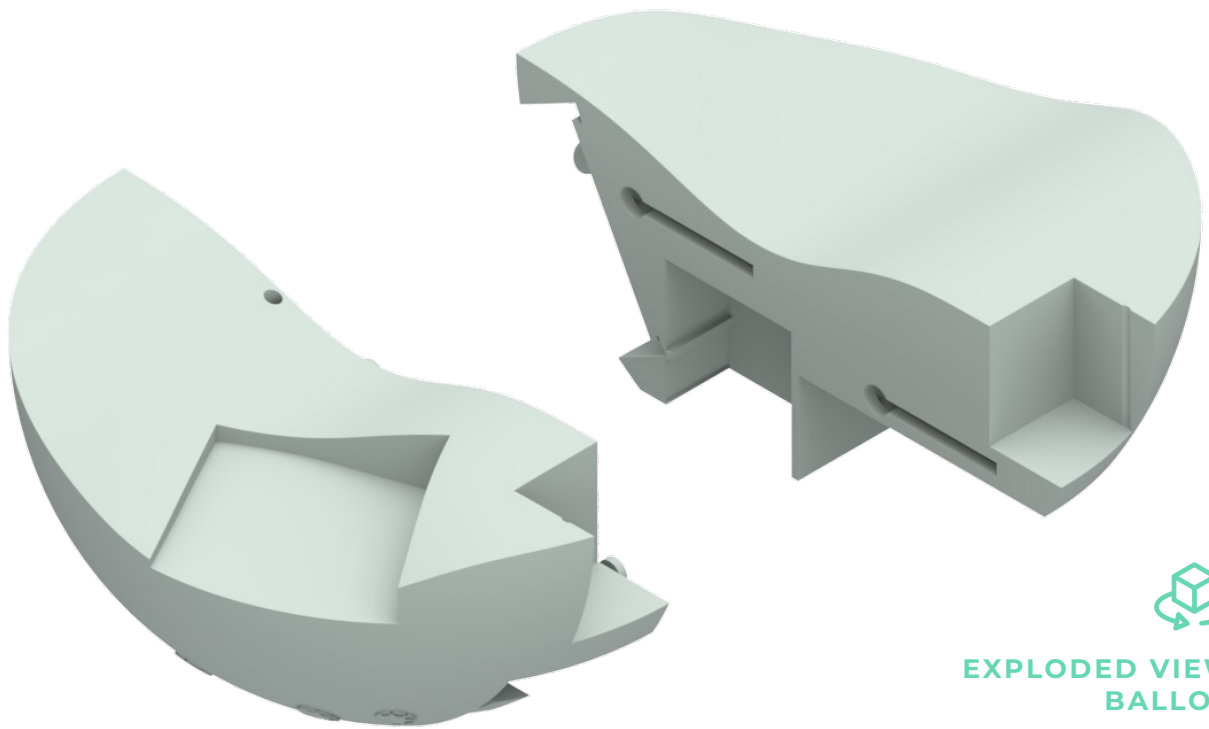
UNITED STATES OF AMERICA



EXPLODED VIEW

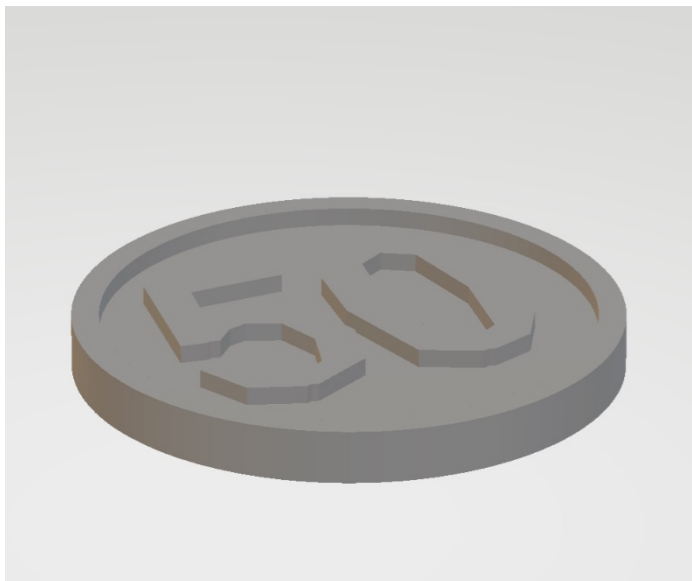
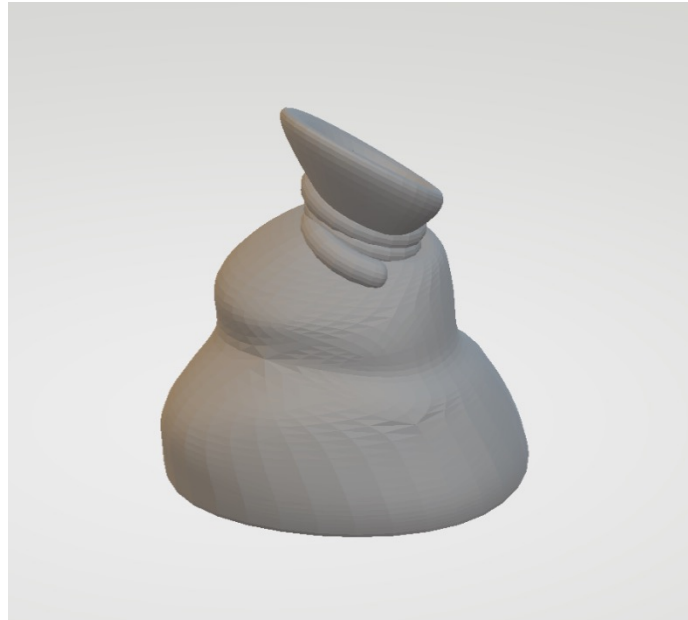


EXPLODED VIEW

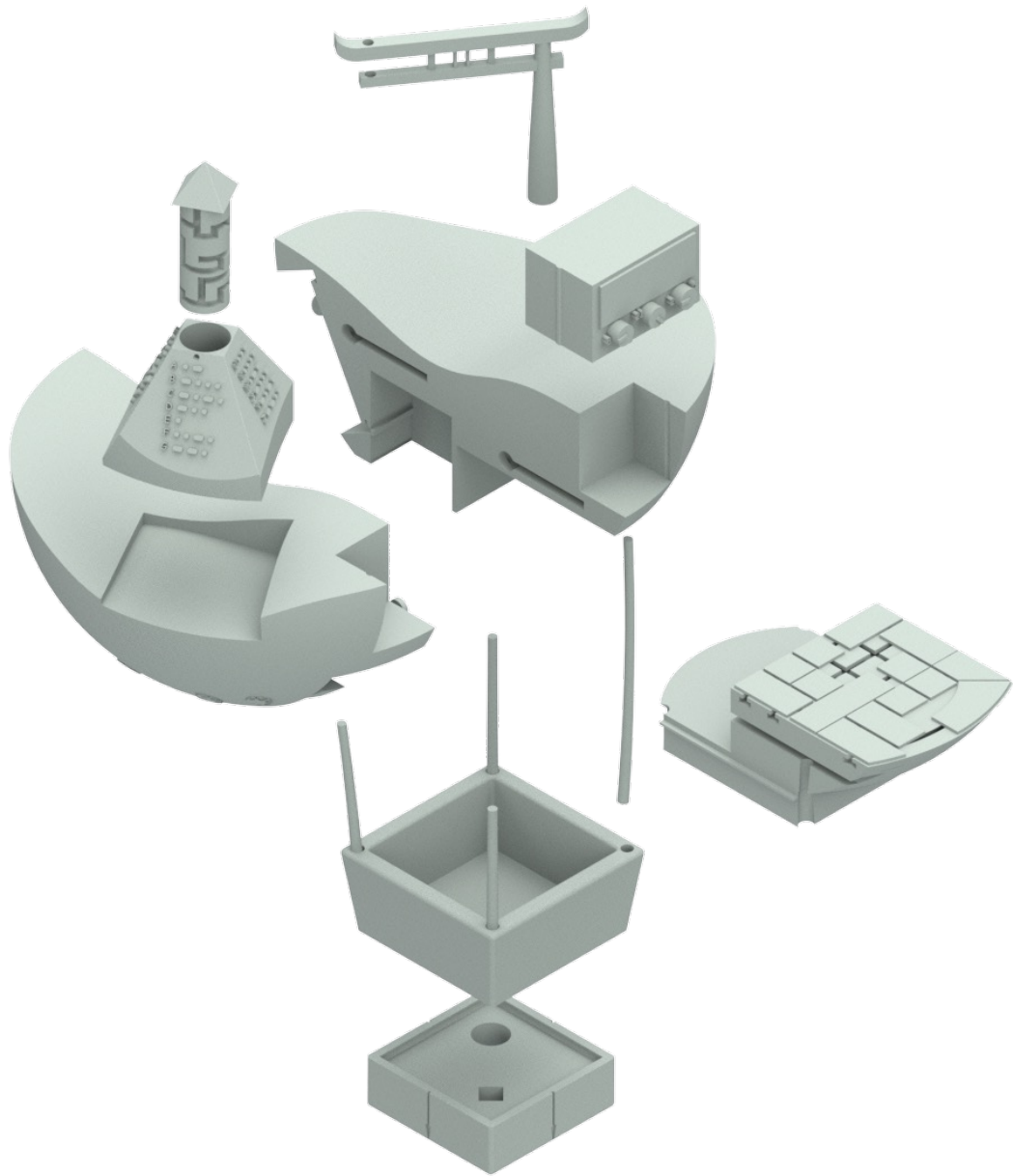


EXPLODED VIEW
BALLON

UNITED KINGDOM



PERSPECTIVE VIEW



EXPLODED
VIEW

STEPS FOR ASSEMBLING THE PUZZLE

STEP 1 - ITALY

Participants will read the narrative of the puzzle, in which they will find the first clues to the theme and narrative of the puzzle.

Within the narrative, a challenge from the English club will be issued to Mr Fogg. He and his butler leave for Italy.

After locating a figure reminiscent of Italy (the pizza), represented in relief on the surface of the puzzle, participants will have to unlock the puzzle with a combination (872) found as a clue in the opening text. The combination will be entered by aligning the knobs.

Inside the Italy puzzle, they will find a small pyramid that they will use to move on to the next puzzle, Egypt.

STEP 2 - EGYPT

The small pyramid will be the tip of a larger pyramid. By fitting the small pyramid into the cylinder inside the larger pyramid, they will be able to solve the maze.

Inside the cylinder they will find a picture of a detective, with a warning message. The participants have been misidentified as Bank of England robbers and there will be obstacles in the next stages.

Another message will be hidden inside the cylinder, for they will find an image with elements typical of India, with dots and lines. Participants will be able to consult the Morse alphabet legend on the sides of the pyramid. After deciphering the message "In the centre of the paws", they can go in search of the epicentre of the paws drawn on the balloon, which will lead them to the next riddle "India".

STEP 3 - INDIA

To locate India, there will be raised elephant footprints. In some places they will be partially depicted (the detective will have hidden them). Participants will realise that to get to the centre of the footprints they will have to pull out the drawer, a part of the ball, in which they will find the next riddle. In fact, the drawer contains a lid to be opened, blocked by dowels. Inside will be Miss Auda (figurine of a woman) who will be re-

scued by Mr Fogg (the scene will be shown by scanning a QR code). Afterwards, another postcard with the Japanese Torii bow.

STEP 4 - JAPAN

Participants must use one of the chopsticks to push down the trapdoor. The chopstick will have to be inserted into a hole in the Japanese Torii arch/door to complete the arch. Inside the trapdoor will be an image of a hamburger. This image will suggest the next riddle, "USA".

STEP 5 - USA

Participants will associate the image of the hamburger with the same raised image on the hot air balloon. On the hot air balloon the image will be partial, in fact they will have to look for the piece that will complete the burger. The image will be on the underside of the basket. By detaching the bottom part of the basket, participants will find two holes that will fit into a recess of the hot air balloon.

In the hidden double bottom, there will be a map to find the reward.

STEP 6 - UK

(FIND THE TREASURE OF THE BET)

The last puzzle will unlock the final part of the puzzle, in which the characters will return to England. They will find a map of the room they are in, with some landmarks and a point marked with an 'x'. The marked spot will be the place where they will find the reward promised by the Reform club in England.

SPECIFICATION FOR FACILITATOR



Description of the use of the puzzle and purpose of the puzzles

Before declaring, the facilitator must set up a room with a table where the puzzle will be placed. The puzzle must have a minimum of 2 and a maximum of 4 participants. It is very important that all participants can reach the puzzle. The puzzle consists of several parts and it is necessary for the facilitator to prepare it in advance. In each phase there are components that are not 3D printed, but must be downloaded (project website) and printed. In the file provided, you can read the instructions for placing the 2D material inside the 3D puzzles. The puzzles consist of 6 puzzles, each of which represents different stages that players have to solve through codes to find and unlock. The animator must know all the solutions to the puzzles in order to supervise and suggest any wrong moves that could compromise the integrity of the puzzle. In fact, it is necessary to communicate to the participants that no piece of the puzzle should be forced.

WHAT BENEFITS CAN BE OBTAINED WITH ITS USE?

This puzzle will introduce the different types of riddles.

Hand-eye coordination, social inclusion, visual memory, morse code, teamwork.

TECHNOLOGY

ADDITIVE MANUFACTURING

IF YOU HAVE A PRINTER, WHAT MODEL IS IT?

PRUSA

MATERIAL

PLA

COLOR

ALL THE PIECES CAN HAVE DIFFERENT COLOURS

SHOULD THE PIECE BE RESISTANT OR BE SUBJECTED TO STRESS?

RESISTENT

DO YOU HAVE TO PAINT THE MODEL?

NO

NUMBER OF PIECES OF WHICH THE PUZZLE IS COMPOSED:

48

LIST OF MATERIALS

GLUE, PAPER OF PRINTING, PRINTER

ACCURACY AND DEFINITION REQUIRED.

HIGH QUALITY

COLAPESCE



DESCRIPTION

The puzzle will consist of several pieces that must be put together. The legend will be performed and set in Sicily, the island and region of southern Italy.

The island and its triangle shape will be the central piece of the puzzle. Then there will be the columns that will have to be put together to support Sicily. In one of the columns it will be Cola Pesce himself who will hold up Sicily. Each piece will have to be placed in the assigned spot. in order to hold up the island.

In the upper surface of the island (triangle) will be placed, mountains, rivers, cities, and the volcano Etna. The objective will be not to slide all the pieces that make up the island when the island has to be supported by the columns.

3D MODEL

1 puzzle consisting of 9 pieces
of which the upper part is made up

UPPER PART

Palermo_upper part
Trapani_upper part

1 puzzle consisting of 9 pieces
of which the upper base is made up

1 column composed of 7 pieces
1 column consisting of 7 pieces
1 column consisting of 13 pieces

Height 380 mm
Width 320 mm
Depth 220 cm



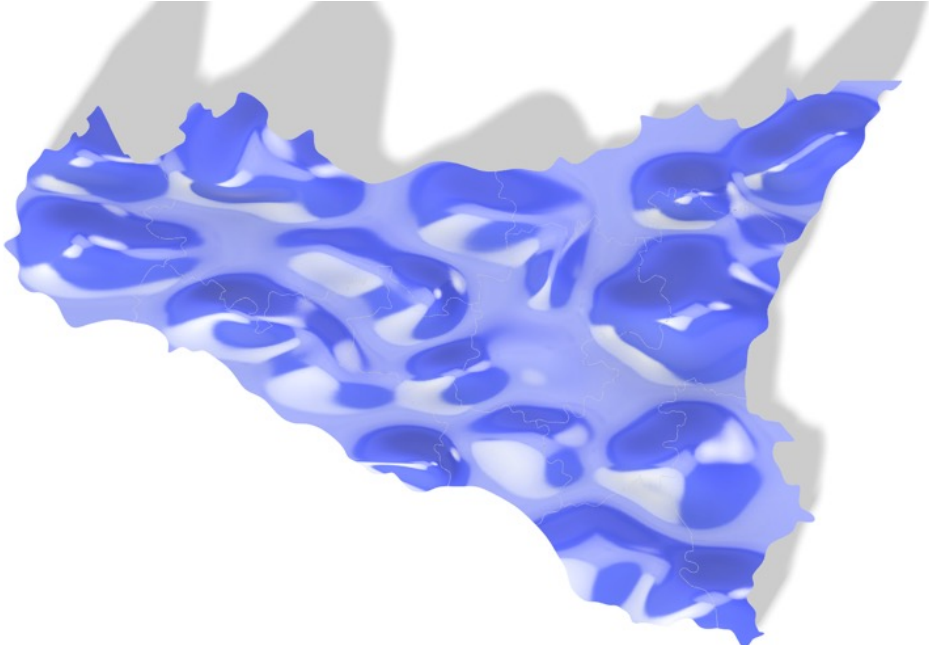
STORYTELLING

The Sicilian story goes that a certain Nicola 'Cola', the son of a fisherman, nicknamed Colapesce because of his ability to move through the water, on his return from his many dives in the sea would pause to recount the wonders he had seen and sometimes bring back treasures.

His fame reached the king of Sicily and Frederick II of Swabia, who decided to put him to the test: the king and his court then went out to sea in a boat and threw a cup into the water, which was immediately recovered by Colapesce. The king then threw the crown into a deeper place and Colapesce again succeeded in the feat. The third time the king tested Cola by throwing a ring into an even deeper place and on that occasion Colapesce never resurfaced. According to legend, Colapesce saw that Sicily rested on three columns, one of which was full of conspicuous cracks and marked by time, and decided to remain underwater, supporting the column to prevent the island from sinking. For this reason, he still supports the island today and every 100 years he resurfaces to see his beloved Sicily, leaving a message hoping for a better future for his land. Find and read the message left by Colapesce.



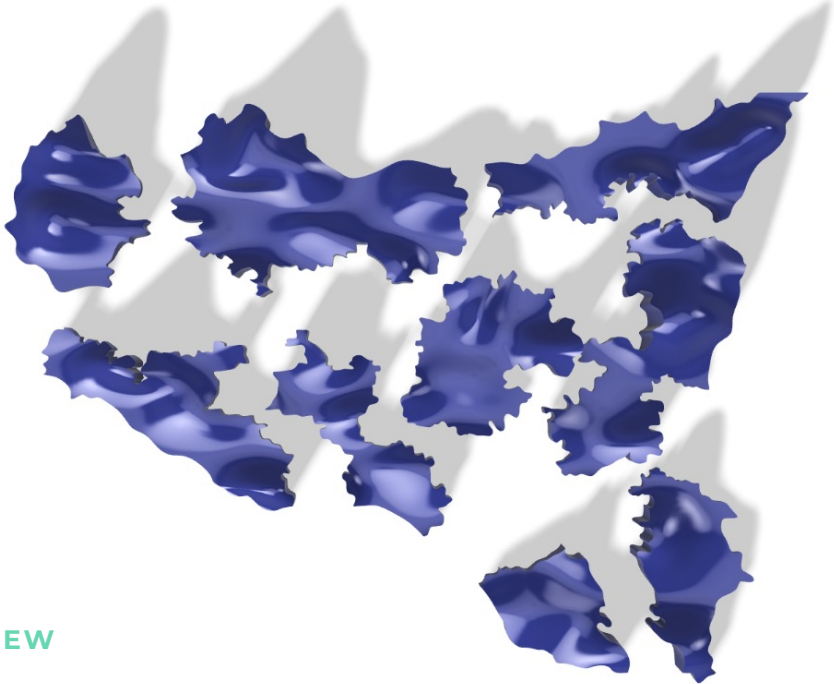
UPPER PART



TOP VIEW

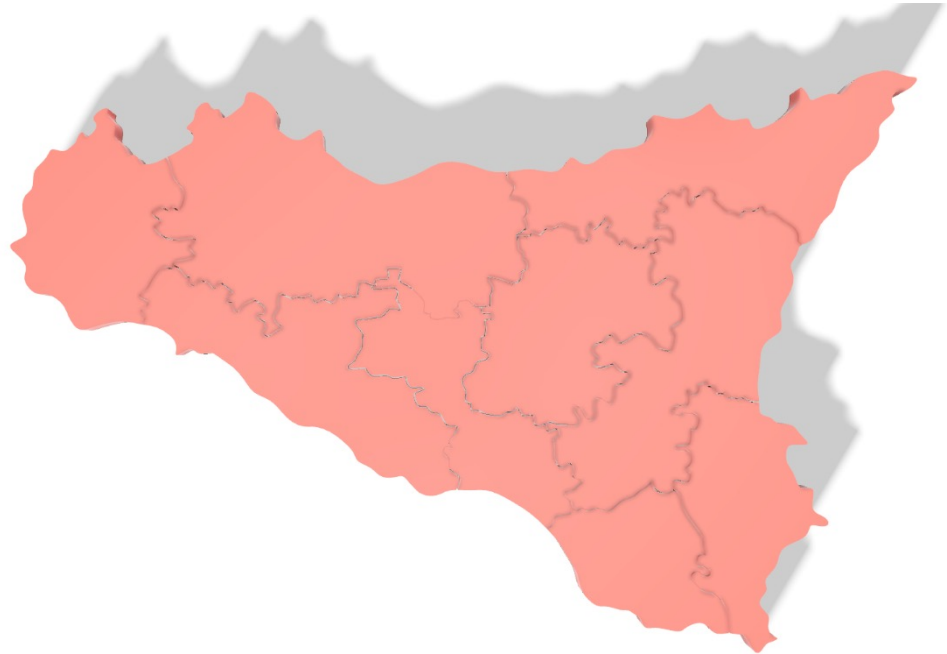


SIDE VIEW



EXPLODED VIEW

BASE

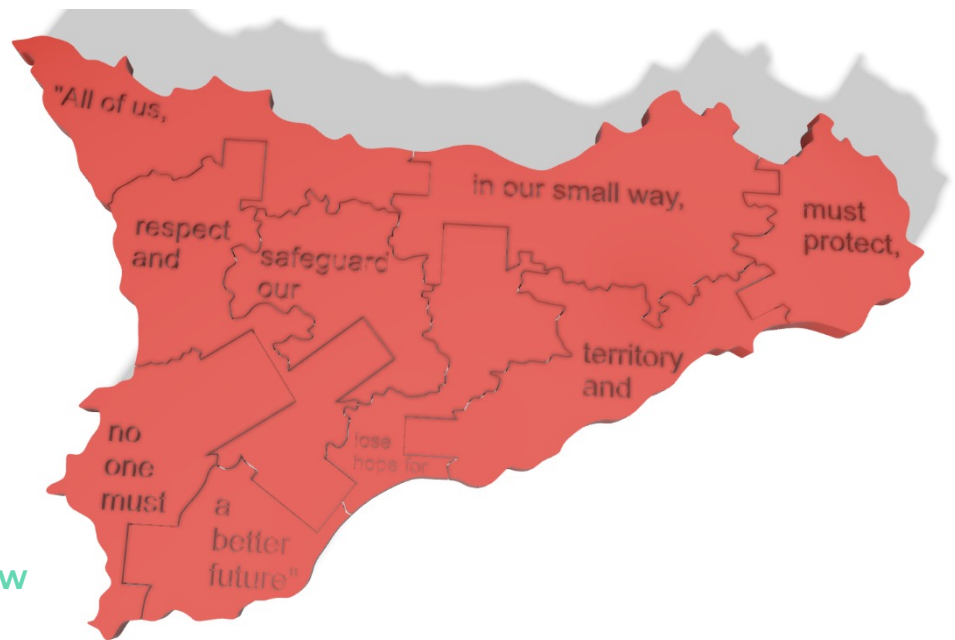


TOP VIEW



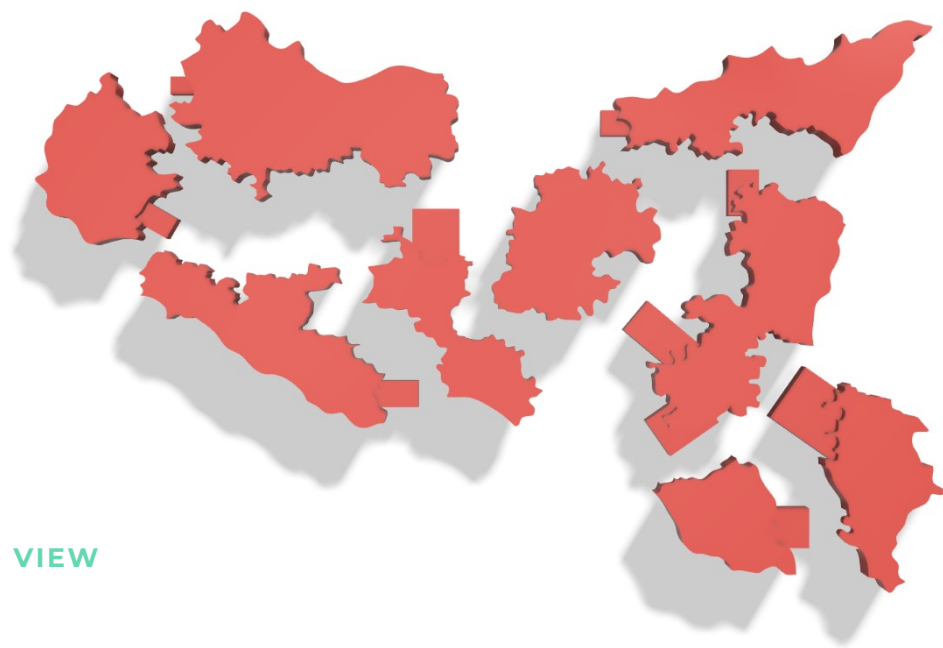
FRONT VIEW

SIDE VIEW



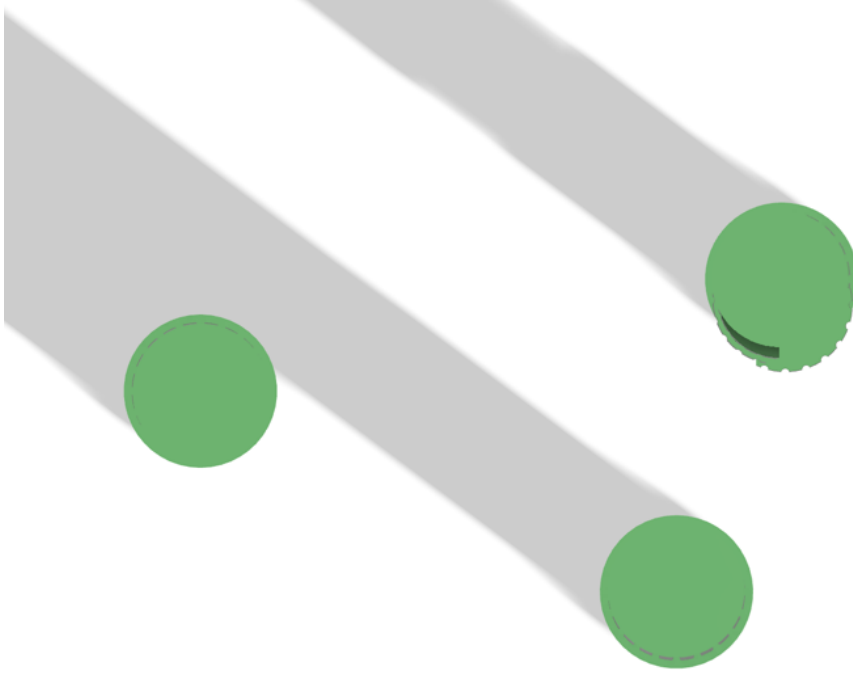
BOTTOM VIEW

BASE



EXPLODED VIEW

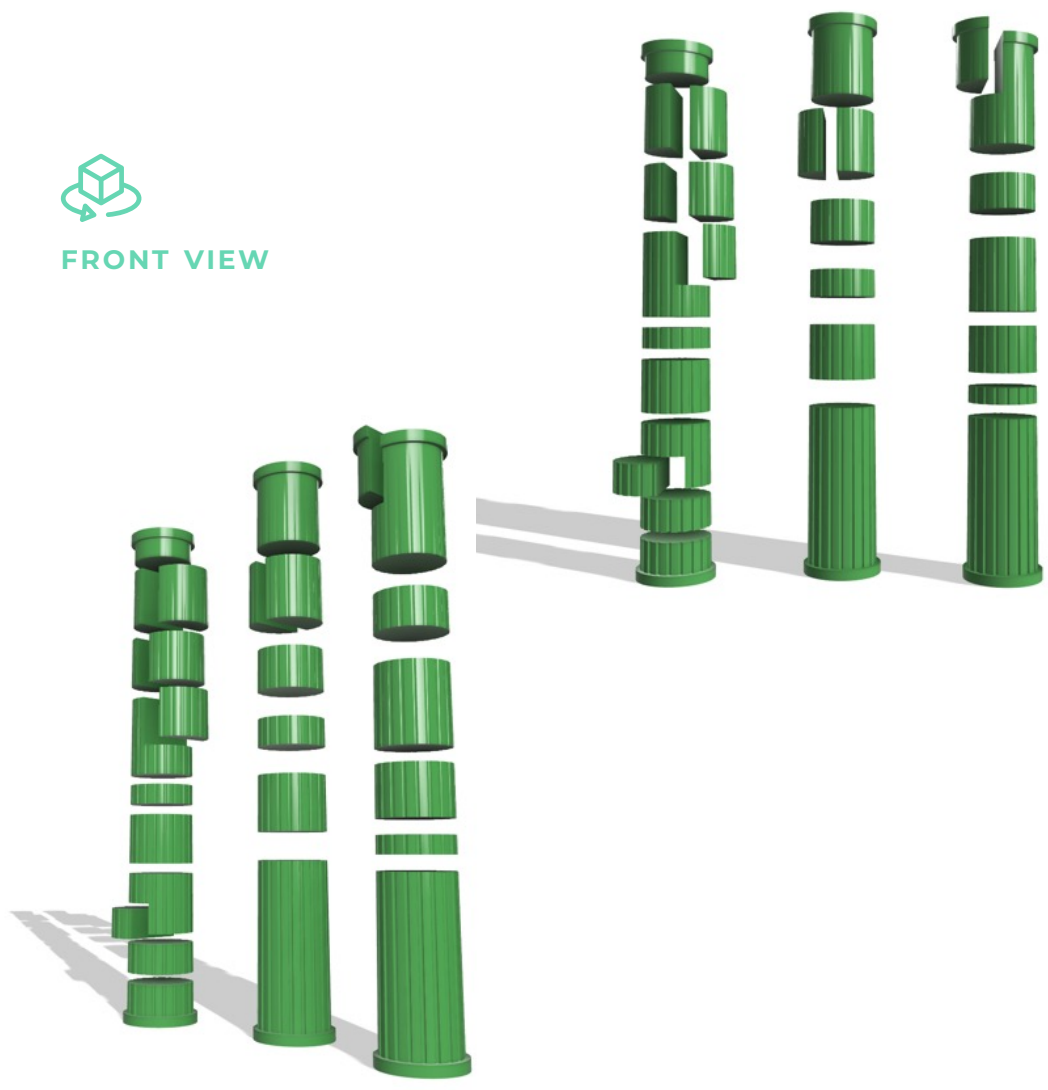
COLUMN 1 - 2 - 3



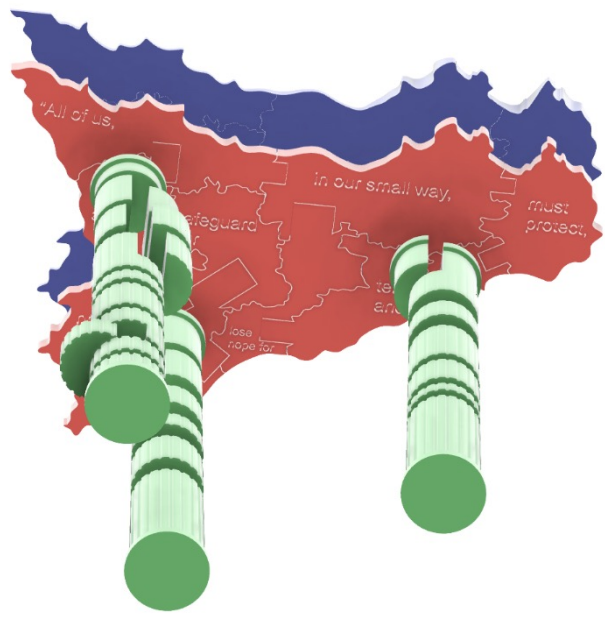
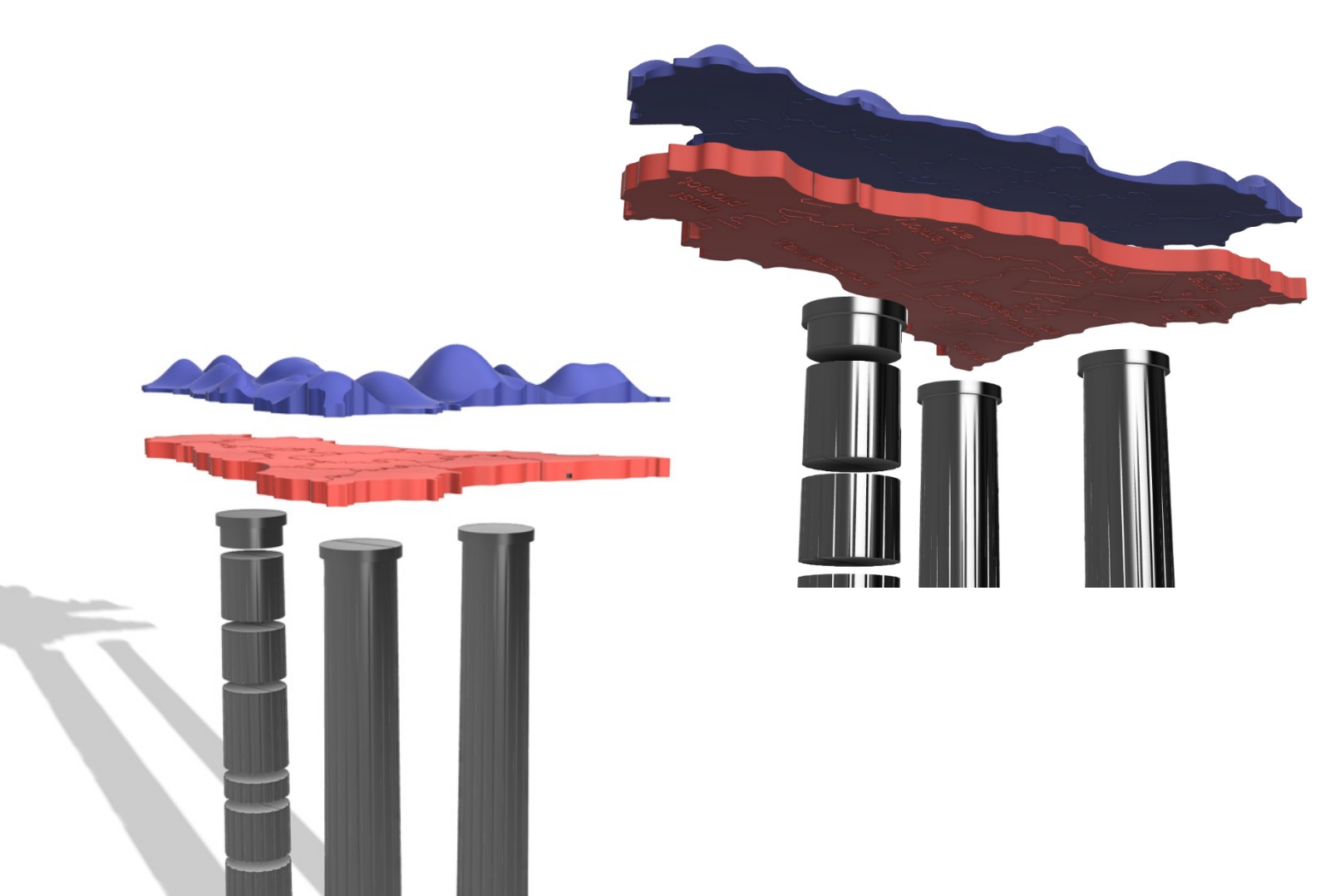
TOP VIEW



FRONT VIEW



SIDE VIEW



STEPS FOR ASSEMBLING THE PUZZLE

The puzzle will be composed of several pieces that must be put together, and search for the message launched in the initial phase with the storytelling.

The pieces are divided into three categories: the columns, the base with joints and the surface.

Inside you will find a map of Sicily, the island from which the puzzle is inspired. The map will be useful to be able to put the puzzle together but to make the puzzle in a difficult level it may not be provided. As a hint you will be told that the island is in the shape of a triangle.

The puzzle will begin with the reading of the storytelling with which to launch the puzzle. Participants will be able to decide which part of the puzzle to start from among the columns, base or surface. By the time the participants have put the pieces together and made 5 main components (3 columns, 1 base, 1 surface). Then, the puzzle need to be assembled, by putting the main pieces together. The columns will support the bases and on them the surface. To complete the puzzle, the participants will find the find and read the sentence composed underneath the puzzle. The difficulty will be putting the puzzle together and realising that only with teamwork will they be able to solve the puzzle.



DOWNLOADABLE MATERIAL

SPECIFICATION FOR FACILITATOR



Description of the use of the puzzle and purpose of the puzzles

The use of puzzles is therapeutic for people with special learning disorders.

WHAT BENEFITS CAN BE OBTAINED WITH ITS USE?

Development of teamwork

Problem solving

Orientation

Logical application

TECHNOLOGY

3D PRINTING

IF YOU HAVE A PRINTER, WHAT MODEL IS IT?

PRUSA

MATERIAL

PLA

COLOR

ALL THE PIECES CAN HAVE DIFFERENT COLOURS, EXCEPT FOR THE COLUMN, EACH COLUMN SHOULD HAVE A DIFFERENT COLOUR.

SHOULD THE PIECE BE RESISTANT OR BE SUBJECTED TO STRESS?

RESISTENT

DO YOU HAVE TO PAINT THE MODEL?

YES

NUMBER OF PIECES OF WHICH THE PUZZLE IS COMPOSED:

41

ENSEMBLE TYPE IF NECESSARY (SLOT, CLIP, SCREWED)

SLICING PIECES

ACCURACY AND DEFINITION REQUIRED. (QUALITY) LOW, MID OR HIGH.

HIGH QUALITY

THE LAST VOYAGE OF OUR LADY OF MERCY



DESCRIPTION

In late 1804, a majestic frigate named 'Our Lady of Mercy' belonging to the kingdom of Spain, embarked on a voyage from Montevideo (Uruguay) to the Spanish coasts of Cadiz. Onboard, the ship carried a wealth of treasures, including gold, silver, vicuña cloth, cinchona, cocoa, and cinnamon.

However, near the end of its perilous voyage, the English Navy appeared with their ships and cannons ablaze, determined to seize the Spanish frigate and its riches. The crew, steadfast in their honor, refused to surrender without a fight, but the English launched a fierce and cold-blooded attack.

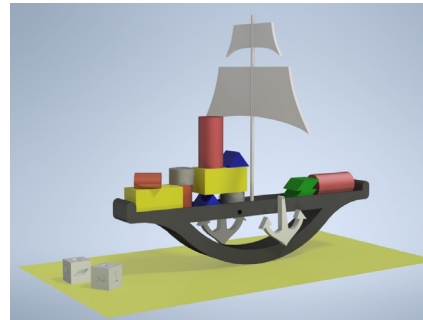
Trapped in the midst of the battle, 'Our Lady of Mercy' suffered a tragic fate, and succumbed to the annihilating forces, as the ship was blown up and quickly sank off Cape Santa Maria, in the Portuguese Algarve. Regrettably, the ship's precious cargo was lost, along with the life of 23 women and children and 226 brave sailors on their way home after a long time overseas.

Despite the tragic and fateful destiny of 'Our Lady of Mercy' this game exists to commemorate this historic event, allowing players to step into the shoes of those on board the ship by recreating its voyage and seeking to balance the cargo, thus paying homage to the courageous seamen and intrepid passengers who perished in the fierce combat against the British Navy in October 1804. The game serves as a reminder of the sacrifice and loss endured during that fateful battle at sea.

OBJECTIVES OF THE PUZZLES

The objective of the game, which can be played either individually or in a group, is to place all the cargo on top of the ship and keep it in balance without capsizing. To do this, the dice will indicate the piece to place as well as the number of pieces to be placed each time.

Height: 250 mm
Width: 300 mm
Depth: 200 mm



STORYTELLING

*From Montevideo it set sail,
In 1804 our Lady of Mercy, proud and hale,
A frigate of Spain, so fine and true,
Bound for Cadiz with treasures anew.*

*But on the way, the English came,
With ships and cannons all aflame,
They sought to take the Spanish prize,
And seize the wealth before their eyes.*

*The Spanish refused, with honor bold,
But the English attacked, fierce and cold,
Our Lady of Mercy was caught in the fray,
And soon, alas, it tragically blew away.*

*Her cargo lost, her crew in sorrow,
No wish and no hope for a better tomorrow,
23 civilians and 226 brave men,
All lost forever, never to be seen again.*

*But now here, a game to play and learn,
To board the ship and take a turn,
To balance the cargo, and make it right,
To honor the sailors lost in the fight.*

*Gold and silver, vicuña cloth,
Cinchona, cocoa, and cinnamon, both,
All aboard, a lush and precious load,
for Our Lady of Mercy, on her last abode.*



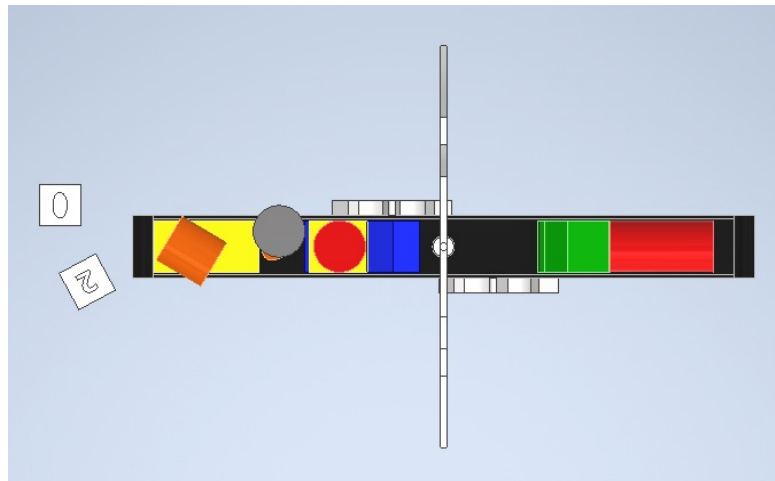
3D MODEL

BASE

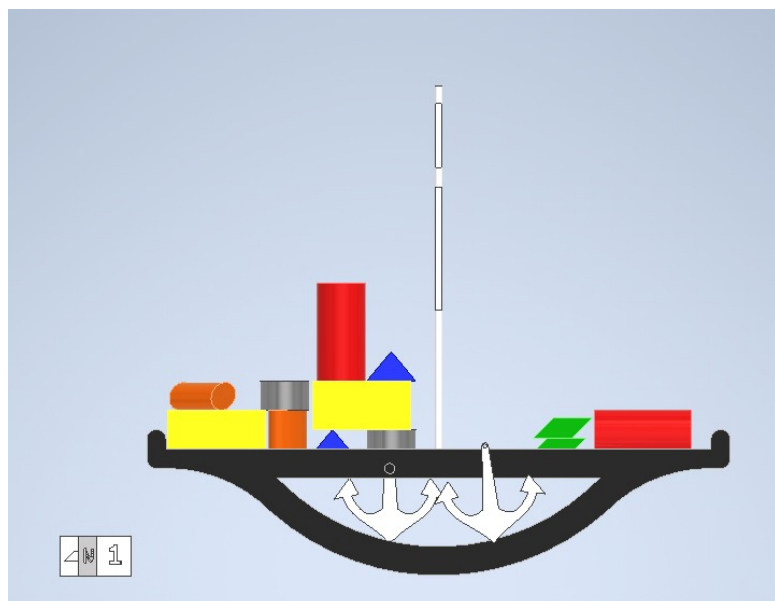
Anchor
Cinchona
Cinnamon
Cocoa
Dice #1
Dice #2
Gold
Sails
Ship
Silver
Vicuña Cloth

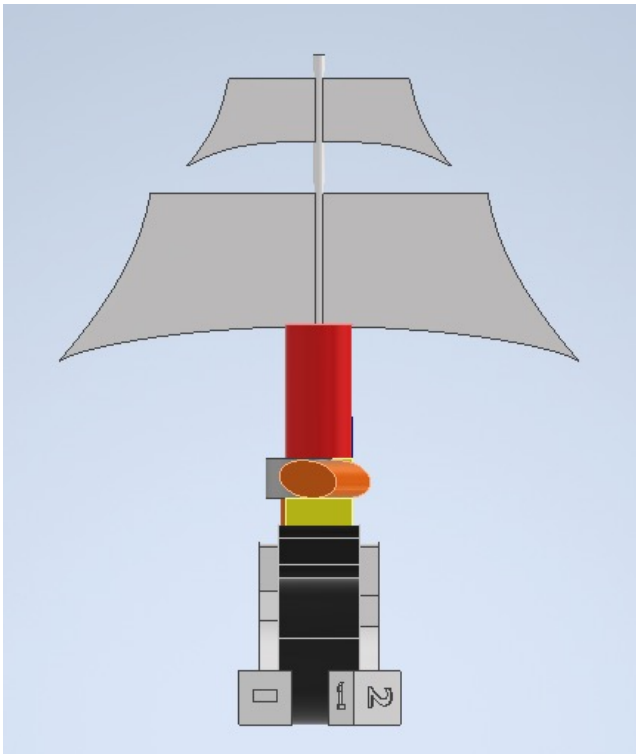


TOP VIEW



SIDE VIEW

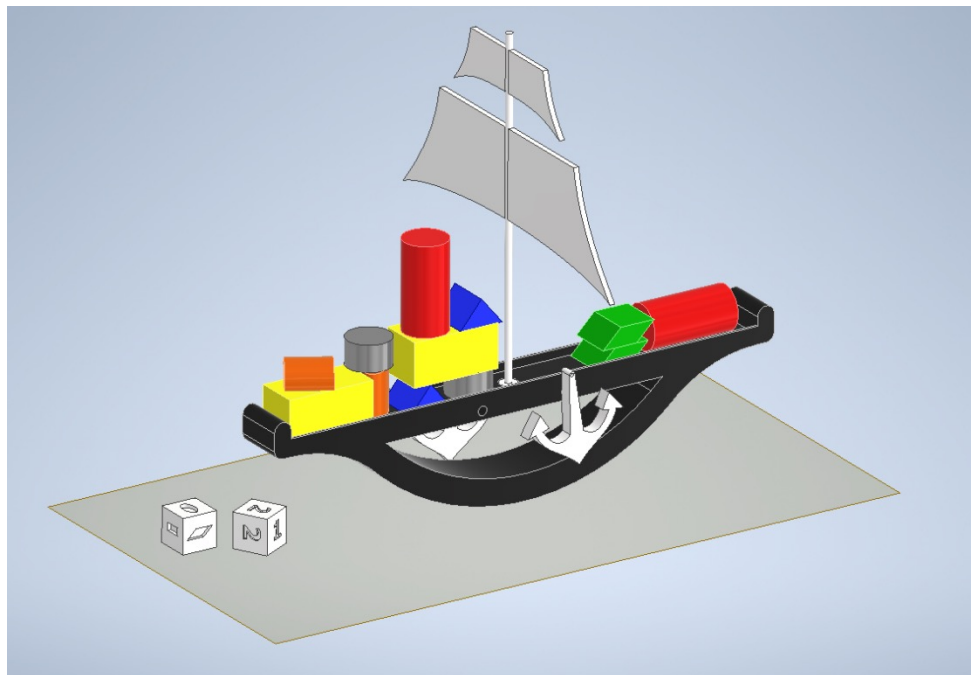




FRONT VIEW



EXPLODED VIEW



FOR EACH PIECE, PRINTING/POSTPROCESSING INSTRUCTIONS (IF THEY ARE NEEDED).

- Anchor: None.
- Cinchona: None.
- Cinnamon: None.
- Cocoa: None.
- Dice 1: Pliers for removing supporting structures.
- Dice 2: Pliers for removing supporting structures.
- Gold: None.
- Sails: Pliers for removing supporting structures. Lime file and sandpaper are required for a better finishing and for shaping the mast that fits in the ship's central orifice.
- Ship: Pliers for removing supporting structures. Lime file and sandpaper are required for a better finishing and for shaping the orifices in which sails and anchors are inserted.
- Silver: None.
- Vicuña cloth: None.

HOW TO SOLVE THE PUZZLE

Place the ship on a flat surface, such as a table. Insert each of the anchors in the orifice on each side of the ship, and the mast with the sails in the top orifice.

Set on the table the two dices and the rest of the pieces representing the cargo to be placed on board the ship.

Throw the dices and look at the shapes and numbers shown. Dice number 1 indicates the shape of the piece to put on the ship, and dice number 2 indicates the number of these pieces to put on the ship (one or two). Throw the dices again and continue playing and trying to balance the cargo on the ship. When any of the piece falls down, the game is over.

SPECIFICATION FOR FACILITATOR



Description of the use of the puzzle and purpose of the puzzles

Through this game focused on fine motor skills, participants will be able to enhance their ability, dexterity, and the handling of pieces in balance, thus training their mental agility and stimulating their capacity for spatial thinking.

WHAT BENEFITS CAN BE OBTAINED WITH ITS USE?

Fine motor skills, hand-eye coordination, focus, problem solving and strategy skills.

TECHNOLOGY

FUSED DEPOSITION MODELING (FDM)

IF YOU HAVE A PRINTER, WHAT MODEL IS IT?

PRUSA I3 MK2S

MATERIAL

PLA

COLOR

ANCHOR: WHITE
CINCHONA: GREEN
CINNAMON: RED
COCOA: ORANGE
DICE 1: WHITE
DICE 2: WHITE
GOLD: YELLOW
SAILS: WHITE
SHIP: BLACK
SILVER: GREY
VICUÑA CLOTH: BLUE

SHOULD THE PIECE BE RESISTANT OR BE SUBJECTED TO STRESS?

NO

DO YOU HAVE TO PAINT THE MODEL?

NO

NUMBER OF PIECES OF WHICH THE PUZZLE IS COMPOSED:

ANCHORS: 2
CINCHONA: 12
CINNAMON: 8
COCOA: 12
DICE 1: 1
DICE 2: 1
GOLD: 8
SAILS: 1
SHIP: 1
SILVER: 12
VICUÑA CLOTH: 12

ACCURACY AND DEFINITION REQUIRED. (QUALITY) LOW, MID OR HIGH
MID.

THE SEARCH OF MOSCOW'S GOLD



DESCRIPTION

In the fall of 1936, a few months after the beginning of the Spanish Civil War, the government of the Second Republic, presided over by Francisco Largo Caballero and at the initiative of his Minister of Finance, Juan Negrín, ordered the transfer of 510 tons of gold, corresponding to 72.6% of the gold reserves of the Bank of Spain, from its deposit in Madrid to the Soviet Union. The purpose of the transfer was to make the gold safe for General Franco's rebel side and for the Soviets to supply arms to the Spanish government. Today, that would be approximately 12.2 billion euros.

Less than 24 hours after the signing of the decree, in the early morning of September 14, 1936, the gold reserves were moved by rail to Cartagena, chosen as the port of departure because of its great defensive qualities as the main naval base of the Second Republic, its strategic location in the Mediterranean and its status as a rearguard zone, far from the war front.

On October 25, 1936, Soviet ships sailed from the port of Cartagena towards the Soviet Union, and the gold from the Banco de España arrived at the Ukrainian port of Odessa on November 2, where the USSR Secret Police was in charge of loading the gold reserves in heavily escorted military trucks to transport them to Moscow.

However, in 1938 the Soviet Union claimed that the gold stocks had already been exhausted. Was it true? More than eight decades later, speculation about whether the Soviets kept the money, or it was returned to Franco's Spain is still up in the air. The truth remains a mystery to this day.

Height: 160 mm
Width: 130 mm
Depth: 130 mm

STORYTELLING

*In a far-off land, where the sun shone bright,
There was a treasure that sparkled with light,
Was worth its weight in 510 tonnes of gold, and so
much more,
And its whereabouts brings us now quite a lore.*

*In the midst of Spain's civil strife,
Amidst the turmoil and the life,
The Bank of Spain held reserves of gold,
Treasures coveted and rare to behold.*

*But in 1936 a war broke out,
And the Bank of Spain was filled with doubt,
They knew their gold might not be safe,
So they packed it up and away they sent it with haste.*

*President Largo Caballero gave the order
To send the gold to a foreign border
To the Soviet Union, far away
Where it would be safe, or so they say.*

*But in 1938, the Soviets claimed the gold was gone,
And from then the whereabouts of the treasure were
unknown,
Did they keep the money or did it return,
To Spain in secret, a treasure to yearn?*

*With each passing year, the search goes strong
As historians and treasure hunters play along
The truth remains a mystery to this day
But the fervour to uncover it won't sway*

*For the Moscow Gold is more than just gold
It's a symbol of a story yet to be told
Of a time when war ravaged the land
And the fate of a nation was in a fragile hand*

*So the search goes on, with a steadfast beat
For the truth that lies buried, deep beneath
And when the Moscow Gold is finally found
The secrets it holds will astound.*



OBJECTIVES OF THE PUZZLES

The objective of the game, which can be played either individually or in a group, is to solve one by one all the puzzles to finally find the long-awaited gold of Moscow.

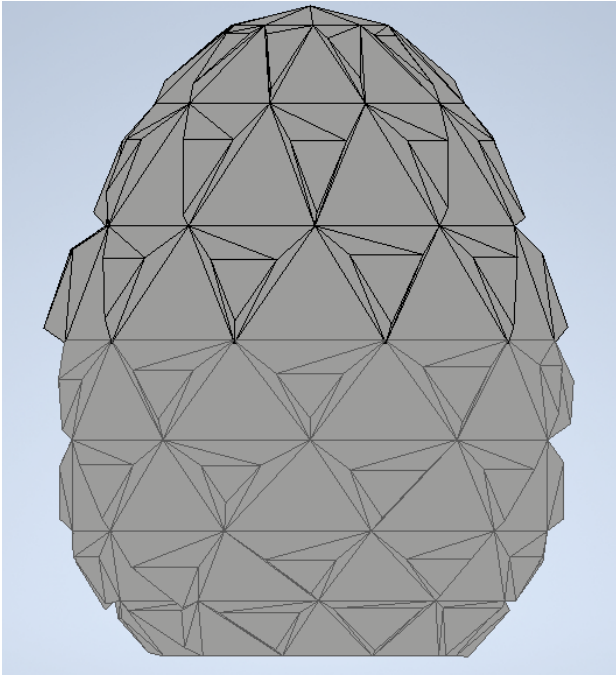
To do this, one must first obtain the numerical code hidden in the Fabergé egg that will open the first of the cryptex, inside which there will be three other maze cryptex. Once solved, one will be able to get the precious gold bars.

Written description of the 3D model: labeled list of the pieces that make up each of the puzzles. Please give a different name to each piece

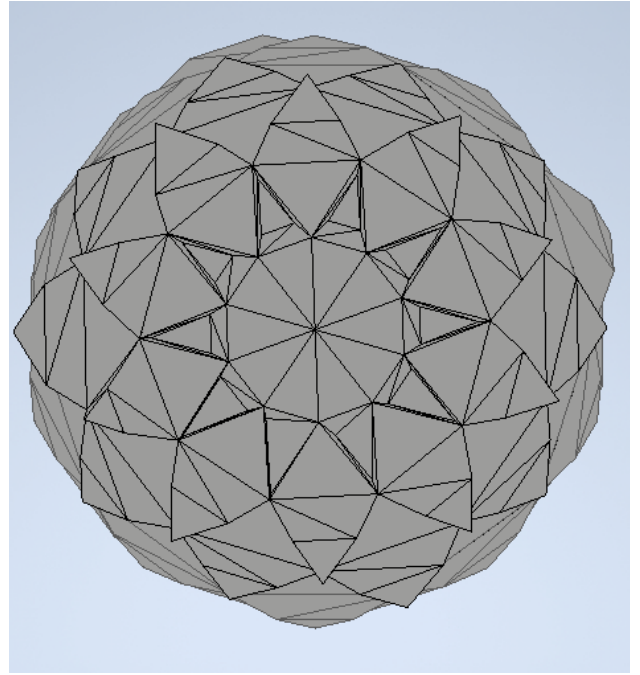
3D MODEL

BASE

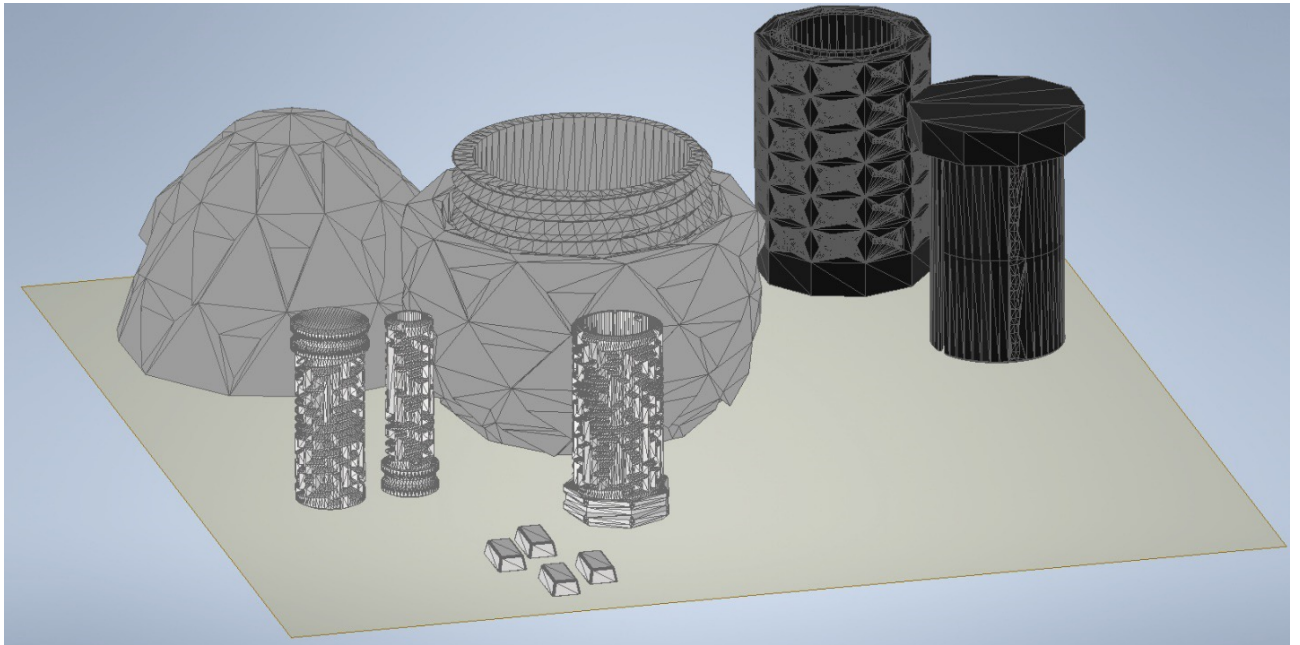
- Fabergé Egg Bottom
- Fabergé Egg Top
- Fabergé Egg Screw
- Da Vinci Cryptex Bottom Case
- Da Vinci Cryptex Inner Ring
- Da Vinci Cryptex Outer Ring
- Da Vinci Cryptex Upper Case
- Cryptex Maze Inner
- Cryptex Maze Middle
- Cryptex Maze Outer
- Gold Bar
- Stickers



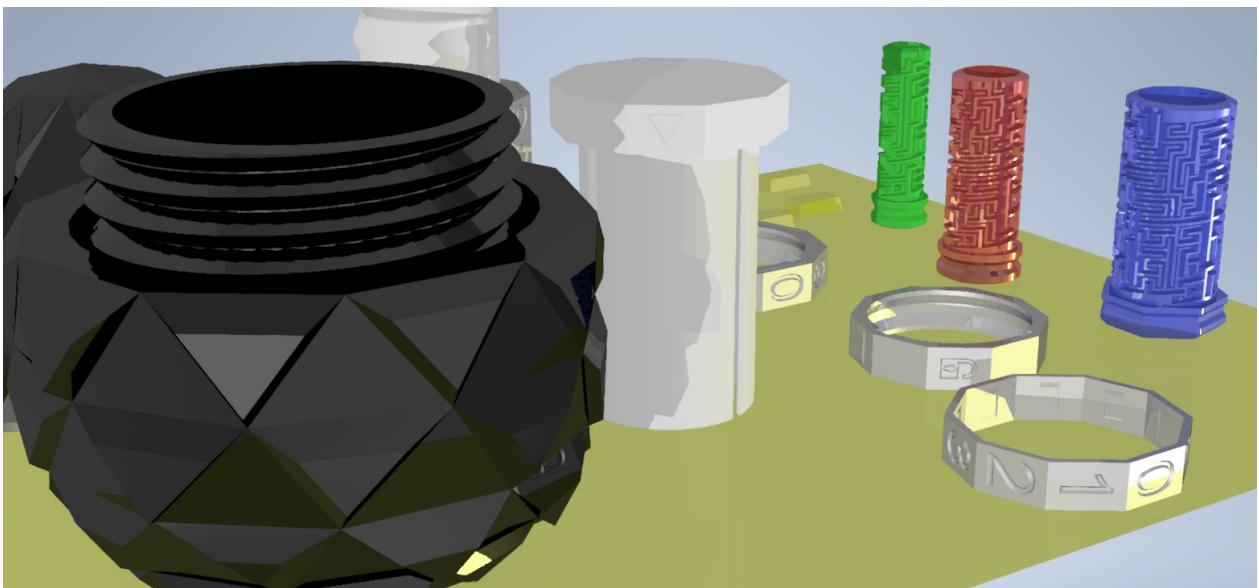
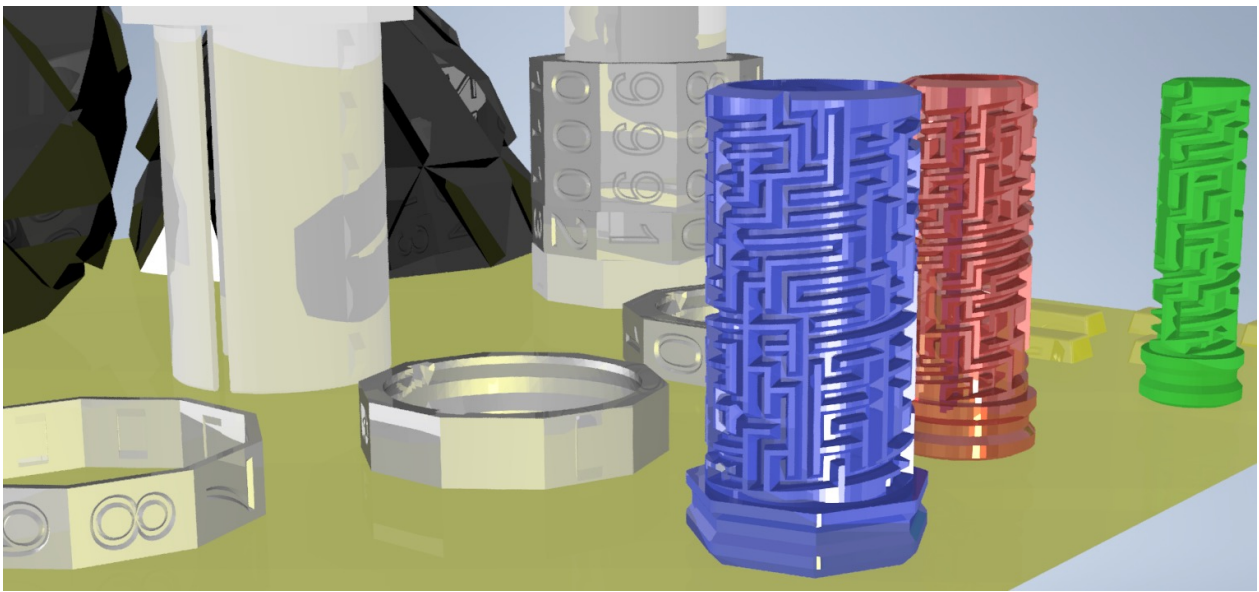
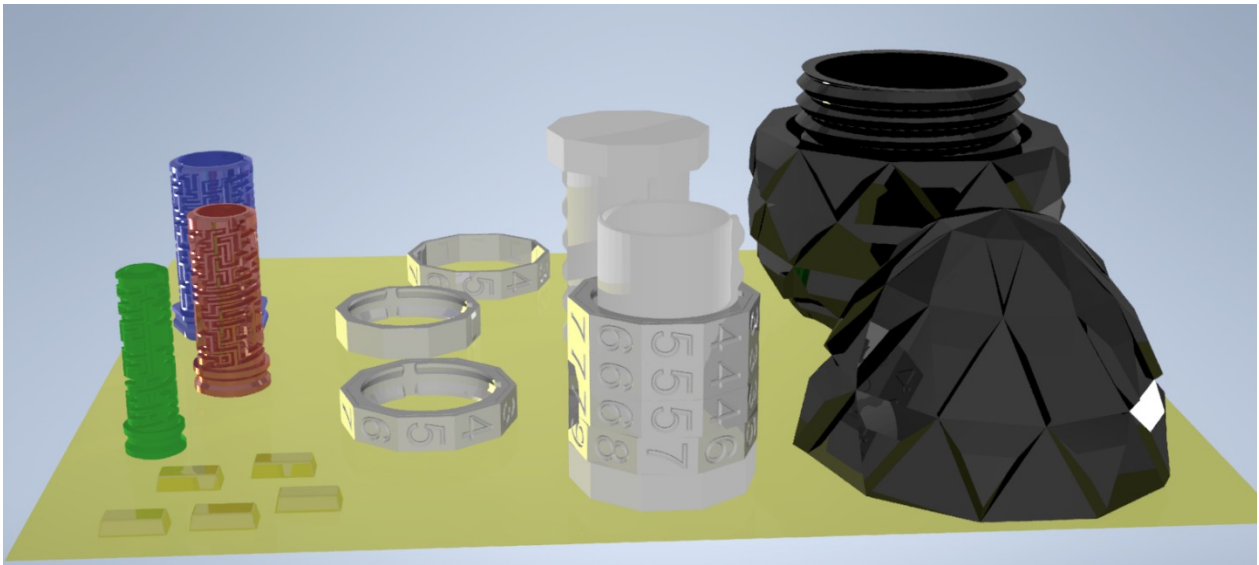
SIDE VIEW



TOP VIEW



EXPLODED VIEW



RENDERS

FOR EACH PIECE, PRINTING/POSTPROCESSING INSTRUCTIONS (IF THEY ARE NEEDED).

Fabergé Egg Bottom: Pliers for removing supporting structures. Lime file and sandpaper are required for a better finishing.

Fabergé Egg Top: Pliers for removing supporting structures. Lime file and sandpaper are required for a better finishing.

Fabergé Egg Screw: None.

Da Vinci Cryptex Bottom Case: Lime file and sandpaper are required for a better and smoother fitting.

Da Vinci Cryptex Inner Ring: Lime file and sandpaper are required for a better and smoother fitting.

Da Vinci Cryptex Outer Ring: Lime file and sandpaper are required for a better and smoother fitting.

Da Vinci Cryptex Upper Case: Lime file and sandpaper are required for a better and smoother fitting.

Cryptex Maze Inner: None.

Cryptex Maze Middle: None.

Cryptex Maze Outer: None.

Gold Bar: None.

STEPS FOR THEIR RESOLUTION, DETAILS ON HOW TO RETURN TO ASSEMBLE IT ONCE SOLVED.

FIRST, the pieces of the Cryptex Maze must be assembled in this order:

- Insert the gold bars in the Cryptex Maze Inner part.

- Then, the Cryptex itself must be solved by inserting the Cryptex Maze Inner part into the Cryptex Maze Middle part. It is advisable to first visualize and memorize the path to follow.

- Repeat the process with the Cryptex Maze Outer part, in which the Cryptex Maze Middle part must be inserted.

Then, the Da Vinci Cryptex must be assembled:

- You first need to set the “secret code”, which is 3-8-6-2-9-4. You can see it when you rotate the Fabergé Egg parts in the correct way. The code, physically, is set by inserting the Da Vinci Cryptex Inner Ring part in the Da Vinci Cryptex Outer Ring part. The lock symbol of the inner ring must coincide with the desired number of the outer ring.

- Once you have all the Inner Ring parts inside the Outer Ring parts (don't forget the code), you will have to insert them, in the proper code order, into the Da Vinci Cryptex Bottom Case part. The insertion should be smooth, or, you should sand a little bit all the pieces otherwise. There is only one way of inserting them into the Bottom Case part.

- Before closing the Da Vinci Cryptex, you will need to place the Cryptex Maze inside it.

- Lastly, in order to be able to insert the Upper Case part into the rest of the assembling, you must rotate all the numbered pieces in the Cryptex to make all the inner slots coincide so that the Upper Case can be properly inserted.

- Rotate all the numbers in order not to show the secret code.

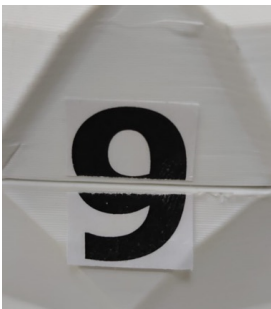
Take the Fabergé Egg Screw piece and screw it on the Fabergé Egg Bottom part. Now insert the Da Vinci Cryptex (with Cryptex Maze inside) in the Fabergé Egg Bottom part.

Finally, close the puzzle by screwing the Fabergé Egg Top part. Rotate it properly in order not to show the numeric code.

To place the stickers with the secret code in the Fabergé egg, you need to print them first:

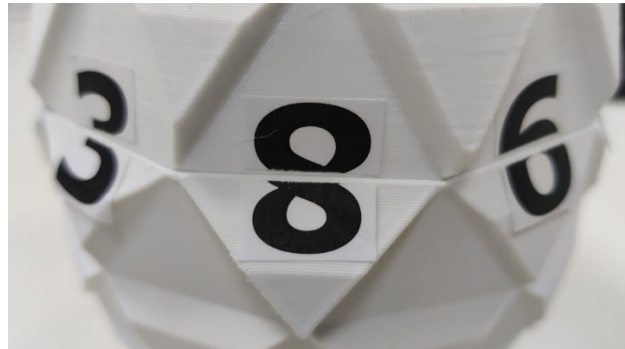
1	2	3
4	5	6
7	8	9
3		

Then, cut all the numbers into two halves and place them in the proper order in the Fabergé egg. Upper half in the top egg part and, and lower half in the bottom egg part:



Place the code numbers consecutively and then place the rest of the numbers, but pay attention so that they don't match when the correct code is shown.

ADDITIONAL MATERIALS FOR A BETTER DESCRIPTION



The code for the Da Vinci Cryptex, properly shown in the Fabergé Egg.

Da Vinci Cryptex with the correct code, but not aligned. This way, the cryptex won't open.

Da Vinci Cryptex with the correct code, and properly aligned. The cryptex will open.

HOW TO SOLVE THE PUZZLE (THE ACTIONS REQUIRED FOR THE USER TO SOLVE THE PUZZLE).

First, to obtain the code of the Da Vinci Cryptex, rotate the Fabergé Egg to match the numbers until you get the six consecutive numbers needed for the Da Vinci Cryptex. Then, unscrew the Fabergé Egg in order to get the Da Vinci Cryptex.

Insert the numbers in the Da Vinci Cryptex by rotating its six rings. The code is shown between the two arrows of the Cryptex.

To open the Da Vinci Cryptex, all the numbers must be correctly and perfectly aligned, otherwise the Cryptex won't open.

Once the Cryptex is open, you will have to solve the 3 inner Cryptex by following its mazes.

The last Cryptex contains the gold bars.

SPECIFICATION FOR FACILITATOR



Description of the use of the puzzle and purpose of the puzzles

Through this game focused on problem solving and strategy, participants will be able to enhance their visual and tactile processing, thus training their focus and stimulating their capacity for mental agility.

WHAT BENEFITS CAN BE OBTAINED WITH ITS USE?

Hand-eye coordination

Visual processing

Hand rotation

Tactile processing

Focus

Problem solving

Strategy

TECHNOLOGY

FUSED DEPOSITION MODELING (FDM)

IF YOU HAVE A PRINTER, WHAT MODEL IS IT?

PRUSA I3 MK2S

MATERIAL

PLA

COLOR

A SUGGESTION COULD BE THE FOLLOWING:

- FABERGÉ EGG: WHITE
- DA VINCI CRYPTEX: BLUE
- CRYPTEX MAZE: BLACK.
- GOLD BARS: YELLOW.

SHOULD THE PIECE BE RESISTANT OR BE SUBJECTED TO STRESS?

YES

DO YOU HAVE TO PAINT THE MODEL?

NO

NUMBER OF PIECES OF WHICH THE PUZZLE IS COMPOSED:

FABERGÉ EGG BOTTOM: 1

FABERGÉ EGG TOP: 1

FABERGÉ EGG SCREW: 1

DA VINCI CRYPTEX BOTTOM CASE: 1

DA VINCI CRYPTEX INNER RING: 6

DA VINCI CRYPTEX OUTER RING: 6

DA VINCI CRYPTEX UPPER CASE: 1

CRYPTEX MAZE INNER: 1

CRYPTEX MAZE MIDDLE: 1

CRYPTEX MAZE OUTER: 1

GOLD BAR: 3/4



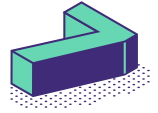
LIST OF MATERIALS REQUIRED TO BE USED IN ORDER TO PRINT ONE UNIT OF THE PUZZLE (GLUE, PAINTING, MARKER PENS, MAGNETS, PRINTED PAPER)...

STICKERS WITH NUMBERS FROM 1 TO 9

ACCURACY AND DEFINITION REQUIRED. (QUALITY) LOW, MID OR HIGH

**FABERGÉ EGG: LOW
DA VINCI CRYPTEX: MID
CRYPTEX MAZE: MID
GOLD BAR: LOW**

FLYING THE FLAG



DESCRIPTION

The “Flying the Flag Cryptex” is a physical puzzle designed around the concept of LGBTQI+ pride and flag symbolism. It consists of a cryptex with six colored rings (red, orange, yellow, green, blue, purple), each containing 10 digits from 0 to 9. These rings are arranged on a cylinder, seated on a round base, and are secured with a round lid on top.

OBJECTIVES OF THE PUZZLES:

The process of solving riddles and aligning the cryptex’s code enhances participants’ problem-solving skills. It encourages logical thinking and the ability to work through challenges, which can be beneficial for individuals with learning difficulties as they develop and strengthen these skills.

Also, it is meant to increase awareness and understanding of LGBTQI+ issues and individuals. By immersing participants in a narrative centered around the LGBTQI+ community’s quest for their flag, the puzzle fosters empathy and encourages players to learn about the challenges faced by this community. This increased awareness can lead to more inclusive and accepting attitudes in society.

OTHER:

Facilitators can adapt the puzzle by creating their own custom quizzes or riddles. This feature allows the puzzle to be tailored to the specific needs and abilities of participants, making it a versatile tool for educators and caregivers working with diverse groups of learners.

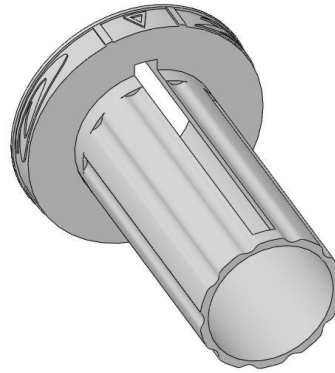
Height: 95 mm
Width: 64 mm
Depth: 64 mm



3D MODEL

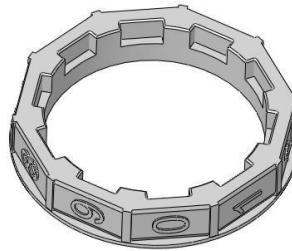
OUTER CYLINDER

The central cylinder that holds the six colored rings that sit on an inseparable cylindrical base. On its left side it features an engraved arrow. On its cylindrical surface it features 10 radially located rounded grooves and 1 axially located gap.



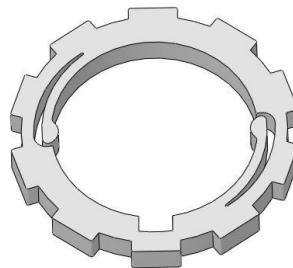
NUMBER RINGS

Six rings with colors (red, orange, yellow, green, blue, purple), each containing 10 number digits on its outside surface. Each number ring has 10 rectangular indentations on its inside surface directly in line radially with each number digit.



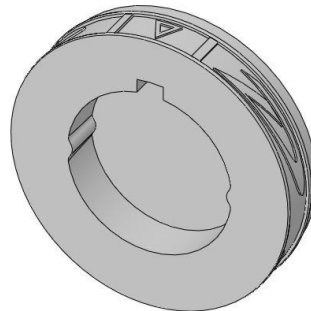
CODE RINGS

Six code rings. Each code ring has 10 radially located rectangular indentations on its outside surface allowing it to nest inside a number ring. Each code ring has 1 rectangular indentation on its inside surface. It also has 2 radially opposed fingers on its inside surface allowing it to rotate and “click” in place in distinct positions on the outer cylinder.



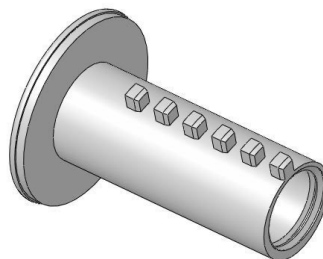
RIGHT SIDE CAP

The round cap that secures the number and code rings and to the outer cylinder. It mounts to the right side of the outer cylinder by means of a tight press fit. On its outer circumference it features an engraved arrow.



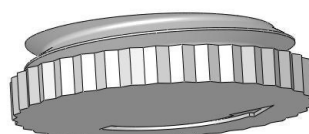
INNER CRYPT CYLINDER

It nests inside the outer cylinder and holds the reward of the puzzle. On its cylindrical surface it features 6 teeth that slide in the axial gap of the outer cylinder. On its inner cylindrical face it features a coarse thread.



INNER CAP

It screws on the right side of the inner crypt cylinder. Unscrewing it from the inner crypt cylinder gains access to the reward of the puzzle.

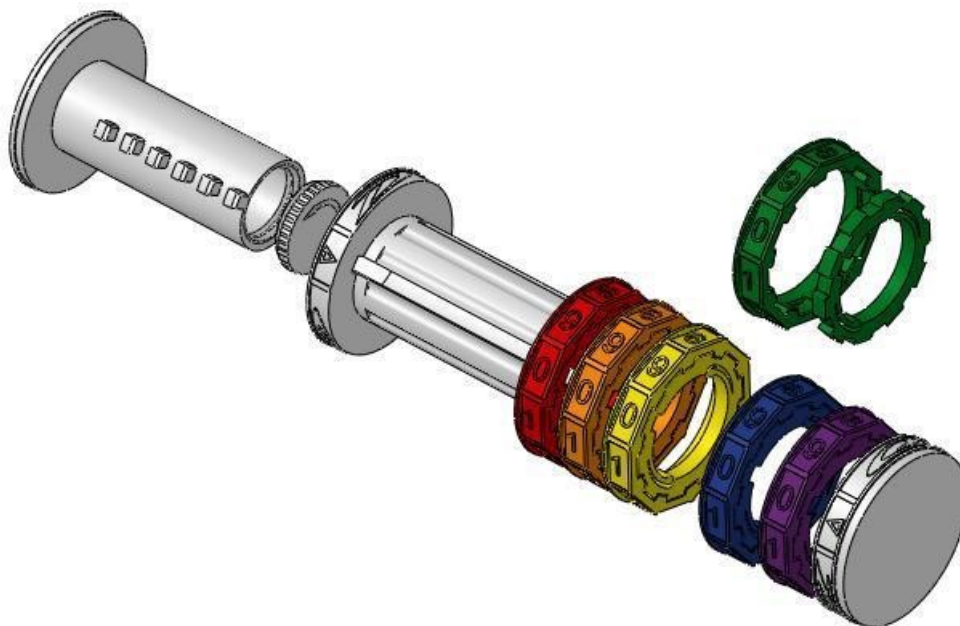
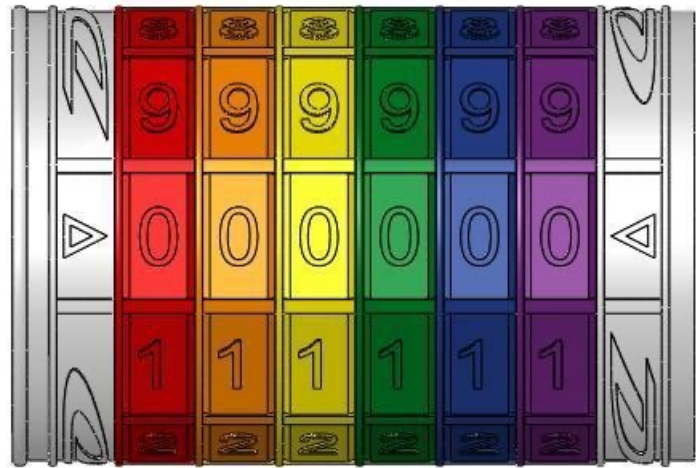




TOP VIEW



FRONT VIEW



EXPLODED VIEW

FOR EACH PIECE, PRINTING/POSTPROCESSING INSTRUCTIONS (IF THEY ARE NEEDED).

Outer cylinder: Pliers and modelling knife for removing supporting structures, modelling knife jeweller files and sandpaper are required for a better finishing.

Number rings: Modelling knife, jeweller files and sandpaper are required for a better finishing.

Code rings: Modelling knife, jeweller files and sandpaper are required for a better finishing.

Right side cap: Modelling knife, jeweller files and sandpaper are required for a better finishing.

Inner crypt cylinder: Pliers and modelling knife for removing supporting structures, modelling knife jeweller files and sandpaper are required for a better finishing.

Inner cap: Modelling knife, jeweller files and sandpaper are required for a better finishing.

STEPS FOR THEIR RESOLUTION, DETAILS ON HOW TO RETURN TO ASSEMBLE IT ONCE SOLVED (INSERT TECHNICAL DETAILS).

The cryptex features two arrows engraved on it, one on the left side on the outer cylinder base and another on the right side on the lid right side cap, facing each other.

Players need to align a code between these arrows by rotating the number rings accordingly.

If all the answers are correct and the final code is formed on the cryptex, players can pull the inner crypt cylinder out by holding it from its base on the left side, unscrewing the inner cap and accessing the reward inside the inner crypt cylinder winning the game.

HOW TO SOLVE THE PUZZLE

To play the game, participants must first access a virtual environment through a QR code or this link and read the backstory about a group of LGBTQI+ people searching for their flag, in order to get to their local pride parade, which must be unlocked from a cryptex.

Players will then need to solve a sequence of riddles presented on the screen, each offering multiple choices for solutions. Each choice is assigned a digit from 0 to 9.

Once players have correctly answered all the riddles, they must input the digits associated with their answers onto the cryptex.

The cryptex features two arrows painted on it, one on the right side cap and the other on the outer cylinder, facing each other.

Players need to align the digits they've chosen between these arrows by rotating the number rings accordingly.

If all the answers are correct and the final code is formed on the cryptex, players can pull the inner crypt cylinder out by holding it from its base, winning the game.

On the right side of the inner crypt cylinder, there is an inner cap rotating lid that, when unscrewed from the inner crypt cylinder, reveals a small object as a reward.

Additionally, facilitators can use the cryptex with a custom quiz of their own, requiring players to input a 6-digit code onto the cryptex.

Setting the correct code for the cryptex:

Each number ring has 10 rectangular indentations on its inside surface directly in line radially with each number digit. Each code ring has 10 radially located rectangular teeth on its outside surface allowing it to nest inside a number ring. Additionally each code ring has 1 rectangular indentation on its inside surface. By assembling a set of number and code ring with the inner indentation of the code ring directly in radial alignment with the desired number digit of the number ring the desired correct number is preset.

Facilitators must set the desired correct digits for all six ring sets and note down the correct code in case they need to disassemble the cryptex.

HOW TO RETURN THE PUZZLE TO ITS ORIGINAL STATE SO IT IS READY AGAIN TO BE SOLVED.

1. Retrieve the Components: Gather the outer cylinder, number rings, code rings, inner crypt cylinder and inner cap and the reward.
2. Reset the Rings: Assemble each set of number and code ring setting the desired correct preset number.
3. Insert the 6 sets of number and code rings on the outer cylinder and rotate them to the correct preset position aligning the correct number on each ring to the arrow of the outer cylinder. This will return the cryptex to its starting configuration.
4. Secure the right side cap: Align the arrow on the right side cap to the arrow on the outer cylinder and assemble the right side cap to the outer cylinder on top of the number rings, pressing firmly until there is no gap between the right side cap and the outermost number ring. This will secure the rings in place.
5. Insert the reward inside the inner crypt cylinder and screw the inner cap back into place. Insert the inner crypt cylinder to the outer cylinder aligning the teeth of the inner crypt cylinder to the axial gap of the outer cylinder.
6. Shuffle the digits of the rings to lock the cryptex.



SCAN FOR MORE INSTRUCTIONS

SPECIFICATION FOR FACILITATOR



Description of the use of the puzzle and purpose of the puzzles

The “Flying the Flag Cryptex” puzzle serves a dual purpose of raising awareness about LGBTQI+ issues and providing mental stimulation and learning opportunities, particularly for individuals with learning difficulties.

WHAT BENEFITS CAN BE OBTAINED WITH ITS USE?

Awareness and Inclusivity: The primary use of this puzzle is to promote awareness and understanding of LGBTQI+ issues. Through an engaging and immersive narrative, participants are introduced to the challenges and triumphs of the LGBTQI+ community. By doing so, the puzzle aims to foster empathy, acceptance, and inclusivity among its players. It encourages individuals to learn about and appreciate the experiences of LGBTQI+ people, ultimately contributing to a more tolerant and accepting society.

Mental Stimulation and Learning: Beyond its role in promoting LGBTQI+ awareness, the puzzle provides a mentally stimulating experience. Participants must engage in critical thinking, problem-solving, and cognitive skills as they solve riddles and align the cryptex’s code. This aspect of the puzzle is designed to benefit individuals with learning difficulties, offering them a fun and interactive way to enhance their problem-solving abilities and cognitive skills.

Inclusivity and Representation: The puzzle also serves as a platform for representation. By featuring LGBTQI+ themes and stories, it provides visibility for this community. Inclusivity is not just about raising awareness;

it’s about ensuring that LGBTQI+ individuals see themselves represented and respected. The puzzle contributes to this by incorporating LGBTQI+ narratives and symbols.

Education and Empowerment: Through the engagement with LGBTQI+ history and symbolism, the puzzle educates participants about the struggles and achievements of the LGBTQI+ community. It empowers players with knowledge that they can use to challenge stereotypes, combat discrimination, and become allies in the LGBTQI+ rights movement.

Customizable Learning Experience: Facilitators can adapt the puzzle to suit the specific needs and abilities of their participants. This flexibility allows the puzzle to be used in various educational settings, making it a valuable tool for educators, caregivers, and advocates working with diverse groups of learners.

TECHNOLOGY

FUSED DEPOSITION MODELING
(FDM)

**IF YOU HAVE A PRINTER,
WHAT MODEL IS IT?**

CRAFTBOT PLUS

MATERIAL

PLA

COLOR

OUTER CYLINDER: 1, SILVER GREY
NUMBER RING: 1, RED
NUMBER RING: 1, ORANGE
NUMBER RING: 1, YELLOW
NUMBER RING: 1, GREEN
NUMBER RING: 1, BLUE
NUMBER RING: 1, PURPLE
CODE RING: 6, SILVER GREY
RIGHT SIDE CAP: 1, SILVER GREY
INNER CRYPT CYLINDER: 1, SILVER GREY
INNER CAP: 1, SILVER GREY

**SHOULD THE PIECE BE RESI-
STANT OR BE SUBJECTED TO
STRESS?**

YES

**DO YOU HAVE TO PAINT THE
MODEL?**

NO

**NUMBER OF PIECES OF WHI-
CH THE PUZZLE IS COMPO-
SED:**

OUTER CYLINDER:1
NUMBER RINGS: 6
CODE RINGS: 6
RIGHT SIDE CAP:1
INNER CRYPT CYLINDER:1
INNER CAP:1

**LIST OF MATERIALS REQUIRED
TO BE USED IN ORDER TO PRINT
ONE UNIT OF THE PUZZLE**

PLIERS
MODELLING KNIFE
JEWELLER FILES
SANDPAPER

**ACCURACY AND DEFINI-
TION REQUIRED**

OUTER CYLINDER: MID
NUMBER RINGS: LOW
CODE RINGS: MID
RIGHT SIDE CAP: MID
INNER CRYPT CYLINDER: MID
INNER CAP: LOW

THE EXIT WITHIN



DESCRIPTION

“The Exit Within” is a physical puzzle designed to symbolize the journey of mental health recovery.

It consists of a maze with a sphere inside it, featuring five colored dots (red, blue, green, yellow, orange) on its floor.

The player’s objective is to guide the sphere to land on each of the colored spots, triggering corresponding mental health recovery steps displayed in a virtual environment accessible through a QR code and/or this link. For each color that the player reaches with the sphere, he/she is presented with a set of mental recovery steps that may contain both true and false information.

Each step is assigned with a number.

Once all the colored spots are activated, the player must select the correct recovery steps and arrange them in the correct order. The numbers associated with these steps will form a code that, when entered into a password form, determines whether the player wins the game.

OBJECTIVES OF THE PUZZLES:

Symbolize the journey of mental health recovery as a challenging and non-linear process.

Engage players in critical thinking and decision-making regarding mental health recovery steps.

Encourage players to discern accurate mental health information from misinformation. Foster understanding and empathy for individuals facing mental health challenges.

OTHER:

The puzzle incorporates a short story about John, a young person with mental health issues, who dreams of being trapped inside the maze. This narrative adds depth and context to the puzzle’s theme.

The journey of the sphere inside the maze symbolises the fact that when struggling with mental health, there is not a defined exit, but rather a series of steps that you have to take to recover

Height: 19 mm
Width: 80 mm
Depth: 80 mm



TO START SCAN IT

3D MODEL

MAZE STRUCTURE

The main labyrinth structure that houses the sphere.

SPHERE

Six rings with colors (red, orange, yellow, green, blue, purple):
The small steel ball that the player must move within the maze.

COLORED WAYPOINTS

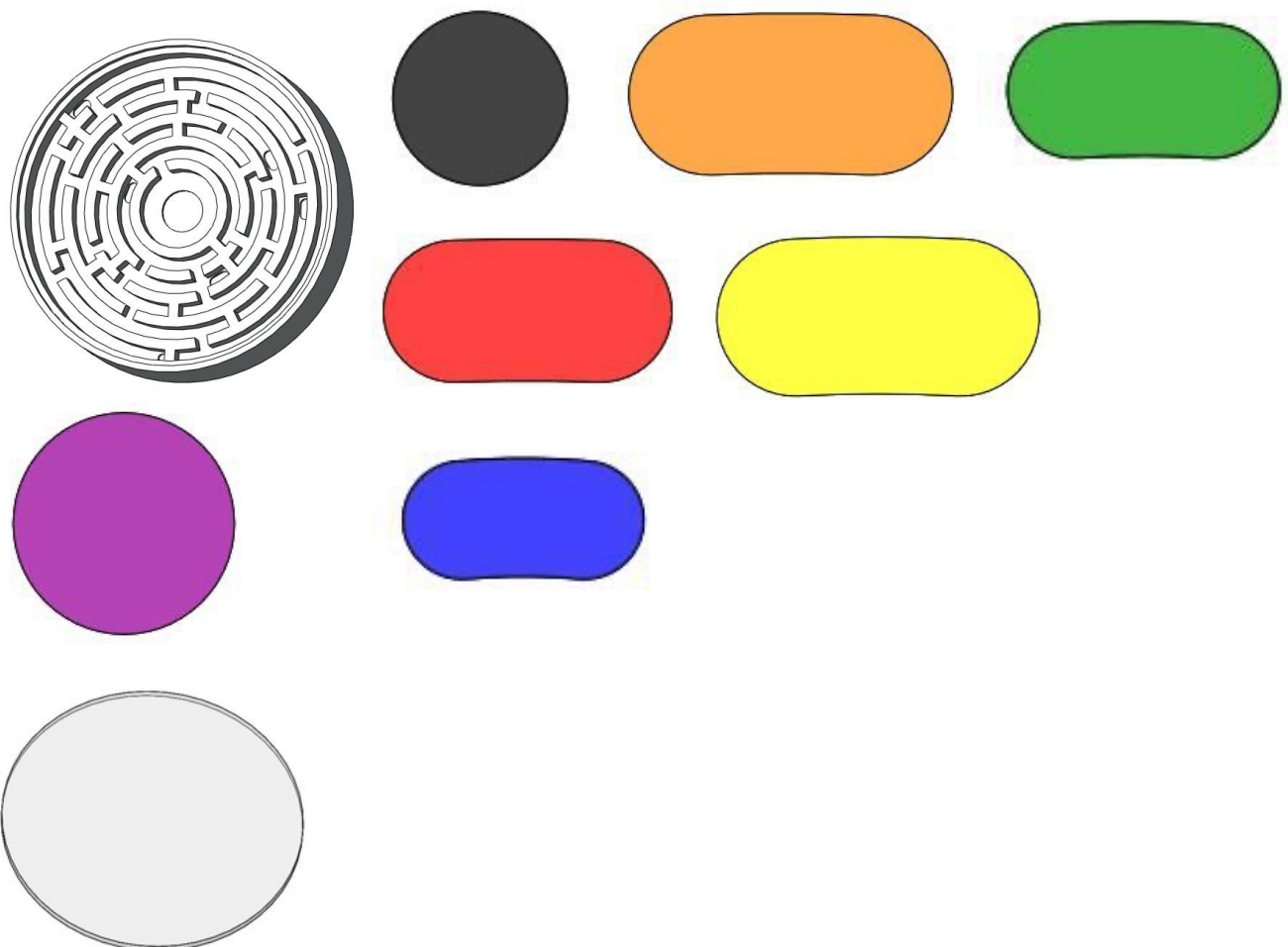
One starting point (black) and six colored waypoints (red, blue, green, yellow, orange, purple) on the maze floor.

PLEXIGLASS WINDOW

Transparent acrylic disc that encloses the sphere inside the maze.

VIRTUAL ENVIRONMENT

A virtual environment accessible via a QR code or a link that contains the story, the colored tiles with their respective steps and the final password form

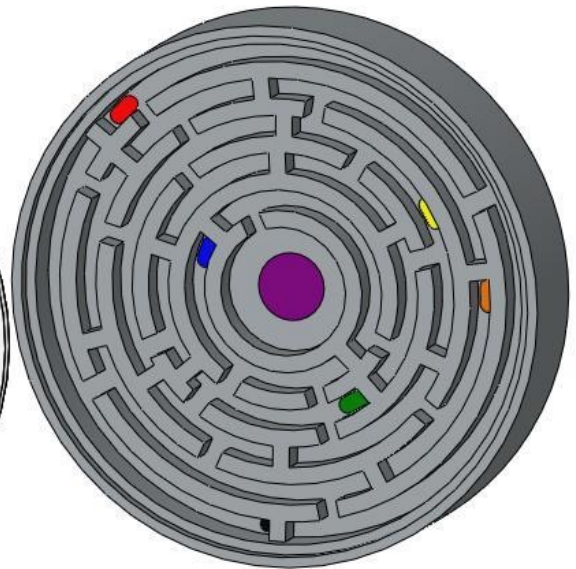
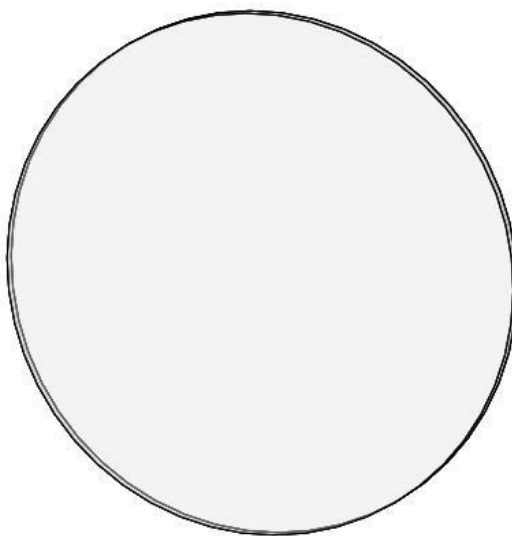




TOP VIEW



FRONT VIEW



EXPLODED VIEW

STEPS FOR THEIR RESOLUTION, DETAILS ON HOW TO RETURN TO ASSEMBLE IT ONCE SOLVED.

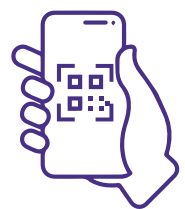
The starting point and each waypoint is glued in place on the maze using CA glue.
The sphere is inserted in the maze.
The plexiglass window is press fit onto the maze structure

HOW TO SOLVE THE PUZZLE (THE ACTIONS REQUIRED FOR THE USER TO SOLVE THE PUZZLE). ADD THE LINK TO THE VIDEO.

Use the QR code or the link to access the virtual environment.
Move the sphere to land on each of the colored waypoints.
Everytime that you land the sphere on a specific colored dot waypoint, click on the tile with the respective color in the virtual environment.
For each tile, you come up with numbered steps to mental health recovery, that each of them may or may not be true.
After activating all dots waypoint, select and arrange the correct recovery steps in order.
Use the digits associated with the steps to form a code.
Enter the code into the password form to win the game.

HOW TO RETURN THE PUZZLE TO ITS ORIGINAL STATE SO IT IS READY AGAIN TO BE SOLVED. ADD THE LINK TO THE VIDEO.

The puzzle comes in one-piece and therefore does not require assembling and disassembling. The steel ball can be quickly positioned to the starting point by inverting the maze bypassing the labyrinth and guiding the ball to the black starting point.



SCAN FOR MORE INSTRUCTIONS

SPECIFICATION FOR FACILITATOR



Description of the use of the puzzle and purpose of the puzzles

The puzzle is designed to be used as a tool for promoting mental health awareness and understanding. Its purpose is to engage participants in a symbolic journey of mental health recovery, fostering empathy, and critical thinking regarding mental health issues.

WHAT BENEFITS CAN BE OBTAINED WITH ITS USE?

It aims to help people with learning difficulties by stimulating certain skills such as hand-eye coordination/rotation, visual processing, instruction comprehension, self-regulation and empathy.

TECHNOLOGY

FUSED DEPOSITION MODELING (FDM)

IF YOU HAVE A PRINTER, WHAT MODEL IS IT?

CRAFTBOT PLUS

MATERIAL

PLA

COLOR

MAZE STRUCTURE: 1, SILVER GREY
WAYPOINT 0: 1, BLACK
WAYPOINT 1: 1, RED
WAYPOINT 2: 1, ORANGE
WAYPOINT 3: 1, YELLOW
WAYPOINT 4: 1, GREEN
WAYPOINT 5: 1, BLUE
WAYPOINT 6: 1, PURPLE

SHOULD THE PIECE BE RESISTANT OR BE SUBJECTED TO STRESS?

YES

DO YOU HAVE TO PAINT THE MODEL?

NO

NUMBER OF PIECES OF WHICH THE PUZZLE IS COMPOSED:

10

LIST OF MATERIALS REQUIRED TO BE USED IN ORDER TO PRINT ONE UNIT OF THE PUZZLE (GLUE, PAINTING, MARKER PENS, MAGNETS, PRINTED PAPER)

1X STEEL BALL BEARING BALL, 2MM
1X TRANSPARENT ACRYLIC (PLEXI-GLASS) SHEET 20X30CM, 2MM THICK
JEWELER SAW
JEWELER FILES
SANDPAPER
CA GLUE

ACCURACY AND DEFINITION REQUIRED

MAZE STRUCTURE: LOW
WAYPOINT 0: LOW
WAYPOINT 1: LOW
WAYPOINT 2: LOW
WAYPOINT 3: LOW
WAYPOINT 4: LOW
WAYPOINT 5: LOW
WAYPOINT 6: LOW



DESCRIPTION

The Feast of Fogaceiras originated from a vow to the Martyr S. Sebastião, made by the people of the Land of Santa Maria, at a time when the region would have been plagued by an outbreak of plague that decimated part of the population. In exchange for protection, the people promised, every January 20, a procession and the offer of a sweet and thin bread, accustomed to be made for special occasions: the “fogaça”.

At the beginning of the fulfillment of the vow, it is referred to the existence of three “fogaças” made specifically for the ritual of devotion, which were taken in procession by three young maidens, from the Castle to the Mother Church, where they were blessed, cut and divided by the people present there, serving as a palliative against the evils of the world: hunger, plague and war.

As in the past, today the people of the municipality of Santa Maria da Feira have the opportunity to manifest the cult of S. Sebastião at a party, which is the “fogaça”, representing the figure of the Feira Castle, symbol of union and collective identity of this vast territory.

Tradition dictates that, on the occasion of the Feast of the Fogaceiras, the inhabitants of Santa Maria da Feira send “fogaças” to their relatives and friends who are far away.

OBJECTIVES OF THE PUZZLES

The objective of the game, which was specially developed to play in group, is to open 3 of the Fogaça’s tours (“mamas”) and collect the parts of the “Fogaceira” doll. After catching all the parts, the goal is to open a trap door with the doll, where they find the final piece of the doll: a little “Fogaça”.

The puzzle has 3 difficulty levels, which differ in the number of clues provided for its resolution. At any of the levels it is possible to ask participants to assemble the “fogaça” again.

Height: 205 mm

Width: 200 mm

Depth: 200 mm



STORYTELLING

*In the 1st decade of the 16th century
The lands of Santa Maria were invaded by the enemy
And all of those who did not fear God
The Black Death scared with a menacing nod*

*Prayers wouldn't beat the plague, it was believed
So the locals worked hard and fogaça was conceived:
A sweet bread in turn of Saint Sebastian's intervention
One that was to be carried by little girls in a procession*

*With ribbons of blue and red
Around the waist of dresses all white
Each child took one upon their head
So joining the war against the plight*

*The martyr showed mercy
And the torment was contained
Feirenses could again walk their city
And their smiles were regained*

*However, the procession persisted
Together with the enduring fear
Rain or shine they do not risk it
It's out on the 20th January, every year*



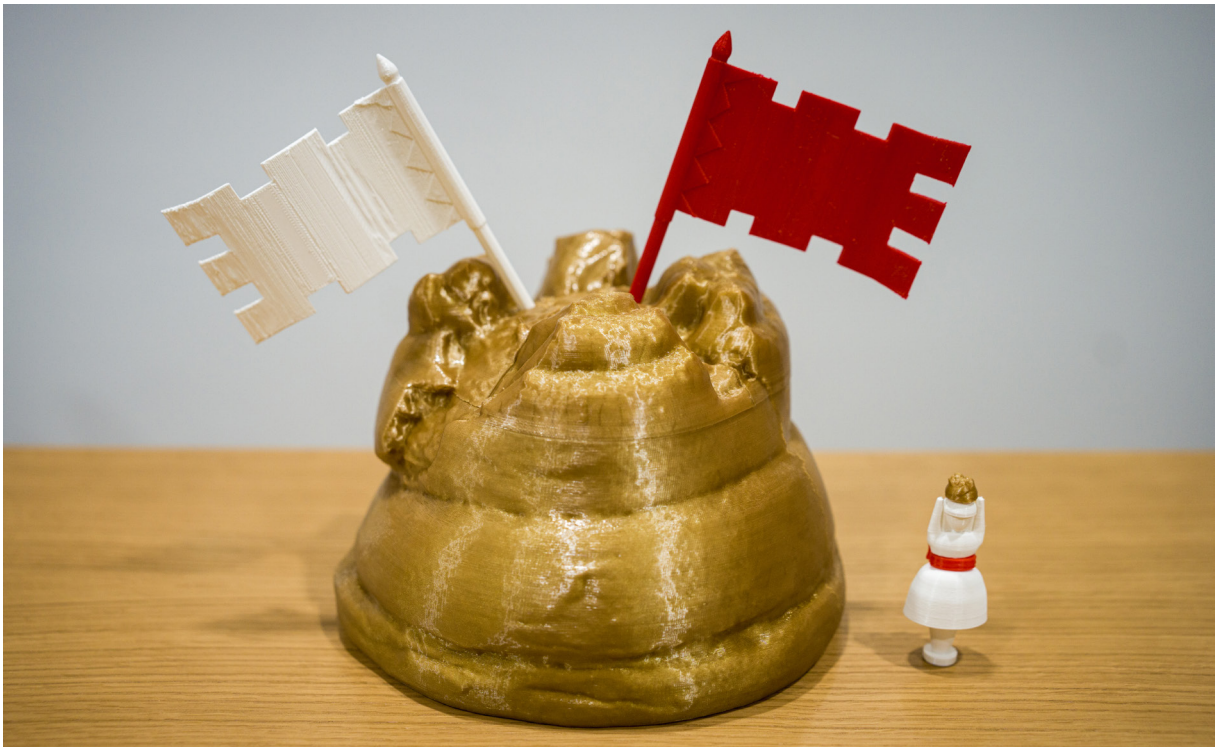
3D MODEL

BASE

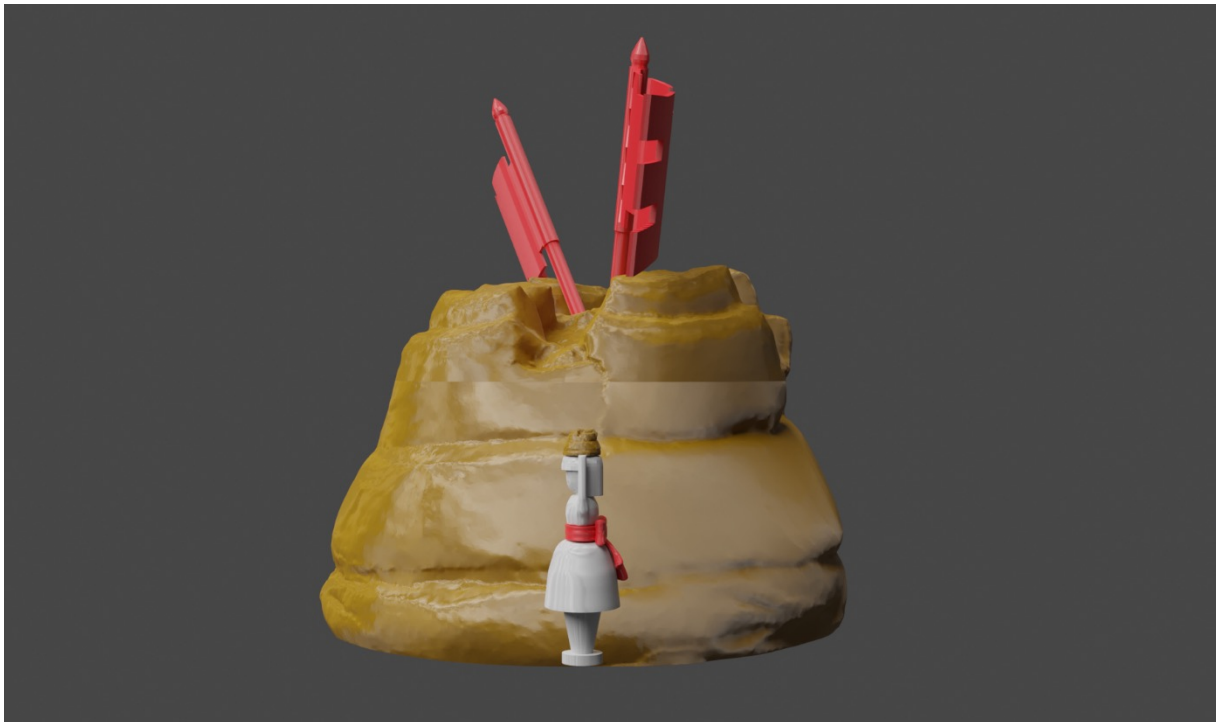
MiniFogaca
Head
Dress
LaceBack
LaceFront
Feet
MamaCrypto
MamaLabyrinth
MamaFlag
TrapDoor
CryptoEnd
LabyrinthEnd
Crypto 1Digit
Crypto 2Digit
Crypto 3Digit
Crypto 4Digit
FlagExtra
FlagPuzzle
Base



TOP VIEW



FRONT VIEW



SIDE VIEW



EXPLODED VIEW

STEPS FOR THEIR RESOLUTION, DETAILS ON HOW TO RETURN TO ASSEMBLE IT ONCE SOLVED.

Print all Pieces once with the colors designated below and remove all supports

Put the "MiniFogaca" in the compartment at the bottom of the "Base", now insert the "Trapdoor" in the laches in the base ,push it until you are able to close the "Trapdoor" flat with the "Base".

Now lay the "Base" in the table with the part that you just assembled facing down, in the Largest circular hole in the top put the "Dress" and close the hole with the "MamaFlag" and insert the "FlagPuzzle" in the small hole in the "MamaFlag".

Now pick up the "MamaLabyrinth"and the "Labyrinth End" with the "MamaLabyrinth" standing on it's side put the "Feet" inside of it ,align the pin inside the "LabyrinthEnd" with the groove and do the maze backwards (Simplest solution : insert the End In 5mm ,rotate the End counter-clockwise until the pin hits a wall,now push until it hits the wal-

l,rotate clockwise until it hits the wall,push in 15mm,rotate clockwise 5mm ,and push in until the End hides all the maze).Insert the "MamaLabyrinth" in the hexagonal hole in the "Base".

Now pick up the "MamaCrypto" and insert all rings "Crypto1Digit"to "Crypto4Digit" by numerical order (careful all pieces are different),and make sure the digits are in same orientation (if the small arrow on the "MamaCrypto" should be on the left of the first number) ,now put the "LaceFront" ,"LaceBack" and "Head" in the "MamaCrypto" compartment ,put the code "1505" in the side of the arrow and now you can close with the "CryptoEnd",change the code to a random one and now you can insert all that part that you assembled in the decagonal hole of the "Base",you can also insert the "FlagExtra" in the small hole in that part.

HOW TO SOLVE THE PUZZLE

Remove the white Flag to unlock the first “Mama” ,so now you can remove the “MamaFlag”and obtain the “Dress”.

Secondly pull out the “Mama ” on the right of the one that you solved ,now you have to rotate and push in a combination that solves the maze(1 possible solution :when closed rotate the End counter-clockwise until you hit a wall ,now rotate 15mm clockwise ,pull until you hit a wall,rotate the end counter-clockwise until you hit a wall,pull until you hit a wall,rotate a little more counter-clockwise,pull until you hit a wall,rotate clockwise until you hit a wall and now you be able to pull the End out),after the maze is solved you will obtain the “Feet”.

Now you can pull the “Mama” on the right of the one that you solved ,pull it out and put the code “1505” between the arrows so you be able to pull the end of the code and obtain the“LaceFront” ,the ”LaceBack” and the “Head”.

Now turn the “Fogaca” around and you will find a path that you will have to follow with the “Feet” until the end so you can pull open the trapdoor and obtain the “MiniFogaca”.

Finally with all the parts that you obtained you can put together all the Fogaceira Doll to finish the puzzle.

HOW TO RETURN THE PUZZLE TO ITS ORIGINAL STATE SO IT IS READY AGAIN TO BE SOLVED.

Start by Disassembling the Fogaceira Doll ,so all parts are separated .Put the “MiniFogaca” in the compartment at the bottom of the “Base” and close shut the trapdoor.

Now lay the “Base” in the table with the part that you just assembled facing down, in the Largest circular hole in the top put the “Dress” and close the hole with the “MamaFlag” and insert the “FlagPuzzle” in the small hole in the “MamaFlag”.

Now pick up the “MamaLabyrinth”and the “Labyrinth End” with the “MamaLabyrinth” standing on it’s side put the “Feet” inside of it ,align the pin inside the “LayrinthEnd” with the groove and do the maze backwards (Simplest solution : insert the End In 5mm ,rotate the End counter-clockwise until the pin hits a wall,now push until it hits the wall,rotate clockwise until it hits the wall,push in 15mm,rotate clockwise 5mm ,and push in until the End hides all the maze).Insert the “MamaLabyrinth” in the hexagonal hole in the “Base”.

Now pick up the “MamaCrypto” put the code “1505” between the arrows and close with the “CryptoEnd”,change the code to a random one and now you can insert all that part that you assembled in the decagonal hole of the “Base”,you can also insert the “FlagExtra” in the small hole in that part.

SPECIFICATION FOR FACILITATOR



Description of the use of the puzzle and purpose of the puzzles

This game aims to stimulate motor, sensorial, cognitive, intrapersonal and interpersonal skills in the participants. Through this game focused on problem solving and strategy, participants will be able to enhance their visual processing, thus training their focus and stimulating their capacity for mental agility.

WHAT BENEFITS CAN BE OBTAINED WITH ITS USE?

Through this game participants can specially train the instructions comprehension, strategy, focus and problem solving (cognitive skills); fine motor skills, hand-eye coordination, hand rotation and visual processing (motor and sensorial skills) and self-regulation and cooperation/teamwork (intrapersonal and interpersonal skills).

TECHNOLOGY

FDM(FILAMENT)

IF YOU HAVE A PRINTER, WHAT MODEL IS IT?

FLASHFORGE ADVENTURE 4

MATERIAL

PLA

COLOR

MINIFOGAÇA-LIGHT BROWN
HEAD-WHITE
DRESS-WHITE
LACEBACK-RED
LACEFRONT-RED
FEET-WHITE
MAMACRYPTO-LIGHT BROWN
MAMALABYRINTH-LIGHT BROWN
MAMAFLAG-LIGHT BROWN
TRAPDOOR-LIGHT BROWN
CRYPTOEND-LIGHT BROWN
LABYRINTHEND-WHITE
CRYPTO1DIGIT-RED
CRYPTO2DIGIT-RED
CRYPTO3DIGIT-RED
CRYPTO4DIGIT-RED
FLAGEXTRA-RED
FLAGPUZZLE-WHITE
BASE-LIGHT BROWN

SHOULD THE PIECE BE RESISTANT OR BE SUBJECTED TO STRESS?

ONLY THE FEET,LACEBACK AND LACEFRONT HAVE TO BE RESISTANT TO STRESS

DO YOU HAVE TO PAINT THE MODEL?

NO

NUMBER OF PIECES OF WHICH THE PUZZLE IS COMPOSED:

19

ACCURACY AND DEFINITION REQUIRED. (QUALITY) LOW, MID OR HIGH

BASE-MID (0.2MM)
EVERYTHING ELSE HIGH (0.12MM)

CASTLE OF EUROPE

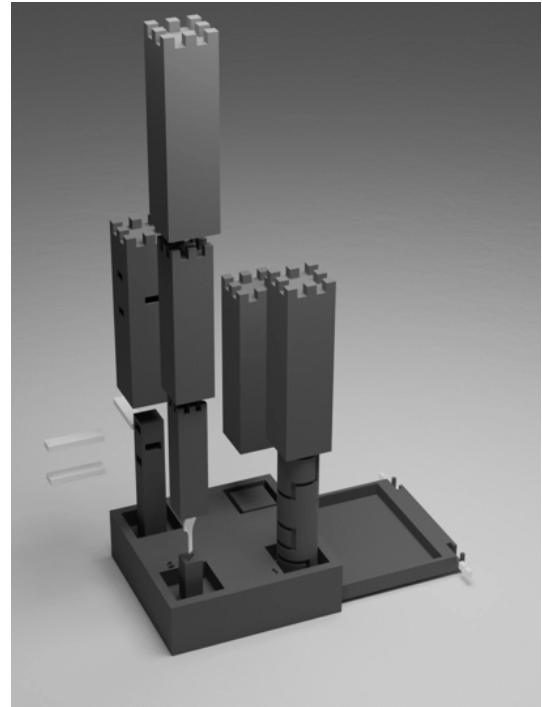
10

DESCRIPTION

Castles mark a medieval era throughout Europe, associating the Middle Ages with wars and disputes over territories. Castles were symbols of feudalism and power, strategically positioned for population control and mercantile purposes.

In the contemporary world, Europe has been creating economic, political and social bonds defending a unity sometimes difficult to achieve.

The metaphor of this scape box is inspired by a castle as a symbol of security and community. In this sense, although each tower has different “mechanisms” representative of the differences between countries, the base of the castle represents the cohesion of the European territory.



STORYTELLING

Castles mark a medieval era throughout Europe, associating the Middle Ages with wars and disputes over territories. Castles were symbols of feudalism and power, strategically positioned for population control and mercantile purposes.

In the contemporary world, Europe has been creating economic, political and social ties defending a unity sometimes difficult to achieve.

One of these results is the European Union, whose motto is “United in diversity”.

This “Castle of Europe” allows us to remember and consolidate the fundamental values of the European Union, which must unite us as a civilisation: human dignity, freedom, democracy, equality, rule of law and human rights.

Height: 250 mm
Width: 200 mm
Depth: 200 mm



OBJECTIVES OF THE PUZZLES

The puzzle represents a castle composed of 4 towers where each of these towers are a puzzle/riddle that need to be solved in order to unlock a key for the final puzzle of Europe, which is hidden on a drawer at the base of the castle.

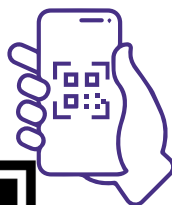
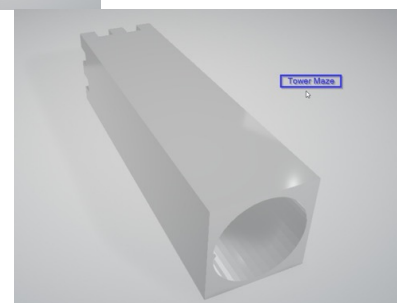
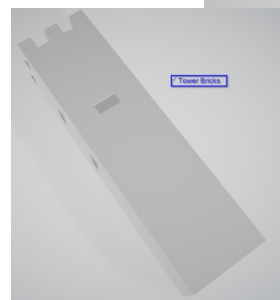
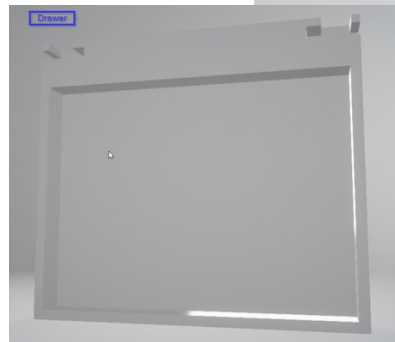
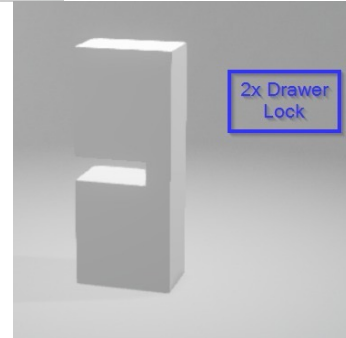
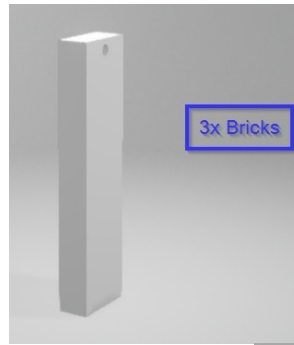
Solve each tower to unlock the final key, being able to resolve the final puzzle, and achieve an overview image of the European continent.

3D MODEL

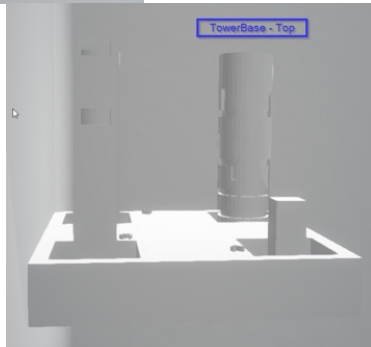
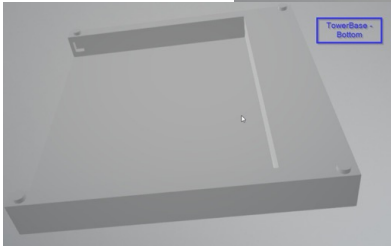
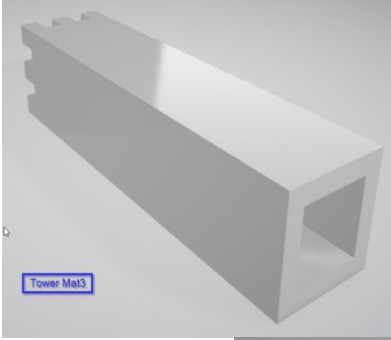
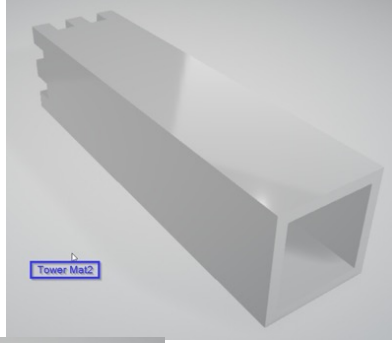
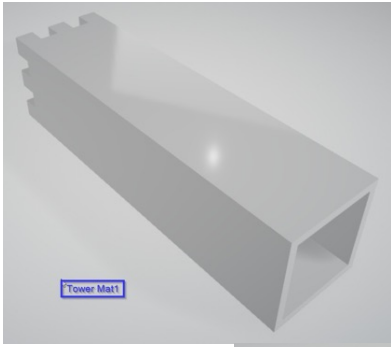
The 3D model is composed of 2 Lego-like quadrangular shapes that after being attached to each other create the solid base for the entirety of the puzzled castle. (TowerBase – Bottom; TowerBase – Top). Attached to this Base there is also a Drawer where the European Union puzzle pieces are placed and a drawer lock. (Drawer; Drawer lock).

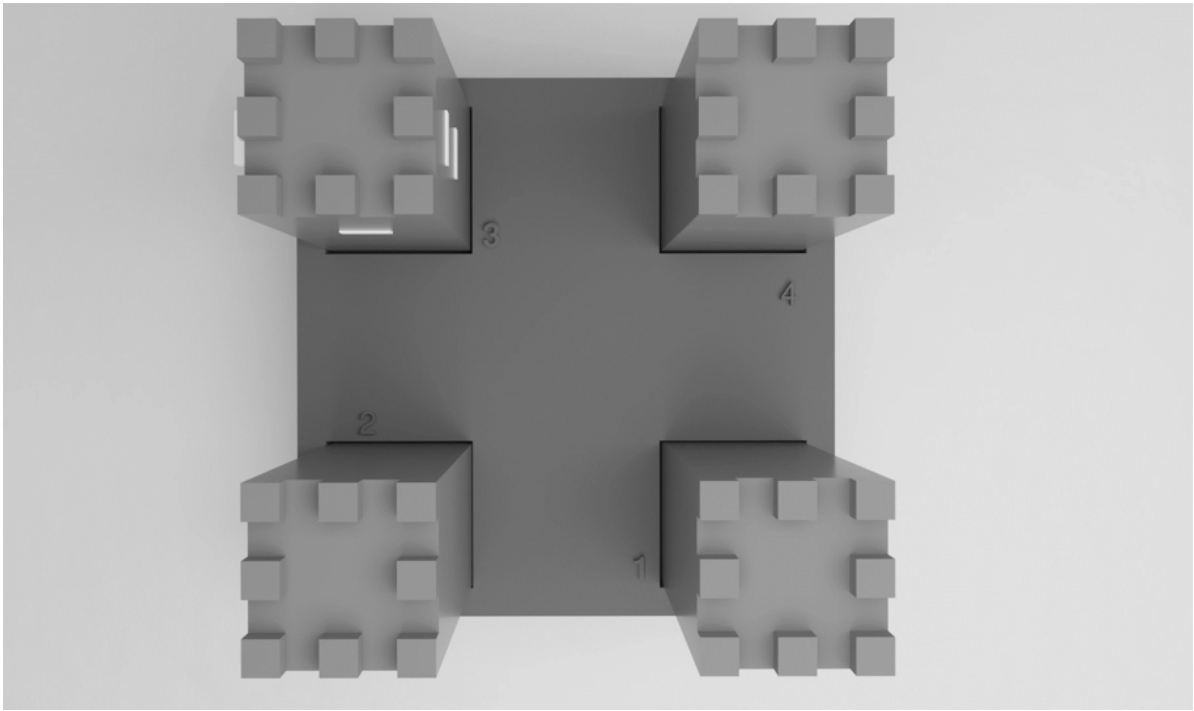
Besides the base, it's part of the castle puzzle assembly, 4 towers that can be coupled to the base where each one of them represents a different puzzle mechanism.

The puzzle mechanisms for the towers are firstly a maze, followed by a tower that can only be solved by removing some bricks that are coupled to a cord (simulates a rope). Also, a tower that resembles a matryoshka doll, where the key that unlocks the drawer lock is hidden. And the final tower is composed of no mechanisms but a paper sheet inside of it, where the EU puzzle should be solved. (TowerMaze; TowerBricks; 3x Brick; TowerMat1; TowerMat2; TowerMat3; Tower Puzzle; Key)

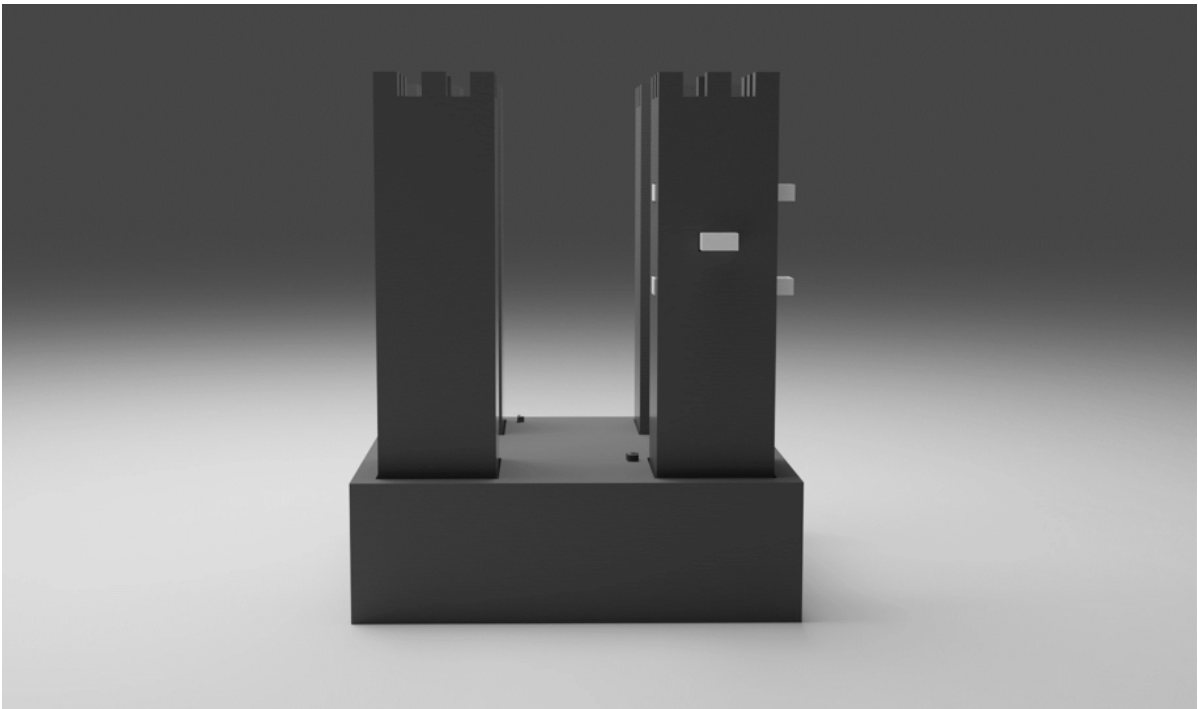


DOWNLOADABLE MATERIAL

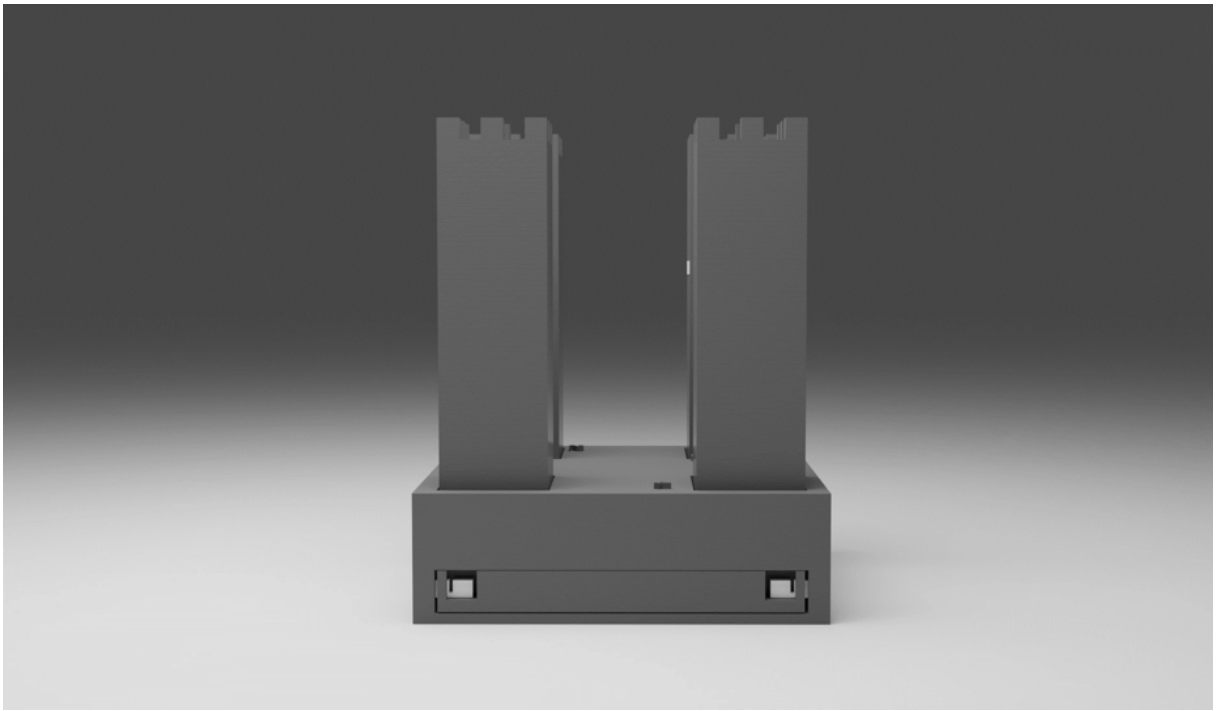




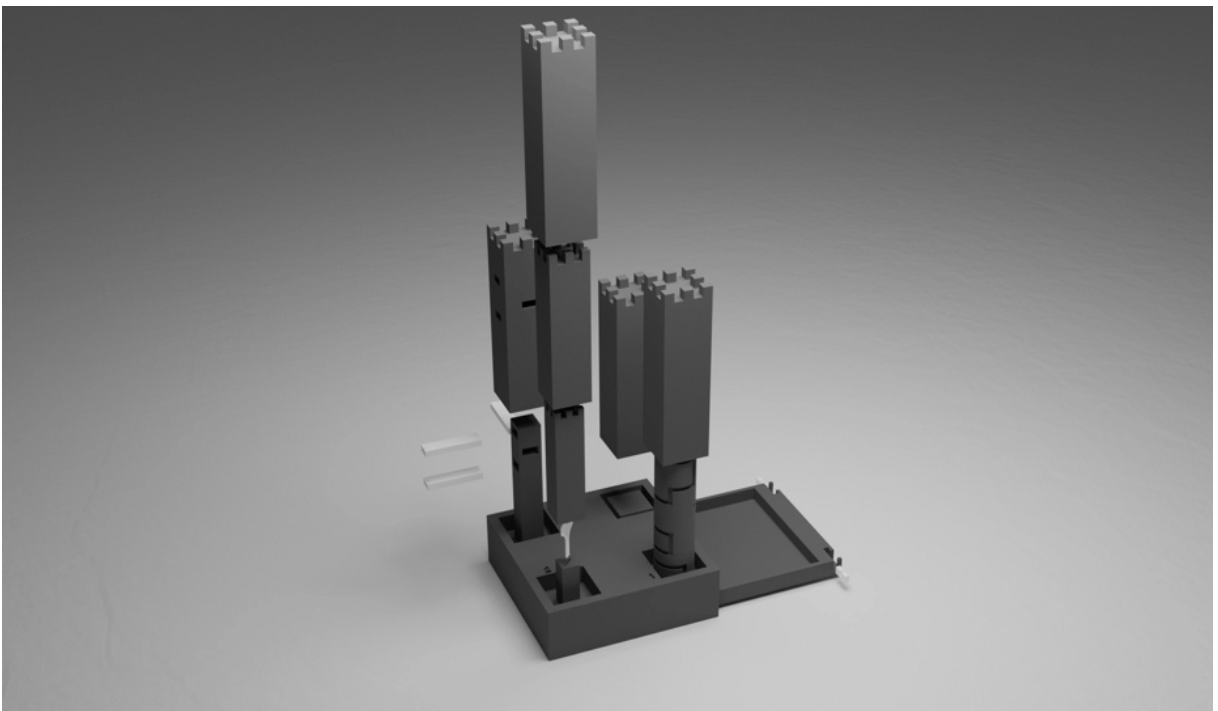
TOP VIEW



SIDE VIEW



FRONT VIEW



EXPLODED VIEW

STEPS FOR THEIR RESOLUTION, DETAILS ON HOW TO RETURN TO ASSEMBLE IT ONCE SOLVED.

In order to have the castle puzzle ready to be used/played first it's needed to assemble all the parts and puzzles/riddles.

Doing this is relatively simple: first it's necessary to assemble the base of the castle by coupling the 2 Lego-like quadrangular pieces (TowerBase – Bottom; TowerBase – Top). Once this base is created it's time now to grab the EU puzzle pieces and place them on the drawer (Drawer) that should be inserted on the gap between both base pieces and locked (using Drawer Lock and Key). The key needs to be placed on the key holder on tower nr3 (number visible on the castle base).

After this is done, in order to prepare the castle puzzle for its first usage, all the puzzles on top of the base need to be assembled/reversed. To do this, first it's needed to place the paper sheet inside the TowerPuzzle and place this tower on the number 4 spot of the castle base. Now it's time to place the Key on its holder and the 3 Matryoshka towers (TowerMat1, TowerMat2 and TowerMat3) on top of it (spot nr3).

For the 2nd spot of the castle base, first the Tower Bricks should be attached to the base whereas it's possible to see some gaps on it where the 3 Bricks with the rope must be inserted. For the first spot and first tower to be solved, it's necessary to reversely solve the Tower Maze, having the whole maze hidden and ready to be solved.

The castle puzzle is now ready to be played/solved for the first time.

HOW TO SOLVE THE PUZZLE (THE ACTIONS REQUIRED FOR THE USER TO SOLVE THE PUZZLE). ADD THE LINK TO THE VIDEO.

To solve the maze on the first tower you need to follow the right path and fully remove the tower coupled to the castle base. To solve the second tower you need to pull the cords laying around the second tower. By pulling these cords, some bricks are removed from the tower, unlocking, and al-

lowing this tower to be decoupled from the castle base.

The third tower can be solved by removing each matryoshka tower present on the third tower, revealing a key inside the smallest matryoshka tower. It's important to keep this key in hands for the latest part of the castle puzzle.

The fourth tower can be simply removed, and it will present a paper sheet with an EU shaped outline where the final puzzle will come together.

By this time, the puzzles from all towers have been solved.

It's time now to move into the final puzzle, by using the key to unlock the drawer on the castle base.

When the drawer is open, multiple European countries shaped pieces can be found inside of it and to solve this last puzzle, it's needed to fit each part of Europe in the correct spot.

HOW TO RETURN THE PUZZLE TO ITS ORIGINAL STATE SO IT IS READY AGAIN TO BE SOLVED

In order to return the castle puzzle to its original state, reversing all the solved puzzles so far is needed. Starting by mixing the EU countries shaped pieces and placing them inside the drawer, closing it and locking it with the drawer key.

After this, the key should be placed in its holder with the 3 matryoshka towers being placed on top of it.

The reversing of the fourth tower can be done by inserting the paper sheet inside the tower and placing the tower back to its spot on the castle base.

The tower locked by bricks can be reversed by placing the tower on top of the base support and by putting the bricks through the holes of both the tower and support, locking this tower to the base.

Last, the maze tower is reversed by following the maze until the whole tower is back in the original position.

The castle puzzle is back to its original state by now.

SPECIFICATION FOR FACILITATOR



Description of the use of the puzzle and purpose of the puzzles

This game aims to stimulate motor, sensorial, cognitive, intrapersonal, and interpersonal skills in the participants.

Through this game, focused on problem solving and strategy, participants will be able to enhance their visual processing, thus training their focus and stimulating their capacity for mental agility.

WHAT BENEFITS CAN BE OBTAINED WITH ITS USE?

Through this game participants can specially train the instructions comprehension, strategy, focus and problem solving (cognitive skills). Also, the solving the puzzle can help to develop fine motor skills, hand-eye coordination, hand rotation and visual processing (motor and sensorial skills) and self-regulation, empathy and cooperation/teamwork (intrapersonal and interpersonal skills).

TECHNOLOGY

3D-PRINTING FDM TECHNOLOGY

IF YOU HAVE A PRINTER, WHAT MODEL IS IT?

ANY FDM 3D-PRINTER (E.G. FLASHFORGE 4)

MATERIAL

PLA

COLOR

DARK GREY FOR ALL PIECES, EXCEPT THE KEY (WHITE) AND THE EUROPE PUZZLE (ANY COLOUR YOU WANT)

SHOULD THE PIECE BE RESISTANT OR BE SUBJECTED TO STRESS?

RESISTANT TO SOME TENSION

DO YOU HAVE TO PAINT THE MODEL?

NO

NUMBER OF PIECES OF WHICH THE PUZZLE IS COMPOSED:

16

LIST OF MATERIALS REQUIRED TO BE USED IN ORDER TO PRINT ONE UNIT OF THE PUZZLE (GLUE, PAINTING, MARKER PENS, MAGNETS, PRINTED PAPER)...

1KG PLA 3D-PRINTING MATERIAL
1 PAPER TO PUT INSIDE THE TOWER-PUZZLE
3 SMALL WIRE/CORD TO PUT ON THE BRICKS
STICKER PAPER TO PUT ON TOWER-BRICK WITH THE WORD "DIGNITY" AND AT THE TOP OF THE TOWERMAZE WITH THE WORD "FREEDOM"

ACCURACY AND DEFINITION REQUIRED. (QUALITY) LOW, MID OR HIGH.

BASE - MID
TOWERS - HIGH



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