

# Level Design Test

# PART 2

2 PUZZLES FROM MY ESCAPE ROOM MOD

# Context

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- ▶ In 2020 I worked on an escape room mod in Rocket League that you can find here:
  - ▶ <https://steamcommunity.com/sharedfiles/filedetails/?id=2236111069>
- ▶ Gameplay video here if needed: <https://youtu.be/NGS0bWyRF0Q>
- ▶ It's 1 big level composed of numerous puzzles. I'll detail 2 of them here: **The morse code** and the **piggy boxes**. Of course there is a strong link between game and level design for these cases.



Piggy boxes puzzle

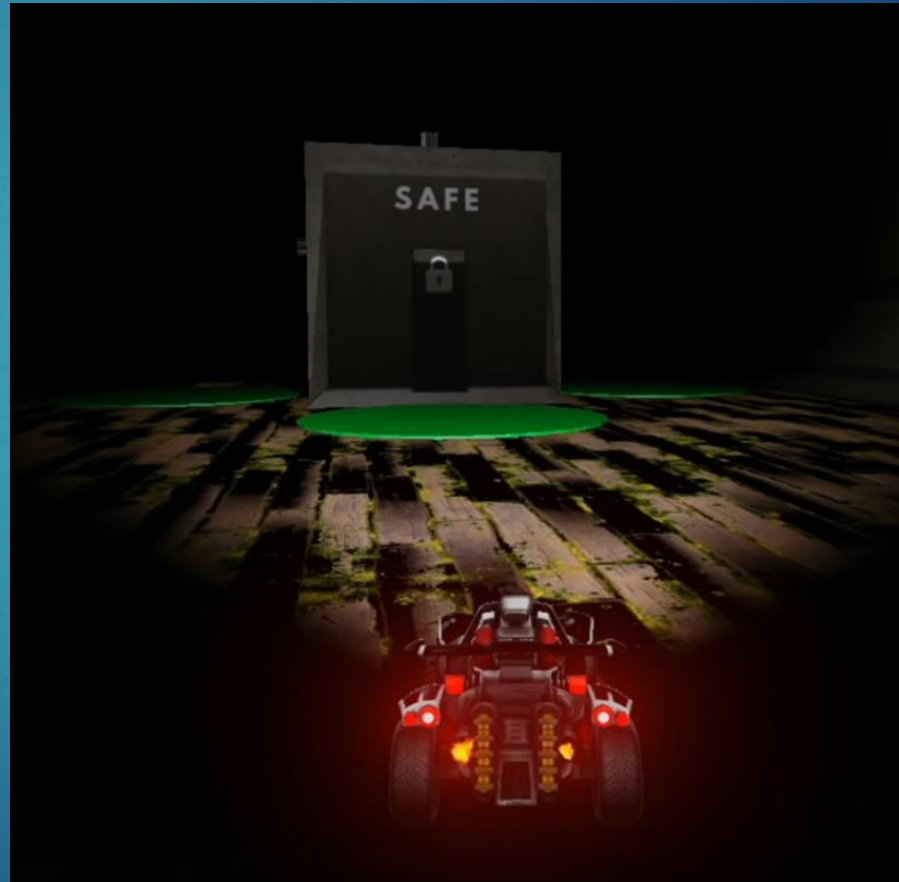
Morse code

# Morse code puzzle

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- ▶ In a really **dark room** underground there is only a **safe**.
- ▶ On each 4 faces of the safe there is a **light that blinks** when the player is close (green area on the floor).
- ▶ That blinking is actually a **morse code** that indicates an **action to press**.
- ▶ Pressing the **right action** turns the **light green**. Pressing the wrong action turns all the lights red and resets the code.
- ▶ Once the **4 lights are green**, the **safe opens up**.
- ▶ But how to know the link between morse code and player's actions?



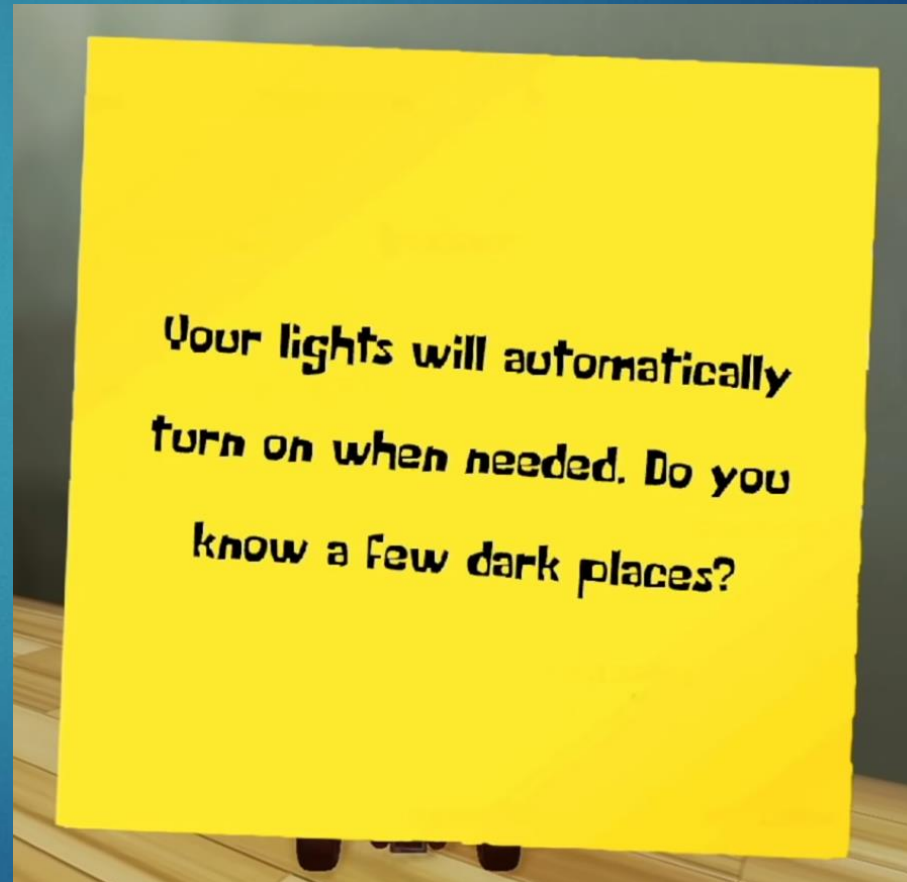


# Morse code puzzle

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- ▶ Before discovering the safe, the player gets a power up: car lights.
- ▶ The lights automatically activate when the player enters a dark room.
- ▶ With the power up, there is a note (img on the right). **The note asks the player about dark places.**
- ▶ There is actually 1 dark location **other than the one with the safe...**

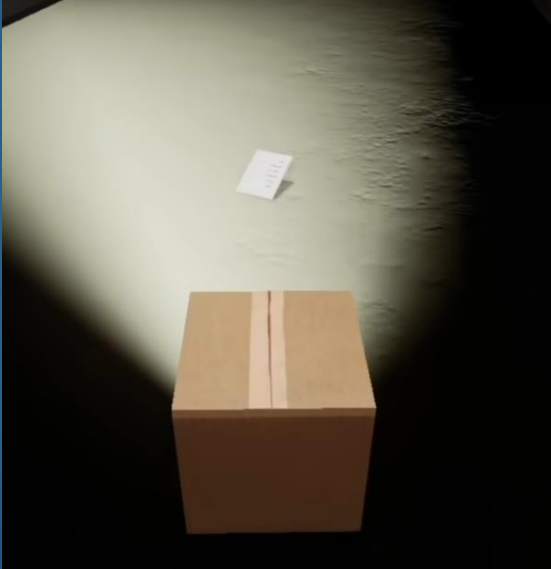


# Morse code puzzle

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- ... And in that location there is a note the player can pick up and use for the puzzle.



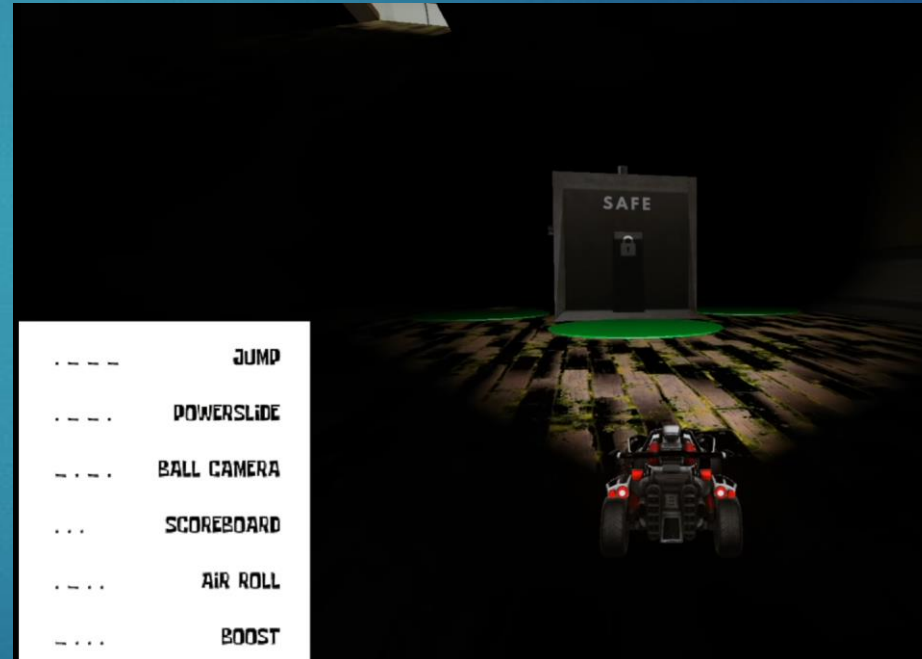
. - - - -	<b>JUMP</b>
. - - .	<b>POWERSLIDE</b>
- . . .	<b>BALL CAMERA</b>
. . .	<b>SCOREBOARD</b>
. - . .	<b>AIR ROLL</b>
- . . .	<b>BOOST</b>

# Morse code puzzle

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- ▶ From then, the note is automatically displayed in the room with the safe.
- ▶ The player has to stay on each green area and read the blinking patterns to enter the right actions.



# Piggy boxes puzzle

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- ▶ Contrary to the morse code puzzle, the piggy boxes puzzle **goes on through the whole level.**
- ▶ The player has to **put 5 piggy boxes in a container.**
- ▶ The boxes are **scattered throughout the different rooms**, sometimes among other kind of boxes.
- ▶ The player has to find them all but there is a trick...





# Piggy boxes puzzle

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- ▶ ... There are **actually 4 piggy boxes in game**.
- ▶ The **last piggy box** is in fact the **player**.
- ▶ The 1st power up the player unlocks is Transformation. This transforms the player into a box.
- ▶ **The piggy symbol is under that box.**
- ▶ The player has to **jump in the container as a box** to succeed.



# Piggy boxes puzzle

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- ▶ The Transformation power up is **introduced before the piggy box container** so it doesn't give away the puzzle solution from the start.
- ▶ Also the **transformation will be used a lot** throughout the game to come and go from a room that necessitates not to be car to enter. This **gives a lot of opportunities to the player to find out about that puzzle.**



# PART 3

A WEIGHT SCALE PUZZLE

# Pitch

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- ▶ In an old abandoned house, the character will discover by accident a hidden room that was used to keep children captive.
- ▶ In this room, there is a **weight scale connected to a mechanism** that can be manipulated to **get a key** that will allow the player to continue on its adventure.



# Quick notes on the prototype

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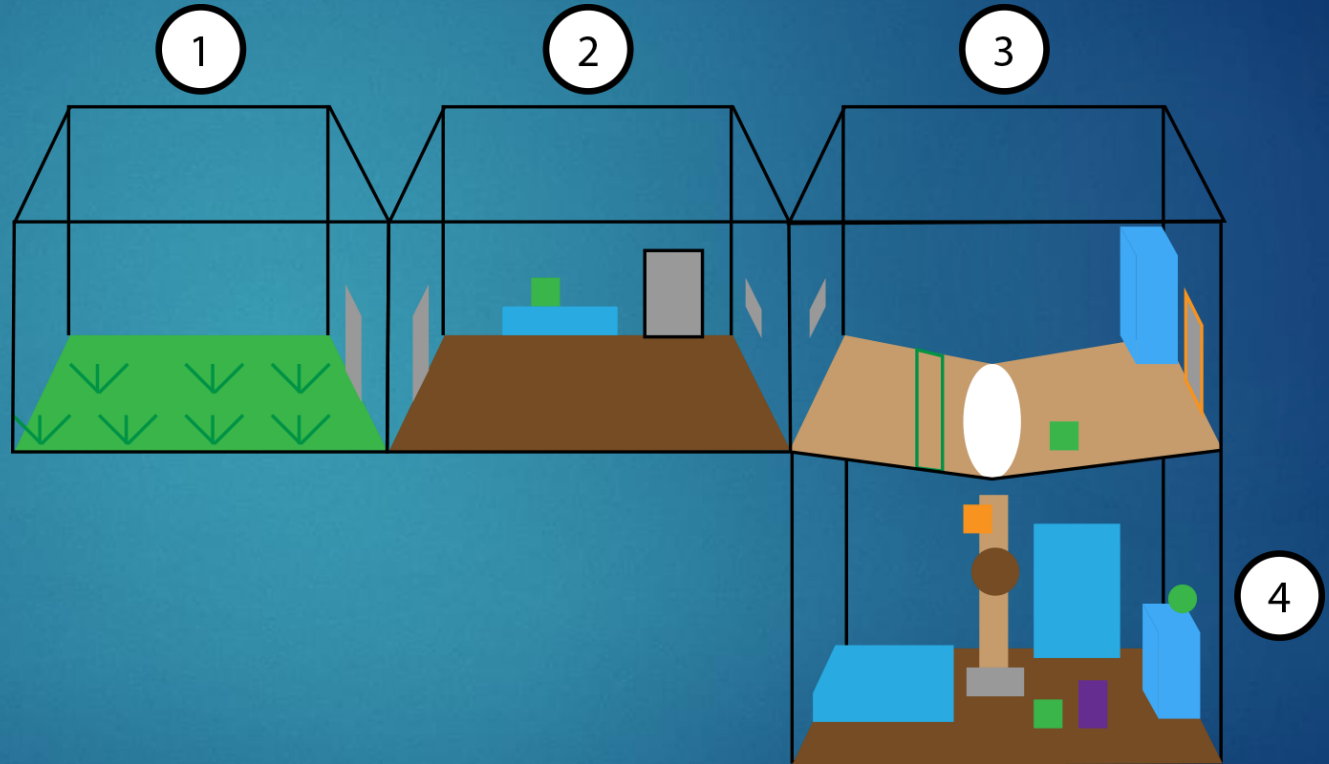
- ▶ At first I thought the Unity project had the same basic mechanics as Little Nightmares, like climbing and carrying objects.
  - ▶ I added triggers that act like climbing (teleports the player)
  - ▶ I added the possibility to carry objects (press C when next to the boxes to pick up or drop). It can be a bit convenient but it's not a necessity to use this so the prototype is fully playable with a gamepad.
- ▶ There is no death possible, but I still added 2 checkpoints to indicate where the progression would be saved.
- ▶ In my opinion this level would need a few iterations to be really good. Of course, discussing with a level designer and doing some playtest after finishing the prototype would be helpful.
- ▶ The prototype only features the content that is important for the navigation/understanding the puzzle and the ingredients available.

# Level structure

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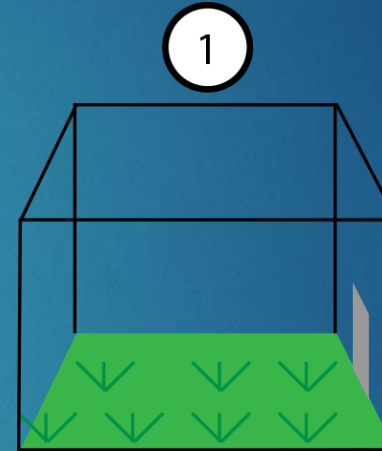
- ▶ 1. Exterior
- ▶ 2. Hall
- ▶ 3. Guard's room
- ▶ 4. The cell



# 1. Exterior

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- ▶ Player starts here
- ▶ Player can **push the door** to enter.

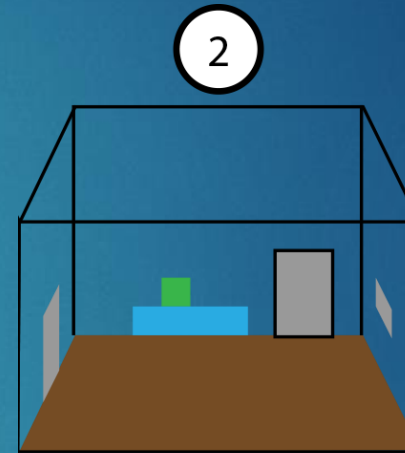


## 2. Hall

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- ▶ In the hall, the door in the back is closed and can't be opened. The only **exit is through the vent** on the right wall but it's **too high** for a simple jump.
- ▶ There is a furniture on which lays a **prop that the player can push/carry**.
- ▶ The prop can be **used to climb** in the vent by jumping on it.



- Furniture
- Pushable Object

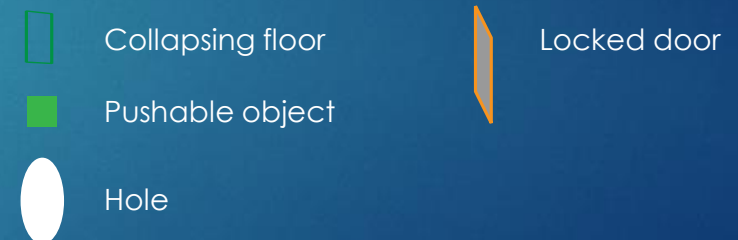
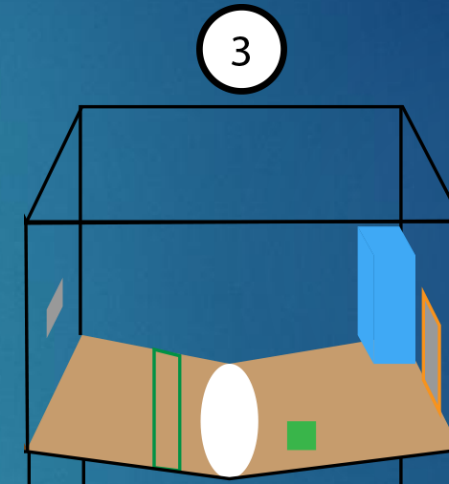


### 3. Guard's room

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- ▶ On the other side of the vent, the room is completely « rotten »: the **floor is ready to collapse** and there is a massive **hole** in the center of the room.
- ▶ On the right part of the room, next to the hole, is a **box**. A **locked door** blocks the exit.
- ▶ As the player approaches the hole, the **floor collapses under its feet**.

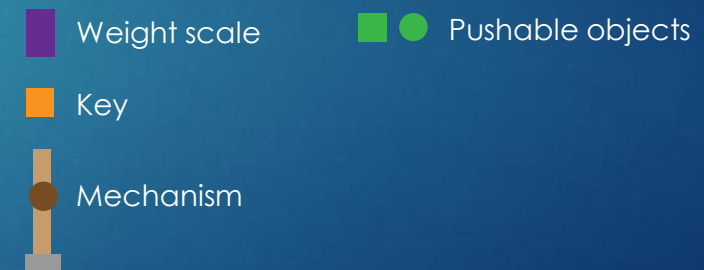
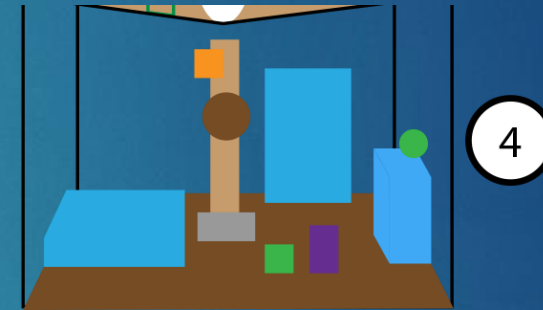


# 4. The cell – initial situation

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- ▶ The player falls in what looks like an old bedroom. In the middle of the room there is a strange **mechanism**. On its top is attached a **key**.
- ▶ On the floor lays a **box** that can be pushed/carried.
- ▶ Against the wall on the right there is a **furniture with an object** on it that the player cash push/carry. An **object will be needed to climb on this furniture**.
- ▶ There is also something acting as a **weight scale**: if the player stands on it, the **mechanism reacts by rotating**.



# 4. The cell – Inspiration

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- The room is pretty small and could look like a child's bedroom.

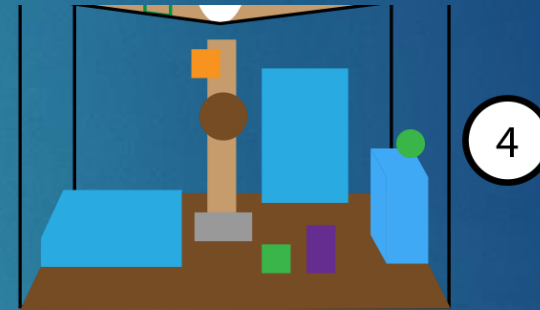


# 4. The cell – The goals

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- ▶ The goal of the player is double:
  - ▶ Get the key
  - ▶ Climb back up and open the locked door to move on



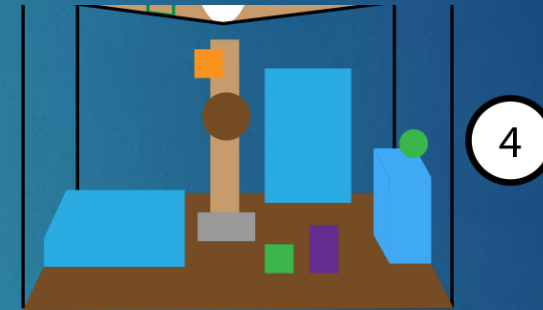


# 4. The cell – The mechanism

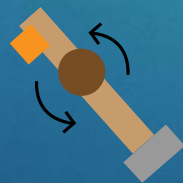
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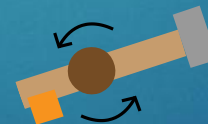
- ▶ Understanding the mechanism is the key to success.
  - ▶ **Adding weight to the scale** makes the **mechanism rotate accordingly**.
  - ▶ The mechanism **rotates faster if the weight is added suddenly: jumping** on the scale will make it rotate faster than **walking** on it.
  - ▶ At first, the **mechanism can rotate** until it gets **blocked by the ceiling**.



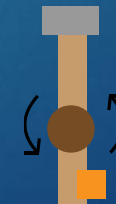
No weight



1 object ■



2 objects ■ ■



3 objects or Player ■ ■ ■



# 4. The cell – Actions order

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Free the  
mechanism



Get the key



Get out

Jump on the weight scale from the furniture to make the mechanism rotate at high speed and break the rotten ceiling

Place the 3 objects on the scale to maintain the mechanism at max rotation and pick up the key

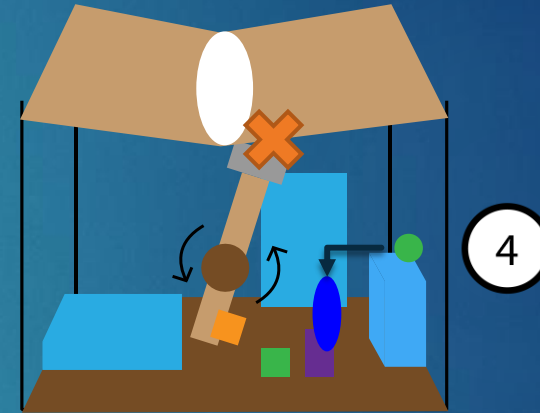
Use the layout to find your way back to the room above

# 4. The cell – Free the mechanism

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- ▶ **Jump** on the weight scale from the furniture to make the mechanism **rotate at high speed** and **break** a part of the rotten ceiling.

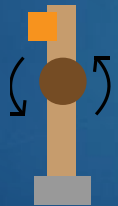
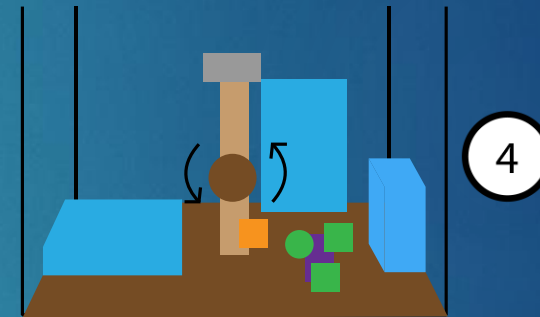


# 4. The cell – Get the key

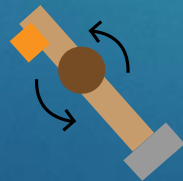
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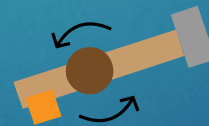
- ▶ The player can use the **box that fell from the ceiling** - after its destruction - and the object on the furniture to add weight on the scale.
- ▶ Place the 3 objects on the scale to **maintain the mechanism** at max rotation and pick up the key.



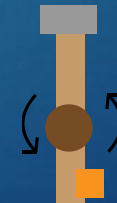
No weight



1 object ■



2 objects ■ ■



3 objects or Player  
Key is reachable



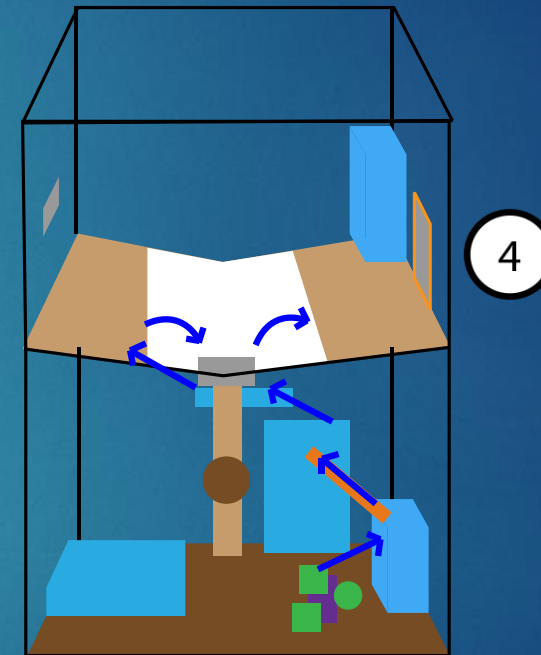


## 4. The cell – Get out

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- ▶ After the destruction of the ceiling, a **plank** fell between the furniture on the right and the one in the back, and provides a **way to climb**.
- ▶ Use the layout to find your way back to the room above and reach the locked door.



Plank fallen from the ceiling

# Testing

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- ▶ I consulted Sundr0 to discuss my original design and validate the different steps of the puzzle.
- ▶ I consulted Pouic to discuss about the mechanism and what it could be in the end to have a better vision of it.