Aperture.

DESIGN DOCUMENT

4TH DIMENSION STUDIO

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OVERVIEW

Game Pitch

“Aperture” is a single player 3D third-person puzzle game where the player pushes, pulls, lifts, and throws objects in the past to manipulate the state of the future. Actions in the past will have consequences on objects in the future, which help the player reach a desired goal or location in the future. The player can swap between the past and future at any location in the level. To figure out what next steps they need to take, they’ll need to strategically swap between the past and the future. The overall experience for the player would be to solve puzzles, watch how the future reacts to changes in the past, explore the levels and uncover the truth of the past.

Aesthetics

Aperture’s aesthetic is a mix of narrative, submission, discovery, challenge, but also expression. The narrative portion of the game is simple, similar to *A Short Hike*, aiming to slowly allow the player to discover the backstory of the main character. Furthermore, the narrative aims to lead the player through a path of self-discovery, and aims to connect with the player on an emotional level.

The game mechanics challenge the player to think in a novel yet dualistic way: what are the consequences of past actions on the future? How might objects change as you move them to different places? What is the correct order of actions in order to solve this puzzle? That’s the bulk of the challenge that the player will face as they progress throughout the game.

The overall aesthetic that the game will look like visually is a mix between cozy and cottagecore, with pastel palettes such as the sample image below.

From *Animal Crossing: New Horizons* with a filter.

Dynamics

The dynamics that drive the player to continue playing the game is mostly exploring different puzzle levels with different interactable items and objects that behave differently when their positions are changed in the past level. The puzzle-solving aspect of the game, on top of the time traveling mechanic makes it an unique game experience. The desire to see more of the story, on top of wanting to reach “the goal” of the puzzle makes it rewarding to play.

Inspiration

Our main inspiration in terms of mechanics was from the game *Love You To Bits*, specifically Level 19 “Back and Forths” (Youtube).

Figure 1: “Future” level in *Love You To Bits*

Figure 2: “Past” level in *Love You To Bits*

This particular level was very interesting as the player is challenged to go to the past level to pick up items or change the state of items so that they can access it in the future. We based off our main mechanic on this particular level of the game, but expanded on it so that it would take place in 3D space, and it would involve much more than a point-and-click gameplay.

Visually, *A Short Hike* and *Animal Crossing: New Horizons* were the main inspiration for narrative, character and environment design, as well as color palettes.

Figure 3: Muted Pastel Palettes

Figure 4: Furniture Designs from *AC: New Horizons*

Figure 5: *A Short Hike's* narrative design, palette and plant designs

Musically, the game was inspired off of *To The Moon*, *Undertale* and *Sky: Children of the Light*. The music should do some part of the storytelling in the game!

Camera

Our camera is an angled top-down view in a third-person POV, similar to the original camera position in *Animal Crossing: New Horizons*.

Story

Premise

Upon the death of his mother, the main character Luca receives the news that he is now the inheritor of his childhood home, where his mother lived before she passed. She also leaves him a blank photo album.

Planning to sell this house, Luca returns to the house to inspect it before putting it onto the market. When he goes to visit, he is called by his older sister Blanche, who comments that he should at least collect their childhood photos that are lying around the house.

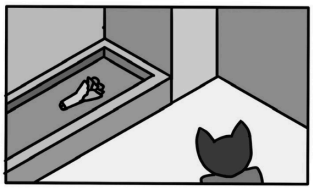
Agreeing to Blanche's request, Luca begins collecting photographs scattered throughout his childhood home, and begins to reminisce about his past.

Somewhere deep in his heart, he wishes that he could change his "past" so that he would not have to live in this version of the "future".

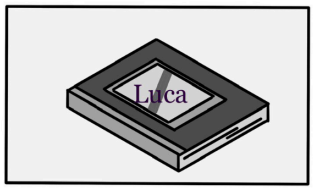
Taking place in a suburban childhood home, players will play as Luca, a young adult black cat grieving over the death of his mother. Photographs are gateways to Luca's past, and players will be given a chance to go back to the past and change the state of the future to collect these photographs. The photographs are thus the goal of each puzzle level.

Storyboard

The beginning of the game will have a short exposition revealing a short snippet of the backstory of the main character:



Luca attends the funeral of his mother.

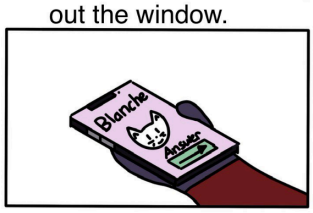


He is handed a book that has a letter on it, addressed to him

Luca is sitting in a car,slumped over he's sad, and he's staring out the window.

The car stops in front of a big but old house.

He gets out holding the photo album and sighs.



Luca gets a phone call from his sister, Blanche.

Gameplay & Mechanics

Time Travel

Our game's main mechanic is time travel. Within a level the player can travel between two time periods, the past and the future.

All of our game's puzzles will be based on this mechanic. The player can travel between the past and future versions of the level at any location within the level at the press of a button. Certain sections of the level will only be accessible in one time period, but generally future levels will have more freedom of movement compared to their past counterparts. This forces the player to travel between time periods to solve the puzzle, so it cannot be solved by staying only in the past.

Picking up and moving objects

The time period will affect what the player can do. For example, in the present, the player can collect consumable items that will be placed in their inventory that they can take to the past. In the past, the player can physically move certain objects, which will affect their locations and/or states in the future.

The rationale behind these choices is that players moving objects in the past should get instant feedback or a clear response when traveling back to the future. However, for simplicity, to avoid the extra complexity of having to track past to future object movement, the player will not be able to move objects in the future.

However, players can collect consumable objects in the future that they can take with them to the past. This allows the future to affect the past and force the player to transition more between the two time periods to solve the puzzle.

High Level Game Arc

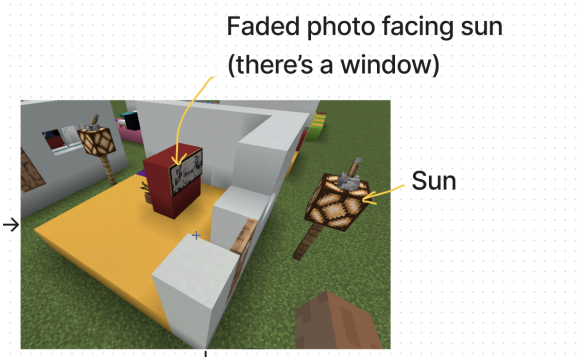
At the beginning of the game, the puzzles will be designed to onboard the player by introducing basic time travel mechanics, moving (picking up) objects and teaching the player to observe how the changes they make to objects in the past can affect the state of the objects in the future. The changes the player needs to make to progress further in the level will be more obvious and/or simple.

As the game progresses, the puzzles will get more complicated by introducing more game mechanics and variables the player has to consider when solving the puzzle, such as the introduction of in-game consumable items. The player will have to think more about what logical

sequence of actions in the past that will get them the desired effect in the future as said sequences get more complicated.

Additionally, past levels could get more restricted in movement, making the player's next step less obvious. This would force the player to think about strategically traveling in time at specific locations.

Player Goals



Based on the story of Aperture, the player will be tasked with retrieving a photograph object placed at the end of every level. The photograph will be placed behind obstacles that will require them to swap between the past and future to surpass, and only then will they be able to retrieve the photo.

Part of the fun is discovering what changes occur in the future once you move an object in the past, and how that will help solve the puzzle and get the player to reach the goal in the future level. For example, discovering that they can use plants to block the harsh sunlight in the past that will ensure that the photo (the goal) in the future will not be faded.

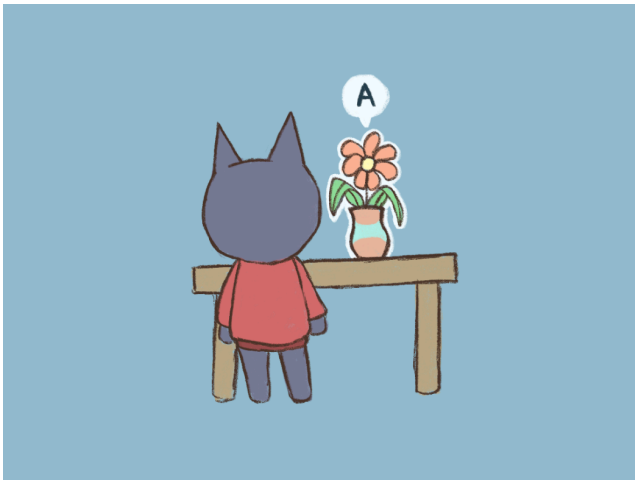
Narratively, there will be some story elements for the player to discover as they progress through the levels.

Controls

Controls Layout

So far, we plan to have controls for both a gamepad and keyboard. Currently our gamepad controls are based on the Xbox Controller, but should be compatible with any standard controller.

Action	GamePad	Keyboard
Movement	Left Stick	WASD
Time Travel	Y	F
Pick Up/Throw	B	C
Interact/ Use Item	A	E



Concept art showing that interactable items (interact / use only) will be highlighted with a small prompt that appears above it stating which button the user should use.

This will be the same for (pick up / throw), except the prompt will show (B) instead.

Because the game will be built in 3D, the character can move in all directions on the X-axis in 3D space. They will be unable to “jump” / move in the Y-axis.

Character, UI and Asset Designs

Player Character

The player will be taking control of a Black Cat named “Luca”. On the right is the preliminary 3D model for the character.

The color scheme for the character is very dull colors, a stark contrast to the light pastel colors of the surroundings. We deliberately chose darker colors for Luca because we wanted to emphasize that he is “out of place”. This ties into the story and themes very well, and we wanted to evoke a sense of sorrow from Luca’s character. He is, after all, a young kitty grieving the loss of his family.

Luca is designed in the image of *Animal Crossing* villager characters because it fits into the “cozy” vibe of the game, but also is intuitive enough to fulfill our core gameplay mechanics. The characters in *Aperture* will be written narratively in a humanistic way, and that way, there exists a suspension of disbelief with the player, who can enjoy the “cozy” vibes of the game and it does not make it feel too weird – (Think about it... talking quadruped cats... processing grief?) – and can thus relate to the main character’s experiences.

Additionally, the shape of Luca’s body makes it easy for three of our main game actions: walking around the puzzle level, picking up items and interacting with items.

About Luca

Luca’s name means 'light', and it exists as a stark juxtaposition against how he physically looks. Luca is a black cat, of whom are often attributed to great misfortune and bad luck, but he has been affectionately named "Luca" because his family believes that he is the light that has been brought into their lives.

Since he's one of the last members of his family alive, it shows how he is the last light of their family... but also, that he is shining a "light" onto the past.

A bit about Luca’s backstory: he used to love taking photos when he was younger. In fact, all the photos he "obtains" during the puzzles are the photos he took of their family during his

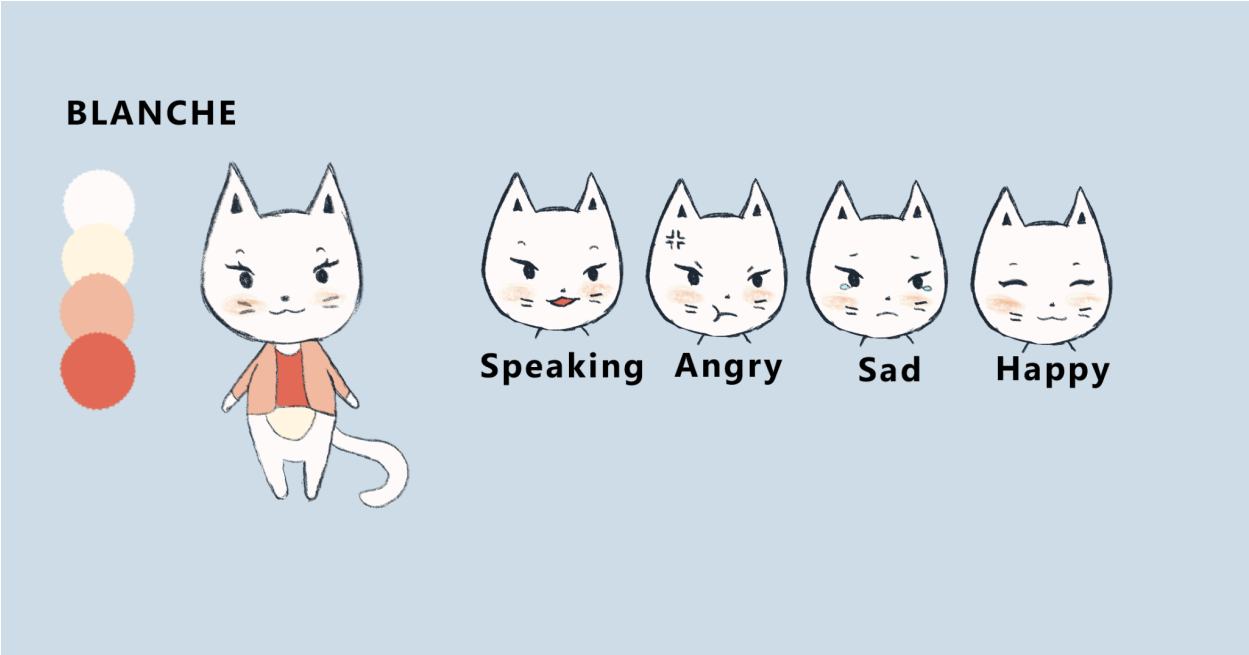
childhood. Due to the sudden death of a family member, he suddenly "gave up" photography... and *Aperture* is the process in which Luca reminisces on his past, as well as processes his own grief.

According to Wikipedia, "In optics, an aperture is a hole or an opening through which light travels". The whole premise of this game is based on how Luca is now "increasing" the aperture of the photos, which is giving him the “bigger picture” of the past that he did not remember before.

Thus, he explores the "full" past rather than the one that's just being displayed in the photograph itself. Thematically, it also shows that the only one who can travel between the "Future" and the "Past" that is contained within photographs is light itself! And hence, Luca himself.

To the left is some extra concept art done with Luca’s old design, but shows the core movements that he will be performing throughout the game. Push/pull and Lift are the core movements that his character model will support.

Non-Player Characters



Blanche is the tutorial narrator, as well as Luca's older sister narratively. She was designed with a more pastel palette in mind, and she "fits in" with the surroundings more than Luca does. As a white cat herself, she contrasts Luca's "quiet" personality. She's bold, a little bit proud, but overall a very expressive cat. She will not have a 3D model as she will only serve as the tutorial and "hint" narrator throughout the game.

Character Development Systems

As "Aperture" is mostly a puzzle game, the most development the main character will get will be gaining the ability to hold inventory items that will contribute to solving some part of the puzzle.

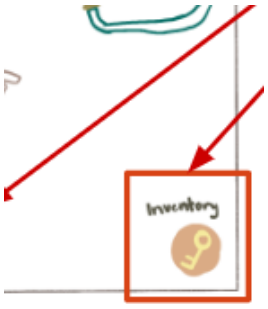


Figure 1: Concept Art of how inventory items may appear

User Interface

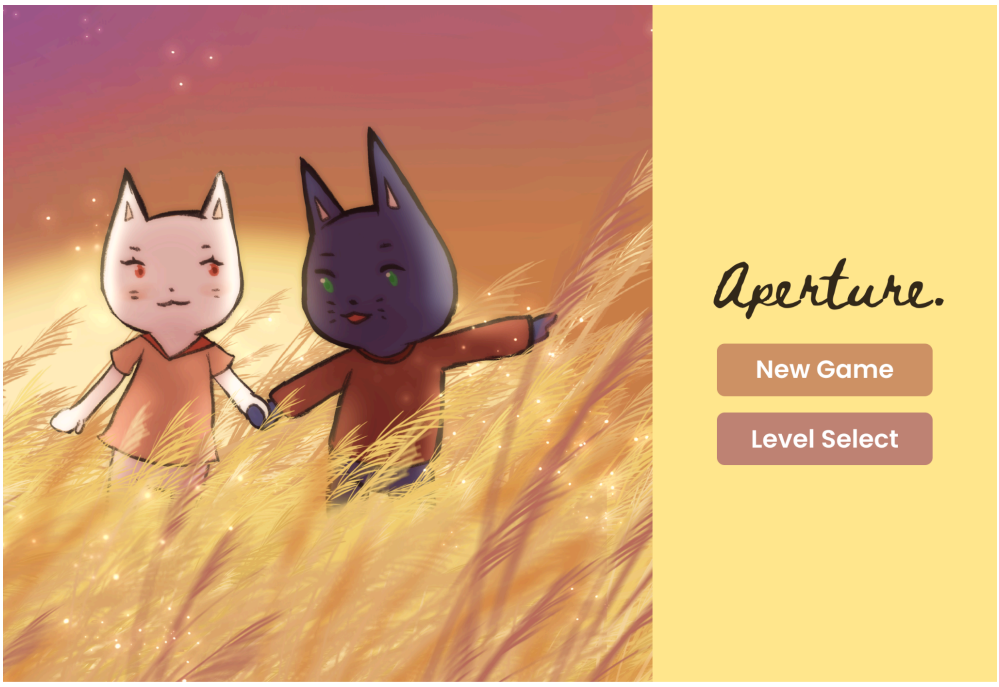


Figure 2: The main menu of the game. The image on the left would either be a 2D concept art or a 3D render of it.

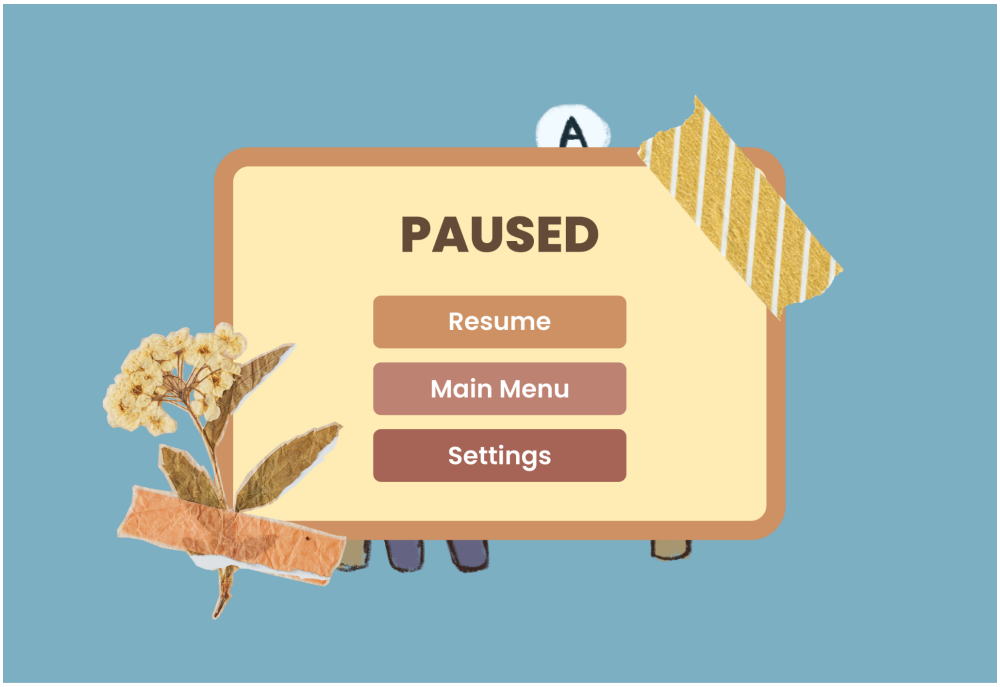


Figure 3: The pause menu of the game (pause is selected during a level).

Figure 4: In-Game UI, featuring a button prompt for in-game dialogue, as well as a pause menu button on the top left.

Figure 5: "Sparkling" particle effect that shows up when the player has moved an item and there is now a consequent change to the state of the object in the future.

The "past" level will usually have a sepia or black-and-white filter on top of it, so it explicitly shows to the player that they are in the "past" level.

Other level assets

The bulk of the level assets will be furniture and/or textures that will become the main building blocks for the puzzles. Below are concept art that are simple, yet detailed enough to be made into 3D models that show character and implicitly tell a story about time.

Figure 1: “Past” Living Room - more antique furniture

Figure 2: “Future” Living Room - more modern furniture, but some remain unchanged.

Figure 3: “Past” version of a greenhouse. Notice the well-kept plants.

Figure 4: “Future” version of a greenhouse. Notice how plants have died or overgrown. “Time” is clearly shown to have a great effect on the environment.

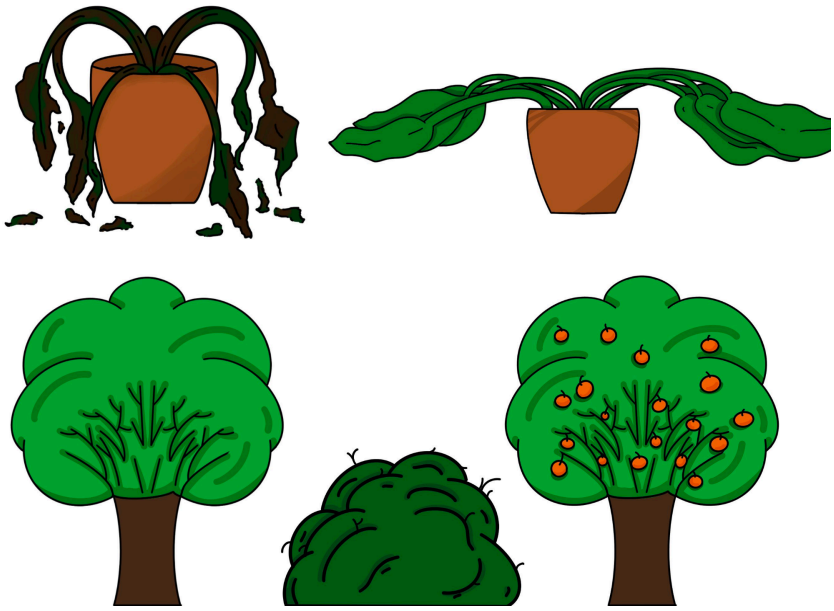


Figure 5: More concept art of plants

Figure 6: Concept art of a vine bridge

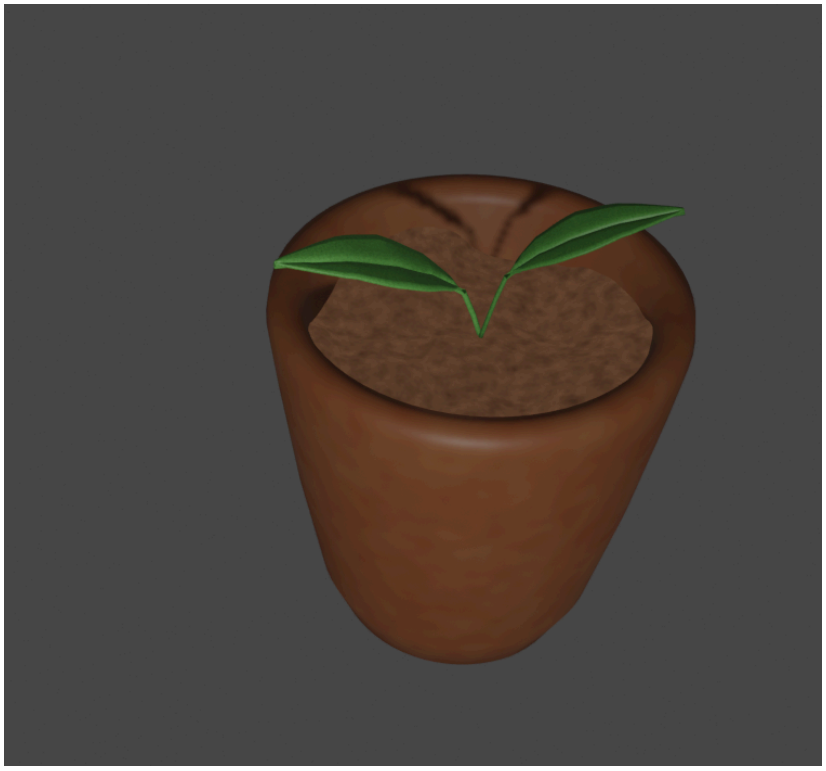


Figure 7: 3D model of a “sprout” plant that should appear in the “Past” version of the current level.

Figure 8: 3D model of a “grown” plant that should appear in the “Future” version of the current level.

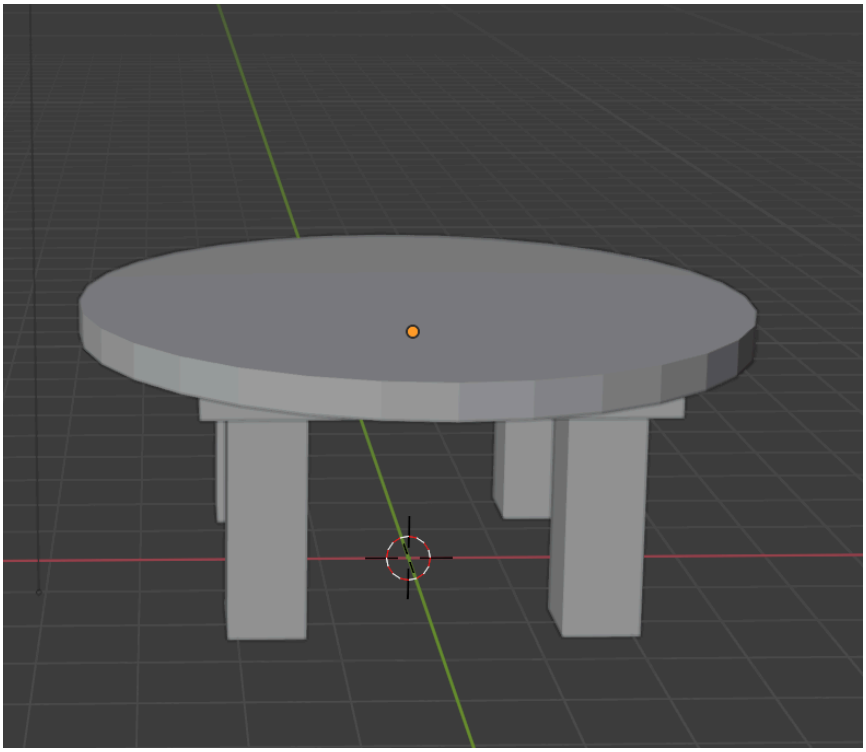


Figure 9: 3D model of a furniture item that could appear in a level.

Music & Sound Design

Motif and Soundtrack Direction

Overall, we want the soundtrack in the game to sound melancholic and nostalgic. The soundtrack from “To The Moon” heavily influenced our soundtrack direction. The main theme and motif in “For River” from “To The Moon” appears a few times throughout the game, but it still sounds different depending on the setting. In flashbacks of the past, it is a simplified version of the song to show the beginnings of a love story between the two main characters as children. In other versions, it feels much more melancholic compared to the former version.

We want a main motif to play throughout the game, with differing styles and arrangements depending on the level and setting. In the past, there would be a more “vintage” feel to the music. In the future, there would be a more “modern” and “technological” feel.

Our current main motif draft is a piano theme that slowly ascends to represent climbing up from the past. Link: (Theme Draft) Once it hits its peak, the melody starts to descend down and resolves itself with the final chord. This peak and slow drop represents getting over the past and moving on. In past levels, we would perhaps not have a resolution in the theme to represent the continuous struggle against the past, and in future levels, there would be more resolution in the themes.

Sound Effects Direction

We would like sound effects throughout the game to improve the immersion of the player with the environment. Since interaction with the objects and environment of the levels is the main part of the game, we would want to make sound effects for all of these interactions (such as object movement, plant growing). We would also like to include ambient sounds (birds chirping, rain on roof, TV static).

Swapping between the past and the future level will be accompanied by a camera shutter sound.

Furthermore, interactions with items, as well as pressing buttons on the menu, or flipping pages on the level select screen will have sound effects that will have sounds that relate to cameras, or flipping pages of an album.

Level Designs

All of our levels start with the player in the future level. They will need to switch between the past and future to figure out how to reach the goal in each level. The goal is denoted by a photo (an object that looks like a photograph) in each level. This goal must be reached in the future level and not the past level.

Time-Affected Variables (TAVs)

What we have affectionately named TAVs are essentially objects in our levels that change outcomes in the future depending on the state that they are left in in the past. These are pretty much the puzzle pieces that the player will have to make use of and put together in order to solve each level. We would start off by introducing these TAVs one level at a time, expanding on what the player can do with each one, and then, in later levels, combine them to make more complex puzzles. Below are some examples:

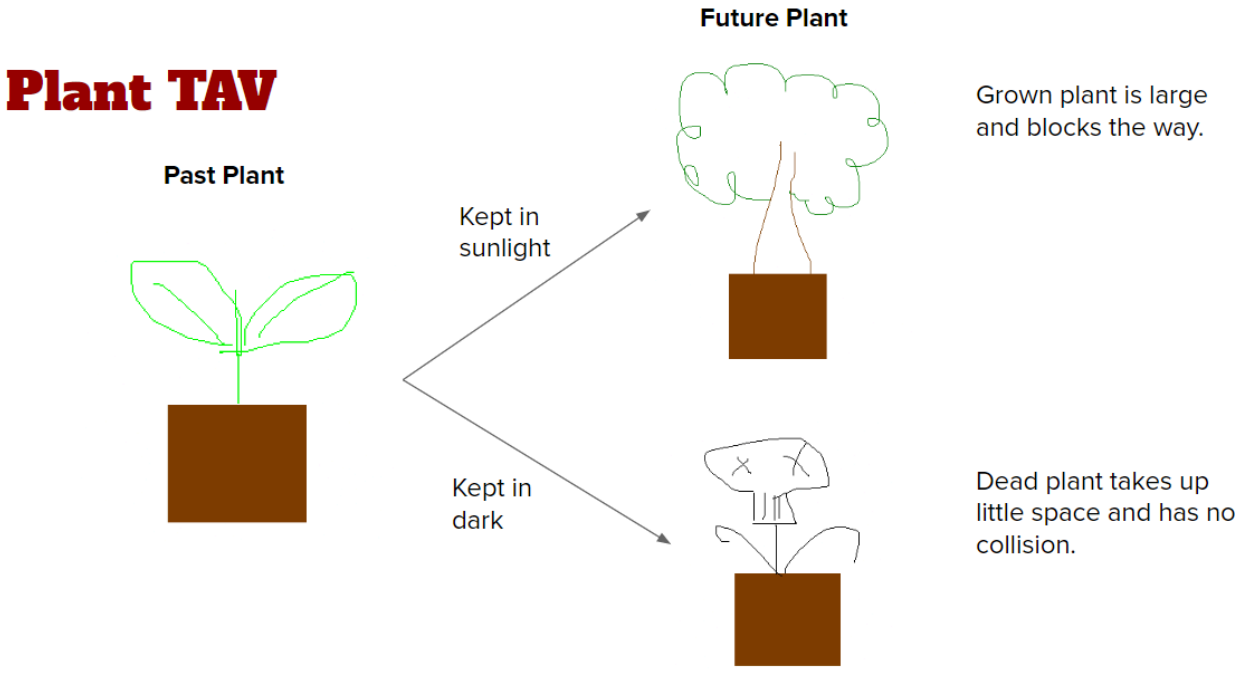


Figure 1: We plan to use plants as something that either helps the player with platforming or acts as a platforming obstacle. If you leave a plant under sunlight in the past, then it grows into a big tree/bush with collisions, so that it blocks the player's way. On the other hand, if you leave it in the dark, then it dies off, leaving a tiny dead bush with no collisions on it.

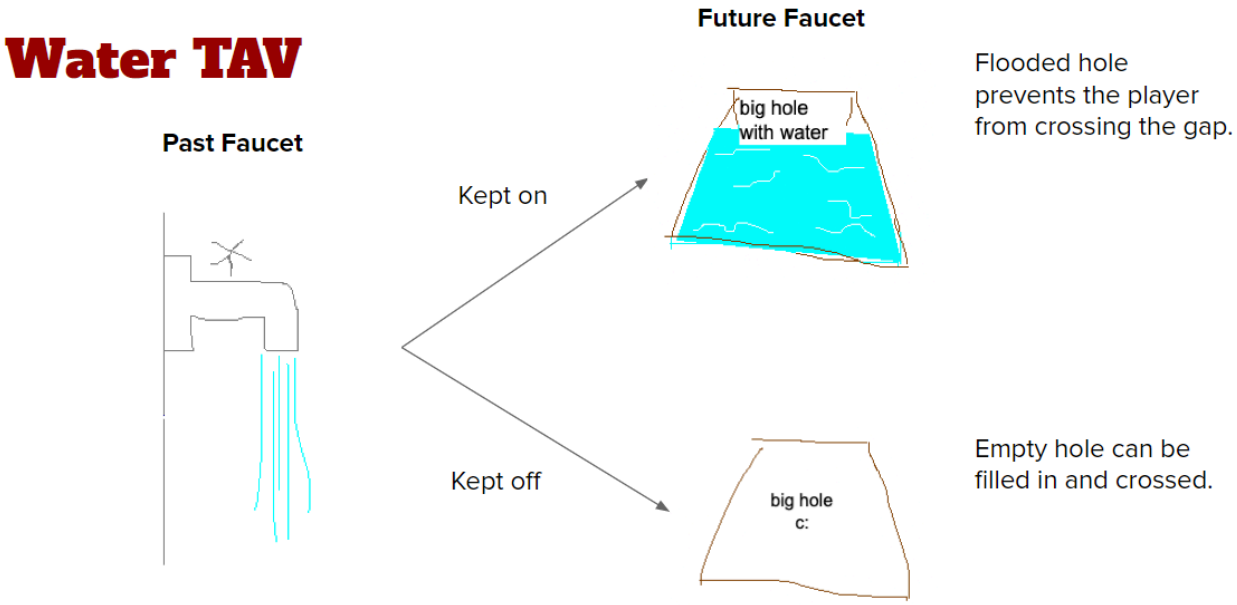
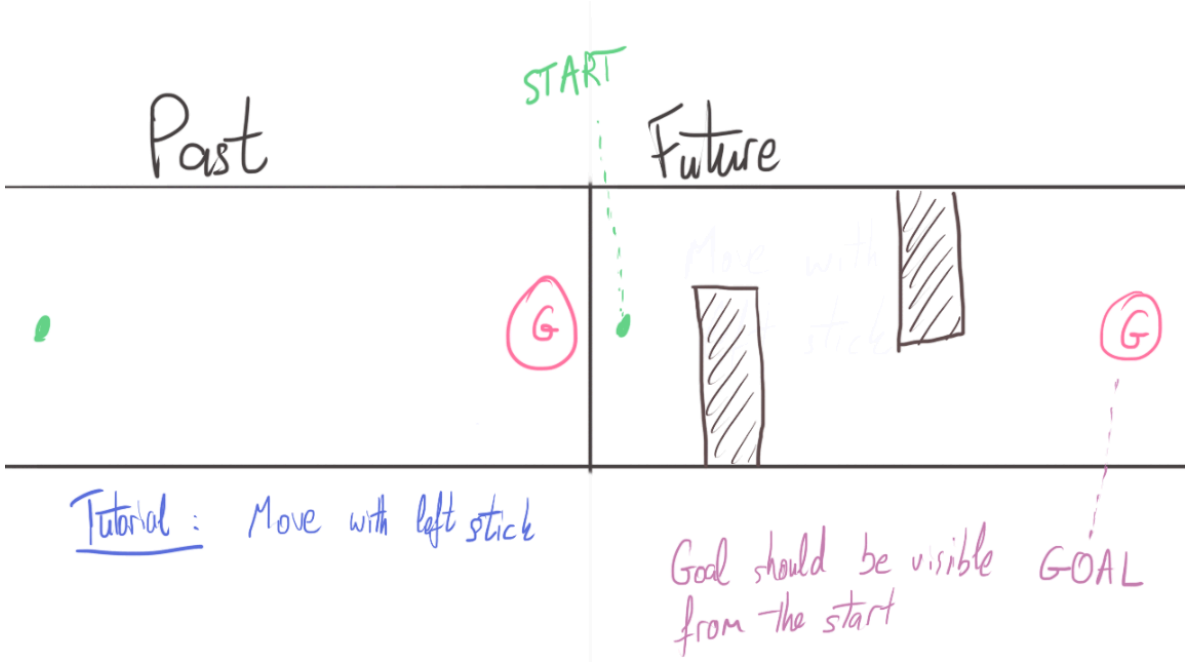


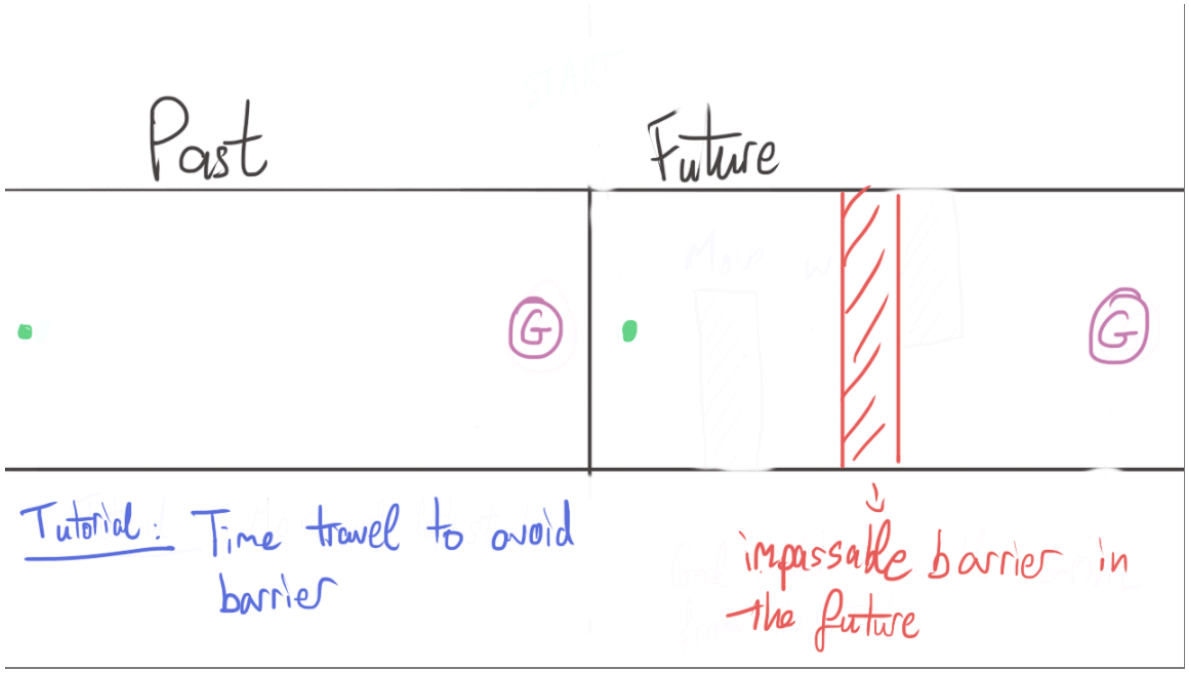
Figure 2: We plan to use water, which could be represented as a faucet or a hose that can be opened or blocked. If you leave it on, it would flood a region in, preventing the player from crossing it, and if you were to turn it off in the past, then it would leave the region empty, allowing the player to drop objects into it to bridge across and cross the gap. The concept of rust could be applied to water as well.

Easy/Tutorial Levels

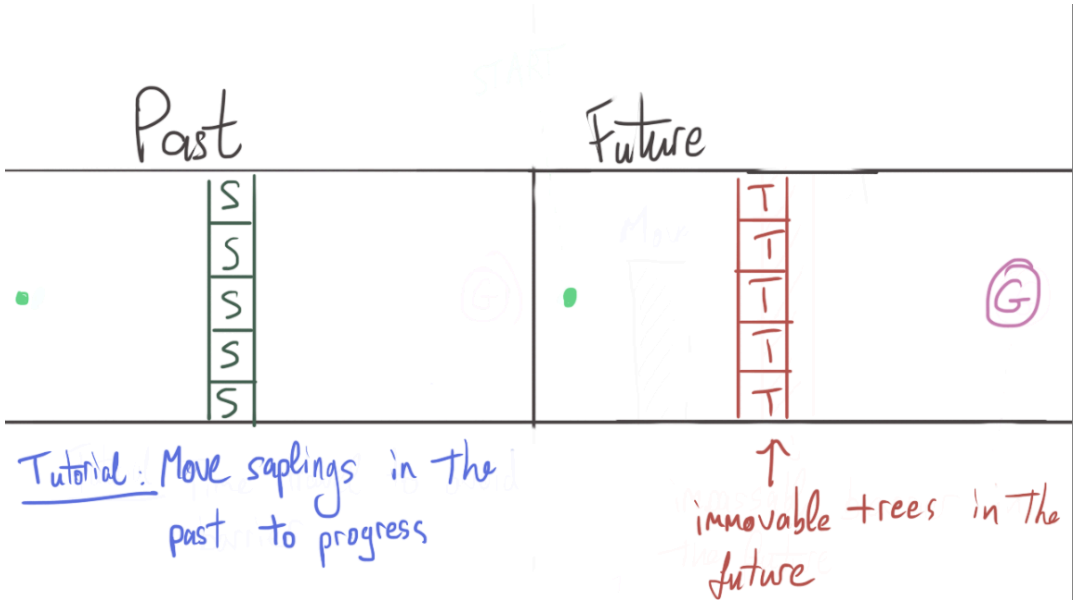
Since our game is a puzzle game, we need to be very thorough with what players can do with time switching and object manipulation. Each tutorial level explained in this section is dedicated to one simple concept that will help with more complicated levels later on.



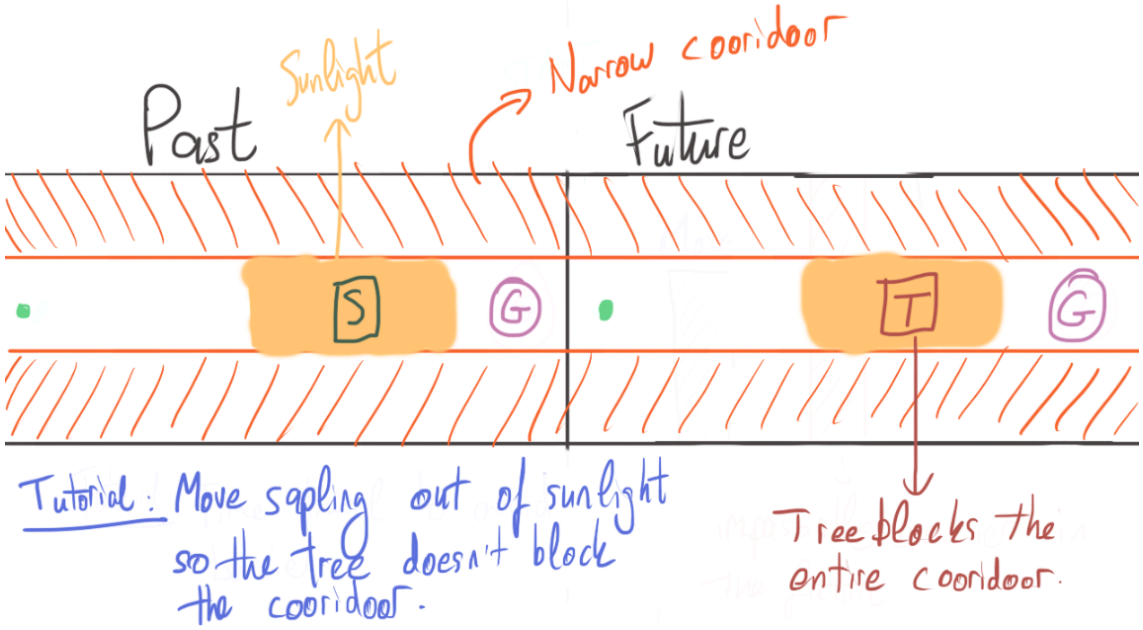
Tutorial 1: The player is shown a goal to reach in the future, and needs to navigate around the walls in order to reach it. No time switch is needed. *Teaches how to navigate with the left stick (controller) or with WASD keys (PC).*



Tutorial 2: When the player first enters the level, there is an impassable barrier in the future. They must switch to the past to see that there is no barrier to the goal. *This teaches the player how to switch time and manipulate their position in the past and future.* 1. Switch to the past 2. Move past the location of the barrier from the future 3. Switch back to the future. Then, the player will be located past the barrier. 4. Move to the goal.

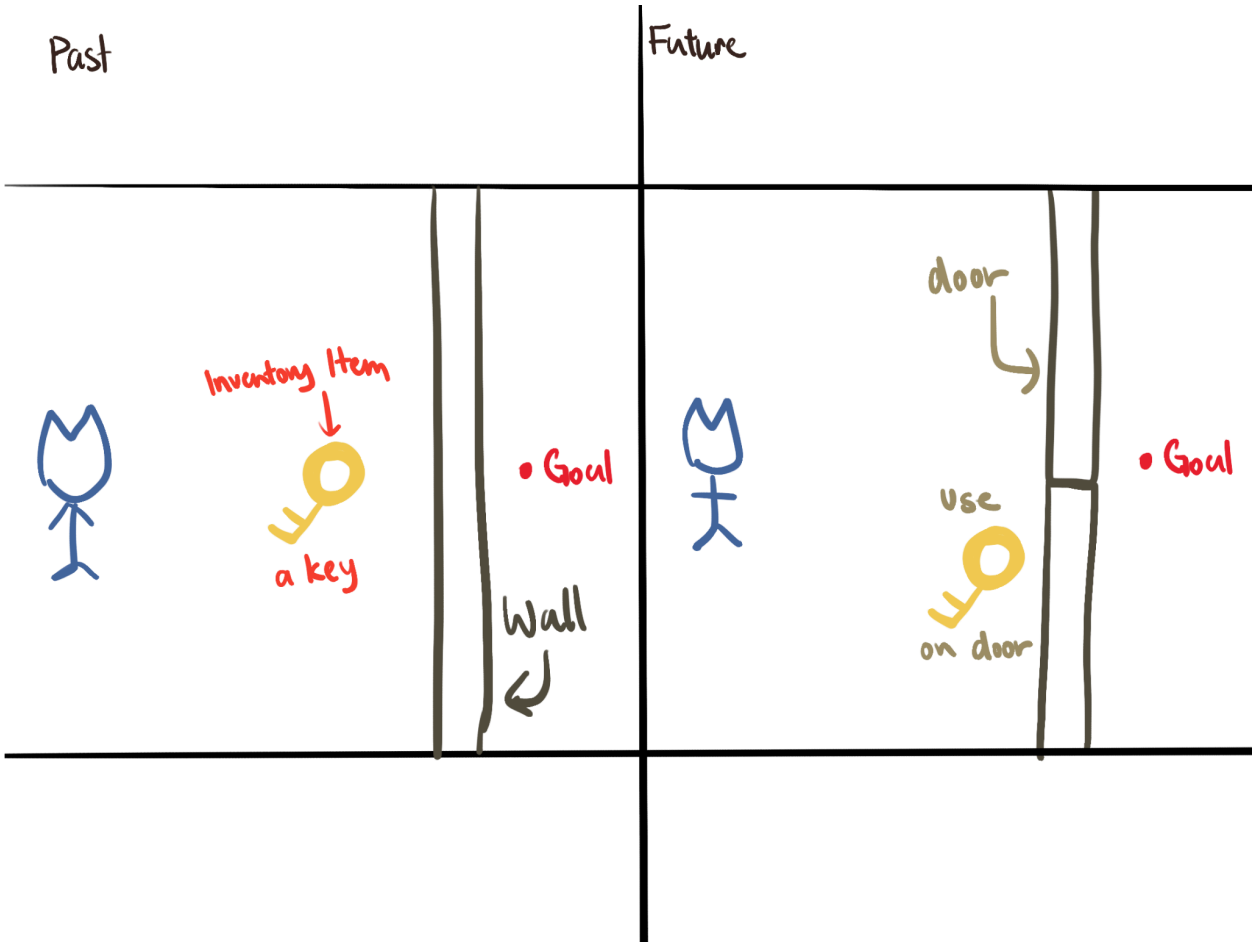


Tutorial 3: The player starts in the future with fully grown trees blocking the path to the goal. They must switch to the past to see that the trees are just small movable saplings in the past. *This teaches the player that time can be used to grow or reverse trees/plants.* 1. Switch to the past 2. Move the small saplings to an arrangement where there is a passable path in the future. 3. Switch back to the future. Then, the player can move through a path they made. 4. Move to the goal.



Tutorial 4: The player starts in the future with a big tree in a narrow corridor. There is no navigation around it, however, there is sunlight shining onto the tree. They must switch to the past where the tree is still a small passable sapling, and move it out of the sunlight so it does not grow and instead dies. *This teaches the player how to manipulate the placement of plants with*

sunlight. 1. Switch to the past 2. Move sapling out of sunlight 3. Switch back to the future, the sapling is now dead and has no collison (passable) 4. Travel down the corridor to the goal.



Tutorial 5: The player starts off in the future and there's a door that's blocking them from accessing the goal. The player needs to go back to the past to pick up the "key". They can't use it on the door in the past because there is a wall instead. The player needs to now go back to the future and use the key (an inventory item) on the door and unlock it so they can get to the goal. 1. Switch to the past; 2. Obtain key; 3. Swap to the future; 4. Use key on door and walk to goal. *This teaches the player that inventory items can transfer across time, from past to future. It will also teach players that pressing "A" to interact can also apply to picking up items.*

Medium Difficulty Levels

The goal of this level is to restore a photo that has been faded out by the sunlight. Then, the player can go and collect it (reach the goal). This will be communicated in a dialogue box in the beginning of the level, informing the player of this requirement. In this level, the player needs to know:

- How to navigate
- How to pick up objects

- How to move objects
- How to switch between past and future
- Plant behavior in the sunlight in the past and future (wilt and grow)

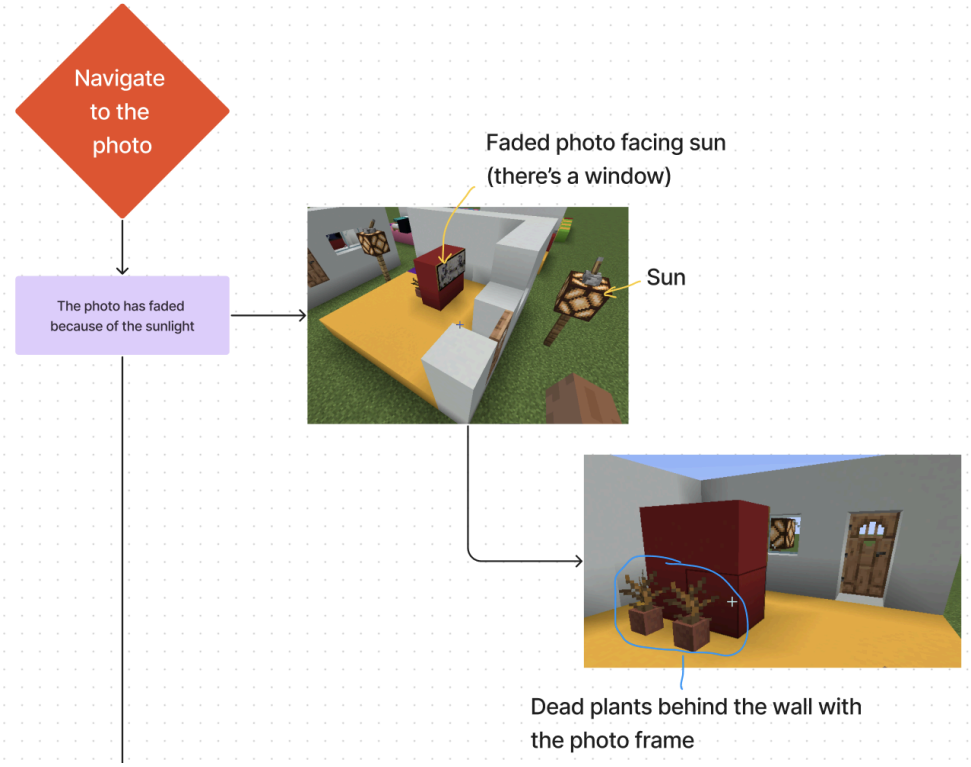


Figure 1: The player starts in a room with a photo facing a window with sunlight shining through it. The player can navigate to the photo but the player cannot interact with it since it has faded from the sunlight. The player can navigate around to see that there are dead plants in the room as well.

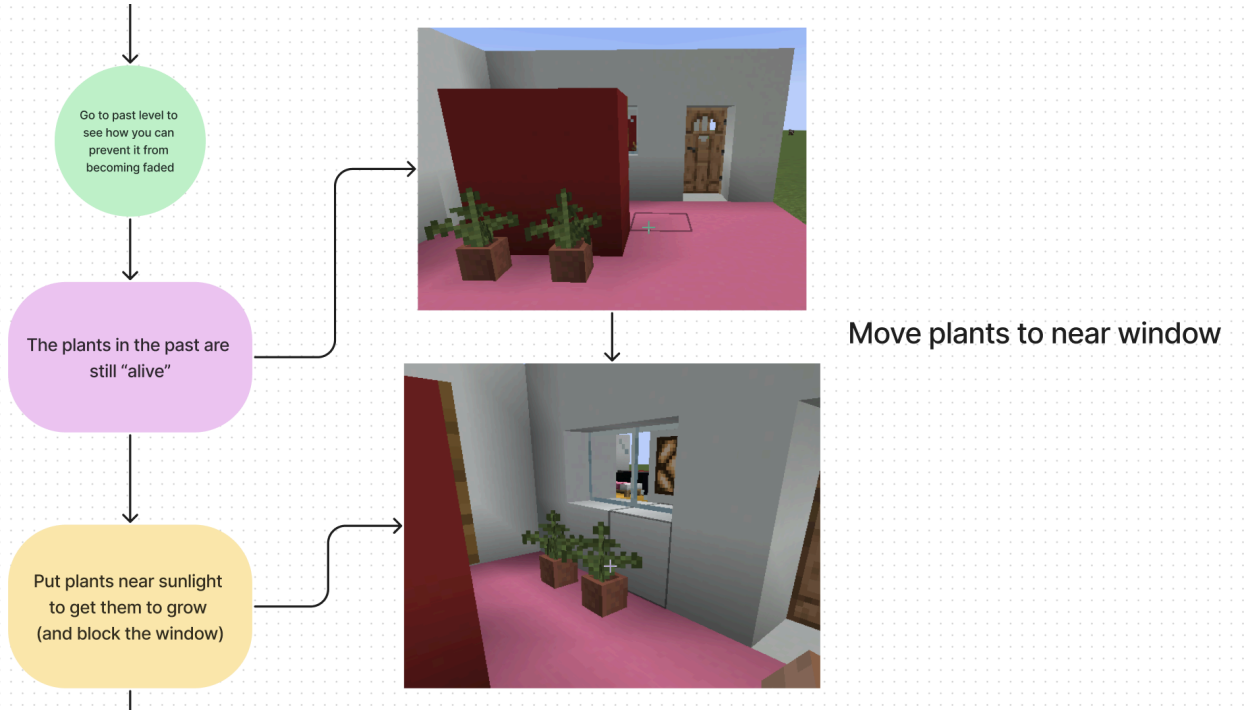


Figure 2: The player needs to switch to the past to see what more can be done. The plants in the past are still alive. The player should know that plants can grow to be much bigger. Plants should be moved to the window in the past so that they will grow and be bigger in the future.

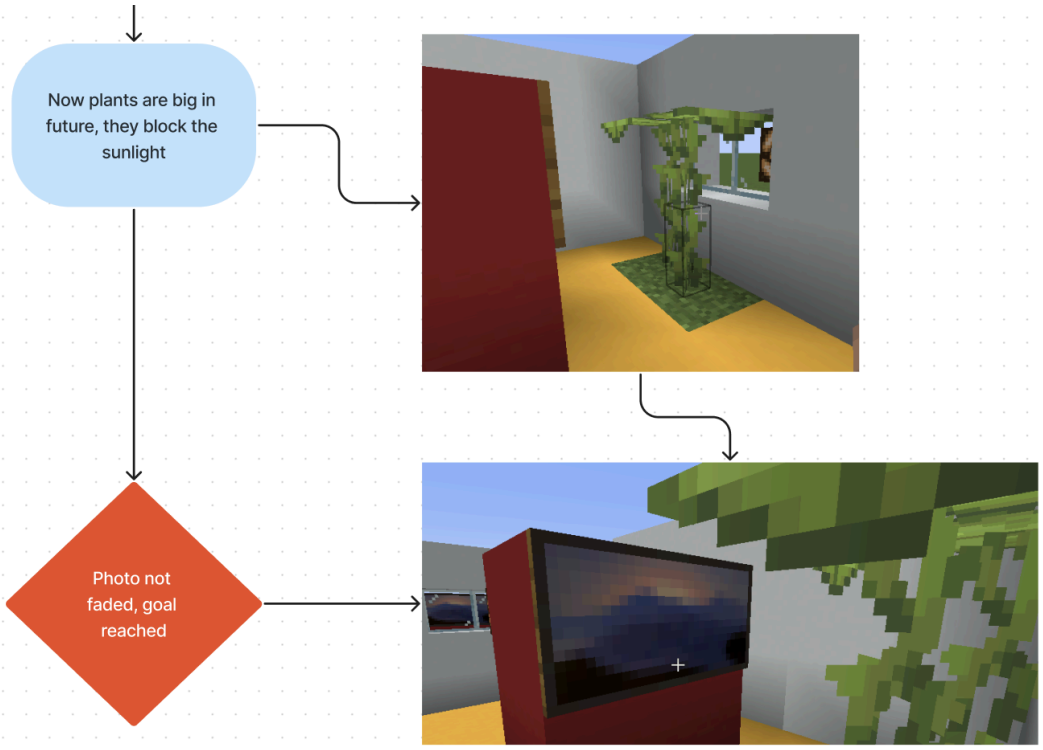
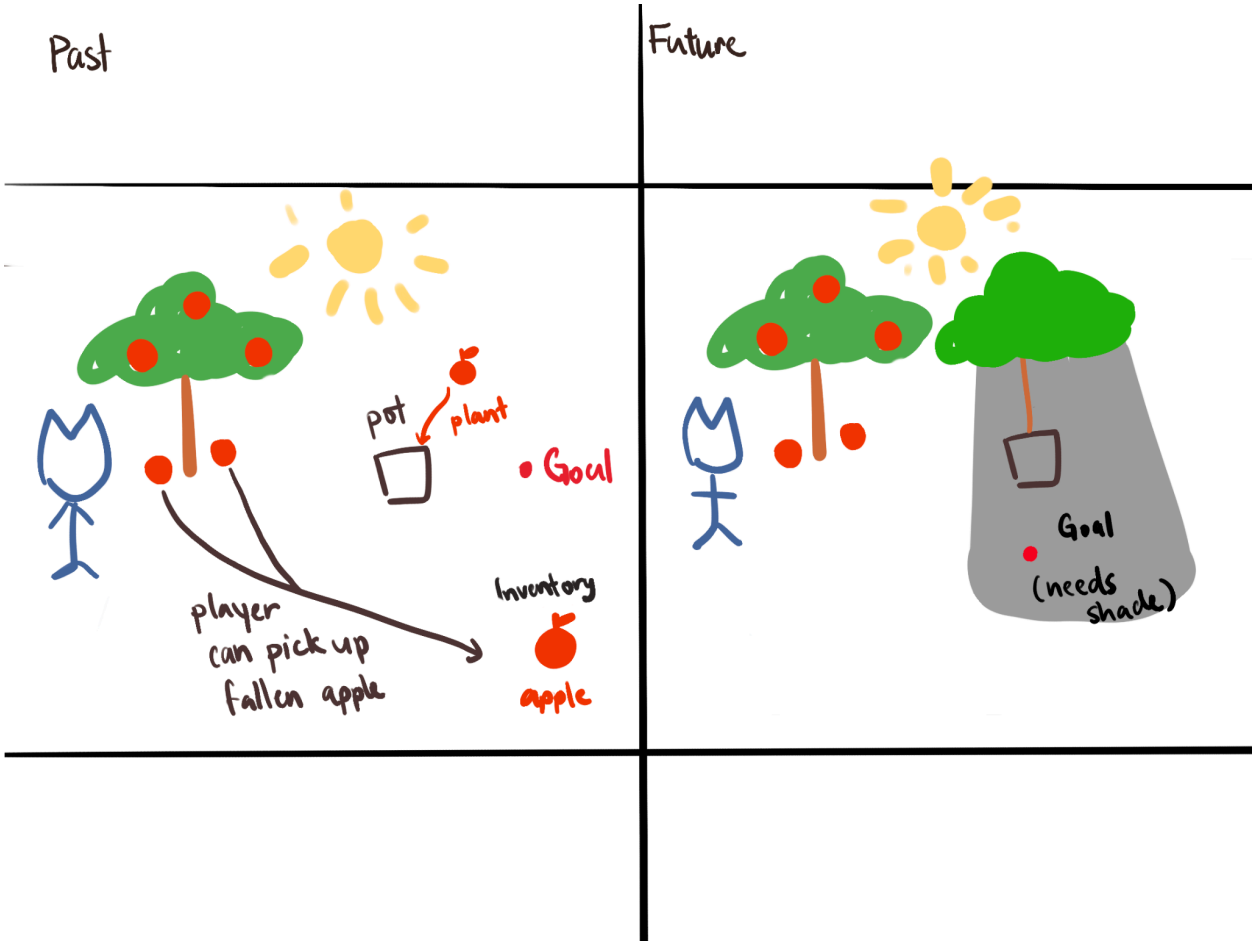


Figure 3: The player needs to switch to the future to see the effects of sunlight on the plant. If the plant is placed in the right position next to the window, it will grow. The size of the plant will block out the sunlight from the window and the photo will not be faded. In the case where the player does not successfully place the plants in the right position, they will need to switch back to the past to move the saplings. There will be indicators in the level to highlight that the sun faded the photo, and the interactable areas will be marked as well.

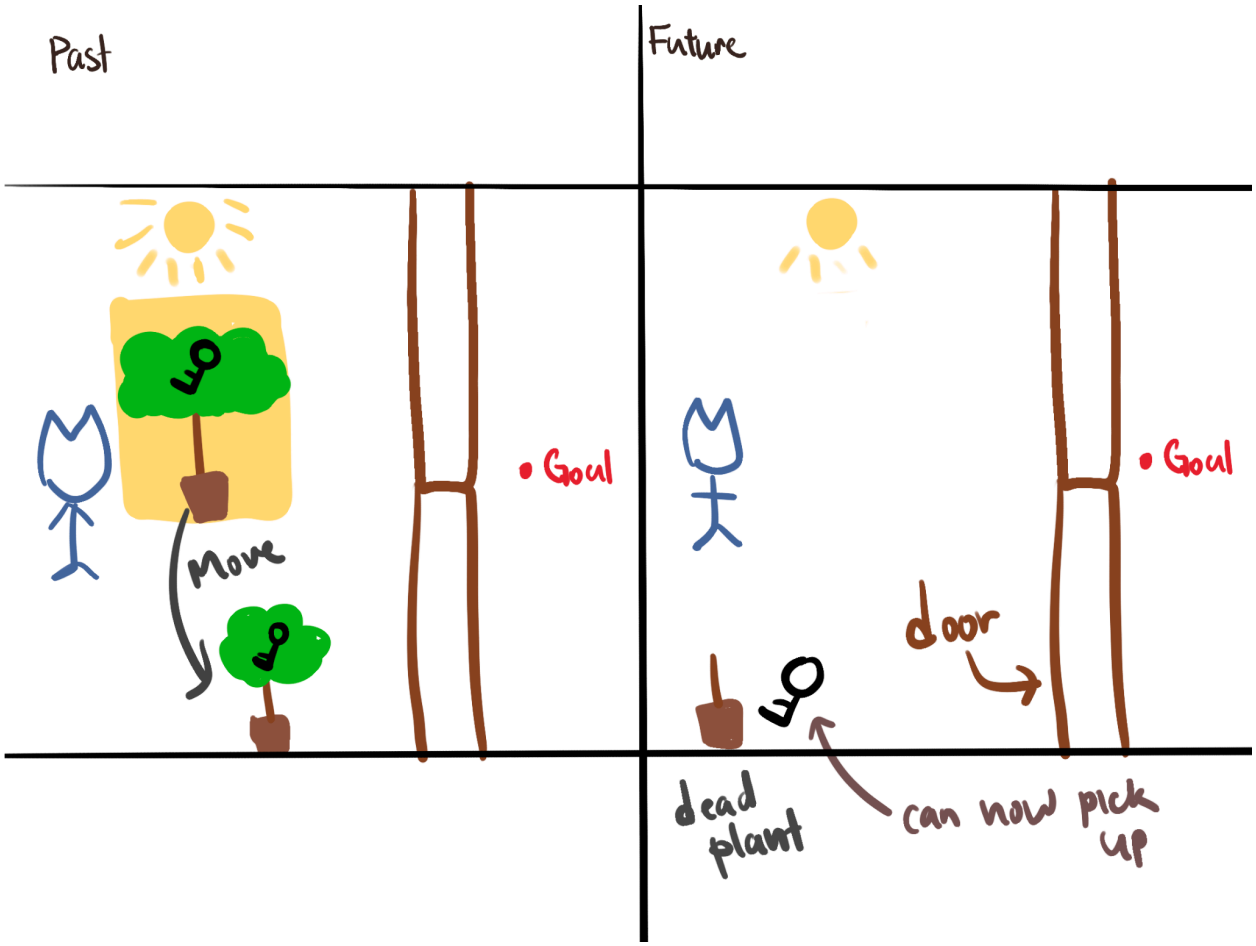
Overall, this level requires some thinking on how a photo should be restored. The key is that the player needs to block the sunlight somehow. We believe that the knowledge of plants growing big will lead them to performing the correct actions to the puzzle, however, we will make sure to add indicators so that this is easy to infer. Through playtesting, we will also be able to know if our puzzle design is too easy or hard.



The goal of this level is to restore a photo that has been faded out by the sunlight. Then, the player can go and collect it (reach the goal). This will be communicated in a dialogue box in the beginning of the level, informing the player of this requirement. In this level, the player needs to know:

- How to navigate
- How to pick up objects
- How to pick up inventory items
- How to move objects
- How to switch between past and future
- Plant behavior in the sunlight in the past and future (wilt and grow)
- Plant behavior in pots (planting)

The player needs to first pick up the apples that have fallen on the ground, then plant them in the pot to the right. In the future, the plant will grow big and block the sunlight, so the photo will not be faded in the future level. The goal can then be reached because the photo is no longer washed out by the sunlight. *This teaches the player that inventory items can be used and they can grow into big plants under sunlight.*

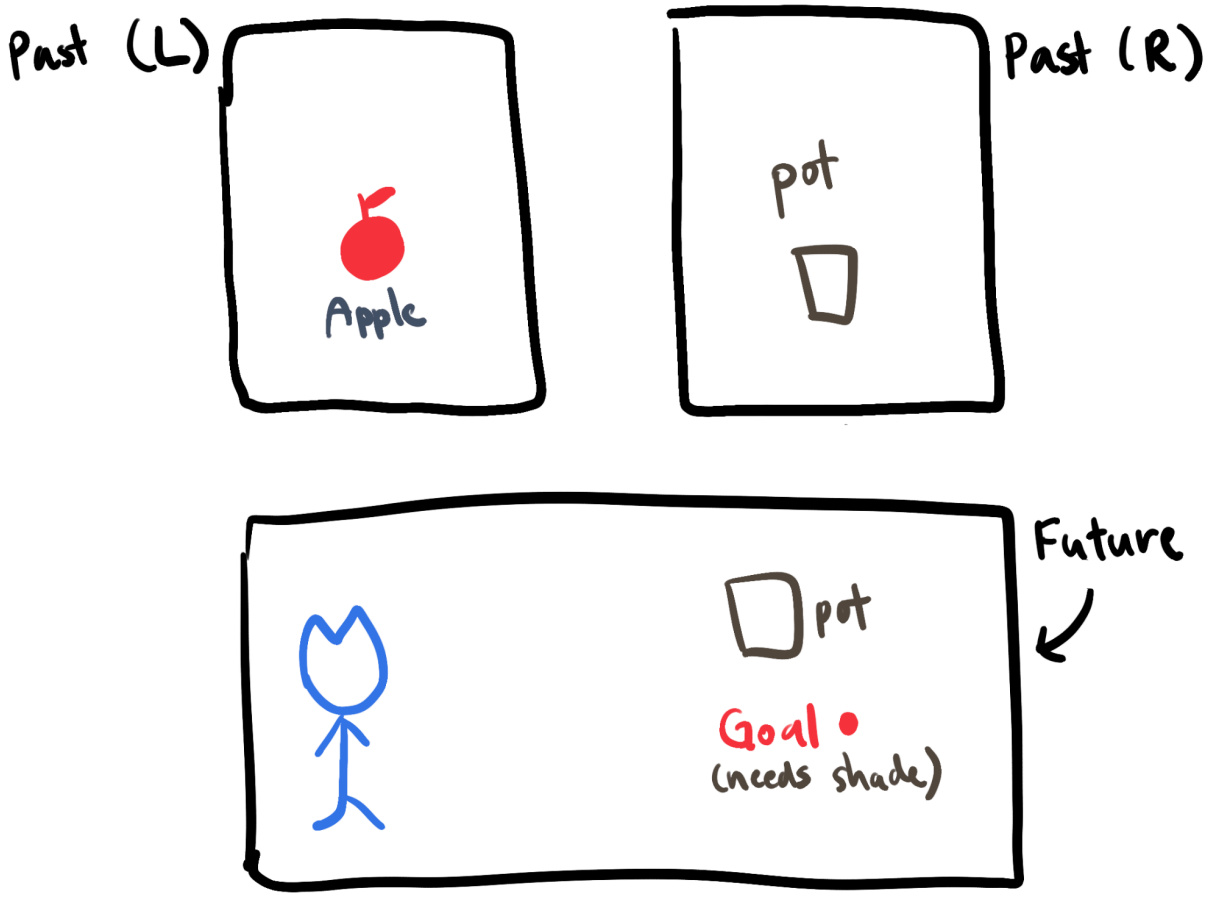


The goal of this level is to reach the photo locked behind the door. This will be communicated in a dialogue box in the beginning of the level, informing the player of this requirement. In this level, the player needs to know:

- How to navigate

- How to pick up objects
- How to pick up inventory items
- How to move objects
- How to switch between past and future
- Plant behavior in the sunlight in the past and future (wilt)

The player must go back into the past level to move the tall potted plant out of the sunlight, so that in the future level, the tall potted plant “dies” and the key falls to the ground, allowing the player to pick it up and use it on the door.



The goal of this level is to restore a photo that has been faded out by the sunlight. Then, the player can go and collect it (reach the goal). However, the past level has been split, and the player will need to learn how to move from the “left” side of the past level to the “right” side of the past level to solve the puzzle. The player cannot move items from the past (left) to the past (right) and vice versa. This will be communicated in a dialogue box in the beginning of the level, informing the player of this requirement. In this level, the player needs to know:

- How to navigate
- How to pick up objects

- How to pick up inventory items
- How to move objects
- How to switch between past and future
- Plant behavior in the sunlight in the past and future (grow)

The player will learn:

- How to switch between past (left) and past (right)
    - Pressing Y while in past (left) will move the player into past (right). Pressing Y again will transport the player back to the future level.

The player first needs to go into the “left” side of the puzzle and pick up the apple. Then, they need to go to the “right” side of the level and move the pot to “behind” the goal (where there should be sunlight). Finally, they need to plant the apple in the pot so that it grows into a big tree in the future and it will block the sunlight. There will be additional pots added to the past (left) level to “trick” the player into immediately planting the apples in the pots in the past (left) level, challenging their assumption that they can just move the pots from the past (left) level to the past (right) level.

Hard Level

The goal of this level is to obtain the photo. However, once again it has been faded by the harsh sunlight in the future level. One more thing that adds to the complexity of this level is that the past level has been “fragmented” into two. The player cannot move items from the “left” side of the level to the “right” side of the level. They will also need to first gain **access** to the “right” side of the past level. This will be communicated in a dialogue box in the beginning of the level, informing the player of this requirement and situation. In this level, the player needs to know:

- How to navigate
- How to pick up objects
- How to move objects
- How to use inventory items
- How to switch between past and future
- Plant behavior in the sunlight in the past and future (wilt and grow)
- Tree behavior over time (growing fruits)
- Strategically swapping between a “segmented” past level

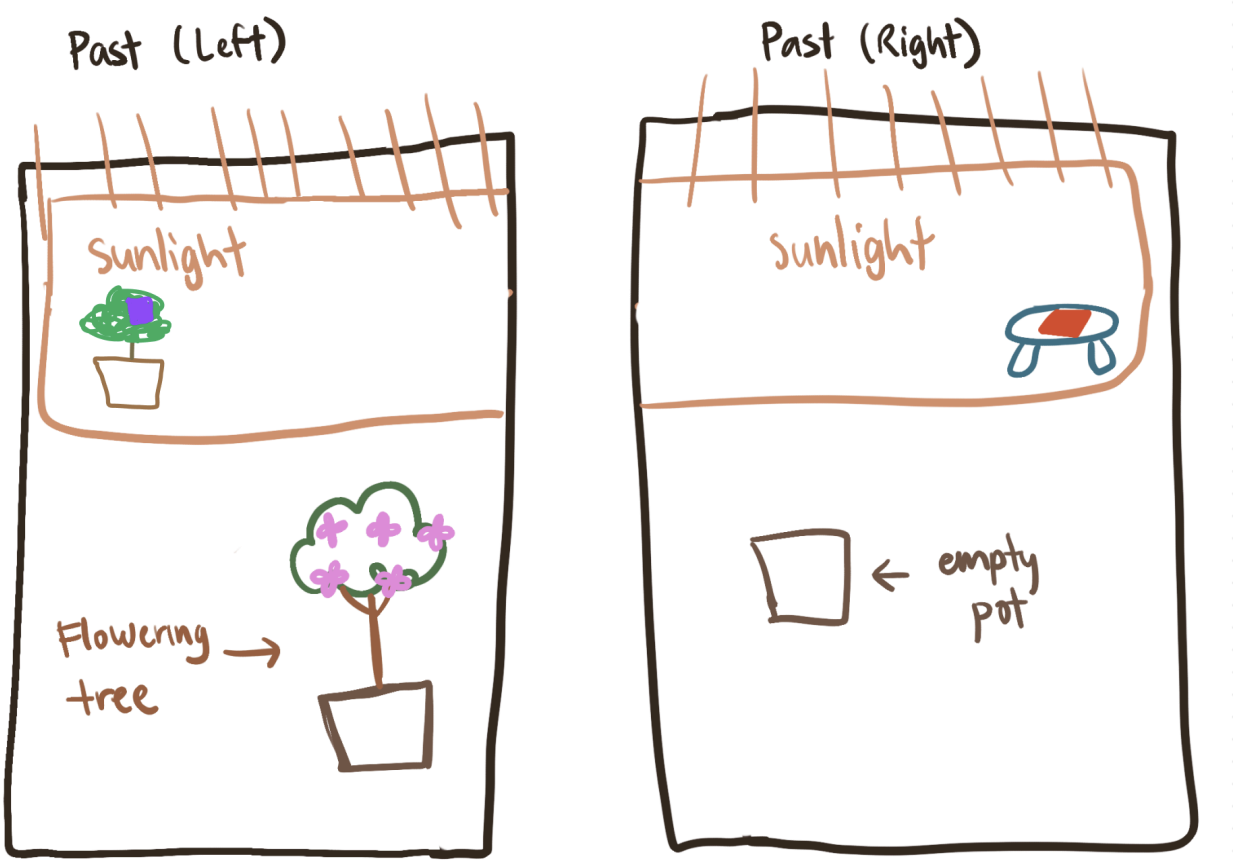


Figure 1: The “Fragmented” Past level. The section on the right side is inaccessible at first, and the player must first obtain the purple item on the tree on the top left before accessing it.

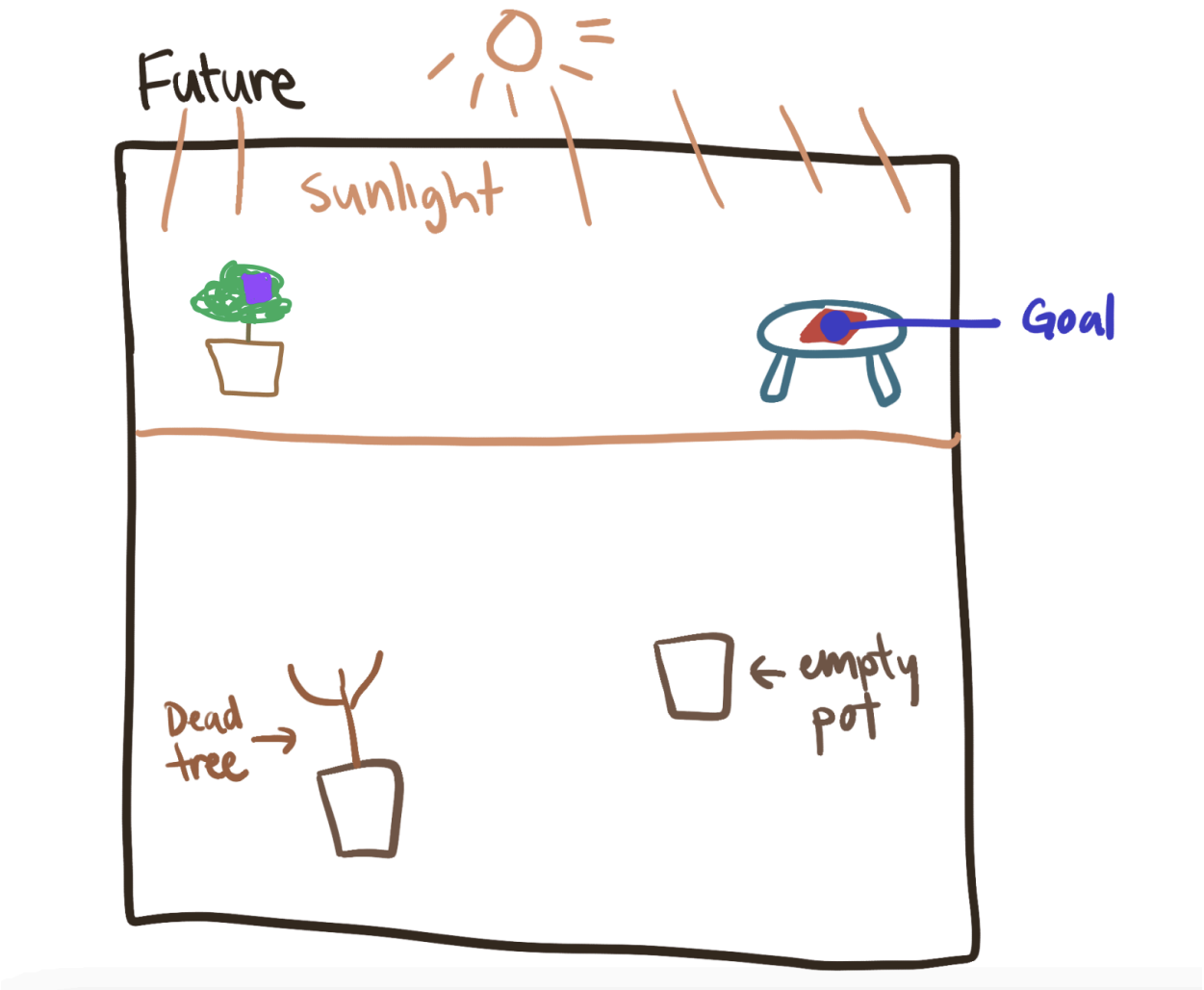


Figure 2: The “Complete” Future level. The player begins in the future level and needs to travel to the past level in order to progress.

“Hard” Levels should only be implemented once the player has had experience with all of the mechanics that it will be utilizing within it. For this particular level, it will require some additional “easy” levels that teach them:

- How to obtain Items on plants
- What the purple item represents in terms of past level segmentation
- How to swap between two segmented parts of the past level
- How to create shadows with plants
- How to plant seeds to grow new plants

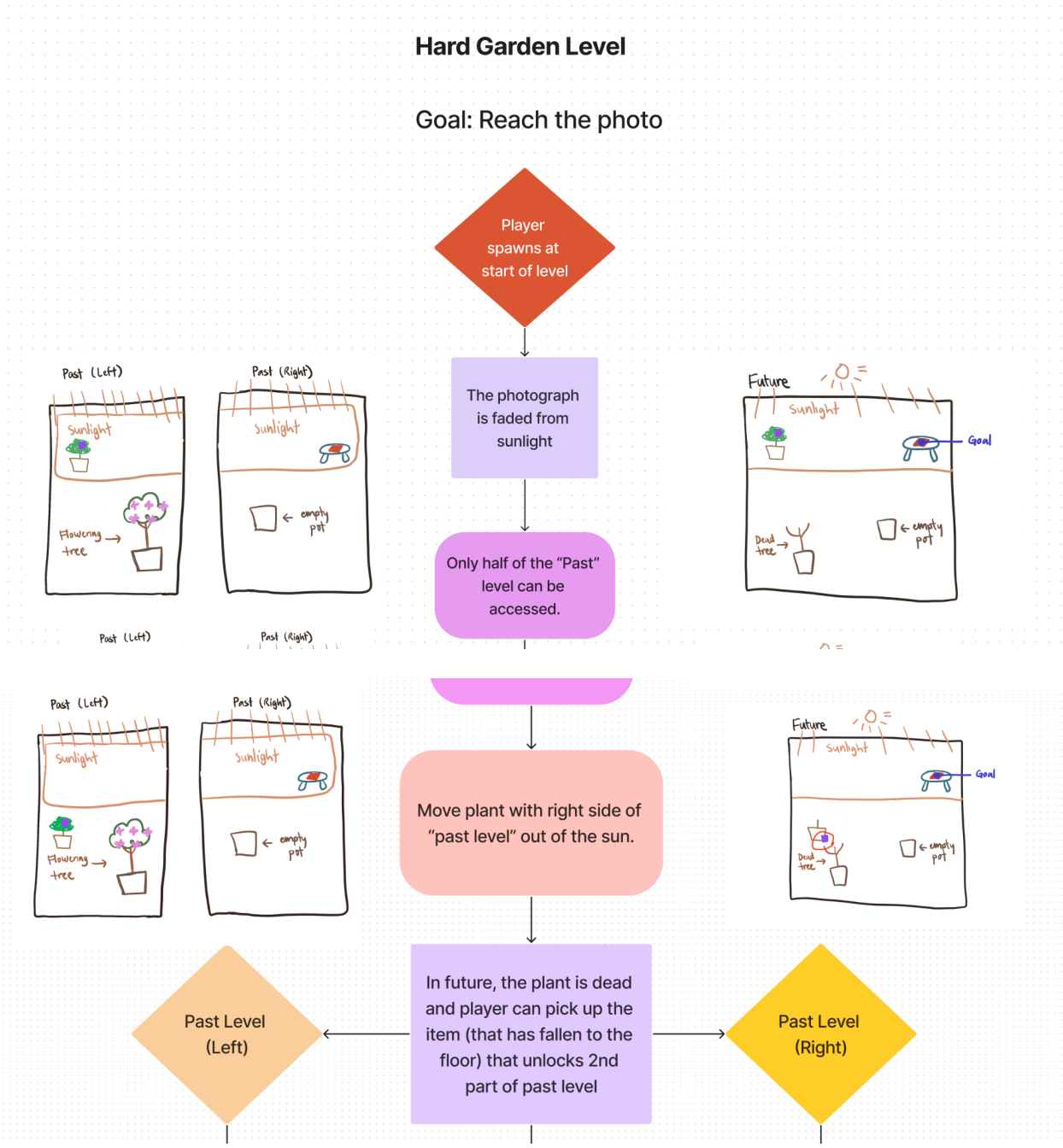


Figure 3: How to obtain the purple item to access the "right" side of the past level. It is expected that the player is familiar with the concepts presented in this level, such as the purple item, etc.

At this stage, the purple item could be anything; it could be a key, a missing half of a photo, etc. It is a placeholder and can be adapted into anything.

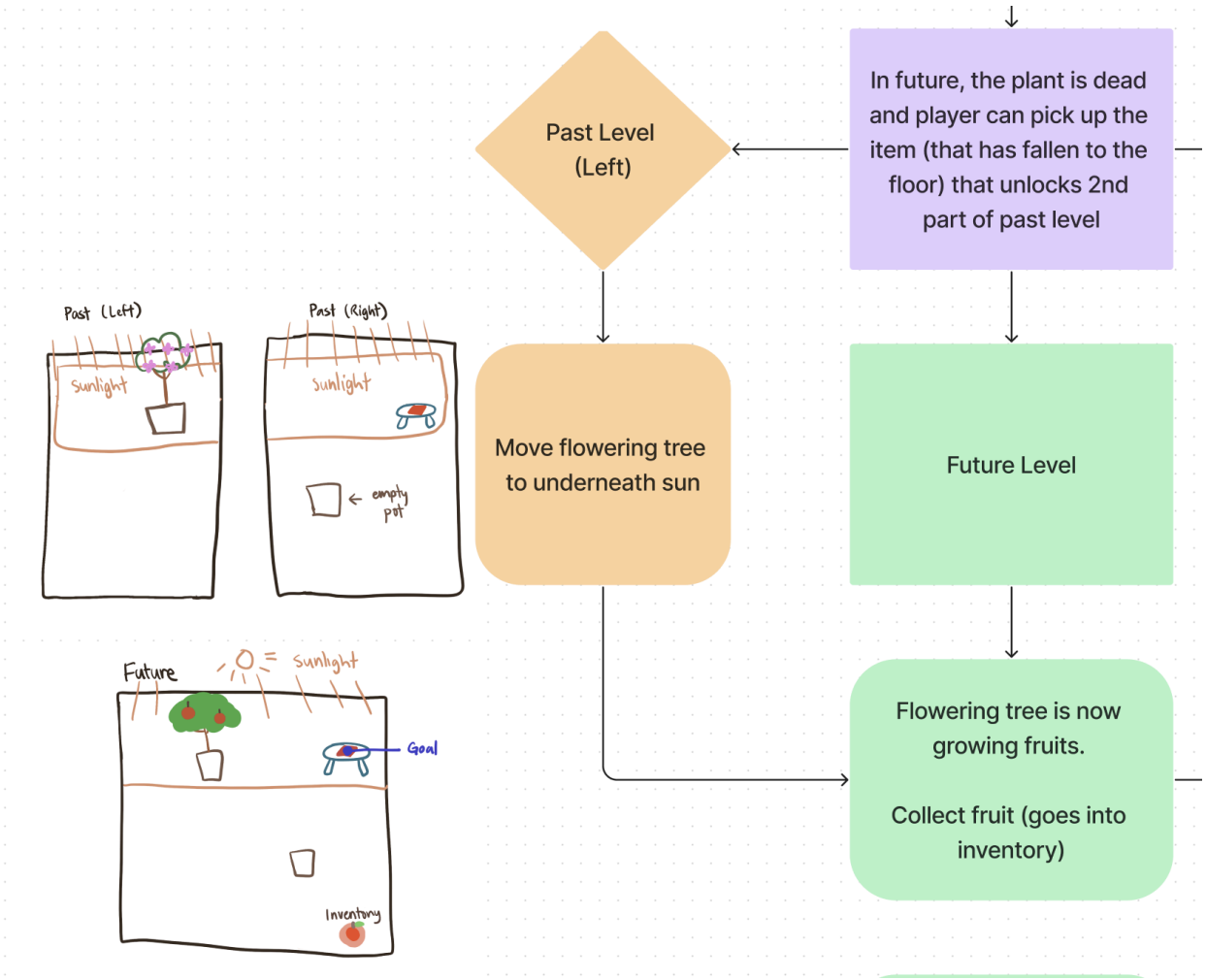


Figure 4: We move the flowering plant to the sunlight so that it can grow and bear fruit in the future. The player will then collect the apples that have grown to use on the “right” side of the Past level.

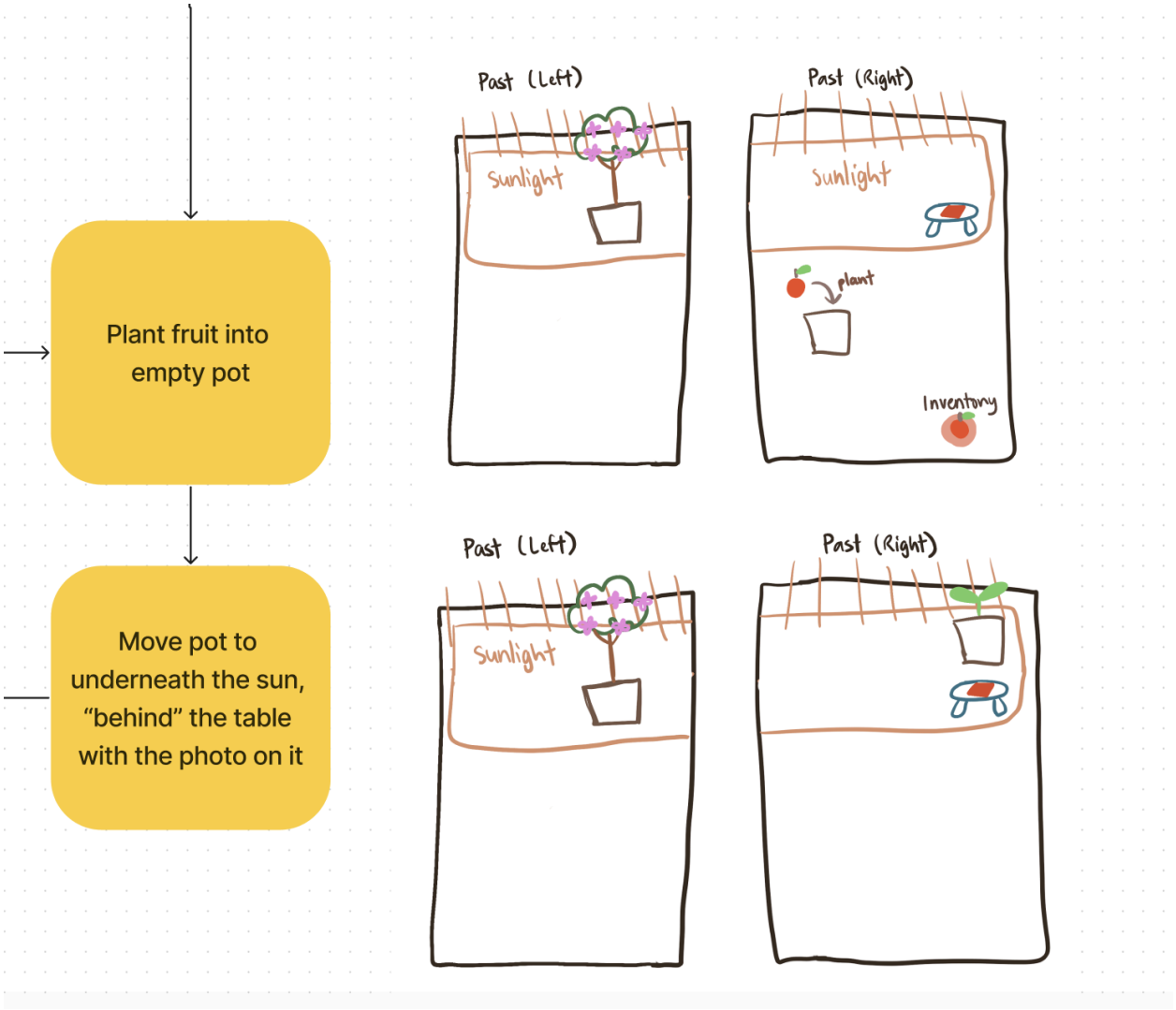


Figure 5: Going to the "right" side of the past level, the player can now plant the apple into the empty pot. Then, they must move the pot to "behind" the table with the photograph (the goal is to collect the non-faded photograph in the future level). The table is immovable.

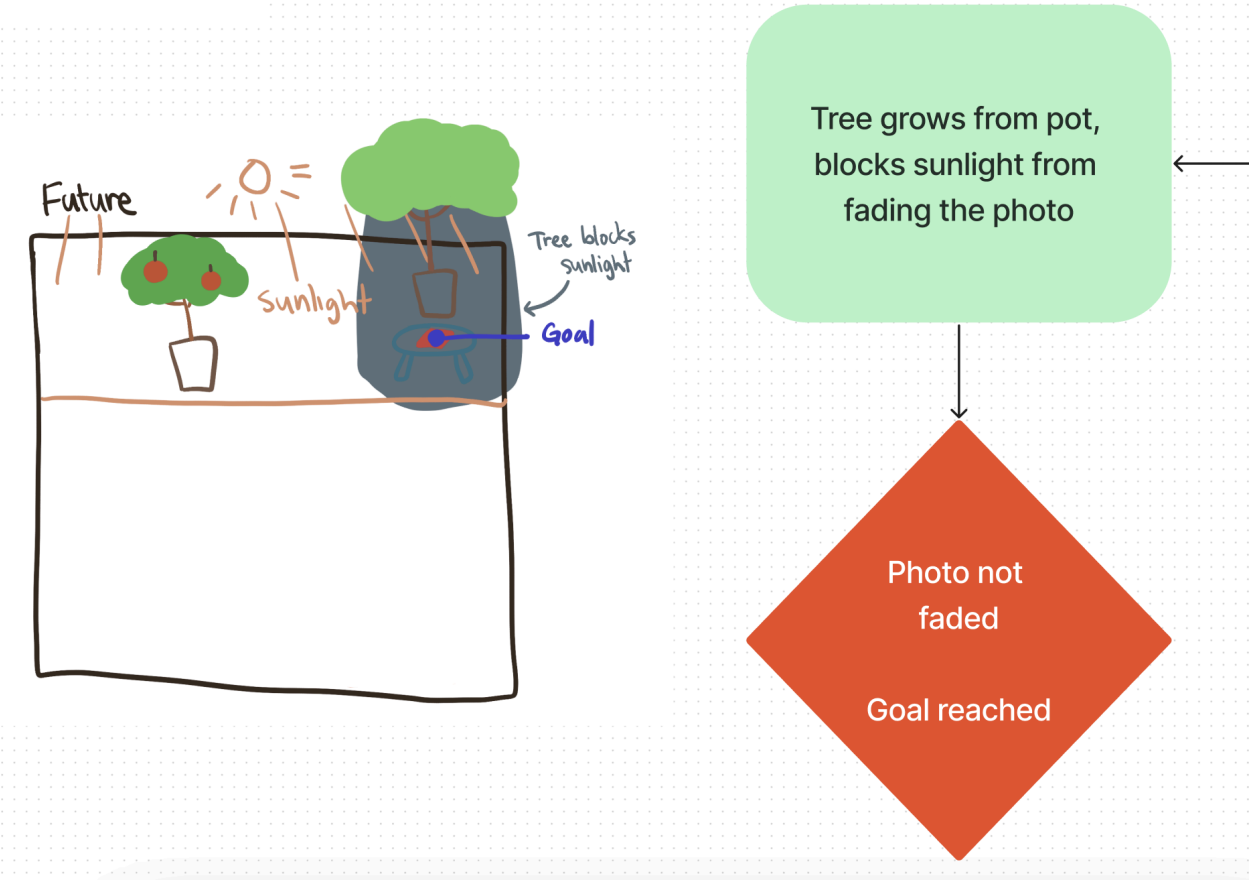
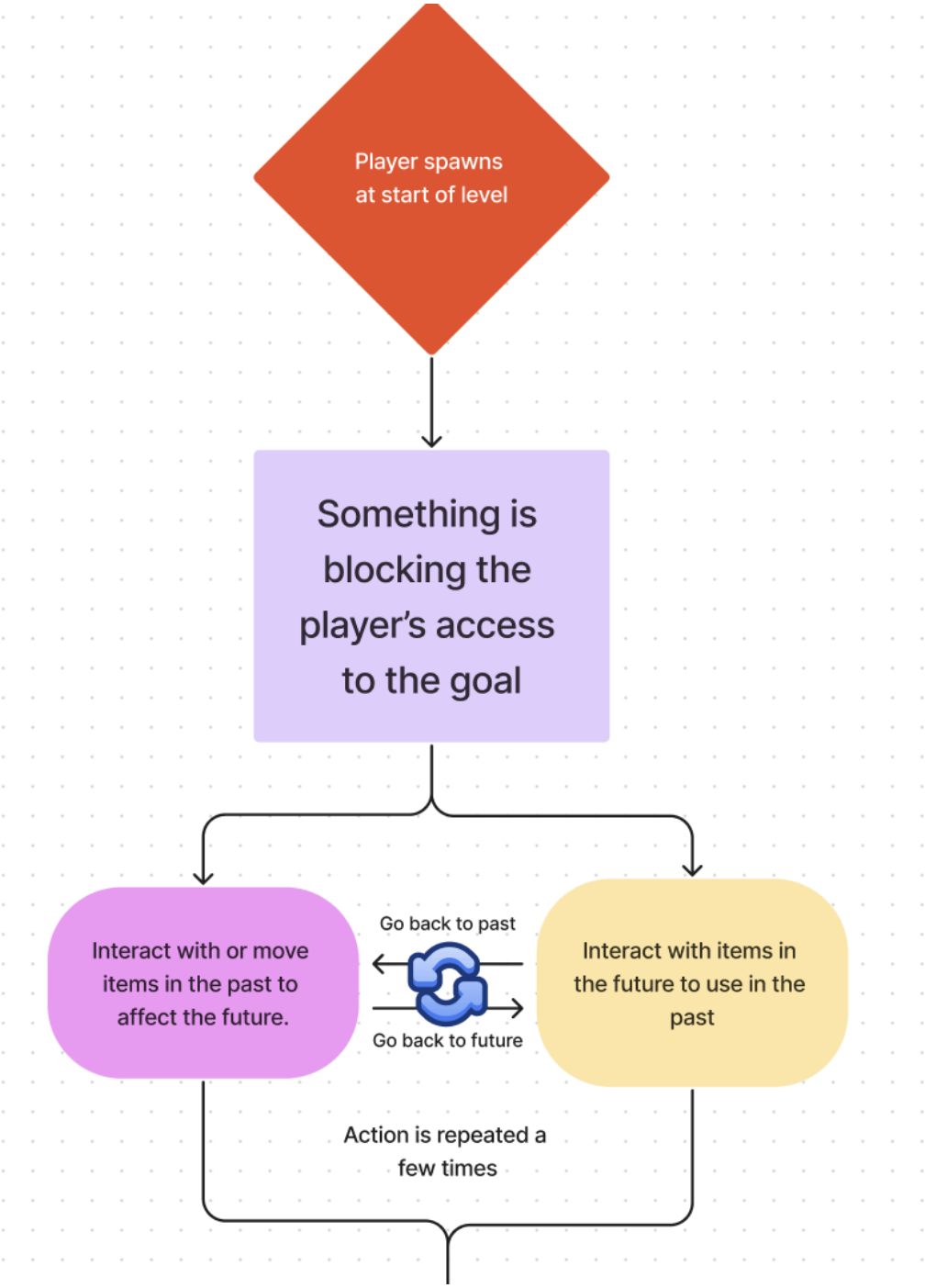


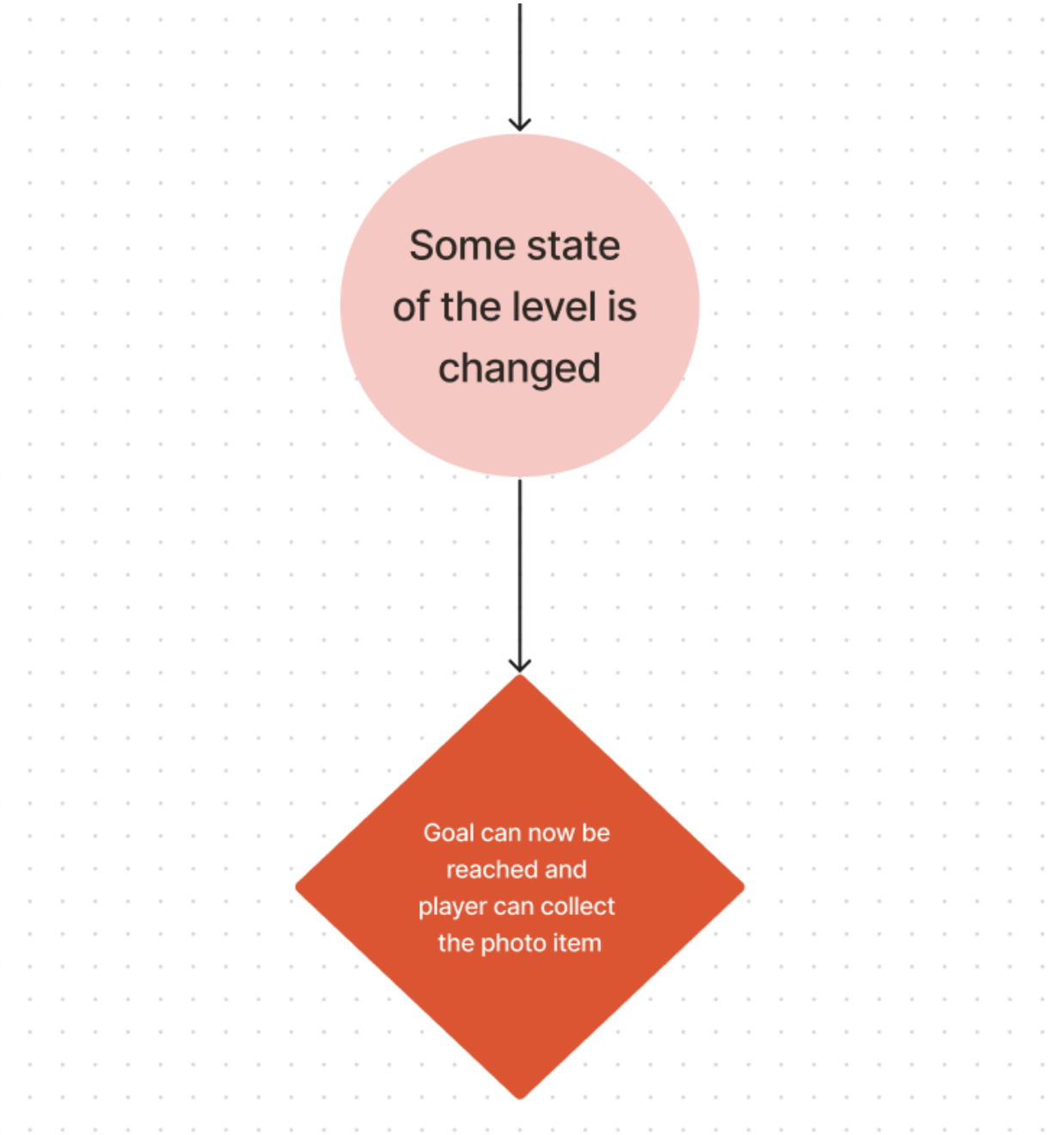
Figure 6: In the future level, the apple tree we just planted has grown and casts a shade onto the photograph. Now, there is no longer harsh sunlight that will cause the photo to fade. The player can not collect / interact with the photo item on the table, which completes the level.

Control Flow Diagrams

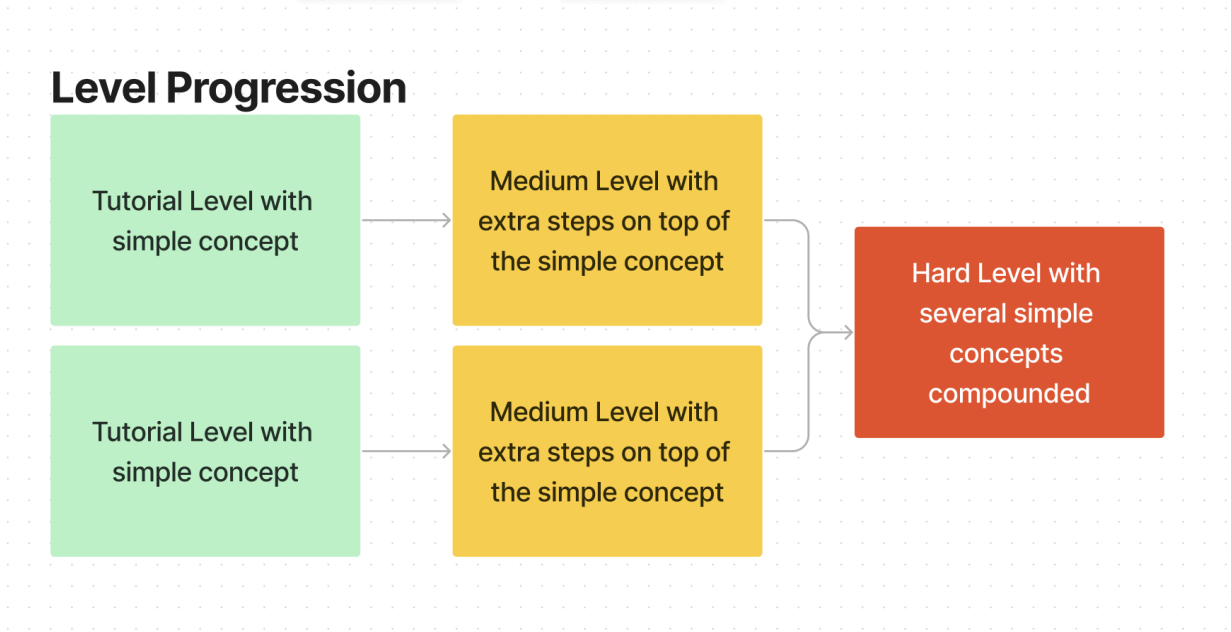
Below is the overall progression that the puzzle levels will be following. For more in-depth flow diagrams, please consult **Level Designs**.

For the full flow diagrams, please consult the **FigJam**.





Visualization of how puzzle levels are designed:


Level Progression
Tutorial Level with simple concept
Tutorial Level with simple concept
Medium Level with extra steps on top of the simple concept
Medium Level with extra steps on top of the simple concept
Hard Level with several simple concepts compounded

Team Roles & Responsibilities

Name	Roles
Chloe Z.	Team Lead, Project Manager, 3D Modeller and Level Artist, Game Engineer, Character Design and Narrative Design
Oktay C.	CS Tech Lead, Game Engineer, Scripting, Model Management, Voice Acting
Elena W.	Game Engineer, Scripting, Level Designer Assistant, UI Designer
Edward L.	Game Engineer, Scripting, Level Designer
Ethan S.	Character Design, 3D Animation & Rigging, 3D Modeling
Yan X.	2D Concept Artist, Level Artist, 3D Modeling
Nimah S.	3D Modeling, Animation & Rigging, 2D Concept Artist
Mimi Y.	Sound Effect Engineer, Soundtrack Composer
Fionn L.	Sound Effect Engineer, Soundtrack Composer
Grace X.	Sound Effect Engineer, Soundtrack Composer

Development Timeline

Alpha Demo Presentation - Feb 28th
Beta Demo Presentation - Mar 21st
Final Game Submission - Apr 19th

Week 5 Feb 6 - 12	**Gameplay** ● “Object position reflection” between past and future. (Oktay/Edward) ● Plant growth/death behavior. (Elena) ● Set key-bindings for gamepad. (Edward) ● Level design (Chloe) **Art** ● Main Character 3D modeling (Ethan) ● Environment 3D modeling (Nimah) ● 2D concept art (Yan) **Sound** ● Musical motif/main theme. (Mimi)

	● Sound effect drafts for TV static, clock ticking (Fionn)
Week 6 Feb 13 - 19 (Demo with TA)	**Gameplay** ● Goal: Implement first few tutorial levels (Tutorial 1, Tutorial 2) ● Populate level layout (Elena, Chloe) ● Add event behavior to objects (Elena, Edward) ● Connect future and past level interactions (Oktay) ● Smooth out the time-travel mechanic. (Edward) ● Add transition animation when time-traveling. (Oktay) **Art** ● Main Character 3D model rigging (Ethan) ● Environment 3D modeling (Yan, Nimah) **Sound** ● Sound effect and soundtrack composition (Mimi, Grace, Fionn)
Week 7 Feb 20 - 26 (Reading Week)	**Gameplay** ● Develop medium level for alpha ● Inventory system and display (Basic UI). ● Check for item when interacting with certain objects. ● (eg. check for key to open door) ● Scene loading behavior. **Art** ● Main Character 3D model animations ● Environment 3D modeling **Sound** ● Sound effect and soundtrack composition
Week 8 Feb 27 - Mar 5 (Alpha Due)	**Gameplay** ● Continue building out extra medium levels or other additional gameplay requirements ○ Begin extra level or extra puzzles to existing level **Art** ● Main Character 3D model animations ● Environment 3D modeling **Sound** ● Sound effect and soundtrack composition
Week 9 Mar 6 - 12	**Gameplay** ● Add adjustments based on feedback from playtesting, such as refinements or quality of life upgrades ● Make adjustments to puzzle design or puzzle mechanics based on feedback ● Build out Main menu UI ● Continue work on medium level(s) **Art** ● Main Character 3D model animations (carry over)

	● Environment 3D modeling **Sound** ● Sound effect and soundtrack composition
Week 10 Mar 13 - 19 (Feedback Adjusted Build)	**Gameplay** ● Add remaining features that may be suggested from feedback ● Finish remaining unfinished level(s) ● Particle effects for level and menu (if needed) **Art** ● High priority 3D models completed ● Gameplay trailer / 2D animation **Sound** ● High priority music or sound effects completed
Week 11 Mar 20 - 26 (Beta Due)	**Gameplay** ● Gameplay Adjustments for Beta **Art** ● Additional 3D modeling ● Gameplay trailer / 2D animation **Sound** ● Additional sound effects or music
Week 12 Mar 27 - Apr 2	**Gameplay** ● Final adjustments based on feedback and Bug Fixes **Art** ● Additional 3D modeling ● 2D Animation (opening scene) **Sound** ● Additional sound effects or music
Week 13 + 14 Apr 3 - Apr 19 (Final Showcase)	Final Presentation