

# Wizard in the Weeds

## Project Charter



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# Revision History

Edits Made	Team Member	Date
Initial Document layout formatting	Alex	Oct 30 2022
Further formatting and basic documentation	Eric	Nov 1 2022
Even further formatting + Narrative breakdown added	Alex	Nov 5 2022
Layout / cropping for design meeting images, created a separate page for them.	Eric	Nov 5 2022
Began UI section of GDD / Readded relevant images to relevant locations of doc for future work. Con't Narrative	Alex	Nov 6
More formatting, expanded on the UI (slightly), Audio & Graphics sections, added a Level Design section and Controls subsection (started miro mood board)	Adam	Nov 6
Filled in Project Summary Page & Core Game Pillars. Created footer for page numbers	Yorick	Nov 7th 2022
Added & completed plant and tool section, expanded on Graphics, Level Design, and Audio sections, added title page image	Adam	Nov 7
Added 'Game Hook and marketing pitch' introduction after Project Summary	Yorick	November 8th 2022
Added a more thorough description for distribution and monetization schemes. Additionally completed the gameplay progression section.	Eric	Nov 8th 2022
Added Media References as to what inspired this game. Including: Firewatch, Powerwash, The Witness,	Yorick	Nov 8th 2022

# Project Summary

## Project Vision and Purpose

The purpose of the project is to create an understanding and bring awareness to the player about the hazards of invasive weed overgrowth and improper yard management using visual learning (i.e, pinpointing where the weeds grow, how they grow and what the difference is between the weeds). In addition, using a mixture of auditory/kinesthetic learning where through the practice of doing and using positive sounds, the player learns. We are looking specifically at how invasive garden weeds can affect the overall health of a wizard's arcane tower homestead.

## Core Gameplay pillars

### Education

The purpose of the game's design has to educate the player about the dangers of invasive weed overgrowth and improper yard management. Therefore, all of the plants, tools and procedures come with supporting research and experience. If there is a design decision that does not follow this pillar. It will be excluded from the scope.

### Fantasy Setting

The game is based in a fantasy setting not as a limiter but as an opportunity for unique spin on conveying the education pillar. There will be no high tech gear, no fancy equipment, no robots. A fantasy setting is a more grounded atmosphere where a player can get into the environment while still retaining excitement for interesting game mechanics. Any systems, tools, or models must support this pillar. Any who aren't are excluded.

### Relaxation

The game atmosphere being relaxing creates a calm stress relief to playing the game and transition into doing the core game loop. Easy to listen to ambience music, event triggers and no enemies to fight help with this. Easy to accomplish puzzles or spells to cast will add the layers of game variety beyond just the cleanup system. Working throughout different parts of the day and working in different sub environments create

new experiences to explore and learn about the world. This will affect the game in a positive way.

## Genre

The game falls under the following genres:

- Educational
- Relaxing Game
- First-person maintenance & collection

## Play Time

The game will take approximately 30 minutes to an hour to complete. Each sub environment will take about 6 minutes with 5 areas overall. One area being the centre hub where you can grow your own special garden beds. This is 30 minutes in total with time allocated to puzzles, player error and travel distances.

## Target Platform

### Game Engine

The game will be playable on itch.io and also work for the latest version of Unity.

### System Hardware Requirements

Minimum system hardware requirements include:

- Windows 10 64-bit OS
- 100 MB available space
- 4GB RAM
- Minimum 1280x720 screen resolution
- 1.5 Ghz Core2Duo Processor

(Whatever computer hardware specs is currently being used in the labs)

# Game Introduction

## The Game Hook

*"Care to open your eyes to adventure? A world of fantasy? A fantasy not like any other! Nay, there will be no slaying of dragons or daemon lords here.... No... THE true beasts will be that of thistles and dandelions! Ivy and Parsnip OH MY! Come one come all potential wizards to battle against the weeds who threaten your tower!"*

Looking for a game to give to a family member this holiday? A game that isn't your typical hack n slash or loot em shoot em? Maybe the next *Minecraft*?! Maybe something educational as well for the kids? Well come and play [The Weed Wizard]. A game where you can sit back and relax while removing weeds from your wizard tower! Explore unique areas and talk to the statue to learn about the very weeds that grow in your backyard and how to properly remove them! WOW! Cast cool spells and grow your own unique plants to your very own garden! Collecting points through each session of play.

But what do I learn from this you may ask? A very fair question! Within the grimoire of this game. You will learn that invasive weed overgrowth is terrible for the environment and has long lasting effects. Using proper yard management you learn to take care and maintain your own backyard. A skill that can be translated to the real world. How awesome is that!!!

So what are you waiting for? [The Weed Wizard] is available on Itch.io and Steam! Come and play to have a relaxing time learning about plants, being outdoors, tools, magic and grow your own garden!

# Media References

## Similar Games

Game Title: Firewatch

(Reference Focus: Art Direction)

Summary: The semi realistic yet more cartoony art style of Firewatch is what we are aiming to achieve with the game's artistic direction. There is definition but also low poly. In Firewatch, what we are looking for specifically is how they use shaders and solid colours to define trees and rocks. Particle effects for the grass and leaves we have also taken into for consideration.



*Figure 1. In this photo you can see how the particle system is being used for the grass.*

How we intend to mimic this artistic direction is by using a unity package that was obtained through the asset unity store.



## Game Title: PowerWash Simulator

(Reference Focus: Tools layout & Design)

Summary: PowerWash simulator offers the design inspiration we are looking for as well as how we want to set up our first person to tool aspect. In PowerWash Simulator you hold the pressure washer tool to blast away grime on objects in a relaxing environment. When you complete this action, there is a visual signifier that you have completed cleaning that object. We want to use this method for when you complete cleaning up an area in the game, successfully removing all of the weeds in that specific area.



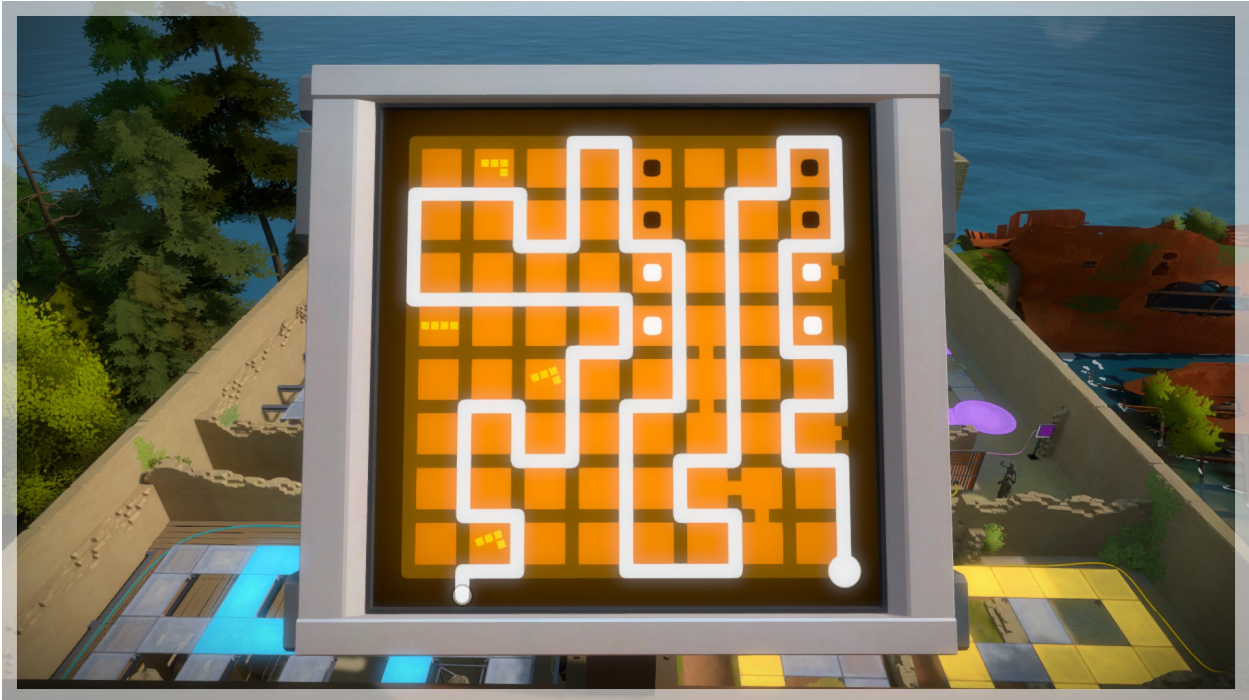
Figure 2. Player using the pressure washer tool to clean a backyard

Furthermore, you can see how the pressure washer tool is the only object that the player sees in their first person perspective. This is how we want to set up our player tools for the shears, shovel and rake. As well as casting spells this way. You should be able to see the rest of the player character from this camera angle.

## Game Title: The Witness

(Reference Focus: Puzzle Design and Level Design)

Summary: The Witness has an interesting take on how to take advantage of easy puzzles in a relaxing environment. In The Witness, you solve line puzzles that connect to one another. This is how you progress in the game. Eventually unlocking new ways to solve the puzzles that you didn't learn in the earlier stages of the game.



*Figure 3. A puzzle being solved in The Witness*

For our game, we want to focus on those puzzles when it comes to using the tools to pull out weeds. Moving up and down for the shovel to dig. Side to side for the rake and clear mouse hold line for the shears. This is to mimic using the tools within our game.

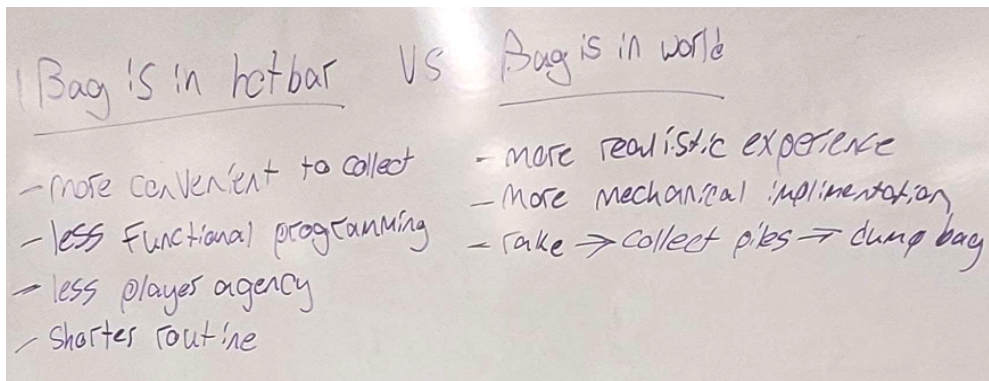
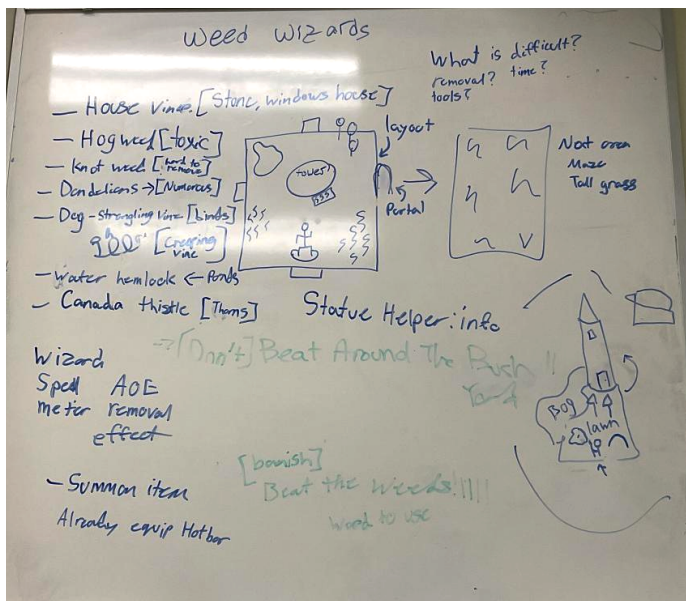
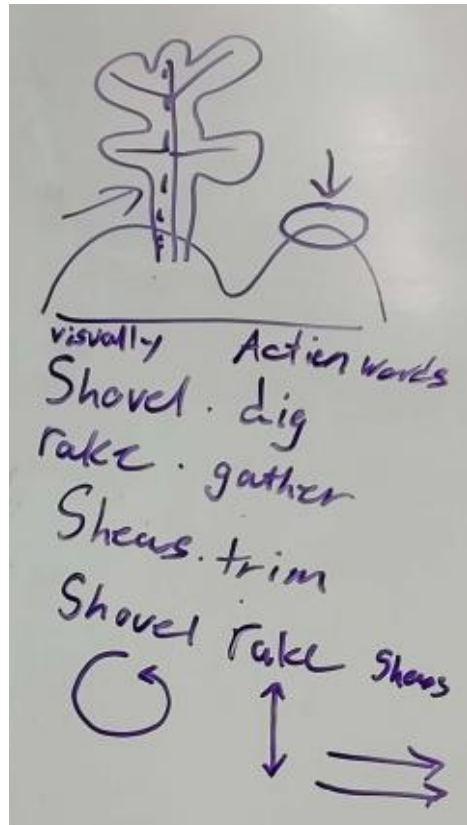
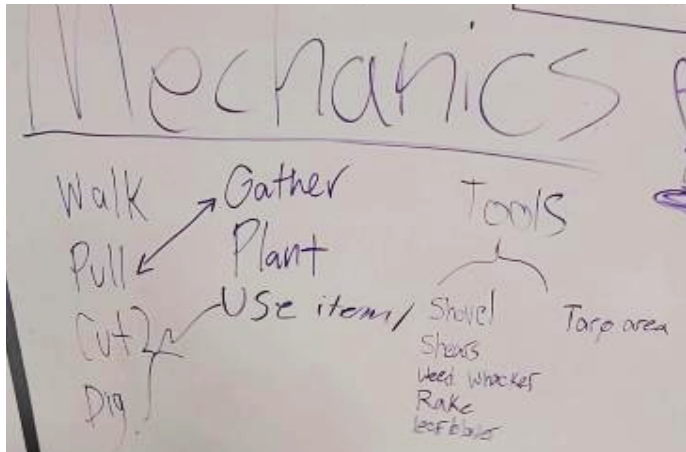
What's more is that the Witness has a great example on creating unique sub-areas (i.e.. Different environments for the player to explore and differentiate between. Thistles growing in sunny plain areas while goutweed weed wants to be in a more cool shaded area surrounded by trees).



*Figure 4. The different areas on the map of The Witness. There is a forest area, ruins area, autumn area, a mountain area etc...*

Using this inspiration. We will make different areas to explore and find the invasive weeds to clean up. All of which in the clear sight of the Wizard's Tower so you know where to walk back too. There will be a more general backyard beginner area, a more shaded forest area, a sunny stone maze area and finally a swampy bog area that can be transformed into a beautiful pond. Taking this and adding the fantasy magical themes for unique flowers or fruits/vegetables to grow will overall improve the essence of the game.

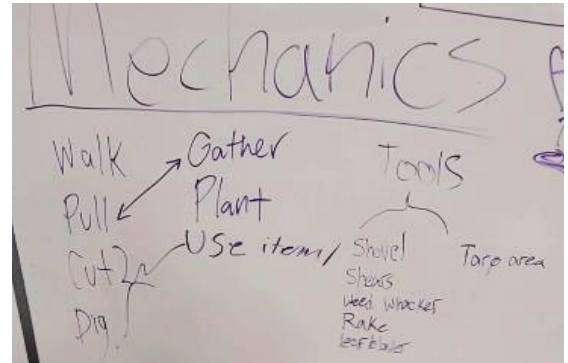
# Design Meeting Images



# Core Mechanics

## Baseline systems

- Unity 3D environment
- First person WASD character controller
- UI gameplay indicators
- Point system: clearing weeds, returning the weeds to the tarp,

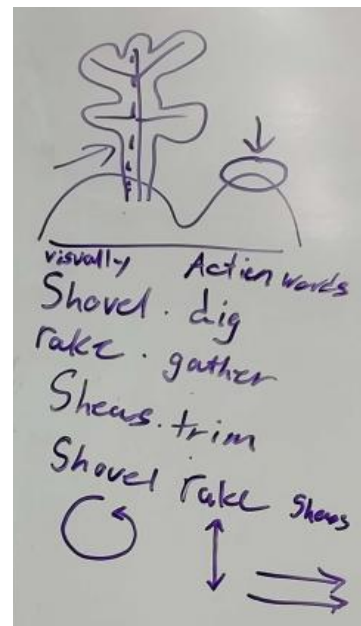


## Fundamental gameplay mechanics

- Picking up and moving objects
- Tutorial dialogue pop ups
- Swapping interactable items on toolbar
- Using the mouse to do tool actions.

## Controls & Player Actions

A section to outline what the controls of the player are and what in-game actions do those actions correspond to. This includes but is not limited to: player movement, interacting with world objects (tarp, statue), selecting tools, using tools (varies depending on the plant), accessing menu, etc. There should also be a consideration for whether the game is exclusively played on keyboard and mouse or if other controllers are/can be included.

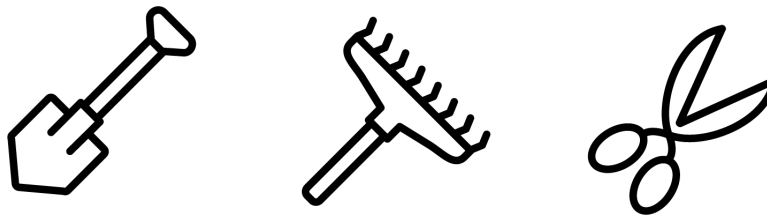


There was also a desire for the actions in game, specifically with weeding, to feel tactile in player motion and button presses. E.g. dragging the mouse down to pull back the weeds or dragging the mouse side-to-side to blow away leaves

# Game Elements

## Player Tools

The Shovel, Rake, and Shears are the game's 3 tools that will be used by the wizard to remove the overgrown plants in his garden. They will be available for selection in the player's hotbar, which the wizard will operate and use the different tools depending on the type of weed.



The Shovel is mainly used to manipulate small weeds by digging out the roots. The Rake is used to clear debris or leaves and can also be used to smother young weeds to hinder growth. The Shears are used to cut down large weeds or to remove the weed's leaves and branches to expose the stem.

All the weeds will be placed in 3 different categories based on how many tools are required to extract the plant.

## One Tool

- Dandelions (Shovel)
- Wild Parsnip (Shovel)
- Poison Ivy (Shovel)
- Broadleaf Water-milfoil (Rake)
- Common Water Hyacinth (Rake)

## Two Tools

- Canadian Thistle ( Shears, Shovel)
- Dog-Strangling Vine (Shears, Shovel)
- English Ivy (Shears, Rake)

## Three Tools

- Japanese Knotweed (Shears, Shovel, Rake)

## Plants

The game will feature at least 9 different species of weed/plant that the player will get rid of as their main objective. These plants are found in the real world and more importantly, within Ontario, Canada, increasing the likelihood of our targeted players being able to recognize the plants found in-game to the ones growing in their own backyards or local parks. When carrying the weeds back to the tarp, players will learn which of the weeds are invasive, which are dangerous, and how all of them are a nuisance to local plantlife.

### Poison Ivy - *Toxicodendron radicans*



**Why Poison Ivy is a Problem:** Touching any part of the Poison Ivy plant can cause red, swollen skin, blisters and severe itching, sometimes within hours after exposure.

## Yellow / Wild Parsnip - *Pastinaca sativa* (Europe, N. Asia)



**Why Wild Parsnip is a Problem:** Wild Parsnip has escaped from cultivated gardens and spread across the continent. Wild parsnip roots are edible, but the sap of the plant can cause severe burns.

## Dandelions - *Taraxacum*



**Why Dandelions are a Problem:** Dandelions can become a problem because they are quick to flower and produce masses of windborne seeds. And the long tap root of dandelions is able to regrow from a fragment if not completely removed.



## English Ivy - *Hedera helix* (Europe, W. Asia, N. Africa)



**Why English Ivy is a Problem:** English Ivy is very costly and labour intensive to eradicate. English ivy can overrun your garden, climb fences, and invade your neighbour's yard and nearby natural areas. The leaves and fruit of English ivy are toxic to humans and livestock and the sap can irritate skin.

## Canadian Thistle - *Cirsium arvense* (Europe, N. Asia)



**Why Canadian Thistle is a Problem:** Canadian Thistle rapidly establishes and spreads quickly, replacing native plants. It grows in circular patches, spreading up to 10-12 feet in one season. It spreads quickly by rhizome and seed production.

## Dog Strangling Vine - *Cynanchum rossicum*



Why Dog-Strangling Vine is a Problem: Also known as Black Swallowwort or Pale Swallowwort, Dog-Strangling Vine does not actually strangle dogs but it can “strangle” native plants and small trees if it is in dense patches.

## Common Water Hyacinth - *Pontederia crassipes* (S. America Brz)



Why Common Water Hyacinth is a Problem: Water Hyacinth is a type of invasive floating plant found in water bodies across the world. These invasive species block the sunlight reaching an oxygen level in water systems, which results in damaging water quality and seriously affecting various life forms in the ecosystem.

## Broadleaf Water-milfoil - *Myriophyllum heterophyllum* (E. US)



**Why Broadleaf Watermilfoil is a Problem:** It forms dense mats of submergent vegetative material throughout the water column and at the water surface, which can prevent water flow, reduce sunlight and reduce oxygen availability. The resulting low oxygen conditions can harm or kill aquatic organisms

## Japanese Knotweed - *Reynoutria japonica* (E. Asia Jpn, Chn, Kor)



**Why Japanese Knotweed is a Problem:** Japanese Knotweed can grow up to 10cm per day, and because of this rapacious growth, it has been known to cause damage to building structures and substructures by targeting weak points, such as cracks in masonry, and attempting to grow through them. Typical damage from Knotweed includes: Damage to tarmac and paving.

# Narrative Breakdown

After an exhaustive odyssey around the realm discovering new knowledge, a wizard returns to his home to see it corrupted with overgrown weeds of various sizes and threats. Guided by the spirit locked in the stone statue overlooking the garden, the wizards task themselves with clearing their once stately home with might and magic to cut down the invading greenery.

Tone: Lighthearted, comedic

## The Wizard

The player character a wizard of incredible knowledge able to manifest tools from thin air

The wizard may make remarks / puns directed at the gameplay the player is participating in.



## The Statue

A statue overlooking all game levels the player will be clearing weeds in and the source of knowledge on plants the player will learn from. A long line of wizards souls are held within the statute thus many different voices cry out to teach the player all their needed gardening information

Statue Sample Dialogue:

- See, over there! Covering that ruined boulder, foul corruption spreads. Dogweed!
- Aah, you return. I do hope your galavanting about the realm was fruitful. While YOU had your fun I've been here watching everything become overgrown.
- Ahh that there is Hedera Helix, a devilish plant indeed. You'll need shears, a sturdy shovel, and much labour to take it down before every flower in the garden is smothered by it! Be sure to remove every iota, not only does its sap burn the skin, the fruit it grows is toxic as well.

# Game Progression

A list of the specific actions the user must take in order to advance through the different stages of gameplay:

Into game stage:

- Player will see a simple title menu showing controls and credits.
- Player starts the game.

Level starts stage:

- The wizard enters the level.
- They can inspect their property
- They must meet the statue before they can leave the entrance area.

Info statue stage:

- Meet the tutorial statue, it describes your task and how to do it.
- Landscaping tools are enabled and players can begin clearing weeds.
- The score starts calculating for clearing and disposing of weeds.

Main clearing stage:

- The player can clear weeds from any area of the level, in any order
- Through clearing different weeds and completing entire areas the player will unlock new dialogue with the statue.

Level completed stage:

- Once 80% of the level is cleared the wizard can cast a spell that ends the level.
- The tarp and its contents get scooped up and magically disappear making a satisfying poof sound.
- The player can then inspect the yard and enjoy their work before returning to the title menu

# User Interface

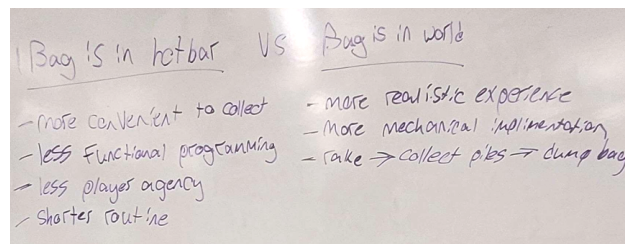
## First Person View UI

Our first person view needs to communicate a number of elements at all or nearly all times to the player.

- Where the player is
- What spells/equipment they have
- How much magic (resource for gardening tasks) they have
- What they can/cannot interact with
- What their tasks are

Aside from this the first person UI will also need to communicate information to the player on more contextual actions or need to display the info only when it is relevant to the player this includes.

- Weed progress / durability bar for weed removal
- Dialogue from the garden statue
- Location of important level elements (weeds, statue, garbage/tarp, new filler plants) (minimap?)



Toolbar, objectives, time spent playing, score.

# Audio

There are 2 types of audio for this game: gameplay and ambient. Any audio for gameplay is meant to communicate player progression (point collecting) and the completion of objectives/tasks (while performing the action and finishing). Ambient audio is to help immerse the player into the experience and their environment.

The audio used for the game will mostly/entirely be sourced from marketplaces or royalty free libraries. The creation of any sounds would only be done if a specific sound is desired and cannot be found.

## Gameplay

Gameplay sounds include: generic woosh sfx when summoning/aparating tools, magic poofs when successfully removing a weed, pleasant dinging noise for point collection (think Minecraft)

## Ambient

Ambient sounds include: leaves crunching, wind blowing, dirt moving, grunts and incoherent murmurs from wizard & statue, bg music, stretching and cutting noises

# Graphics

The game's visual style and assets will be simple, clean, and a mix of low-poly 3D models, 2D UI Sprites, and Particle FX for debris and magic.

We want the game to feel approachable to all ages, seeing as how our target audience has a large variance in age. We also don't want players to mistake the type of game they're playing based on the association a graphic style will have in the player's mind (e.g. realism tends to be a staple in action adventure games like Skyrim, The Witcher or FPS games like CoD and Battlefield). Finally, finding and creating low poly assets will be much easier and is more realistic for the team to create within the project's time frame.

Some games that are inspirations for the desired look of the game include:

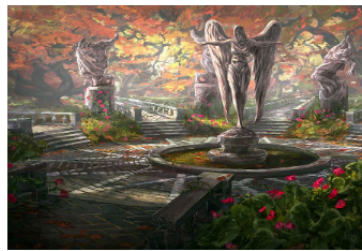
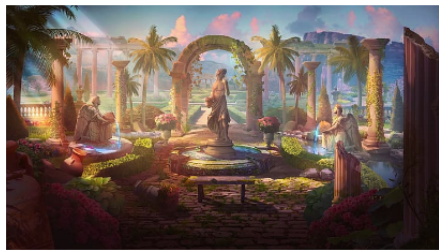
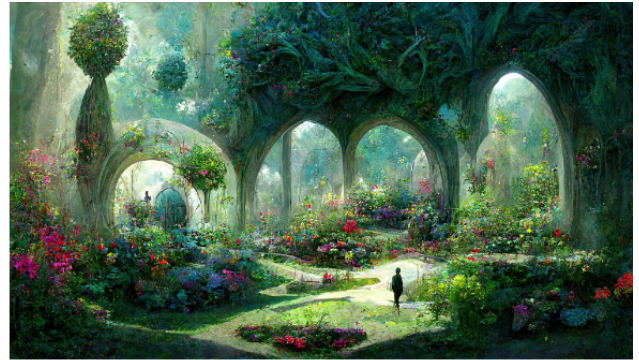




# Reference Images

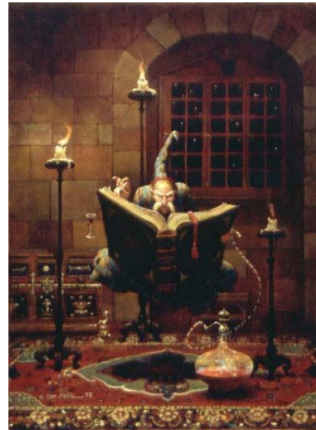
## Garden

The garden is the location the player will inhabit throughout the entire game. Making sure its appealing, varied, and fantastical will serve to keep players engaged and keep within the desired aesthetic theme.



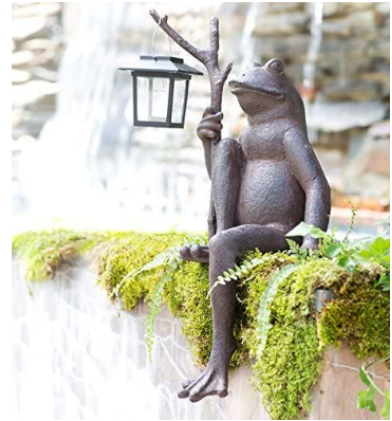
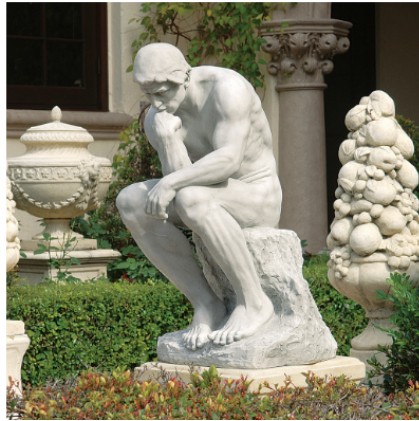
## Wizard

The wizard is the player character. Since the game is in first-person, there probably won't be an entire model made for the game, and instead will likely only have the arms seen during weeding animations.



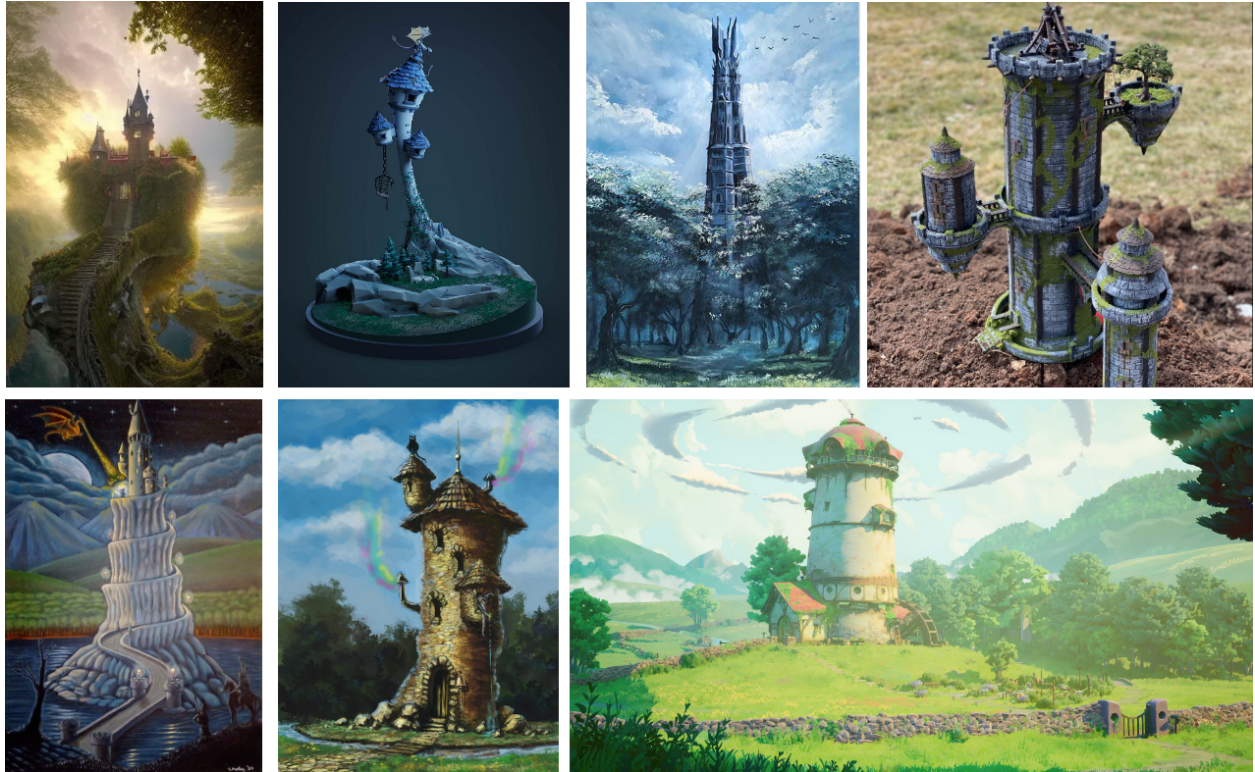
## Statue

The statue is the only other character in the game and will be interacted with many times during play. To utilise the light-hearted tone we desire, the statue's dialogue and physical demeanour would be chill and maybe silly.



## Tower

The Tower is located in the centre of the level and acts as the main landmark, where the statue and tarp will be located. An eye-catching and fun design will make it all the more noticeable and pleasing to look at.



# Level Design

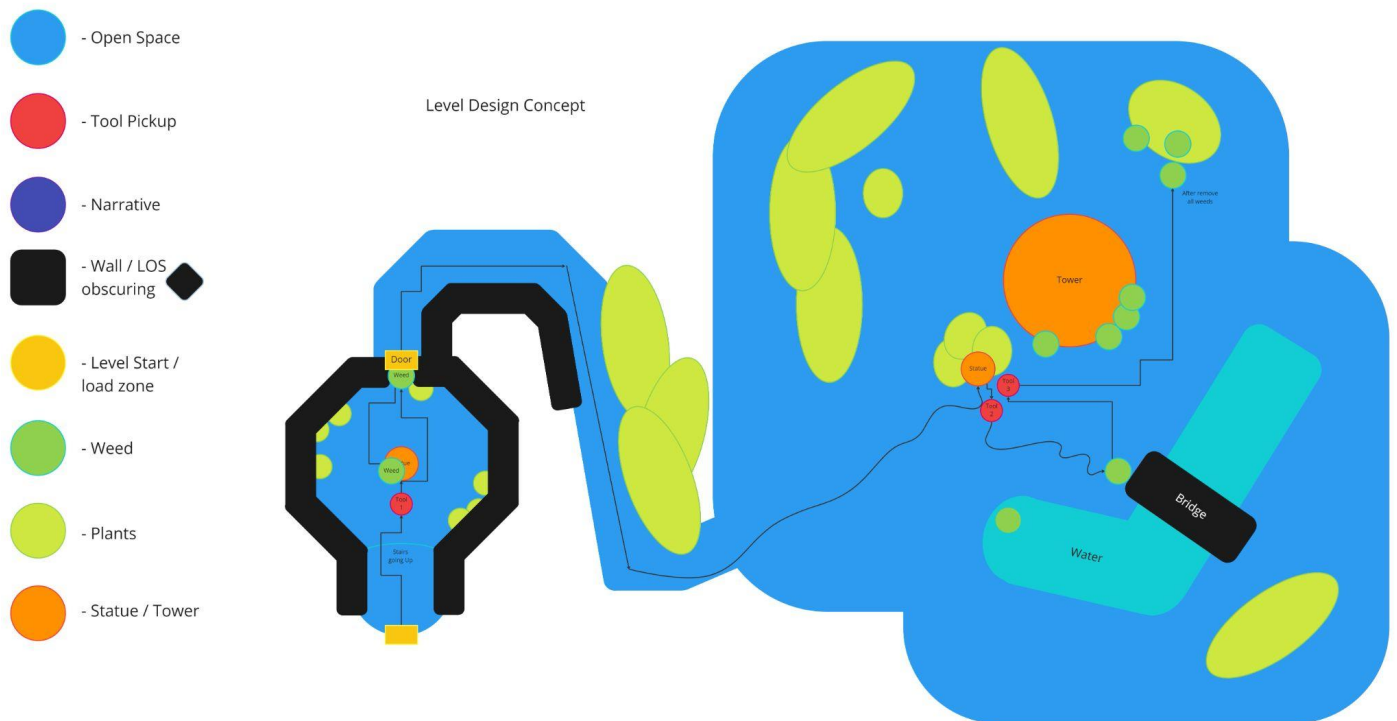
The single level that acts as the tutorial for the game's mechanics needs to have distinct sectioning of areas within the level dedicated for the varying plant types and a few key landmarks for players to easily orient themselves anywhere within the level.

The game's playtime is inherently tied to the size and contents of the level. The plan to have one level is set up so if a longer playtime is desired and the team can complete (an) additional level(s) to the same level of polish as the first, we would be able to do so with relative ease.

These are some questions that we need to consider that could have implications to the level's design.

- Will there be verticality present within the level? Yes
- Is walking the only method of movement? (warp key, recall to a portal mechanic)
- Do players have all of their tools available to them from the get-go? Beyond the first section, all the tools should be available.

The different sections of the level correspond with the type of weed that inhabits it, 3-4 sections



# Monetization / Distribution

## Itch.io

Unity 3D games can easily be distributed via itch.io's market, for free, by donation or fully paid.

Itch takes 30% of profits made from sales and donations on the platform. Itch additionally requires taxation information (SIN or Business licence) from the uploader in order to authorise payouts to a paypal account.

The best option would be to distribute the game for free, and allow for donations. If there were to be any donations the money would be directed to the account owner, and spent as a larger lump sum. The account owner would then distribute the donations in equal thirds to each other team member.

## Steam

If the game reaches a late stage of development, and a high level of quality, the team may decide to create a steam page for the game. This would require a trailer and additional promotional material in order to conform to the platform standards.

If the team were to set up a revenue stream like steam, we would need to agree on specific shares in the project as well as a payout plan and receipts for our personal finances.

Because no member of the team has ever uploaded a game on steam this is something we would need to establish once we already have a high quality game, with marketable user engagement.

## Private portfolios

This project will be a piece that all members will want to add to their portfolio. This may mean the game is hosted on personal websites, or a common itch / steam page. Regardless of paid distributions all members will be able to host a fully playable version of the game for demonstrations of their personal portfolio.