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Introduction

1. Game Summary

Mycelium Roads is a city-builder survival story game which will take the player onto the journey of Mushy. Mushy is a sentient mushroom who finds itself in a forest without any orientation and a place to go. Mushy is found by the Player and taken home. From there, Mushy will live in the Garden of the Player and establish a mushroom colony. Spreading the colony is one of the main goals for the player. The second main goal is to live the story of the kid (player) through the eyes of Mushy. Decisions made in the story of the child will have an impact on the colony, creating an immersive way to learn that every decision has consequences while a young human learns to spread their wings.
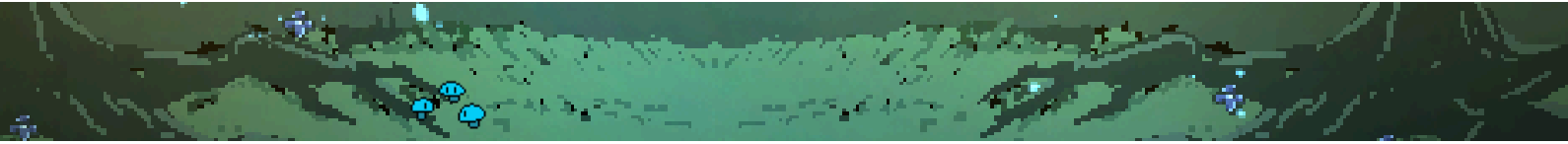
2. Inspiration

a. The Settlers

The Settlers is a series of city-building and real-time strategy games detailing a vibrant supply and demand economic system wherein the player makes decisions affecting resource allocation, economic robustness, and a small society's overall wellbeing. Specific game mechanics to enhance the ecosystems in The Settlers games, such as economic micromanagement and environmental factors, were a large inspiration for the mechanics of Mycelium Roads. Superbly written pathfinding mechanics drove the importance of smooth pathfinding in Mycelium Roads.

b. Civilization

The Civilization series is a collection of turn-based strategy games based on building a civilization through technology acquisition, trade, and diplomacy. The unique pathfinding mechanics found in the Civilization games were the inspiration for the hexagonal pathfinding in Mycelium Roads. The hexagonal tiles evoke a nostalgia of tabletop games that was used to bring a sense of freshness to Mycelium Roads. Civilization's

diplomacy and trade mechanics inspired the complex interactions between Mushy, the child, and the colony.

c. Frostpunk

Frostpunk is a brutal survival game based on tending to the last city on Earth in an apocalyptic icy wasteland. The game forces players to make unthinkable decisions to ensure the city's survival. When the city is pushed to its breaking point, players must make extreme compromises which may force them to question their morality while strategizing and prioritizing on the fly. This pressure on the player to make difficult decisions to preserve a small civilization directly inspired Mushy's responsibilities in *Mycelium Roads*. Not only is Mushy forced to be a leader to the colony, but he is forced to keep composure to ensure that Sam and the colony can coexist harmoniously.

d. Factorio

Factorio is a resource management game which involves the player building a factory to produce increasingly complex objects while defending the factory from external threats. The complexity brought by optimizing components throughout the game can become obsessive. The compelling nature of the *Factorio* player experience inspired some of the mechanics for *Mycelium Roads'* own resource allocation logic, and the realism and depth caused by a slight shift in viewing angle in *Factorio's* 2D pixel art inspired various effects in the 2D graphics for *Mycelium Roads*.

e. Nature - *Stropharia caerulea*

The *Stropharia caerulea* (blue roundhead) mushroom is a species of blue mushroom found commonly in European beech woods. Many core mechanics and resources have been directly pulled from mycological findings (ex. Nutrient benefits of nitrogen, phosphorous, and moisture), as well as specific setting details (British countryside). The color and shape of the mushroom was also an inspiration for the design and dialogue options throughout the game. It was also important for the team to choose a non-poisonous mushroom, for consistency in player interactions and scientific accuracy.

f. **Clannad (and other Visual Novels)**[1]

The dialogue and dialogue mechanics draw their inspiration from a large collection of visual novels. Visual novels are often driven by storytelling, and almost exclusively focus on character interactions through dialogue and monologue. With Mushy having been designed as a nonverbal character, it was important for the team to capture the interactions between Mushy and Sam in a way that was intuitive for the player.

3. Player Experience

Mycelium Roads is a strategy/city-builder based on growing a colony of small mushrooms in a child's garden. A heartfelt story between Sam (a human child) and Mushy (the leader of a small mushroom colony) motivates colony expansion and mushroom maintenance. The player must learn how to optimally allocate resources, tend to different inhabitants of the garden and make decisions based on current events while also trying to predict an uncertain future. Embedding random events into the gameplay further elevates the complexity and investment of the player.

4. Platform

The game is developed for personal computers running Windows. It is optimized for keyboard and Mouse inputs.

Controller support and release on Linux and MacOS are planned for a later date.

5. Development Software

Department / Area	Embedded Links
Coding	Godot 4.2.1 Visual Studio Code
Art	Aseprite (I bought the demo on Steam)

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[1] Take a guess at who on the team is the main visual novel player ◥(´▽`;)◤ - yase_kii

	Clip Studio (Version 2.0) Magma GIMP Procreate
Music	Ableton Live (Live 9.7[2])

6. Genre

- City-building (The Settlers, Frostpunk)
- Real-time strategy (The Settlers)
- Survival (Frostpunk)
- Storytelling (Air - Visual Novel)

7. Target Audience: Ages 12+

Mycelium Roads is a game suitable for casual and more committed players. By taking inspiration from multiple genres, *Mycelium Roads* provides players with a diverse play experience flexible enough to suit both slow and fast-paced play styles. While the game's setting is intended to provide a relaxing and heartfelt game experience, the game's unique city-building mechanics provide a challenge for players to dive into resource allocation and continue upgrading their colony to the next level. This playstyle accommodation allows casual players to stay invested, while not alienating serious players.

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[2] Using a previous version cuz updating is (╯°□°)╯ $ $ $ - yase_kii

Concept

1. Gameplay overview
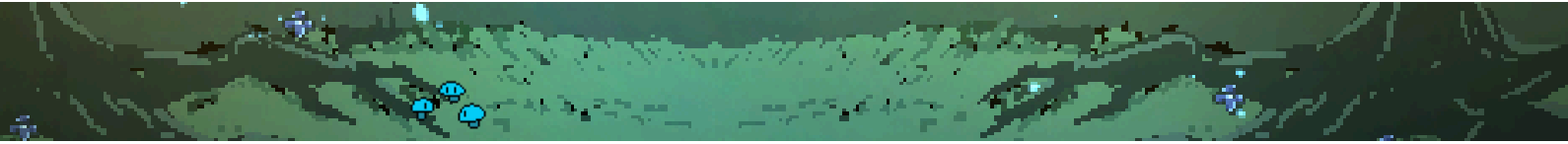
Mycelium Roads is a resource management city builder, RPG-style game from the perspective of **Mushy** - a sentient mushroom who is found in the forest by **Sam**, a human child discovering the joys and responsibilities of life. Resources are gained as the player expands the mushroom colony and helps Sam navigate their new school environment and beyond. The story focuses on Sam's struggles in their new school and Mushy's ability to support Sam through periods of emotional turmoil. Mushy (the player)'s leadership abilities are challenged through the various conflicts between the two protagonists and the outside world.

2. Theme Interpretation

*"**It's Spreading**" - The theme centers around making a mechanic or narrative that consumes or expands in some way. (PirateSoftware 14th GameJam)*

The focus of *Mycelium Roads* is city building and survival, where the player must start at a building, or resource and **spread** away from it to find a larger quantity and variety of resources to continue growing. The environment of the game continuously changes as the city grows, and in turn, strengthens the colony's ability to survive amidst changing conditions and fluctuating resource scarcity. An evolving and growing colony directly translates to a larger support network for Sam in the form of a small army of sentient mushrooms. Positive actions on the colony (ie. actions supportive of growth) inspire Sam to continue learning and develop skills to confront conflict in the classroom and beyond.

Sam's events follow a "coming of age" style tale, wherein Sam learns to **spread** their wings in their world and learn what responsibility means in situations where decisions may be bad or worse. Emotional regulation skills take a front seat in conflicts between Mushy and Sam, as unregulated emotions wreak havoc for both the colony and Sam's own life. Seemingly mundane dialogues turn into pivotal moments for the colony and Sam, just as small differences in treatment in childhood can impact an individual for

a lifetime. Poor treatment towards Mushy and the colony results in tangible decreases in productivity and expansion, and a lack of growth in the colony can discourage Sam from pursuing the things that fill them with joy. Conversely, good progress and effort from the Colony motivates Sam to make good decisions for themselves (good/bad decisions **_spread_**[3] differently into the colony), and Sam's positivity makes them more willing to contribute to the colony in whatever ways possible. Down the line, this may look like additional resources contributed to the colony, protection from external forces, and boosts in efficiency and production for the colony.

3. Primary Mechanics

a. Gridbased movement and building

The protagonist (Mushy) is free-moving in the main garden map. The NPCs roam around the garden map by using street tiles between resources. This allows the NPC mushrooms to walk in a confined space. If enough NPCs walk over the same tile, then the tile becomes a stree tile. Street tiles are different in appearance than standard garden tiles, and change the walking speed of the NPC mushrooms. Buildings and resources can only be placed on tiles that can accept that particular building or resource (ex. Wells can only be placed on a water tile).
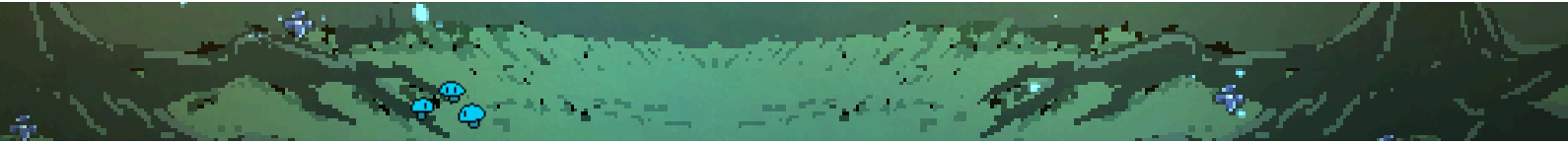
b. Resources

Resources are the ingredients for anything in a city-builder. Every resource has a dedicated purpose and concept behind it. For this game all resources are styled after the materials plants consist of. Main focus of research is on mushrooms. Whenever the player or a non-player entity changes the gameworld, resources will change with it.
A Resource has the following properties:
- Type of resource (e.g. Dirt, Water, Calcium, …)
- State (e.g. collectable, available, used)

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[3] DO YOU GET IT NOW????? IT SPREADS. EVERYTHING IS SPREADING. THIS IS THE INCARNATION OF THE THEME. THE MADNESS IS SPREADING. THE MUSHROOMS ARE SPREADING. OUR MINDS ARE SPREADING! ….. yase_kii & IAmAMerlin

Furthermore Resources are sorted into 3 main groups for planning out the system:

- Building Materials/Resources
- Population Materials/Resources
- Mushy Materials/Resources
- Energy Materials/Resources

c. Buildings

Buildings are a puzzle and visual mechanic for a city-builder. Each building serves a dedicated purpose and costs a certain amount of resources. In general buildings are grouped in industry or economy, housing and special buildings. Industry or Economy refers to anything that produces, enhances or transforms a resource. Housing is usually referred to as buildings that are specifically made to take in resources to tend to the needs of the city's population. Special buildings combine all leftover buildings. Depending on the city-builder another structure could be implemented as well.
A Building has the following properties:

- Type of building
- Size (e.g. 4 tiles)
- Shape of the combined tiles
- Purpose (e.g. mine to quarry phosphorus, house to house 4 pop, …)

d. Diplomacy and Trade

Many plants in the garden can also control other resources. The player is able to take over any resource they want (considering they have enough resources to enable/purchase the tile). Similar to an invasive mushroom, the player can decide if they want to keep everything to themselves/the colony or share with the other plants in the garden. In return, the other plants can give resources back to other plants, or trade resources with the player. This acts as a simple trade and diplomacy system within the game, which can help or hinder the player throughout gameplay.

4. Secondary Mechanics

a. Resources

Water

Water, the elixir of life, is an indispensable resource for all living organisms on Earth. Its unique properties, such as being a universal solvent, make it crucial for various biological processes. Water serves as a medium for chemical reactions, aids in temperature regulation, and facilitates nutrient transport within living organisms. Just as water is the main component of mushrooms, with around 92 grams of water per 100 grams, it is a fundamental necessity for all life forms, supporting growth, reproduction, and overall survival.

Name	Water
Type of Material	Building, Population, Mushy, Energy
Gained by	Well, Rainbucket
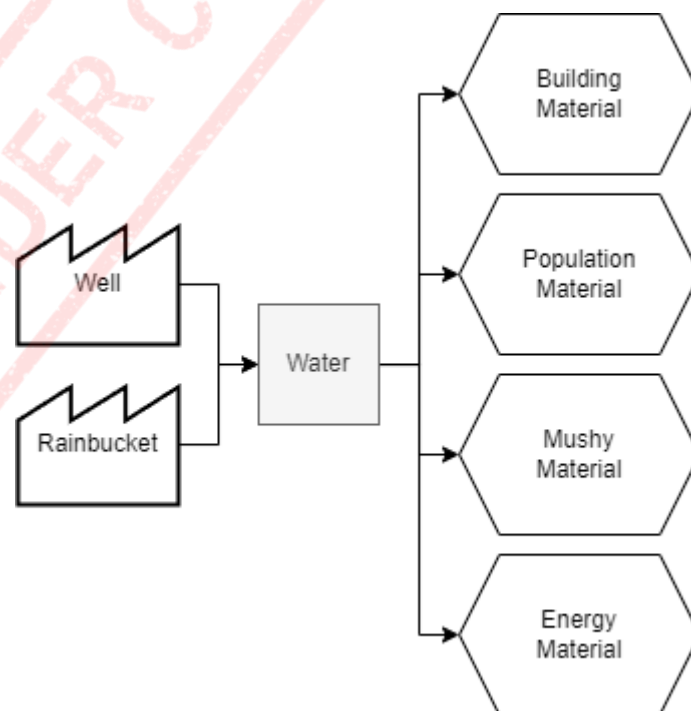
Dirt

Dirt, or soil, is another vital component of Earth's ecosystems. It is a complex mixture of minerals, organic matter, water, and air. Soil provides a medium for plant growth, serving as a reservoir for nutrients and water essential for plants to thrive. In a way similar to water's role in sustaining life, soil acts as the foundation for terrestrial ecosystems, supporting the growth of various plant species and, consequently, the entire food web.

Name	Dirt
Type of Material	Building
Gained by	Dirt Hole
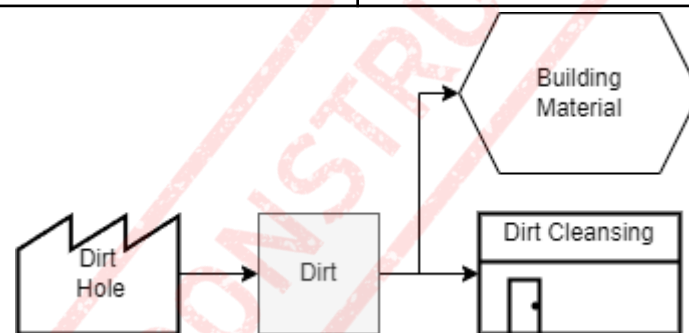
Phosphorus

Phosphorus is an essential element for life, playing a crucial role in various biological processes. It is a key component of DNA, RNA, and ATP, which are fundamental molecules for cellular structure and energy transfer. Much like water is vital for the existence of life, phosphorus is indispensable for the proper functioning of living organisms. In plants, phosphorus is essential for root development, flowering, and fruiting.

Name	Phosphorus
Type of Material	Population, Mushy
Gained by	Phosphorus Quarry
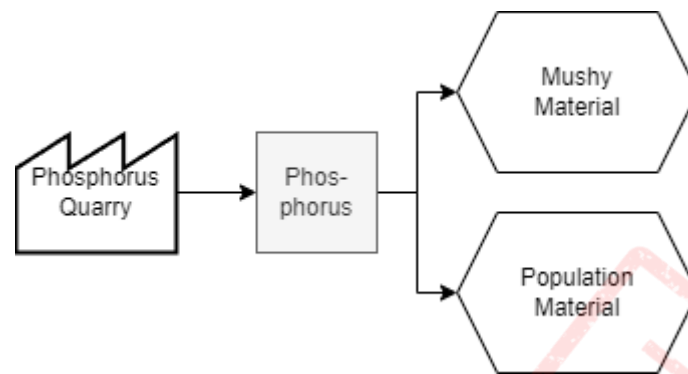
Potassium

Potassium, this mineral is vital for maintaining cellular function and electrolyte balance. It is a crucial nutrient for plant growth, influencing processes such as photosynthesis and water uptake. Potassium helps regulate various physiological functions in both plants and animals, much like water's role in sustaining life.

Name	Potassium
Type of Material	Energy
Gained by	Wood Burner
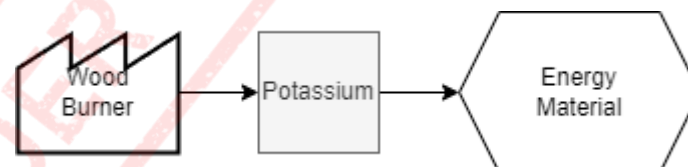
Carbohydrates

Carbohydrates are another fundamental aspect of life. These organic compounds serve as the primary source of energy for living organisms. Carbohydrates, consisting of sugars, starches, and fibers, are essential for fueling metabolic processes. Just as water is a universal solvent supporting various biochemical reactions, carbohydrates provide the energy necessary for life's processes to occur.

Name	Carbohydrates
Type of Material	Building, Population, Mushy

Gained by	Wheat Farm
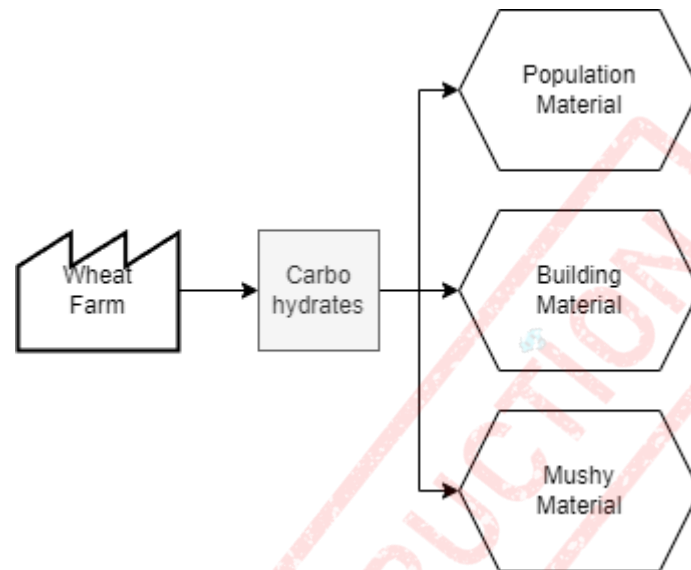
Protein

Proteins, composed of amino acids, are the building blocks of life. They are involved in structural support, transport, and catalyzing biochemical reactions. Proteins play a vital role in the growth and repair of tissues, making them indispensable for life. In a similar vein, water's role in maintaining the structural integrity of cells mirrors the importance of proteins in supporting the structural framework of living organisms.

Name	Protein
Type of Material	Population
Gained by	Earthworm Farm
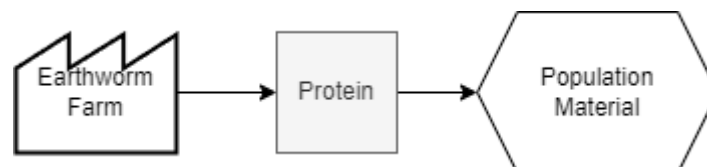
Calcium

Calcium, a crucial mineral, is integral to the formation and maintenance of strong bones and teeth. It also plays a significant role in cellular signaling,

muscle contraction, and blood clotting. Just as water is vital for maintaining cell turgidity and facilitating nutrient transport, calcium is essential for the structural integrity and functionality of various tissues within the body.

Name	Calcium
Type of Material	Building, Mushy
Gained by	Well, Rainbucket
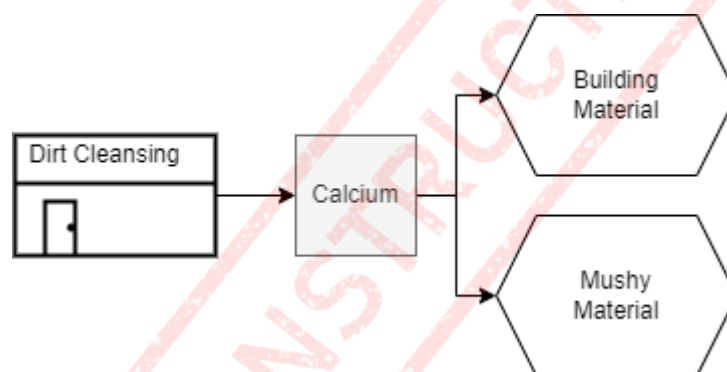
Luciferin

Luciferin, while not as universally present as the previous elements, holds significance in the context of bioluminescence. Found in certain organisms like fireflies, Luciferin is responsible for the emission of light. This phenomenon is a captivating example of how diverse compounds contribute to the uniqueness and adaptability of life forms. In a way, Luciferin exemplifies how different components, like water in mushrooms, contribute to the intriguing diversity of life on Earth.

Name	Luciferin
Type of Material	Building, Population
Gained by	Well, Rainbucket
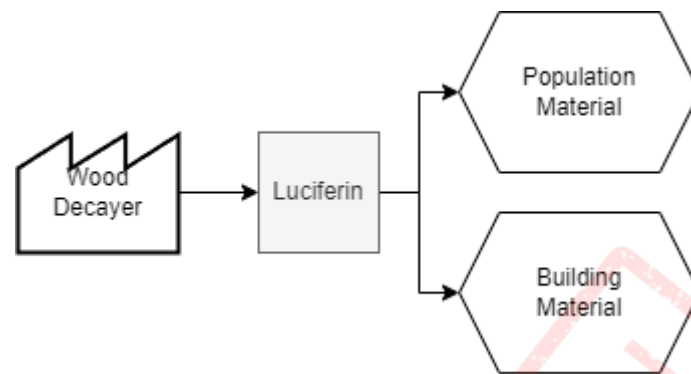
Coming Next:

There are much more minerals and elements to find in a garden. In the future this section will aim to have:

- around 15 base resources
- around 30 to 40 enhancements
- around 50 to 100 use cases for combinations of base/enhancement resources to be used inside the colony or for other game mechanics

b. **Buildings**

Dirt Hole

Nestled deep in the earth, the Dirt Hole serves as a bustling mining hub where industrious workers extract the valuable dirt resource.

Name	Dirt Hole
Type of Building	Gathering
Take-In	Energy
End product	Dirt
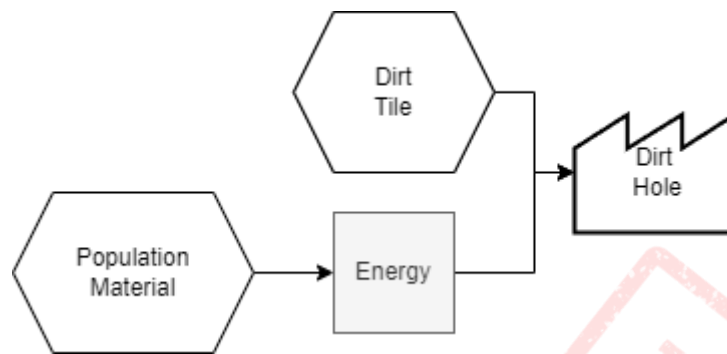
Dirt Cleansing

A serene oasis dedicated to purifying harvested dirt, the Dirt Cleansing facility employs advanced filtration techniques to remove impurities and enhance the soil's fertility. This essential step ensures that only the purest dirt makes its way into the hands of builders and farmers, promoting a flourishing environment while making it possible to repurpose impurities in other lines of production.

Name	Dirt Cleansing
Type of Building	Enhancement
Take-In	Energy, Water, Dirt
End product	Calcium
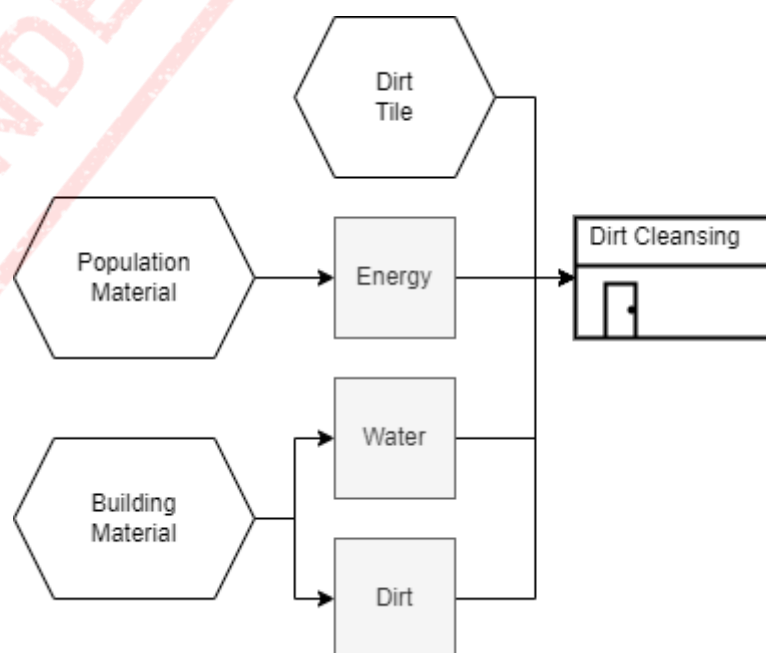
Phosphorus Quarry

Perched on the edge of a phosphorescent landscape, the Phosphorus Quarry is a beacon of industry where miners extract this vital resource. The glowing rocks illuminate the night, casting an ethereal glow on the industrious workers as they gather phosphorus to fuel various enchantments and the always growing needs of the colony.

Name	Phosphorus Quarry
Type of Building	Gathering
Take-In	Energy, Water, Calcium
End product	Calcium
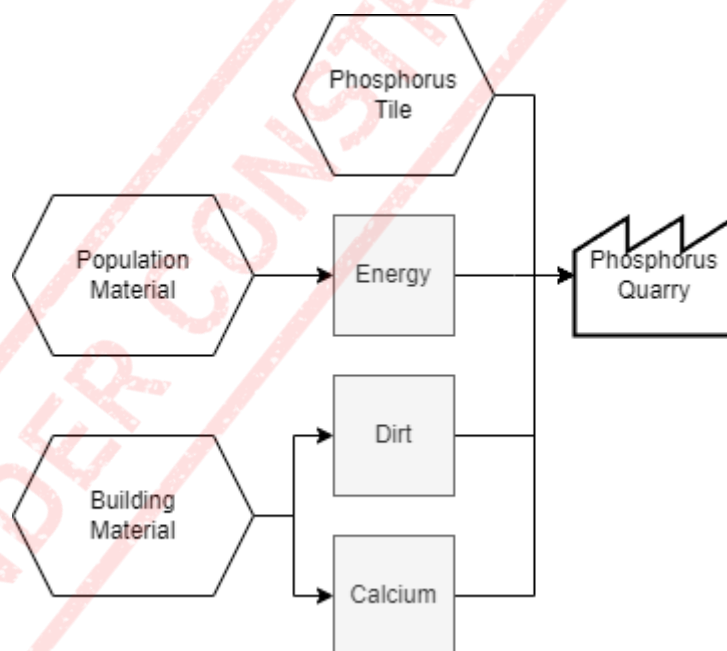
Wood Burner

In the heart of the forest, the Wood Burner stands as a towering structure where lumber is transformed into valuable Potassium. This industrial facility harnesses the power of controlled flames to efficiently convert wood logs into a potent energy source.

Name	Wood Burner

Type of Building	Gathering
Take-In	Energy, Water, Calcium
End product	Potassium
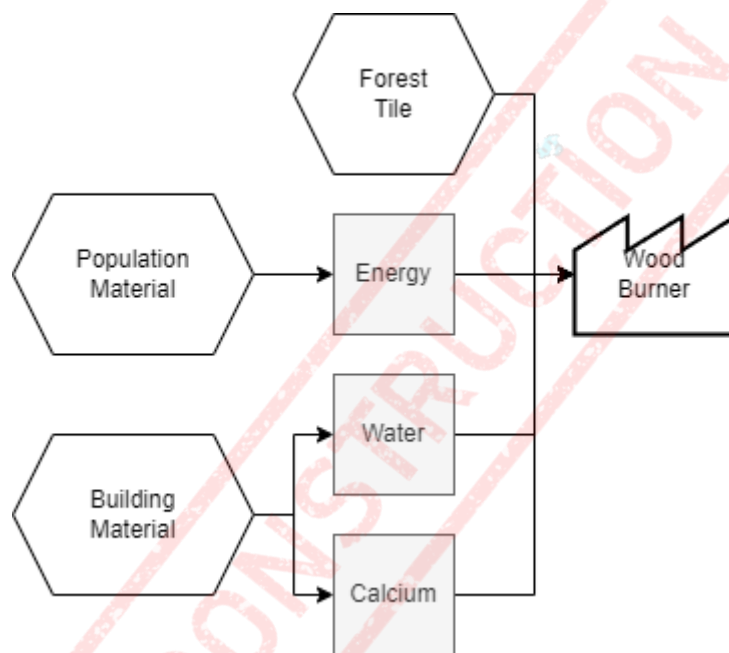
Wheat Farm

A picturesque expanse of golden fields, the Wheat Farm is a vital source of sustenance for the game's inhabitants. Farmers diligently cultivate and harvest wheat, providing a steady supply of grains that serve as the foundation for a variety of culinary delights and essential provisions.

Name	Wheat Farm
Type of Building	Gathering
Take-In	Energy, Water, Calcium, Dirt
End product	Carbohydrates
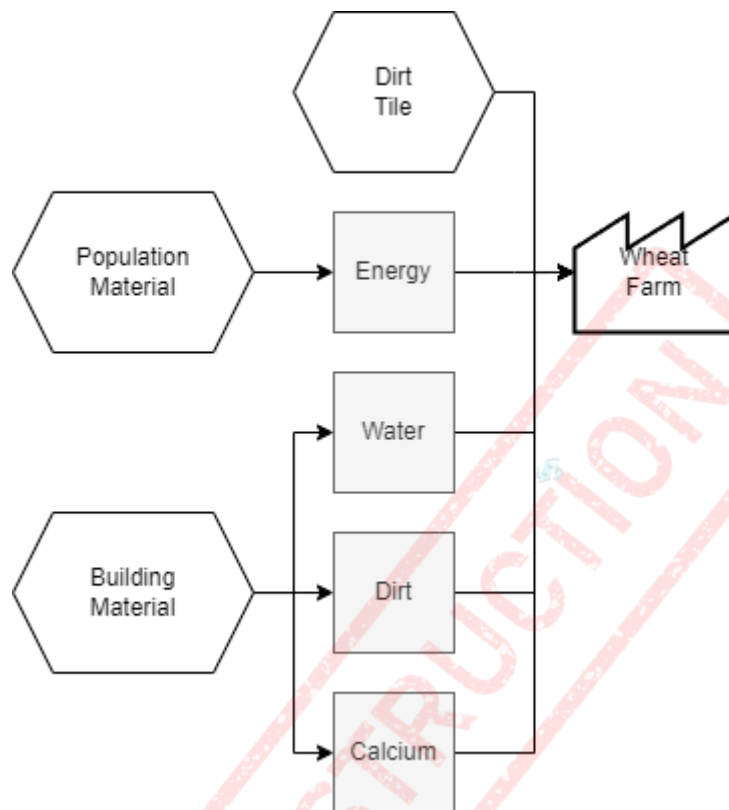
Wood Decayer

Tucked away in a secluded grove, the Wood Decayer is a mysterious structure where ancient techniques are employed to break down wood into rare and magical components.

Name	Wood Decayer
Type of Building	Gathering
Take-In	Energy, Dirt, Calcium
End product	Luciferin
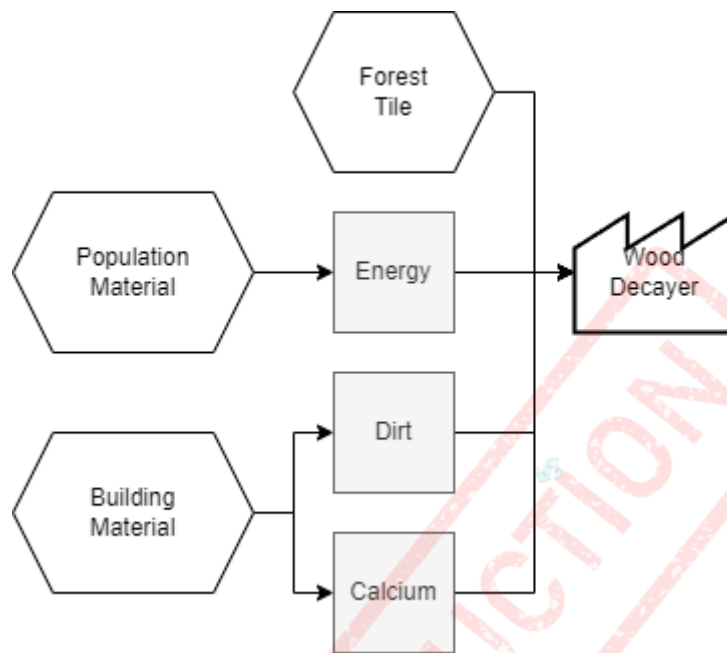
Earthworm Farm

Beneath the surface, the Earthworm Farm teems with activity as it cultivates a thriving population of earthworms. These diligent creatures play a crucial role in soil enrichment, promoting healthier crops and ecosystems. Harvested worms also serve as a simple way to obtain Protein for the colony.

Name	Earthworm Farm
Type of Building	Gathering
Take-In	Energy, Dirt, Calcium, Water
End product	Protein
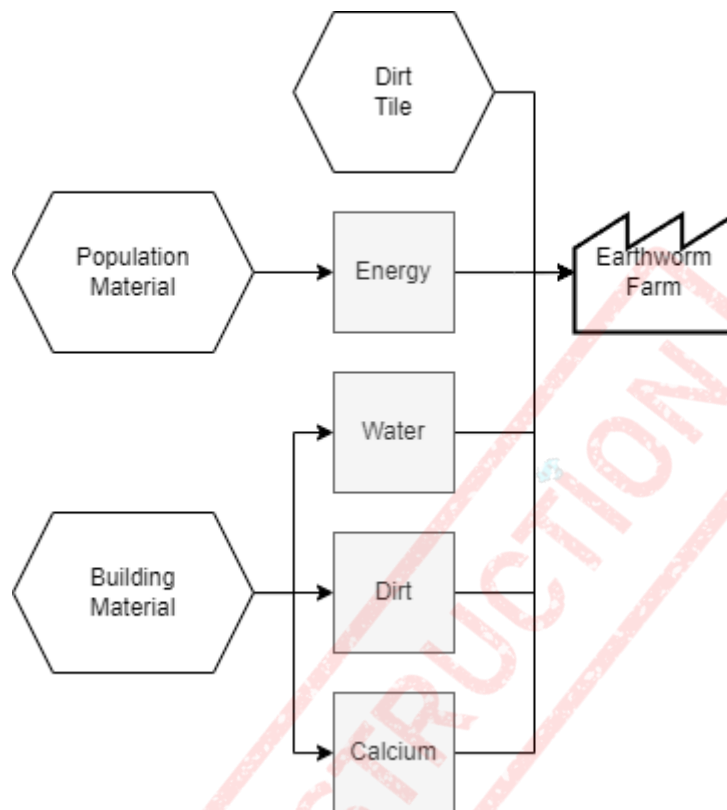
Well

A simple yet essential structure, the Well provides a dependable source of freshwater for nearby communities. Nestled in the heart of settlements, it ensures that residents have access to a reliable supply of clean water,

Name	Well
Type of Building	Gathering
Take-In	Energy, Dirt, Calcium
End product	Water
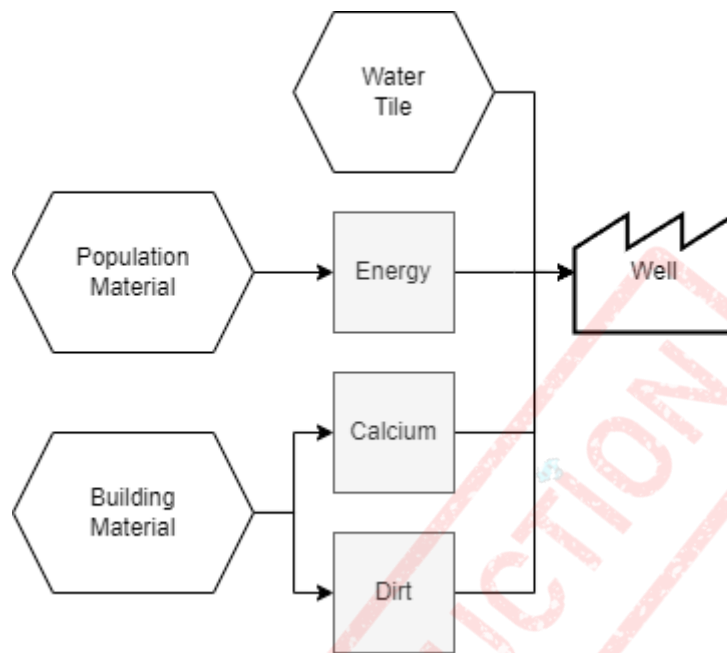
Coming Next:

Following the goals set in the previous section there will be much more buildings. This is elevated even more by more game mechanics like Diplomacy, Trade, Population and more.

c. Population

The Population is essential for the Games Progression. Ensuring a well fed and overall happy colony is the foundation for a flourishing gameplay.

The maximum population for the colony is determined by the number of available housing. There will be different types of housing, with variable costs and benefits to the inhabitants.

Coming Next:

Continuing to build mechanics around colony development, population well-being and more:

- Design an Energy Mechanic for each individual population member
- Day and Night cycle with different aspects to colony behavior
- Technological advancement through scientific research

5. Non-essential Game Mechanics

Achievement Name	Player Action
Dancing Mushroom	Played the 2nd GDD Mushy animation.
Found in the Forest	Player completed the introduction.
Safe and Sound	Player returned to home base after introduction.
Look Ma, Dirt!	Player touched a dirt pile.
Started a Family	5 mushrooms in the colony.
Classy Mushrooms	20 mushrooms in the colony (small classroom size).
Well, well, well!	Player put down a well.
Well, well, well…	A mushroom drowned in a well.
It glows!	Player found luciferin.
X marks the spot!	Player puts resources in an "X" formation.
Dirt wigglers	Player builds an earthworm farm.
Garlic mushroom	Player accidentally left a mushroom at a fire for too long.
…	*More coming soon! Achievements will be created as the development progresses, ensuring a tone of Achievables while also staying close to features inside the game.*

Story

The story is largely Sam's coming of age story, told through Mushy's eyes. The game begins with Sam running away from home, presumably due to an argument or some other kind of conflict happening at home. Sam is established to be a curious and empathetic child, showing no fear towards the mushrooms in the forest when lost. Sam's journey in the forest clearly depicts Mushy and Sam's first meeting as one born of accidental discovery through Sam tripping on a stray root and accidentally hurting Mushy in the process. Despite this, the two are initially very amicable and are able to return Sam home, despite this being a potentially problematic environment for Sam. It is this kindness and camaraderie between the two unlikely friends which spawns an entire colony and the player's city-building journey.

1. Naming

Mushy's naming is two-fold; first a name of convenience given by Sam to the mushroom (a childish shortening of "mushroom"), and second, to reflect the chief mushroom's moldability to Sam's whims and the needs of the rest of the colony. While "mushy" in plain English can be interpreted to have negative and unpleasant connotations, it also evokes images of "mushy peas"; a hearty and classic British dish surviving since the medieval times often fed to young children as part of an everyday meal. The name's attribution to a dish that accompanies children as they grow mirrors Mushy's role as a figure who helps Sam learn and grow.

Similarly, the name "Sam" is typically given the meaning "name of god" from the original Hebrew version. From the perspective of the mushrooms, Sam acts as deity-like figure who keeps the colony safe in the garden and away from natural predators. This is contrasts the perceived notion of Sam being originally saved by the mushrooms and establishes the interdependency between Sam and the new mushroom colony.

2. Plot

The game's structure primarily revolves around Sam's journey after finding Mushy while lost in the forest on a rainy night. Mushy guides Sam back home, and Sam keeps Mushy safe in the garden to grow the colony. There are several events that are planned out which are opportunities for conflict where Mushy's reaction plays a pivotal role in how the colony expands.

A full version of the script and stage/game directions are available at the bottom of this document in the Appendix. It is important to note that Mushy's (the player's) dialogue options will affect the child's reaction to external conflict, and this will also be reflected through debuffs to the colony.

Event 1: Sam's first day of school!

- **PREMISE:** Sam's first day of school! Mushy is left alone for a bit to figure out some basics about resource management and start to build up the colony. Colony 101.
- **CONSEQUENCES:** Mushrooms start to waddle around a bit.
- **PROGRESSION:** 15 mushrooms to get to the next event

Event 2: Show and tell!

- **PREMISE:** Share and tell! It's time for Sam to show off one of the mushrooms to the class/talk about their newfound friends! Sam is super confident about this here!
- **CONSEQUENCES:** Mushy needs to choose a part of the colony to prioritize, and pick a resource to remove from the colony for Sam to bring to show and tell.
- **PROGRESSION:** 50 mushrooms to get to next event.

Event 3: Teasing

- **PREMISE:** Sam is getting teased at school for what they demonstrated during show and tell. Sam asks Mushy what they should do. (Light teasing, feeling doubtful)

- **CONSEQUENCES:** Mushy's judgement is clouded by emotions about show and tell, depending on dialogue options. Mushy can either try to reassure Sam and the rest of the colony about the situation, remain neutral and apathetic, or put Sam down about taking care of the colony and berate the colony for not working fast enough to be cool for Sam. Mushrooms can die out faster because of lowered morale.
  PROGRESSION: 75 mushrooms to get to next event.

Event 4: Want to give up?
- **PREMISE:** The colony is threatened when Sam returns home in tears and wants to give up caring for the colony. Mushy must try to talk Sam out of this predicament and convince them not to give up on trying to care for the colony. (Feeling very discouraged).
- **CONSEQUENCES:** Mushrooms die out faster due to lowered morale, lowered speed, and Mushy's emotions are even more clouded, becomes more desperate to save the colony depending on dialogue.
- **PROGRESSION:** Mushroom colony must continue growing past 75. If the colony number falls below 75, then progress to Event 5.

Event 5: Saving Throw

- **PREMISE:** Sam trying to figure out what to do about their classmates. Mushy needs to try to figure out ways to convince Sam to not give up and try to confront the people making things difficult at school.
- **CONSEQUENCES:** If Mushy does a bad job, bad ending. If Mushy does a bad job, but has done a good job in previous stages, bad ending. If Mushy does an okay job, neutral ending. If Mushy does a good job, good ending and things resolve.

3. Endings

There are three possible endings in *Mycelium Roads:* Bad, neutral, and good. The choice of ending depends both on the player's dialogue choices, as well as their performance while building the colony. If the colony does poorly, and dialogue options maintain emotional distance rather than support Sam, then the player will arrive at the bad ending. Most notably, to achieve the good ending, the player **must** fail Event 4 to continue to Event 5; reinforcing the importance of persistence amidst failure.

Full versions of the bad, neutral, and good endings are included in the Appendix.
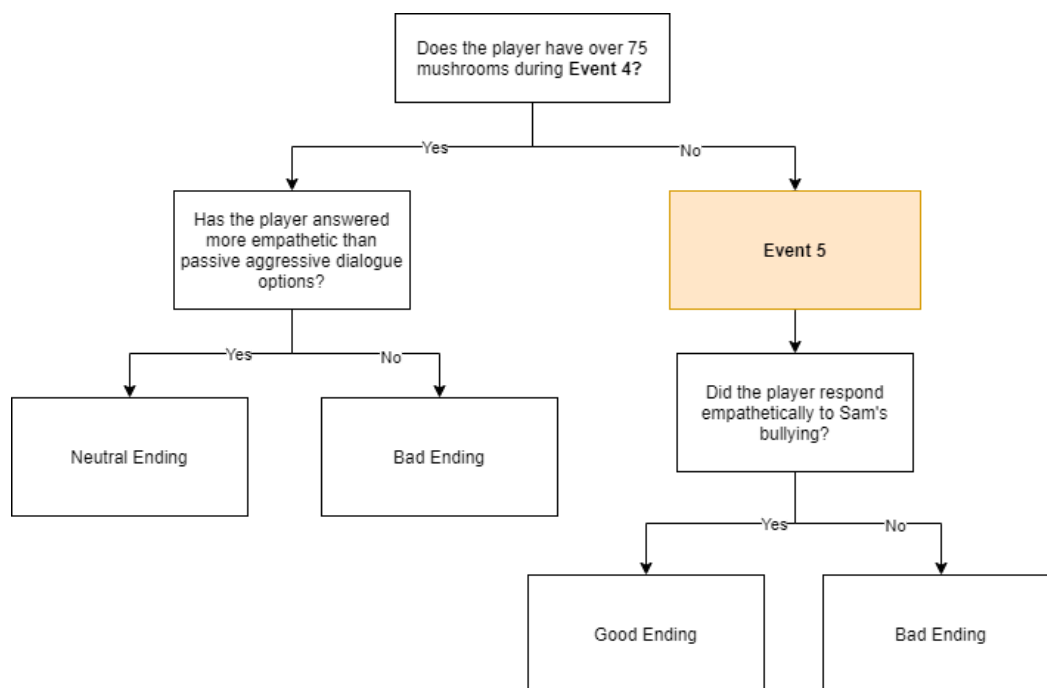
Alternative versions of the events with considerations for resource-related achievements and additional mechanics not included in the prototype are also included in Part 2 of the Appendix.

Art

1. Inspiration

The art for *Mycelium Roads* is primarily in a pixel art style, featuring bright colors in the garden, and blue/grey sketches for storytelling. The design of the garden is loosely based off of world maps with hexagonal tiles (ex. [Settlers of Catan](), [Civilization](), and [Curious Expedition]() (screenshot on the left). Each tile features a distinct purpose (ex. Grass, water, dirt) which can be enabled/disabled as needed. Sprites follow a pixel art sprite style similar to [Pokémon Emerald]() games.

Hexagonal tiles are used in the game as both a nod to traditional city-builder games, and also to introduce a sense of freshness to the pathfinding in the game. Hexagonal tiles also help with increasing pathfinding possibilities in the colony, and make the mushrooms feel more organic than if they were navigating along horizontal and vertical axes as would be the case with square tiles.

The art style in the story is similarly pixel art, though the color palette is restricted to shades of blue/grey to reflect the impact of Mushy on the story and Sam as a character. The story starts off in grey and black, and as Sam finds Mushy, the scenes are also colored in shades of blue (Mushy's color).

The UI designs use organic elements as frames, similar to [Stardew Valley](). The vines around the wooden frames are meant to evoke a nature and forest setting around the garden. The frames are easily rescalable and can be changed and adapted to fit any of the UI inventory and other menu items. The same base frame is also used for the dialogue, making menu elements cohesive throughout the game.

2. Theme Interpretation

Like other elements of the game's design, the vines spread throughout the UI elements from the main screen, and pull the whole design together. The base frames for the UI also resemble easels or chalkboards that children would use at school, relating to how Sam's school life bleeds into their life with the colony.

The mushroom's design is based off of that of *Stropharia caerulea* (blue roundhead mushroom) native to Europe and North America. Given the mushroom's improved growth among beech trees, and its presence in Europe (specifically Britain), design elements are largely inspired by flora of the English countryside. The blue roundhead mushroom was originally selected due to its saturated color, and the otherworldly nature of a bright blue in contrast to its earth-toned surroundings. Blue typically connotes relaxation, trust, and calmness; directly relating to Sam's feelings while initially finding the mushrooms as well as the mushroom colony's objective of emotion regulation throughout the story.

3. Design
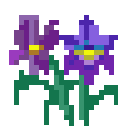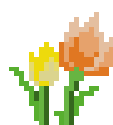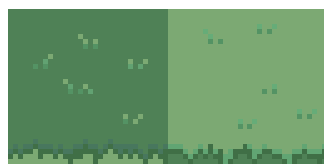
Flowers from top to bottom, left to right:
- Pyramidal orchid
- Double Late Tulip (Sunset Tropical)
- *Campanula rotundifolia* (harebell)
- *Tulipa sylvestris* (woodland tulip)
- *Primula vulgaris* (primrose)
- *Orchis mascula* (early-purple orchid)
- *Pulsatilla vulgaris* (pasqueflower)

Sam's design was inspired by that of young countryside children as portrayed in movies in the late 80s and early 90s. Films such as *Sarah Plain and Tall*, and *Skylark* inspired the wardrobe choices for Sam. Although these films are set in the prairies in the United States, the wardrobe evokes a sense of nostalgia for the countryside regardless.

Audio

1. Music

The music is primarily based off of classical impressionist music by Debussy and Ravel. Arrangements of pieces evoking nature, springtime, childhood, and wonder have been mixed and mastered using a subset of a traditional orchestra, primarily utilizing more whimsical instruments such as flutes, glockenspiels, celestes, and strings. On occasion, a soft pad has been used make the piece feel more atmospheric. All scores for the original classical music used in the mixes of *Mycelium Roads* is globally in the public domain, and unless otherwise indicated, all MIDI files sampled in the creation of these mixes fall under a [Creative Commons 0 (CC0)] license and have been heavily modified to better fit the instrumentation and desired usage.

Main Colony Theme
The main colony theme is an arrangement of Debussy's *Passepied* from the *Suite Bergamasque* (originally for piano). A *Passepied* is a kind of dance originating in Brittany, and is meant to be quick and light. A cello was selected for the arpeggiation to add lightness to the mushroom's footsteps and paint an image of mushrooms tiptoeing and pattering around the garden. A string section is used to provide a swell and evoke the fullness of the motion on screen. A piccolo and glockenspiel are used to emphasize whimsy and the magical nature of the mushrooms, and the tempo has been lowered to 125bpm to better sync with the mushroom movement and ensure the player does not feel rushed while working with the colony. This also makes it easier to sync the animations to the music at a later date. The MIDI file used and extensively modified for this track is graciously provided by [Bernd Krueger] under a [Creative Commons 3.0 license].

Finding Mushroom (Opening) Theme

The three parts of the "Finding Mushroom" theme are based off of samples from Ravel's *Le jardin féerique (The Fairy Garden)* from *Ma mère l'Oye (My Mother the Goose)*. The original arrangement for complete orchestra has been rewritten for a glockenspiel, two vibraphones, two electric piano pads, and faint strings. All instruments have been decompressed to amplify the perceived space in the audio, and the stereo width has also been increased to provide more ambiance and emphasize the high reverb and soft attack of each instrument. Specific sections have been arranged to be loopable according to the opening dialogue, and provide space for the player to enjoy the feeling of a mystical garden while lost, far from home. The vibraphones have been incorporated into the arrangement to provide an echoing and misty feeling, and the glockenspiel represents the pockets of ethereal light emanating from the mushroom, and the "sparkle" in Sam's eyes. Additionally, the pads are used to keep the instrumentation light for the listener, while also keeping the piece steady and flowing.

Main Menu/Event Themes

The main menu and Event 1 theme are a rearrangement of Satie's *Sonatine Bureaucratique,* (originally for piano) to glockenspeil, xylophone, two violas, two grand pianos, cello, double bass, English horn, and French horn. All instruments have been slightly compressed to give a certain crispness to the rhythm, and a distinct matter-of-factness to the main melody. The piece was chosen for its resemblance to sonatinas played by youth when first starting an instrument[4]. It evokes a sense of play and bounciness when heard, amplified by the pizzicato and staccato strings. The traditional chamber music-like instrumentation evokes a sense of regality and importance; a piece fit for tiny royalty.

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[4] This was my childhood (and a whole lot of other folks')! I played so many of these on piano and it was a fun time! - yase_kii

Event Themes 2, 3, 4, 5, and Good/Bad Ending
The other event themes (2, 3, 4, 5) and the good and bad endings are based on excerpts from *Ravel's Ma mère l'Oye (My Mother the Goose)* suite. Event 2 is based on the *Pavane of Sleeping Beauty*, Event 3 is based on small excerpts of *Petit Poucet*, Event 4 on parts of *Les entretiens de la belle et la bête*. Event 5/Good/Bad ending tracks are based on the finale of *Le jardin féerique*, the same source as the "Finding Mushroom" theme. The instrumentation is identical for all themes.

2. Sound Effects

The sound effects in *Mycelium Roads* primarily consist of organic and traditional percussive hits with compression effects for consistency. The button sounds are [wood blocks](), a small drum made out of a hollowed piece of wood. A low sound is used for a "confirm" button, and a high sound for "back" or uncertain options. The sound effect for placing a resource uses [claves](), two short, wooden sticks hit together to produce the sound. The sound to delete a resource is provided by [castanets](). These sounds are all made from wooden instruments traditionally used in Latin and European dance music. In many schools, basic percussion instruments are among the first instruments young children play. As the story revolves around Sam's first steps in school, it seemed fitting to use these instruments for the button sounds.

The theme for colony expansion is an excerpt from the main colony theme on strings, glockenspiel and flute. The chord progression for this effect is intentionally unstable as it reflects the additional responsibility of having more mushrooms in your colony.

Several sound effects are sampled and extensively modified from an open source, [CC0-licensed sound library](). The original footstep sample was sample from this library, and the pitch and speed, were modified. Noise and randomness were augmented to add atmosphere to the effect. To get the mushroom footsteps, the child's footsteps are compressed, random noise is increased, and the pitch and speed are increased to represent the comparatively lighter footsteps fo the mushrooms.

Game Experience

1. UI

The current UI elements are all designed to represent a nature theme, complete with overgrown vines that have started to take back the wooden planks to further the spreading theme. On the top left is the main UI element which shows the player all of the resources they currently have along with the population count of the colony and any events currently active. The time and weather in the top right shows how much longer the play has in the current day along with a quick reference to the weather. Hovering over the weather displays more detail, including what day the player is on. On the bottom right are all the time controls so the player can better play at their own pace. Time controls go from paused, up to three times speed.

Coming Next:

Going forward with the project, all visual elements will be redrawn in a more uniform size so the pixel sizes are the same size throughout the game. A more unique font will be used over the default to more match the style of the HUD and other elements.

2. Controls

Keyboard
- Arrow Keys / WASD - Camera
- Escape - opening menu, closing ui elements
- M - Main building, needed to build anything else
- B - Street tile to connect buildings together
- V - Turns street back into grass
- U - Tent, medium population increase
- N - Shed, medium population increase
- I - House, large population increase
- C - Dirt hole, used to gather dirt
- H - Well, used to gather water (well what else did you expect?)
- L - Dirt cleanser, generates calcium
- K - Earthworm farm, produces protein
- J - Quarry, produces phosphorus
- G - Wheat farm, produces carbohydrates
- P - Wood burner, produces potassium
- O - Wood decayer, produces luciferin

Controller
- D-pad / Joystick - Camera

Development Timeline

1. Minimum Viable Product

#	Assignment	Type	Status	Finish By	Notes
1	Design Document - Draft	Oth... ▾	Finished ▾	Jan 15, 2024	This includes all Diagrams, all Things as Bullet Lists
2	Task List for GameWorld	Oth... ▾	Finished ▾	Jan 16, 2024	Based on Design Document Draft
3	Task List for UI	Oth... ▾	Finished ▾	Jan 16, 2024	Based on Design Document Draft
4	Finishing Design Document	Oth... ▾	Finished ▾	Jan 26, 2024	Based on Design Document Draft
5	Group Reading of GDD and Last Playtesting	Oth... ▾	Finished ▾	Jan 26, 2024	1 Day Group Meeting
6	Wrapping up all Files	Oth... ▾	Finished ▾	Jan 26, 2024	Packing the Demo for Shipment + GDD + Soundtrack
7	Submit	Oth... ▾	Finished ▾	Jan 26, 2024	https://itch.io/jam/pirate

Game Design Document

#	Assignment	Type	Status	Finish By	Notes
1	Diagram building Dirt Hole	Other ▾	Finished ▾	Jan 17, 2024	
2	Diagram gathering Dirt	Other ▾	Finished ▾	Jan 17, 2024	
3	Diagram building Dirt Cleansing	Other ▾	Finished ▾	Jan 17, 2024	

#	Assignment	Type	Status	Finish By	Notes
4	Diagram gathering Calcium	Other ▾	Finished ▾	Jan 17, 2024	
5	Diagram building Earthworm Farm	Other ▾	Finished ▾	Jan 17, 2024	
6	Diagram gathering	Other ▾	Finished ▾	Jan 18, 2024	
7	Diagram building Wheat Farm	Other ▾	Finished ▾	Jan 18, 2024	
8	Diagram gathering Carbohydrates	Other ▾	Finished ▾	Jan 18, 2024	
9	Diagram building Wood Burner	Other ▾	Finished ▾	Jan 18, 2024	
10	Diagram gathering Potassium	Other ▾	Finished ▾	Jan 18, 2024	
11	Diagram building Wood Decayer	Other ▾	Finished ▾	Jan 18, 2024	
12	Diagram gathering Luciferin	Other ▾	Finished ▾	Jan 18, 2024	

GameWorld Tasks

#	Assignment	Type	Status	Finish By	Notes
1	Implement Hexagonal grid	Cod... ▾	Finished ▾	Jan 19, 2024	
2	Implement Grid based Pathfinding	Cod... ▾	Finished ▾	Jan 19, 2024	

#	Assignment	Type	Status	Finish By	Notes
3	Implement NPC Mushrooms	Cod... ▾	Finished ▾	Jan 19, 2024	
4	Implement Street Tile Mechanic	Cod... ▾	Finished ▾	Jan 20, 2024	It is its own Navigation layer
5	Implement Tile Placing mechanic	Cod... ▾	Finished ▾	Jan 20, 2024	Simple Overlay to choose which tile to place/building,
6	Implement Building	Cod... ▾	Finished ▾	Jan 21, 2024	Start _> Main Building
7	Implement Building Restriction to Grid	Cod... ▾	Finished ▾	Jan 21, 2024	
8	Implement Check System if Building was placed already	Cod... ▾	Finished ▾	Jan 21, 2024	
9	Implement Mushroom Population Spawning / Despawning	Cod... ▾	Finished ▾	Jan 22, 2024	
10	Implement "Move to Destination"	Cod... ▾	Finished ▾	Jan 22, 2024	
11	Implement Task Manager	Cod... ▾	Finished ▾	Jan 24, 2024	
12	Implement Main Building	Cod... ▾	Finished ▾	Jan 24, 2024	
13	Implement Wood Burner	Cod... ▾	Finished ▾	Jan 25, 2024	spawning, Inventory + function
14	Implement Wheat Farm	Cod... ▾	Finished ▾	Jan 25, 2024	spawning, Inventory + function

#	Assignment	Type	Status	Finish By	Notes
15	Implement Dirt Cleansing	Cod... ▾	Finished ▾	Jan 25, 2024	spawning, Inventory + function
16	Implement Well	Cod... ▾	Finished ▾	Jan 25, 2024	spawning, Inventory + function
17	Implement Wood Decayer	Cod... ▾	Finished ▾	Jan 26, 2024	spawning, Inventory + function
18	Implement Dirt Hole	Cod... ▾	Finished ▾	Jan 25, 2024	spawning, Inventory + function
19	Implement Phosphorus Quarry	Cod... ▾	Finished ▾	Jan 25, 2024	spawning, Inventory + function
20	Implement Earthworm Farm	Cod... ▾	Finished ▾	Jan 26, 2024	spawning, Inventory + function
21	Implement Mushroom Tent	Cod... ▾	Finished ▾	Jan 25, 2024	spawning, Inventory + function
22	Implement Mushroom Shed	Cod... ▾	Finished ▾	Jan 25, 2024	spawning, Inventory + function
23	Implement Mushroom House	Cod... ▾	Finished ▾	Jan 25, 2024	spawning, Inventory + function
24	Mushy Baby Asset	Art ▾	Finished ▾	Jan 14, 2024	1-Frame/Greyboxing
25	Mushy Teen Asset	Art ▾	Finished ▾	Jan 14, 2024	1-Frame/Greyboxing
26	Mushy Adult Asset	Art ▾	Finished ▾	Jan 14, 2024	1-Frame/Greyboxing
27	Grass Tile Assets	Art ▾	Finished ▾	Jan 15, 2024	1-Frame/Greyboxing
28	Wood Burner Assets	Art ▾	Finished ▾	Jan 16, 2024	1-Frame/Greyboxing
29	Wheat Farm Assets	Art ▾	Finished ▾	Jan 16, 2024	1-Frame/Greyboxing

#	Assignment	Type	Status	Finish By	Notes
30	Dirt Cleansing Assets	Art ▾	Finished ▾	Jan 16, 2024	1-Frame/Greyboxing
31	Well Assets	Art ▾	Finished ▾	Jan 16, 2024	1-Frame/Greyboxing
32	Rainbucket Assets	Art ▾	Finished ▾	Jan 16, 2024	1-Frame/Greyboxing
33	Wood Decayer Assets	Art ▾	Finished ▾	Jan 17, 2024	1-Frame/Greyboxing
34	Dirt Hole Assets	Art ▾	Finished ▾	Jan 17, 2024	1-Frame/Greyboxing
35	Phosphorus Quarry Assets	Art ▾	Finished ▾	Jan 17, 2024	1-Frame/Greyboxing
36	Earthworm Farm Assets	Art ▾	Finished ▾	Jan 17, 2024	1-Frame/Greyboxing
37	Mushroom Tent Assets	Art ▾	Finished ▾	Jan 17, 2024	1-Frame/Greyboxing
38	Mushroom Shed Assets	Art ▾	Finished ▾	Jan 18, 2024	1-Frame/Greyboxing
39	Carbohydrate Tile Assets	Art ▾	Finished ▾	Jan 18, 2024	1-Frame/Greyboxing
40	Dirt Tile Assets	Art ▾	Finished ▾	Jan 18, 2024	1-Frame/Greyboxing
41	Calcium Tile Assets	Art ▾	Finished ▾	Jan 18, 2024	1-Frame/Greyboxing
42	Luciferin Tile Assets	Art ▾	Finished ▾	Jan 18, 2024	1-Frame/Greyboxing
43	Phosphorus Tile Assets	Art ▾	Finished ▾	Jan 18, 2024	1-Frame/Greyboxing
44	Potassium Tile Assets	Art ▾	Finished ▾	Jan 18, 2024	1-Frame/Greyboxing
45	Protein Tile	Art ▾	Finished ▾	Jan 18, 2024	1-Frame/Greyboxing

#	Assignment	Type	Status	Finish By	Notes
	Assets				
46	Street Tile Assets	Art ▾	Finished ▾	Jan 18, 2024	1-Frame/Greyboxing
47	Water Tile Assets	Art ▾	Finished ▾	Jan 18, 2024	1-Frame/Greyboxing
48	Main Building	Art ▾	Finished ▾	Jan 18, 2024	1-Frame/Greyboxing
49	Main Colony theme - Day	Audio ▾	Finished ▾	Jan 22, 2024	Ingame Music (Main theme)
50	SFX - Building placed	Audio ▾	Finished ▾	Jan 23, 2024	Should be more substantial and not annoying
51	SFX - Resource removed	Audio ▾	Finished ▾	Jan 23, 2024	Move single cells around and collide with walls
52	SFX - Sound effects	Audio ▾	Finished ▾	Jun 22, 2022	Player movement, UI interaction
53	SFX - Watering effect	Audio ▾	Finished ▾	Jan 22, 2024	Watering mushrooms sound effect.
54	SFX - Growing effect	Audio ▾	Finished ▾	Jan 24, 2024	Colony growing sound effect.
55	SFX - Button clicks	Audio ▾	Finished ▾	Jan 24, 2024	UI button click sound effects.
56	SFX - Birds	Audio ▾	Finished ▾	Jan 20, 2024	Background effects
57	Finding mushroom theme	Audio ▾	Finished ▾	Jan 22, 2024	Music for finding mushrooms at the beginning of the game.
58	Storyboarding for finding mushroom	Art ▾	Finished ▾	Jan 18, 2024	Storyboards for opening scene.
59	Storyboarding for 5 events	Art ▾	Finished ▾	Jan 18, 2024	Storyboards for the five events. Consequences, dialogue.

#	Assignment	Type	Status	Finish By	Notes
60	Art for opening running scene	Art ▾	Finished ▾	Jan 18, 2024	Assets for the opening scene.
61	Art for opening tripping scene	Art ▾	Finished ▾	Jan 18, 2024	Assets for the opening scene.
62	Art for opening interaction with mushroom	Art ▾	Finished ▾	Jan 18, 2024	Assets for the opening scene.
63	Art for opening dialogue	Art ▾	Finished ▾	Jan 18, 2024	Assets for the opening scene.
64	Art for walking out of the forest	Art ▾	Finished ▾	Jan 18, 2024	Assets for the opening scene.
65	Art for Event 1	Art ▾	Finished ▾	Jan 18, 2024	Assets for the event scene.
66	Art for Event 2	Art ▾	Finished ▾	Jan 19, 2024	Assets for the event scene.
67	Art for Event 3	Art ▾	Finished ▾	Jan 19, 2024	Assets for the event scene.
68	Art for Event 4	Art ▾	Finished ▾	Jan 19, 2024	Assets for the event scene.
69	Art for Event 5	Art ▾	Finished ▾	Jan 19, 2024	Assets for the event scene.
70	Music for Event 1	Audio ▾	Finished ▾	Jan 19, 2024	Music for the event scene.
71	Music for Event 2	Audio ▾	Finished ▾	Jan 19, 2024	Music for the event scene.
72	Music for Event 3	Audio ▾	Finished ▾	Jan 19, 2024	Music for the event scene.
73	Music for Event 4	Audio ▾	Finished ▾	Jan 19, 2024	Music for the event scene.
74	Music for Good Ending	Audio ▾	Finished ▾	Jan 19, 2024	Music for the good ending.
75	Music for Bad	Audio ▾	Finished ▾	Jan 19, 2024	Music for the bad ending.

#	Assignment	Type	Status	Finish By	Notes
	Ending				
76	Music for Neutral Ending	Audio ▾	Finished ▾	Jan 19, 2024	Music for the neutral ending.
77	Main theme music	Audio ▾	Finished ▾	Jan 20, 2024	Music for main theme.

UI Tasks

#	Assignment	Type	Status	Finish By	Notes
1	UI Scaling	Coding ▾	Finished ▾	Jan 22, 2024	
2	Options Menu (In game)	Coding ▾	Finished ▾	Jan 22, 2024	
3	Day/Night Clock	Coding ▾	Finished ▾	Jan 22, 2024	Have base in, need final art
4	Time Scale Buttons	Art ▾	Finished ▾	Jan 22, 2024	Need art to implement
5	Resource UI	Art ▾	Finished ▾	Jan 22, 2024	Need final art
6	UI Buttons	Art ▾	Finished ▾	Jan 22, 2024	Need large, flat, buttons. Trashcan to delete save files. Gear for options.
7	Custom Cursor	Art ▾	Finished ▾	Jan 22, 2024	
8	Resource Tracker	Coding ▾	Finished ▾	Jan 22, 2024	Link the resources owned to the HUD -> Blocked by Main Building Mechanic
9	Add in SFX	Coding ▾	Finished ▾	Jan 22, 2024	
10	Main Menu Background	Art ▾	Finished ▾	Jan 22, 2024	Maybe parallax
11	LandratSoftware	Art ▾	Finished ▾	Jan 22, 2024	Rat on land with binoculars, looking

#	Assignment	Type	Status	Finish By	Notes
	Logo				out at a ship on the sea. (Pirate Software Logo on the looked at Ship)
12		Other ▾	Finished ▾	Jan 22, 2024	
13	Exit button	Art ▾	Finished ▾	Jan 25, 2024	
14	Mushy inventory button	Art ▾	Finished ▾	Jan 25, 2024	
15	Quit button	Art ▾	Finished ▾	Jan 25, 2024	
16	3 save file buttons	Art ▾	Finished ▾	Jan 25, 2024	
17	Gear icon	Art ▾	Finished ▾	Jan 24, 2024	
18	Trash icon	Art ▾	Finished ▾	Jan 24, 2024	
19	Fast forward buttons	Art ▾	Finished ▾	Jan 24, 2024	
20	Large flat buttons	Art ▾	Finished ▾	Jan 24, 2024	
21	Start main menu	Art ▾	Finished ▾	Jan 24, 2024	

2. Beyond MVP - After Game Jam

Game Design Document

#	Assignment	Type	Status	Finish By	Notes
1	Diagram building Cafeteria	Other ▾	Not started ▾	Jan 26…	
2	Diagram gathering Energy	Other ▾	Not started ▾	Jan 26…	

#	Assignment	Type	Status	Finish By	Notes
3	Level Design	Other ▾	Not started ▾	Jan 26…	
4	Define Building Function	Other ▾	Not started ▾	Jan 26…	
5	Define Mechanic Streets	Other ▾	Not started ▾	Jan 26…	
6	Define Mechanic Inventory	Other ▾	Not started ▾	Jan 26…	Inventory will only be visible for player, for in game the global inventory changes when a task is fulfilled successfully
7	Define Mechanic NPC Mushroom	Other ▾	Not started ▾	Jan 26…	
8	Define Mechanic Main Character	Other ▾	Not started ▾	Jan 26…	
9	Define Task Manager	Other ▾	Not started ▾	Jan 26…	
10	Define Despawn Mechanic	Other ▾	Not started ▾	Jan 26…	For mushrooms that are stuck
11	Define Main Building Mechanic	Other ▾	Not started ▾	Jan 26…	
12	Cafeteria Assets	Art ▾	Not started ▾	Jun 23…	1-Frame/Greyboxing

GameWorld Tasks

#	Assignment	Type	Status	Finish By	Notes
1	Grass Tile Asset	Art ▾	Not started ▾	Jun 23…	ConceptArt, Design, Animation
2	Wood Burner Asset	Art ▾	Not started ▾	Jun 23…	ConceptArt, Design, Animation
3	Wheat Farm Asset	Art ▾	Not started ▾	Jun 23…	ConceptArt, Design, Animation
4	Dirt Cleansing Asset	Art ▾	Not started ▾	Jun 23…	ConceptArt, Design,

#	Assignment	Type	Status	Finish By	Notes
					Animation
5	Well Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
6	Rainbucket Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
7	Wood Decayer Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
8	Dirt Hole Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
9	Phosphorus Quarry Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
10	Earthworm Farm Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
11	Mushroom Tent Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
12	Mushroom Shed Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
13	Mushroom House Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
14	Carbohydrate Tile Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
15	Dirt Tile Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
16	Calcium Tile Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
17	Luciferin Tile Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
18	Phosphorus Tile Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
19	Potassium Tile Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
20	Protein Tile Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
21	Street Tile Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design,

#	Assignment	Type	Status	Finish By	Notes
					Animation
22	Water Tile Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
23	Cafeteria Asset	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
24	Mushroom NPC Interaction	Art ▾	Not started ▾	Jun 23...	ConceptArt, Design, Animation
25	Mushroom NPC Asset	Art ▾	Not started ▾	Jun 23...	1-Frame/Greyboxing
	Mushroom House Assets	Art ▾	Not started ▾	Jun 23...	1-Frame/Greyboxing
26	Add Collision detection of NPC Mushrooms towards each other	Coding ▾	Not started ▾	🗓 Dat...	No more stacking into each other -> needs a lot of finetuning of Grid, NavAgents and CollisionDetection
27	Implement Rainbucket	Coding ▾	Not started ▾	Jan 26...	
28	Implement "Resource Delivery" Task	Coding ▾	Not started ▾	Jan 26...	
29	Implement "Work in Building" Task	Coding ▾	Not started ▾	Jan 21...	

UI Tasks

#	Assignment	Type	Status	Finish By	Notes
1	Add Controller Support	Coding ▾	Not started ▾	Jun 22...	General Inputs need to be defined.
2	Add Controller Preset	Coding ▾	Not started ▾	🗓 Dat...	Add a user friendly Controller preset
3	Add Free Keybinding	Coding ▾	Not started ▾	Jun 23...	Option to map any Key to any Action inside the game (Keyboard + Mouse, Controller)

#	Assignment	Type	Status	Finish By	Notes
4	Improve dialogue system	Coding ▾	Not started ▾	🗓 Date	Improve interface for dialogue, make full screen, text on screen, more dynamic.
5	Include optional narration	Coding ▾	Not started ▾	🗓 Date	For vision-impaired player support.
6	Include alt text for images in narration	Coding ▾	Not started ▾	🗓 Date	For vision-impaired player support.
7	Include CCs for sound effects and music	Coding ▾	Not started ▾	🗓 Date	For hearing-impaired player support.
8	Rearrange/Redo all Assets to fit 16:9 ratio to fit modern screens	Other ▾	Not started ▾	🗓 Dat...	Complex task! Should be split into individual problems.
9	Implement HoverShadow of Building to be placed	Coding ▾	Not started ▾	🗓 Dat...	Should help the user to know where a building will be placed
10	Saving Functionality	Coding ▾	Not started ▾	Jun 26...	
11	Minimap	Coding ▾	In progress ▾	Jun 23...	Have art, need game world to test minimap
12	Random Events	Coding ▾	In progress ▾	Jun 24...	Have placeholder art and no events.
13	Player Inventory	Coding ▾	Not started ▾	Jun 25...	
14	Options Menu (Main Menu)	Coding ▾	In progress ▾	Jan 18...	Need the game world to swap the scene to.

Story

#	Assignment	Type	Status	Finish By	Notes
1	Implement Event 1 into gameplay	Story ▾	Not started ▾	Feb 29...	Implementing story into gameplay.
2	Implement Event 2 into	Story ▾	Not started ▾	Feb 29...	Implementing story

#	Assignment	Type	Status	Finish By	Notes
	gameplay				into gameplay.
3	Implement Event 3 into gameplay	Story ▾	Not started ▾	Feb 29...	Implementing story into gameplay.
4	Implement Event 4 into gameplay	Story ▾	Not started ▾	Feb 29...	Implementing story into gameplay.
5	Implement Event 5 into gameplay	Story ▾	Not started ▾	Feb 29...	Implementing story into gameplay.
6	Implement Good Ending into gameplay	Story ▾	Not started ▾	Feb 29...	Implementing story into gameplay.
7	Implement Bad Ending into gameplay	Story ▾	Not started ▾	Feb 29...	Implementing story into gameplay.
8	Implement Neutral Ending into gameplay	Story ▾	Not started ▾	Feb 29...	Implementing story into gameplay.
9	Flesh out scripts with more dialogue options	Story ▾	Not started ▾	Feb 29...	Implementing story into gameplay.

Music/Sound

#	Assignment	Type	Status	Finish By	Notes
1	SFX - Turn to day	Audio ▾	Not started ▾	Jan 31...	Sound effects for turning night to day in-game.
2	SFX - Turn to night	Audio ▾	Not started ▾	Jan 31...	Sound effects for turning day to night in-game.
3	Main Colony theme - Night	Audio ▾	Not started ▾	Jun 13...	Ingame Music (Main theme)
4	Code in sound effects for story scenes	Audio ▾	Not started ▾	Feb 21...	Add sound effects to story
5	Add false speech sound	Audio ▾	Not started ▾	Feb 10...	Add speech effects to dialogue.

#	Assignment	Type	Status	Finish By	Notes
	effect for Sam and Mushy				
6	Dirt SFX	Audio ▾	Not started ▾	Feb 14...	Resource SFX.
7	Phosphorous SFX	Audio ▾	Not started ▾	Feb 14...	Resource SFX.
8	Potassium SFX	Audio ▾	Not started ▾	Feb 14...	Resource SFX.
9	Carbohydrates SFX	Audio ▾	Not started ▾	Feb 14...	Resource SFX.
10	Protein SFX	Audio ▾	Not started ▾	Feb 14...	Resource SFX.
11	Calcium SFX	Audio ▾	Not started ▾	Feb 14...	Resource SFX.
12	Luciferin SFX	Audio ▾	Not started ▾	Mar 5, ...	Resource SFX.
13	Dirt Hole SFX	Audio ▾	Not started ▾	Mar 5, ...	Building SFX.
14	Dirt Cleansing SFX	Audio ▾	Not started ▾	Mar 5, ...	Building SFX.
15	Phosphorous Quarry SFX	Audio ▾	Not started ▾	Mar 5, ...	Building SFX.
16	Wood Burner SFX	Audio ▾	Not started ▾	Mar 5, ...	Building SFX.
17	Wheat Farm SFX	Audio ▾	Not started ▾	Mar 5, ...	Building SFX.
18	Wood Decayer SFX	Audio ▾	Not started ▾	Mar 5, ...	Building SFX.
19	Earthworm Farm SFX	Audio ▾	Not started ▾	Mar 5, ...	Building SFX.
20	Well SFX	Audio ▾	Not started ▾	Mar 5, ...	Building SFX.
21	Cafeteria SFX	Audio ▾	Not started ▾	Mar 5, ...	Building SFX.
22	Rework Event 1 track to original score	Audio ▾	Not started ▾	Mar 5, ...	Reworking Soundtrack
23	Rework Event 2 track to original score	Audio ▾	Not started ▾	Mar 5, ...	Reworking Soundtrack
24	Rework Event 3 track to	Audio ▾	Not started ▾	Mar 5, ...	Reworking

#	Assignment	Type	Status	Finish By	Notes
	original score				Soundtrack
25	Rework Event 4 track to original score	Audio ▾	Not started ▾	Mar 5, ...	Reworking Soundtrack
26	Rework Event 5 track to original score	Audio ▾	Not started ▾	Mar 5, ...	Reworking Soundtrack
27	Rework Main Colony track to original score	Audio ▾	Not started ▾	Mar 5, ...	Reworking Soundtrack
28	Rework Main Menu track to original score	Audio ▾	Not started ▾	Mar 5, ...	Reworking Soundtrack

Appendix

Scripts

Beginning

SETTING: British countryside/farm in the 1900s (ambiguous exact date, but roughly 80s, 90s).

CHARACTERS:
   - Sam (Child)
   - Mushy/Roundhead (Mushroom)

SCENE 1
Garden. Night. Rain. The scene is black and white. Sam runs out the back of the house, panting.

The player can hear unintelligible frantic dialogue, yelling.

Sam pauses, and shakes their head, as if to say a definitive "no", before running into the forest with their head down.

Yelling. Garden. Night. Rain.
(Running, tripping, no dialogue)

Cut to a few frames of Sam running through the forest, the frame growing darker and darker each time, tears beginning to form and trail behind them.

Sam trips and falls to the ground, wincing in pain. A soft blue light emerges from the ground where they had uncovered the ground.

Sam stares at the blue light in wonder, eyes wide, and wipes a couple tears away from their face.

A small blue mushroom resting in the soil, like a baby bird cocooned by moist grass lays there, glowing.

Tenderly, Sam scoops up the mushroom, before it winces and grumbles itself to wake.

The perspective shifts to that of the mushroom, staring into a bewildered Sam's face.

The camera darkens/shifts a few times, to simulate blinking and looking around.

SAM: *Startled.* I-I'm sorry… I didn't mean to wake you.

SAM: *Dialogue.* I need to get home… I don't know where I am anymore and it's so dark out here… It's so cold…

Sam huddles into a ball after placing you (the mushroom) back on the soil.

A few seconds pass.

The mushroom's light grows brighter. The scene lights up with the greens of the forest, and blue from the mushroom light.

Sam *pauses, before picking the mushroom up again, and cupping it in his hands tenderly, letting the light guide them.*

Soon enough, the two are back at the farm, stepping out of the forest.

SAM: You saved me…

Sam rustles around in the garden, before finding a nice bed of leaves for you, and placing you in the center. They step back inside the farmhouse. You close your eyes and go back to sleep, having spent your energy being a fungi flashlight.

SCENE 2
You (the mushroom) wake. The sun has risen, the birds are chirping, and the garden is peaceful.

Sam comes out of the farm and sees you wandering about. Startled, he begins moving side to side/shaking erratically.

SAM: *(Whispering to themselves)* Gyah! A walking mushroom? I thought these only existed in the books ma keeps showing me… Could it be a pixie? There's no way…

Sam pauses, and carefully approaches the mushroom.

The mushroom approaches Sam warmly.

SAM: Well, you are awfully cute, so there's no way you'd be able to hurt me. You're a mushroom after all… maybe I'll call you Mushy!

MUSHROOM: *Dialogue options:*
- *… (anything but that)....*
- *:D*

SAM: *Dialogue answers*
- Sorry…. ummmm…. well you do have a pretty round head… and so do I…. What about Roundhead? Or what about Stropharia caerulea?
- (No answer necessary here)

   MUSHROOM: *Dialogue options:*
   - *… well it's better than "Mushy"…*
   - *something else? (Text box)*

SAM: Great! I'm so happy you're here! You really helped me last night, and I want to keep you safe here so no hogs get you out there.

You jump around the garden excitedly, glad to be away from the forest predators.

SAM: Let's get you set up… but I don't know what you'd need… Can you <u>show me what you need?</u>

You point the player towards some beech wood chips and some water. The resources are gathered to a central point. You do a little happy dance when the task is completed.

SAM: Ah! I see! You need <u>wood chips</u> and <u>water</u> to grow! I wonder what else would help you… *(distant yell)* I'll be back later! See you soon!

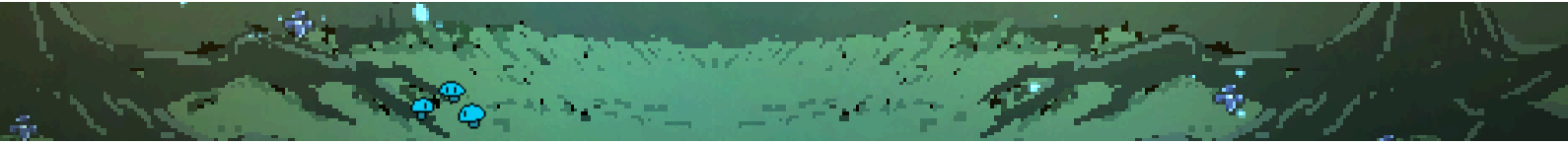*You are left to start the game on the resources you have. You have preliminary growth options given.*

Scripts (Demo Events Option 1)

Event 1: Sam's first day of school!

<u>**PREMISE:**</u> *Sam's first day of school! Mushy is left alone for a bit to figure out some basics about resource management and start to build up the colony. Colony 101.*
<u>**CONSEQUENCES:**</u> *Mushrooms start to waddle around a bit.*
<u>**PROGRESSION:**</u> *Once all mushrooms are waddling, continue to the next event.*

Sam and Mushy are in the garden. It's sunny, the birds are chirping, and it's a cute morning.

Sam: *Yaaaaaaaaawns…* It's so early… but it's my first day of school today! Mum says it's a big school far away. I don't know what the other kids will be like…

Mushy: (Thinking):
- *You'll be fine!*
- *Hmm… I'd be a bit nervous too if I were you…*

Sam:
- *(Determined)* You're right! If I could make it through the forest, I'll be totally fine at school!
- *(Nervously)* Ahhhhhhhhhhhh! I hope it works out….!

(Some adult calls Sam back into the house)

Sam: *(Hurriedly)* Oh no! I have to go! See you later Mushy!

. . .
Gameplay
. . .

Sam returns from school and is in the garden again.

Sam: Wow! What a big school! I met so many other kids there… and everyone is so cool! Tomorrow is show and tell… wait… hold on…THE OTHER MUSHROOMS ARE MOVING??? (Sam is freaking out). Can I take one of them to show and tell PLEASE PLEASE PLEASEEEEEEEE…

Mushy: (options)
- Hold on hold on you want to WHAT? One of MY mushrooms?? What do you mean??????????
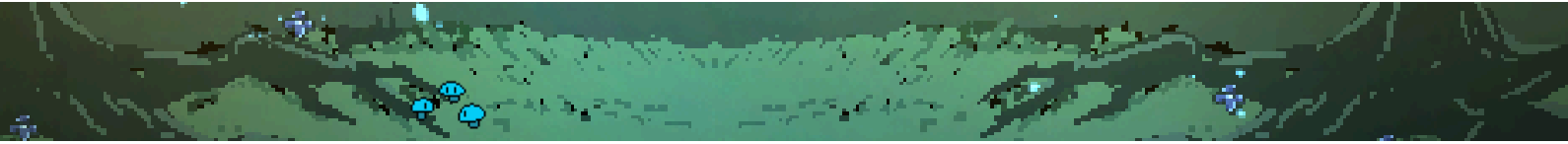- Of course! Let's go!

Sam:
- Come on, you're too cool not to show off!
- YAY! LET'S GO!!

A brief pause while Sam thinks.

Sam: That settles it! I'm taking one of your friends with me to show off tomorrow! I could take you, but it's clear you know how to work miracles in Mom's garden.

(Distorted adult calls for Sam)

Sam: Gotta go! I'll see you later Mushy!

Event 2: Show and tell!

<u>*PREMISE:*</u> *Share and tell! It's time for Sam to show off one of the mushrooms to the class/talk about their newfound friends! Sam is super confident about this here!*
<u>*CONSEQUENCES:*</u> *Mushy needs to choose a part of the colony to prioritize, and pick a resource to remove from the colony for Sam to bring to show and tell.*
<u>*PROGRESSION:*</u> *Integration of at least 3 resources to move onto the next event?*

Sam and Mushy are in the garden again, just chatting.

Sam: Eating out here is the best. The breakfast table seems so boring now.

Mushy:
- You should come out here to eat more often!
- What are you talking about, you have it good in there, why come out here?

Sam:
- You're right, I should come out here more often!
- The sun is really nice out here.

Sam: Show and tell is today. I promise to bring your friend right back!

Mushy:
- Have fun! Show em what cool mushrooms we are!
- But I didn't even agree to let you bring them with you!

(Distorted adult calls for Sam)

Sam: (*Ears perk up*) I guess I gotta go! Don't worry, I'll be back soon!

. . .
<u>*Gameplay*</u>
. . .

Event 3: Teasing

PREMISE: *Sam is getting teased at school for what they demonstrated during show and tell. Sam asks Mushy what they should do. (Light teasing, feeling doubtful)*

CONSEQUENCES: *Mushy's judgement is clouded by emotions about show and tell, depending on dialogue options. Mushy can either try to reassure Sam and the rest of the colony about the situation, remain neutral and apathetic, or put Sam down about taking care of the colony and berate the colony for not working fast enough to be cool for Sam. Mushrooms can die out faster because of lowered morale.*

PROGRESSION: *Number of mushrooms to move onto the next event?*

Sam and Mushy are in the garden again. Sam is a bit quieter than usual. Mushy is supervising the colony.

Mushy:
- *Approach Sam.*
- *Continue watching the colony.*

Sam:
- (A bit of a delay)….Wha? Yesterday was fun. I think your friend enjoyed the class!
- (More silence… big debuff)

Mushy:
- Ah! Seems like it was a long day!
- You seem a bit quiet today, is everything okay?

Sam:
- Yeah, lots of kids shared things they enjoyed. Lots of flowers, rock collections, and one girl even brought her dog!
- Well… lots of kids shared things they enjoyed. Some kids brought flowers, and one kid even brought her dog! I was really happy to share Mushy's first mate with the class, but then these two started saying that there was no way that I had mushrooms running everywhere in Mum's garden… they thought I was making it all up!

>   **Mushy:**
>   - It is a little out of this world… It might just be you who can see us move…
>   - Even if they don't believe you, I'm right here!
>
>   **Sam:**
>   - Maybe it is a little weird, but at least you're here, right?

> ■ You're right… I'm probably just overthinking here.
> They haven't seen you, after all!

A pause.

Sam gets called from inside the house.

Sam: Oh no, it's time to go again. See you later Mushy!

Event 4: Want to give up?

PREMISE: *The colony is threatened when Sam returns home in tears and wants to give up caring for the colony. Mushy must try to talk Sam out of this predicament and convince them not to give up on trying to care for the colony. (Feeling very discouraged).*
CONSEQUENCES: *Mushrooms die out faster due to lowered morale, lowered speed, and Mushy's emotions are even more clouded, becomes more desperate to save the colony depending on dialogue.*
PROGRESSION: *Mushroom colony must continue growing past XX number. If falls below YY number, progress into Event 5. Else, the situation resolves and good ending.*

Sam comes home in tears and is in the garden. Mushy is tending to the colony.

Mushy:
- Approach Sam
- Continue with the colony (things start dying faster).

Sam: (sobbing to themselves). How could they say such horrible things about us… They think you're not real, they think I'm crazy, some kid thinks it's a government ploy to spy on us, and more and more kids started agreeing that I was probably lying! I even brought your friend along! They didn't even believe me…

A pause.

Mushy:
- Try to talk to Sam
- Continue with the colony (things start dying faster).

Sam: How do I even know you're real? What if I'm just dreaming? What if all of this is just a big government conspiracy theory like that one kid said it was??? What then?

Mushy: *(only if has approached Sam twice already).*
- I'm right here!

- We're all just an *illusion woooooooo~* It's all just a dreammmmmm~ *(Insta bad ending)*

Sam: Oh, what can you even do about any of this! You're just a mushroom! I don't even know why I'm spending so much time caring for you and the colony if I'm just going to get made fun of by everyone! No one believes me, and I even if I try to show you off, no one will believe me.

Sam storms off.

Event 5 (Saving throw).

<u>**PREMISE:**</u> *Sam trying to figure out what to do about their classmates. Mushy needs to try to figure out ways to convince Sam to not give up and try to confront the people making things difficult at school.*
<u>**CONSEQUENCES:**</u> *If Mushy does a bad job, bad ending. If Mushy does a bad job, but has done a good job in previous stages, bad ending. If Mushy does an okay job, neutral ending. If Mushy does a good job, good ending and things resolve.*

YOU HAVE TO CHASE AFTER SAM TO GET HERE.

Sam: No! Let me go inside! I don't want to be outside anymore!

YOU HAVE TO FIND A WAY TO STOP SAM FROM GOING INSIDE (GET IN THE WAY)

Sam: No one cares about mushrooms, and everyone thinks it's stupid I spend so much time out here anyway!

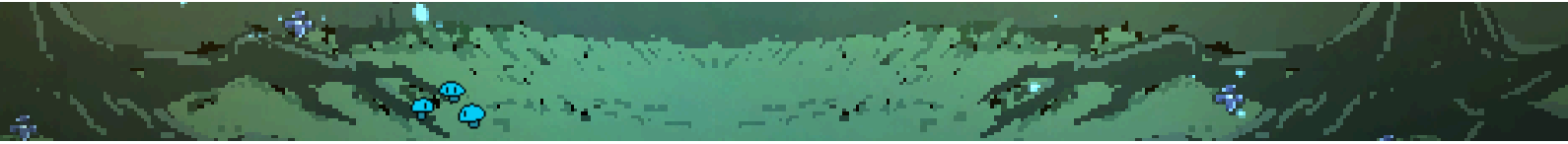*YOU HAVE TO STOP SAM AGAIN (If you fail this, bad ending).*

Sam: STOP! *Sam crumples to the ground.*

Mushy:
- Those kids don't know what they're talking about!
- Don't listen to them, you're doing great! The colony's doing great!

Sam:
- What do you mean? Everyone knows what they're talking about! I'm the stupid one here!
- The colony? Who cares about the colony! I have nothing to even show them because they don't even believe you exist! (Teary)

Mushy:

- Bring out the colony.

The colony surrounds Sam.

Mushy:

- You're not alone.
- We exist.

Sam:

- What are you talking about?

Mushy:

- Circle Sam more tightly.
- CLIMB THE HUMAN!!

Outcome here: If there are enough mushrooms in the colony, good ending. Not enough = neutral ending/bad ending if REALLY not enough.

Scripts (Demo Events Option 2)

Part 1: New Beginnings (A possible alternate script)

Length: *1 day cycle, 1 night cycle.*
Premise: *Sam's first day of school! Sam brings home some things they found at the school.*
Consequences: *Depending on the player's performance/choices in each of the stages, Sam gains more confidence for show and tell!*
- *Mushrooms start to waddle around a bit*

New items available in the garden:
1. Beech wood chips
2. Water

New items brought back by Sam:
1. Dad's coffee grounds
2. A little bit of fertilizer Sam snuck from the school garden.
3. Sheep manure (with some flies too!) from the school's mascot - Lenny the Lamb!

You start in the garden. This is the start of the city-builder mechanic.

Part 2: Show and Tell

Length: *2 day cycles, 2 night cycles.*
Premise: *Share and tell! It's time for Sam to show off one of the mushrooms to the class/talk about their newfound friend!*
Consequences: *If the player did not score high enough in part 1, what Sam has to show to the class won't be cool enough :(.*
- *If they did score high enough, this left a neutral/cool impression on the class, and Sam feels confident on their return!*

New items available in the garden:
1. Moist leaves
2. Mom's favorite - Yummy compost soup!

New items brought back by Sam:
1. Some more fertilizer from the school garden
2. Pea pods - ready for sprouting!
3. A box of shiny trinkets for safekeeping
4. Walnut shells

You again start in the garden. Day 2! Keep on building!

Part 3: The Wall

Length: *2 day cycles, 2 night cycles.*
Premise: *Depending on how Part 2 went, there may be many/few kids who didn't like Sam's show and tell. These kids confront Sam at school. Sam's confidence/success depends on how Part 2 went.*
Consequences: *If all went okay at school, then returns positively, but if no progress in part 3, then Sam becomes discouraged and does not want to continue taking care of mushrooms.*
- *If things went badly at school, there is still a possibility for things to improve if the player makes substantial progress in Part 3.*

Depending on the sum of player's performance points throughout the three parts, the player gets one of three endings:

Endings

Good Ending

Premise: *Sam is happy with how things are going with the mushrooms, wants to continue taking care of them. Bonding moment between mushrooms and Sam - stay friends and grow even closer as a team. Sam feels empowered by the mushrooms being a special interest of theirs, and wants to continue sharing their experience with the colony with their classmates.*

Mushy: All of us are here for you. You've cared for us and kept us safe in your garden. You've given us company, and given us a chance to grow and work harder than we've ever worked before.
…
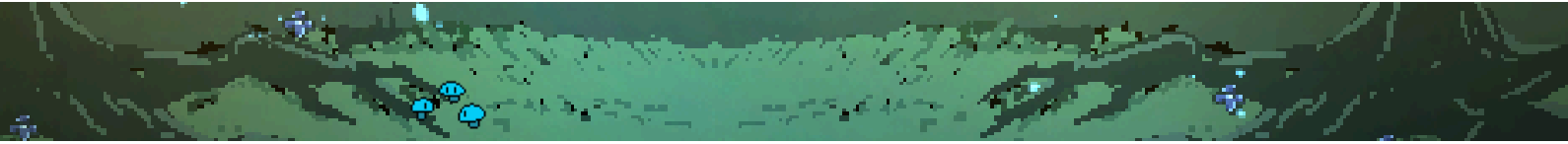Isn't that something you should be proud of? (on a pure black screen).

Frame is Sam holding a single mushroom, flashback to getting out of the forest.

Mushy: You didn't leave us behind, so why should we? (on a pure black screen)

Sam bursts into tears.
. . .
. . .
. . .

Sam: (face is like 50% tears/blubbering) I'm so sorry I ever doubted you…

Mushy is looking up at Sam.

Sam: I promise I won't leave you behind. My classmates can go kick sand. You're all so much cooler than any of them.

Neutral Ending

<u>**Premise:**</u> *Sam is happy with how things are going with the mushrooms, and wants to continue taking care of them. Sam is a bit nervous about how things will continue, but is determined to keep caring for the colony, but will keep things to just the two of them for a while.*

Mushy: All of us are here for you. You've cared for us and kept us safe in your garden. You've given us company, and given us a chance to grow and work harder than we've ever worked before.
…
Isn't that something you should be proud of? (on a pure black screen).

Frame is Sam holding a single mushroom, flashback to getting out of the forest.

Mushy: You didn't leave us behind, so why should we? (on a pure black screen)

Sam bursts into tears.
. . .
. . .
. . .

Sam: You're right but… they keep saying these horrible things and… maybe I should just keep this our secret.

Sam wipes away their tears, and they make their way back into the garden.

Bad Ending

<u>**Premise:**</u> *Colony has not been doing well in Sam's garden… Sam blames the colony for their unfortunate circumstances at school. Sam feels that the colony is a burden to them that will only make it easier to get bullied. It's time for the colony to pack up and find a new place elsewhere.*

Sam storms off.
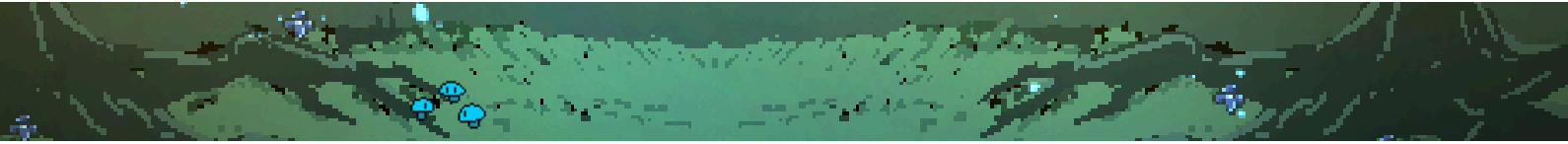
Days pass, and Sam stops going into the garden.

Mushy's colony decides it is a better idea to leave the garden behind and return to the forest.