Brandon Fields
Kate Noelle
Lowell Batacan

3D Level Design Document - Yellow Brick Apple

Premise/Setting

A gargantuan tree bearing a single special fruit. The architecture in and around the tree is uninviting, dangerous, and isn't hostile so much as apathetic towards the player. Fallen rotten fruit litters the ground.

The player is but one of many who've tried to claim the tree's fruit, and more homely derelict camps can occasionally be spotted around the more desolate architecture long a go built into the tree.

It is obvious that at one point a powerful civilization once controlled the tree and its fruit, but there power has long since dissipated

Gameplay Mechanics

- Walking
- Sprinting
- Jumping
- Double Jumping

Gameplay Metrics

Player Height (m)	1
Player Width (m)	0.75
Run Speed (m/s)	8
Movement Speed	250
Jump Height (m)	1.1
Double Jump Height (m)	2
Jump Distance (m)	3
Double Jump Distance (m)	5

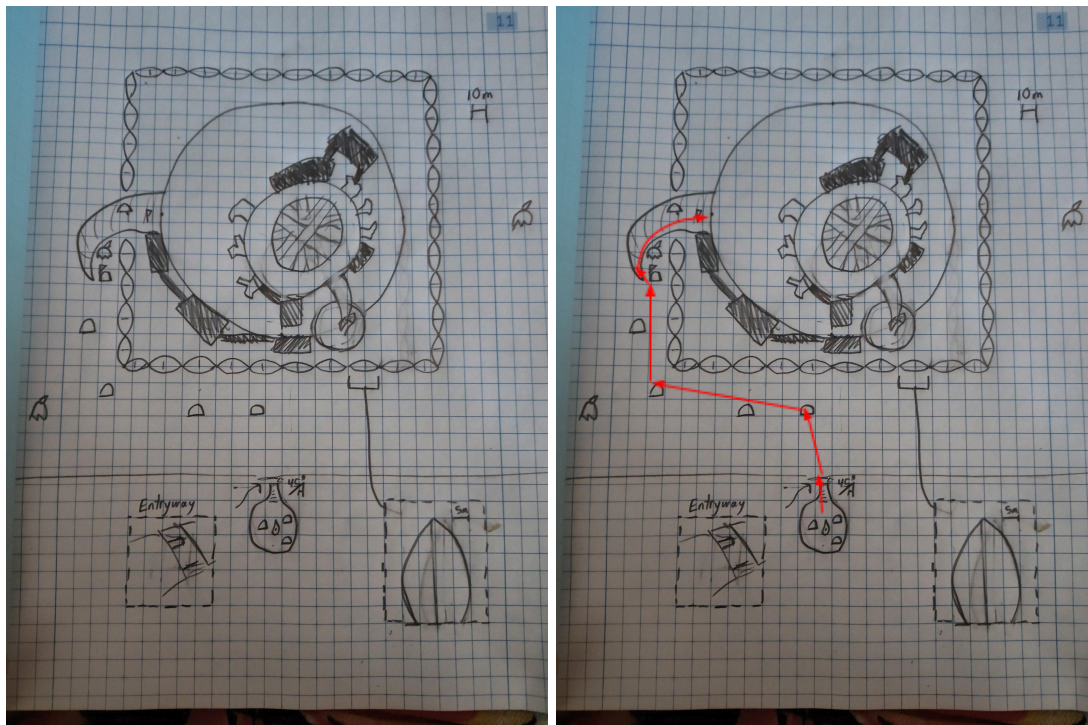| Jump Strength	8
Walk on Slope Angle (degrees)	50

Path Description

(Put the map drawings along with the walkthroughs here)

Notes:
- checkpoints are in the little tents of more modern day travelers. Canopy has only one at the start.

Roots - Kate

Start: South side

End: root going into tree on its west side, buildings are growths on it

Section 1: The Burrow
Map Center, with zoomed in view bottom right
Players start in an earthen enclosed space with tents. Players spawn in facing a wall, with no sight of a way out until they move the camera. The colors are warm and inviting.

Directly behind the player a pathway ascends and narrows. The pathway is nearly the sharpest angle the player can traverse (45 degrees). Once the player starts traversing it, they'll notice it gets narrow to the point where the player barely fits. Once the player gets through the passage they can see most of the rest of the level.

Section 2 Initial Periphery
Map Center

The player emerges facing the tree, the slope moves the camera angle so that the tree's fruit is within frame on initially leaving the burrow, in the entryway just above the player character. Ominous spikes completely surround the base of the tree in a square and, if the player walks forward, occlude the fruit from view. There is no visible gap between the spikes from this angle. There is a tent not far in front of the player.

To the player's left more tents are visible, slowly winding around the base of the fence. There are no tents visible to the player's right. These are meant to serve as breadcrumbs to the west side of the tree, clued in mostly by their lack of presence to the east.

However, circling the tree erratically are old, fallen fruit. Purely for environmental storytelling reasons, since ground fruit is not intentionally placed in the fiction like tents are.

Section 3: Entry
Map Top Left

As players follow the path of the tents, or even if they head the other direction and almost completely round the tree, a root from the tree stretching past the spike barrier will become visible. This should only require walking to the corner of the fence, and seeing the break in the fence about halfway between said corner and the start of the tree root. The root is gently sloped so that the player can walk up it. The tents become less common after the root.

Trunk - Brandon

(Level begins at bottom left of lower picture)

normal sized stairs

spike

⅓ block up

cut to next page

2 squares
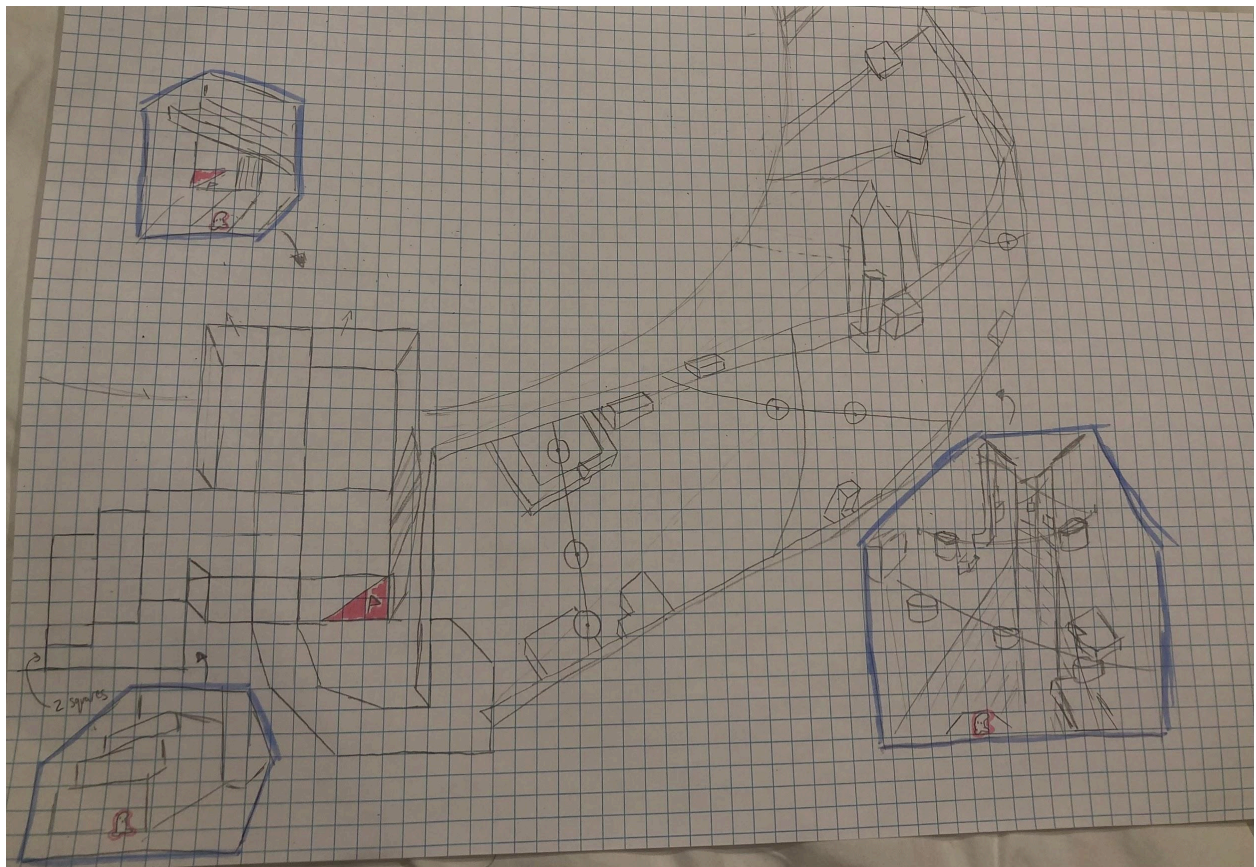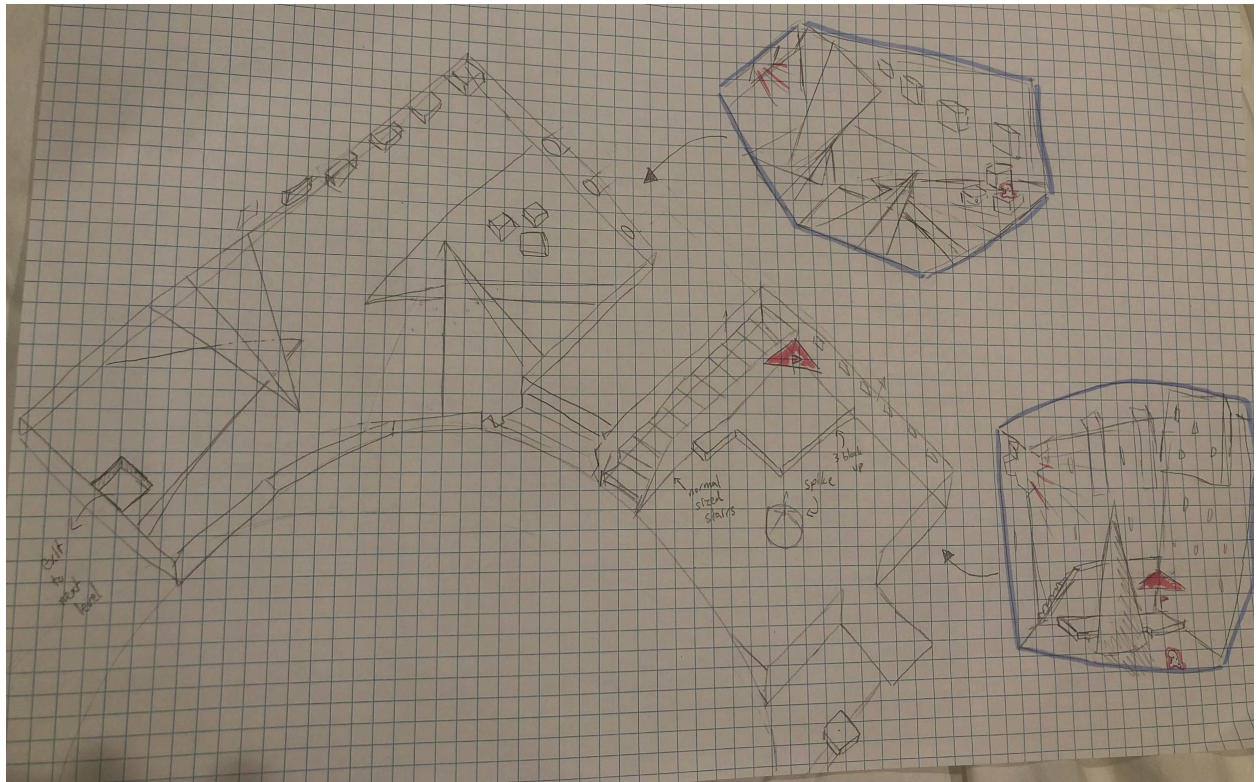
Start: entering into building growth on west side of tree
Section 1: Stairs
- Entering inside the ring of spikes, there's massive set of stairs, like steppes
- Need to double jump up each stair
- Some evidence of HP-sized ladders and tools brought recently

Section 2: Hall
- Obvious forward path from stairs leads into big building, to large closed door
- (Tree is obscured from this point forward)
- First checkpoint, in HP-sized cloth nook
- Double jumping up a layer to a bridge going the other direction lets HP get out and move southeast around tree

Section 3: Chasm
- Massive chasm stretching upward and forward near indefinitely. Curves left (north) off out of sight
- Strings hold platforms across the chasm. Must hop platform to platform, stand on oddly jutting geometry and indents in walls to move forward
- Can't reach the end of the chasm, travel through hole in wall down tube
- Exit the Chasm, see the tree trunk to the left
- Must hop between modern wood platforms on strings of spiked barbed wire to progress.

Section 4: Bloc
- Enter cubic, imposing bloc with central spike and walls of square "windows" in irregular intervals
- Modern tarp and checkpoint in here
- Must hop railing to climb stairs (which go nowhere) then escape out a hole in the corner of the room that lets in light
- Second bloc - now at a slight angle. bottomless floor, hop between irregular loose bricks in walls to gain height
- Eventually reach "ventilation", snaking tube filled with spikes pointed towards HP as they enter
- Escape vents to see tree and edge of canopy

End: Climbing higher on northwest side of tree

Canopy - Lowell

Start: Northwest section of tree

End: The fruit (to the west) falls, cut to black, whistling whoosh then SPLAT sound

Section 1: Start and Outside of Tree
- Start of the canopy level begins right where the Trunk level ends, with a path leading to the tree.
    - There is only one campsite checkpoint located at the start. Narratively, this represents that only few ever have made it to the tree.
    - The fruit (goal) is also visible for the player to see, reminding them of their reward.

- The player navigates a straightforward path with branches and spikes looming over them as they go down the path, foreshadowing the next section. The path wraps around the tree. The path gradually escalates in elevation, smoothly like a slope.
  - There will be gaps and spaces in-between that the player will have to jump towards.
- At the end of the path rocks and debris that the player can platform onto, giving them enough height to jump to the first branch.

Section 2: First Set of Branches
- The player will now have to platform along the branches.
  - There is some safety if the player misses a jump, they can land on the path beneath them.
  - Some branches stick out beyond the path, missing jump will lead to death and restart at the camp
- Upon reaching the last branch of the series, a piece of it breaks and falls onto the pathway below, creating a slope towards the starting point
  - This allows the player to skip Section 1 and immediately go back to the Section 3
  - There is a hole that leads into Section 3, a hollow within the tree.

Section 3: Inside the Hollow Part 1
- The player enters a hole at the end of Section 2, which leads inside the tree. It is hollow but filled with protruding spikes.
  - These spikes don't pose a danger and are an aesthetic
  - There is a floor at the bottom, acting as a safety net similar to the path from Section 1 and 2.
  - There is a light shining down the center of the tree, foreshadowing the eventual top of the tree
- The player travels up the sloped path, and will jump on a spike to get across. After that, there is another connected path that the player will have to jump down onto.
- It is straightforward as the player goes up the sloped path and exits the hollow through another hole into Section 4.

Section 4: Outside The Tree Again, With a Building
- Similar to Section 1, it is a path that wraps around the tree. This section is shorter compared to the beginning.
  - As the player follows the path and jumps over gaps, the fruit will eventually come into view again at the end.
  - Branches loom over the player as they walk upwards on the path, foreshadowing their next platforming section.
- The end of the path has rocks and debris, giving the player height again to jump onto the branches.
- The player jumps onto the branch, leading to another series of branches to jump on.
  - The branches this time protrude beyond the path, not providing a safety net from the platform.

- As the player gets onto the second branch they see another hole to the hollow again. However, it isn't as direct as it should be. There is a massive gap between the second and third branch.
- The player will have to use the branch to go into the building it is piercing through.
- As the player enters the building, the hole to the hollow can be seen in clearer view. They go up stairs and jump onto the branch
- Players follow the branch, and once they reach near the tree, a piece breaks off to create another slope to allow the player to bypass the section.

Section 5: Into the Hollow Again and Final Ascent
- As the player enters the hole into the hollow, there is a straight spike path that leads towards the center of the tree.
  - The center is illuminated in a light that is beaming from the exit that leads to the top of the tree.
- As the end of the spike path are a series of spikes that are positioned as stairs that the player will have to jump onto.
  - Each step acts as a symbolic step towards the light, thematic of their journey's end.
- Once the player enters the top of the tree, they make it onto the branch that holds the fruit.
  - There are no hazards and no other platforming.
  - Though the player can choose to fall off the tree and spawn at the camp if they so choose to. This does nothing prolong the ending.
- The player follows the path, the fruit in full view on a curved branch.
  - Because the branch is curved North, the player can see the entire previous levels to show how much they progressed.
- As the player approaches the end of the branch, the fruit falls down and the scene cuts to black with a splattering sound to end it off.
  - An ironic twist of fate

Feedback
- Make sure AT LEAST ONE tent is visible on leaving burrow
- Perpendicular cam? For narrow sections
  - Spline solution for standards too coding heavy
- Use of a camera to tighten spaces (Shiverburn galaxy??)
- Invisible polygon to prevent walking off
- Bug motifs to emphasize size?
- Test cameras in prototype?
- Forgiving platform size, 3D precision platforming hard
- First section light indicators to guide player?
- Check Epilogue (VRChat) for inspo
- Have player construct checkpoints in canopy
- Fog layers? Full fall damage? How to handle player death?

- Hollow pit? Signs of other life??? (spider webs)
- Canopy building falls and breaks off?? One way valve/sells old society crumbling

Post-Mortem

For our level we used Godot with the Cyclops Level Maker add-on. These tools we ended up using to make this level ended up being a bit of a mixed bag. While great for more cubic, puzzley layouts, Cyclops struggles to refine shapes or create more natural looking environments. Because of this both the aesthetics and the kinds of puzzles were limited. This is most evident in the starting cavern and the tree hollow/canopy.

Moving on to bad decisions on our part however we had a few. The approach to the tree was very meticulously designed around 3 core scenes.

A) Emerging from the burrow with the camera pointing towards the fruit.
B) Not seeing a direct way to the tree with the fence now occluding your view of the fruit.
C) Following the tents to see a root breaking the fence perimeter.

This created a LOT of design needs paired with the fact we wanted the tree to look massive. The angle not only had to be just right to see the fruit, but had to account for both the height of the tree, a problem we'll come back to later, and the distance from the tree. If the angle was too steep it'd be impossible to get players to see the fruit without forcing the camera, a thing we were not equipped to do (this ended up being a moot point as nothing seemed to be able to convince players to look up anyway). If it was too shallow however then the tree would be far enough away that traveling to it would be inordinately boring. This could be fixed with adding more content on the way to the tree, but would be hard to balance with the empty feeling of the wasteland we were shooting for. We had created enough conflicting needs in the design and didn't quite have the time or capability to fully resolve them. This is where the tree height comes back into play, as it directly correlates to the vertical design of the rest of the level and just how much content we'd have to make for it. Designing levels vertically proved challenging, and the changes we had to make to the tree to accommodate our final levels ended up causing troubles with the earlier mentioned approach view. In addition, the buildings in the level are incredibly closed off and although that can help with feelings of claustrophobia, led to several visual parsability issues that were too obtrusive.

This all being said, it's fair to say we achieved our main design goals. We built the level with a backstory of there essentially being three groups in the world, the tree dead from neglect and abuse, the old civilization which had ambitious architecture but ultimately failed to control the tree, and the player's people small and beneath the consideration of the previous two groups. The architecture of the old civilization was meant to feel impersonal and though not hostile to the player, have no regard for their welfare. The puzzles (specifically the Ribs) did this while still being solvable AND teaching players good habits regarding camera usage. We wanted players to feel almost humbled by the scale of everything in the level but determined to press on.