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1. Overview

I. Razor Statement

Keystone is a third-person exploration/puzzle-based game that invites the player to view a bubbly land of diverse people and creatures. On a quest to purify corrupted Shards across the land, the player can solve stealth-based puzzles in dungeons called Hallows, talk to and accept quests from weary townsfolk, or simply explore and gather resources in the large overworld. As the player adventures, their decisions affect the story and lead the player down unique paths.

II. Focus Statement

Keystone puts the player in the vast world filled with colorful characters and critters under threat by a mysterious organization that seeks to corrupt magic Shards spread throughout the world. In order to purify the Shards, the player must solve puzzles, use their bow to gather resources, craft tools, and avoid the many monsters turned evil by the corrupted Shards' influence!

Keystone aims to make its players feel a sense of wonder and awe as they explore the world and captivate them with charming NPCs. How the story unfolds and what characters, puzzles, and side quests the player has access to will change depending on the choices that they make.

III. Tone

The tone of *Keystone* is mostly lighthearted and happy, shown by the several different fantastical environments and the people and creatures that dwell within them. However, there are also slightly darker undertones embodied by a mysterious organization and their nefarious deeds.

IV. Technical Considerations

Our choice of engine for *Keystone* is the newly-released *Unreal 5 Engine*. *Unreal 5* has a wide variety of features that will facilitate the creation of a 3D open-world game such as the World Partition system, which automatically divides the world into grid cells and loads/unloads the cells as necessary. This would allow us to work on a single persistent open world with minimal demand on performance. Another great feature of the World Partition system are the Data Layers, which allows for the creation of different versions of the same world that can be activated/deactivated as necessary. This would allow for the easy implementation of one of *Keystone*'s main selling points: a world that updates depending on the player's choice.

We intend to release *Keystone* for the Nintendo Switch. We find that the audience base of the Switch tends to be younger on average than that of other consoles. The camera will be in the third person and the game's art will consist of 3D art assets.

2. Game Mechanics

I. Movement

Walking will be the basic mode of travel throughout the world of *Keystone*.

However, to traverse the world, other modes of travel are needed in order to overcome obstacles or simply to cover large distances quickly.

Sprinting is the second simplest form of travel, allowing the player to move quicker while making more noise in the process.

The player can **jump** to about the height of the character while standing still, with the height increasing to about 1.5 times the height if done while sprinting.

Crouching cuts the player's speed in half while bringing the character down closer to the ground. This form of movement almost entirely removes any sound made by the player while moving.

Rolling allows for the character to very quickly travel a short distance in any direction. This allows the player to dodge any incoming dangers. If done while crouching, the roll will travel a shorter distance but will make less noise.

The **wall kick** is an action that can be performed when the player sprint jumps at a wall and hits the jump button again when on the wall. The height gained from a wall kick is only about half the height of the original jump, but the main use is continuing momentum to travel farther distances. The direction traveled after performing a wall kick is controlled by the angle at which the player is running

with respect to the wall. If the player is running straight at the wall, the wall kick will propel the player further up the wall. If the player is running near parallel to the wall, the wall kick will provide less height and will instead conserve vertical and horizontal momentum, allowing the player to jump a farther distance.

Ledge grabbing is the last basic movement action that can be performed by the player character. This action is performed by holding the left joystick towards a wall after a jump leaves the character at an elevation high enough for them to grab onto the lip. Once grabbed onto the ledge, the player can either climb up onto the ledge (if it is large enough) or to move to the side. This action, in combination with jumping and wall kicking, makes up the brunt of climbing throughout the game.

II. Stealth

The stealth within *Keystone* is a product of the player character being a small child in a world with enemies much larger and more powerful than they are. Due to the immense power imbalance within the world, the player must traverse it without engaging in combat. In order to do this, the player must make sure they avoid the enemy's detection.



One way to achieve this is by avoiding the enemies' detection radii.

Different enemies have differently sized detection radii and will rely on sight, sound, or a combination of the two. Enemies will most likely rely on sight in open areas with ambient sounds, while in darker areas they will be more likely to rely on sound. The player generates sound every time they move. The amount of sound made falls under a spectrum, with jumping being the loudest and crouching being the quietest. Crouching is the best way to remain hidden, as it will keep the player closer to the ground, allow them to hide behind obstacles, and lower the amount of sound they make.

Another way that the player may avoid enemies is by manipulating their paths by purposefully causing commotions. For example, the player could knock over some pots to attract the attention of nearby guards in order to sneak past the area that they were originally guarding.

III. Hallowed Sight

Hallowed Sight is an ability that allows the player to see further distances, read ancient tongues, and recall gathered information that could help them in their current situation.

The information can be recalled by zooming in and examining any faintly glowing object. By doing this, the eye will give relevant hints that have been gathered in the past by interacting with the world and its inhabitants. For example,



if an NPC tells the player in a conversation that an object is flammable, inspecting said object with Hallowed Sight will yield the note that it is flammable. This rewards the player for and thus encourages them to explore and interact with the game's world.

IV. Bow

The player's bow is their main tool for exploration. Although unfit for combat (due to the player being too weak to fire damaging arrows), the bow has several utilitarian arrows that can be used to overcome obstacles.

For instance, one arrow consists of a plunger tied to a rope that can be used to traverse large gaps, while another is a torch that can be used to light up distant areas. Some arrows are only useful when within a Hallow, such as a honey arrow that creates small pools of honey to immobilize enemies.

V. Town Progression

The player's hometown of Keystone will grow as the player progresses through the game. Exactly how it grows is determined by which sidequests the

player completes and whether the player decides to leave or bring a purified Shard back to Keystone.

If the player takes a Shard back to Keystone, then the characters living near the Shard will also move to Keystone and bring their businesses with them. If the player decides to leave the Shards instead, Keystone will grow at a slower pace and different lots will become available for the player to decide what to create in them. The available options for the lots are few and not as powerful as the shops opened when the Shards are taken, but the shops will still be available in the hometowns of the other species.

Below are some examples of how taking or leaving Shards effects town progression:

Shard	Leave	Take
Bonfire Forest	Lyra sets out on a journey roaming in the open world and even visiting other towns. She'll barter rare items with the player and tell them about her journeys, even giving hints about where to find interesting locations.	Fires burn brighter and stronger. As a result, the blacksmith Fornax opens up shop and cooking while in Keystone will be more effective. Cosmetically, new lanterns and torches appear around town.
Lumi Island	The Jellies send units to collect information about the rest of the world. The player can trade junk for different junk that can be useful in crafting. Additionally, the Jellies' town begins to develop thanks to new information.	Volcanic soil in the farmlands increases productivity and unlocks new crops. Additionally, a resident of Lumi Island becomes an assistant at the library, giving the player access to new resources and knowledge from the hivemind that can be helpful in completing quests.
Lake Aria	Kite gives the player a glider and opens a minigame using it.	A strong wind blows on the edge of town and the weaver Dae

	Zeph and Not open a port on the northern coast, offering easy access to Lumi Island. A few small shops spring up around it.	moves in. As a result, a windmill is built and new products can be made, including finely woven cloth. New clothing becomes available in the store and, cosmetically, new tapestries appear throughout town. The town also starts to raise a small herd of tumble-sheep, who like windy environments.
Gashadokuro Mountains	Hiroshi Sensei opens a clinic on Echo Ridge. The player can barter for special medicines, including a remedy that can revive the player if they are knocked out.	An ore deposit appears on the outskirts of town, and resources mined there can be used to upgrade facilities beyond what they usually can. Additionally, Moriko moves to Keystone and will grow new trees with unique properties around town.
Parietal City	Cap expands his aerobics studio and offers the player special lessons for a price to help the player limber up. Allows the player to move and dodge faster.	The tree roots grow deeper, but it will be a long time before Keystone sees the effects. Additionally, a jazz band from the city comes to Keystone, and their music provides unique, temporary boons to the town.
Fragmented Shards 1-6	N/A	Keystone's land expands incrementally.

The player will also be given the option to modify the cosmetic appearances of the town and to upgrade certain buildings through sidequests and resource allocation. As the player tinkers with the town, different sidequests may become available relating to the changes that the player has made, such as a quest for an NPC that loves the style the player has chosen.

VI. Resource Gathering

The player will be able to gather countless different materials throughout the world to use in their adventure. Some materials can be harvested from the environment without any tools such as stones, plants, seeds, twigs, and more. These basic materials can be used to craft tools for harvesting more advanced materials, such as a hatchet to harvest lumber and a pickaxe to harvest ores.



Resources that are harvested will become temporarily depleted. The speed at which they regenerate varies depending on the resource, but most will return after a single day/night cycle.

VII. Crafting

Players can use the materials they have gathered to craft several different items such as tools or food. Crafting is performed through a menu accessed through the inventory and does not require any complex action to perform.

Crafting recipes can be attained through several means including speaking to random NPCs, doing sidequests, or completing a main story quest. Some recipes

can only be performed in special circumstances, such as requiring the player to use an external tool. For instance, a player would need a furnace and anvil to craft with ores or cooking utensils to make foods.

VIII. Bartering

The world of *Keystone* is diverse and divided, and thus lacks a unified currency. This means that the primary method of trade between civilizations is bartering. The value of items will vary between shop owners depending on the location. For instance, merchants in the desert region of Sail Town will value lumber much more than a merchant in a forested area like Gealbhan.

Under this system, players would choose which item they wish to purchase and how many they want to buy. They would then be given the option to choose what they would like to trade for it, with this process continuing until the shopkeeper decides that the trade is fair. The type of item and the quantity of the item will determine the price, with the price per item steadily declining with increased quantity until a cap is reached for the amount of a single item that can be traded by the player.

IX. Food

Foods are special items that can be crafted by the player which have their own unique effects. The majority of foods require utensils to prepare and the recipes can also be attained by exploring and interacting with the world.

Food can be given to NPCs and animals. If given to a shopkeeper, it will affect their pricings for goods. Each shopkeeper has their own favorite and hated foods, which can be learned through conversation. If a shopkeeper is given food that they love, they will be more lenient with prices for their wares for the next day, with the opposite happening if they are given foods that they hate. Snacks can also be created for animals, which will make them more docile allowing for the player to mount them.

X. Mounts

As explained in the previous section, snacks can be given to animals in the wild to make them more docile, allowing for them to be used as mounts. These mounts allow for the player to traverse the land much faster, with each of them having the basic abilities to walk/run and jump.

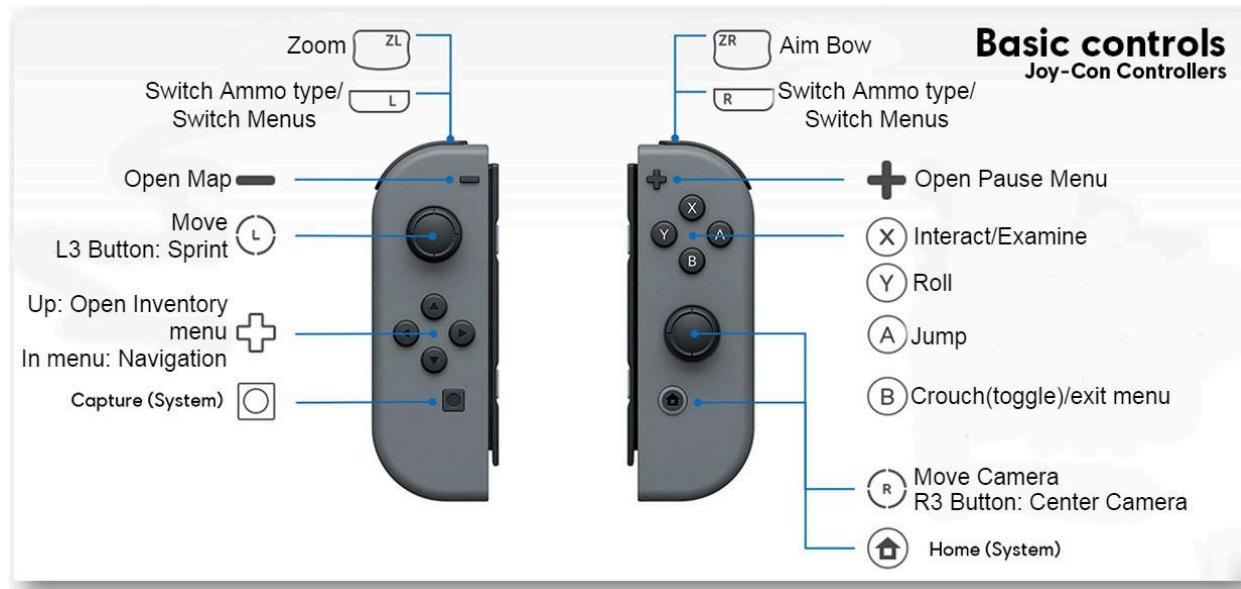
Each environment will have its own unique wildlife resulting in many different rideable animals. If the player leaves the mount's preferred environment, it will begin a timer with the animal beginning to travel back to its natural

environment. In addition, a mount will get scared and run away if the player attempts to enter a Hallow while on a mount.

XI. Fast Travel

As the player explores the world of *Keystone* they will discover several different cities and landmarks. Once they have discovered these areas they will be marked on the player's map. The player can then select these areas on the map and the player's friend Blanca will pick them up in her hot air balloon and quickly take them to the selected area.

XII. Controls

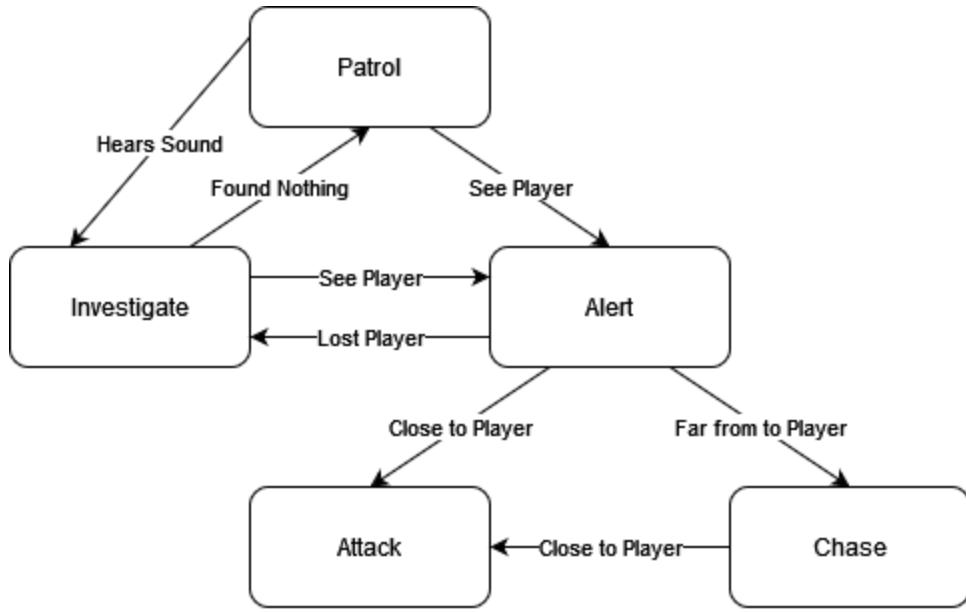


3. Artificial Intelligence

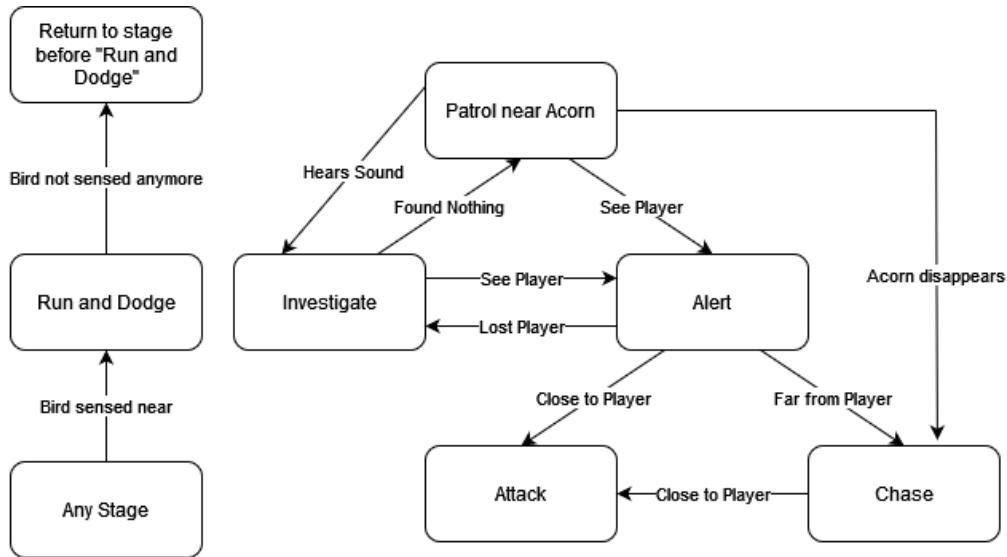
Generally, the main way in which players will interact with AI through *Keystone* is in the form of enemies. Although the player's choices do matter, there is no need for complicated NPC systems such as rapport. The main impact the player has choice-wise is on how the story ends and how the town of Keystone grows. As a result, non-hostile NPCs will not have a complicated AI system, allowing the majority of *Keystone*'s AI work to focus on ensuring that enemies are not too challenging and that the wildlife throughout the world feel alive.

I. Enemy AI

Due to *Keystone* being a stealth game in which its puzzles rely on interacting with and manipulating enemies, it's extremely important that enemies are predictable and not overly complicated. As a result, enemies will not stray away from standard stealth-game patrol patterns. Like in other games, enemies will move from one predetermined point to another while having both auditory and visual sensors that can detect the player. Upon detection, the enemies will pursue the player until either the player is caught or the enemy loses track of them. Below is a basic outline of a State Machine depicting this behavior:



Keystone stands out from other games is the way in which it encourages the manipulation of enemy patrols and interaction with the enemy. Each enemy will have a unique twist to them, and will change how players interact with them. In the Sleeping Giant Hallow, enemies rely on sound and have larger ranges of auditory detection. The Squirrel and Hawk Enemies found in the Parietal City's Hallow are protective over specific items, and will mainly ignore the player until they touch these items. The next page has an outline of what this State Machine would look like for the Squirrels:



II. Pathfinding

In order to make NPC movements as familiar to other games as possible while also keeping costs down, the pathfinding in *Keystone* will take advantage of the A* algorithm. The A* algorithm is the standard pathfinding algorithm and allows enemies to travel from Point A to Point B through the path of least “resistance.” It’s then possible to modify the “resistance” of each path so as to have greater control over the exact path enemies take.

This, along with modifying the state machine for each enemy type, creates unique enemy-enemy and enemy-player interactions that will shape the way in which different areas are approached. For example, enemies in the Gashadokuro Mountain prioritize each other over attacking the player. Thus, their destination points will be modified so that they prioritize other NPC entities over the player.

III. Wildlife AI

To make the world of *Keystone* feel alive and invite the player to explore different areas, the wildlife must also feel like it is real. As a result, all wildlife have a “priorities” list loosely based on Maslow’s hierarchy of needs. The hierarchy enemies will utilize throughout *Keystone* can be found below:



Wildlife will prioritize acquiring necessities in the lower levels before they move up onto the higher levels. This way, the wildlife in the world of *Keystone* will have a purpose in their movements and feel truly alive. Wildlife will also be classified as either “predator” or “prey”. This allows wildlife to interact with one another in both friendly and hostile manners.

4. Game Elements

I. Character Design



The Protagonist (Tag)

The character that the player will be controlling. They can be named upon starting a new game, and play the role of the silent child protagonist. Their appearance can be customized as new outfits and hairstyles are unlocked.



Blanca

Blanca is a former Avist Club member who wishes to stop their evil actions. She drives the initial conflict.



Luc

The older brother of the Protagonist. Watcher of the Keystone Hallow.



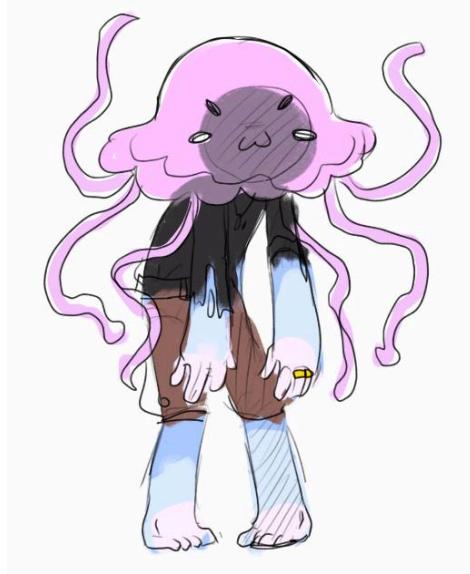
Sally

Sally is the Watcher of the Lumi Island Hallow and a fire-breathing parrot-salamander hybrid.



The Willow Wisps

A people made of ghostly fire that reside in the Bonfire Forest. Poll (Left) and Castor (Right) are the Watchers of the Hallow there.



The Jellies

A parasitic hivemind of jellyfish people. Surprising docile to everyone that isn't already infected.



The Sailfolk

A desert people that rely on their wings to get around. They're known for their prized clothing and gliders, as well as their Tumblesheep.



The Puppeteru

Mountain dwelling spirits with a fear of fire. Much like pixies, they can be tricky but are mostly peaceful.



The Not-Yet-Deads

A people of skeletons who reside in Parietal City. They insist that they are alive and well and that their city, despite its nickname, is not lost. Mayor Thoracic, seen above, is the Watcher of the city's Hallow.



Dr. Johanna Harris

Eccentric but well-intentioned archaeologist native to the central town of Keystone. Gives the player a fetch quest that spans the entire game.

II. World Design



World Map

This is the map of the *Keystone* world before the player starts to explore. Black circles indicate towns, and angry red circles indicate Hallows or other puzzle areas such as the Airship.



Different Outcomes

These assets are visual indicators of the player's progress as they play the game. These are the two extremes, in which they leave all Shards (left) or take all Shards (right).

III. Enemies



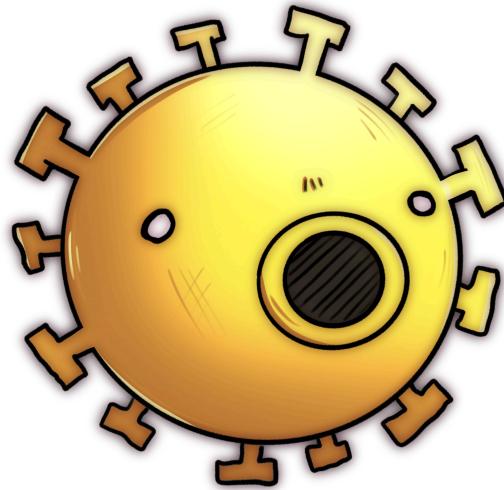
The Avist Club

The evil organization that is corrupting the world of *Keystone*. Found on The Airship and occasionally seen around the various locations in *Keystone*.



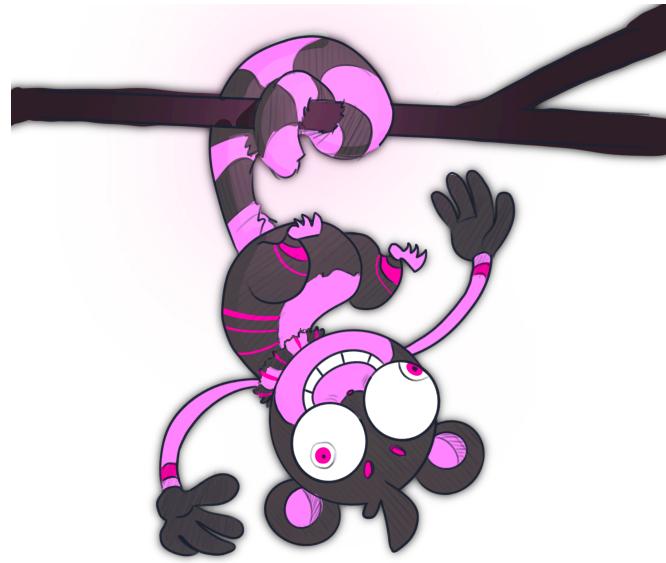
Shielded Dragon

Angry creatures that can be used to shield the player from fire. Found in the Ruined Fort.



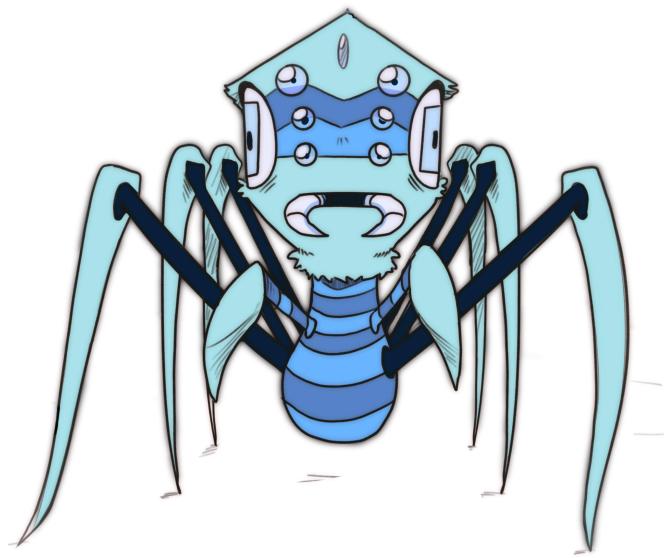
Puffermine

Easily frightened pufferfish that explode in a sandy storm when provoked. Found in the Ship Graveyard.



Toxic Tarsiers

Clownish creatures known to throw things at intruders. Found in the Overgrown Volcano.



ViruSpiders

These mutated creatures are blind and rely on sound to find their prey. Found in the Sleeping Giant.

IV. Essential Items



Bow

The player's bow is given very early in the game. It fires non-lethal projectiles like plungers for rope-swinging or smoke bombs for distraction. It is used to solve numerous puzzles.

5. Storytelling

I. Backstory

Long before the acts of the game, the world was on the verge of ending, the atmosphere beyond repair. That is, until the Shards crashed to the surface. With the Threefold Rebirth of the World, life is preserved to start anew.

- **First Fold:** The Shards strike the surface, bringing an end to all life as it was known to that point.
- **Second Fold:** The spirits of the dead are reborn in new forms with the activation of the Shards. Their memories take to the skies, creating life there (the Avists).
- **Third Fold:** Legend has it, when the Shards are brought together, the atmosphere will be healed. Then, life can truly prosper in the reborn world. At the start of the game, this hasn't happened yet.

II. Act One

One day, while the player is out gathering resources, an Avist Club hot air balloon crashes near the player's hometown, Keystone. The player helps its pilot, Blanca, and after realizing Keystone's Shard isn't corrupted, she explains that the club is corrupting the other town's Shards.

The player and Blanca decide to purify the Shards together, but first they'll need a map of where they are. The two fly the balloon up to an Avist Club airship and the player sneaks past club members to obtain the world map.

Upon returning to Keystone, they find that the Shard has been corrupted! The player enters the Shards Hallow and they discover that they have the unique mutation of Hallowed Sight, allowing them to read Hallowed Runes and purify Shards. Afterwards, Luc explains what the Shards are to the player and Threecold Rebirth of the World, speculating that the player's power could play a role in it. Equipped with this new power, the player begins their quest to purify the Shards.

III. Act Two

In act two, the player ventures around the world of *Keystone* in order to purify the five other Shards. The player can visit the other towns and Hallows in any order, and the decisions they make in each will affect the direction the story takes, specifically if they choose to take or leave the Shards.

Bonfire Forest and the village of Gealbhan

The player arrives in a forest consumed by flames. Upon exploring the forest, they discover the quiet village of Gealbhan that a people known as the Willow Wisps call home. While they may be made of fire, each has a kindling in their chests that represents their lifespan. When their kindling burns out, they die, giving them a greater appreciation for the time they have.

The Shard's corruption has caused a part of the forest surrounding the Hallow to become overheated, the fire hot enough to greatly reduce the Willow Wisps' kindling. They are worried about this area spreading to their town, but if they leave the forest without taking cautionary measures, cooler climates can cause their fires to go out.

Meanwhile, an Avist Club engineer has launched the construction of a fire wall surrounding the town, claiming to help the residents. However, they threaten to stop the construction if the Willow Wisps don't meet their demands, which involves supplying them with special/sacred wood that never stops burning to use as a fuel source. The Willow Wisps feel like prisoners in their own home, but what choice do they have?



By entering the Hallow and purifying the Shard, the player frees Gealbhan from the Avist Club's oppression and the overheated flames.

Lumi Island

The player hears rumors of a dragon flying around the northern coast. Upon further investigation: the player meets Sally, a fire breathing, salamander parrot hybrid. She tells the player that her home, Lumi Island, is in danger from the Shard's corruption, creating burning hot steam from the island's volcano, and the

Avist Club's meddling. However, she's weakened from the corruption and can't fly the player there, so they'll have to find another solution, such as:

- Asking the Sailfolk Zeph and Not for help crossing the sea on a ship if the player has already purified the Lake Aria Shard.
- Asking Blanca for help and crafting special equipment to safely navigate the steam.
- Cooking a special strength-boosting meal for Sally so she can fly the player across.

The player arrives at the island to find a shining neon jungle, glass beaches, bioluminescent water, and the island's overgrown inactive volcano Hallow at the center, spewing steam that makes the island difficult to navigate.

The steam makes it impossible for the island's residents, a parasitic jellyfish hivemind, to fish for food. The Avist Club has stepped in, supplying them with ration crackers that lack the nutrition the Jellies need to nurture their hive mind. With the Jellies too malnourished to stop them, the club sends expeditions into the jungle, claiming to look for new food sources for the Jellies while actually harvesting the jungle's rare resources for themselves.

By purifying the Shard, the player rids the island of the overpowering steam so Jellies can go back to fishing and the Avist club no longer has anything to hold

over them. This also makes the island easier to explore and lets Sally return to her nest in the Hallow.

Lake Aria and Sail Town

When the player arrives at this dried out lake turned desert, they find that the sand's waves have become violent, limiting mobility and even swallowing people up in whirlpools.



The player finds Sail Town in a distraught state. In order to get around the desert's turbulent waves, they traded their prized textiles for the Avist Club's ships. However, the Avist Club purposely misused the textiles and said they were bad quality, putting the Sailfolk in debt. As a result of this unfair trading, the Sailfolk now have to pay off the engines with fast growing interest.

A member of the Avist Club wants to build a massive factory in the desert, with the Sailfolk working it, saying that it would pay off their debts. Sail Town's leader and Watcher, Angeles, knows they must be lying, but is having a hard time protecting her people and home against the club.

By purifying the Shard, the player returns the desert's waves to their usual gentle state. No longer needing the engines to get around, Sail Town frees itself from the Avist Club's oppression.

The Gashadokuro Mountains and the Echo Ridge Settlement

These mountains were once a living, gentle giant. During the first fold, a Shard struck its heart, killing it. In the second fold, the Shard's activation brought it back to life as a living mountain. The Shard's corruption has caused cholesterol to form inside the mountain, to have "heart attacks" that cause small earthquakes and avalanches on the surface.

The Puppeteru call Echo Ridge on the mountain's shoulder home. Typically cheerful, the Avist Club's deforestation of the mountain has caused them to feel sad, making the mountain's declining health even worse. The Avist Club also plans to start mining, giving the Puppeteru even more concern.

By purifying the Shard, the player puts a stop to the earthquakes, and the Puppeteru become less afraid to stand up for themselves, forcing the Avist Club to leave. Afterwards, the player can help them plant new trees on the mountain.

Parietal City (A.K.A. The Lost City)

The player arrives in a city where giant redwoods tower over ruined buildings. The Shard's corruption has caused a never-ending rain. The weather causes the skeletal citizens—known as Not-Dead-Yets—bones to ache, keeping them cooped inside.



The Avist Club, meanwhile, is taking advantage of the situation to study and steal from the ruins in order to improve their own technology. The citizens are really more concerned about the weather, but they don't like how the club is treating their city.

By purifying the Shard and putting a stop to the rain, the Avist club leaves and "life" comes back to Parietal City.

IV. Act Three

The events of act three vary based on whether the player brings all the Shards back to Keystone, leaves all the Shards in their Hallow, or a mix of both.

Take All Shards

When all the Shards are brought together in the Keystone Hallow, a mysterious gate opens. The residents of Keystone gather to figure out what this means. Luc decides it must be the beginning of the Third Fold, and a chance to finally heal the world. The other's point out that it would also likely put a permanent stop to the Avist Club. However, it could be dangerous.

If the player decides not to enter the gate, they follow the neutral ending instead. If they enter, however, they find themselves in the Hidden Hallow, which takes elements from the previous Hallows. Upon reaching the end of the Hallow, the Shard's are activated and a great beam of light shoots from the gate into the

sky, healing the atmosphere. Keystone celebrates: with the atmosphere healed a world of possibilities open to them.

Leave All Shards

Once the Shards are all purified, the Watcher's meet in Keystone to decide what to do next about the Avist Club. Some suggest sneaking aboard the Avist Club's airship city; if the player chooses this option they follow the neutral ending. Luc suggests something different: theory he had on activating the Shards. Rather than heal the atmosphere, it will cleanse it, forcing the Avist ships to the surface.

The player will have to activate all the Shards within a limited time, venturing once again into the five Hallows. Once activated, the Shards shoot beams of light into the sky, and the Avist Club's ships float to the surface, where the Watchers and residents of the towns greet them, ready to put aside their differences and thrive together in the new, unperfect world.

Neutral (Mixed Shards)

After purifying all the Shards, the player and Blanca meet to decide what to do next. They come to the realization that the Avist Club could just corrupt the Shard's again if they wanted to, so no one can rest easy just yet. They decide to take action, and the player sneaks aboard the Avist Club's airship city and destroys the poisons and machines used to corrupt the Shards and subjugate the surface. In a final confrontation with the club's leaders (the same ones encountered in the different towns), the player and Blanca have to make them see reason through the

correct dialogue options. They won't stop the player there if the player selects the right options, but they'll have to sneak out of the city with the guards on high alert and chaos from some of the machinery exploding. As the player and Blanca escape on her balloon, they watch the surface below. They're happy that everyone will finally be able to live freely, but can't help but wonder if the world will ever truly recover and if they can all find a way to live in peace.

V. Characters

Blanca: A shy but caring girl whose parents are members of the Avist Club; she becomes more bubbly as the player gets to know her. She loves her home, but the Avists' plans scare her. She doesn't think it's a fair way to treat people and wants to right the wrongs. One of the primary quest givers.

The Avist Club: The game's antagonists. They live in the skies on airships and see themselves as above everyone else (literally!). Their goal is to corrupt the Shards using a special poison in order to subjugate the surface. Work through deception and cunning, not military power.

Luc: The player's brother figure, as well as Keystone's Watcher and leader. In his early twenties, he's very scholarly but determined to help people in any way he can. Alongside Blanca, he is one of the primary quest givers.

Page: Luc's assistant in running Keystone, as well as his best friend. They are a bit on the cautious side and the primary quest giver for things around Keystone and related to town progression.

Dr. Johanna Harris: An eccentric, high energy archeologist interested in the Shards and the ancient past. When she learns of the player's Hallowed Sight, she insists on their help. Her quests will involve the player revisiting Hallows and bringing her artifacts. As the player progresses, she awards them different degrees, at the end referring to them as "Dr."

Castor and Poll: Young twins and Watchers of the Bonfire Forest Hallow and leaders of Gealbhan. Twins have special significance to their culture and that's one of the reasons why they were chosen as Watchers. Castor is the brother and

the kindhearted outgoing of the two. Poll is the sister and the quieter, more book smart of the two.

Lyra: A teenage Willow Wisp with a strong sense of passion. She craves adventure out in the world, and dreams of finding her soulmate: a hopeless romantic in both these ways.

Fornax: An ambitious blacksmith Willow Wisp, with dreams of expanding his business beyond the forest.

Sally: The Watcher of the Lumi Island Hallow who calls the overgrown volcano home. She is a talking, parrot salamander hybrid that can breathe fire with a colorful, outgoing personality.

The Jellies: A parasitic hivemind of jellyfish people. They are very concerned about keeping their mind sharp and doing what's best for their community. They lack the emotional intelligence of the other groups and don't understand human needs, but they mean well.

Angeles: Watcher of the Lake Aria Hallow and distinguished leader of Sail Town. An older woman, she is regal and wise, loving her people like family, but also stern and won't hesitate to make hard decisions for their safety.

Kite: A young Sailfolk who loves gliding around town. Makes fast friends with the player, if they can catch him.

Boreas, Zeph, Not, and Eurus: Siblings who run a ferry around the desert.

Dae: A skilled weaver from Sail Town. In her mid-twenties, she is kindhearted and modest despite her talent and popularity.

Takehiko: Teenage leader of Echo Ridge and Watcher of the Gashadokuro Mountains Hallow. He has a quiet personality and is very duty bound. Feels the need to be perfect after his parents died, passing the role of Watcher onto him when he was young.

Moriko: A young Puppeteru girl who likes to collect rare seeds.

Hiroshi Sensei: A Puppeteru doctor who helps to ensure the Gashadokuro Mountains are healthy.

Mayor Thoracic: Mayor of Parietal City and Watcher of its Hallow; she is the *backbone* of the society. She has a sweet, old fashioned personality.

Scapula: Mayor Thoracis' goofball husband and *shoulder* to lean on. He makes a lot of bad puns and calls her Thora.

Cap: A Not-Yet-Dead aerobics instructor who is taking the weather particularly badly.

The Carpal Octet with frontwoman Lunate: A jazz band in Parietal City that has fallen on hard times recently. Lunate is desperate to find the group's big break.

The Scavengers: A mysterious and resourceful group who call the Falling Swamp home. With clothes that cover them completely, it's impossible to discern their identities or where they come from. They don't like the Avist Club, but don't strictly dislike them either. They drop some pretty neat stuff from their Ariships, afterall. The scavengers can trade the player rare items and teach them particularly resourceful crafting recipes and even how to carry more items in their inventory.

VI. Environments

Keystone is set in a bright and bubbly world filled with diverse environments. Each of the environments is based on a real world biome that, through remote association, the Shard has evolved in wildly different ways to create unique settings for the player to explore. Each of these environments are directly tied to the game's story and gameplay experience. The conditions of each environment shift based on the player's progress. There are six main environments excluding the town of Keystone:

- **The Bonfire Forest:** A never-ending forest fire. The player will need to find ways to manage the heat. As a result of the Shard's corruption, a section



surrounding the Hallow has become overheated, providing a conflict in the story and a challenge for the player. Once the fires are tamed to their usual state, this area becomes easier to explore and the conflict is resolved.

- **Lumi Island:** An island with bioluminescent flora, fauna, and water, as well as reflective volcanic glass. The island contains four subareas: a glass beach that reflects the bioluminescent water at night, a small cave system off the beach with similar theming, a neon jungle, and an overgrown inactive volcano. The Shard's corruption has caused the volcano to spew large amounts of steam that make the area difficult to navigate, so the player must rely on the bioluminescence to find their way. Once the Shard is purified and the steam relieved, the area becomes easier to explore and the player can see the bioluminescent island in its full glory.
- **Lake Aria:** A dried out lake-turned desert. The sand moves like waves, the plant life sways as though under water, and the residents of Sail Town live in structures similar to lighthouses. The corruption has caused the sand's waves to turn violent and even swirl in dangerous whirlpools. Purifying the Shard returns the waves to their usual, gentle state.
- **The Gashadokuro Mountains:** A living mountain range that was once an ancient giant, covered in snowy forests. The mountains move as though breathing, but the Shard's corruption has caused it to have "heart attacks" in

the form of earthquakes and avalanches. The player will have to tread carefully, but purifying the Shard puts a stop to the heart attacks, making it safer.

- **Parietal City:** An ancient city where giant redwoods tower alongside ruined skyscrapers. The Shard's corruption has caused it to always be raining there, water cascading like veils off the trees and the ground turned muddy. Purifying the Shard relieves the constant rain.
- **The Falling Swamp:** While this environment has no Shard of its own, it does contain Shard Fragments to find. This swampy area is highly polluted with the Avist Club's airship city flying in the skies above. When navigating this area, the player will have to be cautious of toxic waters and falling debris.

VII. Narrative Technique

Keystone's narrative is nonlinear. Players have the option to explore the world in story in any order they choose, and their decisions they make throughout the game directly impact which of the 3 endings they will experience. The story will be delivered primarily through dialogue with the assistance of cutscenes.

Through dialogue, the player will learn about the plights of the different inhabitants of *Keystone*'s various towns, expanding the player's understanding of the world and motivation for purifying the Shards. Key dialogue between Blanca,

Luc, the Watchers, and members of the Avist Club drive the story and conflicts forward and give the player necessary information to progress through the game.

Cutscenes are primarily used to develop the *Keystone*'s backstory. However, rather than making the player sit through one long intro cutscene and dumping the lore on them that way, cutscenes work incrementally at the end of every Hallow. Cutscens will play once the Shard's are purified, showing what happened to their environments during the First and Second Folds. For example, the Gashadokuro Mountains' Shard will show the death of the giant and their rebirth as the mountains. Cutscenes will also be used for some key story moments, such as the endings after the final levels are completed.

VIII. Visual Storytelling Methods



Keystone uses a bright and colorful art style to establish the story's tone and soften the impact of the more intense moments to keep *Keystone*'s younger target audience engaged. For example, even as the story deals with heavier themes such as life and death, or the Willow Wisps fear for the safety of their home, the story maintains its lighthearted visuals, making these harder subjects easier to approach for a younger audience.

Visuals will also be used to emphasize key elements of the story in an indirect way, such as the sky having noticeable patches where the atmosphere has deteriorated and the pollution and debris in the Falling Swamp.

6. Game Progression

I. Beginning Keystone

Keystone's opening sequence introduces the player to some of the game's basic mechanics and the lively town of Keystone. The player is sent to explore the town for Luc, who then sends the player on a mission to collect some resources.

While looking for the resources, the player spots Blanca's hot air balloon crash from the sky. The player brings her back to Keystone and helps her fix her ship, requiring more resource gathering. Once done, the two fly up to the airship.

II. The Airship

After meeting Blanca and flying up to the Airship, the player now knows of the Avist Club's plans and of the map they hold to all of the Shards. Filled with guilt and in need to right her family's wrongs, she asks the player to help her by retrieving the map

from the Command Room found deep in The Airship's second floor. Learning about the Avist Club as they make their way through, the player sneaks through the ship and witnesses a grand Jazz performance indicative of the luxury they can't live without and the imperialistic headspace that maintains it.



Upon reaching the Command Room and taking the map, the player must make their way out of the Airship while being chased by many of the guards they had slipped by earlier. Throughout this escape, the player is learning of the different movement options they can utilize to avoid enemies. Eventually, the player finds themselves cornered, in a balcony with no way out but to jump. As they utilize the tools they have gathered, the player crafts a zipline and slides down to safety. Here, along with Blanca, the player takes off in the balloon, one step closer to foiling the Avist Club's plans.

III. Nonlinear Progression

A foundational pillar of *Keystone*'s design is player freedom. The player will feel as though they are making their way through this world, and that the decisions they make during their playthrough truly matter. As a result, once the player acquires the map of the Shards in the Airship they have complete freedom over where to go next. The world of *Keystone* contains six unique areas which can be explored in any order. Upon clearing every Hallow, the player can then return to Keystone and witness how their choices affected the game's ending.

IV. The World of *Keystone*

Each area in the world of *Keystone* is unique, with different flora, fauna, and characters to interact with. In order to gain more influence and wealth, the Avists have corrupted the Shards found deep within each area's Hallow. The player is the only one who can enter the Hallows and restore the Shards. They then have the option to either take the Shard back to Keystone or leave it where it is. These decisions affect the way in which towns interact with Keystone, and ultimately influence different endings.

V. Bonfire Forest

In the Bonfire forest, the player will find fiery flora and fauna, inspired by forest fires. They'll be able to collect resources such as super spicy peppers and encounter animals such as fire bears. Additionally, there are decaying ancient ruins scattered throughout the forest. In the town of Gealbhan, the player will meet the Willow Wisps, a group of people made out of fire. The Avist Club is building a fire wall around the town when the player arrives, and using it as leverage against the town's residents.



The player will need to take precautions when exploring this area, such as eating fireproof meals or wearing special clothing, particularly so in the overheated area of blue flames caused by the Shard's corruption.

Hallow: The Ruined Fort

The Ruined Fort's crumbling defenses have been attacked severely by nature over time. Now, it is filled with the fiery vegetation native to the area, the tree's flames so hot after the corruption that they now shine blue. This shallow's Shard can be found in the fort's treasury, located in the center of the entire area.

As the player makes their way through the fort and its many open fields packed with trees, they will notice that the wind has shifted the trees' flames, creating many fiery walls that impede the player's path. This leads to this Hallow's maze-like structure in which the player's goal is not to find a path in the maze, but to "break" these flaming walls and make their own way through.

To assist the player in this task, there are 2 main enemies in this area: the Firebears and the Shielded Dragons. The Shielded Dragons, with their powerful defensive heads, are able to block these fire walls temporarily, allowing the player to cross through. However, they are very fast and jittery so they will not stand there for long. Thus, the player must find a way to make them stay there for extended periods of time. One way in which the player can accomplish this is by following the Firebears. As the player follows the Firebears, they must be stealthy so as to avoid getting its attention. Once the players follow the Firebears to their

destination, they will be able to find honey, which they can then use to stick the Shielded Dragons to the ground.

Due to its maze-like nature, this hallow emphasizes critical thinking as opposed to platforming skills. The player must figure out which walls to break and how to go about breaking them, while at the same time being careful so as to not get attacked by any of the enemies. In addition, there is an interesting switch in dynamic, as the player now must actively pursue the firebears as opposed to fully hiding from them as they might in other hallows.

After Purifying the Bonfire Forest Shard

Once the player successfully purifies the shard, the blue fires return to normal and the fire wall is taken down as the Avist Club leaves. This makes the area safer for the player to explore and improves the mood of the Willow Wisps. A sidequest will become available that involves finding a way for them to safely explore the rest of the world without fear of their fires going out

If the player **leaves** the shard, Gealbhan is able to expand beyond where the fire wall kept them in. The Willow Wisp Lyra sets out on a journey roaming in the open world and even visiting other towns. She'll barter rare items with the player and tell them about her journeys, even giving hints about where to find interesting locations.

If the player **takes** the shard, Keystone gains the boon of good kindling: fires burning brighter and stronger. As a result, the blacksmith Fornax opens up shop

and cooking while in Keystone will be more effective. Cosmetically, new lanterns and torches appear around town.

VI. Lumi Island

Lumi Island uses bioluminescence to create a unique environment for the player to explore and consists of four subareas: a reflective glass beach, a small cave system off the beach with similar theming, a neon jungle, and an overgrown inactive volcano. Similar to actual jungles, there will be many unique resources for the player to find here as well as bioluminescent animals. On the beach, the player can find the Jellies' settlement.

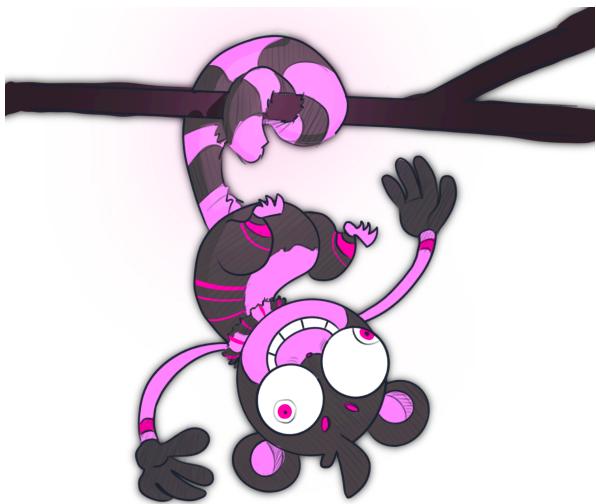
The Shard's corruption has caused a hot volcanic steam to cover the area, so the player will need to make sure they are protected against it. Additionally, it also makes navigation difficult and results in tricks of light using the bioluminescence.

Hallow: The Overgrown Volcano

Due to many years of inactivity and astoundingly rich soil, the Overgrown Volcano's conditions create a home for a beautiful and diverse fauna rivaling that found in Lumi Island's rainforest. The Shard can be found deep in the volcano's throat, surrounded by lava and vegetation.

To make their way down the volcano, the player must interact with enemies and manipulate light to make their own path. Throughout the hallow, the player will find obsidian glass and obsidian-shelled snails, both of which they can utilize

to reflect and manipulate light for their benefit. As the light intensity in different areas of the volcano changes, the plants present within will react accordingly and move towards the light in search of nutrition. This will allow the player to create new paths, both for them and enemies.



The main enemies found in this area are the Toxic Tarsiers, who have phenomenal eyesight and are able to spot the player from far away. When the player is out of their reach they will throw seeds at them, which can then be planted and used to create new paths. This gives the player some incentive to being spotted, something that is generally avoided in other Hallows. On the other hand, the Toxic Tarsiers will start chasing the player and attacking them if they have a way of getting to them. Thus, the player must be careful so as to avoid making a path for enemies while still making a path for themselves.

After Purifying the Lumi Island Shard

Purifying the Shard provides relief from the steam, making the island much easier to explore and allowing the player to see the full extent of the bioluminescence. Without the steam, the Jellies can resume fishing, the Avist Club no longer has an excuse to stay there, forcing them to leave.

If the player **leaves** the shard, the Jellies send units to explore the rest of the world, bringing back new data to help their settlement develop. If the player finds them on their journeys, they can trade them junk for different junk that can be useful in crafting.

If the player **takes** the shard, new volcanic soil in Keystone's farmlands increases productivity and unlocks new crops. Additionally, a resident of Lumi Island becomes an assistant at the library, giving the player access to new resources and knowledge from the hivemind that can be helpful in completing quests.

VII. Lake Aria

In Lake Aria, the player will find a desert area filled with aquatic inspired flora and fauna. The plants move as though swaying in water, and the sand rolls in waves. In Sail Town, the player can barter for textiles and clothing made from the Sailfolk's prized tumblesheep and visit their lighthouse-style homes.

The Shard's corruption has caused the sand to churn in a violent storm, with big waves and even whirlpools, so the player may want to request the Sail Town Ferry for help exploring. The Avist Club holds the town under fast amounting debt and plans to build a factory in the desert, upsetting the environment.

Hallow: The Ship Graveyard

The Ship Graveyard can be found deep in the desert canyon, its scattered remains a shadow of the long-forgotten sea that was once there. This Hallow's

Shard can be found in the ancient, battered flagship among the debris at the bottom of the canyon.

As the player descends, they must make their way down ship remains, utilizing the local fauna to their advantage. The main enemy players will see going down to the graveyard in this area is the Puffermine, a mix between pufferfish and naval mines. These enemies are not very fast, but are extremely dangerous. They'll quickly expand when frightened, making a pseudo-explosion that can push the player and break parts of the ship.



Puffermines in their natural habitat... Some say you could rocketjump with them...

Once the player reaches the ship and purifies the Shard, an escape sequence begins in which the player must climb up the ravine while being chased by some

very territorial crabs seeking to protect their land. In this escape, the player must display their mastery of enemy AI manipulation and platforming prowess.

After Purifying the Lake Aria Shard

Purifying the Shard brings an end to the sand storms, so Sailtown no longer has to rely on the Avist Club's engines to navigate their ships through the desert. This allows them to break free of their debt and put a halt to the factory plans. Additionally, the area becomes easier for the player to explore on foot, but the ferry will still be an option to get around.

If the player **leaves** the Shard, the Sailfolk are able to once again explore and herd their tumble sheep around the desert, making it much more lively. The Sailfolk Kite gives the player a glider and unlocks a minigame using it. Zeph and Not, who previously worked at the ferry, open a port on the northern coast, offering easy access to Lumi Island, a few small shops springing up around it.

If the player **takes** the Shard, a powerful wind starts to blow over a section of Keystone, and a windmill is opened, allowing access to new products. The Sailfolk weaver Dae moves to town, and her pieces can be found in different buildings. New clothing becomes available in the store and the town starts to raise a small herd of tumblesheep, who like the windy environment.

VIII. Parietal City

Arriving in Parietal City, the player finds giant redwoods towering beside ruined skyscrapers. The player will find giant sized flora and fauna, as well as artifacts of ancient civilization for them to collect. The player can interact with the citizens of the city, the Not-Yet-Deads, with their chipper attitudes and bad puns.

The Shard's corruption has caused it to never stop raining, keeping the residents cooped inside and leading the animals to take shelter in the ruined buildings. The Avist Club can be found scouring the area for rare artifacts. They don't like intrusions to their work, so the player will have to move cautiously around them.

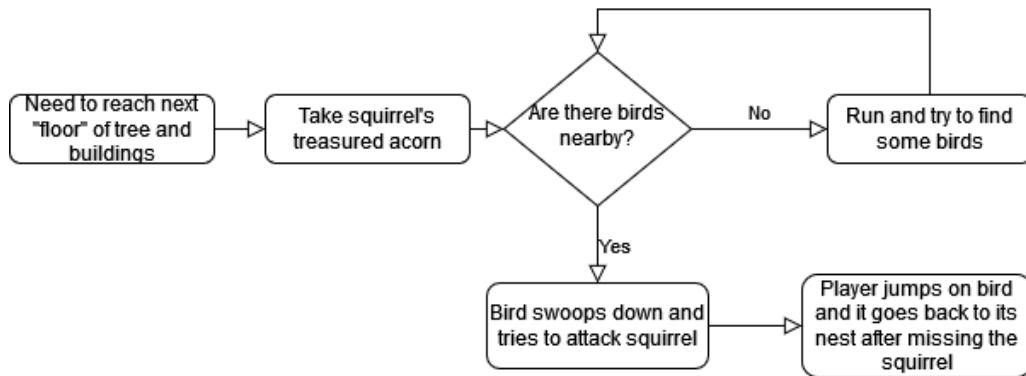
Hallow: The Sequoia Tower

A bastion of a past civilization, the Sequoia Tower and its surrounding skyscrapers tower over the player. In order to purify the Parietal City's Shard, the player must make their way through the buildings and climb the tree's surface all the way to its crown.

As the player climbs up the tree, they will encounter two main species of animals that have been corrupted, the Squirrels and the Hawks. These two species are very protective of their respective "treasures," acorns and eggs. The player must interact with these treasures in order to find ways to make it to the top. This hallow has a strong emphasis on manipulating large objects to create enemy

interactions that assist the player to reach new heights, while requiring careful execution and planning so as to avoid being attacked by the protective animals.

An example of how a player might approach a part of this level is below:



After Purifying the Parietal City Shard

Purifying the Shard brings the rain to a stop, and the Not-Yet-Deads and animals come out of hiding, bringing “life” back to the city for the player to interact with. With everyone out and about, the Avist Club has to leave.

If the player **leaves** the Shard, the various businesses in the city will offer more stock to barter. The aerobics instructor Cap expands his studio and offers the player special lessons to help them limber up, allowing the player to move and dodge quicker.

If the player **takes** the Shard, the Carpal Octet jazz band moves to Keystone, and their performances bring various temporary boons to the town.

IX. The Gashadokuro Mountains

Scaling the Gashadokuro Mountains, the player will find snow covered trees and ground that shifts as the mountain breathes. The smaller plants there will run away as the player tries to collect them. On the mountains' shoulder, the player will find the Puppeterus' settlement.

The Shard's corruption has caused earthquakes and avalanches in the mountains that the player will need to be careful of when navigating the area. The Avist Club is cutting trees in the area, making the Puppeterus too sad to stand up for themselves.

Hallow: The Sleeping Giant

Dark and foreboding, the player is certainly not welcome in the Sleeping Giant. Inspired by the inner workings of the human body, this Hallow's Shard can be found in one of the chambers of the Sleeping Giant's heart.

As the player makes their way through the Giant's body with their trusty torch, they will notice large tremors occurring regularly. This is the Giant's breathing, and will be one of the many tools that will aid the player in their journey through this body. Due to the cave's sheer darkness, enemies in this area are entirely blind and reliant on sound. There are two groups of enemies: the antibodies and the antigens. The antibodies take the form of Killer T-Bats, which defend the giant's body and attack any intruder they cross paths with, including the

player. On the other hand, the antigens take the form of the ViruSpiders, attacking the body and leaving their webbing behind as a way of clogging up the Giant's arteries.

In order to navigate through this area, the player must carefully time their actions with the Giant's breathing so as to avoid detection, while also attempting to heal the giant by clearing the plaque left behind. In addition, they must carefully manipulate enemies so as to create conflicts between the antigens and antibodies that may be beneficial to them. Distractions are highly effective due to the enemy's reliance on sound, and forcing the different species into combat with one another can lead to great progress.

After Purifying the Gashadokuro Mountains Shard

Purifying the Shard stops the earthquakes. With the mountains' health restored, the Puppeterus are ready to stand up for themselves, making the Avist Club leave. Without the earthquakes, the area becomes safer to explore and the Puppeterus become happier, their settlement offering more facilities.

If the player **leaves** the Shard, the settlement works hard to rebuild from the Avist Club. Hiroshi Sensei opens up a clinic where the player can barter for medicines.

If the player **takes** the Shard, an order deposit appears in Keystone.

Additionally, Moriko moves to Keystone and will grow new trees with unique properties around town.

X. The Falling Swamp

Below the Avist Club's massive city in the sky, the Falling Swamp is home to no group in particular. The Avist Club's luxurious waste has attracted many different individuals to the area. They coexist in a small settlement as a group of resourceful scavengers, taking advantage of the beauties the Avist Club calls trash.

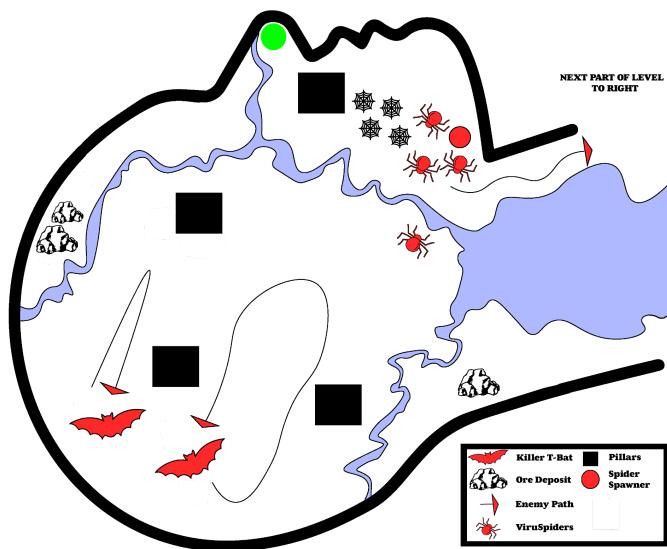
While this toxic swamp may not hold a Shard, it is home to some of the Shard Fragments that the player can find throughout the world. The player can choose to search for these Shard Fragments, being careful so as to avoid the falling debris and staying in the toxic waste for too long. In order to traverse this area with more ease, the player should seek advice from the natives. The scavengers in this area can teach the player some useful crafting recipes, such as consumables that increase the player's resistance to toxicity.

XI. Sample Level: The Sleeping Giant

As the player enters the Giant through its nose, the absolute darkness that surrounds them will make it difficult to see anything at all. Luckily, the player was warned of this and was given a torch by the Hallows' Watcher. Upon pulling

out the torch, the player will be able to see about 5 feet in front of them, just enough to see the river and pillar by them.

The waters near the player are too strong, and a single step in them would sweep the player away. To progress, the player must drop off the edge of the Giant's throat and into a ledge under them. In order to do this the player must either: get rid of the ViruSpiders and their nest, or find a way over the river.



In order to get rid of the ViruSpiders, the player must lure the bats over to them. The safest (and recommended) way of doing this would be by shooting arrows near the Killer T-Bats so as to bring them close enough for them to identify the ViruSpiders. However, a player may choose to be the bait themselves and bring the bats over to the spiders. A skilled enough player could attract their attention, bring them to the spiders, and lose them by being quiet after the next breath-tremor.

This would lead to the destruction of both the ViruSpiders and their nest, which would clear the top-most path and allow the player to enter the throat.

Alternatively, the player can choose to make their way silently through the level. Upon grabbing the spiderwebs, the player will be prompted to craft a trampoline, which they can then utilize to cross the river. The player must be careful so as to time the landing of their jumps with the breath tremors so as to mask all sound. Due to the enemies in this area being blind, the player's top priority is keeping noise to a minimum so as to avoid being caught. Once the player crosses the river twice and makes their way to the throat, they'll be next to an ore which they can choose to mine. While extracting it may be loud, the ores of the Sleeping Giant are extremely durable.

Once the player jumps down on the throat, they'll be faced with a platforming challenge in which they must descend the throat while avoiding the river's waters and nearby enemies. As the player descends, they will face multiple ledges to which they must hang onto and shimmy across. They must be careful so as to avoid hanging on a ledge while the Giant breathes, but also ensure that it covers their tracks whenever they jump or take an action that makes a lot of noise.

Upon going all the way down the throat, the player will eventually find themselves in the left atrium of the heart, where they'll see that the shard is in the

right atrium, which is closed off. There is only one path forward from here, and that's out of the heart and into the rest of the body.

As the player continues, they'll follow a mostly linear path through which they must continue avoiding enemies. In addition, the player will see large webs blocking the path of the river at points in time. Upon first being introduced, the player will see that these cannot be broken by Killer T-Bats and must instead be destroyed by something else (perhaps some fire will do the trick?).

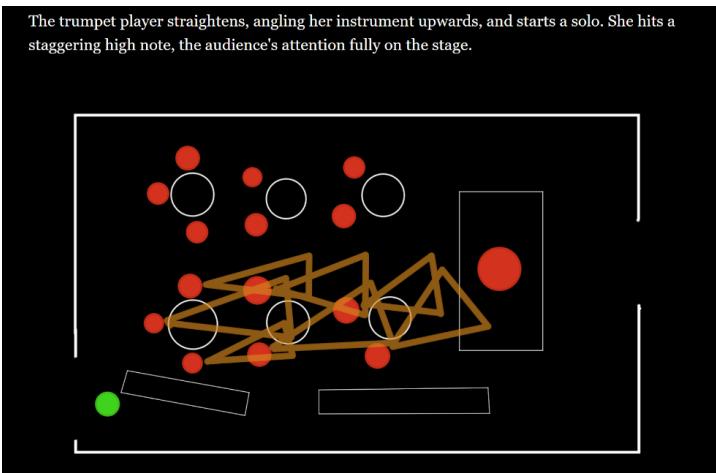
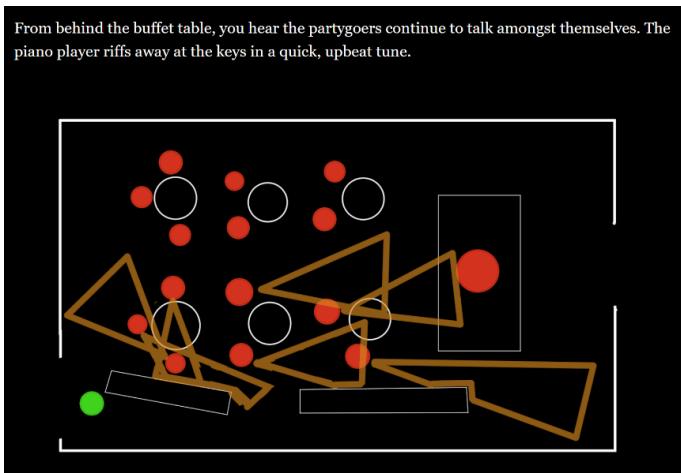
Upon reaching the heart, the player will notice that the large gate leading to it is closed and that the river in front of it is dry. From this, the player can deduce that the river's flow has been stopped by the webs, and can then go back to clear them. The player must be careful to avoid all enemies as they do so, especially since the ViruSpiders will be near the large webs.

Once the player finally clears all the spiderwebs blocking the river's flow, the gate leading into the heart opens as the river floods in. Finally, the player will be able to purify the Hallow's Shard and rid the Sleeping Giant of their disease.

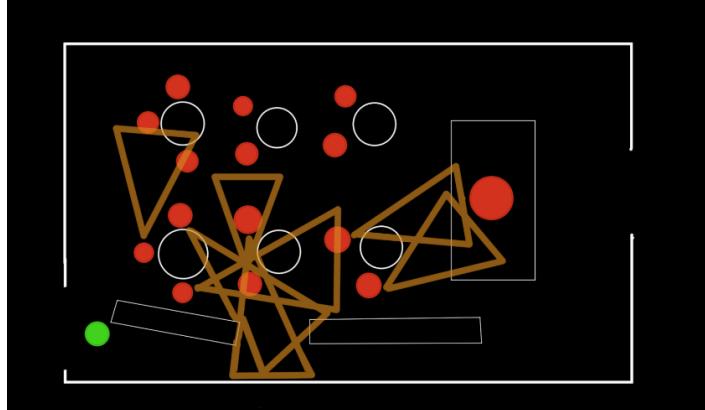
7. Prototyping

I. Method

Playtesting was accomplished through a text-based adventure game created with the Twine engine. The intent was to test the viability of an action-adventure game that lacks combat. Playtesters were directed to infiltrate and explore an airship filled with enemies, extract a map, and escape without being caught. The game featured several puzzles, diamond choices, some digital art, and quicktime events to simulate the experience of the final game.



A server comes down the stairs with a new platter of side dishes. A few of the partygoers watch as they set the platter on the buffet table. The band is playing a chorus, the instruments harmonizing.



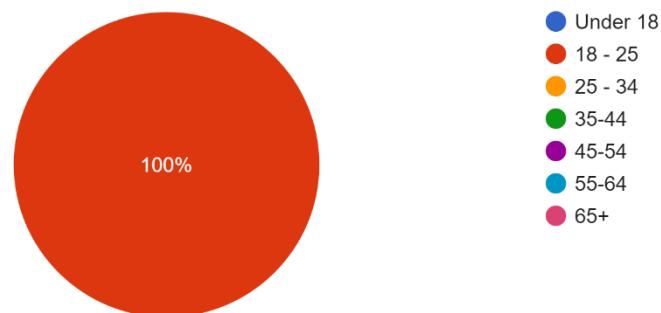
In one area, playtesters would have to wait in real time until the text and images cycled to the correct option before attempting to move forward. Moving at the wrong time would allow them to be caught, giving them a game over.

II. Data Collection and Results

Data was collected through a Google Forms survey that was filled out after playing through the game. Playtesters were asked for their demographic information and about their experience with the game.

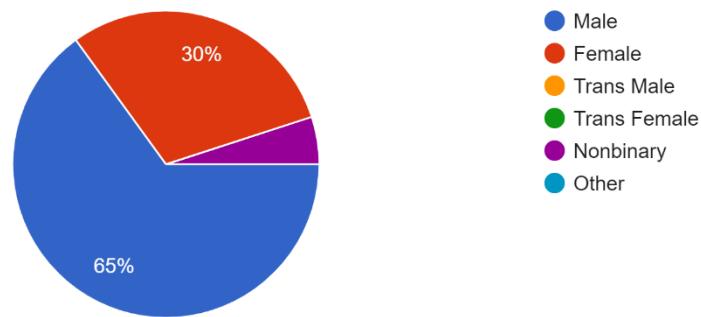
What age group do you fall under?

20 responses



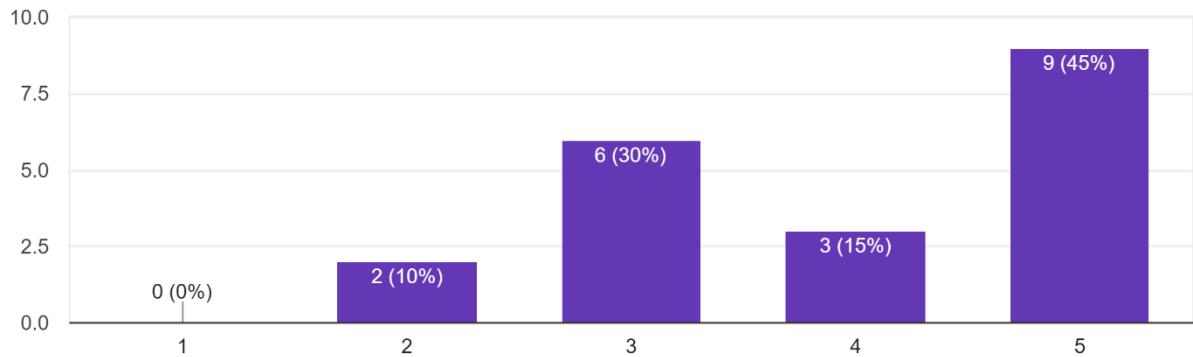
What gender do you identify as?

20 responses



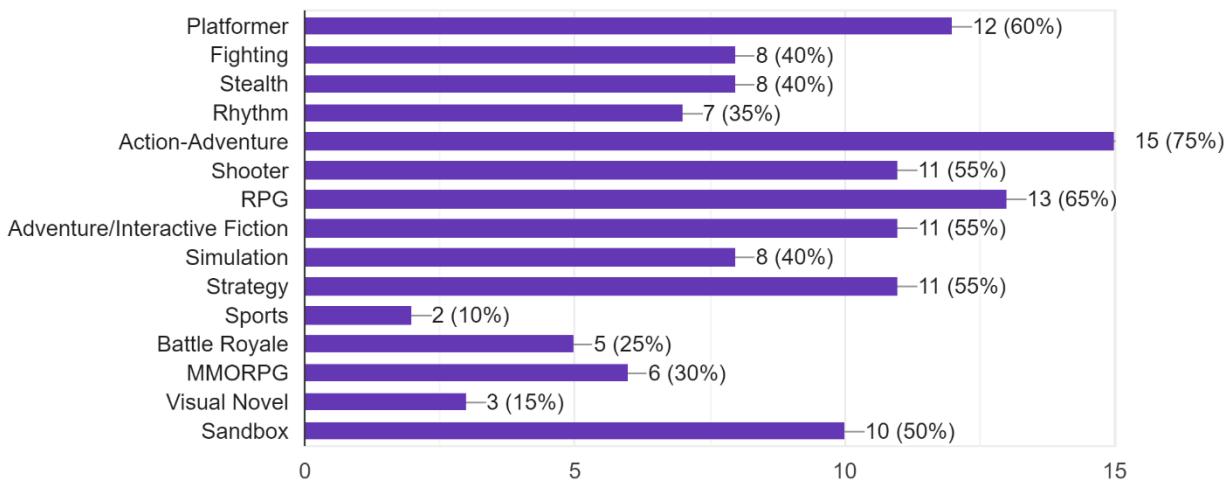
How much experience do you have playing video games?

20 responses



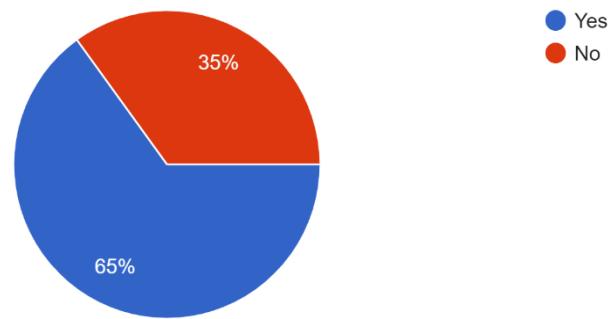
Which of these game genres do you enjoy?

20 responses



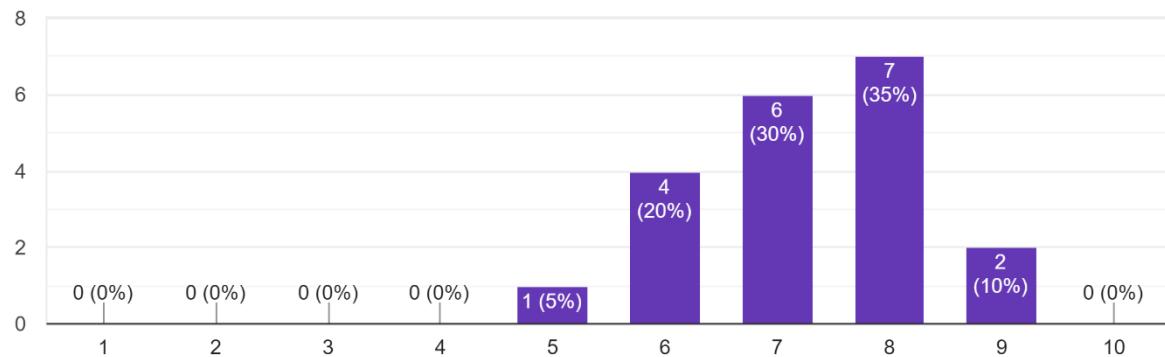
Were there any times where you felt lost or didn't know what to do?

20 responses



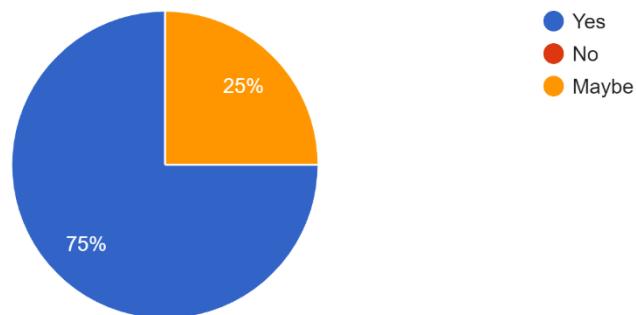
On a scale of 1-10, how would you rate your experience with this game?

20 responses



Would you be interested in playing a full version of this game?

20 responses



In written feedback, playtesters responded positively to the nonlinear design, the art, and implementation of time-based events. On the other hand, playtesters had trouble navigating the airship and expressed frustration of there being too many diamond choices. The playtesters also considered *Keystone*'s prototype too wordy. To accommodate for this feedback, the following changes and consideration will be implemented in *Keystone*'s development.

- Avoid unnecessary text/dialogue and place a heavier emphasis on visual storytelling.
- Employ more feedback from player choices.
- Include indicators of progress.
- Include clear level objectives.

To ensure the integrity of *Keystone*'s playtest, playtesters were explicitly not asked about the stealth elements in the survey, since they do not represent the full extent of stealth in the actual game. Because there were no negative comments on the prototype's stealth elements in the written feedback, it is reasonable to believe that the playtest demonstrated the viability of an action-adventure game without combat.

8. Business Considerations

I. Target Audience

The bright colors and lighthearted tone of *Keystone* led to an initial target audience of players between the ages of 10 and 18. However, the playtest attracted an audience consisting exclusively of people in the 18-25 age range. In order to expand *Keystone*'s target audience to include this new demographic, the game will include some darker (yet still family-friendly) moments, emphasizing players who enjoy exploration, puzzle-solving, and interacting with NPCs. *Keystone*'s nature as a 3D open-world game allows it to cater to both a casual and hardcore audience by including lots of extras for players to discover as they play.

II. Competition Analysis

Keystone is a 3D open-world action-adventure game and thus finds itself in an oversaturated market where it must compete against heavyweight titles such as *The Legend of Zelda: Breath of the Wild*, *Pokemon: Legends of Arceus*, and *Elden Ring*. What separates *Keystone* from these games is a complete absence of combat. Since players cannot harm the enemies roaming the land, *Keystone* has a much larger emphasis on stealth than other titles in this genre. One game *Keystone* shares many qualities with is *Subnautica*, another open-world game with exploration, resource gathering, and a heavy nonviolent slant. However, *Keystone* maintains its

distance from *Subnautica* by lacking *Subnautica*'s survival elements and by having a more family-friendly tone.

III. Advertising

Social media will be the primary method of advertisement due to its popularity with a younger audience. According to the PEW Research Center, the 3 most popular social media platforms as of 2018 for Americans between the age of 13 and 17 are YouTube, Instagram, and Snapchat (**1**). Copies of *Keystone* will also go to prominent users of Twitch and YouTube to reach the game's target audience. 75% of Twitch viewers are between the ages of 16 and 34 (**2**) and 95% of adults between the ages of 18 and 29 use YouTube (**3**). *Keystone* will also be advertised on TikTok to reach a younger audience.

IV. Projected Sales

Because *Keystone* calls for a moderate fiscal budget and scope, the intended price is \$30.00. To accurately estimate sales, comparisons were made between figures of other open-world games from obscure developers that became breakout hits, such as *Subnautica* and *Horizon: Zero Dawn*. *Subnautica* sold over 5 million copies in 2 years (**4**), and *Horizon: Zero Dawn* sold 2.6 million in 2 weeks (**5**) and 20 million copies in 5 years (**6**). With effective marketing, *Keystone* could match these numbers, bringing in \$60 million in 5 years.

V. References

1. https://www.pewinternet.org/wp-content/uploads/sites/9/2018/05/PI_2018.05.31_TeensTech_FINAL.pdf
2. <https://twitchadvertising.tv/audience/>
3. <https://www.pewresearch.org/internet/2021/04/07/social-media-use-in-2021/>
4. <https://www.gamesindustry.biz/articles/2020-01-14-subnautica-has-sold-over-5m-copies>
5. <https://www.polygon.com/2017/3/16/14945792/horizon-zero-dawn-launch-sales-ps4>
6. <https://twitter.com/hermenhulst/status/1492136368541212673>

8. Appendix

1. Art

- 1.1. [Airship Map Beta.png](#)
- 1.2. Avist_Club.png
- 1.3. Blanca_Reference.png
- 1.4. Box_Art.png
- 1.5. Farewell!.png
- 1.6. Foraging!.png
- 1.7. Gameplay_Mock-Up_(Rotate_Camera).png
- 1.8. Gameplay_Mock-Up_(Swinging).png
- 1.9. Gameplay_Mock-Up_(Walking).png
- 1.10. Great_Escape!.png
- 1.11. Key!.png
- 1.12. Keystone_Cover_Art.png
- 1.13. Keystone_GDD_Art.png
- 1.14. Keystone_Watermark.png
- 1.15. Kitchen Diagram 1.png
- 1.16. Kitchen Diagram 2.png
- 1.17. Kitchen Diagram 3.png
- 1.18. Luc.png
- 1.19. Map_End_1.png
- 1.20. Map_End_2.png
- 1.21. Map_Start.png
- 1.22. Menu_Mock-Up.png
- 1.23. NP-See_You!.png
- 1.24. Protagonist_Reference.png
- 1.25. Puffermine.png

- 1.26. Puppeteru.png
- 1.27. Sailfolk.png
- 1.28. Sally.png
- 1.29. Scatterbrain_Entertainment_Crew.png
- 1.30. Shielded_Dragons.png
- 1.31. Ship_Graveyard_(Puffermine).png
- 1.32. Sleeping Giant Map.png
- 1.33. The_Airship.png
- 1.34. The_Avist_Club_(Concept_1).png
- 1.35. The_Avist_Club_(Concept_2).png
- 1.36. The_Shards!.png
- 1.37. Toxic_Tarsiers.png
- 1.38. ViruSpiders.png
- 1.39. Willow_Wisps.png
- 1.40. You_Got_Caught!.png

2. Pitch Presentations & Prototype

- 2.1. Pitch_1_-_Keystone.pdf
- 2.2. Pitch_2_-_Keystone.pdf
- 2.3. Pitch_3_-_Keystone.pdf
- 2.4. Pitch_4_-_Keystone.pdf
- 2.5. Airship_FinalMaybe.html
- 2.6. nightmare.png
- 2.7. PROTOTYPE_README.txt
- 2.8. Prototype Results.pdf