

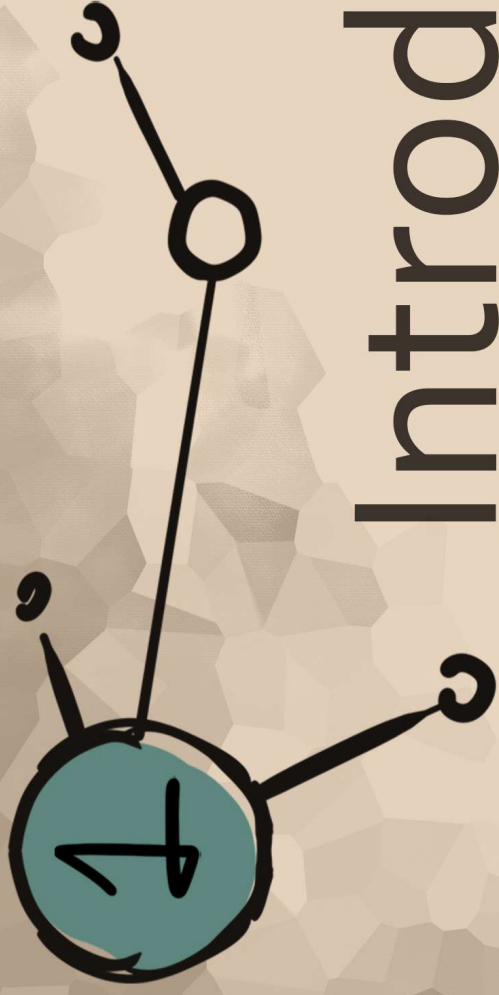
THE DESIGN OF

WILEY



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Introduction

“The pinnacle of game design craft is combining perfect mechanics and compelling fiction into one seamless system of meaning.”

— Tynan Sylvester, *Designing Games*

The Design of Delve is a design book made by students to cover the thought process behind some of the design choices for the master thesis game Delve.

The game was made over the course of 18 weeks, and this book was produced in the post mortem stages of the production.

The goal for the game was to create a high quality experience that was fun to play.

The team consisted of 5 students:

- Jonas Melgaard Jensen
- Colin Michel
- Maja Sayk Sørensen
- Nicolai Hestehave Worsøe Jørgensen
- Kelsey Lyn Adsitt

In 75 pages of art, game design and programming, you'll get insights into the thoughts and decisions that went into the design of Delve.

Enjoy:)



GAME WORLD

2 GAME WORLD DESIGN

“Thousands of years ago, before the very beginning of time, there was only darkness. And in that darkness, presence. As stars were born and planets formed, the presence grew, reaching for the physical planes that were manifesting around it. Searching. Expanding. Devouring.

All sparks of life it came upon became it’s prey, as it dug into their minds and ate away at their sanity, feasting on the terror that surrounded its presence. And as such, planets with entire civilizations fell to madness, consumed by an unquenchable hunger.

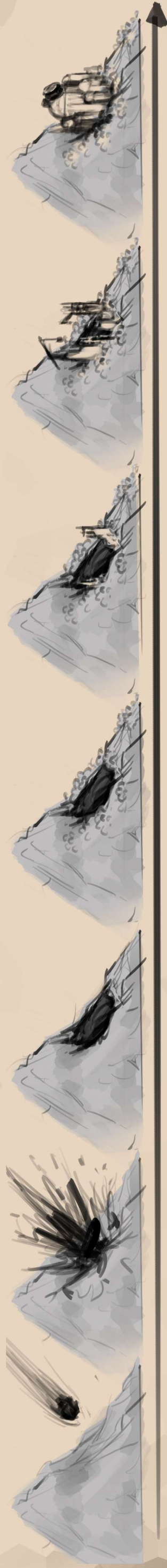
As millennia passed the planet we inhabit was born and with its existence came the people of this world. With its many continents and climates, all kinds of tribes were formed, and the tribes grew into villages.

But as time had passed the presence had grown, and it had at last reached our planet. While most could not quite explain what it was that unsettled them, let alone to themselves, they sensed something was lurking at the edges of their consciousness. Brushing against their mind’s barrier. Scraping. Probing.

But to a few, it meant excitement. These were high mages of the northern region, men of knowledge and power, scholars who were interested in the unknown. And so, they got to work.

To many, if not almost all, it seemed that the darkness that had grown in their minds had vanished overnight, and it was as if the entire planet sighed in union. But on an island in the north, a presence had been sealed, locked in a cage. And as more millennia passed, the villages grew into cities, and the cage became a temple of knowledge, and the temple became a tomb. And so, the temple fell into the shadows of history, it’s purpose and origin washed away by the absence of those who were left to remember.”

In Delve you play as an adventurer, searching a forgotten temple for treasure and secrets. Unforeseen circumstances causes you to be trapped and cursed by an Old God, mocking your every attempt at escape. To find your way out you must delve deeper using your trusty grappling hook and flare gun to overcome obstacles. Explore a mix of lovecraftian horror and middle eastern architecture wrapped in darkness as you uncover the truth.

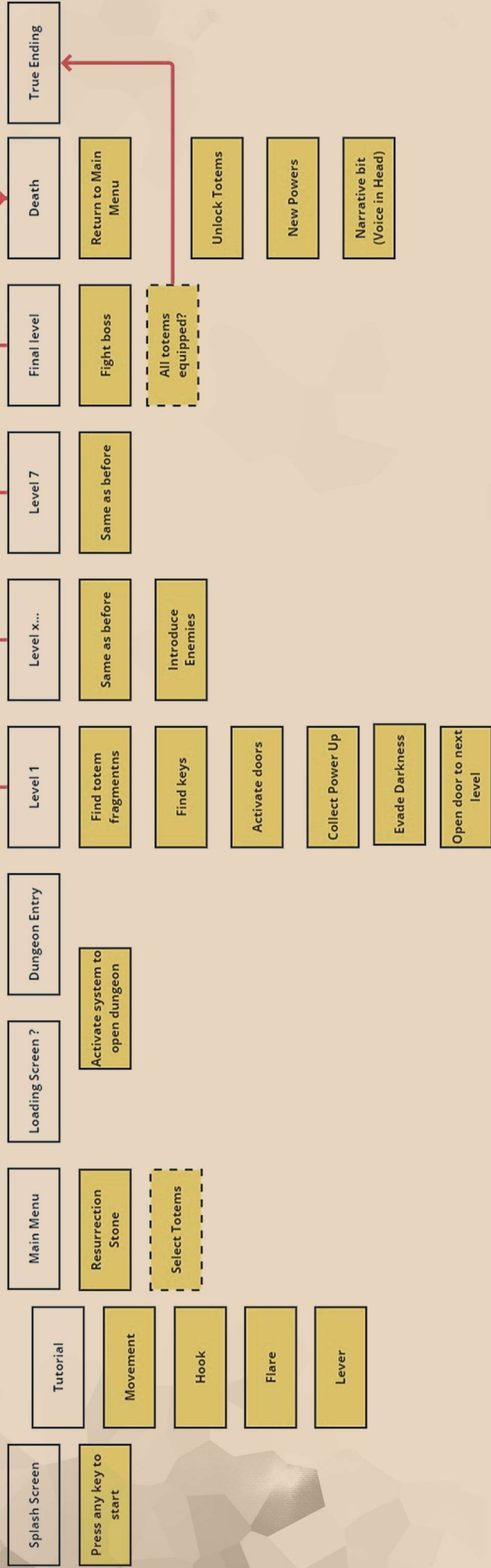


2 GAME WORLD - GAME DESIGN

When playing a game the player usually only experiences the polished product, the glazing on the cake so to speak.
But in reality it is the combination of several disciplines failing and succeeding together to bring a shared vision to life.
The final version of Delve is a product of many iterations, prototypes, scrapped ideas in an overall effort to make it all combine into one coherent experience.

GAME PROGRESSION LAYOUT PROTOTYPE

The original concept was for the game to be a highly replayable dungeon crawler, inspired by roguelikes such as Spelunky but in a more frantic first person setting with survival depending on fast decision making.



Level 1 (Bridge)

Teaching:

- Insanity
 - Light/Dark
 - Dark Spheres (Also around Fragments)
 - Wall
- Hook to pull things
- Interactable
 - Pressure Plates

Challenge:

- Find all the interactable

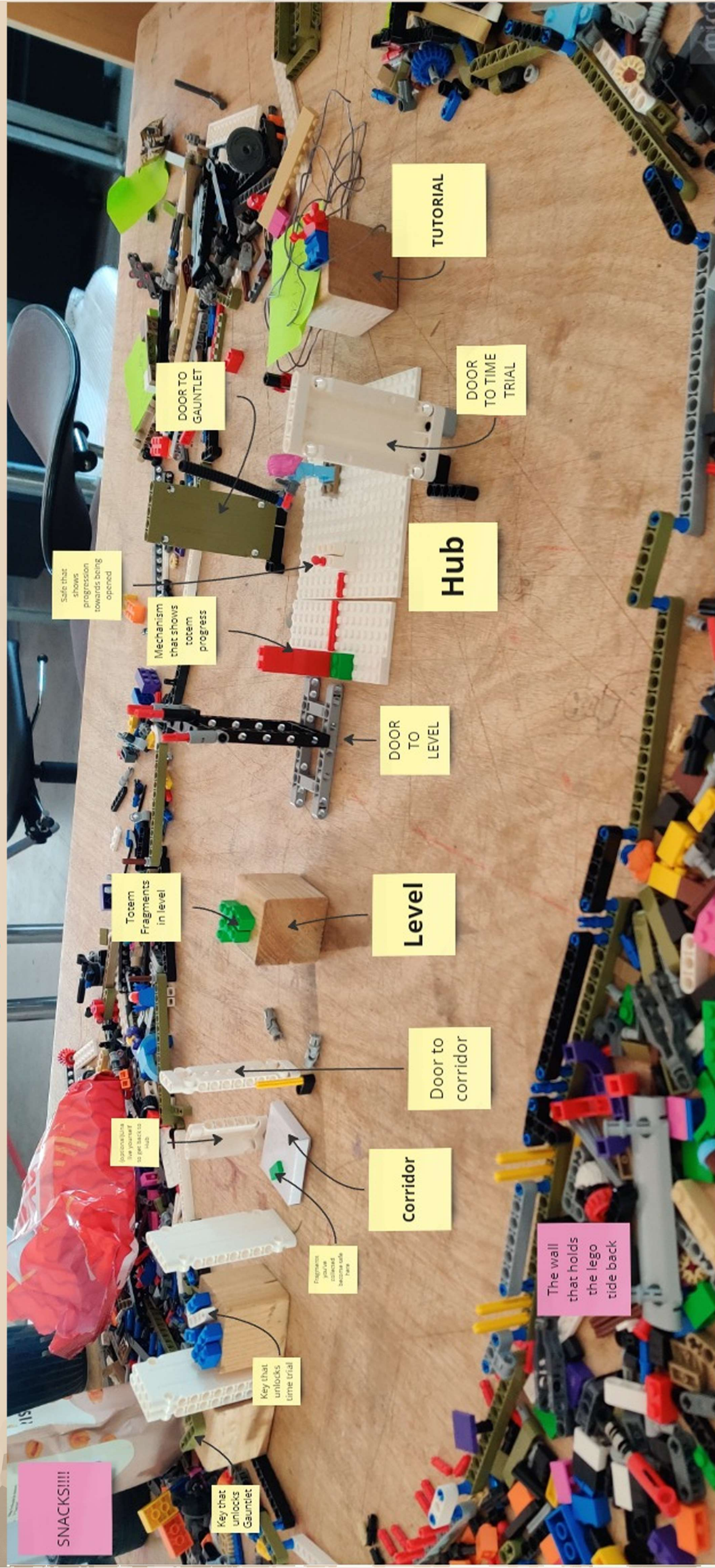
As development went on, the game gradually transformed into a more exploration based experience where the player has to tactically explore dark environments to progress.

As we were exploring the game progression layout we could define teaching moments and challenges for each area, and get an overview of how the progression should relate from one area to the next.

2 GAME WORLD - GAME DESIGN

To align a common understanding of the experience we were making, we mapped out the story beats, gameplay moments and overall progression using LEGO as a medium to bridge the gap between abstract thoughts and concrete ideas.

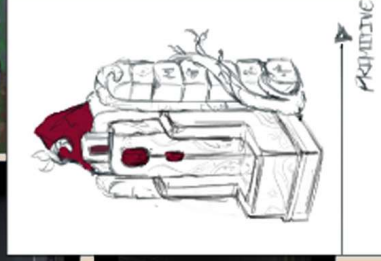
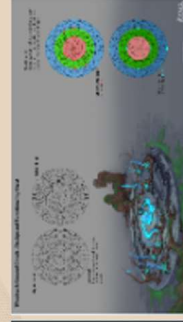
The lego workshop allowed us to map out how different areas in the world were positioned compared to one another.



2 GAME WORLD - VISUAL DESIGN

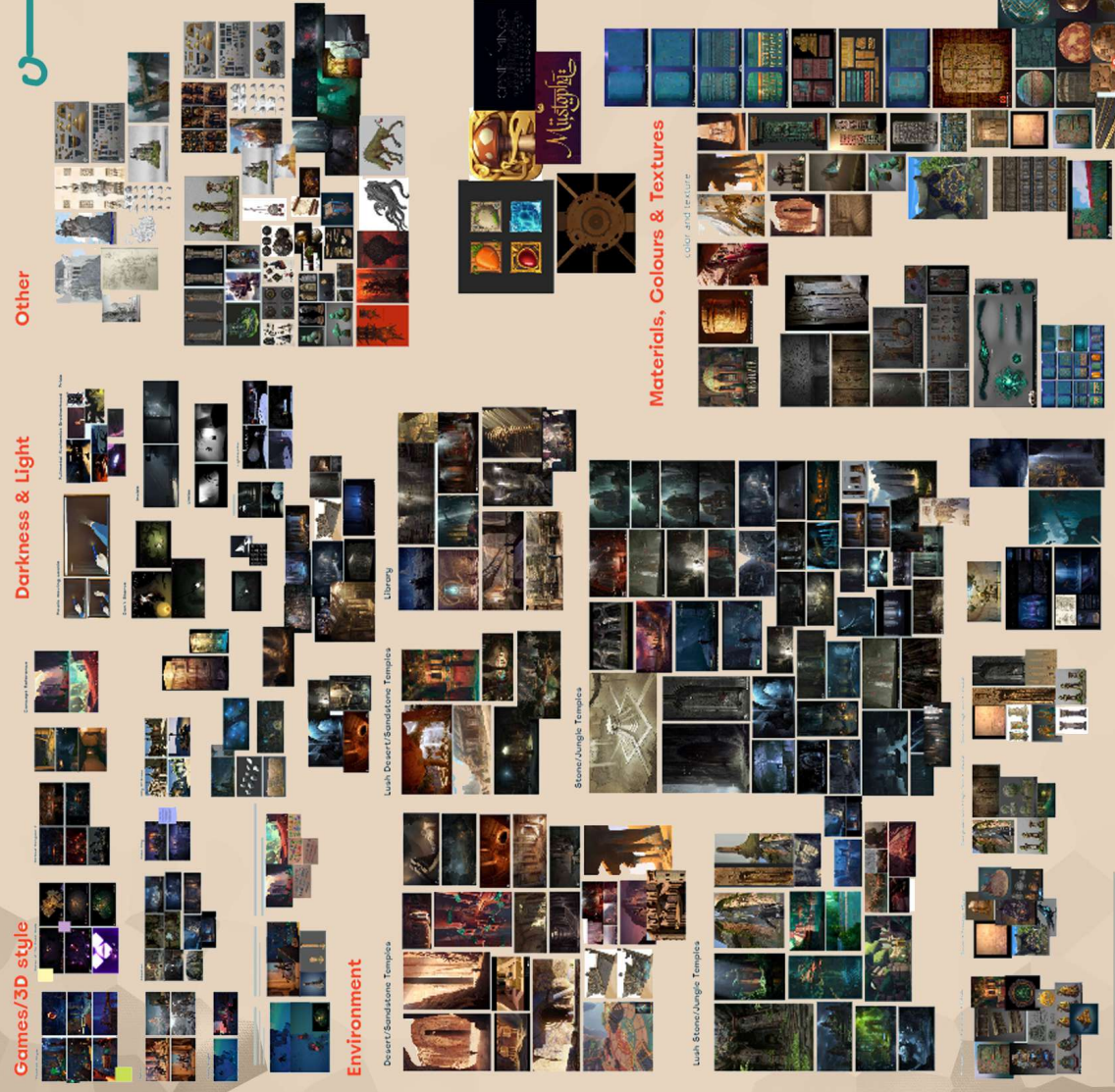
Primitive/Worship

Advanced/Enlightened

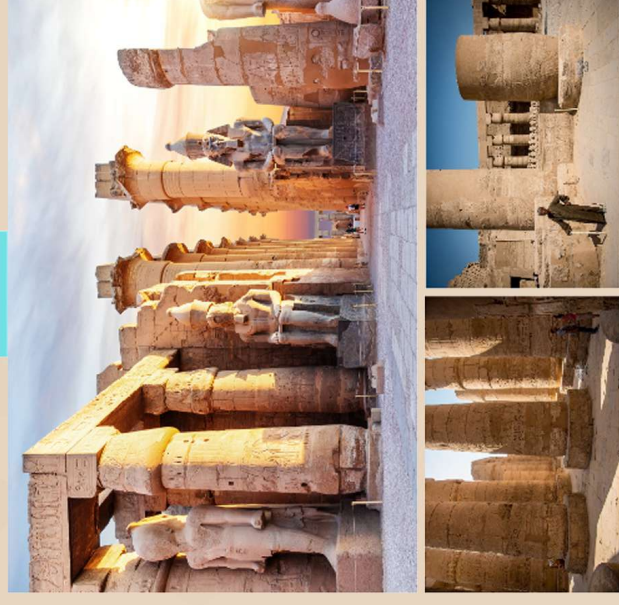


To figure out the feel of the temple the game was set in, we defined a range of how advanced the temple could be.

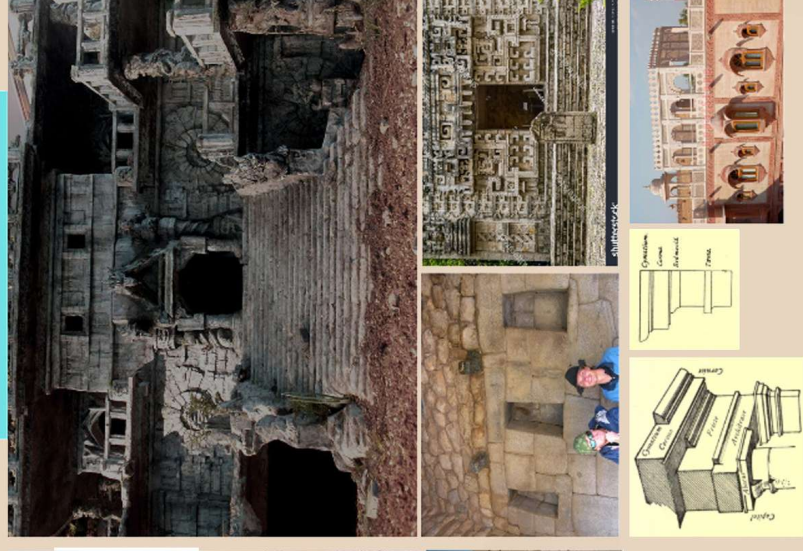
Starting off the visual development, we gathered a lot of reference for inspiration with the narrative design in mind.



Scale



Architectural detail



Material



The final decision was to use the scale and sandstone of the Egyptian temples and mix it with some of the level of detail found in Mayan and Inca temples

2 GAME WORLD - VISUAL DESIGN



The initial exploration of the colour palette, trying to push for something bright and vibrant or very sinister and dark.

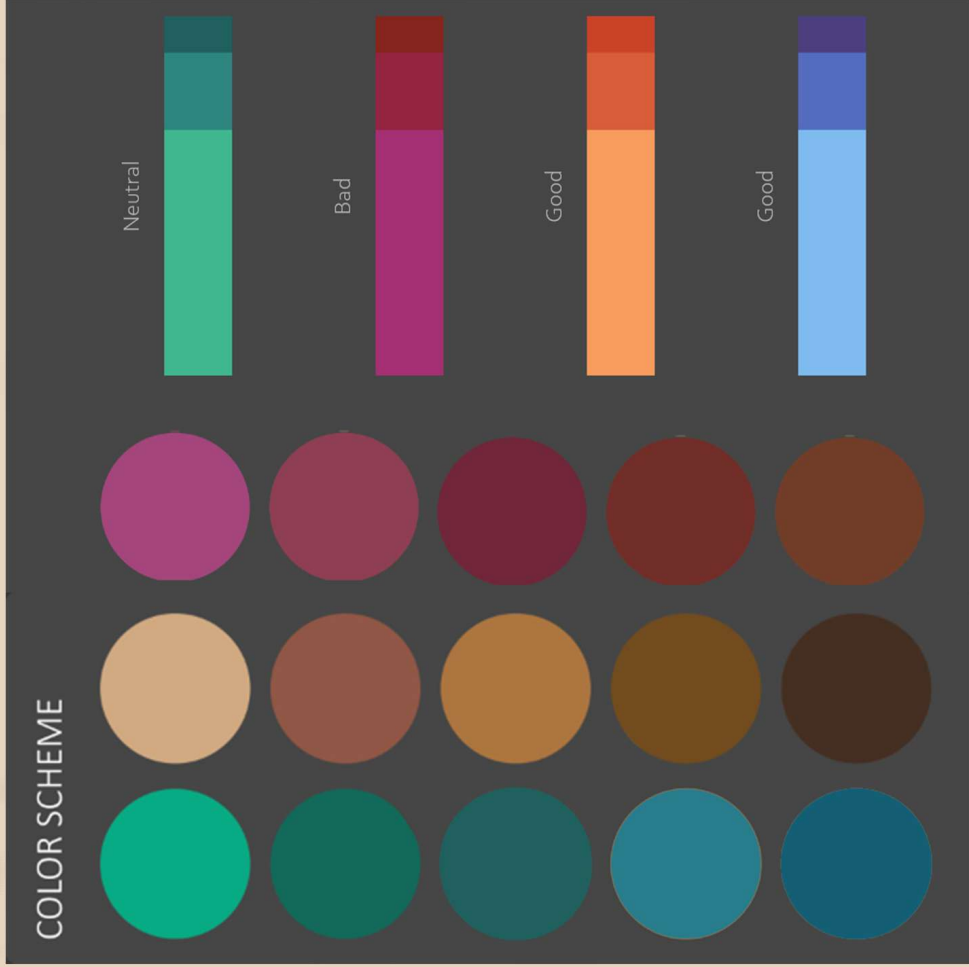


At this point the colour palette was starting to feel decent, having a solid range of sandstone colours that we could spice up with accents of blue and red.

An exploration of more ominous horror inspired colour palettes

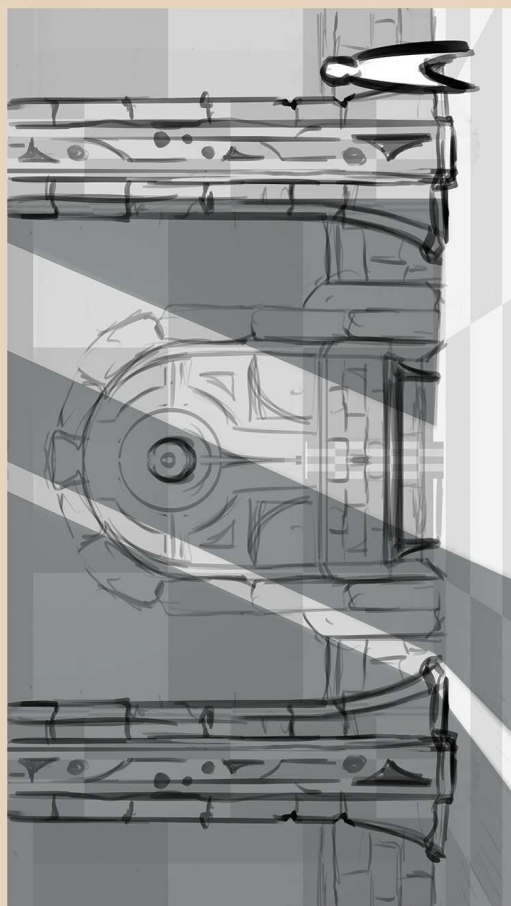
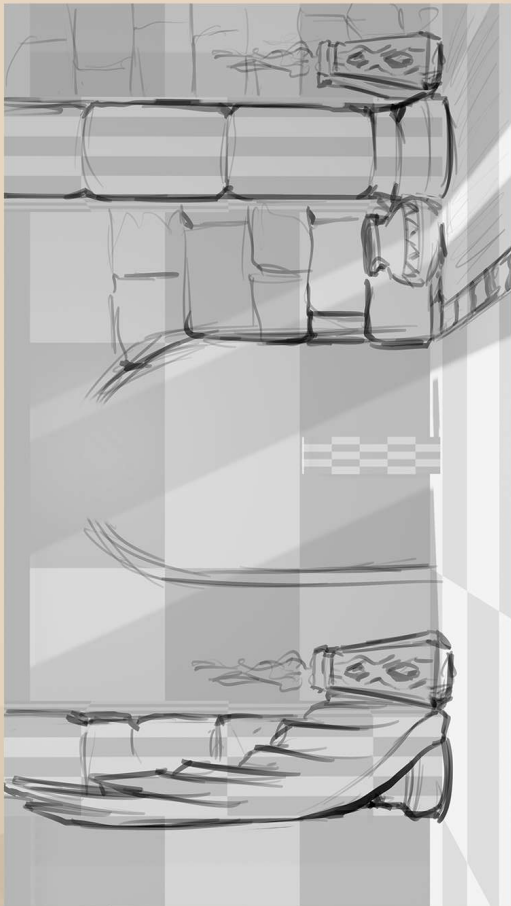
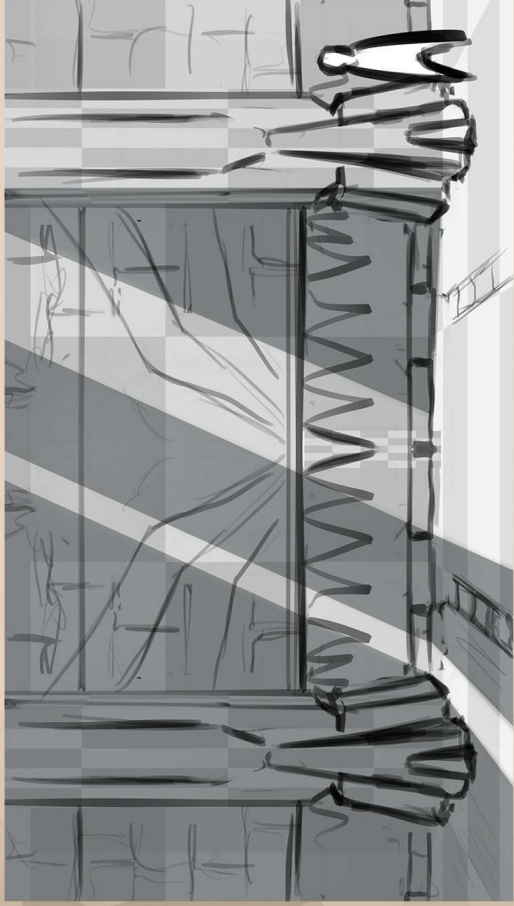


The final colourscheme. To compliment the orange and brown shades of sandstone, we decided to go with a split complementary colour scheme, that would have an analogous range of teals and blues, as well as magentas and purples to compliment the oranges. We knew that we needed a broad range of colours, to show the difference between states of good and bad in the game.



2 GAME WORLD - Visual Design

First sketches of the environment, trying to get a feel for the temple.



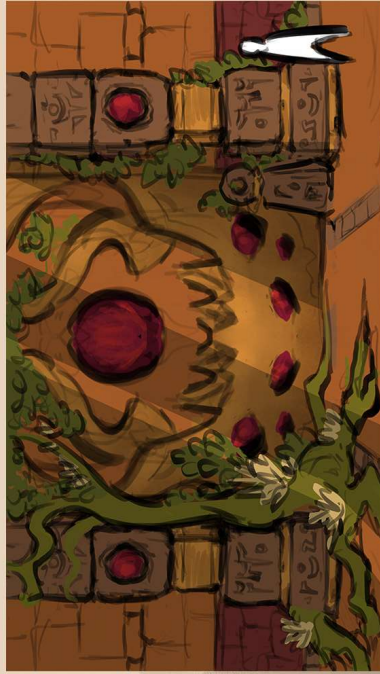
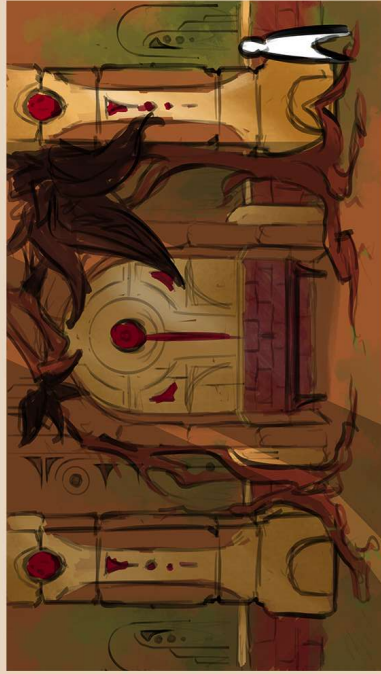
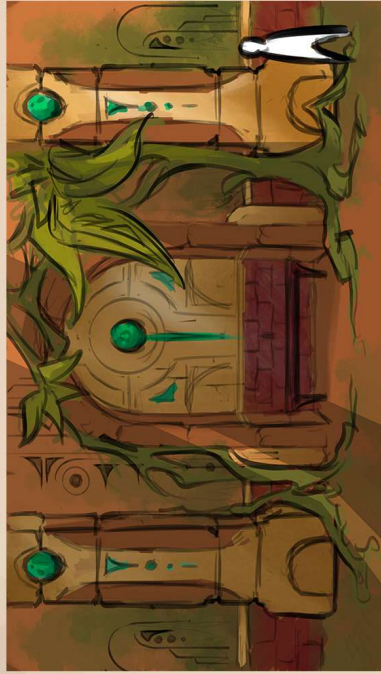
At the same time as trying to figure out the look of the environment, we tried to define a palette of patterns and shapes to inspire the environment.

The constellation patterns felt interesting and was explored some more, taking a lot of inspiration from the *Treasure Planet* movie.

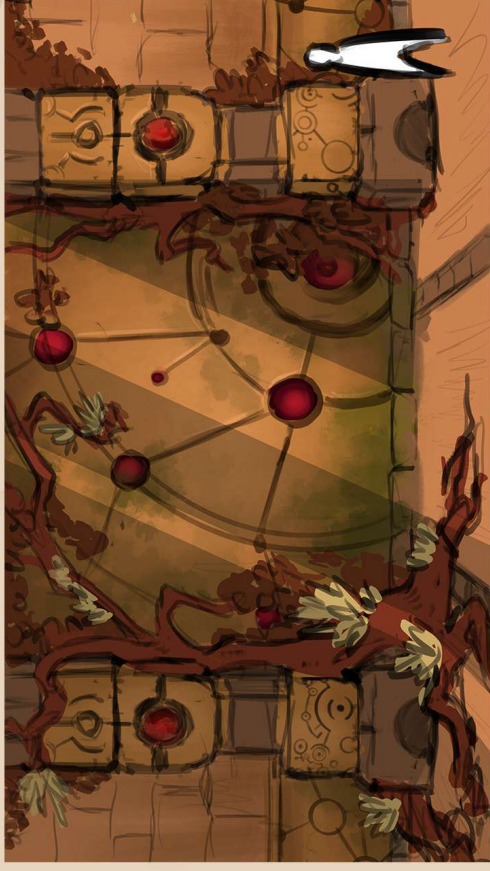


2 GAME WORLD - VISUAL DESIGN

Inspired from the constellation patterns and shapes, trying to play around with colours and aesthetic of the temple. We were trying to hit a fine balance between a feeling of a bygone era, that was neither completely destroyed, nor intact. We therefore didn't want our temple to be too crumbled from the age of time.



The final environment sketch. We decided to go with a sandstone temple, drawing inspiration from Egypt, India and Arabia, as well as cosmic elements.



Variation of the constellation with red colours to give a more sinister feel.

To add in some more colour in the sandstone temple we played around with vines, roots and other foliage, as well as water.

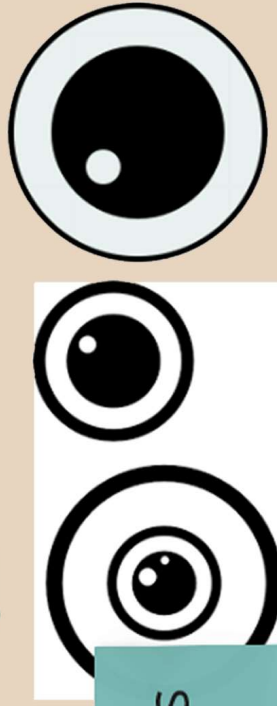
The gems and wall paint was also another way to add splashes of colour.

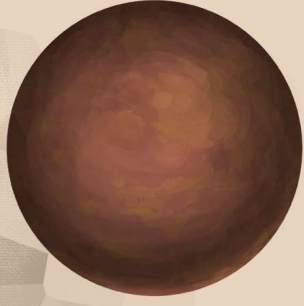
2 GAME WORLD - VISUAL DESIGN

An early idea we had, was to mix a lot of the patterns and constellation shapes with circles resembling eyes, to make the player feel like they were being watched. The idea for the eyes in particular was drawn from the Lovecraftian inspiration behind the Old God that resided in the temple, called *The Eyes Between Worlds*.

The natural overlap in the round shapes from constellations and eyeballs made it easy to mix the two.

Touches
of
madness

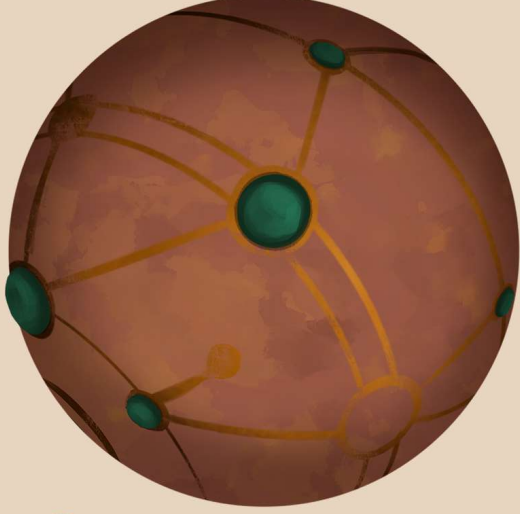




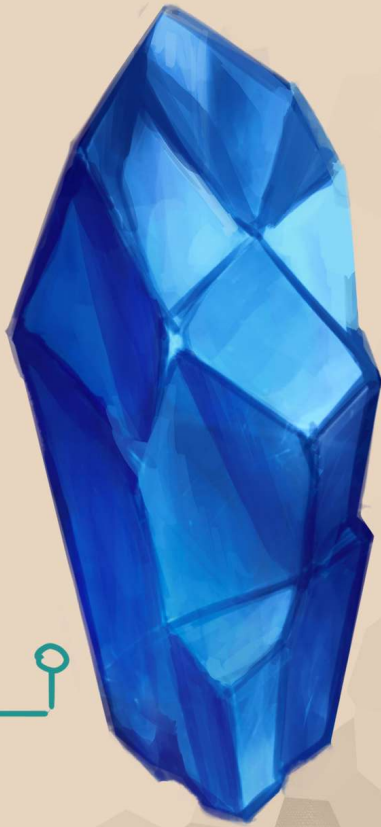
To help streamline the design of the world, we defined a toolbox of various materials and textures that could be used to design props and environments with.

Sandstone Materials

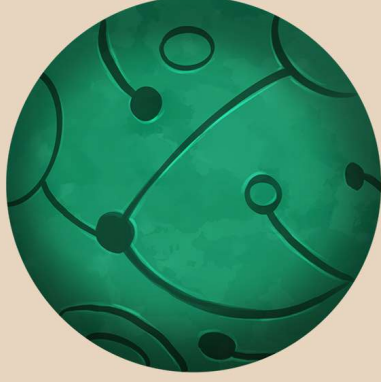
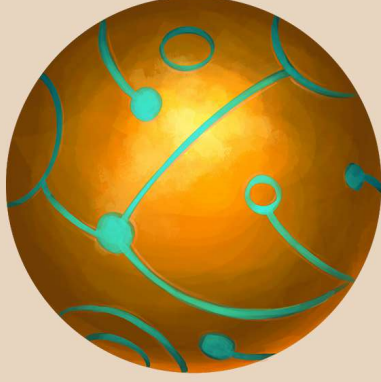
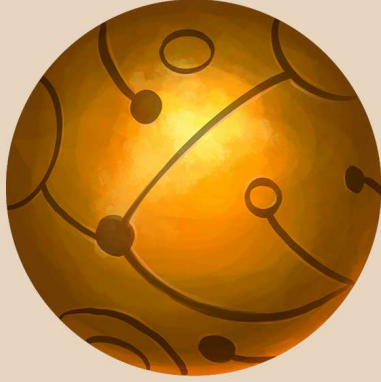
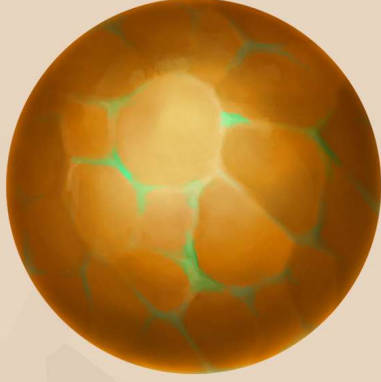
Some places we introduced more unique materials such as wood for brittle gameplay elements or sandstone combined with gold and gemstones for storytelling

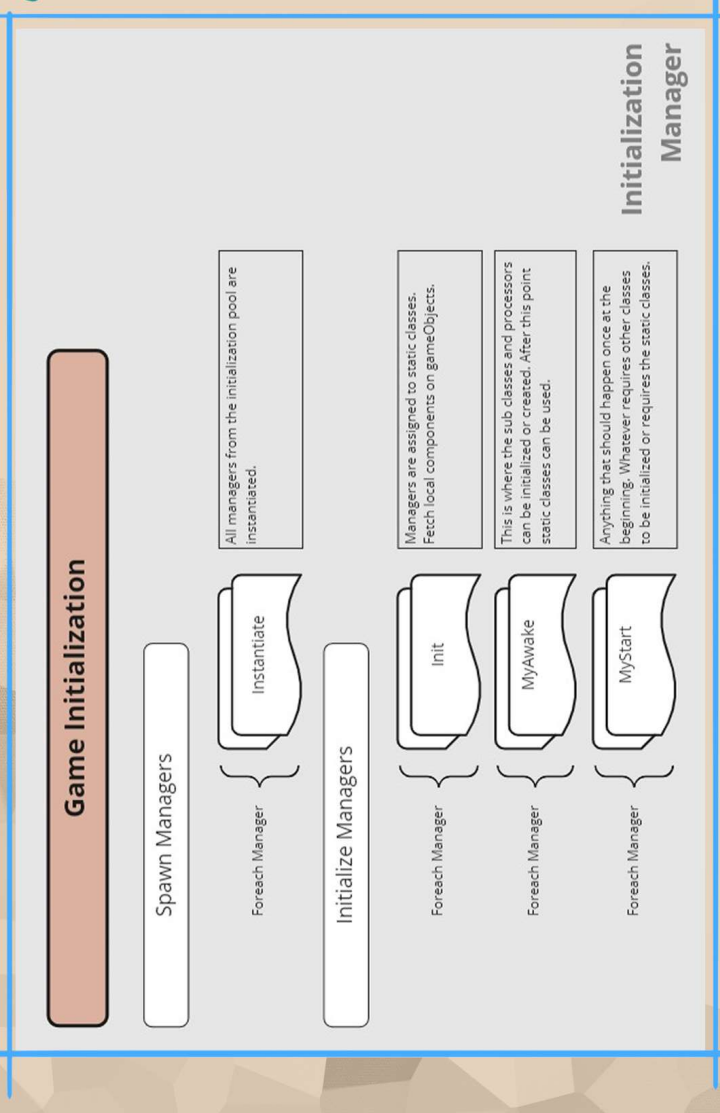


One of the materials we made up was a blue crystal material inspired by *Hextech Crystals* from the *Arcane* series. Our crystal material was emissive, above diamonds on the hardness scale, and had the property of igniting on impact with itself.

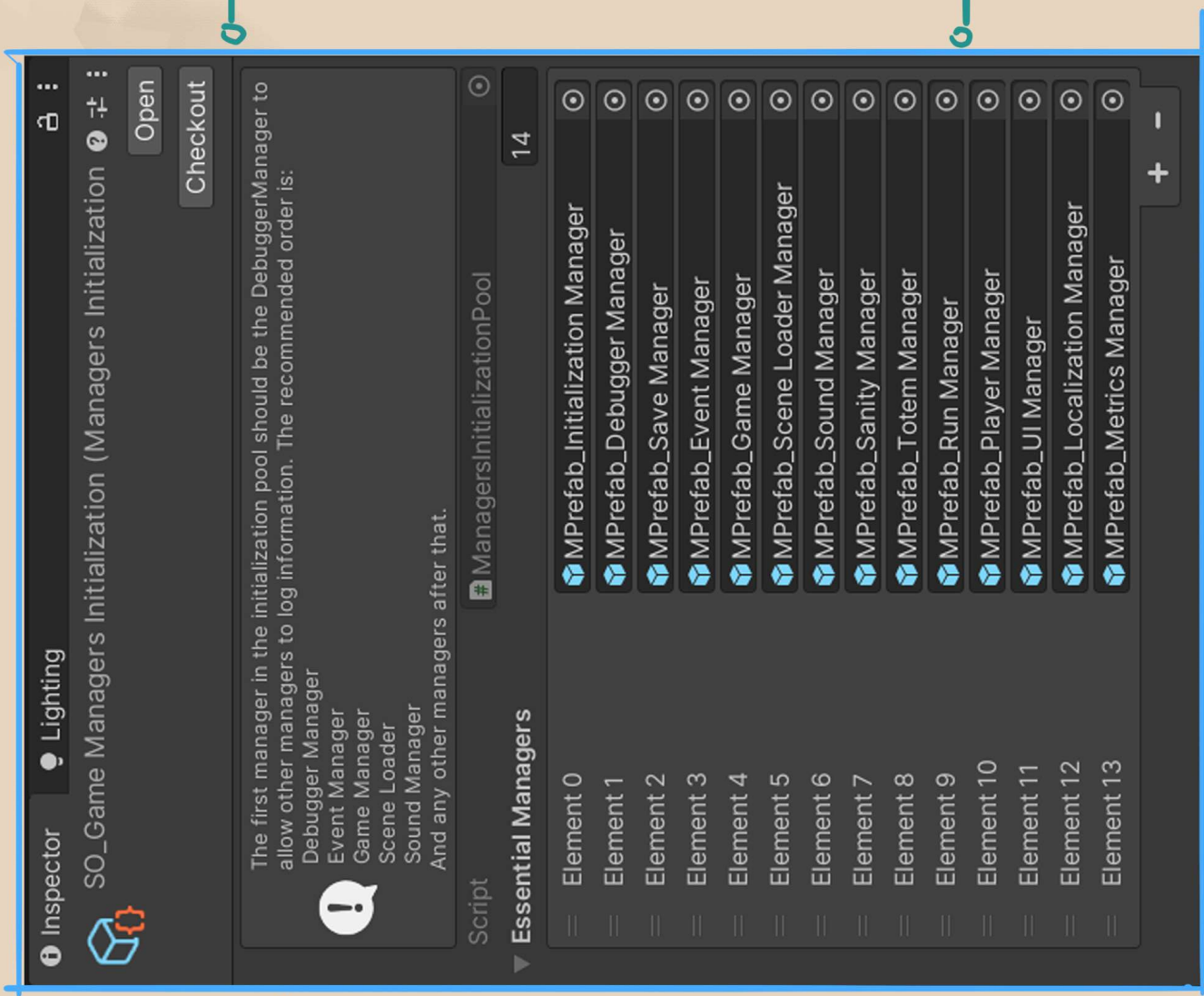


Inspired by the crafting techniques of the world, stained stone, forged metal and engravings were added to the palette of materials and details we could use to design the props and environment with





5

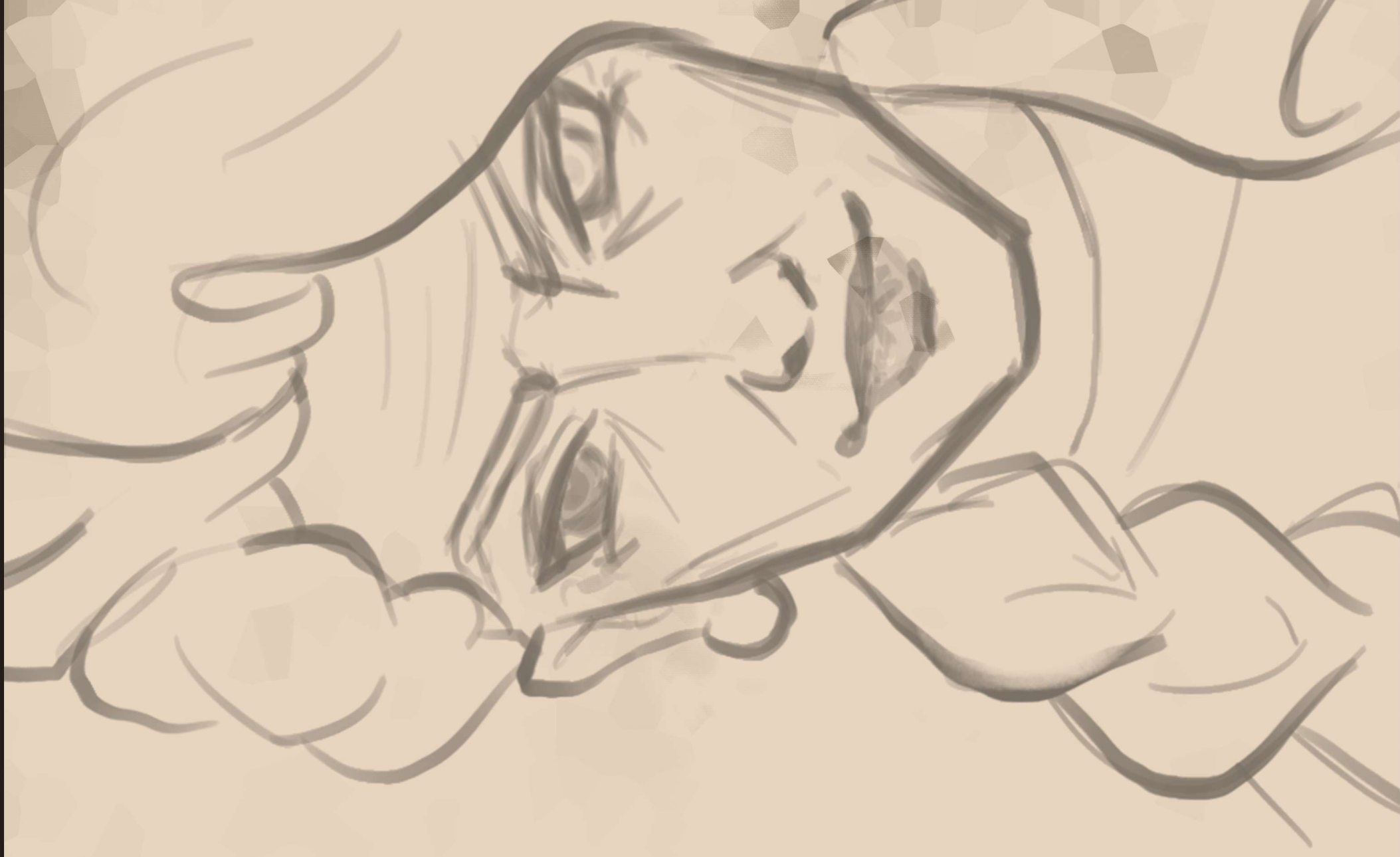


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PROGRAMMING DIAGRAM



Character



3 CHARACTER DESIGN

"Nefertari is drawn to the temple by a mysterious force that she cannot ignore. As a retired tomb raider with a thirst for adventure, she cannot resist the temptation to explore the ancient ruins and uncover their secrets. Though she is wary of the dangers that may await her, her curiosity and desire for knowledge drive her forward, and she is willing to risk everything for the chance to uncover the mysteries of the temple."

In Delve you play as Nefertari Amun-Tey, an arrogant retired tomb raider. As a clever, resourceful, and brave individual with a wide range of knowledge that makes her a skilled adventurer, the world is Nefertari's playground for her unquenchable thirst for adventure.



3 CHARACTER - VISUAL DESIGN

Although the game is first person, exploring the character design and archetype was a way to get a better understanding of the characters motivation, as well as a help to inform the design of the characters tools - Flaregun and Hook. The moodboard was a mix of text and images to nail the personality.

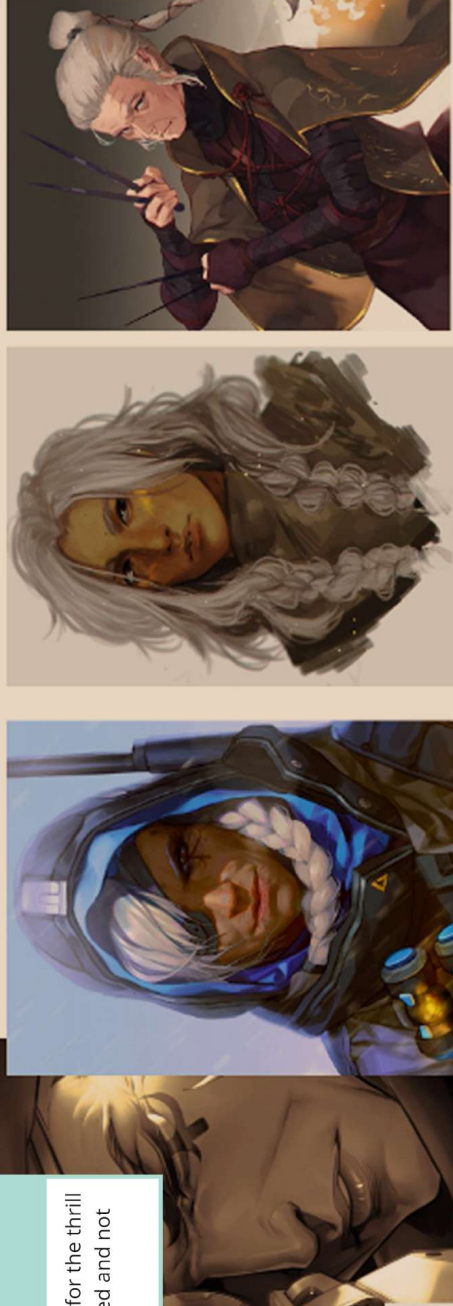
General theme: Retired Explorer called back into the field.

Retired Grave Robber: A master of their skill, the grave robber lives for the thrill of exploring ancient temples and finding treasure, only retired by need and not desire.

Important Elements

- Exploration specialist
- Retired due to injury
- Agile and Fast
- Doesn't Fight
- Confident (Arrogant & Proud)
- Equipped with her trusty tools.

Defining the most important parts of the character helped the decision process for designing the characters physique, tools, outfit, etc.



Although the character was very clearly an Indiana Jones archetype, the main inspiration behind the personality and visual design became *Ana* from *Overwatch* and *Samira* from *League of Legends*.

We boiled the archetype down to either the hero archetype or the explorer archetype, and ultimately landed on the explorer as we wanted our character to be proactive, rather than reactive.

What Is The Explorer Archetype

Simply put, an Explorer character is someone who seeks to uncover the world around them. Unlike the Hero, they don't wait around for an inciting incident to drive them to action. They are *ready, set, go* all the time. Explorers seek authenticity in their lives and are always curious about the world. They want to delve deep into the stories, people and places they encounter to get to the heart of it all.

EXPLORER

Explorers are rogues that specialize in discovering lost places, lore, and treasure. Most explorers have extensive knowledge of certain subjects, like archaeology, and use this to uncover the secrets of the places they go. In combat, explorers use their cunning to exploit the weaknesses in their enemy's attacks. Furthermore, explorers are also usually good survivalists, able to adapt to a variety of environments.

Traits

- Determined
- Proactive
- (over)confident
- Resourceful
- Arrogant

Practical, comfortable, well crafted exploration clothes.

"Maybe I'm not as tough as I used to be, but my brains can make up for that and my hands are still quick enough."

— **Raul Tejada**, *Fallout: New Vegas*

"The world is my playground"

3 CHARACTER - VISUAL DESIGN

A



The initial loose sketches for the character design. At this point it was not feeling right, although the round pearl earring was giving the character some nice aging, and the braid was hinting at some practicality that felt right for the character.

B



C



Second iteration, taking it closer to the inspiration. The asymmetrical details around the eyes were very nice on all of them, but the face shape on A had the right balance of elegant arrogance. The bold messy hair with the braid was also giving a lot of character.



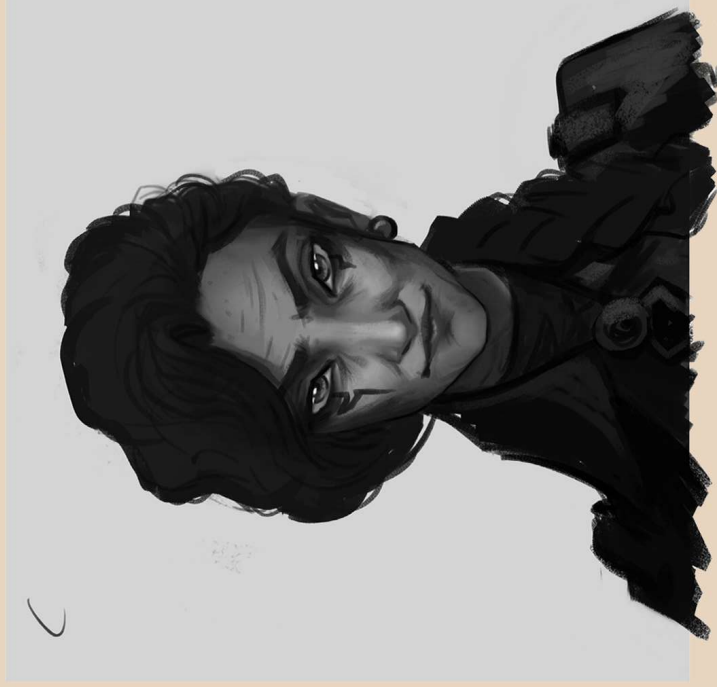
A



B



C



More sketches exploring the personality. Making the hair bolder, and exploring it in a more stylized rendering style, to simplify the process and bring more focus on shapes.

Because we could not spend too much time on something that wasn't even going to be seen in the game, the design was not pushed very far from the initial loose sketches.

3

CHARACTER - VISUAL DESIGN



Loosely sketching ideas for clothes also helped inspire the Flaregun and Hook designs later on.



An exploration of practical and comfortable clothes for the character.



The bird talon shoes were inspired by spiky mountain climbing shoes, practical for exploring crumbled ruins.

The final character portrait

A

B

C

D

E



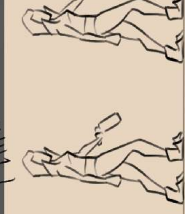
• Nefertari Amun-Tey



3 CHARACTER - VISUAL DESIGN

CHARACTER

MOVEMENT



Ready to fire



Ready to fire



Ready to fire



Ready to fire



Ready to fire



Ready to fire



Ready to fire



Ready to fire



Ready to fire



Ready to fire



Ready to fire



Ready to fire



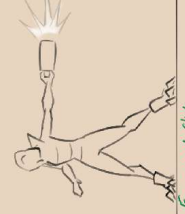
Ready to fire



Ready to fire



Ready to fire



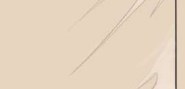
Ready to fire



Ready to fire



Ready to fire



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Ready to fire



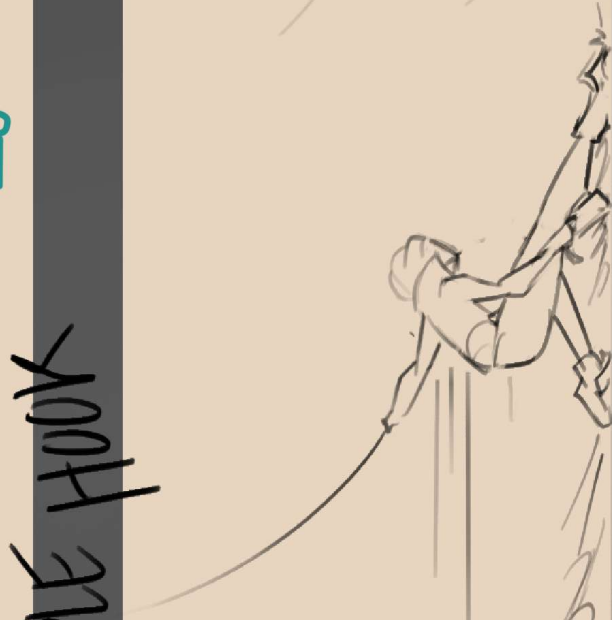
Ready to fire

To help imagine the positions of the hands, which the player would see as they moved around and used abilities, a bunch of actions shots were created, both for the use of the tools and for general movement.

GRAPPLE HOOK



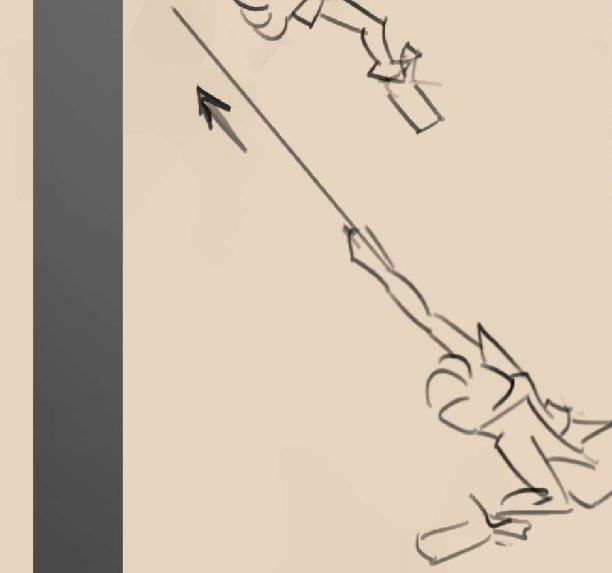
Rappel Landing



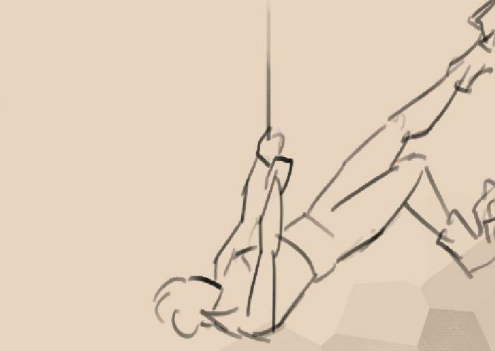
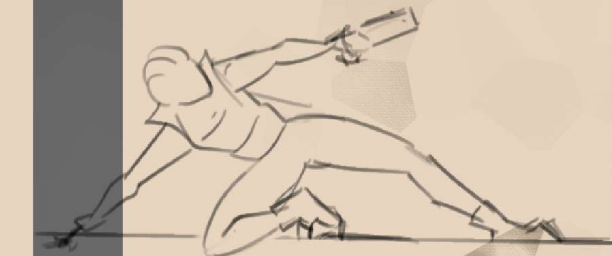
(Fast) Swing Landing



Swing



Wall Punch



Pull



Shoot



Fast Hook



Over Edge Landing



Whip Hook light

3 CHARACTER - GAME DESIGN



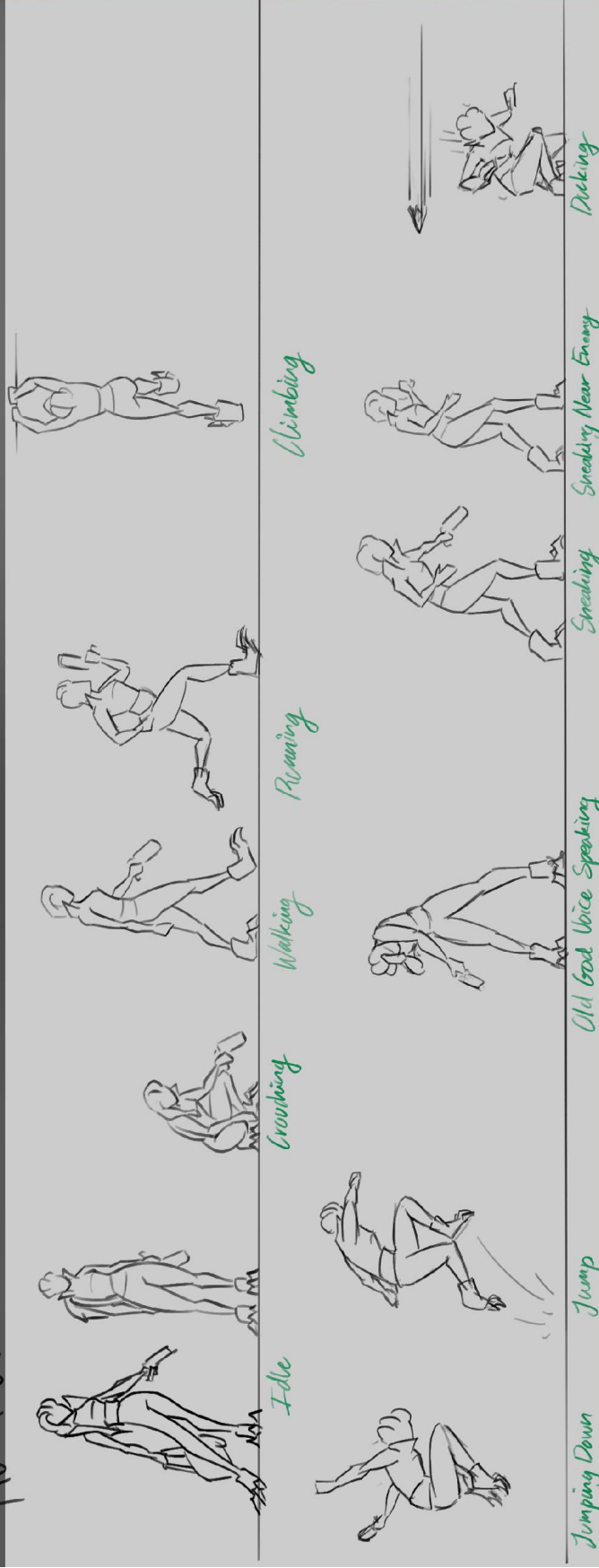
To support the explorer archetype we needed the controls to provide a high degree of freedom and responsiveness while still being grounded and not feeling supernatural.

To track if the movement in the game worked as intended, we tracked player paths and based on this we were able to fix. tweak character values or level design, increasing the success rate of jumps that were not intended to fail.

We originally envisioned the controls to include things like crouching and running, but scaled it down to focus on our more unique mechanics.

Striking a balance between the character height, movement feel and scale of the environment proved difficult, as the character quickly felt very small and slow to play.

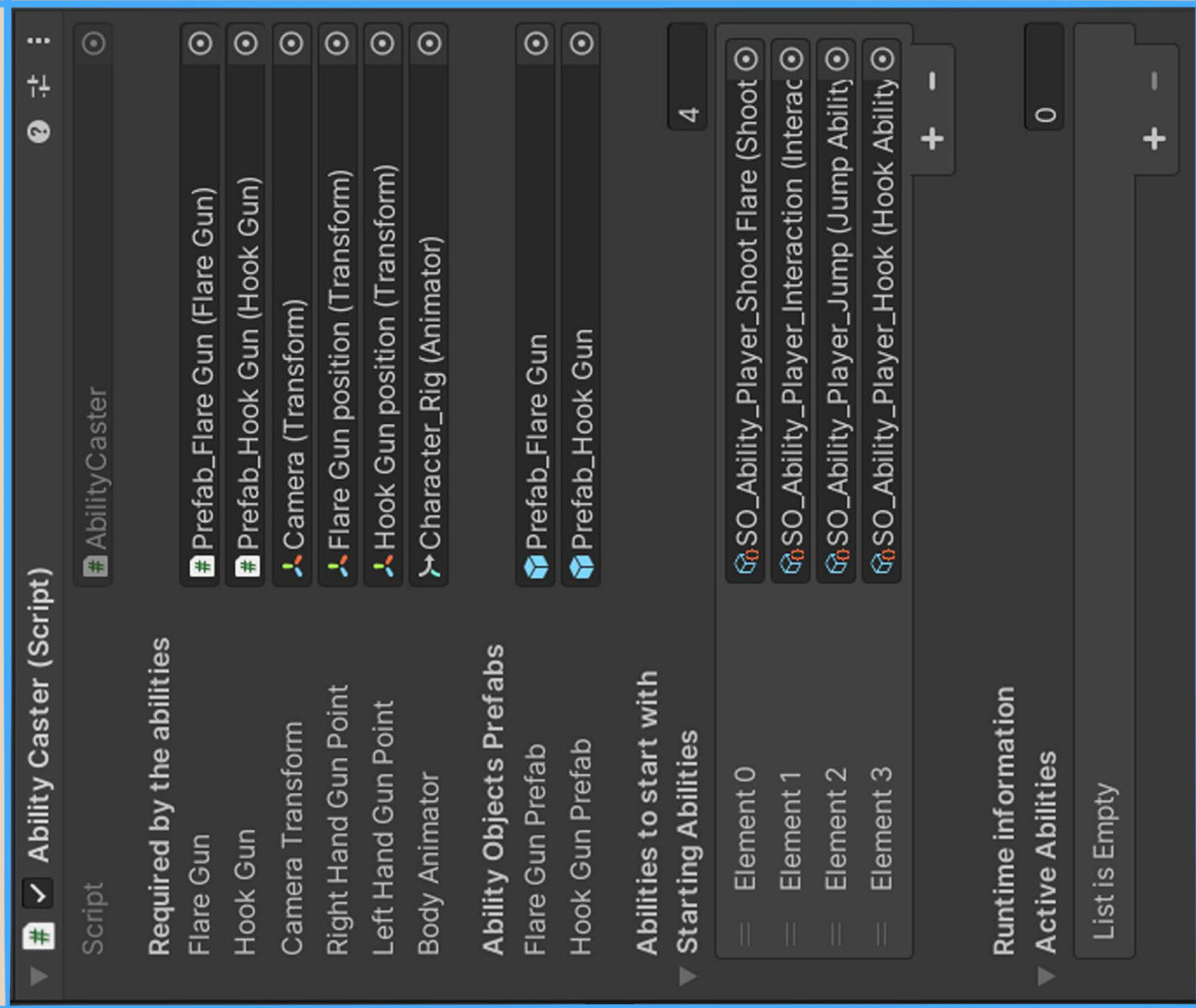
MOVEMENT



3 CHARACTER - SYSTEM DESIGN

PLAYER INPUT CONTROLLER

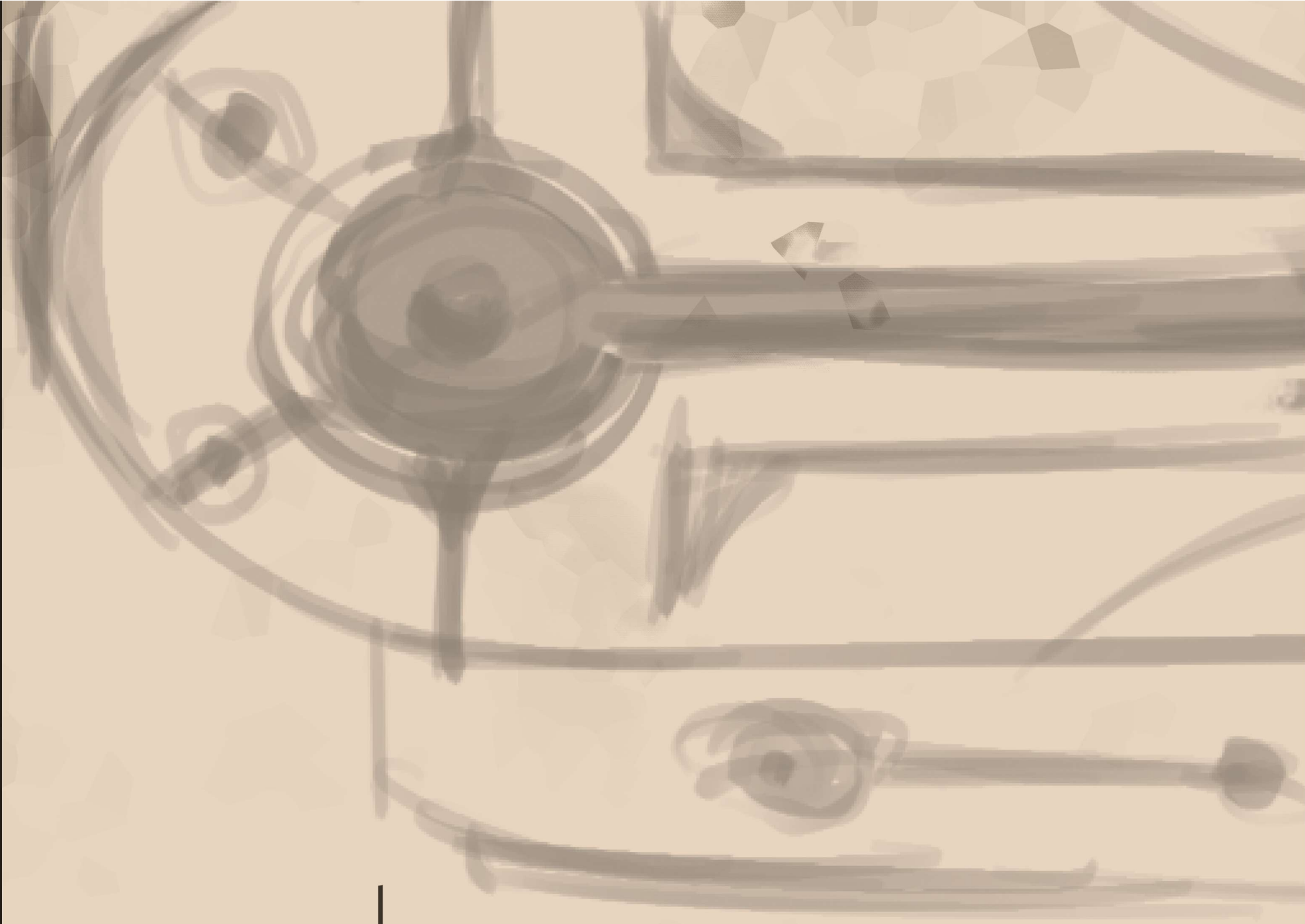
The abilities of the player are made using scriptable objects. These can be added to the player at the start or over time. The AbilityCaster component contains the references required by the abilities. One major improvement opportunity is to make this component ability-agnostic, making it reusable with AI entities.



This component controls the player's input events. Other components can register to its events. This has been done to have an extra layer of control over the input. Allowing us to pause and resume inputs, as well as simulate recorded input to replay user actions.



Sanity



4 SANITY DESIGN

"As you venture deeper and deeper you feel the dark pulling your mind further and further apart. Small pockets of light serve as a temporary respite from the endless abyss, because you know, that only by delving deeper will you regain control in this insanity".

The sanity is a crucial component of the game as it is the main losing condition, when sanity runs out, the player gets insane and respawns.

Sanity acts as the players health and can be damaged by darkness and in-game events.

Through a combination of light, visual effects, and sound, the game communicates to the player that danger is close and that they need to take action.

Light act as safe zones that either restore sanity or freezes sanity loss.

Colour Tests



4 SANITY - GAME DESIGN

The sanity system is our take on a non-combat-based omnipresent threat. The base concept is pretty simple: darkness, bad and light, good. The questions is how bad is bad and how do we ensure players understand the difference.

A cut feature, for the sake of the demo, was negative modifiers in the form of curses that the player would receive when reaching certain thresholds of total sanity lost. This would be a way to make delving into the temple progressively harder, the longer they stayed with clear markers that "now difficulty increased".

Weapons / tools

Grappling hook becomes sluggish with longer cooldown

Flares turn to dark clouds when light runs out.

Player

Visual impairment

Sanity declines faster when standing still

Environment

Braziers break over time.

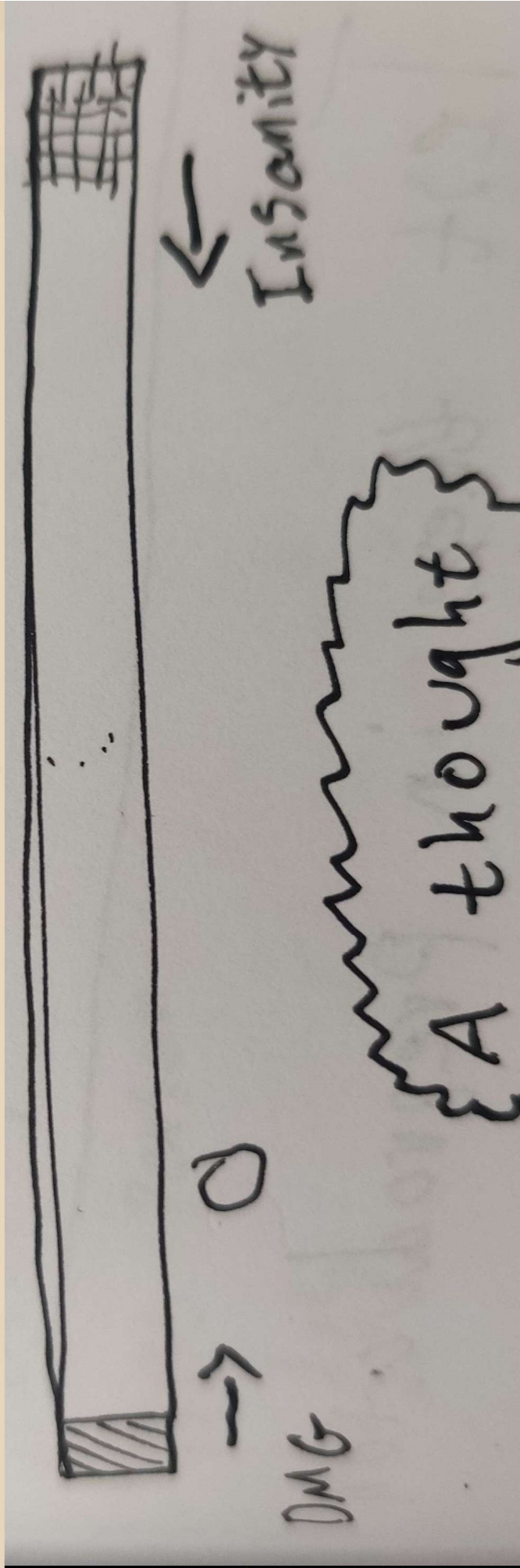
Water turns to blood

We did multiple iterations of darkness lethality. Some of these were:

- Slow damage, frozen by being in light. Akin to a timer.
- High damage in multiple steps, with each step resulting in visual changes.
- Damage that scales with how far you've progressed through levels.

Important for our final decision, to make sanity quickly declining and regenerable, is that being in danger should be clear to the player and there should never be moments where the player slowly waits for sanity to run out because they get stuck in darkness.

We also experimented with a double ended sanity bar mixing permanent and temporary damage.



4 SANITY - GAME DESIGN



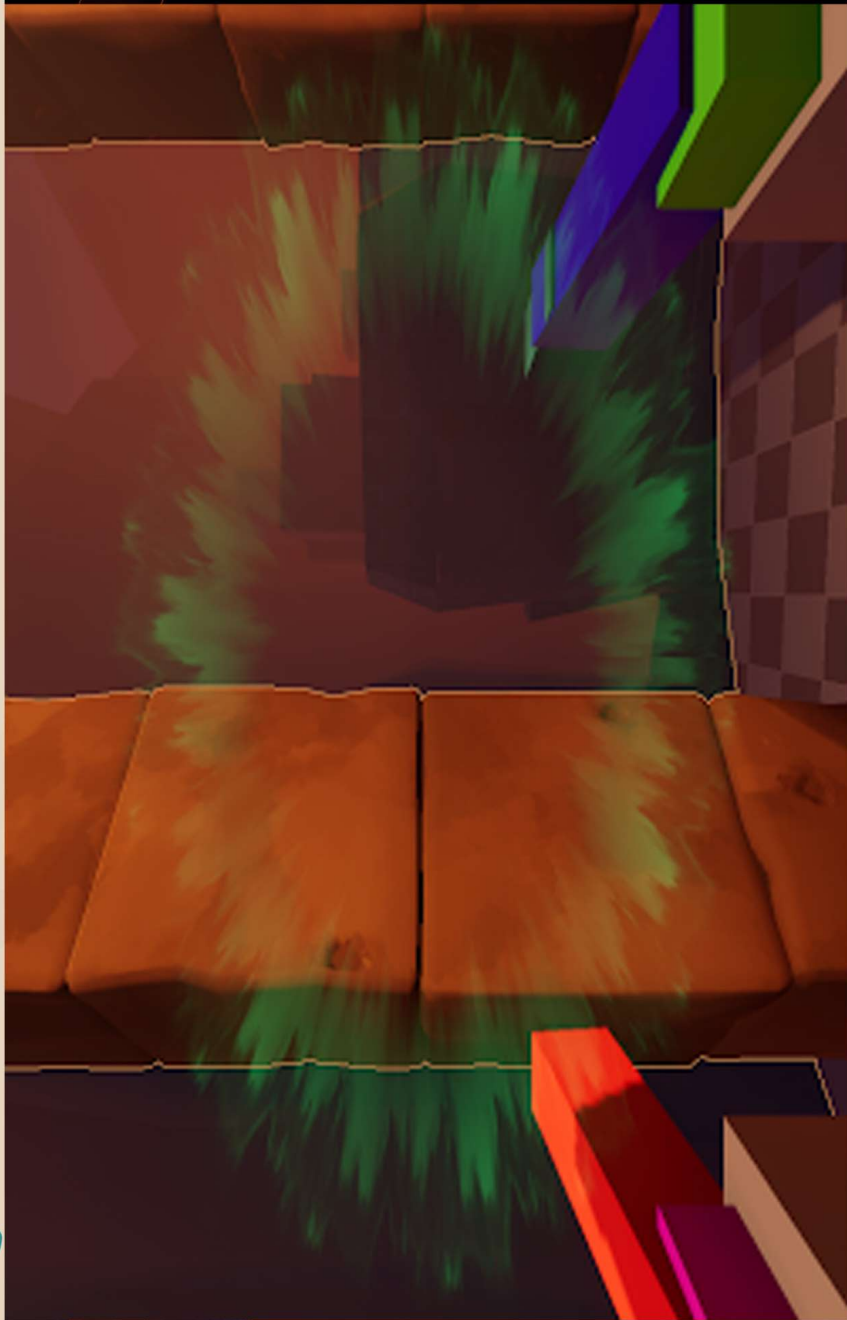
Communicating the state of the players sanity as well as whether they were within light or not was pivotal for the sanity system to work.

Some of the tools we implemented to help with this were:

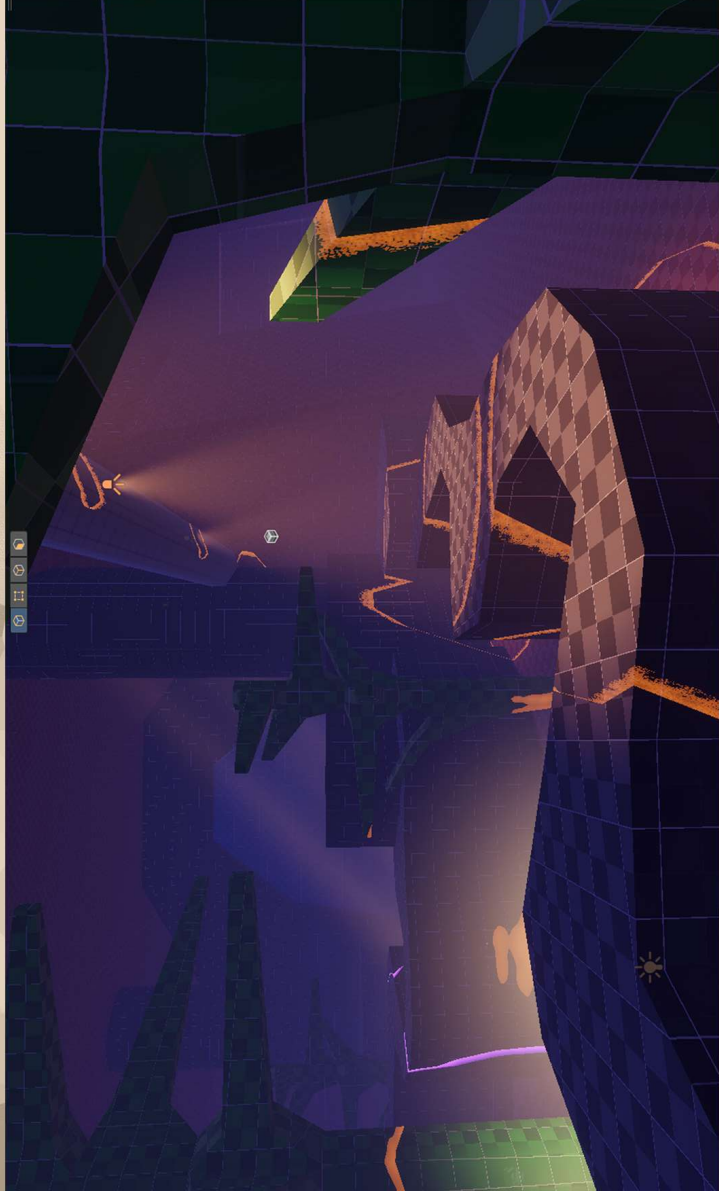
- Shaders on the player mesh to show sanity decline.
- Health bar.
- Screen effects, Pulse effect, vignette and more.
- Sounds, heartbeat and muffled ambience when approaching death.

A big decision during development was making darkness almost pitch black. We did this to emphasize the need for light, to make edges more distinct and to increase the usefulness of player created light sources.

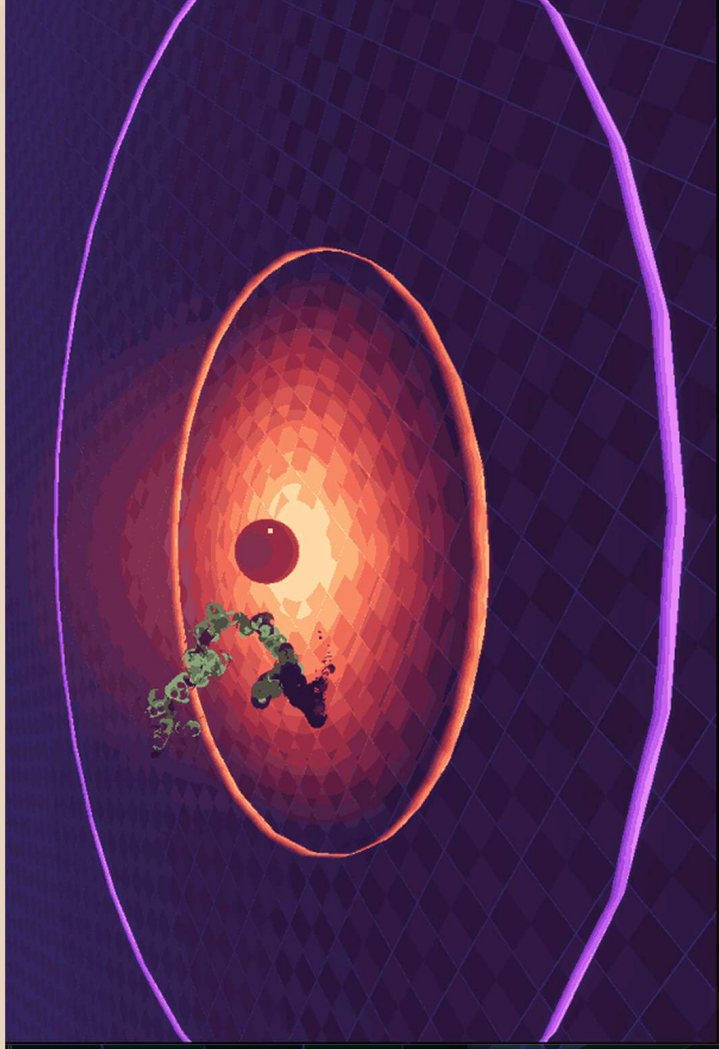
Early version of the screen overlay sanity effect providing obscuring visual feedback. From before we decided on evil color being magenta.



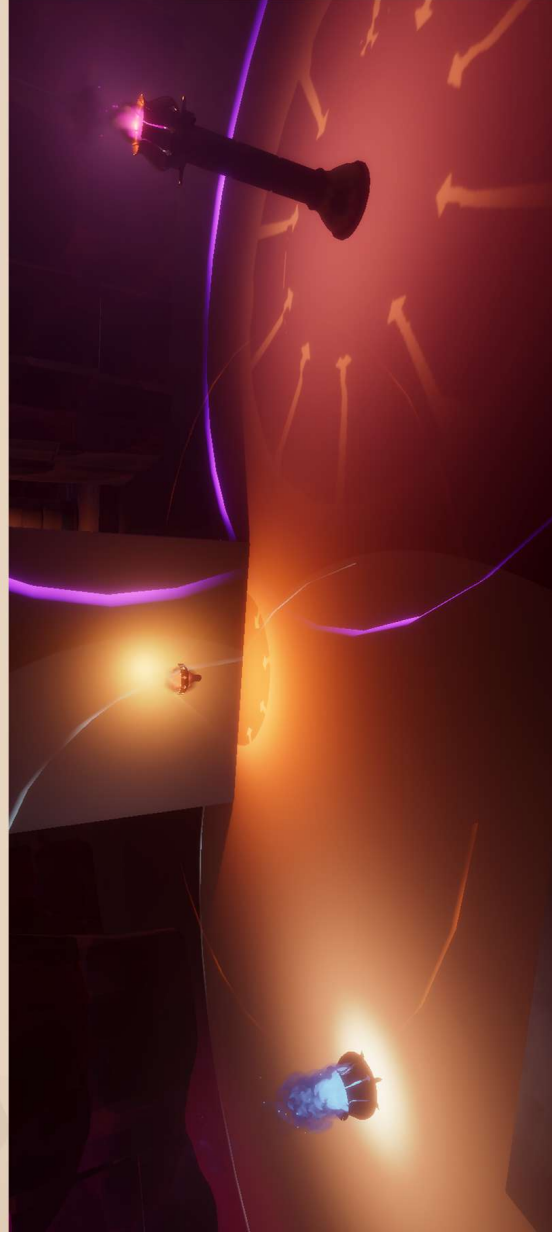
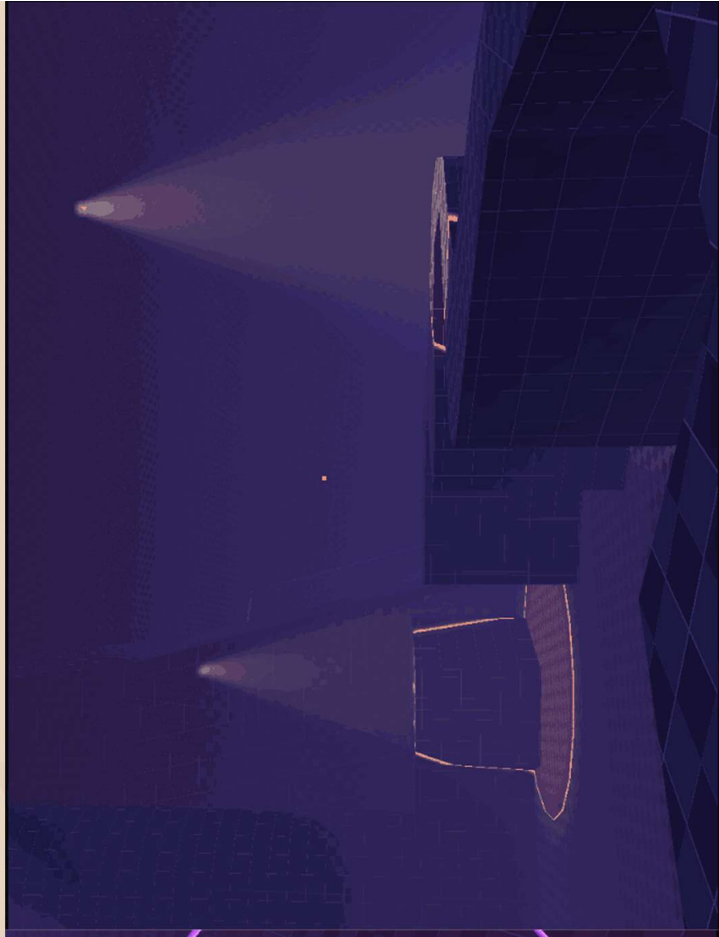
4 SANITY - GAME DESIGN



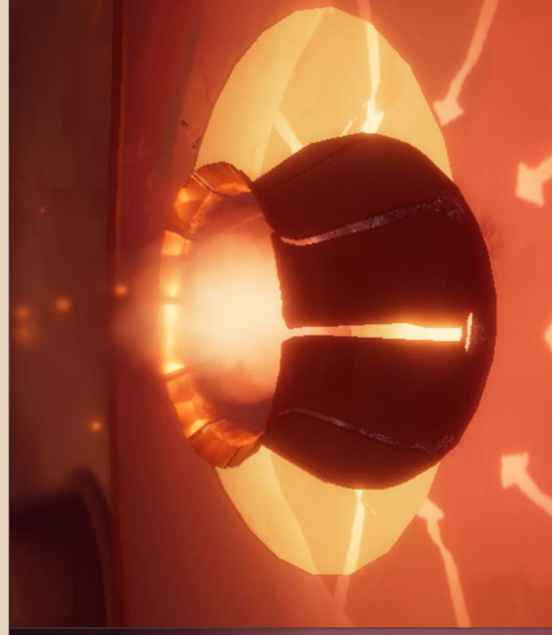
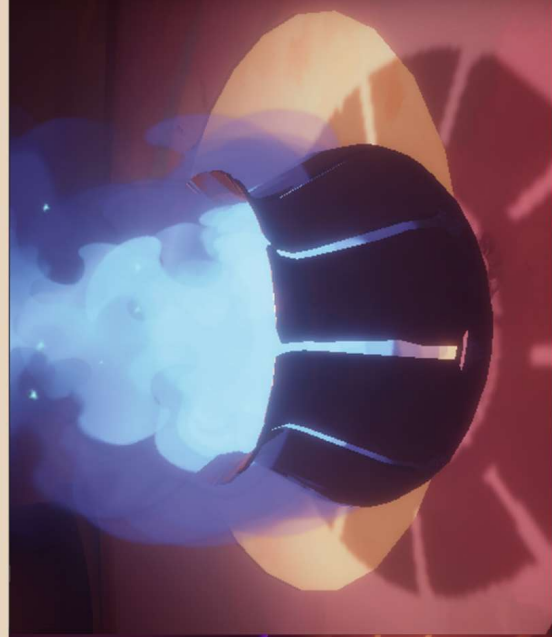
After deciding on sanity rapidly declining in darkness we experimented with multiple different light types to provide gameplay and visual variety.



Most early blockouts were testing lighting, environmental readability and visual clarity in the darkness.



To generate moments of tension around light sources, we played around with the lifetime, movement, persistence and size of light.

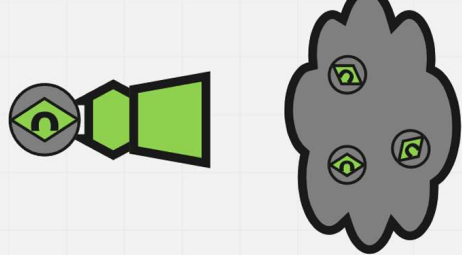


The two types of light sources; Firelight that restored sanity, and crystallight that simply freezes its decline.

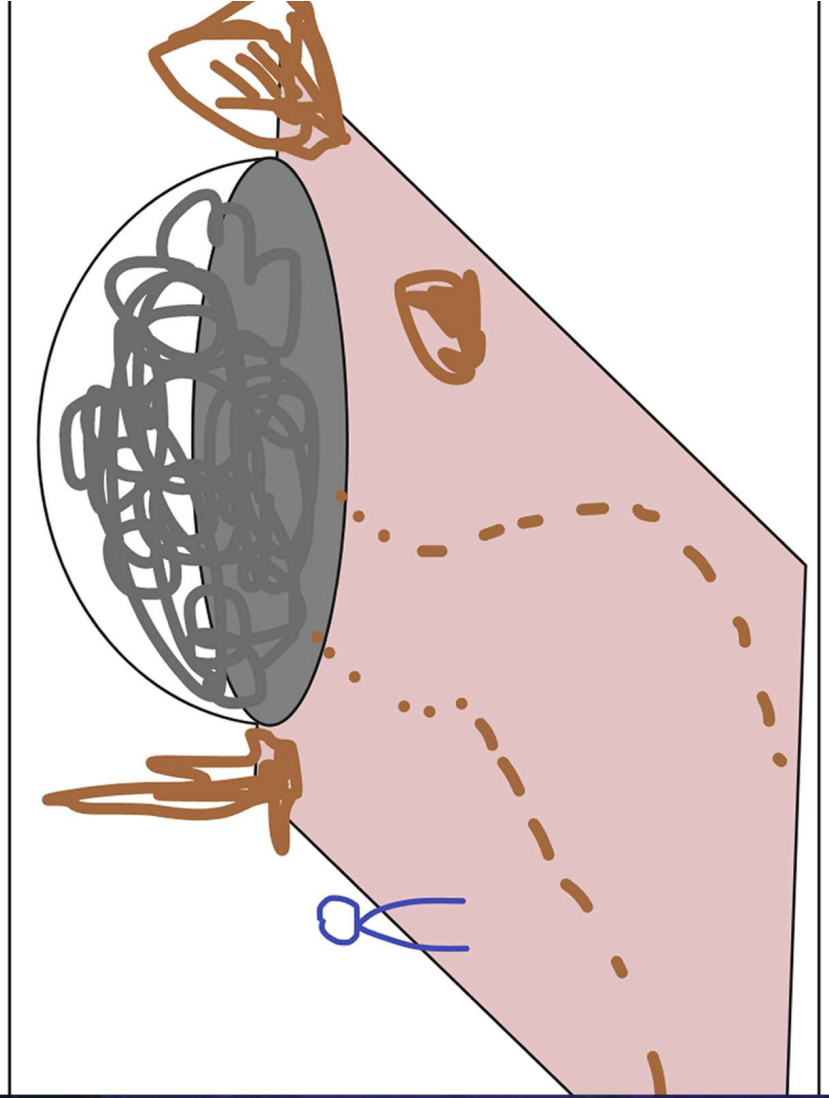
4 SANITY - GAME DESIGN



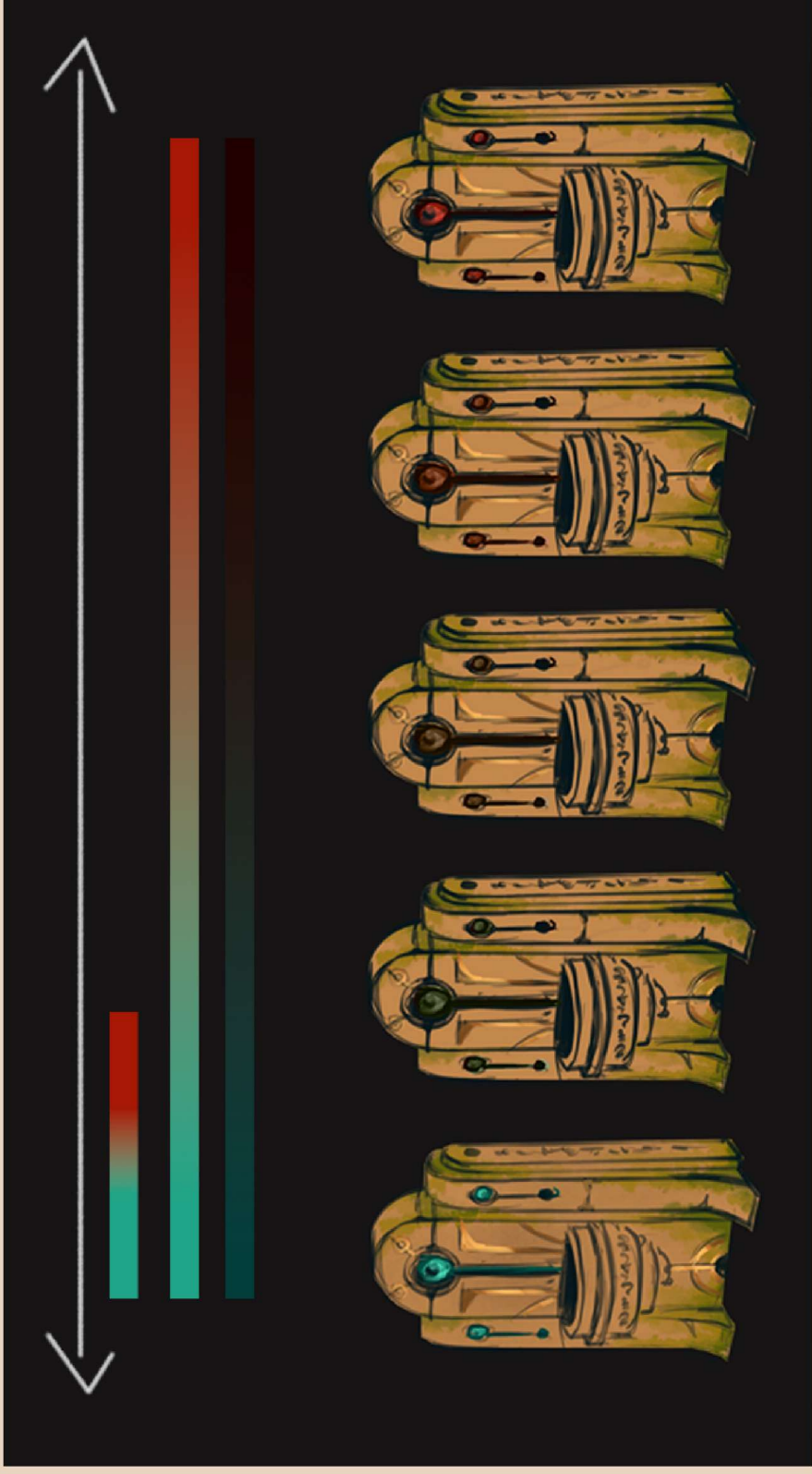
For a while we also entertained the concept of dark entities providing additional layers of challenge. Darkness that behaves and moves around the world to obstruct vision and potentially turn off lights.



To communicate new gameplay concepts it helped to create small illustrations that show scale, values and how the darkness blocks the players path.



4 SANITY - VISUAL DESIGN



Although later scrapped, one of the early ideas in the pre-production was to have aspects of the environment change from teal to red as you went insane. This would provide the player with very clear visual feedback of their current situation.

The insane version of the environment was inspired by the classic Cthulhu depiction with tentacles, as well as the eyes from *The Eyes Between Worlds*.





SANITY - SYSTEM DESIGN

The sanity system in the game is based on 2 types of components that work in pair, Receivers and Emitters.

Emitters: Apply the effect to any receiver it comes in contact with.

Receiver: Is triggered by the Emitter, specific behaviours can be hooked to a Receiver's events.

The SanityReceiver is used by any entity which should react to sanity loss generated by the SanityManager.

Used by all light sources in the game. Triggers any entity with a LightReceiver that enters its effect area.

Light Detection Script

#

LightEmitter

?

-

:

GUID

Script

b28f2eca-386b-4100-af7b-b682dc16e065

#

LightEmitter

○

Heals an entity, like the player, when said entity has entered a light emitter. Is depending on a LightReceiver.

#

LightReceiver

?

-

:

Script

/!\ Runtime Information /!\

Is In Light

Amount Lights

Active Lights

0

Used by any entity which should react to light. Has events for when said entity enters and exits light.

#

SanityReceiver

?

-

:

Script

/!\ Runtime Information /!\

Is Afflicted

Amount Afflictors

Active Afflictors

0

List is empty

+

-

#

LightHealer

?

-

:

GUID

Script

Light Behaviour

Healer Is Active

Active Receivers

0

2b482340-25da-446c-bfce-aa0f7f40bc50

#

LightHealer

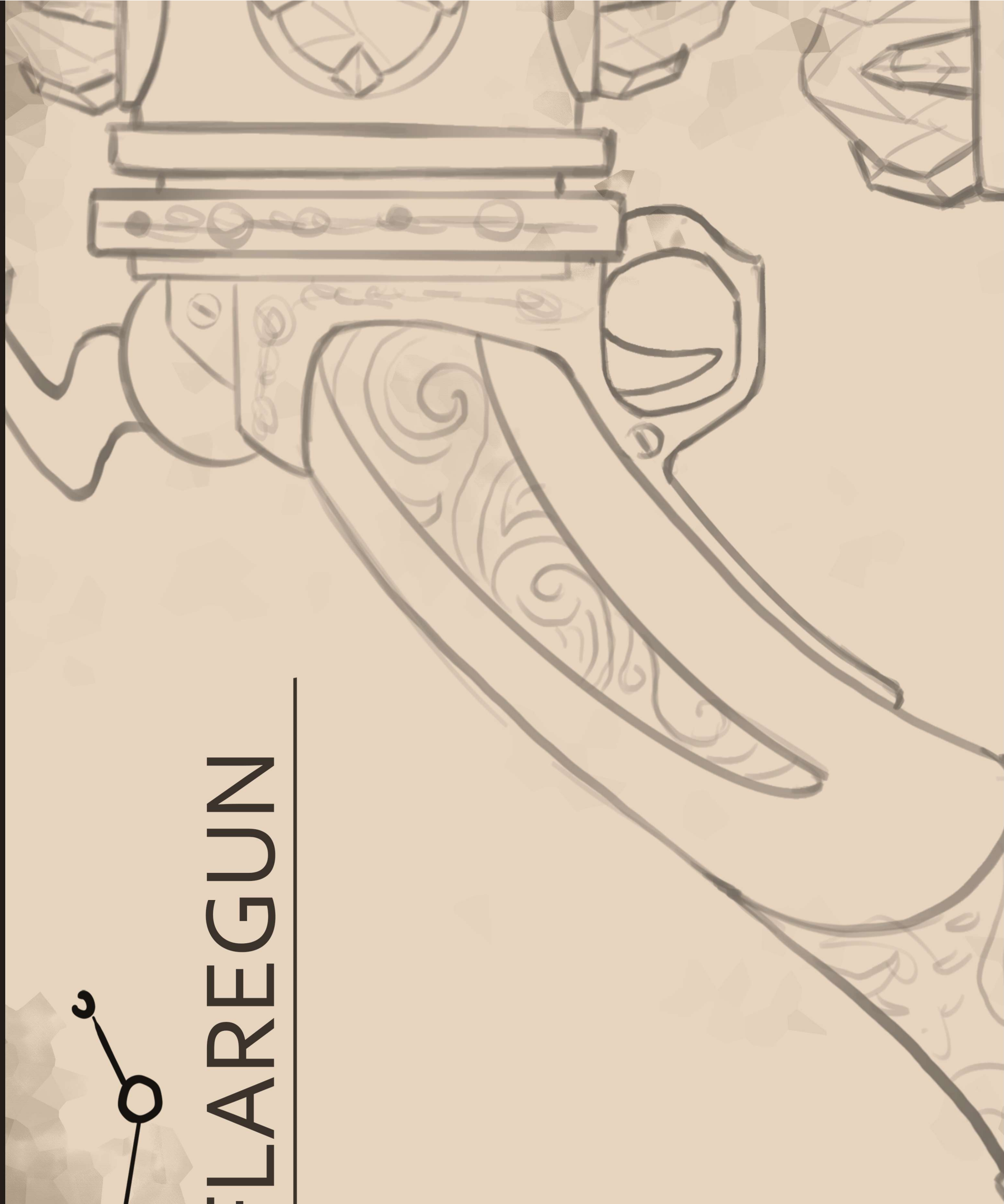
○

SO_Light Behaviour_Braziers (Light Beha

✓



FLAREGUN



5 FLAREGUN DESIGN

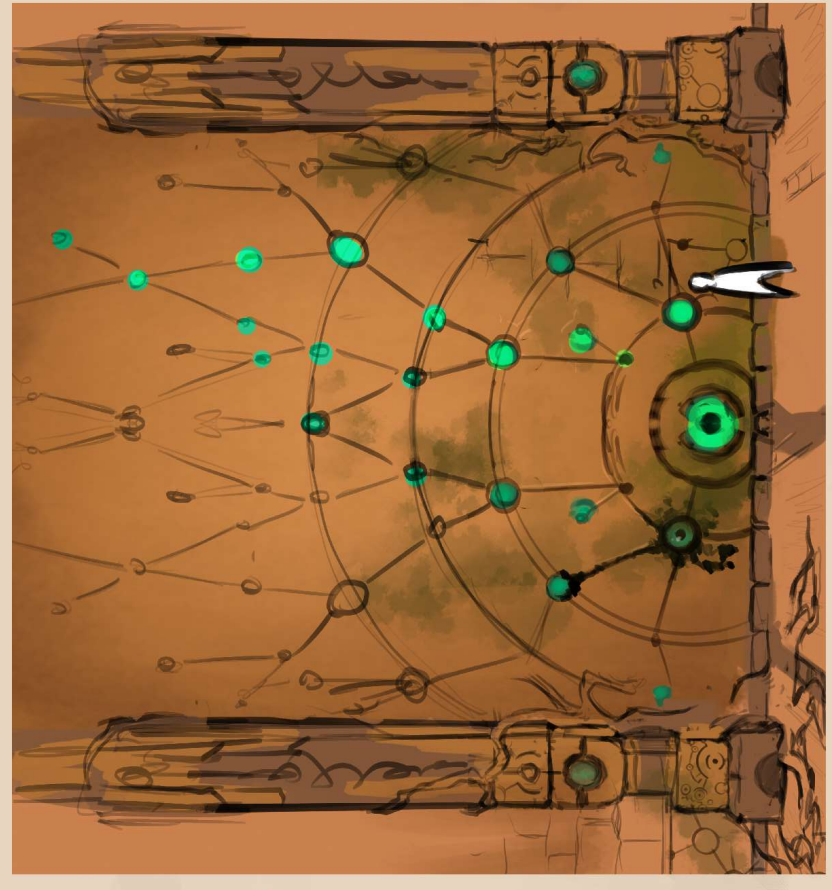
"As an adventurer who frequently ventures into dark places you know how valuable light is and therefore has a contraption that shoots out light emitting flares. By coincidence this turns out to be the perfect weapon when the enemy in this dungeon is darkness itself."

The flare gun is the main tool the player has to combat the darkness. It fires heavy light emitting energy that provides temporary security in the dark and allows the player to assess the surroundings before exploring further.



5 FLAREGUN - GAME DESIGN

With multiple light types we couldn't give the player access to unlimited healing lights as that would remove the threat of darkness. We could have increased the cooldown drastically to balance this, but we also wanted it to be a tool for navigation so the player can get a sense of their surroundings. As such the flare, by default, shoots a "lesser" light that only stops sanity damage.

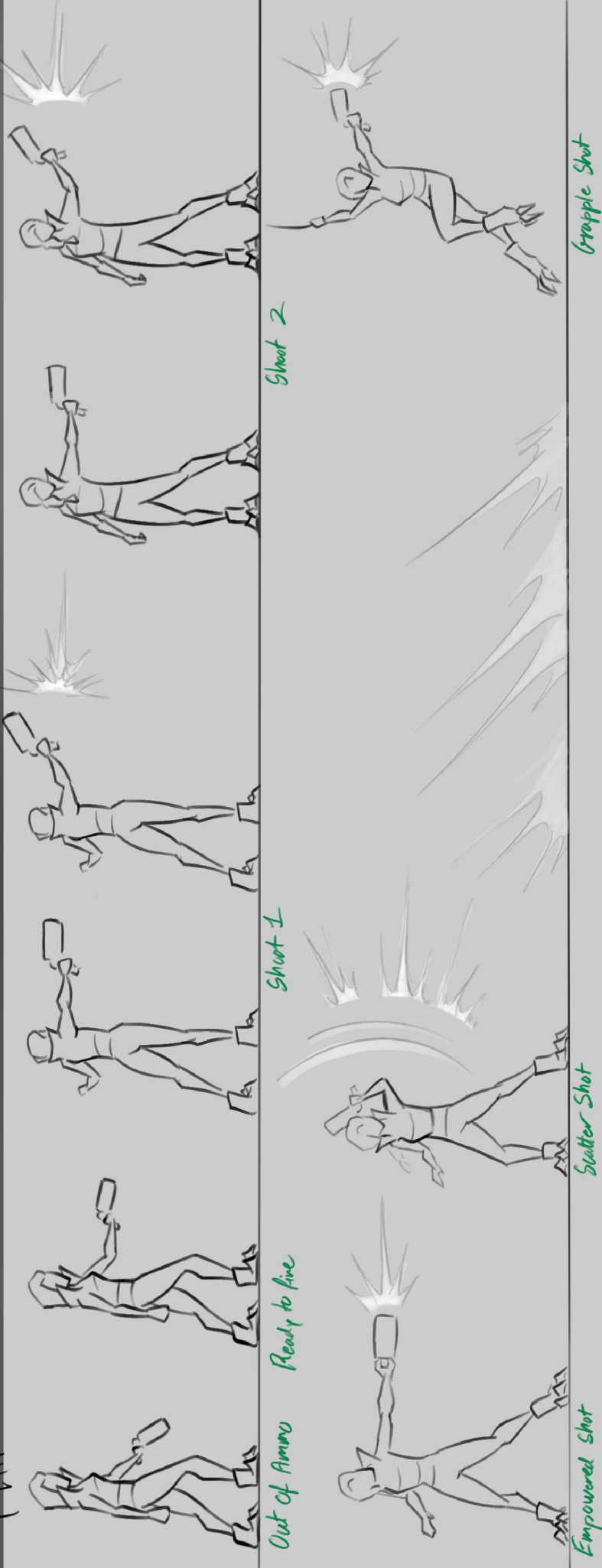


Even though the flare is an infinite resource with a relatively short cooldown, we still ran into the problem that, instead of creatively exploring the environment to map their surroundings, players had a tendency to consistently shoot it at their feet to provide immediate protection. Reducing the cooldown to let you fire more often would make exploring feel less resource demanding but also, again, completely eliminate the threat of darkness.

To solve this we planned to have light activated objects in the world and an alternative fire mode or other tools for lighting your surroundings to survive or a large area for orientation.

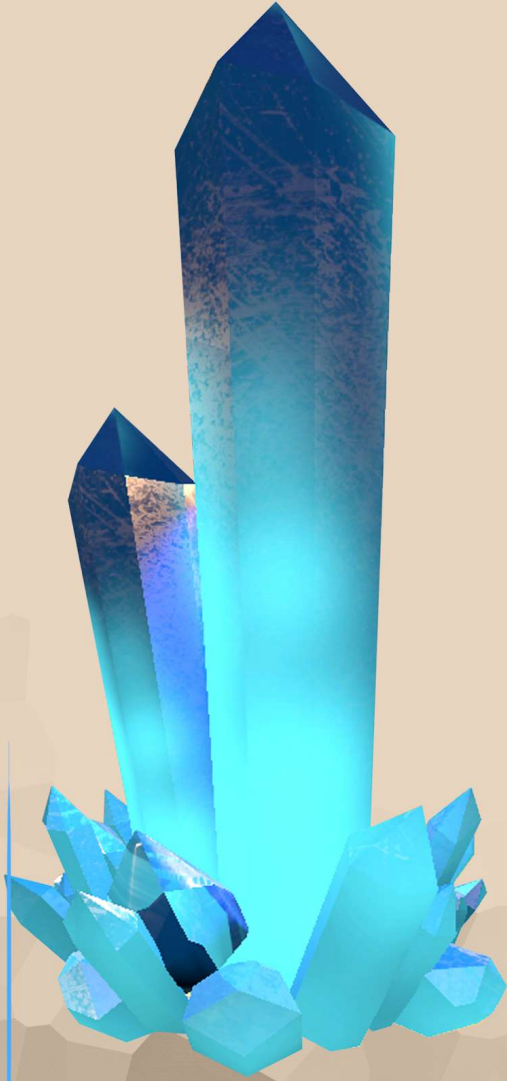
Thematically the flare needed to be based on a light source that wouldn't be confused with the more natural, "healing" fire based light. Thus the concept of crystal light was born.

FLAREGUN



5 FLAREGUN - GAME DESIGN

The flare crystal sprouts were added to provide additional use cases and functionality to the flare that overlapped with the Hook.



Another proposed flare feature was switching ammunition, picking up fire crystals or turning regular flares into fire by shooting above a brazier

With the crystals spawning and interacting with the hook, the flare conceptually served several interesting gameplay purposes. Just by tweaking charge limit and cooldown values we could have the player evaluate whether to use the flare to progress, explore, traverse or survive.

Combining different shooting modifiers with ammunition types would allow the flare to have several permutations to experiment with.

Most of the added utility in different ammunition types, crystal sprouts, projectile behavior and alternative tool abilities could easily be transformed into an upgrade system befitting a roguelike structure. Which would also help teach mechanics without having to make specific tutorial moments in levels.



Flaregun becomes Fireball shooting

Projectile Speed

Multiple Projectiles

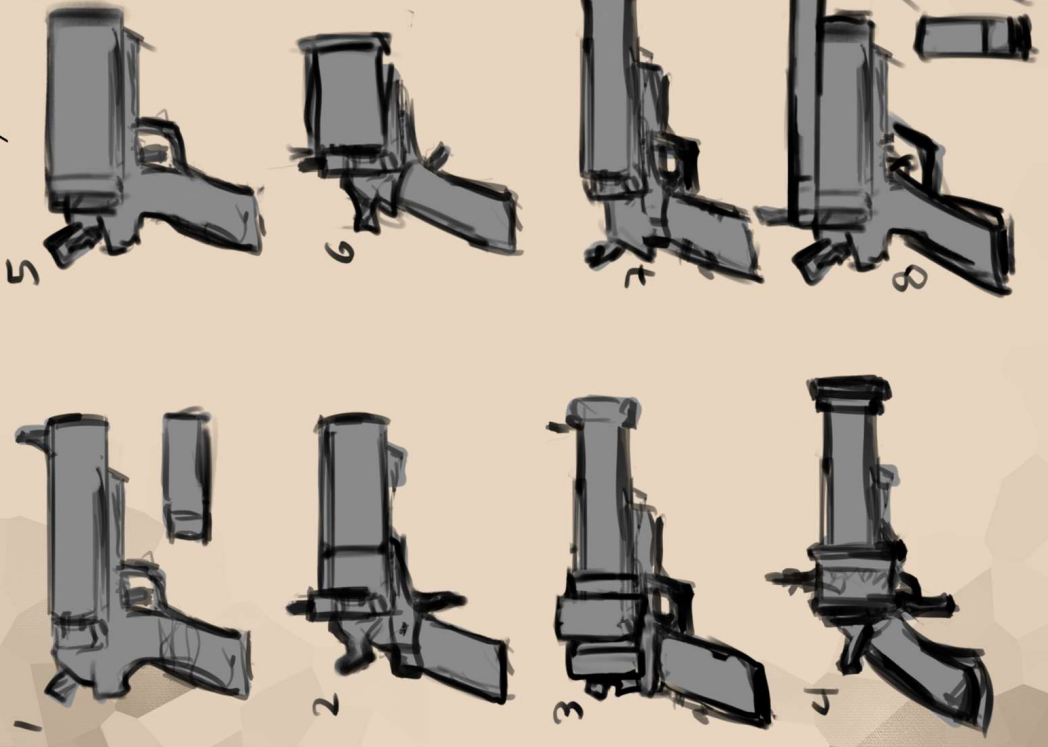
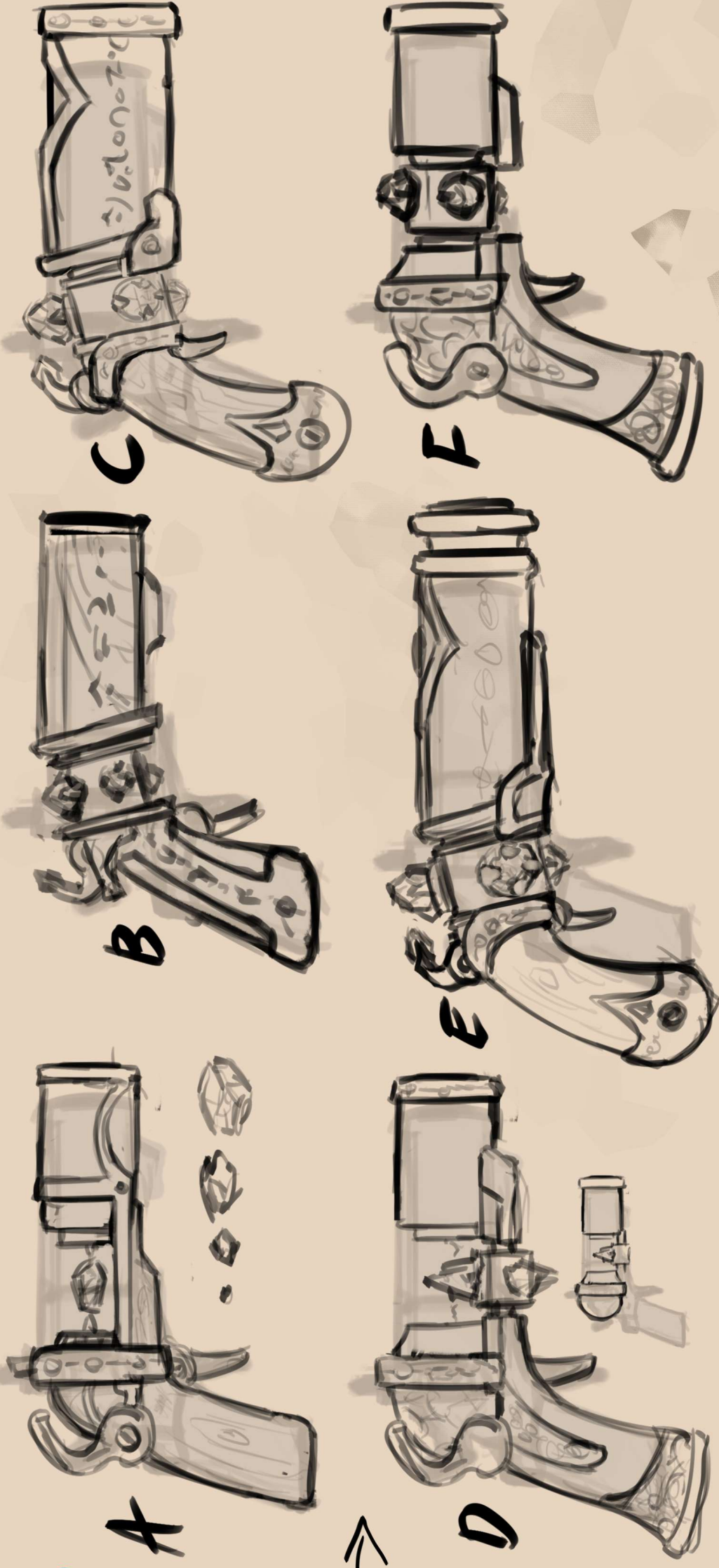
Increase Radius of light by charging it before release

Refill charges faster when standing in light/ standing still.

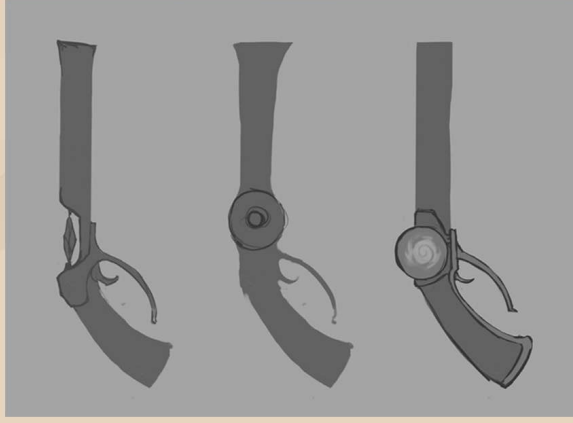
5

FLAREGUN - VISUAL DESIGN

Having settled on a general silhouette for the flare gun, we explored in more detail, still trying to push around the proportions a bit.



One of the first iterations of the flare gun, feeling out the silhouette and barrel to handle ratio.



One of the primary concerns when designing the flare gun, was how to communicate it's non-weaponness. We therefore went away from weapon gun references, and instead designed it around real flare gun silhouettes, with their stunted barrel.



The visuals for the flare gun are inspired by the series Arcane, and how Hextech technology works.

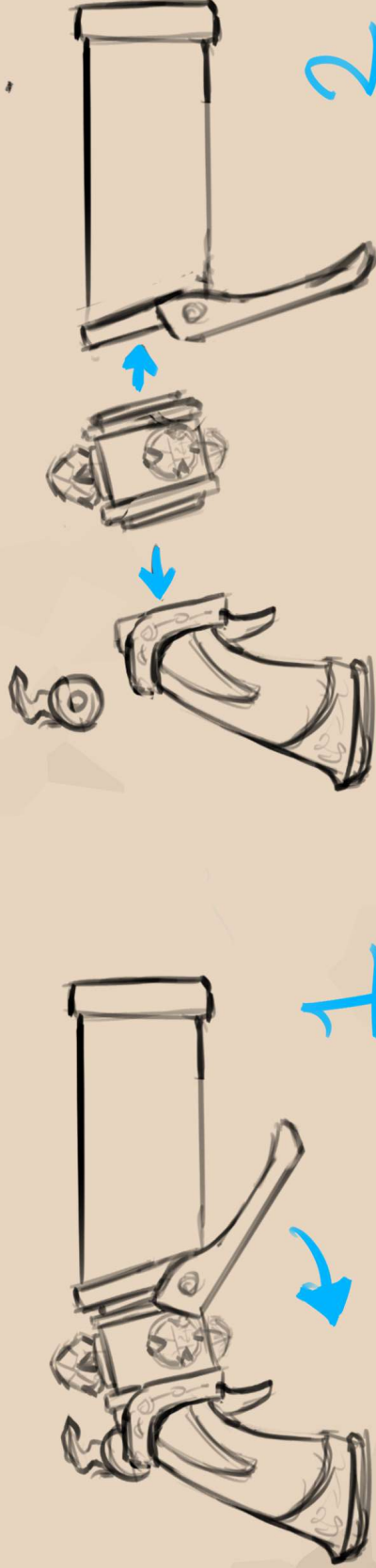
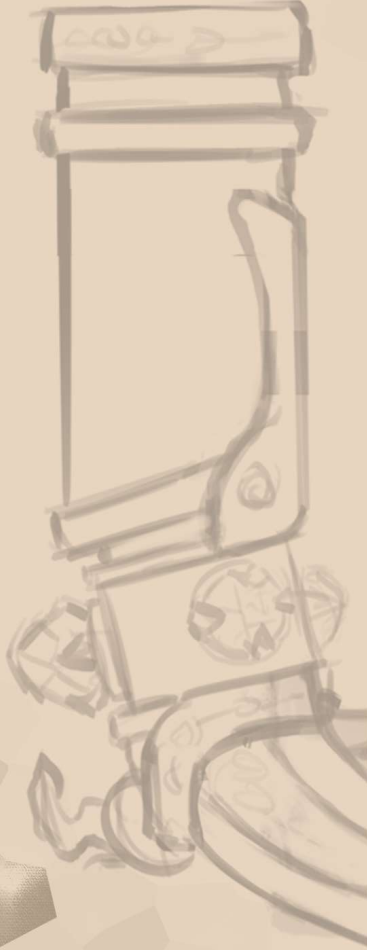
To communicate ammunition charges to the player, we put the ammo on the outside of the flare gun.



At this point the direction was feeling good, but the proportions of the flare gun still felt off. The tilted ammo cylinder made the design difficult to balance.

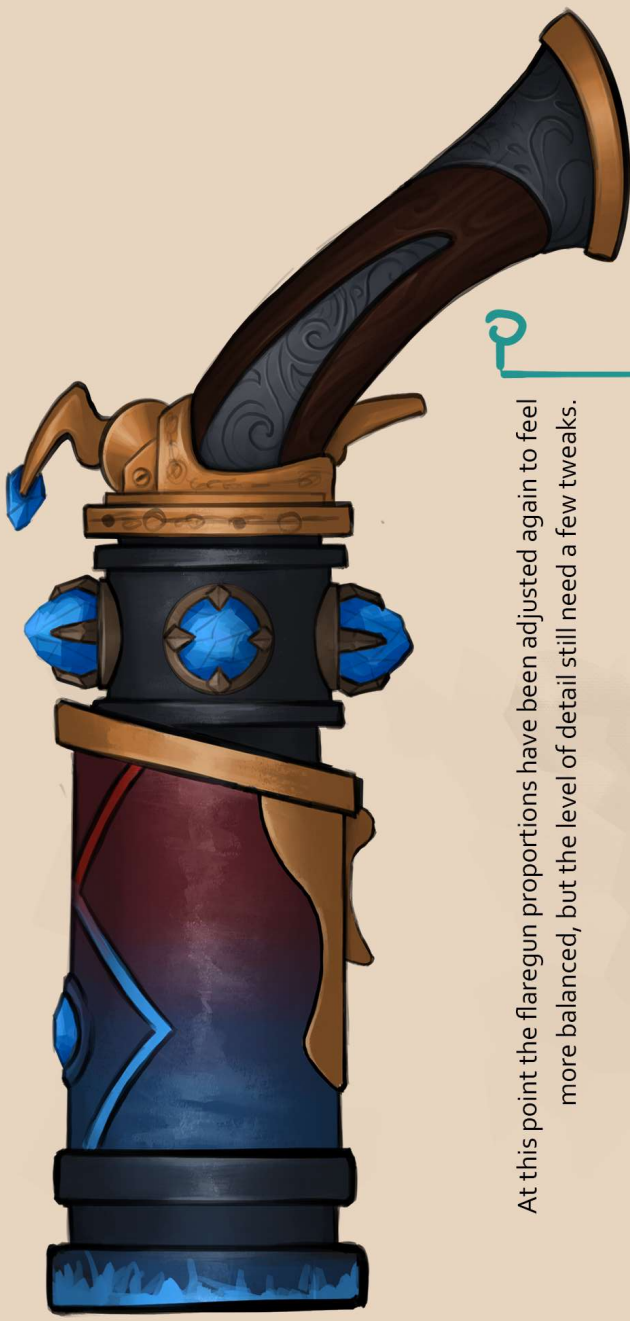


Thinking of the functionality of the flare gun as we designed it, to enhance believability.





To reflect the duality of the flare gun being able to shoot both crystal and fire light, we chose a colourscheme of reds and blues that represent each of those light sources.



At this point the flaregun proportions have been adjusted again to feel more balanced, but the level of detail still need a few tweaks.



Final flare gun design.



Iterations of the initial barrel pattern, to see if the design should be pushed more.

5 FLAREGUN - VISUAL DESIGN

The final concept art was made as a "package" containing clean elements for 3D modelling, functional storytelling, and material textures to provide the 3D modeller with a clear overview.

Several moving parts on the flare gun like the hammer and ammo barrel allowed us to animate it to provide feedback to the player.

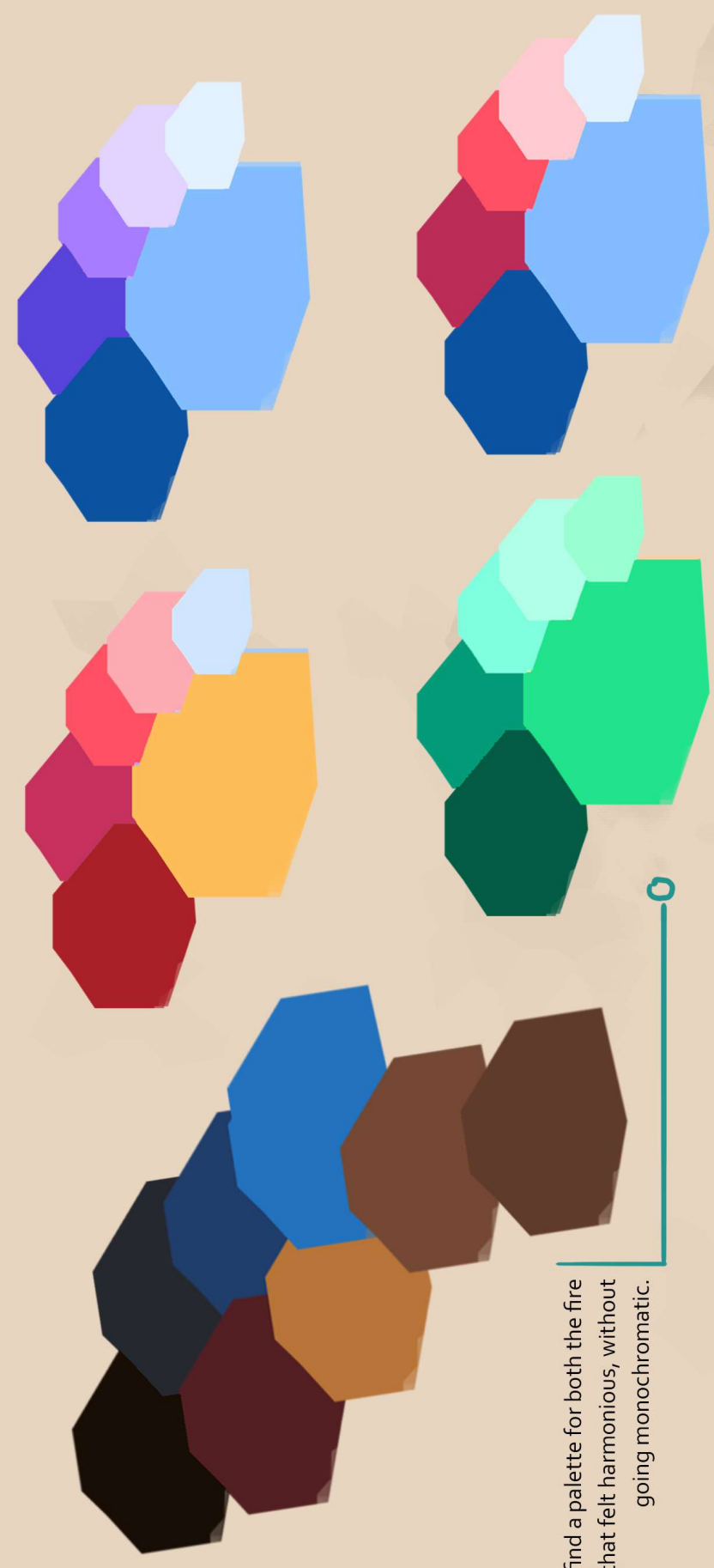
The bullets are designed with a different material entirely to make them feel even more custom than the rest of the flare gun.



Lineart of top and bottom view, and flat shading for an easier 3D modelling process.

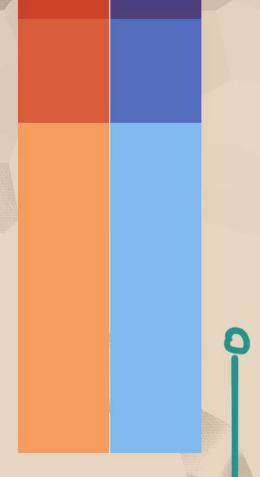
FLAREGUN - VISUAL DESIGN

Mapping out the flare guns primary colour palette and trying to tie the VFX palette into it, with higher saturation and an analogous colour range.



It was difficult to find a palette for both the fire and crystal flare that felt harmonious, without going monochromatic.

Instead of working with a range of colour to create VFX stages, we ended up with an almost monochromatic palette that used value instead. To highlight visual feedback to the player, the most important moments of the VFX were designed to be the brightest.

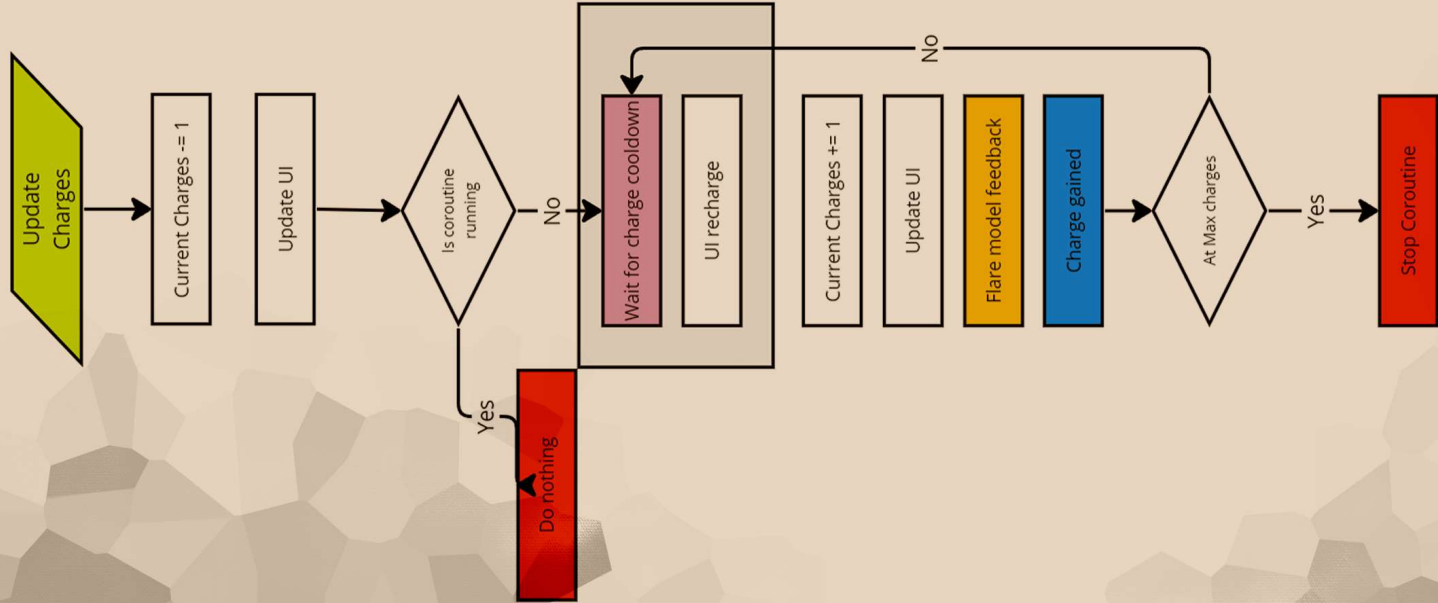


Final concept for flare VFX during its lifetime.

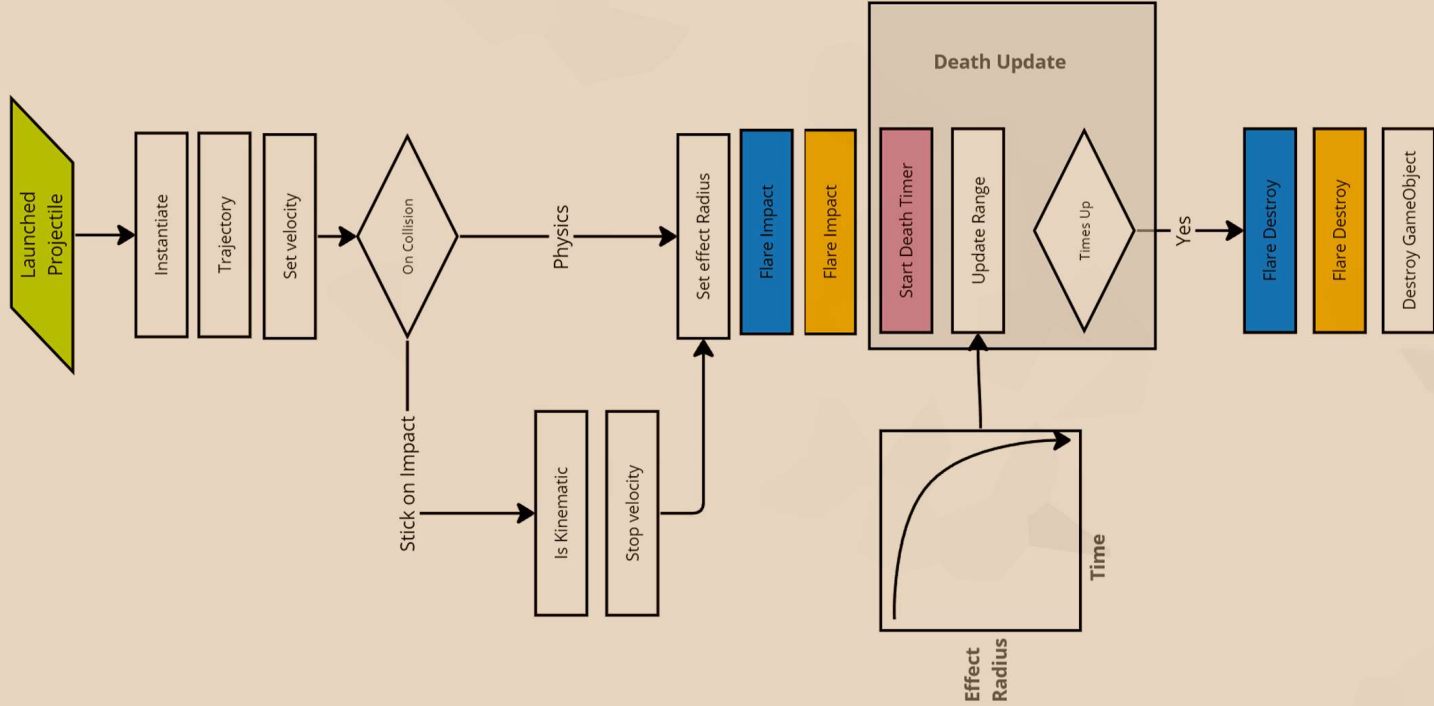


When making the behaviour of the flare gun, this diagram has been made as a result of the collaboration between the designer and programmer. It contains the key states and actions of the flare gun. This has ensured that team members had a common understanding of the feature.

Charges

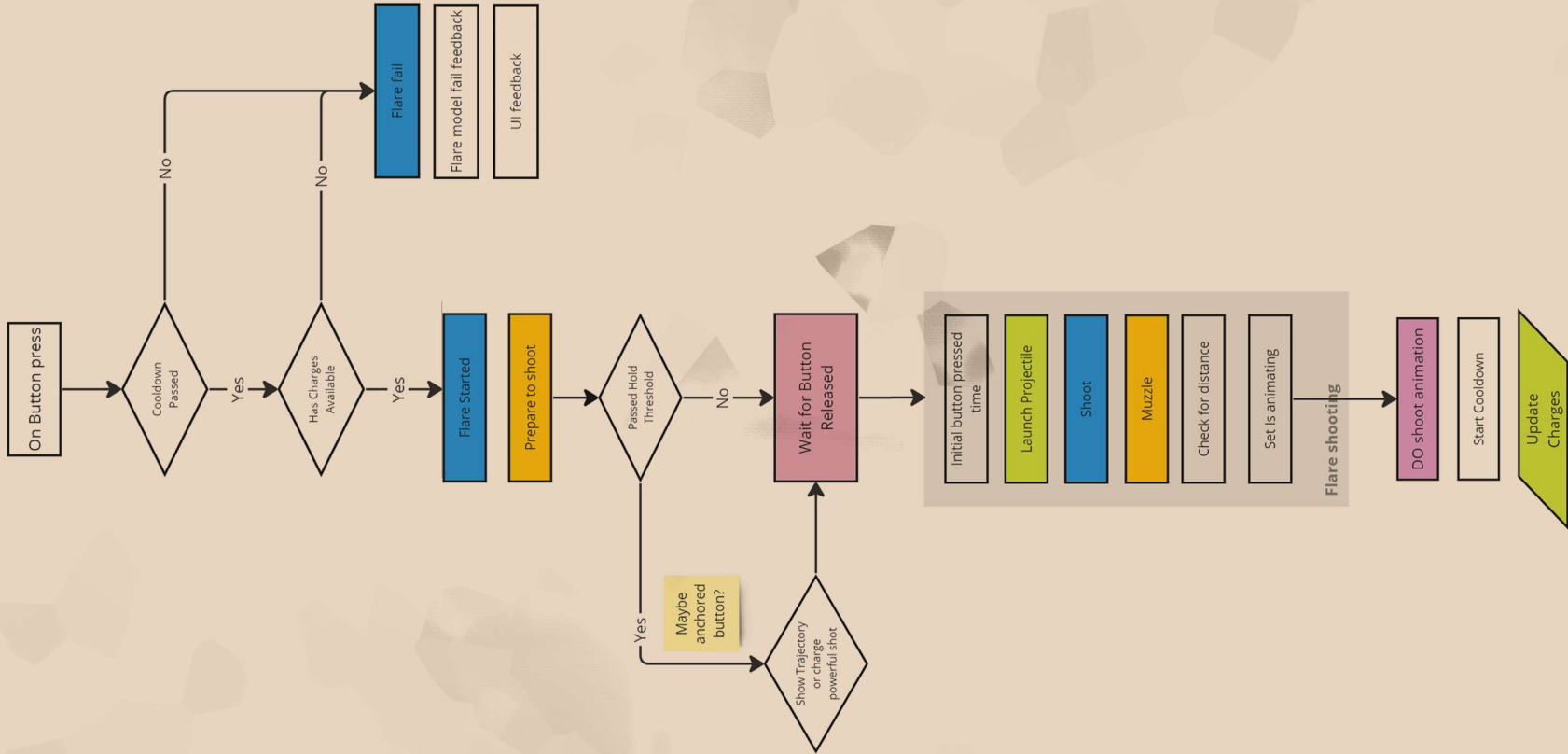


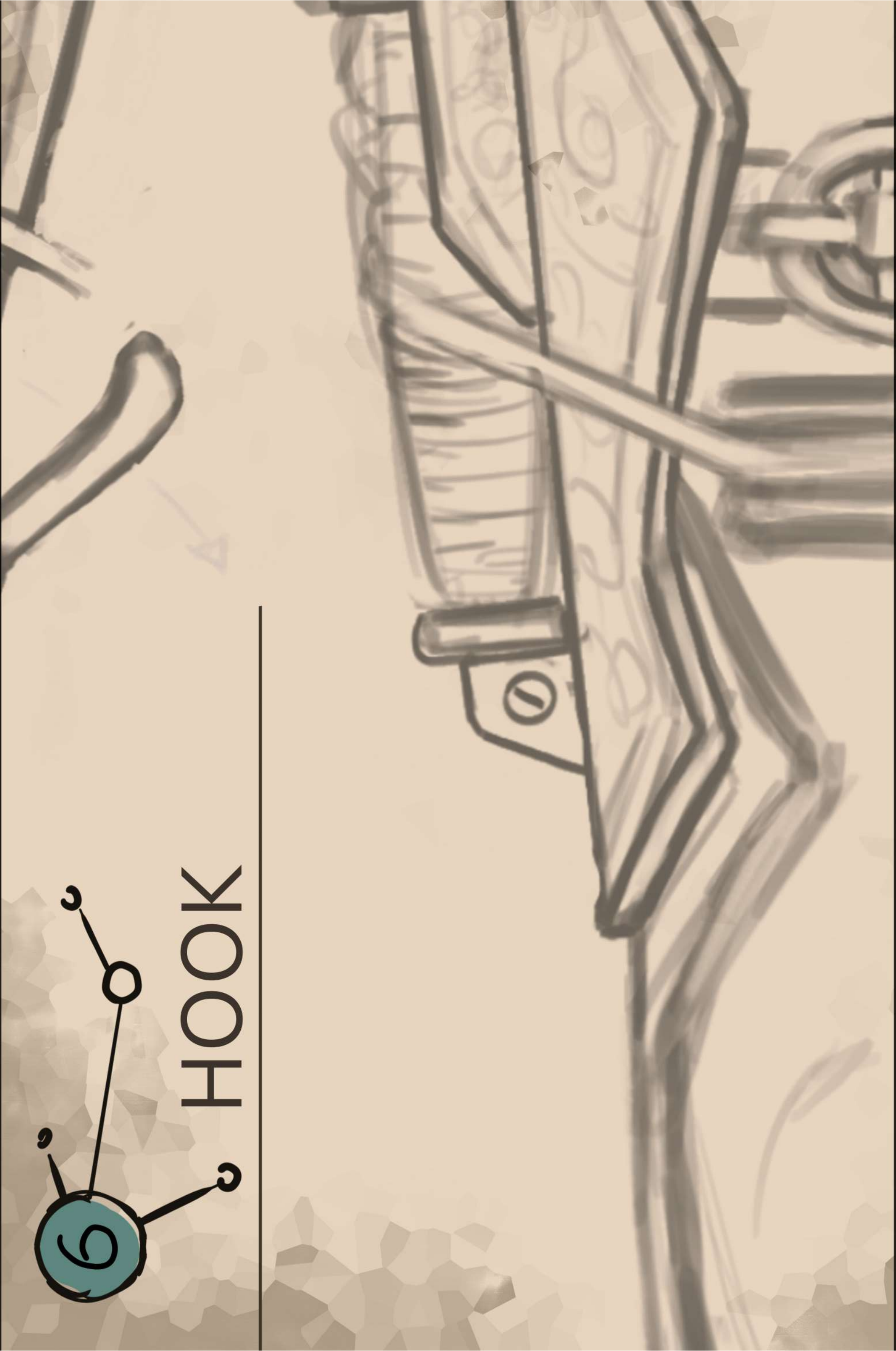
Flare Object



FLARE PROGRAMMING DIAGRAM

Flare Action





6 Hook DESIGN

"As a treasure seeking adventurer you are equipped with a grappling hook that allows for fast paced movement, swinging across deep ravines, pulling objects from afar and leap from platform to platform."

The hook is the main tool of the player to evolve through the environment. It is one of the most complex features of the game due to the multitude of interactions with the world, and can be used in a variety of ways to traverse the environment, break objects or manipulate the world around the player from a distance.



Hook - Game Design

The hook was one of the first gameplay considerations during concept development. Part of the reason the game formed to be what it is, is due to questions like: "How do we make grappling hooks skill based?"



We decided on making two hook functions, fast propel and swinging to allow for situations in which the player has a choice and must gauge which is appropriate for the current challenge.

The fast hook quickly proved very reliable at getting on top of objects and became the go-to tool for most challenges. Instead of redoing the hook we first tried to give the swing more traversal power by having certain objects break when fast hooking them. Even if it didn't completely solve the power difference it added a lot of versatility for those who discovered the difference.

Placeholder hook and flare as they looked in early phases. Having an early placeholder to look at made it easier to form opinions about the feel of the flare and hook with the feedback the placeholders provided.

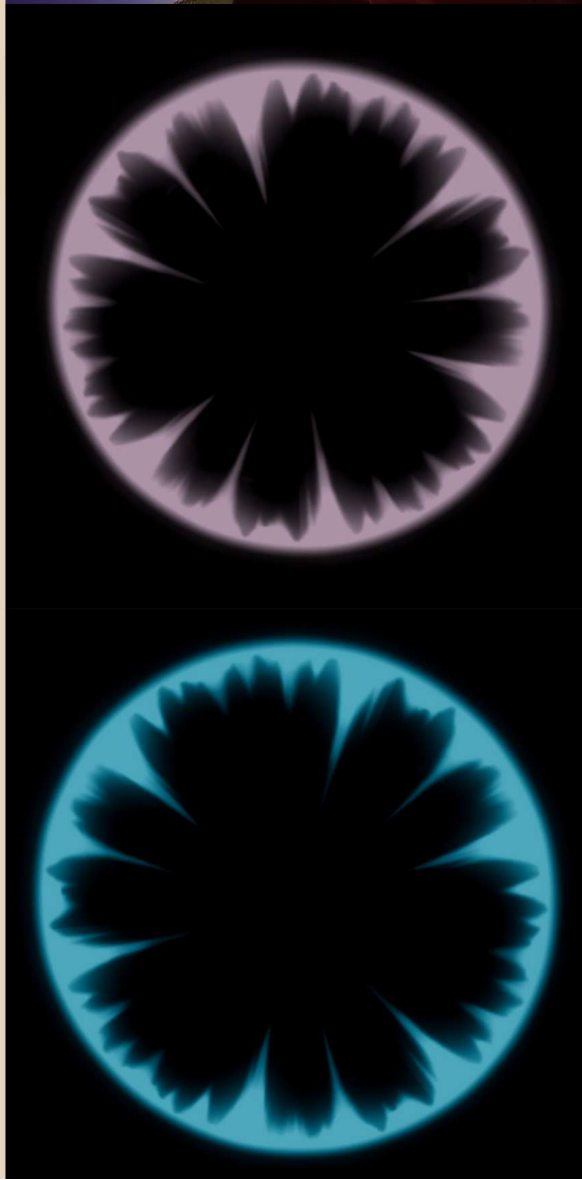


Because we envisioned both fast paced moments and more slow paced sections, it was important that the player had multiple cues for the availability of the tools.

For the hook we wanted visual feedback and animations on the model itself as well as sound cues for different materials and on successful impact.

Most efficiently however was the crosshair that we used to communicate direction, cooldown and range. We considered whether it, as UI, obstructed the view too much but decided that the benefits outweighed the downsides as playtesters found it easy to read.

Another way we tried to visualize the range of the hook was outlining objects when close enough. We eventually swapped this effect to highlight interactables instead as it felt too intrusive and ruined the pitch black darkness.



6 Hook - Visual Design

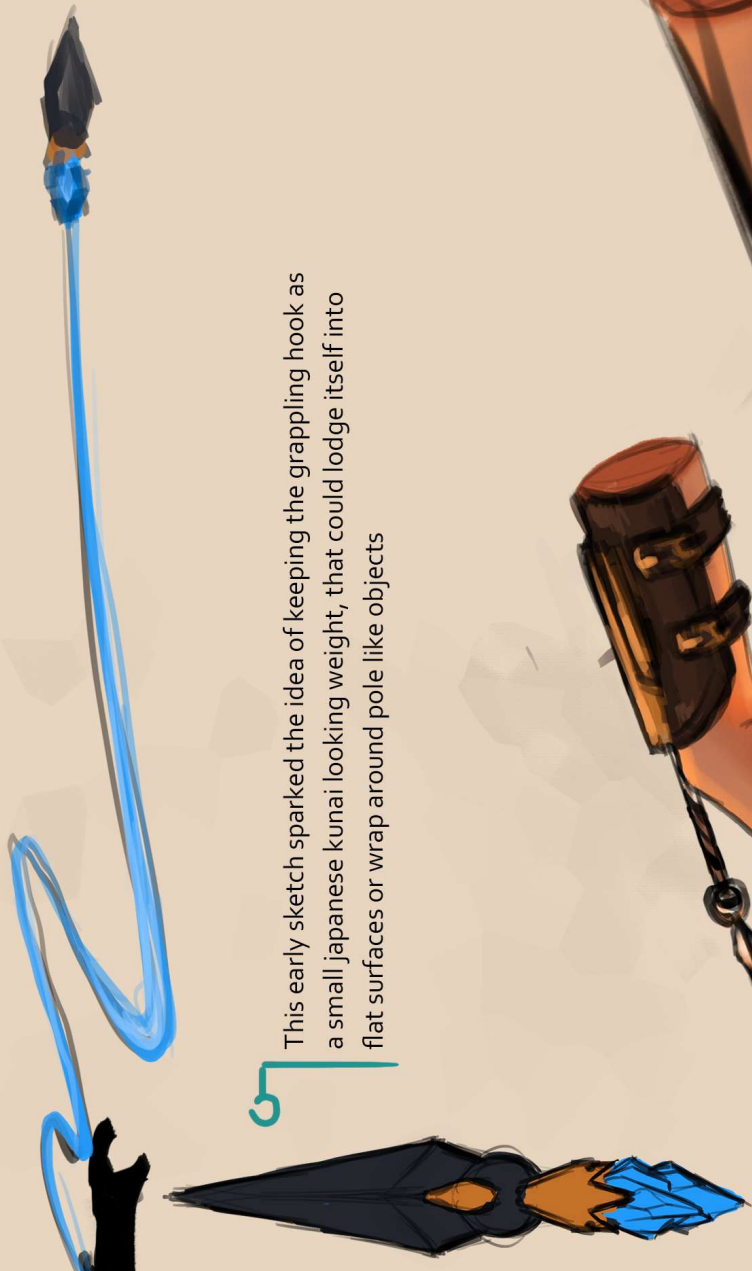
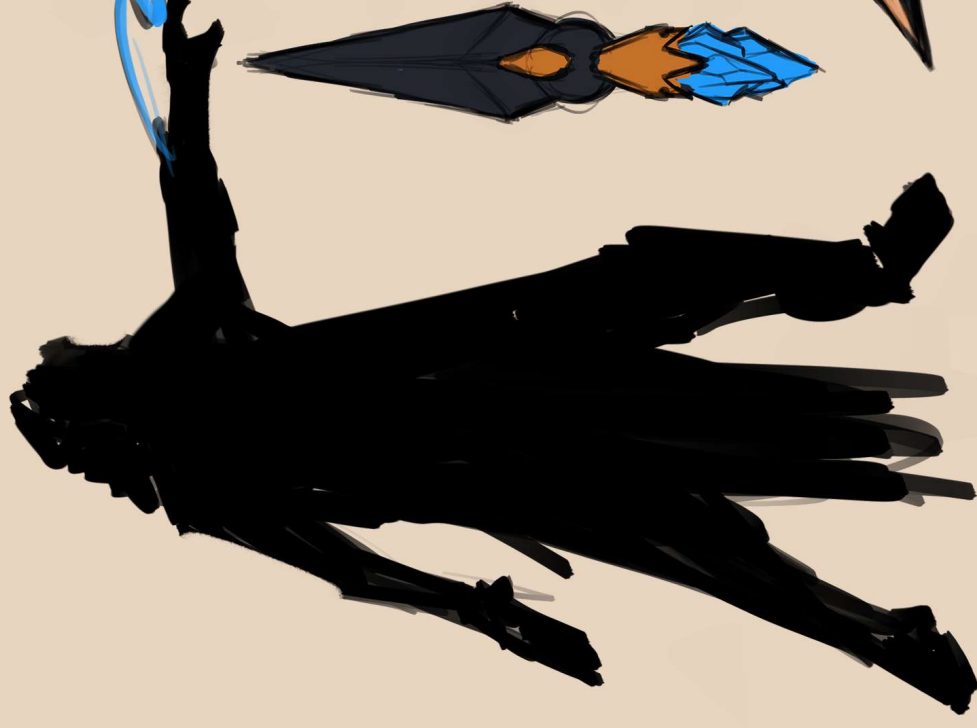
Layer 1



Layer 2



Layer 3



This early sketch sparked the idea of keeping the grappling hook as a small japanese kunai looking weight, that could lodge itself into flat surfaces or wrap around pole like objects

Because of the complexity of the hook design and how it would logically work, we decided to break it down into multiple components.

The device would consist of a glove/bracer that was put on top of normal clothes, and the hook device itself could then be attached to the glove/bracer.



An early idea for the hook was an organic shadow deformity that could extend and pull you with it.

6 Hook - Visual Design

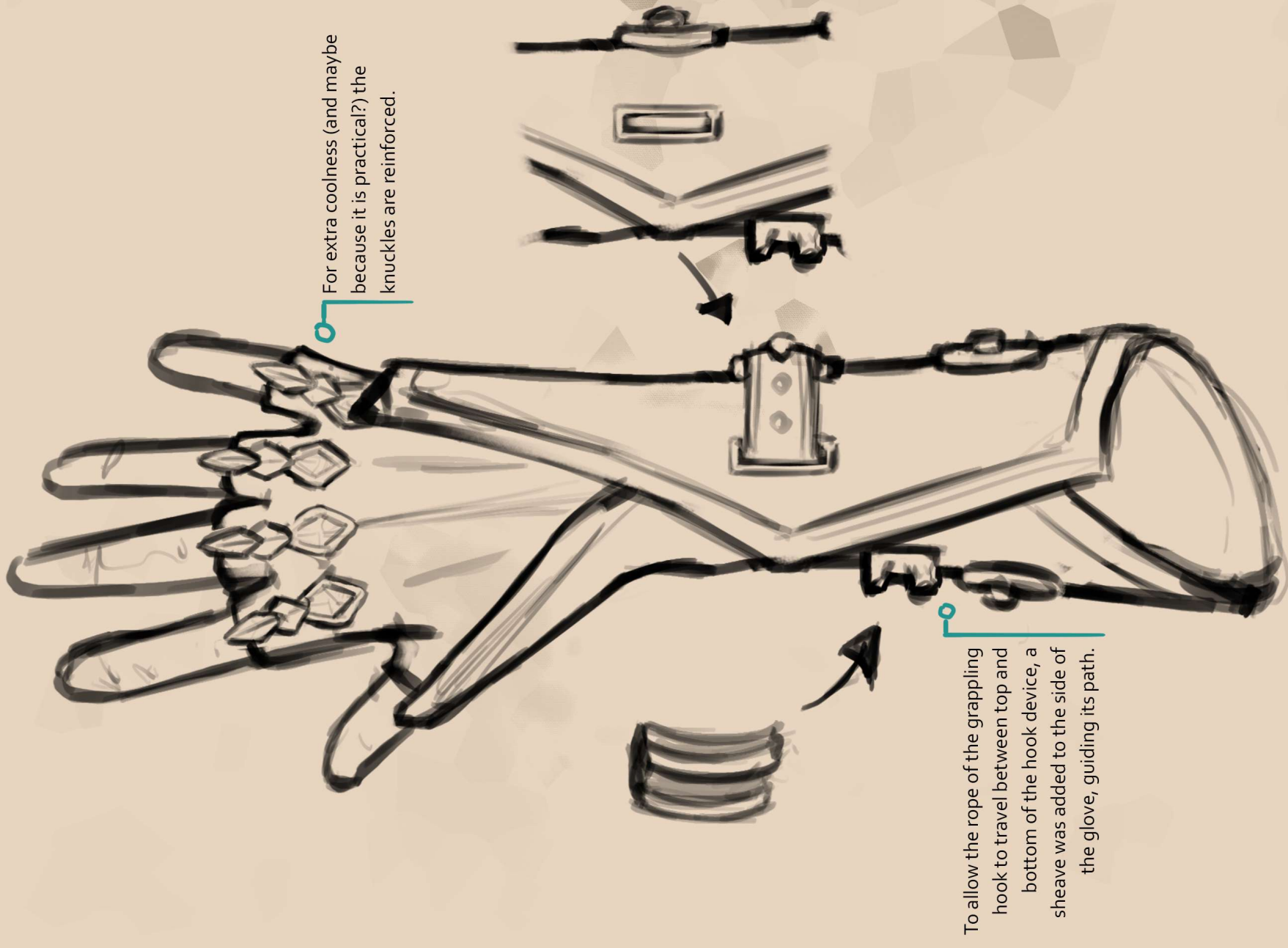


As the design of the glove was getting hard to visualize in 2D, we took it into the real world with paper and scissors. Afterwards we could then trace the design in a digital space from photographs.

Imagining how the glove would function in real life was a great help to inform design choices. To add functionality to the glove it was designed with many fabric layers, where the most layers were at the parts that needed most sturdiness, and the least layers were given to the fingers that needed a greater range of movement.



The glove was designed with buckles that could be used to strap the hook device onto it.



For extra coolness (and maybe because it is practical?) the knuckles are reinforced.

To allow the rope of the grappling hook to travel between top and bottom of the hook device, a sheave was added to the side of the glove, guiding its path.

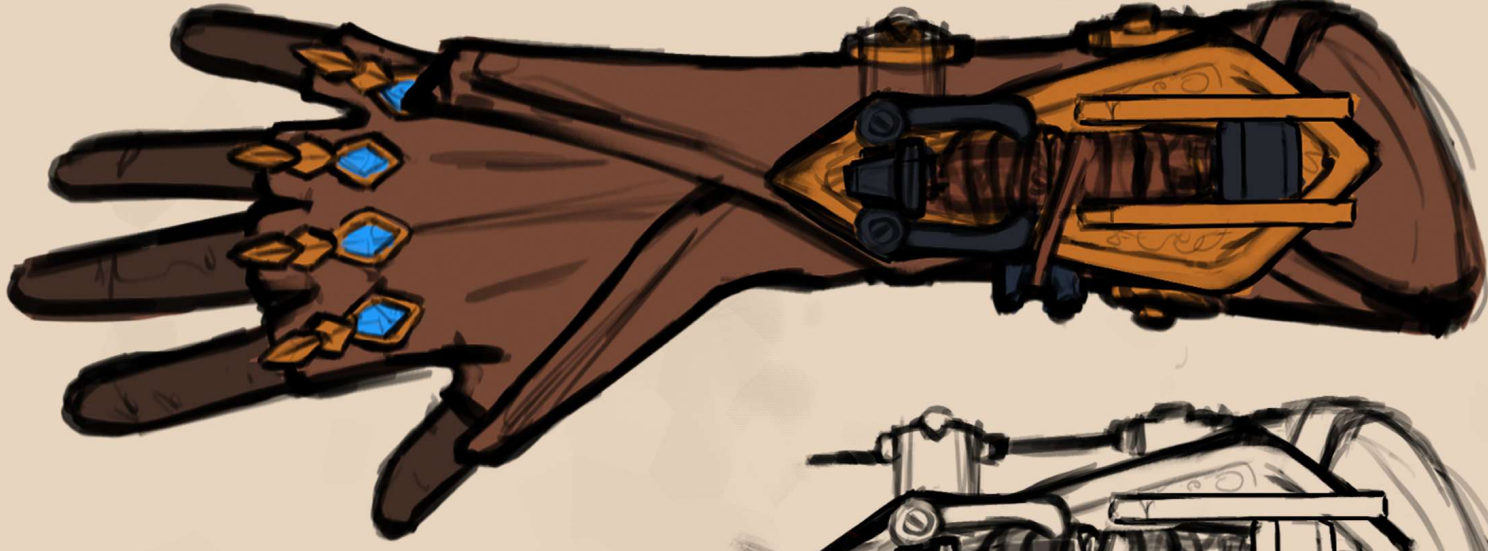
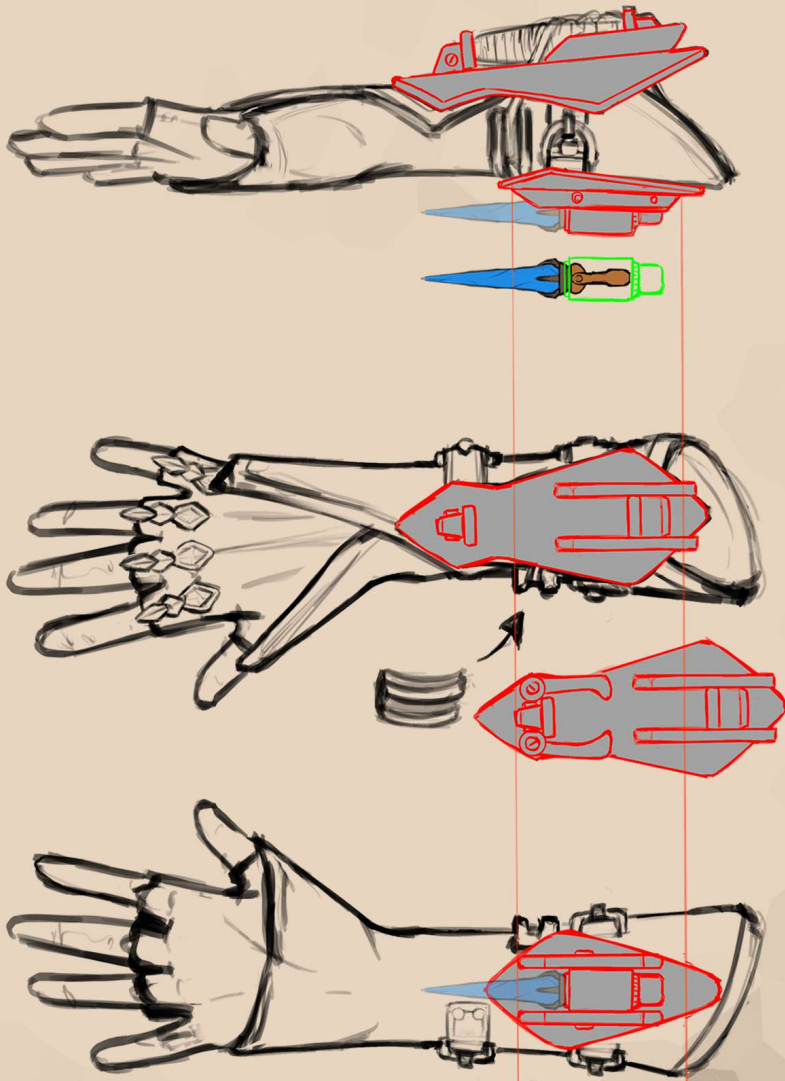
6 Hook - Visual Design



To tie the hook glove into feeling like it was made as a custom tool alongside the flare gun, it was given many of the same materials and colours.



For clarity in the 3D modelling process, the big shapes for the hook device were simply drawn out in a flat coloured clean line drawing.



To spread the visual clutter out, the hook device was spread across the top and bottom of the arm, the rope being on top and the sheathe for the hook being at the bottom.

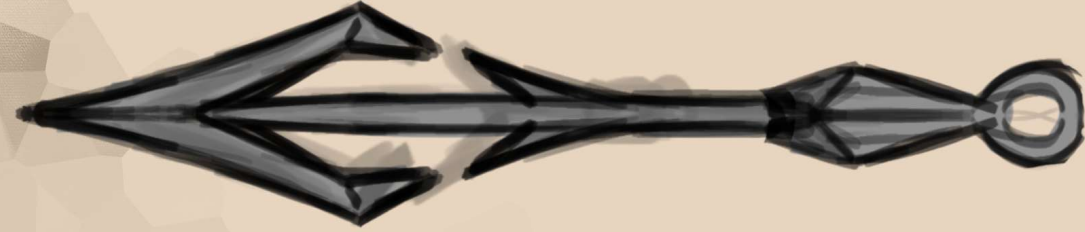




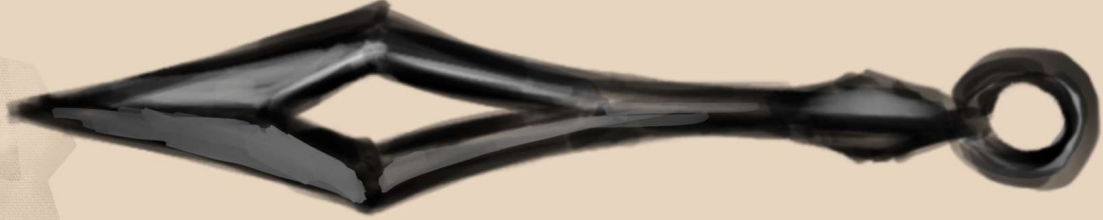
Hook - Visual Design



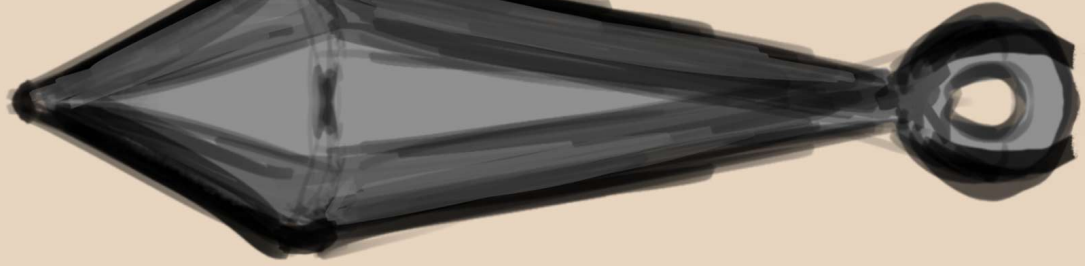
A



B



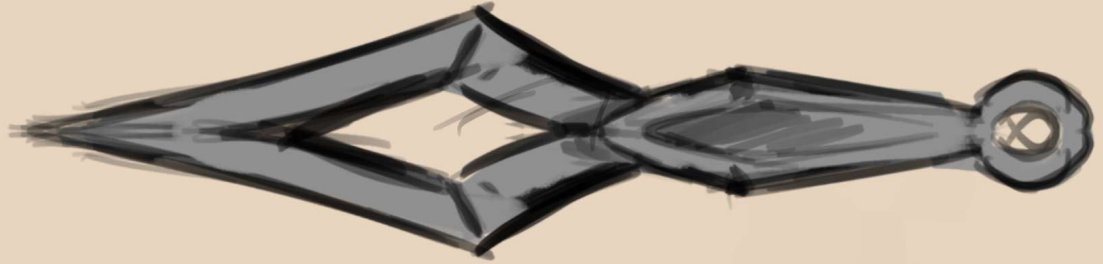
C



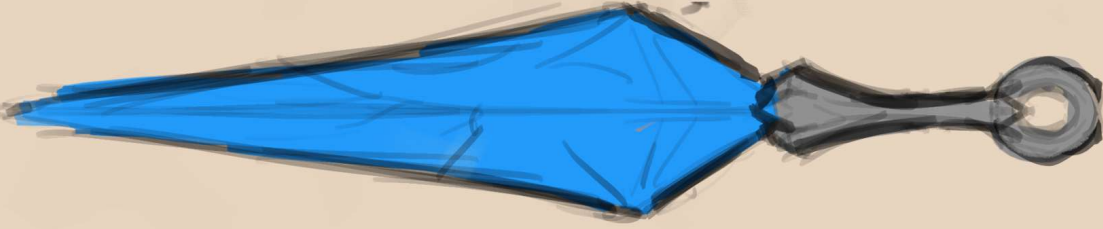
D



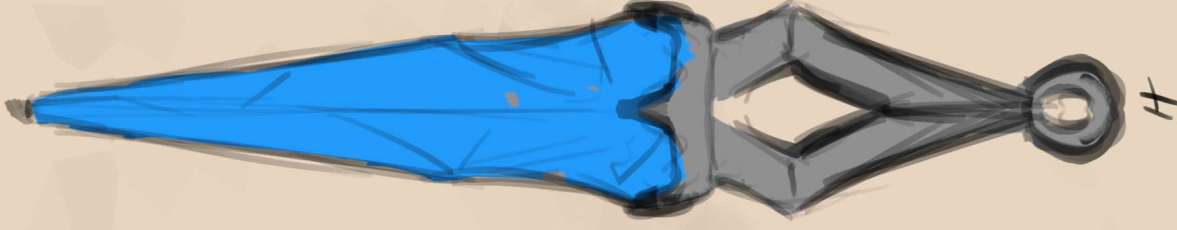
E



F



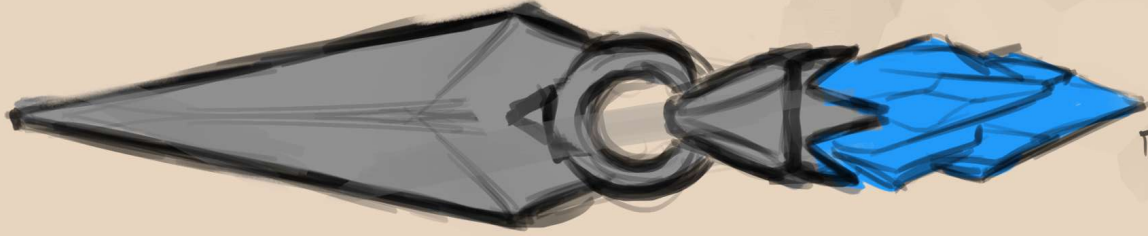
G



H



I



J

Taking inspiration from the kunai silhouette, we explored different shapes for the hook. We were looking for something that had a good shape with some weight to it in the front, but still felt elegant.

The glowing crystal material turned out as a good hook material, as it provided emission that would make the player able to see the hook at it travelled in the darkness.



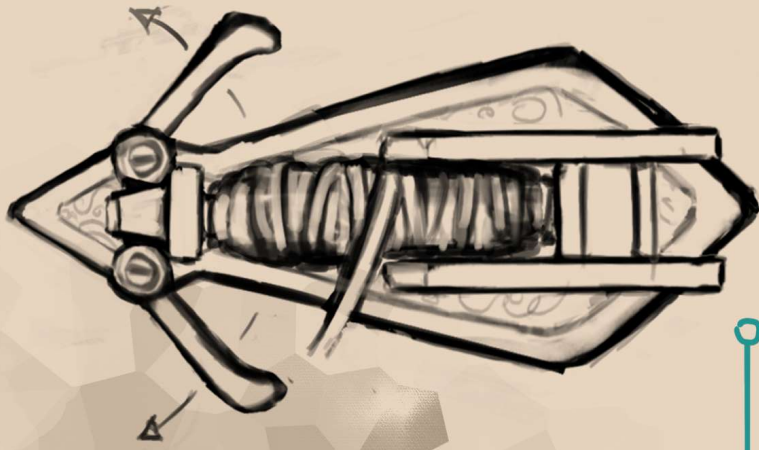
The design for the final hook.



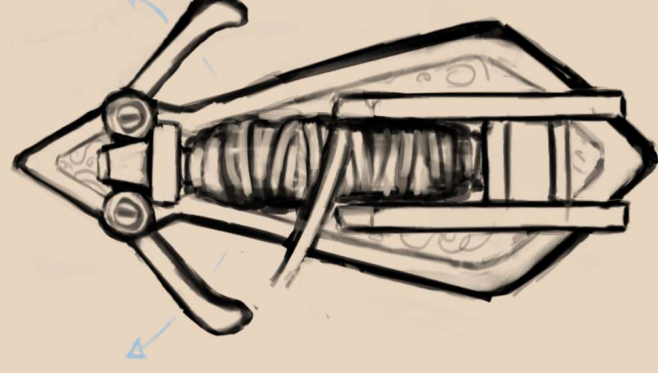
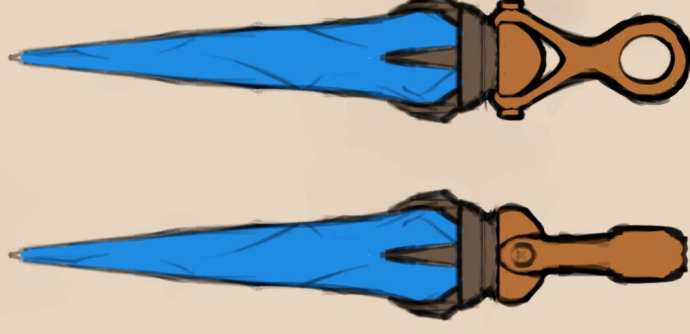
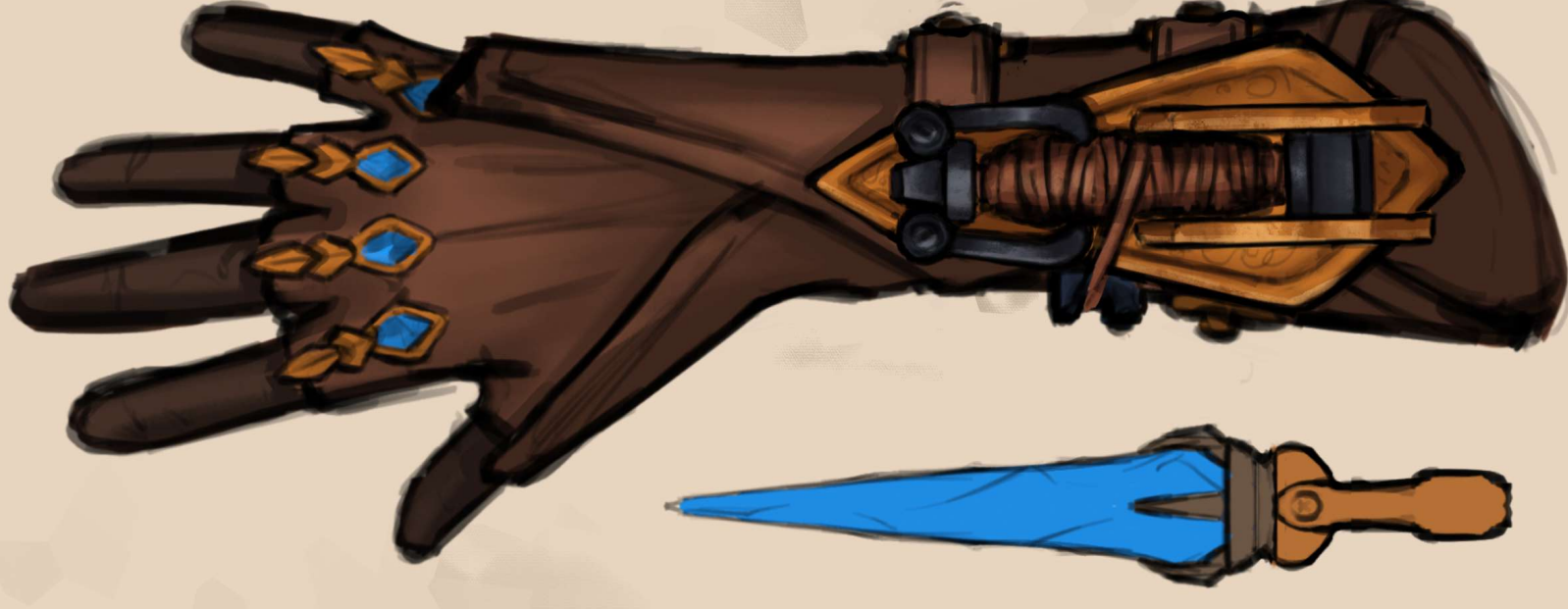
For the second iteration we tried to push the materials, functionality and shapes some more.

6 Hook - Visual Design

The final concept for the hook was finished after the 3D model was begun. This was because it was easier to solve the hook mechanism design in a 3D space.



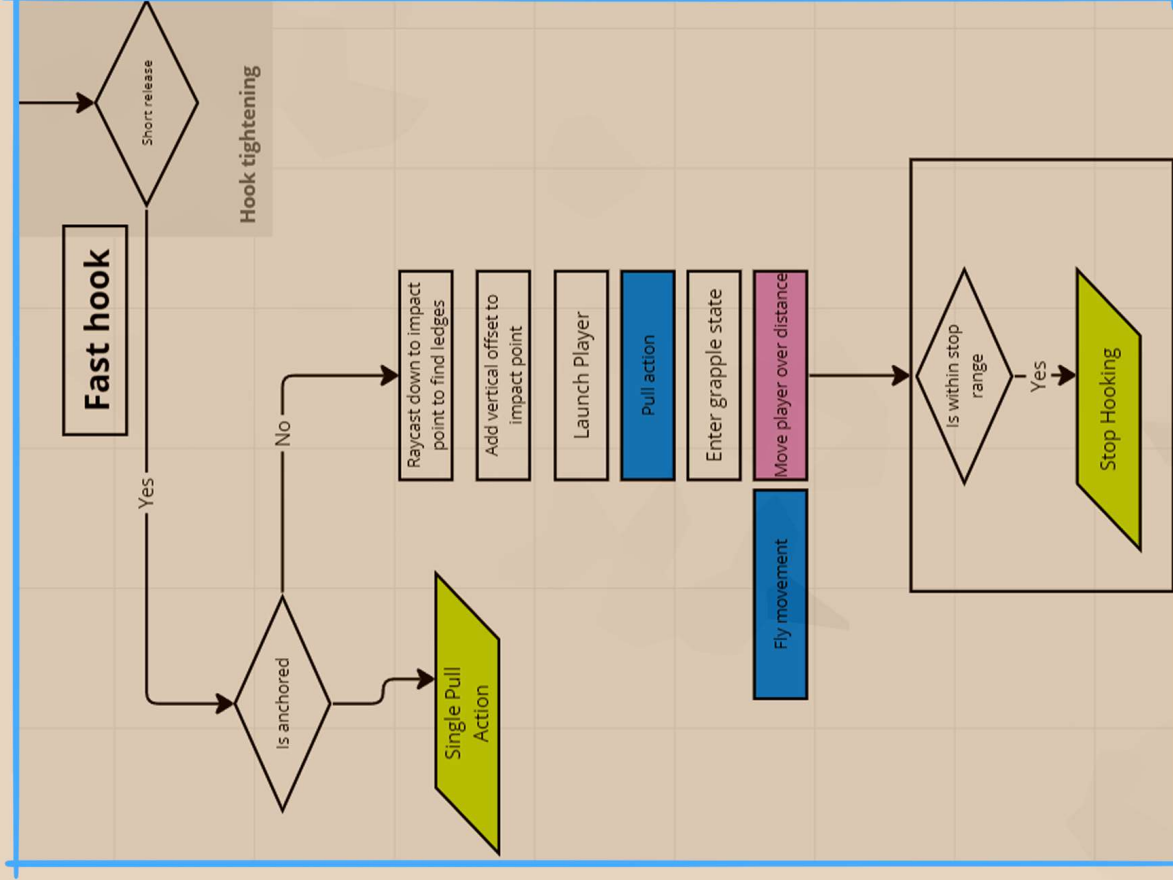
The top of the hook device is designed with two flaps that holds the hook spool in place. They snap out when the hook is shot, to provide visual feedback to the player.



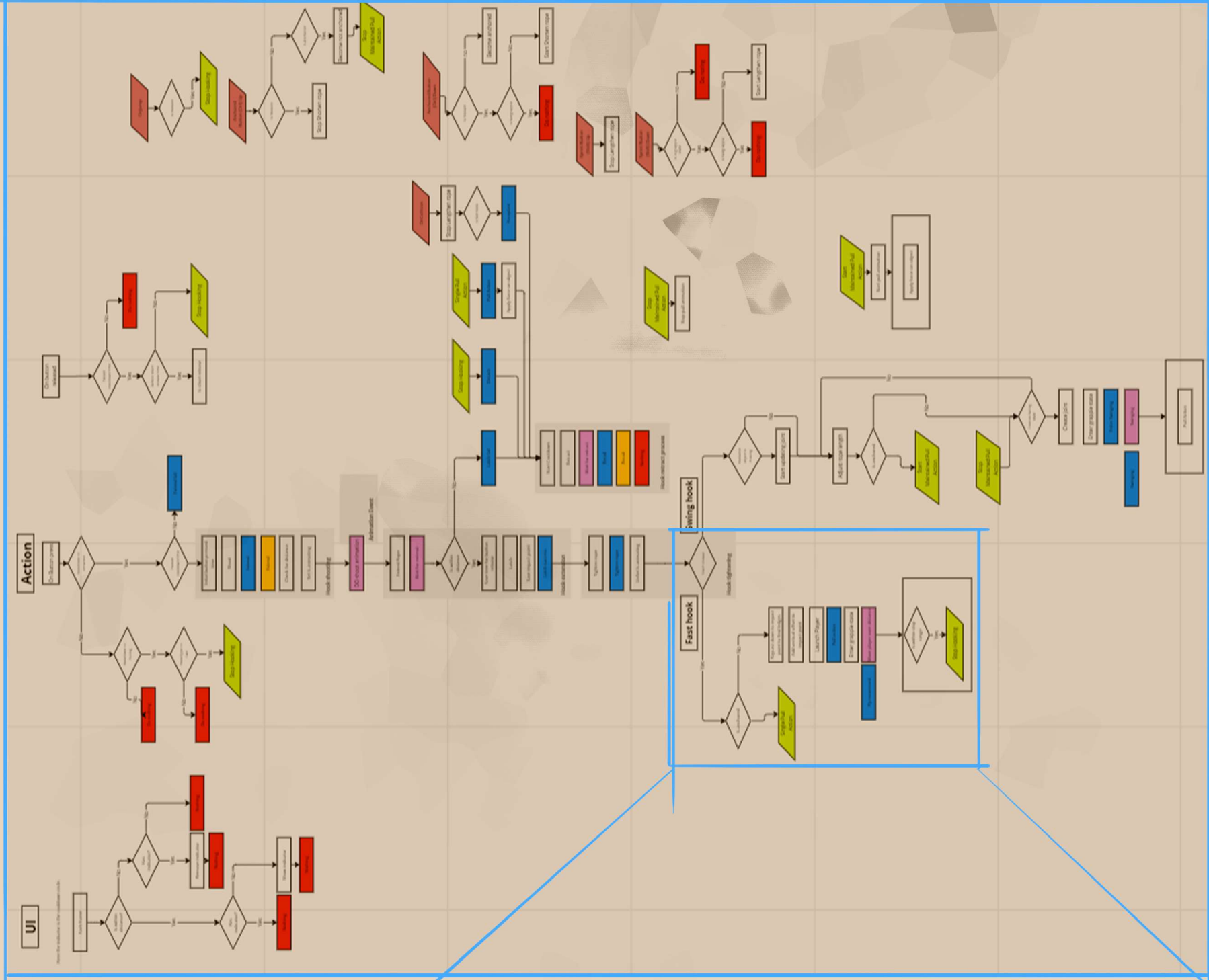
Hook - SYSTEM DESIGN

The hook being the most complex feature of the game, the team dissected its behaviour into the following diagram. This diagram helped the sound designer understand which sounds needed to be made and in what context they were played. Dissecting the conditions and states helped the programmer structure the code for readability, future changes and bug fixing.

This diagram was made after the first feature meeting regarding the hook. While maintained for a while, the continuous update of such document becomes very time consuming with diminishing returns. Its most effective purpose has been to align the team members working on the feature.

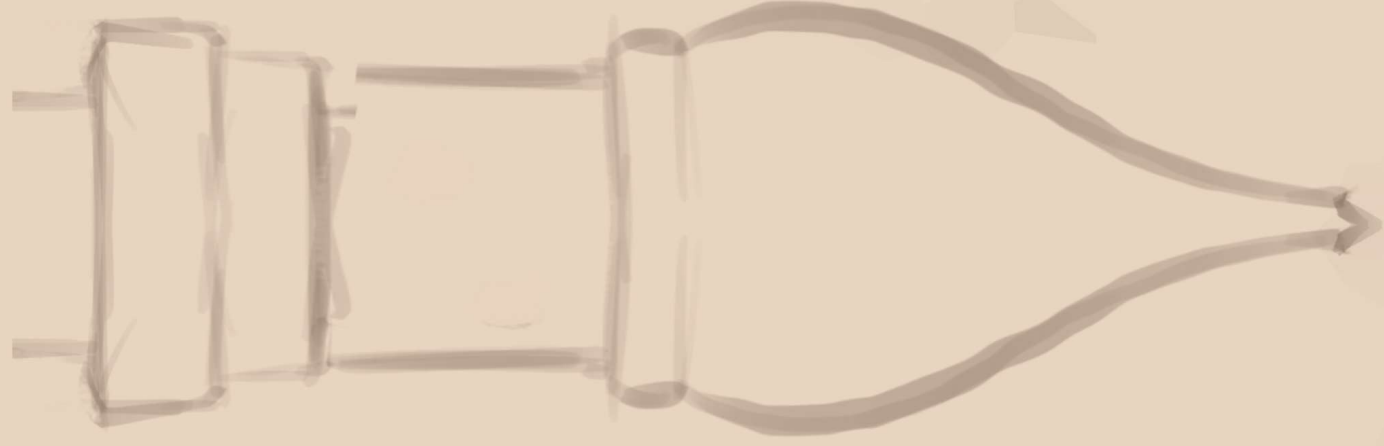


HOOK SCRIPT DIAGRAM





LEVELS

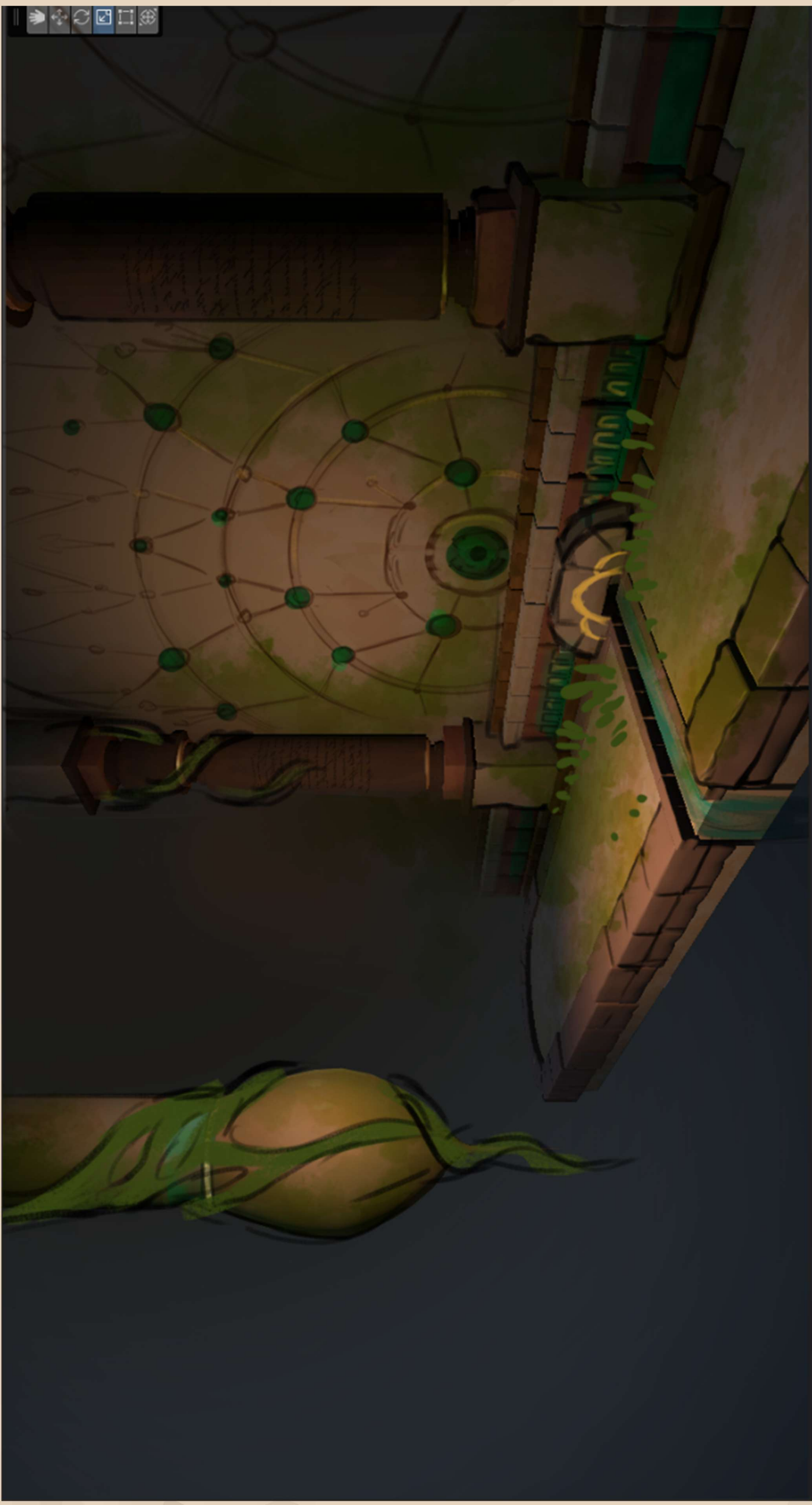




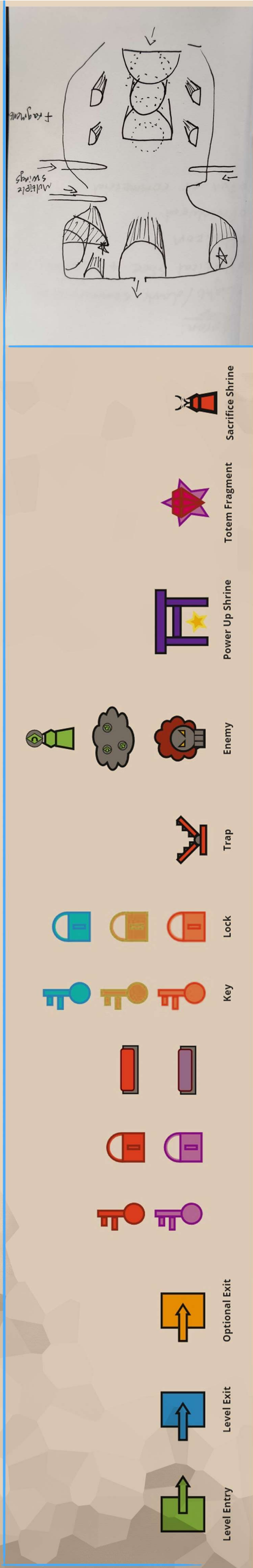
LEVELS DESIGN

"Had I known this would be my home in this hellhole I would have brought a chair."

Delve contains 4 levels, counting the tutorial. While every level is designed to look and feel formidable and awe-inspiring, we've focused on individually unique aesthetics, thematic influence and level design to keep the experience fresh and reward exploration in both small and large spaces on your way through the depths.



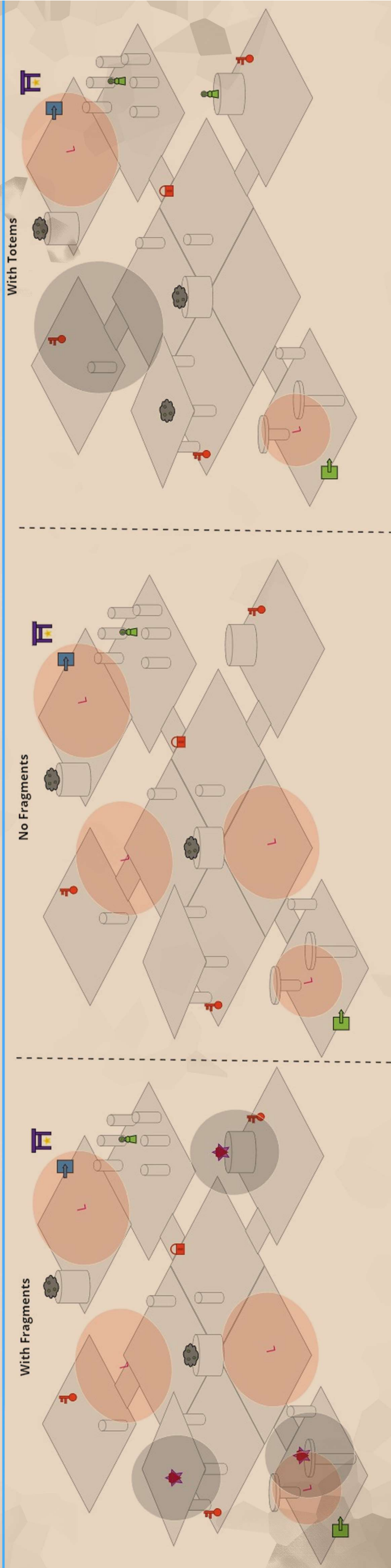
7 LEVELS - GAME DESIGN



We created icons out of our game features to help illustrate the components in a level

Other level ideas were simply drawn out beforehand

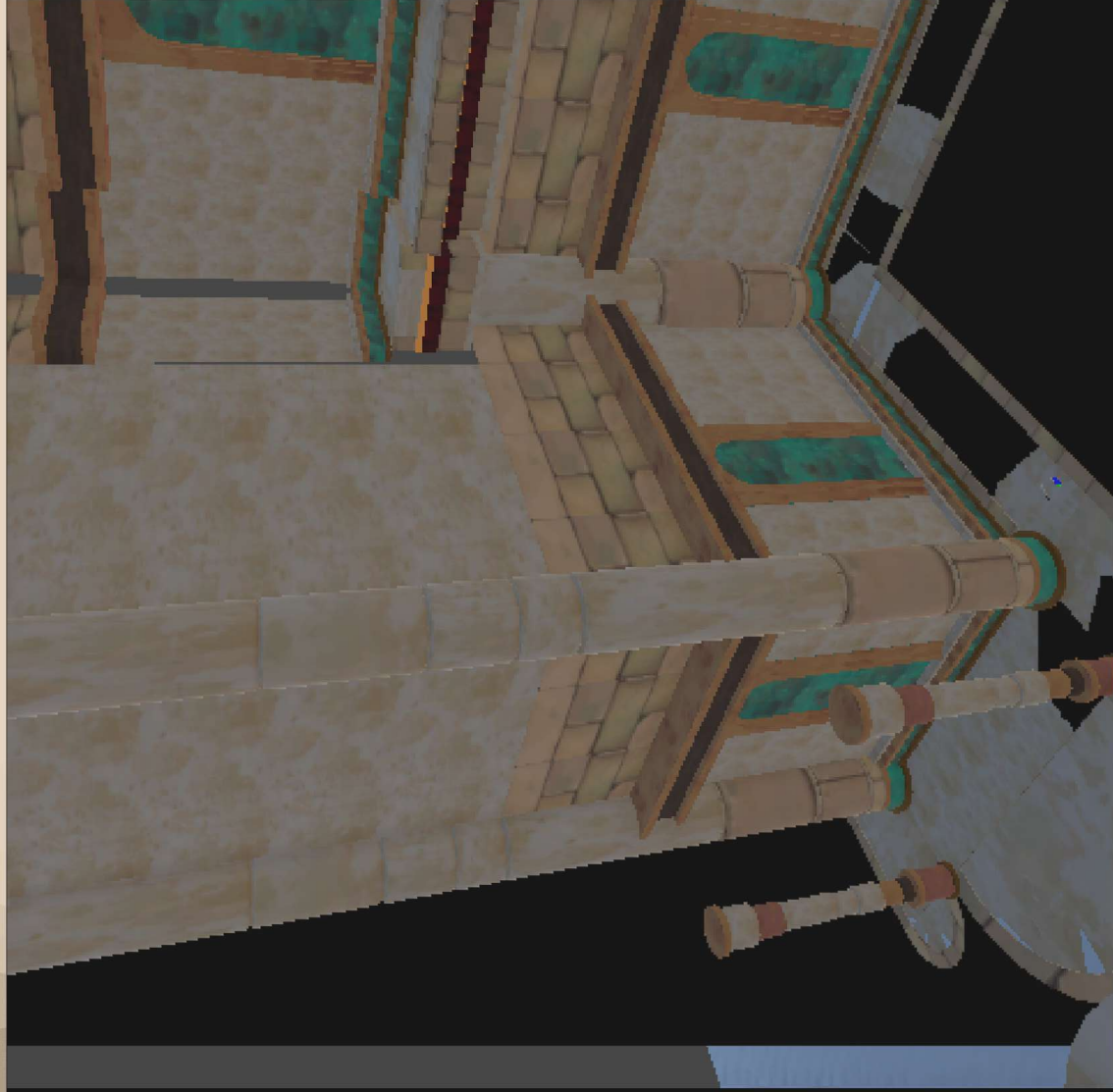
Diagram illustrating how we wanted levels to have replay value by changing the layout and spawning enemies depending on actions taken in previous playthroughs.



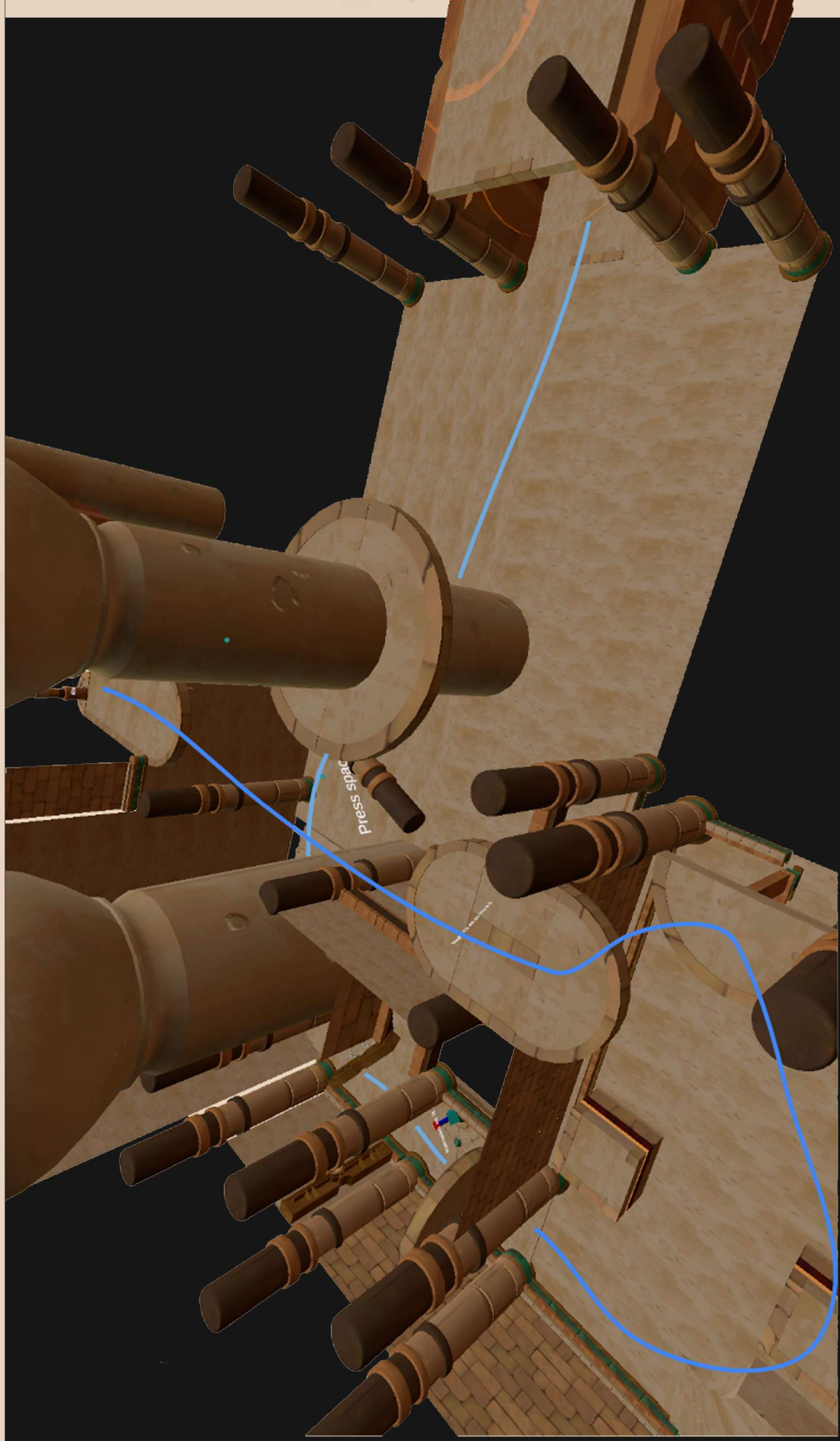


LEVELS - GAME DESIGN

By the time we had a decent amount of assets in the game it became quicker to sketch out levels directly in-engine



By having the tutorial path loop around as we introduce the hook we can raise the level above ground to create a higher sense of urgency while ensuring that even if the player fails the jump they arrive in a familiar location that allows them to experiment freely with the hook to get back up or explore the old jumping puzzle with a new tool.



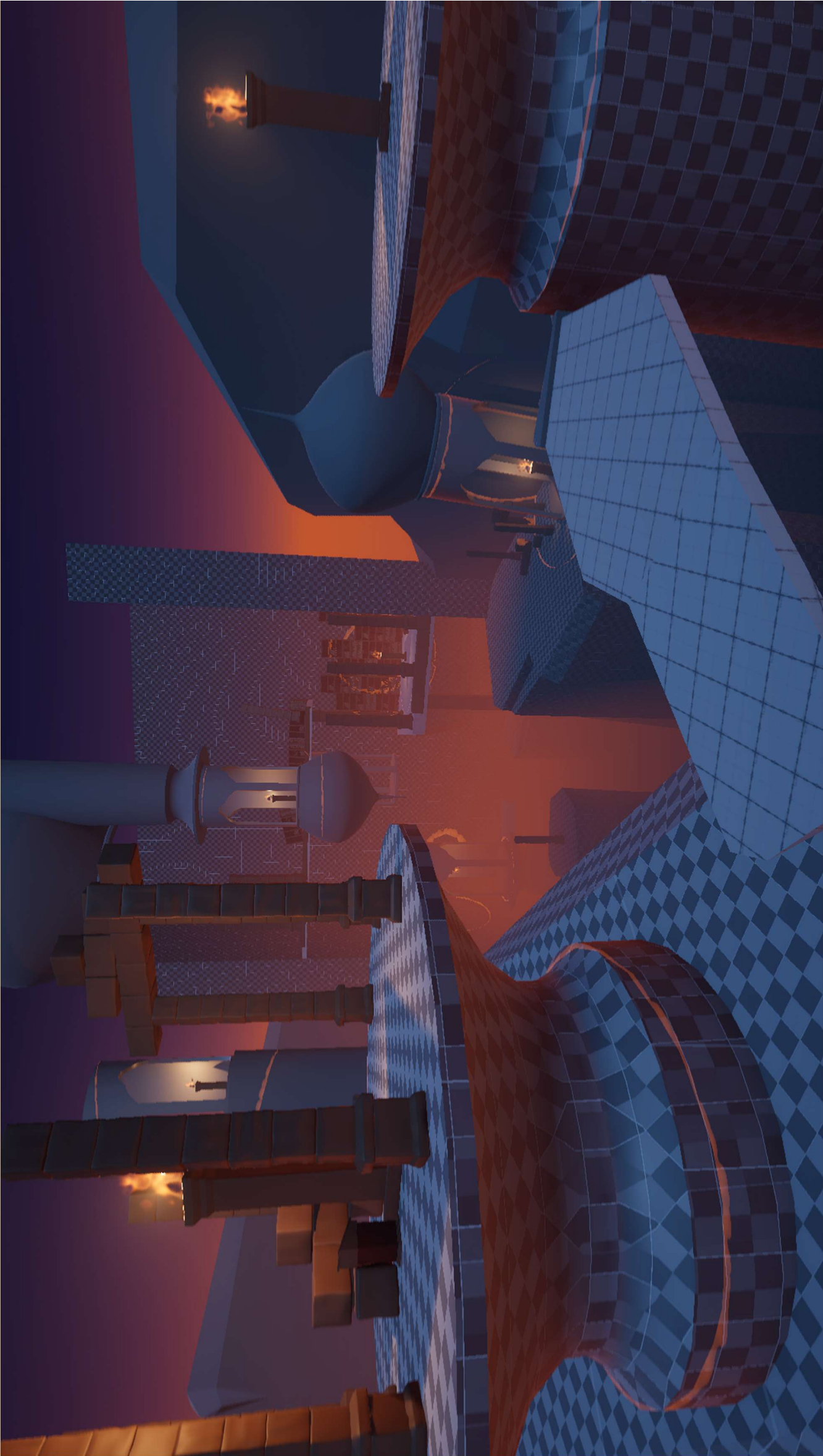
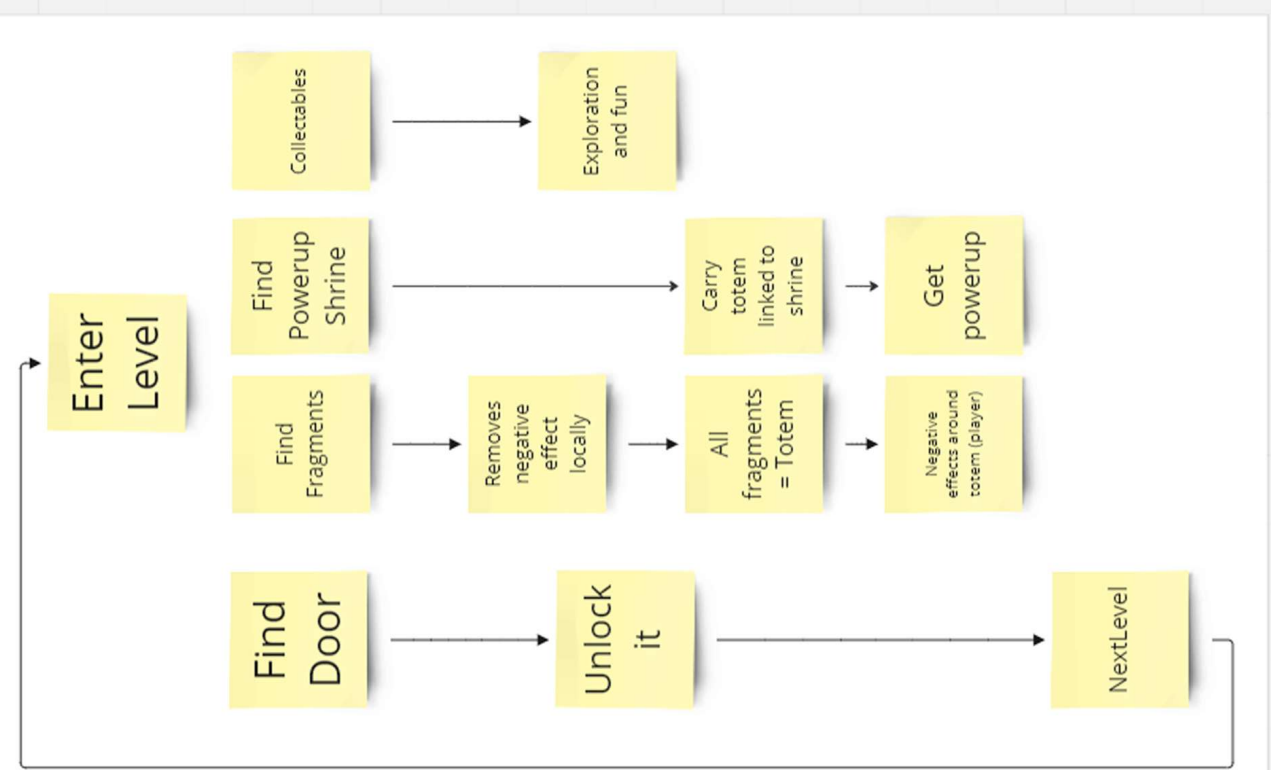


LEVELS - GAME DESIGN

Early level diagram showing potential parallel goals in a level to ensure variety when playing through the game. Here the collectables were more integral to the difficulty of the level they belonged to.

Early greybox level exploring gameplay in large open spaces. For this level we also implemented a timer and had collectables spread around to test fun value in platforming under additional pressure.

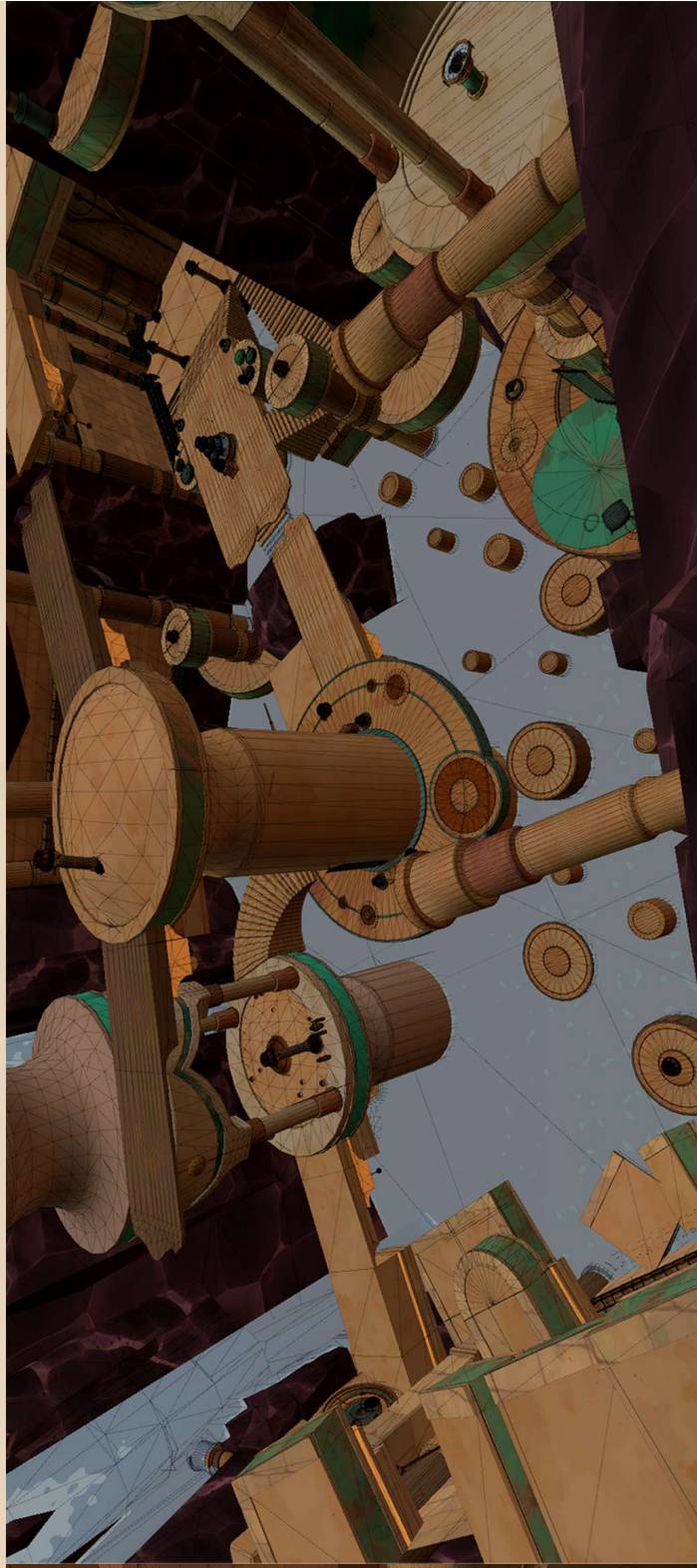
Early Diagram of Level Goals



7 LEVELS - GAME DESIGN



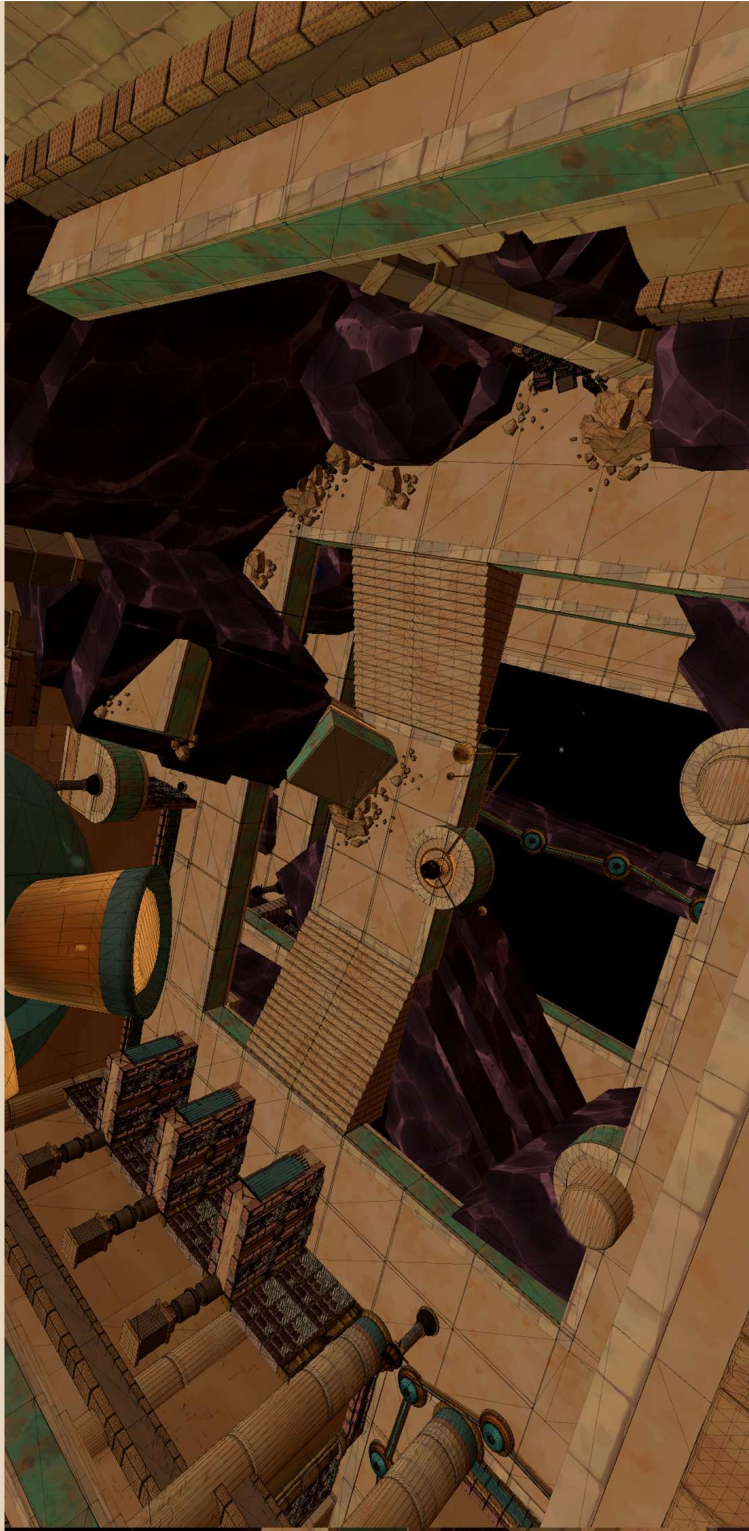
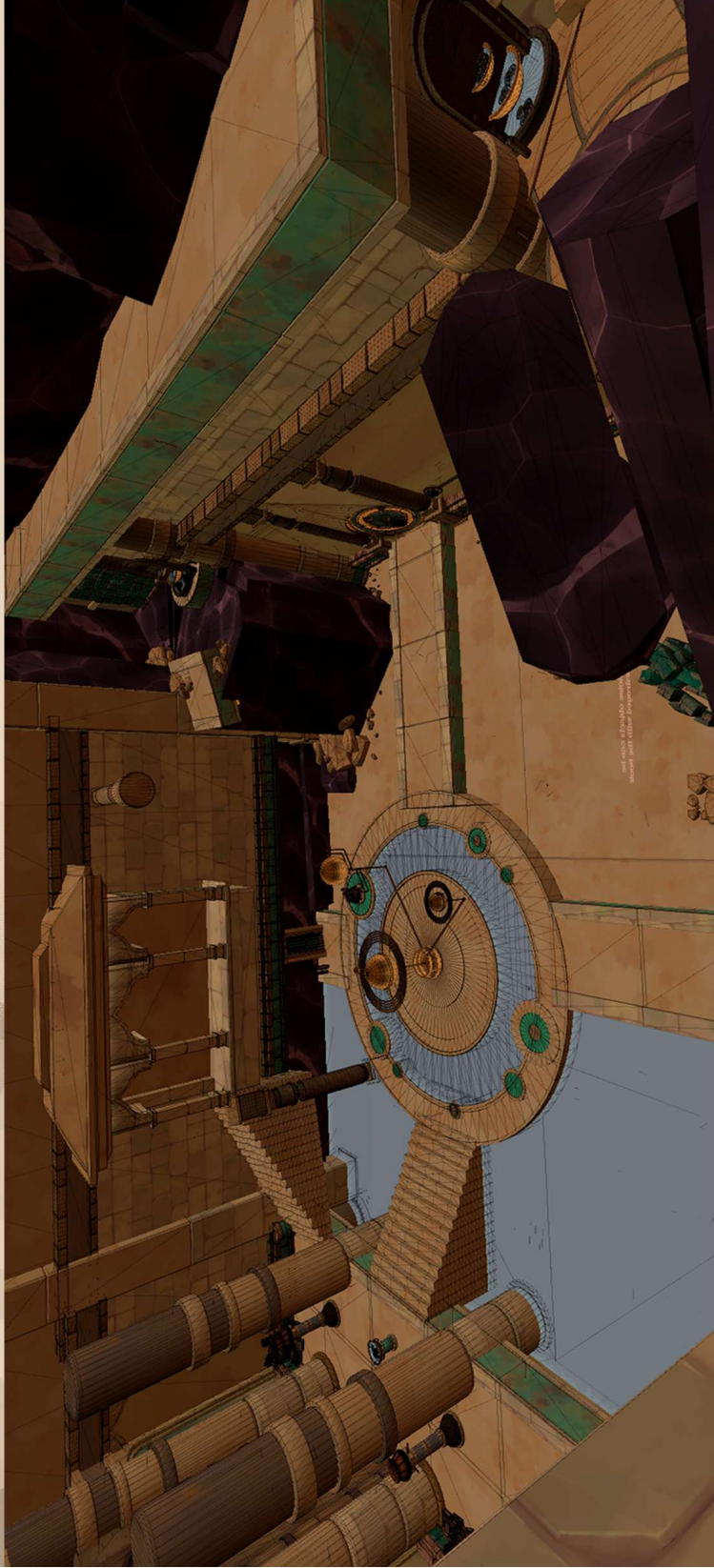
Beyond teaching basic controls we wanted the tutorial to enforce a sense of doubt of whether you were heading the right way before being trapped inside the temple.



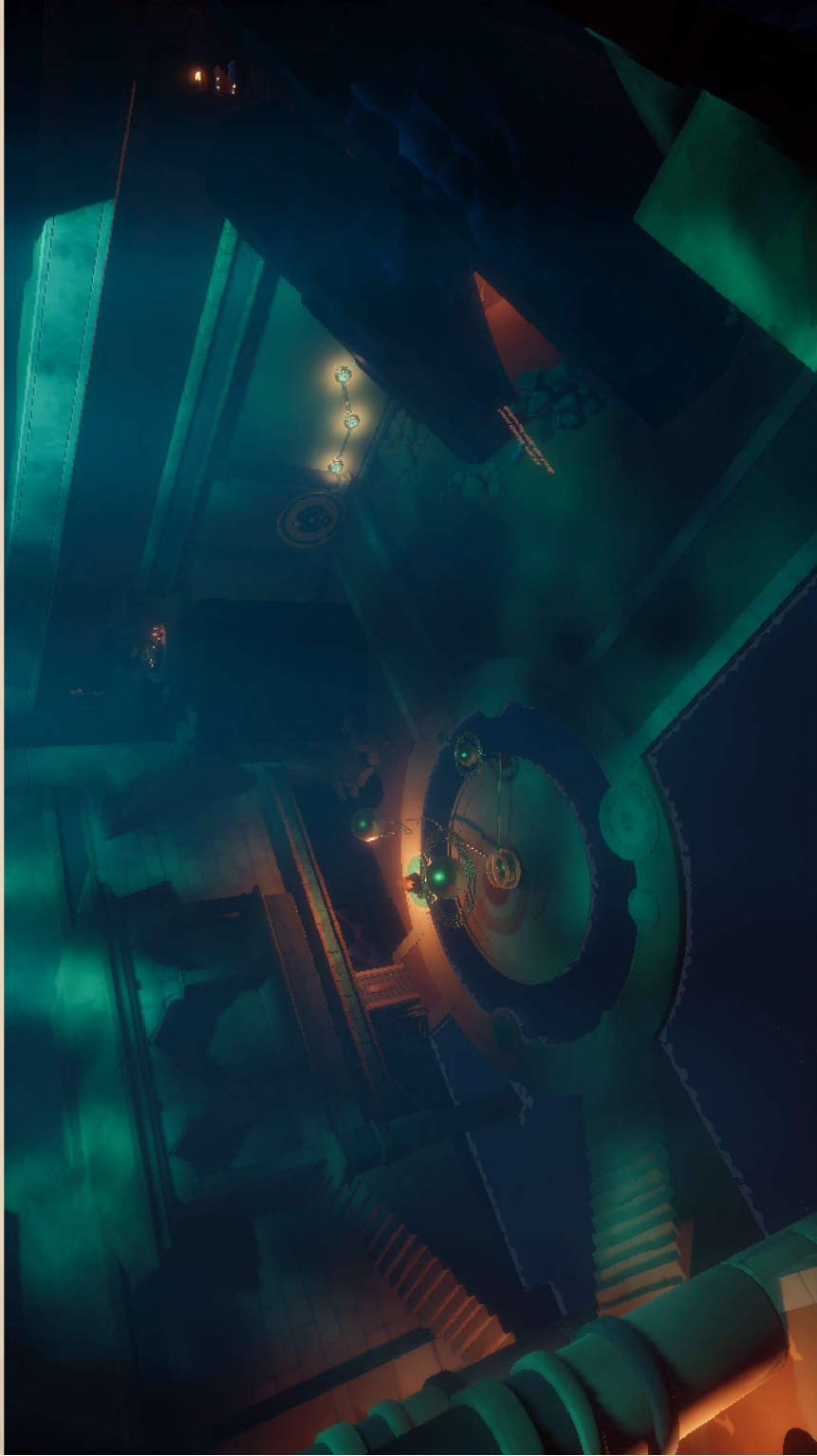
The first level is focused on introducing darkness in a more sinister temple environment.



7 LEVELS - GAME DESIGN



For the second level after getting cursed we wanted to start by slowing down the pace a little and provide a safe space for reflection and experimentation.





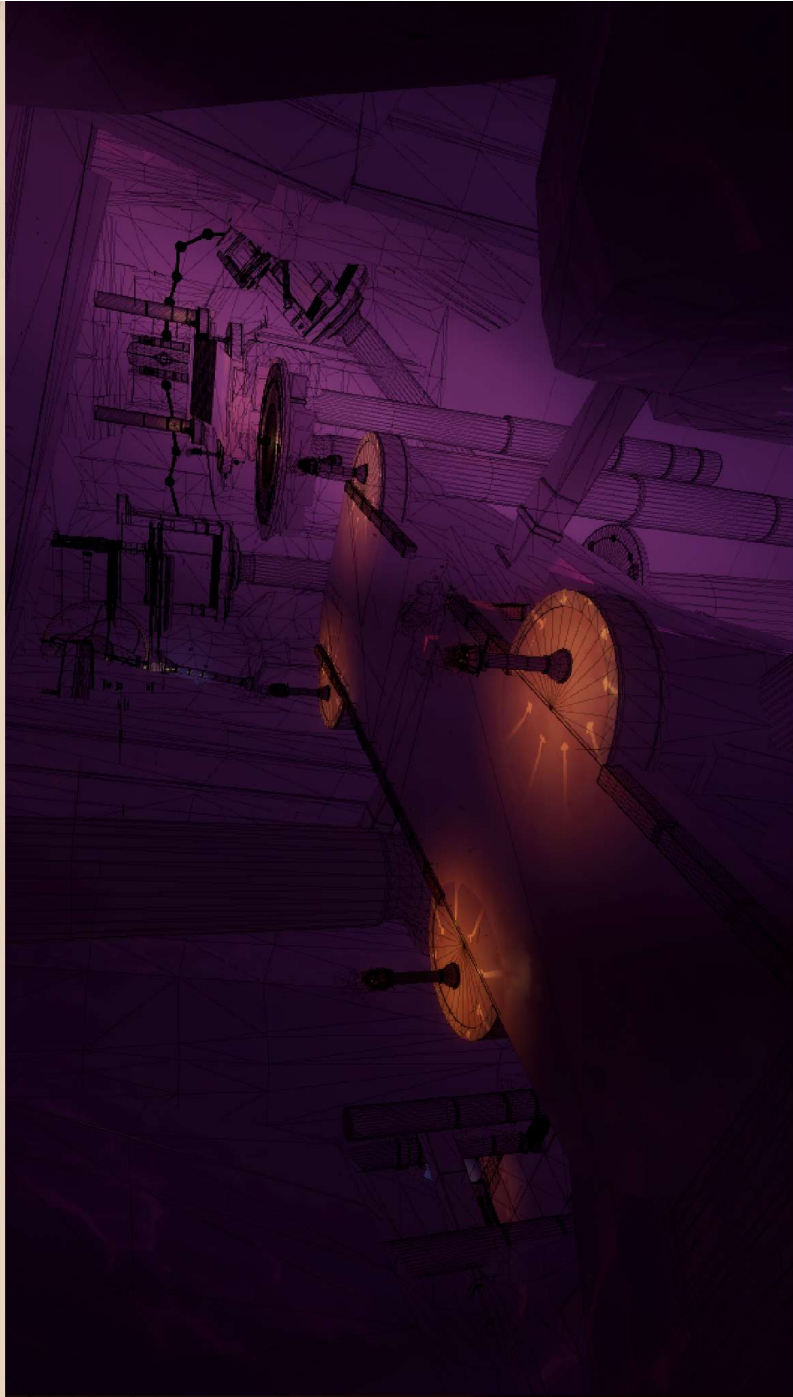
LEVELS - GAME DESIGN



Still going off the slow pace, but introducing the danger of darkness, part of the second level was designed with a maze-like structure.



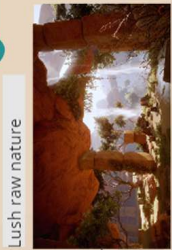
The last level is all about scale and grandeur as the player must figure out a way to cross an impossible gap. Right before this we force them through narrow spaces to make the reveal more impactful.



7 LEVELS - VISUAL DESIGN

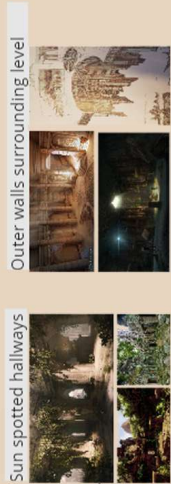
The Island

To figure out what props we needed for the levels, each level was given an identity. This helped us gather reference for the visual design.

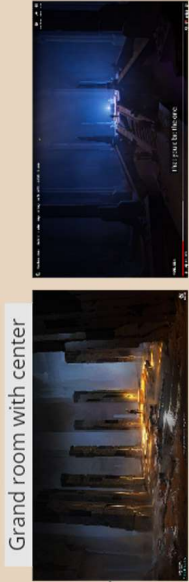


The Mountain

The Exterior Temple



Observatory/ hub area



The Gardens



The Library



The Bridge



Prison/end area



Totems
Totem altars
Urns
Murial
Roots
Moss
Starry night sky

Spire
Murial
Planet balls
Scrolls
Bookcase
Bookcase Pillar
Bench w/ pillows
Lectern
Writing tools
Inscribing tools

Spire
Spire platform
Bridge
Wall
Floor
Water Canal
Hanging Lamp
Brazier
Altar
Shrine
Carpets & seating
Storage

Based on the what-why-how-where we generated an asset list for props that would help the storytelling.

The temple

What

Observatory
Temple

Prison/
Tomb

Why

Knowledge
Worship

Power

How

Cataloguing
Rituals

Magic,
totem
fragments

Where

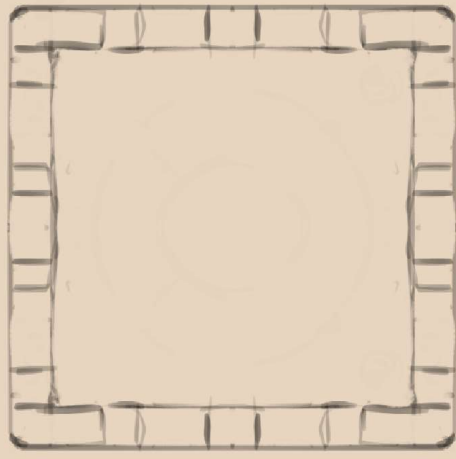
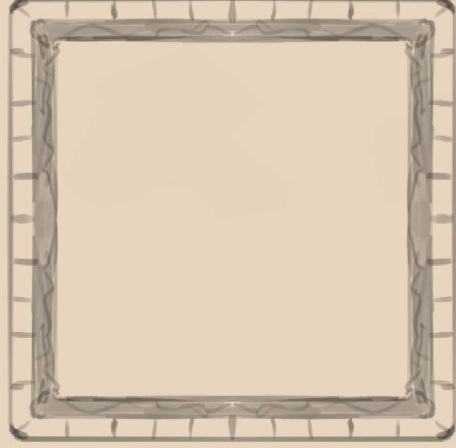
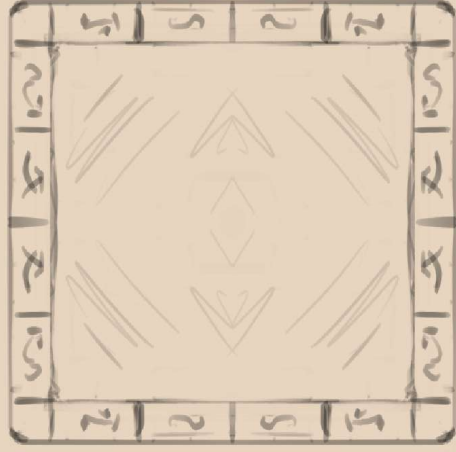
Library
Altars

Lowest
temple
level

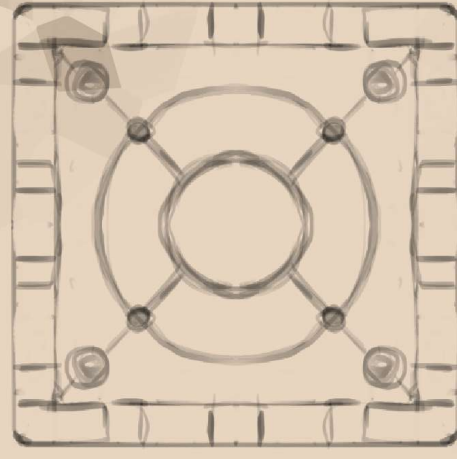
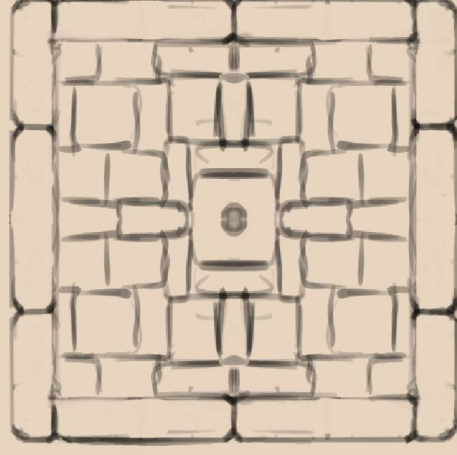
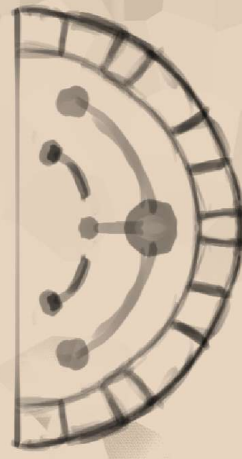
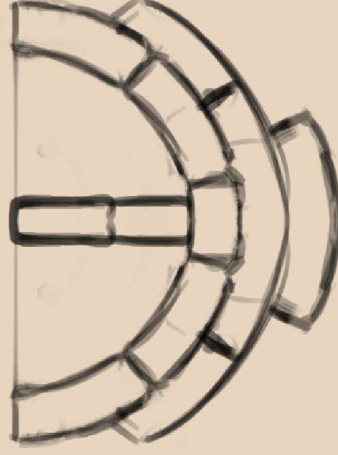
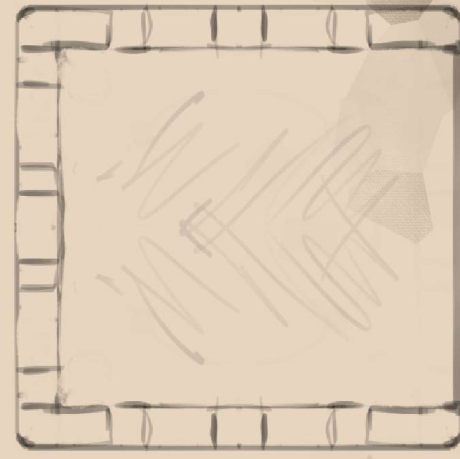
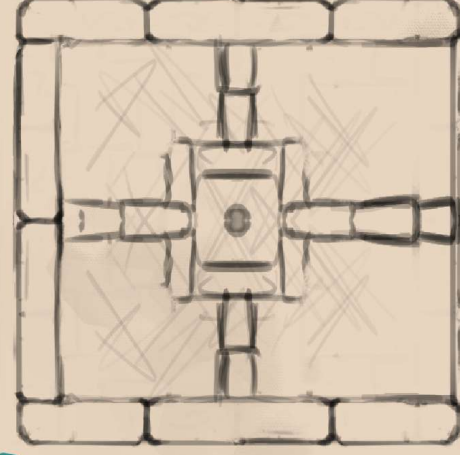
Using post-it notes, we defined the three "what's"/themes of what the temple was; Observatory, Temple and Prison. Asking ourselves why the "what's" were, how it was expressed and where it was expressed, we could define key environments and props of the temple that fed directly into the story.

LEVELS - VISUAL DESIGN

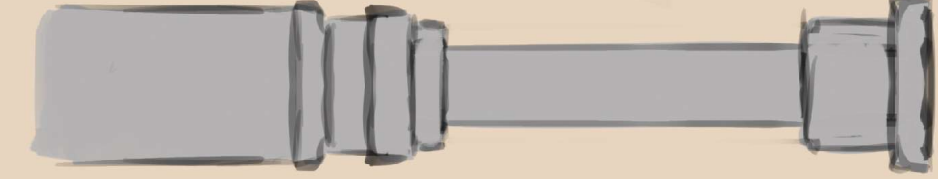
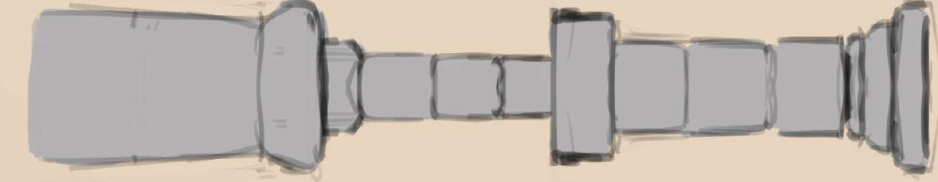
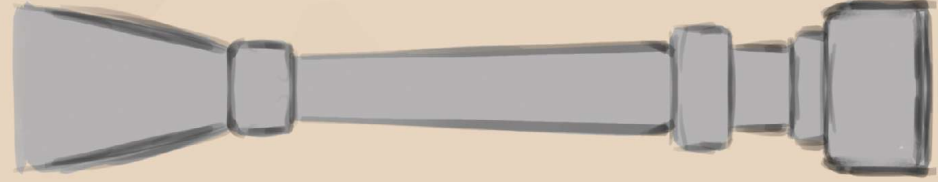
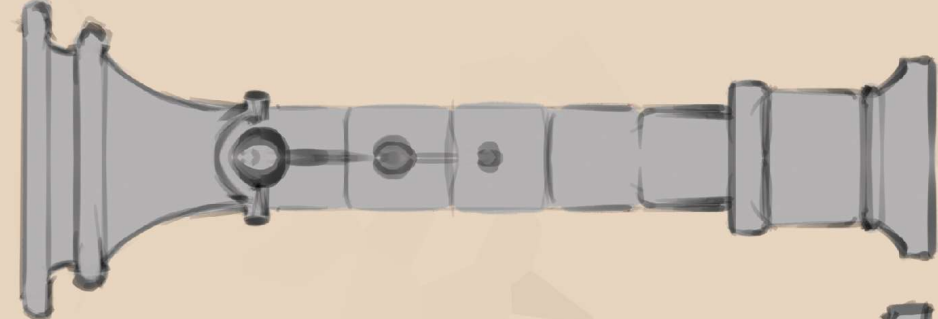
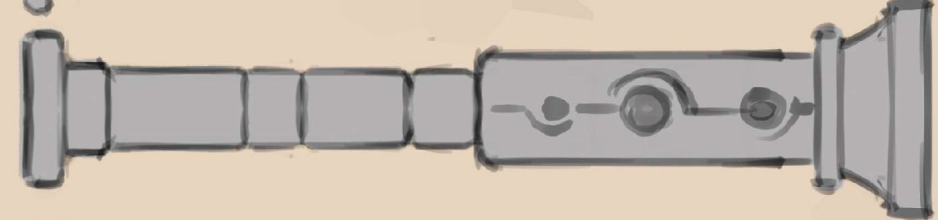
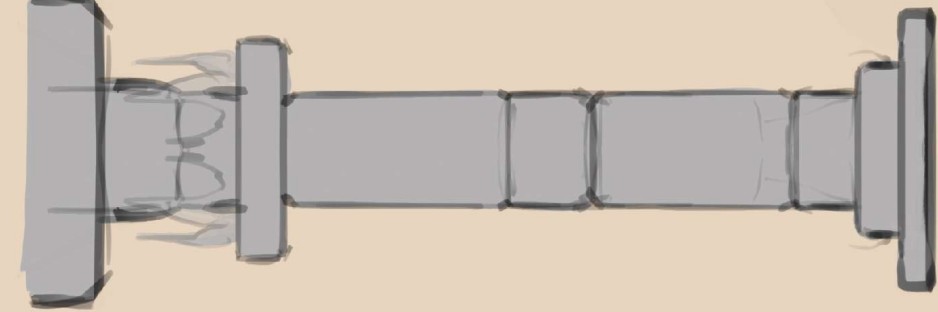
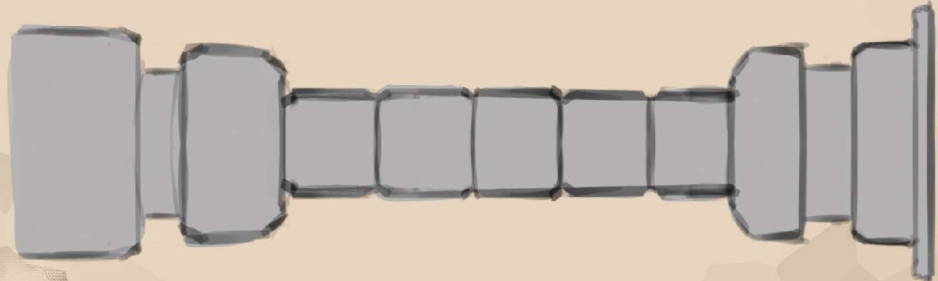
Concepting the basic props for the levels like pillars and floors to begin with, allowed us to fairly quickly have placeholders that could be used for greyboxing.



The focus of the floor designs were to make them versatile and modular, so we could easily build levels from them. The concepting for them were therefore also brought into 3D shortly after starting to sketch them out.



For the pillars we needed both huge and small ones, to give a sense of scale. The design for the small ones was finalized in 3D, but the early 2D iterations provided some good pointers for silhouette and level of detail.

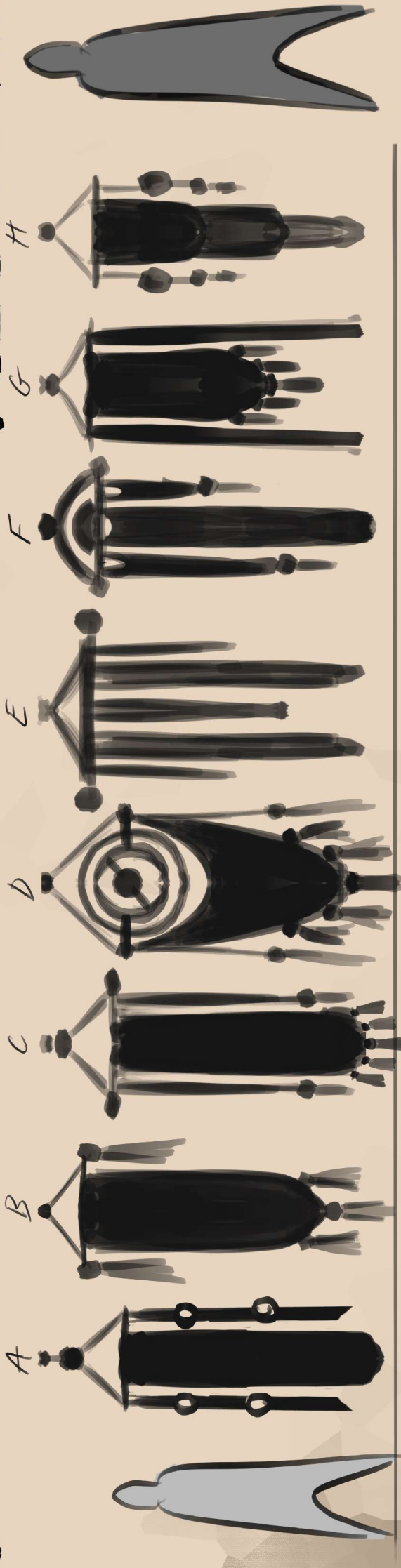
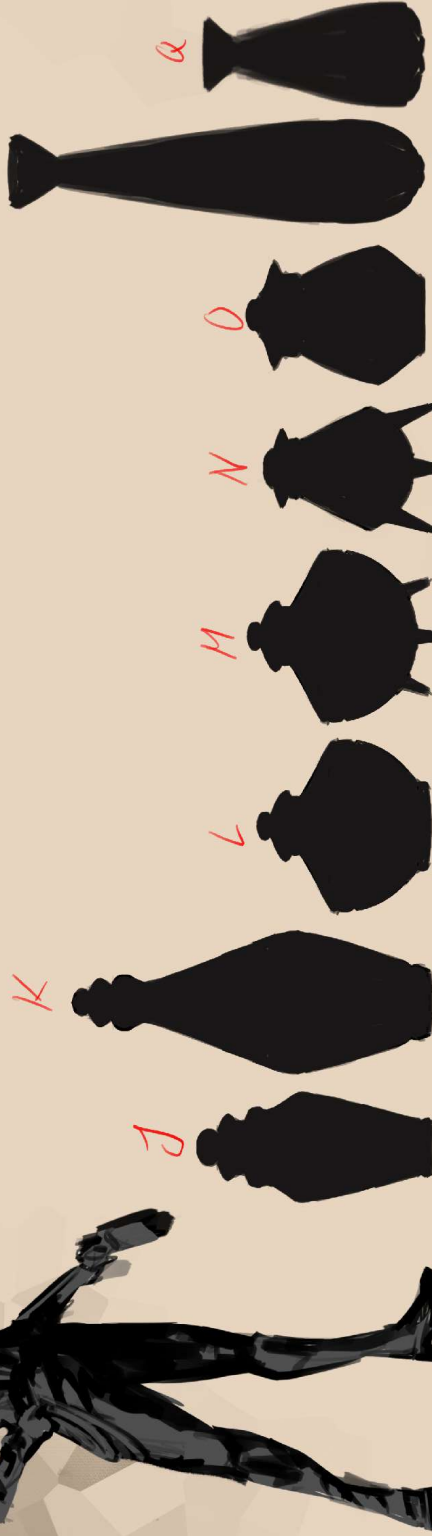
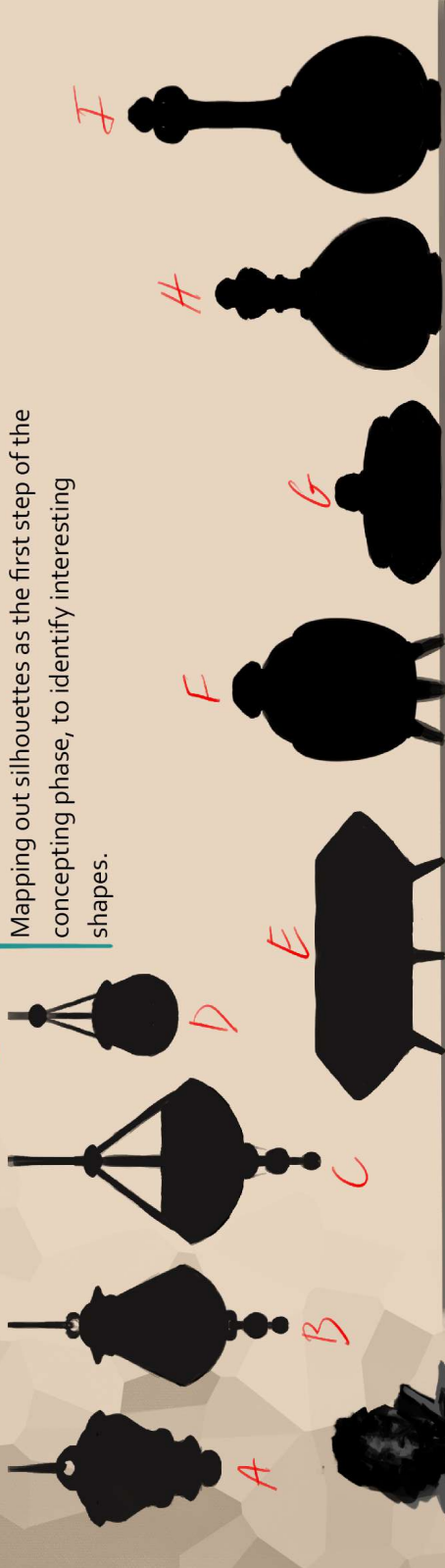




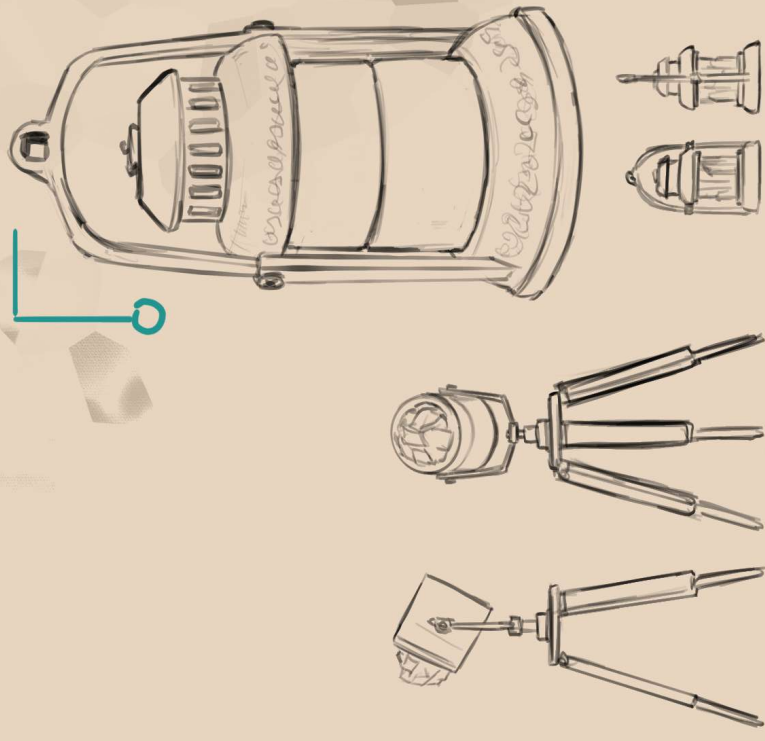
LEVELS - VISUAL DESIGN

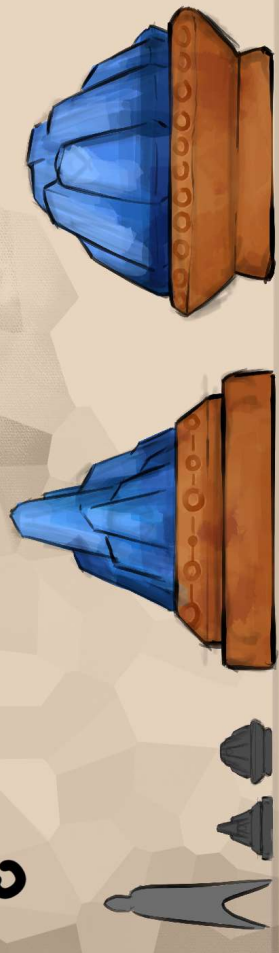
Picking the most interesting silhouettes, we could mix and match various props to create a range of objects for the world. For the second iteration we could focus more on defining smaller details in the design.

Mapping out silhouettes as the first step of the conceiving phase, to identify interesting shapes.



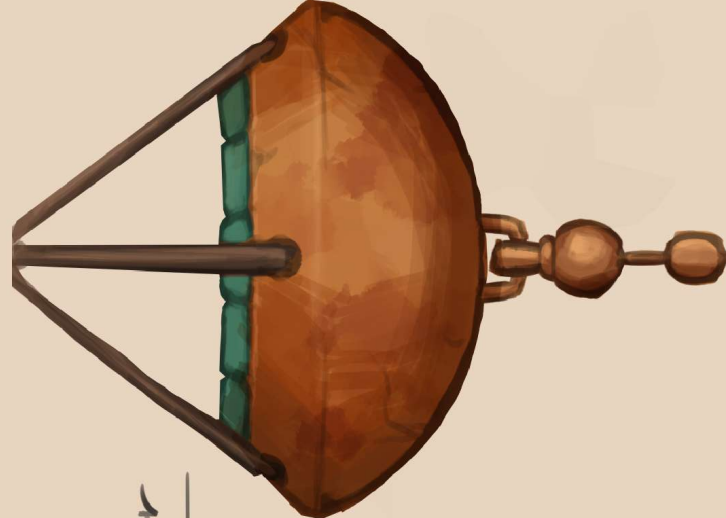
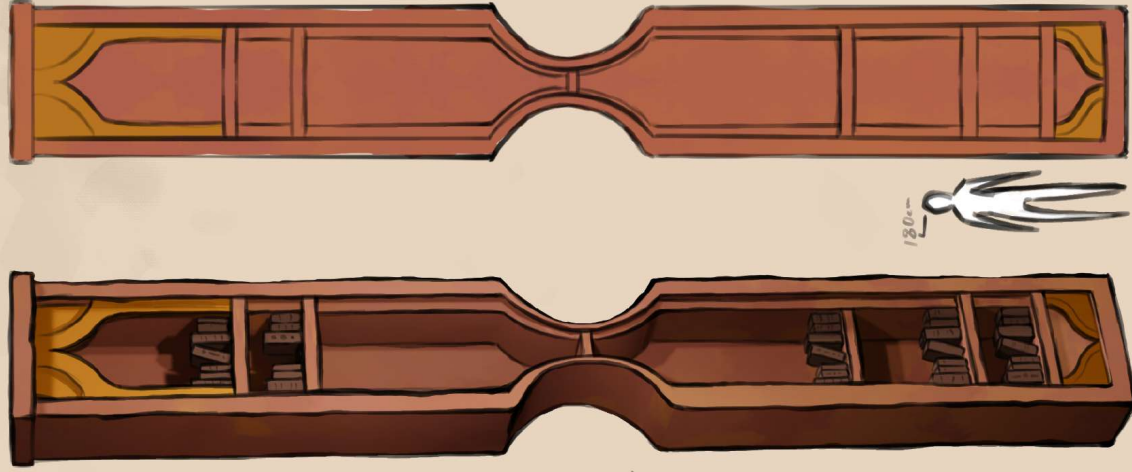
For every prop it was important to keep the technology and available crafting methods in the world in mind.





While a lot of props were designed to fit into multiple levels, some, like the bookshelf, had a more unique design that was made to fit into the particular level it was designed for (in this case the library level).

Cosmic Bookcase



Brazier



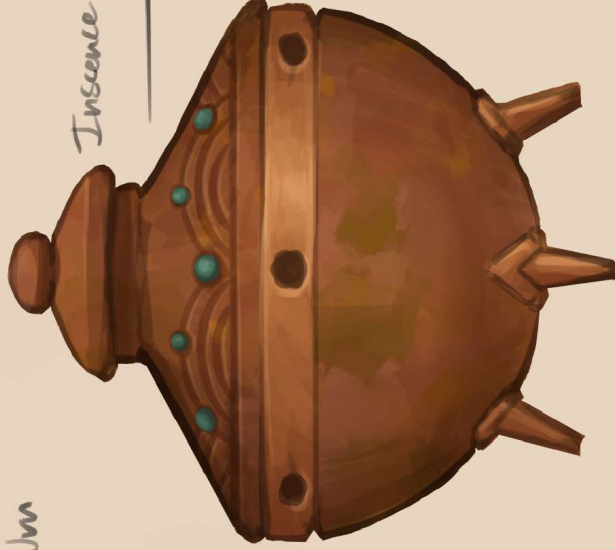
Incense Burner



Water Storage



Adept Urn



Incense Burner

7 LEVELS - VISUAL DESIGN

To level dress the greyboxed levels, we took a micro view on each level and dissected it into screenshots. Each screenshot was given a post-it note with a desired identity for the areas, along with some reference.

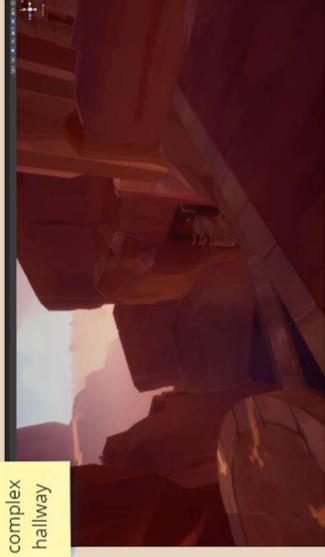
To ground it in something recognisable and make it more digestible to the player, the reference we used was from real life. The focus was on the moment-to-moment experiences of the world, and how each area related to the next in terms of visual cohesion and storytelling.

The tutorial dissected with screenshots, post-its and reference.

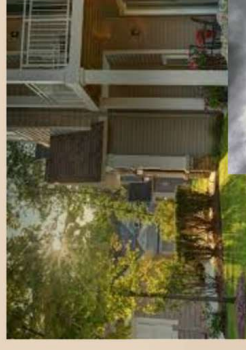
Apartment complex entrance /hallway



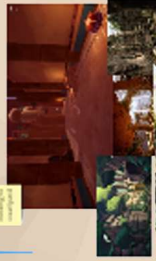
Apartment complex hallway



Apartment complex court area + balconies



Apartment complex entrance



Apartment complex entrance



Apartment complex entrance



Apartment complex entrance



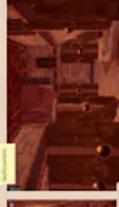
Apartment complex entrance



Apartment complex entrance



Apartment complex entrance



Apartment complex entrance



Apartment complex entrance



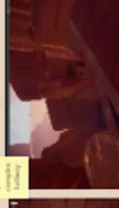
Apartment complex entrance



Apartment complex entrance



Apartment complex entrance



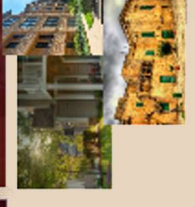
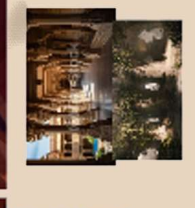
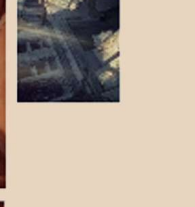
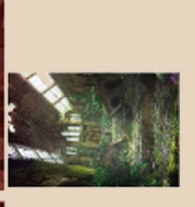
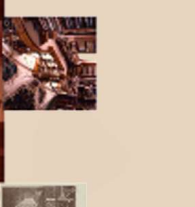
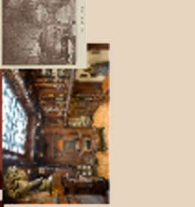
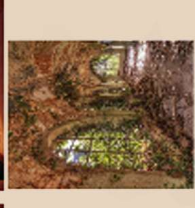
Apartment complex entrance



Apartment complex entrance



Apartment complex entrance



Apartment complex entrance



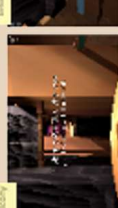
Apartment complex entrance



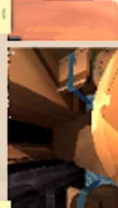
Apartment complex entrance



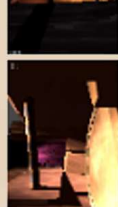
Apartment complex entrance



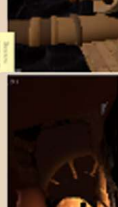
Apartment complex entrance



Apartment complex entrance



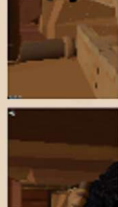
Apartment complex entrance



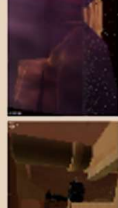
Apartment complex entrance



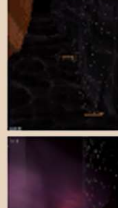
Apartment complex entrance



Apartment complex entrance



Apartment complex entrance



Apartment complex entrance



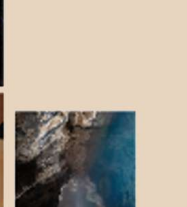
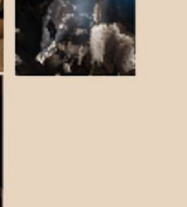
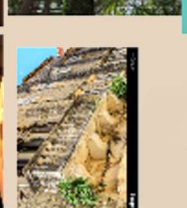
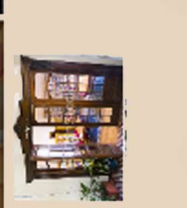
Apartment complex entrance



Apartment complex entrance



Apartment complex entrance



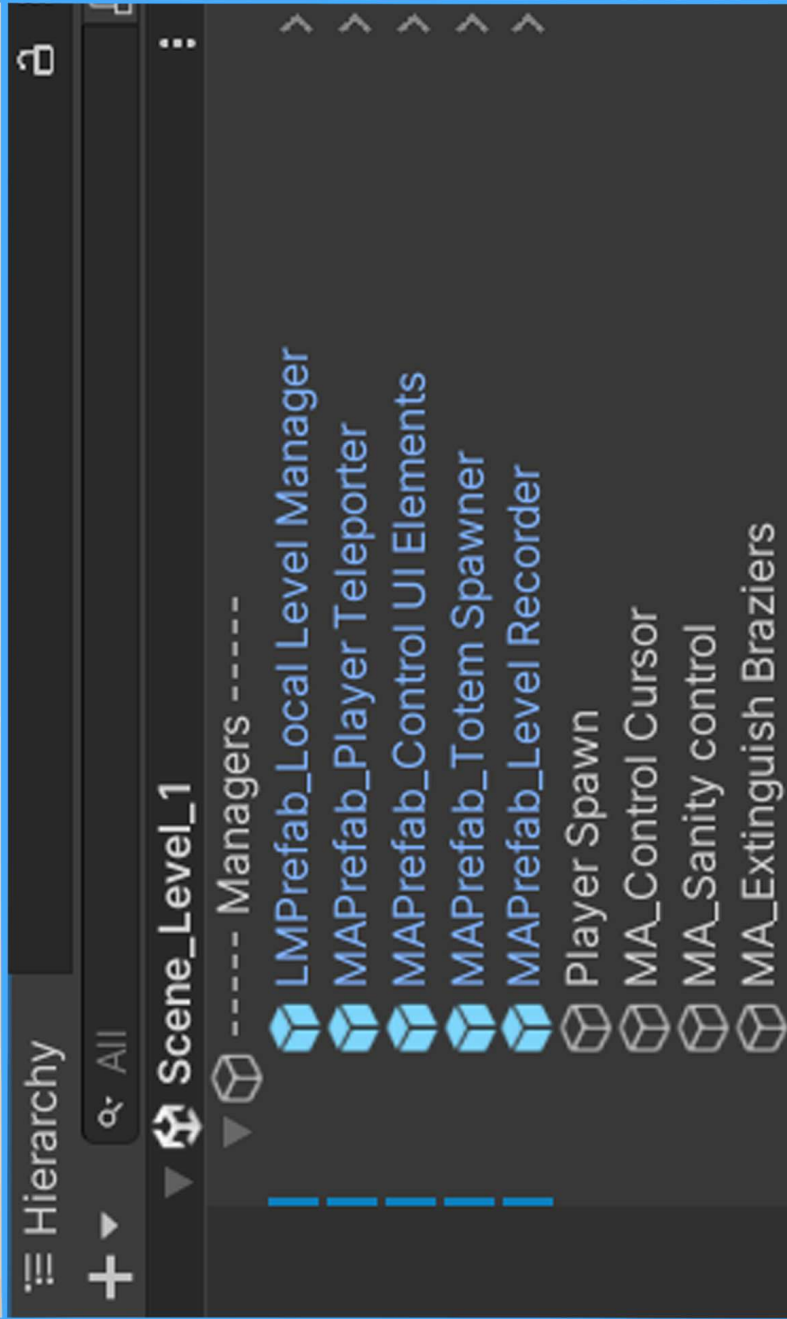
Apartment complex entrance

7 LEVELS - GAME DESIGN

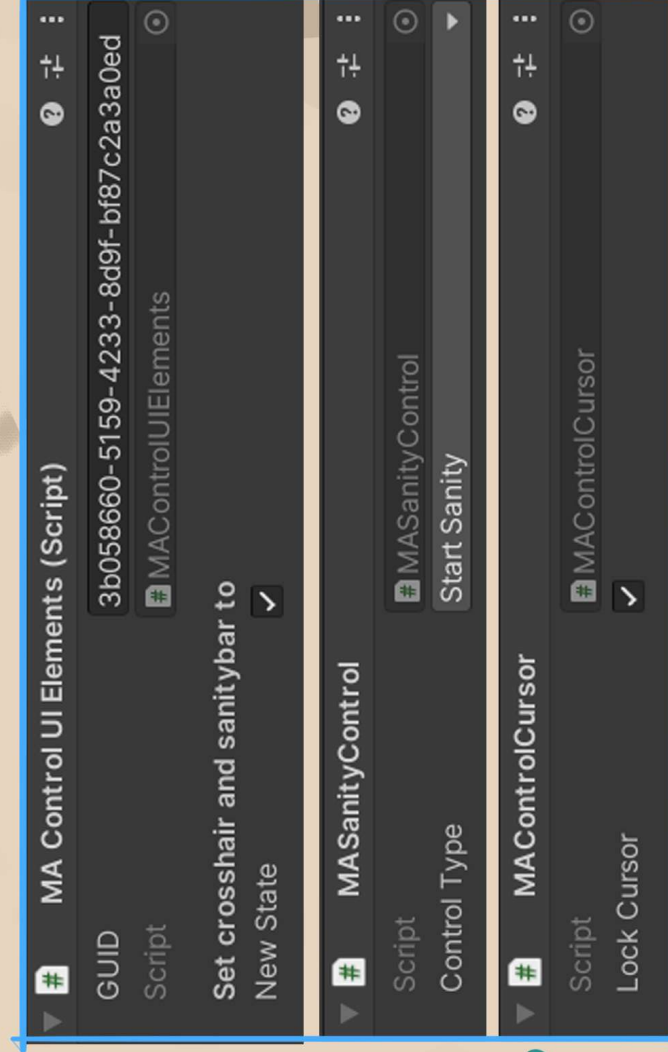
To give designers the opportunity to control events, within the start of a level, in a specific order. A LocalLevelManager component has been made. That manager is responsible for the initialization of the scene, it is called by the scene loading system. This manager introduces more flexibility in each scene, since the different initialization actions do not need to be hard coded in the manager of that scene, but rather they are added by the designers based on the scene's needs.

LEVEL MANAGER

Local manager actions exist within the scene which means they can reference objects from that scene.



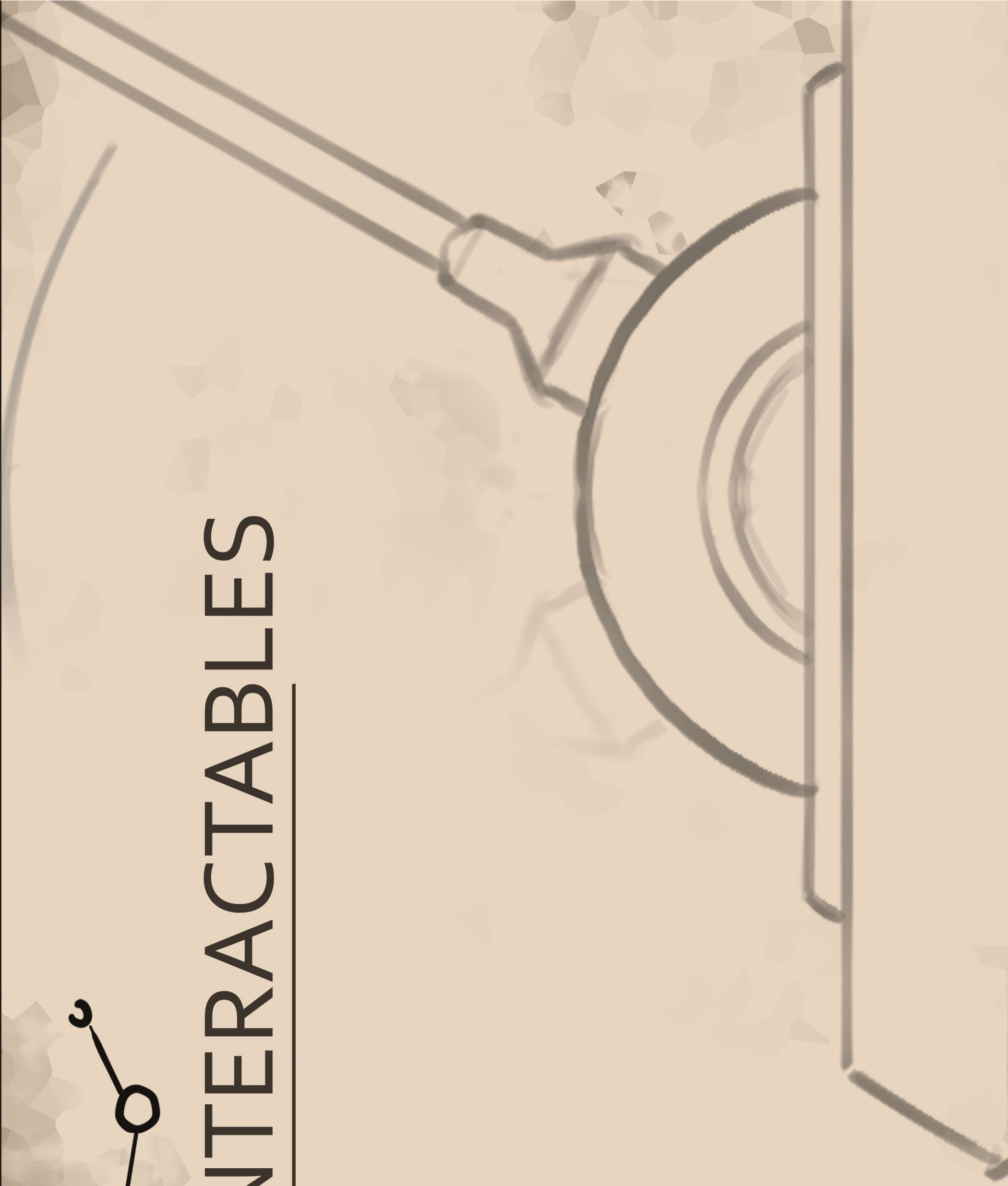
LocalSceneManager component with a list of actions to perform.



Examples of components that inherit from LocalManagerAction.



INTERACTABLES



8

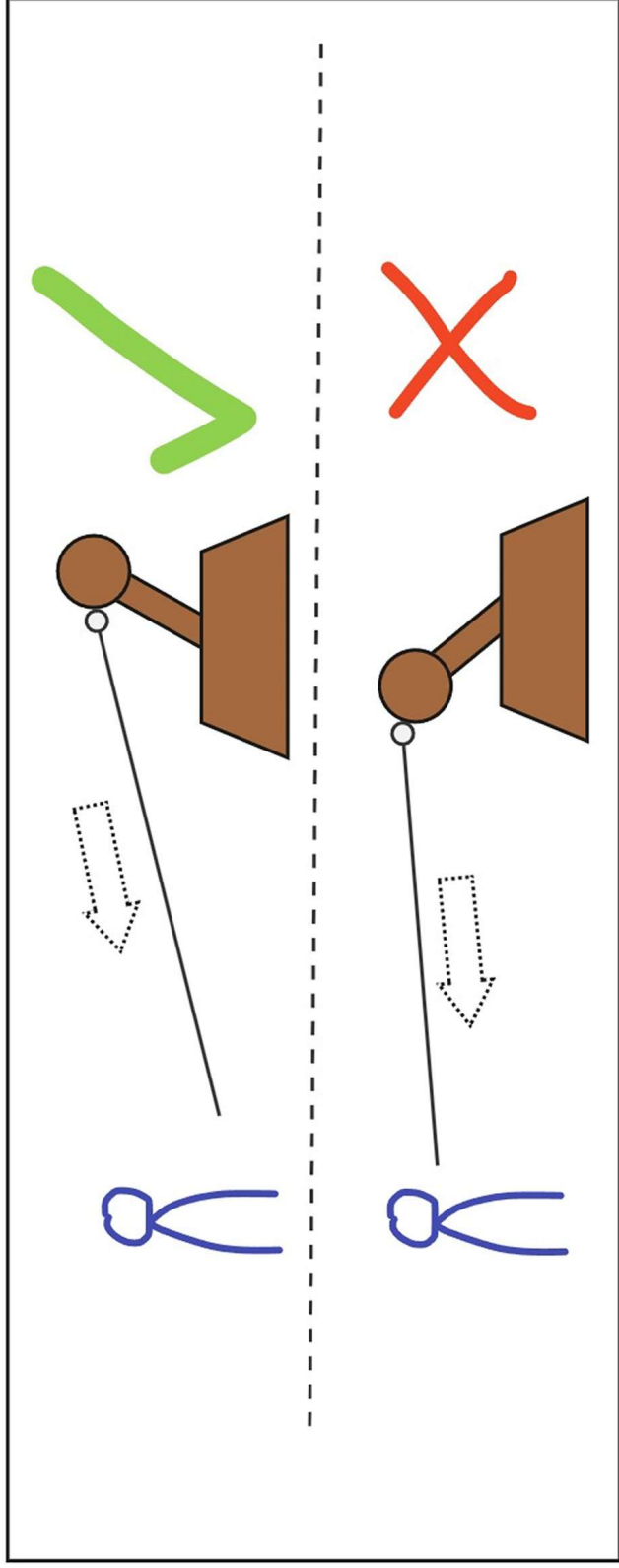
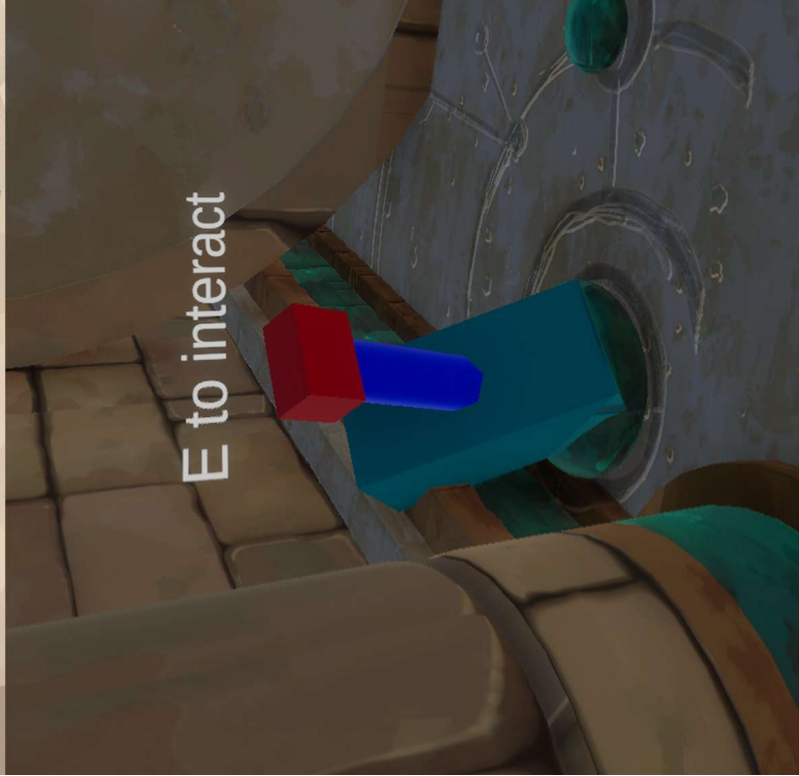
INTERACTABLES DESIGN

"Before you, blocking the path, was the grandest door you'd ever seen. Heavy, hulking and ominous. Cold to the touch and inscribed with language you couldn't read. Based on scratches, dents and several blood stains you weren't the first to encounter this obstacle and clearly it didn't intend to let you through either. High above you in the middle of the door you could make out three large sockets waiting for something... Whispering into the damp room. Was it a door? It almost seemed more like a vault or prison gate."

Throughout the game several interactable elements such as levers were placed to create progression, unique moments and variety.



8 INTERACTABLES - GAME DESIGN



miro

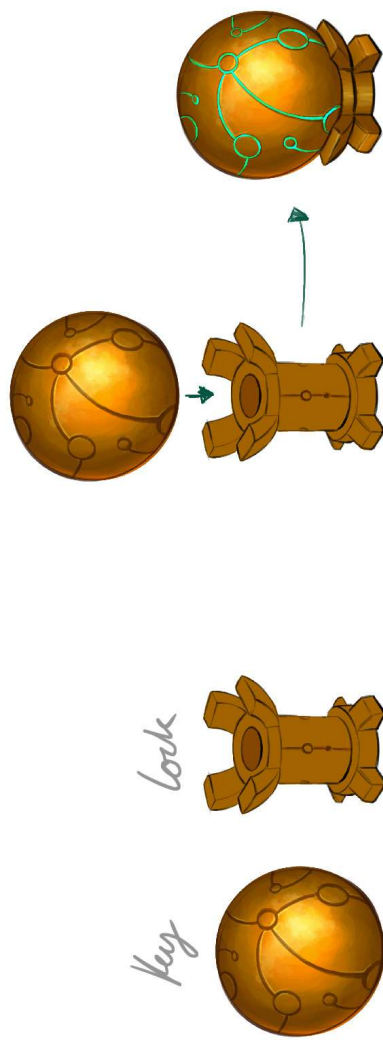
The goal was to ensure that interactable objects had interesting behavior, even something as simple as a lever.

We imagined scenarios such as pulling it with the hook, swinging from it, what if the lever itself moved and more. Then designed it to accommodate most scenarios.

An early idea for added decision making was for the hook to only activate levers if used within correct angle. This could lead to more creative player paths to optimize angles and speedrun times. However in reality it would probably lead to frustration for most players and require us implement audiovisual feedback on that behavior as well as making the lever design more readable from a distance.



Beyond pulling levers we attempted to make finding them more interesting by implementing a type of wire (starlinks) that both showed the lever and what it activates while providing satisfying audiovisual feedback.



Other interactables include:

- Turnable puzzles
- Proximity plates (activated by flare, player or other entities)
- Carriable doorkeys(that restricts tools while holding)

8 INTERACTABLES - GAME DESIGN

The starlinks allowed us to create some rather compact and confusing maze-like level design as the player always had a breadcrumb trail to follow. Even when obscuring it slightly with fallen debris.

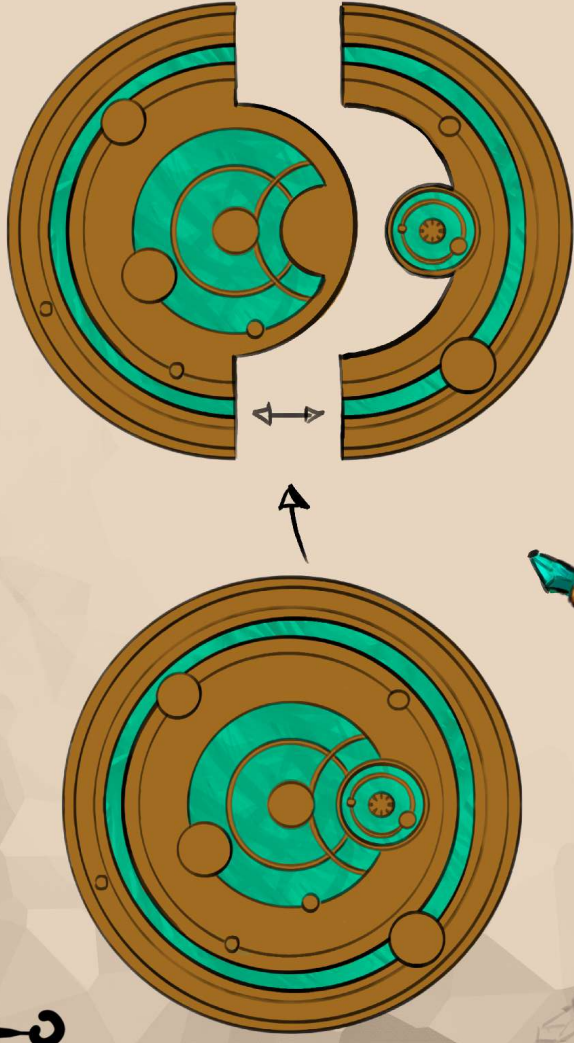
For every large area or zone in a level we made sure there was a main path to progress (lever to open door), a shortcut for skilled players, objects to break, a fragment and gold to find as well as environmental storytelling areas hidden near the main path.

Pots were added as a satisfying interactable that the player could break for a chance of acquiring gold. These were scattered around levels as rewards for players who explored nooks and crannies.



8

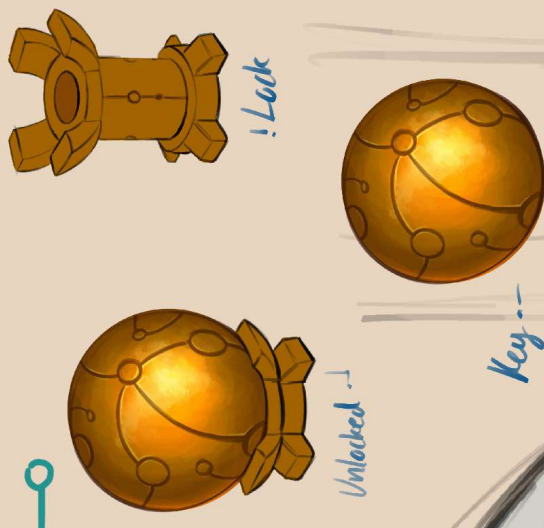
INTERACTABLES - VISUAL DESIGN



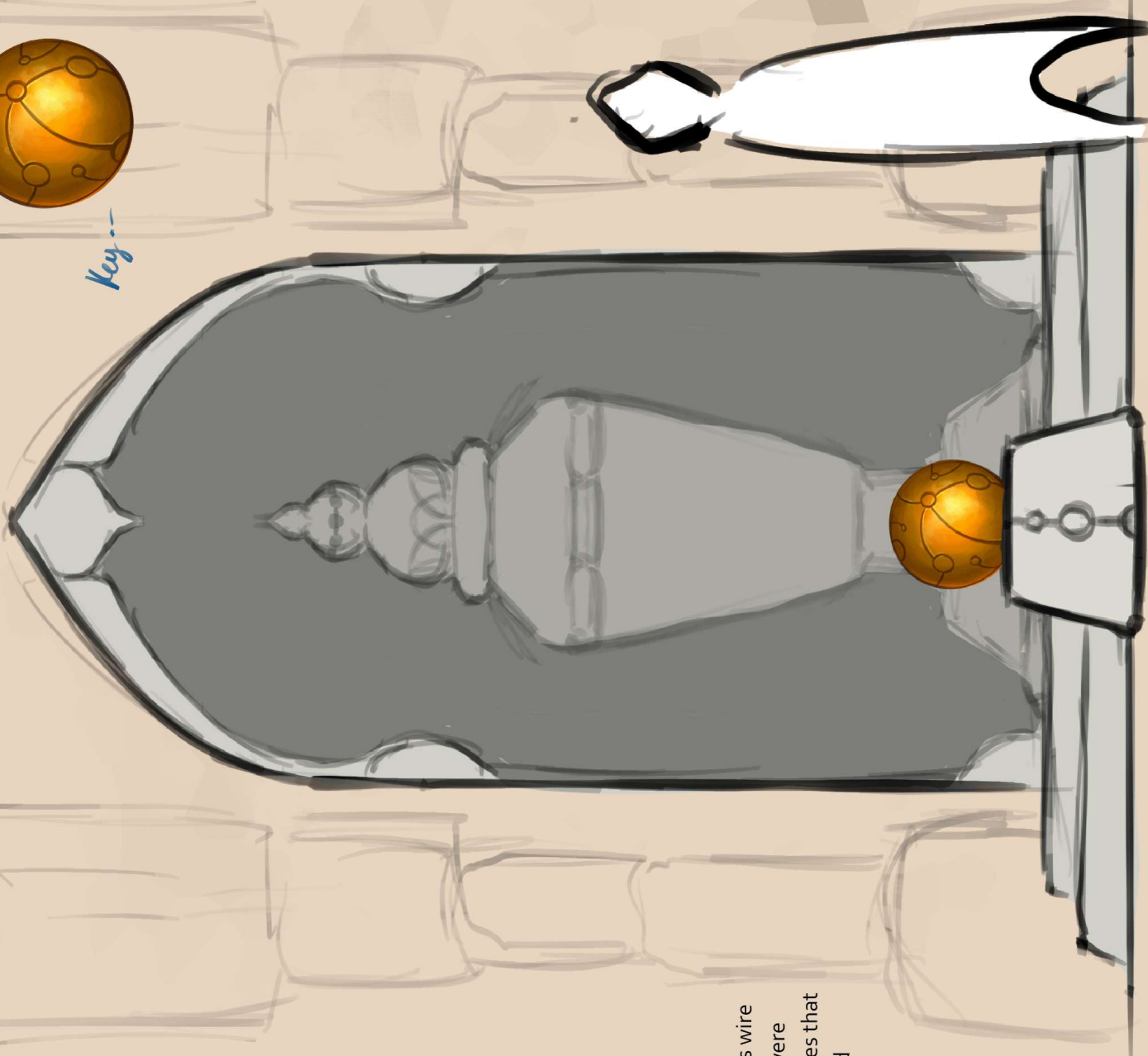
The visual design for the door, lever and starlinks were inspired by constellations. To make the relationship between lever, door and starlink clear, they were designed with the same shape language and materials, and to provide feedback they were given emission that turned on as they were activated.



The starlinks that acted as wire between door and lever were designed as modular pieces that could easily be placed and changed around.



Although it didn't make it into the game, the idea for the visual design of the carriable key was small planet like balls, still leaning into the shape language and materials of the normal door, lever and starlinks.



8 INTERACTABLES - SYSTEM DESIGN

The core of the interactable system was made out of 2 main components from which other components can inherit.

Activators: Are triggered by the player or by a physics interaction. They hold a list of targets which should be activated upon interaction.

Activation Targets: They impact the world through different actions. They are activated by the Activators.

ActivationLock

GUID

Script

Activation Type

Activate Target On Completion

Activation Process Complete ()

Runtime Only

Prefab_Door_c

Door.Activate

Activation Process

Element 0

Step Activator

Is Validated

Step Activation ()

List is Empty

An activation target can be locked. Requiring one or more specific activators to be activated by the player.

All Activators were made to have a list of activation targets which they should trigger upon activation.

Lever

Script

Activation Targets

Element 0

Handle Transform

Activated Rot

Not Activated Rot

Start Activated

Rotation Speed

Time Before Activation

Lever Pull Sound

Is Locked

Starlink (Script)

GUID

Script

Door

Script

Start State

Single Cycle

Only Opens

Only Closes

Animation Settings

Animated Body

Animation Open Time

Animation Close Time

Anim Open Speed Multiplier

Open Speed Param Name

Anim Close Speed Multiplier

Close Speed Param Name

Anim Trigger Open

Anim Trigger Close

Sounds

Door Open Sound

Door Open End Sound

Door Close Falling Sound

Door Close Impact Sound

Examples of activation targets.

ACTIVATION TARGET

8

INTERACTABLES - SYSTEM DESIGN

The interactables system also includes components that react to the activation or deactivations. These components require an Activation Target to be on the object. They allow designers to only add the needed behaviours.

ActivationListener

GUID

36d7a966-c67c-469d-bd1a-b2dc7c512fbc

Script

ActivationListener

Activation Targets

Listen To

Prefab_Starlink (3) (Starlink)

Listen To Activation

☒

Listen To Deactivation

☐

Listens to activation and activates other targets.

DeactivationEvent

Script

DeactivationEvent

Activation Target

Prefab_Starlink (3) (Starlink)

On Deactivation Complete ()

List is Empty

Plays a unity event on deactivation.

REACTION COMPONENTS

ActivationEffects

Script

ActivationEffects

Activation Target

Prefab_Starlink (3) (Starlink)

Activation Sound

SoundClip_Starlink_Lightup (Sound Cli

Activation VFX

VFXClip_Starlink_Lightup (Visual Effect

Has Offset

☐

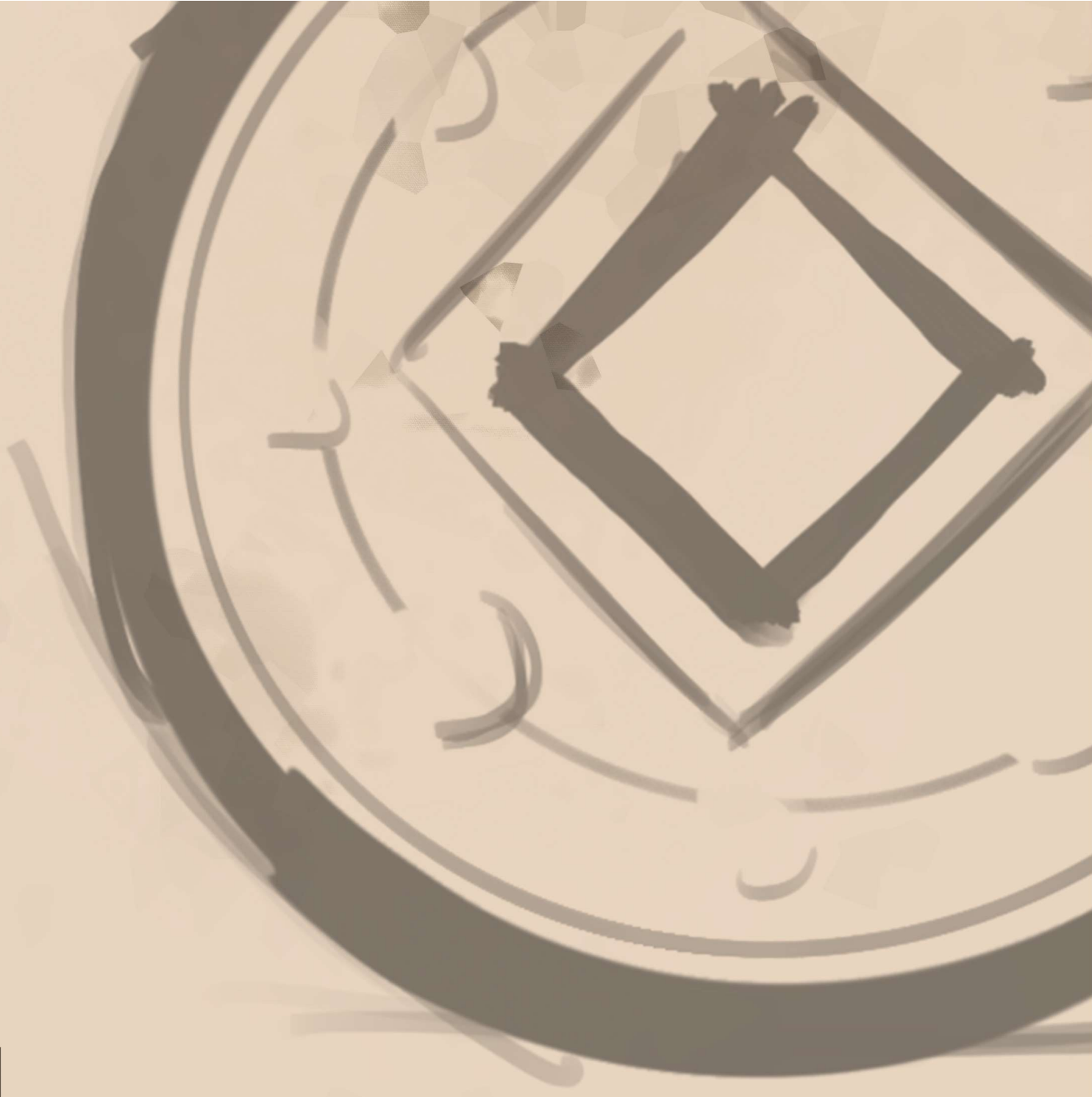
Alignment

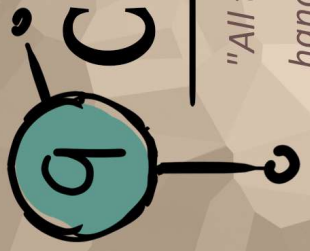
Local Up

Spawns VFX and plays sound effect.



COLLECTABLES

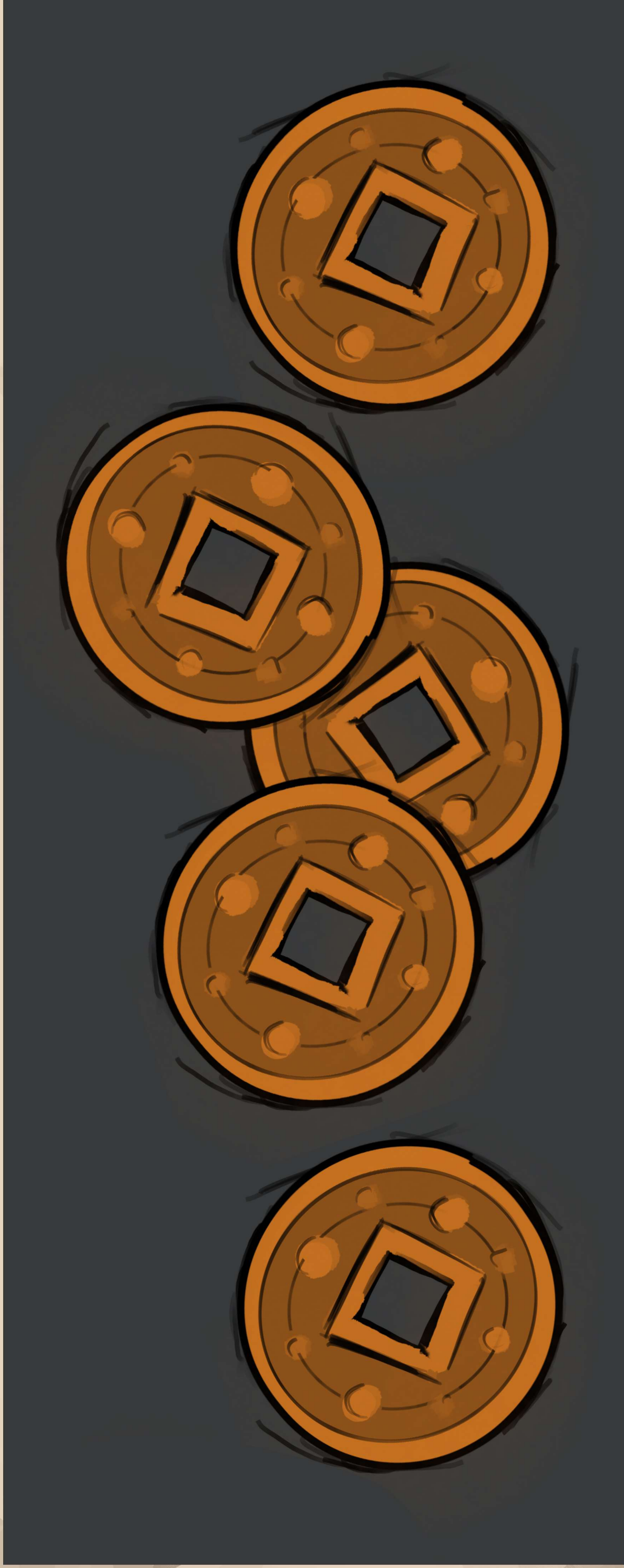


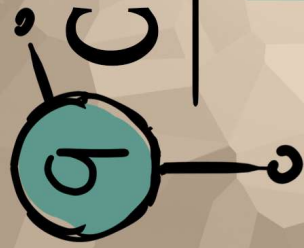


COLLECTABLES DESIGN

"All the fragments snapped together like magnets and formed some grotesque totem in your hand. Pulsing with energy a surge of power overwhelmed you elevating your senses and heightening your abilities. This was unnatural yet alluring and while you felt more powerful it was clear that this thing still contained a great evil."

As a token of immersion, gameplay, and atmosphere, some objects in the world can be collected by the player. Various collectables could be found in all levels, all providing different rewards.





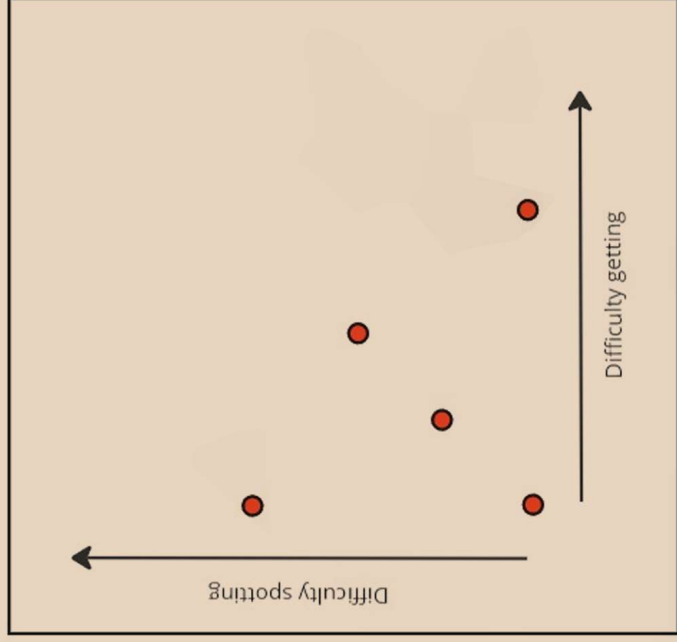
COLLECTABLES - GAME DESIGN

As a challenge we attempted to make collecting crystal fragments the primary goal and motivation for progressing in the game (beyond simply completing levels).
This was initially a problem because they didn't provide an immediate feedback on their purpose.
By showing fragment progress in the hub, between levels and at the end we reinforced the importance and by playing voice line exposition we established the fragments as the collectable that defeats the being who cursed you.

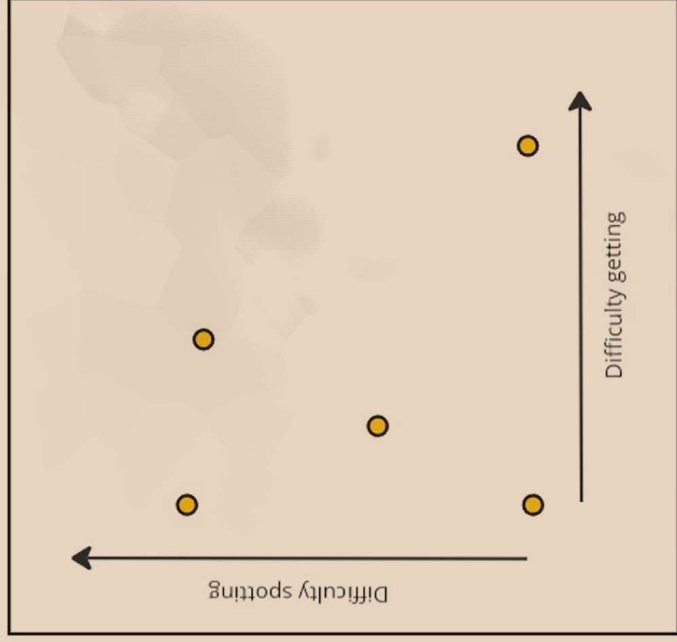


Collecting things have an inherent satisfaction, especially when combined with juicy audiovisual feedback. On top of this we distributed fragments throughout levels based on two parameters: difficulty spotting and difficulty getting to.
This allowed some variety on whether they required exploration, mastery or a bit of both to collect.

Level 1 (Garden)



Level 2 (Library)



Level 3 (Bridge)

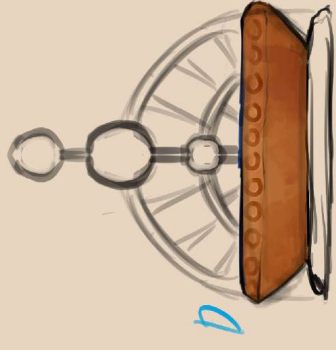
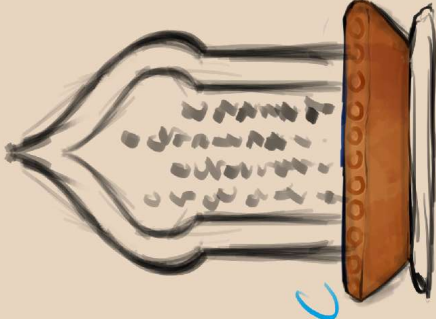
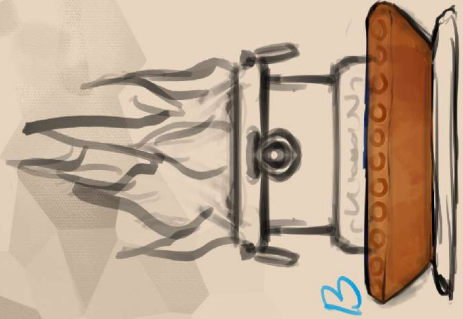
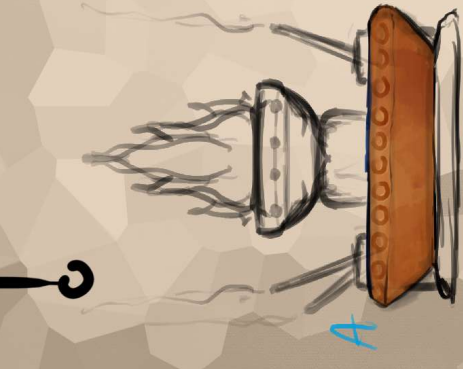


To follow in the path of most modern games and to remove unnecessary frustration we made sure you could collect coins by walking through them.

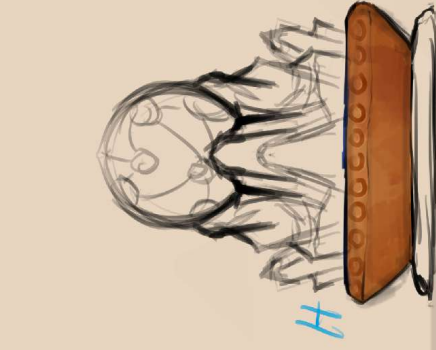
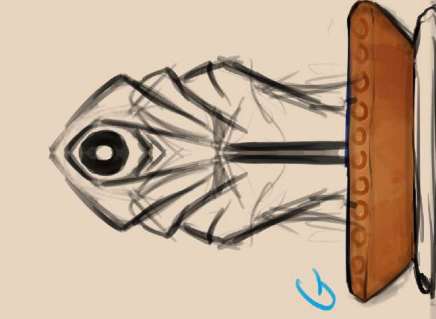
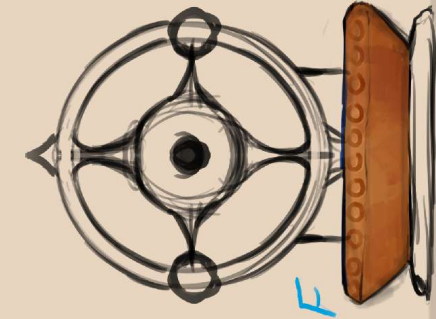
Although we never got around to giving it a gameplay purpose, coins were added to the game as a collectables.
Picking up the coins would mean the player was stealing from the temple, feeding the feeling of being a greedy treasure hunter.



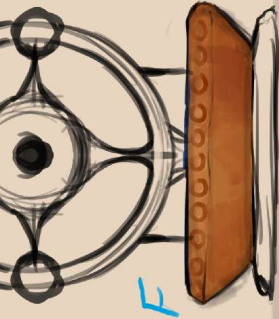
9 COLLECTABLES - VISUAL DESIGN



The "coins" design were inspired by constellations to tie them into the temples overall feel. While they resemble coins, the original intent was for them to be valueless tokens, offered to the Old God in the temple as a sign of their devotion.

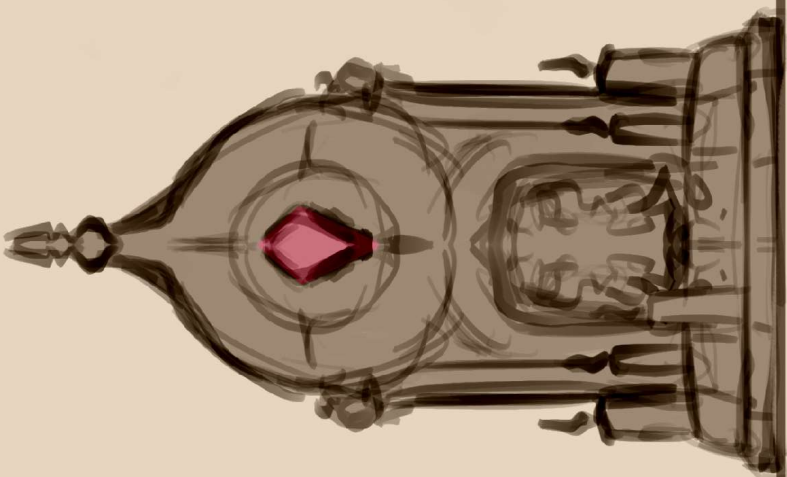


While the coins could be found in various places around the temple, an offering bowl was designed to give them a designated place where the player could always find them
The offering bowl was designed as a small altar to lean into a religious feeling.

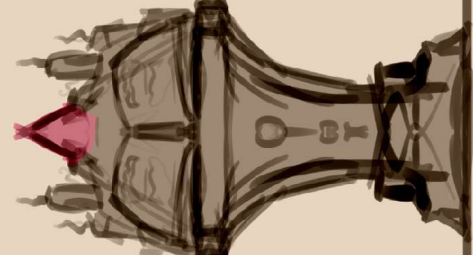


For the location of the crystal fragments a number of prop designs were explored.
With these designs we were trying to figure out how easy it should be to spot the fragments, playing around with viewing angles of the fragments compared to the size and openness of the prop.

Shrine



Spell Station



Altar



Pedestal



Random Places



9 COLLECTABLES - SYSTEM DESIGN

By adding this component to an object, it can now be collected. This component deals with the player interaction, independently from what is being collected.

#

Collectable (Script)

?

⌵

:

GUID

91989b72-764a-4027-9cad-39d3fd8a138f

Script

Collectable

Behaviour

Collect On Trigger Enter

✓

Collect On Interaction

✓

Detection Events

Valid Trigger Tags

1

Player Trigger Name

PlayerTrigger

COLLECTABLE COMPONENT

#

Coin (Script)

?

⌵

:

GUID

8805bfdc-d7aa-439c-96cf-f47eb2b55a1e

Script

Coin

Behaviour

Coin Amount

5

SFX & VFX

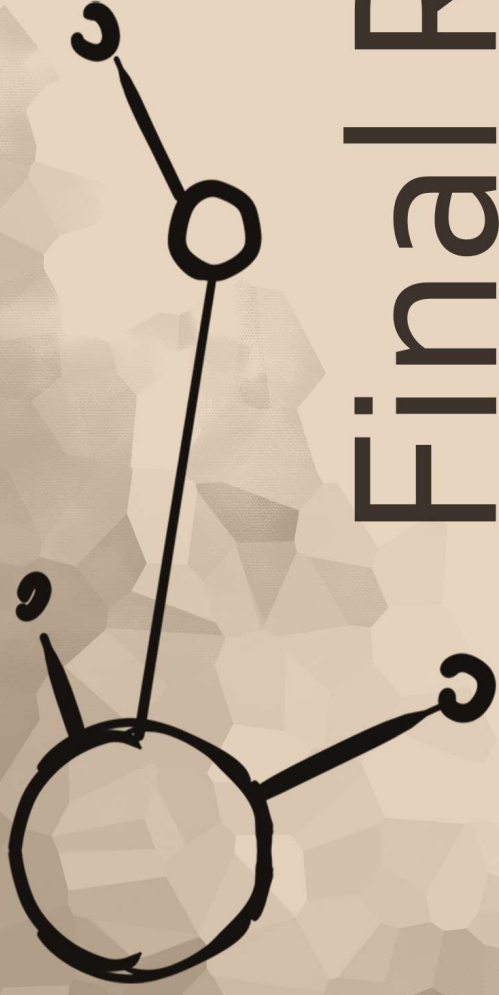
Pickup Sound

SoundClip_Coins_Collect (Sound Clip)

Pickup VFX

VFXClip_Coins_Collect (Visual Effect Clip)

Specific components such as the Coin component can hook themselves to the Collectable component and react when they are collected. These specific components contain the information about the resource to provide to the player.



Final Remarks

“The pinnacle of game design craft is combining perfect mechanics and compelling fiction into one seamless system of meaning.”

— Tynan Sylvester, Designing Games

Thank you to the team and to the people who helped us make this game come true. While it never quite ends up how you envision it, Delve exceeded our expectations in many ways. It was a fun and challenging journey, and we leave it much wiser.

And to the reader of this book, thank you for your time and interest.

From the Delve team.

