GAME DESIGN DOCUMENT

Working Title: Zeph

A puzzle exploration game by Eoin Ahern, Hazel Smith, Patrick Kelly and Ryan Higgins

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Chapter 1 GAME OVERVIEW

Elevator Pitch

Zeph is an isometric puzzle exploration game where the player uses different powers of the Sun to solve puzzles in a world where parts of reality are distorted. Explore the natural world around you, alter the environment systemically and find the path to return home to the Sun.

Concept

Zeph is an isometric puzzle exploration game where the player uses the different powers of the Sun to explore and interact with the environment systemically while solving puzzles. The player will come across areas of the world that are Cosmic Distortions, in which objects and scenery will be distorted, with the likes of rotation in landscape, twisted & bended scenery, visual & colour distortion and other warped aspects.

Player Experience & Goals

For our game, we want to make the player feel a strong sense of intrigue, importance and magic. In the environment design, we will try capture these feelings for the player. In making a natural and mystical forest setting, we want to emulate that feeling of wonder and whimsy using glowing features for both the scenery and player. With being able to harness the powers of The Sun, we're aiming to make the player feel important with how they're able to use their powers to interact with the environment and how they need to fix the distortion of the world.

The aesthetic is extremely important in our game and we want to make the player feel fully immersed. Through systemic design of the powers and the freedom of being able to approach the game's puzzles in any order, we want players to experiment and feel they have more freedom in exploring the world. With the hub area, we want the player to feel like they have opportunities to relax and to freely explore at their own pace.

Genre

The genre of our game is isometric puzzle game with exploration.

Target Platform

The current target platform for our game is PC. We aim to release on Steam and Epic Games Store. In terms of aiming for additional platforms such as mobile, switch & console, we feel that given time our game could be ported to these platforms, but that process would be beyond the scope of this project and would take vital resources away from the development of the core game.

Target Audience

The target audience for our game are players that fit into either the achievers and explorers' archetypes.

As a puzzle game, we want achievers to be able to enjoy the puzzle design in using the Sun's powers in approaching the solution. Puzzles will need to be solved by combining aspects of the powers, as well as considering the Cosmic Distortion rifts that can alter the rules of the game. As such, we will have established rules for the design of the puzzles (Size, how many powers, etc).

With the pseudo open world nature, we want to target fans of exploring too. We want to tell the story through runes that the player must find separately from solving puzzles. The hub area will allow for the player to explore freely and discover aesthetic scenery. Cosmic Distortion in areas can also appeal to explorers to see how the world has been changed and give them incentive to explore the new developments.

With our game having no hostility or violence, there isn't as much concern for a strict age rating. As such, we feel a PEGI rating of 12+ is suitable for our game. The reason it isn't lower is due to the nature of our puzzles having levels of difficulty which may not be as accomplishable by younger ages. In a general sense, we feel that ages 12 to 40 would be the age demographic of our game when looking at statistics for PC games.

CHAPTER 2 DESIGN

Regarding initial design, we all shared a common goal of designing a more relaxed style game with a focus on aesthetic, exploration and puzzles.

Gameplay Design

Regarding initial design, there was a common ideology in the team towards making a game that felt more relaxed with a goal of players not having feelings of adrenaline or urgency in completing tasks, but rather an experience in which players could take their time and play in a more relaxed state.

Powers

The player will be able to use 3 different powers in order to solve puzzles. These powers are: Solar Light, Solar Flame and Solar Orbit. In terms of how the powers work, they function as a circular radius around the player. Solar Flame is the closer radius, Solar Orbit is the in-between radius, while Solar Light is the further one. To activate this power, the player presses the button to cause a pulse of solar energy to radiate out from the player and affect things within the environment. This activates all three powers at once.

Solar Light -

In Zeph, Solar Light is used to explore your surroundings, simply by lighting your way and showing you the scene. While your character will always have a glowing aura, Solar Light will further increase the range of vision you'll have in darkness, as well as a method of solving puzzles. With Solar Light, you can grow different plant life in order to form new pathways or platforms for the player to progress. Solar Light is also used to power any ancient machinery, resulting in powering sections of the level such as moving platforms, doorways and access points. It can also be used to bring aspects of the world back to life.

Solar Flames are the other Sun based power that can be used. This flame power is used in order to burn through various environmental aspects found in the scene, ranging from different overgrown plant life or lighting torches as a burning source. This power's focus is to help remove any obstacles in your path, acting as a power to compliment the life bringing aspects of the sunlight. The idea of this is to have both the ability to give and take away life from the nature around you, giving the immersion of your character being a cosmic force.

Solar Flame

The Solar Orbit power would enable the player to pull objects towards them using gravity and float around the player in an orbit, like how the planets obit the sun. Also, when the button is pressed, it launches any objects that are currently orbiting out in the forward direction they are facing from the player. There would be a max limit of three objects orbiting a player at any one time.

Solar Orbit

Alongside this, the player can use Solar Orbit to pull down trees or cracked pillars which can act as bridges. Depending on the object size and state, it will determine if the player can use it in their orbit or not (A rooted tree or a large pillar cannot be picked up, as opposed to a ruin block, log, or small boulder).

Cosmic Distortion Rifts

While our three powers do enable for good puzzle design, it's still simple mechanically for a puzzle game. As such, we needed a way to flesh out level, gameplay and puzzle design as well as a strong Unique Selling Point. In designing various methods, we decided on a concept of Cosmic Distortion.

In exploring the world, the player will find rifts which appear as a tear through space. Moving into these will alter factors of the level, which changes the design of the level and adds more lateral thinking. These cosmic distortions can only occur when the player interacts with the portal. These interactions can vary depending on the area:

Object Distortion – Objects of the world can distort in shape and change drastically in appearance. Examples would be a tree which will start to bend and curve in a horizontal growth or the shape of a flat cliff face bending towards the player to allow them upwards onto it. This also allows the bending of spaces between gaps, allowing players to cross or reach new heights.

Camera Shifting – Some Areas when the rift is used will cause the world to rotate to a different angle. This causes a change in the controls as the perspective is now different, as well as objects and powers behaving regarding what perspective it exists in.

Changing Rules – There will be times where objects will behave in peculiar ways when activating the rifts. This includes aspects such as linked objects, where when one plant grows, the others would shrink, as well as objects disappearing depending on proximity or if you are looking in their direction. Some objects overall physics rules may change, such as immovable blocks or already floating objects.

Powers Influencing Each Other

While we have different powers the player can use, we found that if players are just using one power after another to take on a puzzle piece by piece, it will make the experience too easy regarding the achiever type of player who won't feel as challenged by the puzzles. While the mechanics may be solid, it still will feel more like a step by step game rather than exploration of how to solve the puzzle.

As such, following our system design mantra, we decided instead to have powers interact with one another in ways that the player would need to learn in solving puzzles. With the unlimited use of the powers, players can naturally figure out what could happen when using different powers and how they could combine in order to solve puzzles. Listed below are some examples of use:

Solar Flame & Solar Light – Some sections will require the player to burn away overgrown ivy, however the ivy itself is unreachable by the player themselves. The

player may have to first make a plant grow before igniting the plant, which will cause a chain reaction to the ivy and burning that. This will be able to help the player get by barriers in which they're unable to progress to.

Solar Flame & Solar Orbit –

Combining Solar Orbit with the Solar Flame can allow the player to ignite objects that have the ignite property on them (logs, plants, etc). The player can then use the force momentum from the orbit in order to shoot the flaming objects across an area they can't reach in order to ignite something out of the player's immediate reach.

Solar Light & Solar Orbit –

There will be certain plants that when the player grows with the Solar Light, they can then use the Solar Orbit to pull it in closer and move it to a desired location. This also is determined by the type of plant and how it's interacted with (small shrubs can be picked up with the Solar Orbit, while larger trees can be knocked down as a pathway for the player).

Cosmic Distortion & Powers –

The Cosmic Distortion will affect how powers are used depending on the Distortion that occurs. Rotation can cause a change in gravity in relation to objects the player interacts with, as well as how bending of assets within the scene will affect how powers now interact with those (flames will burn in relation to the deformed assets shape). As well as this, it will affect some rules for objects such as light being used to grow a plant can make the other plants in the scene shrink or only being able to set objects on fire if you face away from it.

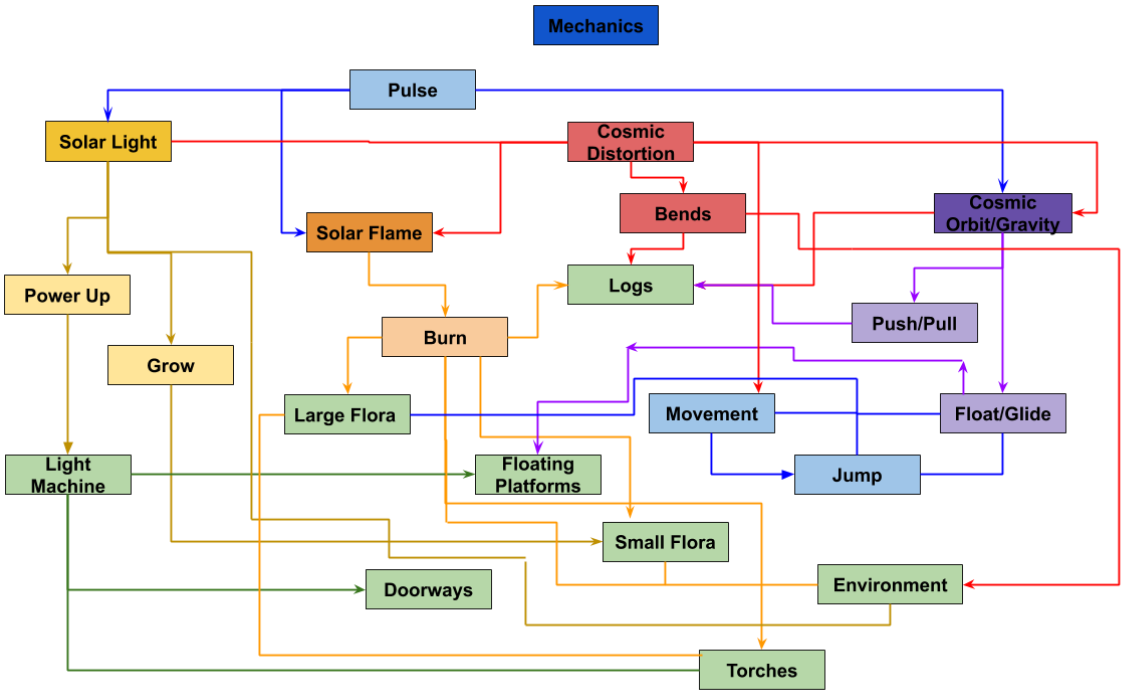

Fig 2.1: Mechanics Tree of interacting objects/powers within game.

Level Design

Designing the levels did require a lot of discussion and we had to make sure everyone was on the same page. While our first iteration was to make a linear room to room puzzle solving game, it took away the ways to explore and felt very limited. As such, we decided to approach the area design of sections in a freer exploring tone, with pseudo-railroading the player into exploring and progressing.

The first area you start in will be a tutorial level with 3 puzzles, introducing the ideas of how each power works in its respective field. Leaving the starting area will bring them to the first interaction with the Cosmic Distortion Rifts. This will show them what interacting with it looks like and how it interacts with the player. This is will focus as a stronger aesthetic set piece to give a strong and lasting impression to the player.

When they leave, they will enter a hub area, from which the player can access the altar in the centre, only to discover they need to repair it by claiming the crystals in the separate areas surrounding the altar. Players can only enter these areas by solving the related puzzles in the hub area to open the doorways, both marked clearly by the same rune symbol. This gives the player a freedom in how they approach the game and when

they complete an area and claim the crystal, the other area puzzles will increment in difficulty.

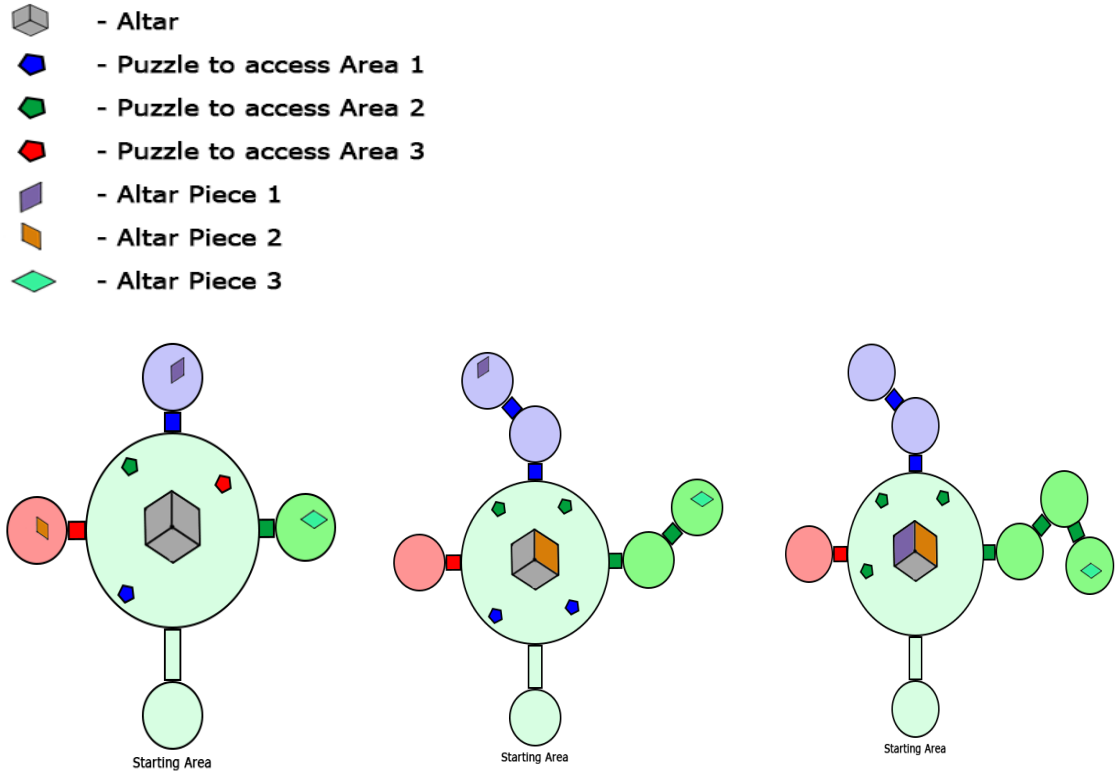

Fig 2.2: Example approach of a player – First they obtain the orange crystal from the red area, then the purple one from the extended blue area and finally the cyan one from the even more extended green area.

The gameplay is isometric view where the player must complete an area before advancing to the next one. The camera will always be at the same range and angle and will only move if the player moves towards the edge of a larger area. Such examples of the isometric level design in puzzle games we took inspiration from include he likes of Monument Valley, and Lara Croft Go with Bastion also helping in designing isometric gameplay from a non-puzzle game perspective. These games give a good indication of designing levels for isometric in terms of what is viewable or obscured to the player, as well as approaching how to add height to an isometric environment.

Cosmic Distortion Rifts will allow for a different level design for different puzzles planned. It can serve to make an aesthetically and more intriguing puzzle layout and design as it changes the first impression a player would have in entering an area. Previously mention aspects like changing the level rotation will help make these levels and puzzles more interesting.

To go alongside the exploration, there are optional Etching Runes the player can come across. Interacting with these will allow for the player to explore into the story of the game, designed through visuals and an ancient language, hinting at more of what is going on within the game's world. These only serve as optional goals for players that are interested in the story and lore of the world. The player will be able to find these in puzzle areas or the hub, usually by solving a separate puzzle to reach it. Ways of indicating how it's not related to the main puzzle in the area is separating it using environment parts (Trees around it indicating a separate clearing, dividing it using a river).

Our goal is designing a game in which the player can approach in different ways, not just forcing them down the one path but dividing up how they can reach the end. We aim to have the puzzles also increment in difficulty, either by adding additional factors in a puzzle to solve or changing up the puzzle entirely.

Systemic Design

Zeph is a Systemic game. We wanted everything to be modular and work totally independently of the player, everything interacts with each other depending on the properties that they have assigned to them. Obviously, the payer will cause most of these changes, but we still wanted it so that regardless of if the player was involved the system would still function. We thought this would make puzzle design more versatile and easier to create in engine. This includes both the main puzzle mechanics of the game as well as the little interactions that occur within the world.

The idea is that each power the player has will interact with the environment in different ways, not only serving to solve puzzles but to also have these influencing aspects of the environment around them. Using each power does add to this aesthetic change and feel: Using light around grass will grow flowers, using flames will singe the ground and Orbit will cause grass and leaves to blow around the player as well as showing grass pushing in the direction on the ground. This doesn't cause any change to solving puzzles, but it adds that extra juice to the game to make it feel more alive. For example, if the player uses their solar powers and a plant is created and blooming, we hope that the player would approach the flower and possibly use their solar powers again, which would light the flower on fire and destroy it, creating immersion.

We hope this immersion in the game world will create a connection to the character on a deeper level. Having the player respond to having created something unintentionally, only to then destroy it after wanting to examine it again. This immersion will help connect players to the game world also, making them think about their actions and the possible results for them, hopefully this will encourage experimentation and lateral thinking within the puzzles. This allows for players to really feel like their decisions impact the world around them, even if it doesn't play a role in the story.

Regarding Cosmic Distortion, it will cause a change in visual appearance when one of the Rifts is activated. The effect we want to emulate is a distortion filter for when distortion is occurring, ranging from a difference in colour tone as well as a bending in the game's camera view, like different camera filters (Fisheye, Barrel, Pincushion, etc). This gives the impression of an objects form changing in shape and size visually, but it still has its original state. This adds for the extra juice within the game.

Puzzle Design

In designing puzzles, we wanted to establish several rules and factors for how they should be designed. We wanted to ensure we have a clear idea in how to make our puzzles and ensure none of them stand out from others. As such, we also looked towards other puzzle games as inspirations and how their puzzles are solved, what factors do they use in their puzzles and the overall presentation of the puzzles. This also meant looking into aspects for how distortion could play into solving puzzles and how different medias have created distortion in their aesthetic and visuals.

Puzzle Philosophy

For researching puzzles, we investigated various puzzle games and how they design their puzzles. The main result of research was finding out, that designing a puzzle is easy, but designing a good puzzle is difficult.

While it's easy to design a level where the player pushes a box to a switch to open a door, it doesn't feel satisfying as the player doesn't need to think and the solution is

laid out to them. In terms of designing a good puzzle, there are various aspects to explore:

Not Overcomplicating – A tough puzzle can be made with several moving parts to it, where each part the player must use in order to complete it, but it makes the puzzle more frustrating to finish and makes the player irritable. It is possible to design difficult puzzles with not many components to them, but still requires the player to think. Limiting the amount of interactable objects they have within the scene or adjust the level size in according to interactable placement can help with making what seems important to the level and what isn't.

Presenting Similar Concepts – Connecting to the previous point, you can still design a difficult puzzle following the same concept you once had. Typically, ways of making a puzzle more difficult is changing the order of how you go about it and misdirection. If the puzzle you have still involves fire elements as the last four did, you can tell you have to still rely on it. However, the layout can change where the flame element is now being obscured by another step the player needs to take.

Think Laterally – By thinking outside the box, it gives more substance to the puzzle and makes the player need to expand their thought process. Players can enjoy a puzzle more by expanding their thoughts on how the puzzle works, without adding too many new moving mechanics. This also ties into how the Cosmic Distortion can affect gameplay. You still have the same powers, but now you need to apply them to a new logic and layout. A puzzle where you light a flame in the centre of the level by walking over to it is easy but applying how to now reach that when your character is walking on the walls instead means the player needs to move out of the inside box thinking they had.

Design Rules

Regarding the limitations to designing puzzles for Zeph, we wanted to establish rules in their designs that when creating them, we could ensure that all puzzles follow the same design process. These designs tie into the puzzle philosophy on what makes good puzzles and how to go about making a good design, however by establishing a ruleset, it allows us to have a guide to refer to for design.

Interactable Limitation – With a focus on powers interacting with aspects of the scene, we don't want to overwhelm players with several different assets to solve puzzles as it could be jarring, and the player would feel overwhelmed with how many pieces of the puzzle there are. As such, we feel it could be better to have a cap on the amount of interactable puzzle elements the player could find in the scene. This is helped with systemic design as that gives us that immersion impression we're going for due to having not as many puzzle assets the player can interact with. Similarly, we want to limit the Cosmic Distortions to two kinds per section as any more would make the abnormal nature seem normal to the player.

Establishing the Powers to Use – We will have to ensure an understanding of how many of the player's powers need to be used in different sections. This means identifying when players should be using powers. While we want to allow the player to be freely able to use the Solar Pulse whenever they want, we don't want every single puzzle to need the use of each power form the pulse. Alongside this, we don't want every puzzle to have interference with Cosmic Distortion, as the more abnormal feature of our game becomes the norm for the player to solve.

Height – There needs to be an understanding on if there will be height factors in certain puzzles or not. This can allow us to refer to what assets we should use if we're building a puzzle with height or not. This is also a requirement as the isometric design does need to confirm if height exists within these sections.

Puzzle Research

Lara Croft Go – In similar designs for puzzle games we found regarding our design and mechanics, there were a few that acted as strong inspirations and influence into designing puzzles.

We found that *Lara Croft Go* uses various mechanics in order to make a great isometric style puzzle game. While our game allows free movement, we can still take influence from designing at an isometric perspective from Lara Croft's turn style movement. These puzzle use elements such a height, tools, environmental interaction and planning in order to clear levels, with our game taking a similar approach.

Factors we looked at were height and environmental interaction for solving puzzles. Elements such as cracked blocks, climbing and height positioning are used similarly in our game, with height playing a role for gliding to different sections of the level and positioning in order to use powers correctly to solve puzzles.

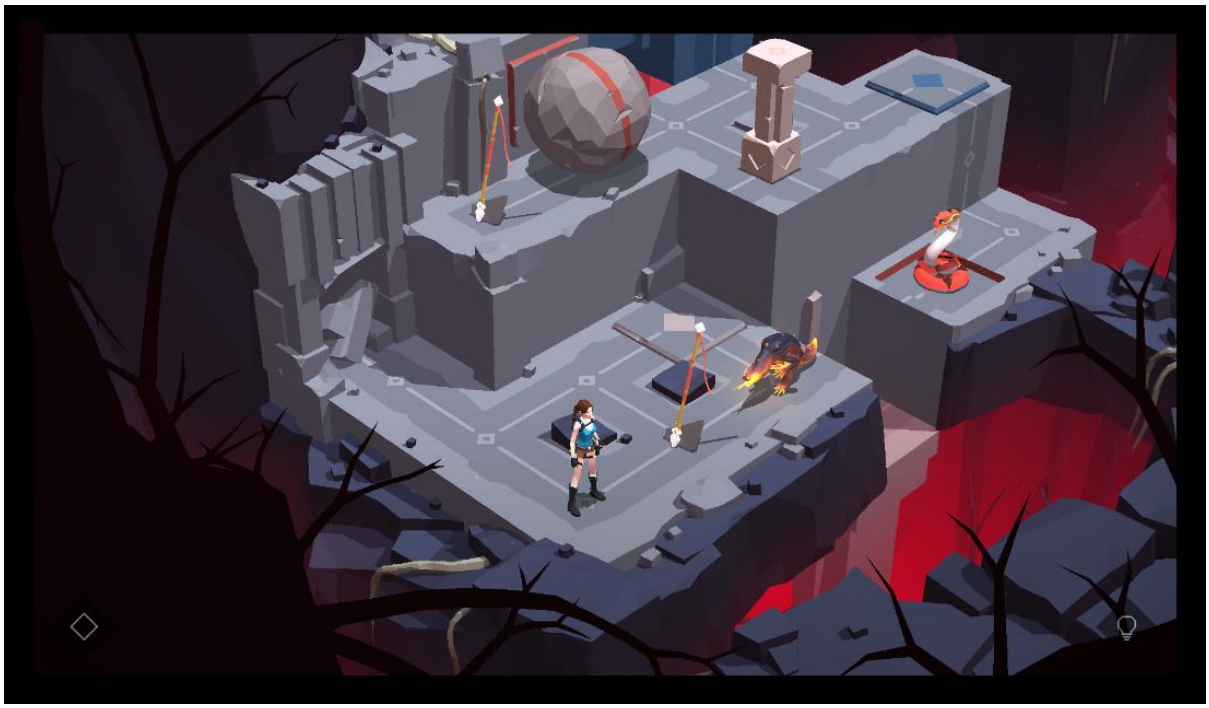

Fig 2.3: Lara Croft Go Screenshot – Shows use of tools and height in an isometric environment.

Portal 2 –

Within *Portal 2*, players are encouraged to test their portal gun and play around with it in the early levels, where players may be able to figure out various new ways of solving puzzles, such as uses of momentum. Alongside this, *Portal 2* introduces new factors to consider when solving puzzles such as light bridges, gel and excursion funnels. These factors are encouraged to be used with portals and seeing how the two elements interact with each other.

As stated, prior in the powers interacting with each other, some puzzles in Zeph will require the player to have powers interact with each other to solve puzzles. This inspiration comes from *Portal 2* and its method of solving puzzles, being element interaction. Alongside this, the player is given free control of their powers in the early levels of the game to be able to play around and test different ideas with their power, like how *Portal* 2 allows access to the portal gun very early on.

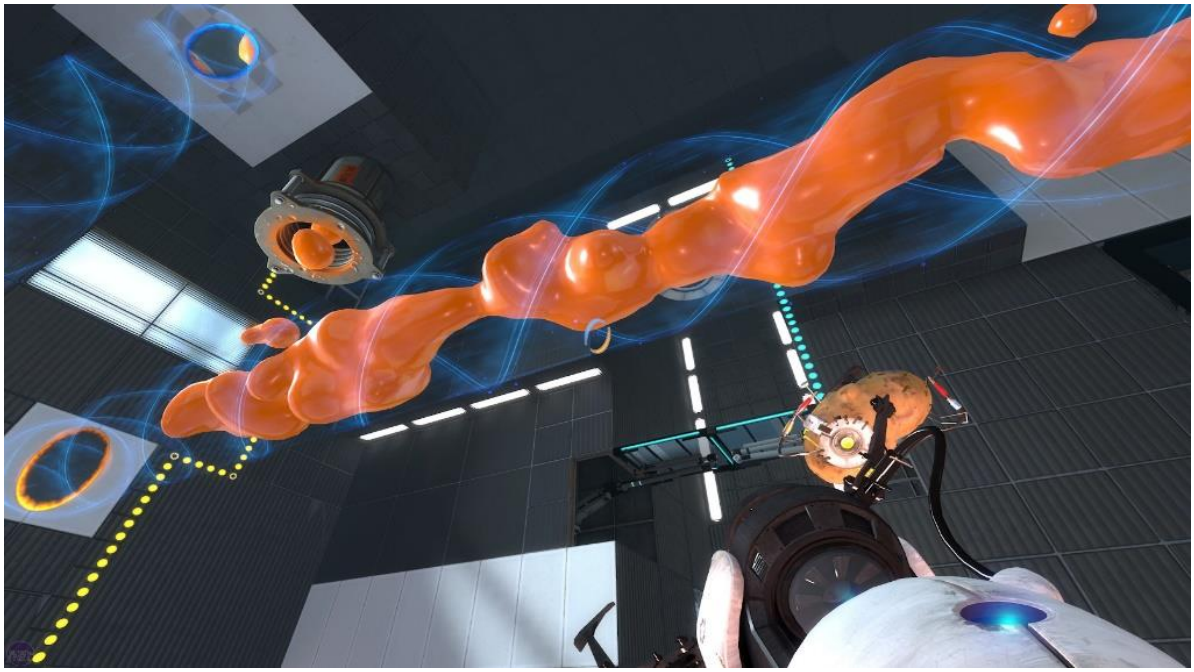

Fig 2.4: Portal 2 Mechanics Interaction – Example of gels combining with the portal gun to allow them to float across using the excursion funnels.

Monument Valley –

In *Monument Valley*, the gameplay is an isometric view like *Lara Croft Go* but what makes *Monument Valley* different is the visual distortion and perspective it gives in its level's design.

Using simple controls and mechanics, the selling point for *Monument Valley* is the emphasis on a basic level design that becomes drastically altered but doesn't overcomplicate. You can see how the level changed and can piece together how to go about moving through the level. Its design is heavily inspired by the *Escher* illusions of never-ending patterns. It really causes the viewer and player in this case to think on the layout and how the mechanics work.

While this game won't be exactly like *Monument Valley*, it still takes inspiration of visual trickery, in which the player is observing how aspects of the levels have changed in the Cosmic Distortion and how to approach the puzzle. This gives a stronger sense of gameplay to our game, as both players who enjoy puzzle games and those who appreciate a visual side of games can equally enjoy the game.

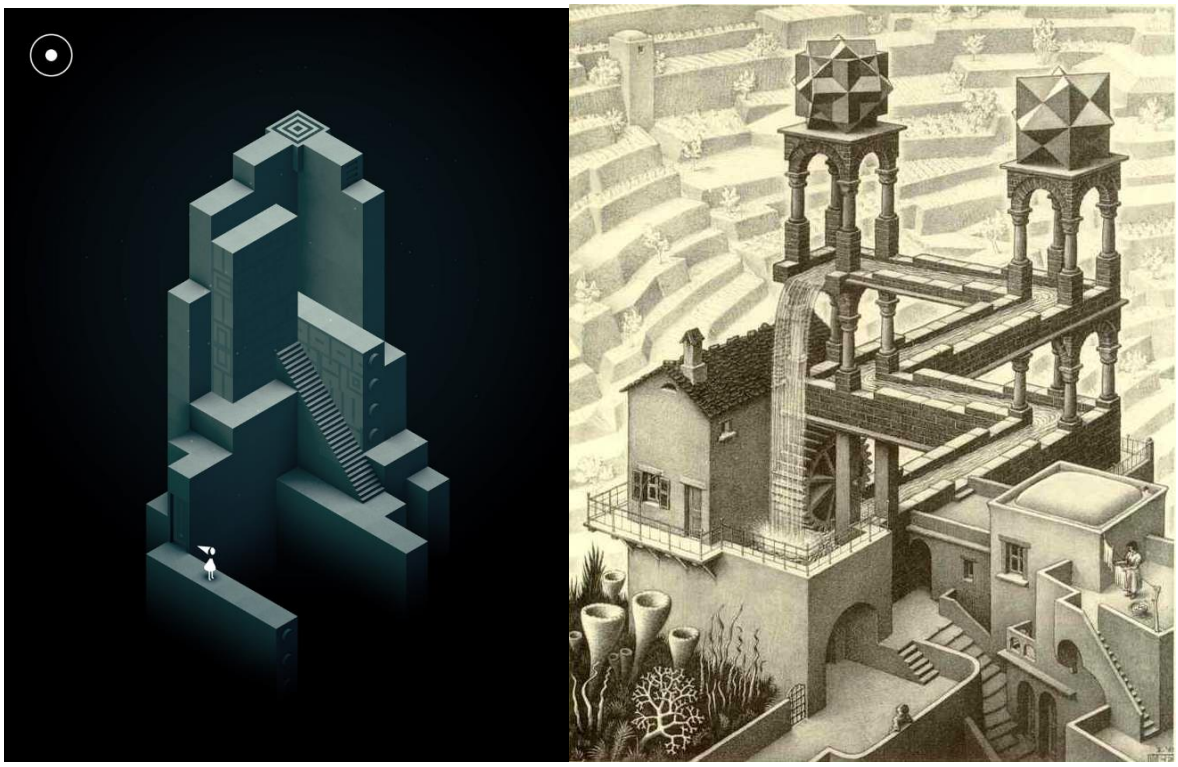

Fig 2.5 & 2.6: Monument Valley Level Design & Escher Fountain – Basic level design that can be drastically altered by changing simple layouts. Takes a large inspiration from Escher's work.

Cosmic Distortion Research

In researching Cosmic Distortion, there is a large variety of sources from different medias that have strong emphasis on distorting, bending and changing the rules of reality. These are done in visualizations or in logic in which an established order or rules has now been changed and subverted, changing the formula and to give a longer lasting impression to viewers of the medium.

We've done an exploration of different visual distortions across different games and films. Different types of distortion exist, with some focus on general landscape, unnatural and visual tweaking. We are aiming to explore these different elements of distortion, trying to make it suitable for the game and to make it visually interesting and appealing to the player.

General landscape distortion examples are the likes of *Inception* or *Doctor Strange* where the physical landscape starts to bend and warp around the characters. This type is a strong focus in designing levels as it allows us to play with the subverted

expectations on how to solve puzzles, where players would have to play at a new angle and adapt to new rules and ideas.

Fig 2.7: Distortion and Illusions from movies – Used moodboard for inspiration on designing cosmic distortions

Unnatural designs would be going against the laws of what has been established, particularly going against the rules of the media. This includes *Pokémon Platinum's* Distortion World and *Alice in Wonderland*. Both feature nature scenery that goes against typical ideas of nature, with plants growing in abnormal directions, water flowing against physics and the capability of parts of the scenery to disappear and reappear to the viewer.

Visual tweaking would be when the visuals change in animated ways or through types of camera filters. Such examples can be found in *Super Castlevania 4* (rotating room) as well as *Control* (Ashtray Maze features doors that peel apart and general level distortion and movement). These visual effects can almost act as illusionary traits to give the environment a warped style and state appearance to the player. This is to help give the impression that reality within the world would be warped and twisted.

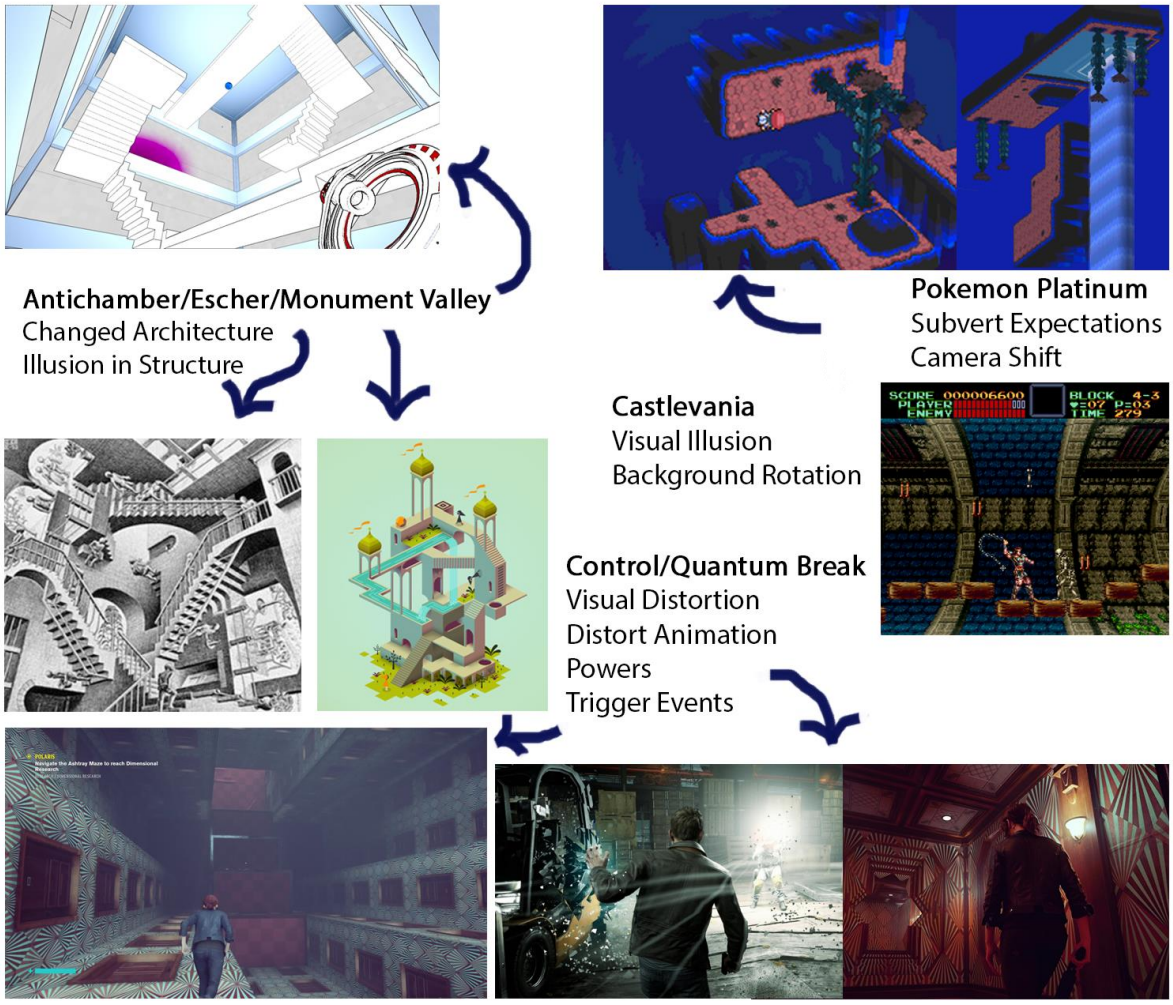

Fig 2.8: Game Distortion Moodboard – Exploring different distortion techniques used in games.

CHAPTER 3 TECH

The overall programming goal for this project is to maintain a clean and coherent code base for the duration of the project, new design features should be easily implemented without the need for refactoring or altering the existing code.

For this project another concern is performance, we want to have the ability to port the game to additional platforms if we find that we have the space within our scope later in development. To achieve this goal this game will implement unity's job system and burst compile features in performance-critical areas.

Systems

When programming the game's systems, we plan to use abstract classes and interfaces to enforce that each system follows a consistent structure which should allow all the games systems to easily interact with each other. Our current implementation of the systemic design is comprised of the interactable system and element system, an interactable component is attached to any object that can be interacted with, this then adds or removes various components based on the game objects properties e.g. a tree has the properties of flammable and growable, the interactable system will then attach a flammable and growable component to the tree. For example, fire is a basic data type that contains a list of components it activates and a list of components it stops (e.g. fire activates flammable objects and stops growable objects).

Data Management

We also plan on improving our data storage techniques by making use of scriptable objects. This allows us to abstract data, so systems no longer require references to each other as the scriptable objects acts as the meeting point between systems. We developed the element data system using scriptable objects, which allows us to create new elements in the inspector without adding new code and it provides a layer of abstraction between the player and interactable objects. For example, if the player uses the fire ability on a plant, the player sends the plant's interactable component the fire scriptable object, that is then passed to the plant's flammable component, then the

plant catches fire it. The plant doesn't need to know where the data came from and the player doesn't need to know if plants are flammable it just sends the data to the interactable component regardless. Another benefit of this system is that we can create and add new components (e.g. a shrinkable component) without editing any of the games existing systems we just need to update the relevant elements data via the inspector.

Rendering and effects

As effects and lighting are such an important aspect of our game's aesthetic some considerations were made when we were choosing which unity rendering system to use. We had originally planned on using the standard unity renderer with a volumetric lighting addon called Aura 2, this allowed us to easily implement sun shafts and dramatically improved the games lighting quality, but it did have a considerable impact on performance. In the end, we decided to implement unity's new LWRP (lightweight render pipeline). This required us to remove volumetric lighting from our game, but it did give us access to shader graph and the VFX graph which makes it trivial when implementing effects in our game. The addition of the LWRP will also improve the performance of the project which will allow us to port to lower end pcs and devices in the future.

We also plan on using shader graph and the VFX graph to develop a vertex manipulation system, this will be used when the player interacts with some objects in a distorted area some of the vertices of the objects will be distorted to create the illusion of the Zeph warping reality. For example, if Zeph interacted with a boulder the boulders vertices might shift upwards allowing Zeph to walk through/ under it.

Atmosphere & Aesthetic

For this game we want to create an atmosphere of calm yet cold, and a sense of vastness to the world. In concepting this game, we had an emphasis on "game feel" and wanted to use the art to contribute to this focus.

The aesthetic for the game is largely inspired by the visuals of *"Ori and the Blind Forest"* and *"Hollow Knight"* from which we have drawn inspiration for our colour palates and the "glowy" style of the environment.

Various low-poly but generously detailed models on the 3D art sharing website Sketchfab were examined and collected to be an inspiration for our own game as well. Below is the decided upon colour palate and a mood board of our environment and 3D style.

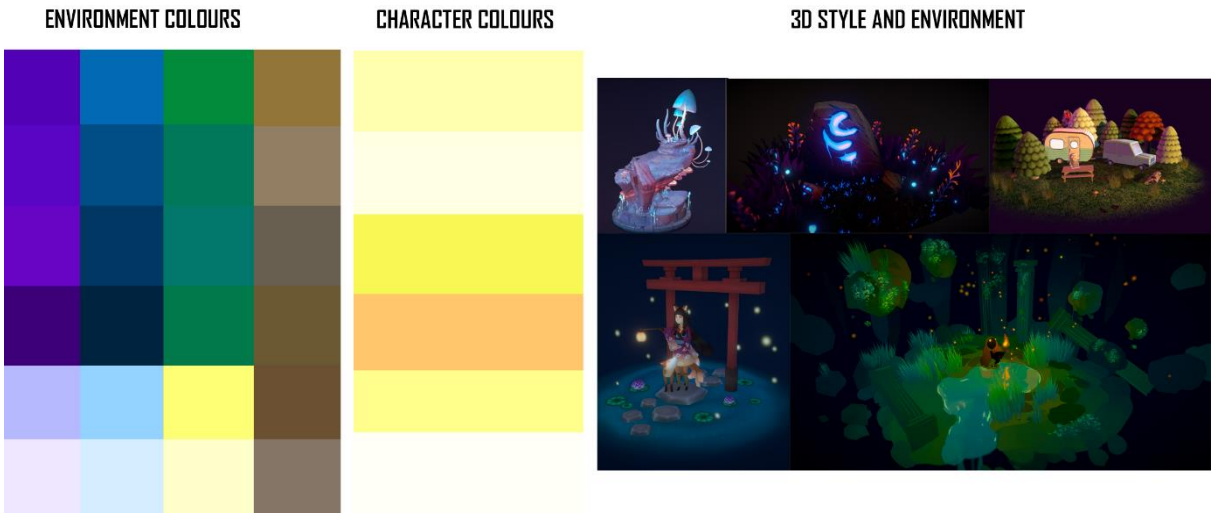

Fig 4.1 & 4.2: Environment and Character Colours with a inspirational style moodboard.

Character Design

In the creation of our character, we set out to design a humanoid creature to go with the narrative of "guardian of the sun". A yellow colour pallet was created to symbolise the light from the sun, and a few variants of the character were created using this alongside natural brown tones. As the rest of the world is blue, the warmth of the character colours will contrast her with the background. The character, along with all

the assets of the game, will be 3D, low-poly but detailed with texturing and smoothly animated.

Fig 4.3: Preliminary art for Zeph's design

We went through a couple of iterations of Zeph's look, finally settling on the one you see below. We set out a few key points of design for her look.

The key points of design for the character is:

- No mouth
- Big eyes
- Has own source of light (glowy)
- Floats (doesn't walk)
- Ethereal
- Young
- Otherworldly but still recognisable and relatable

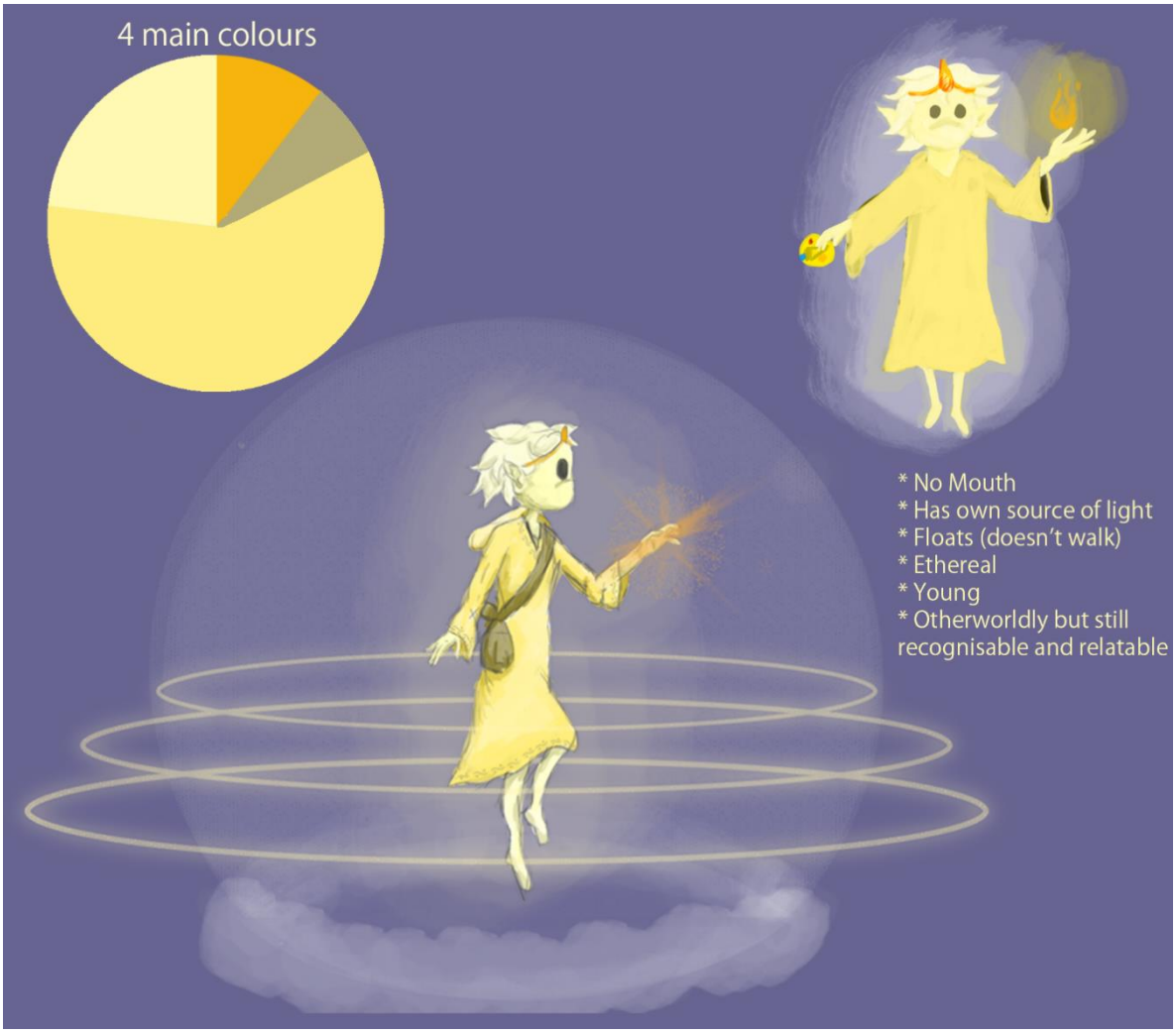

Fig 4.4: Zeph Finalized design – Young looking but still mystical

To create even more contrast between Zeph and the world, we are making her small in comparison to the surrounding environmental assets. This also creates a sense of vulnerability for the player and gives the world the feeling of being overwhelming and vast. Below is a scale factor to compare what the player will look like next to different assets in the game.

Fig 4.5: Object Scale chart

Environment Art

Regarding the Environment, the forest setting we're designing will need various nature assets to give it the natural feel of scenery. Alongside the nature, we are looking to create a ruined ancient style of civilization, giving the impression that there was a group that lived here. This will also tie into the environmental storytelling and stone runes which give additional world building.

One core part of our game is using light to make plant life grow and expand in size. This will be done by creating different animations for different plants. These plants will start as small shrubs or seedlings and when the player light is shined on them, will grow and change shape. We want to use two different animation methods.

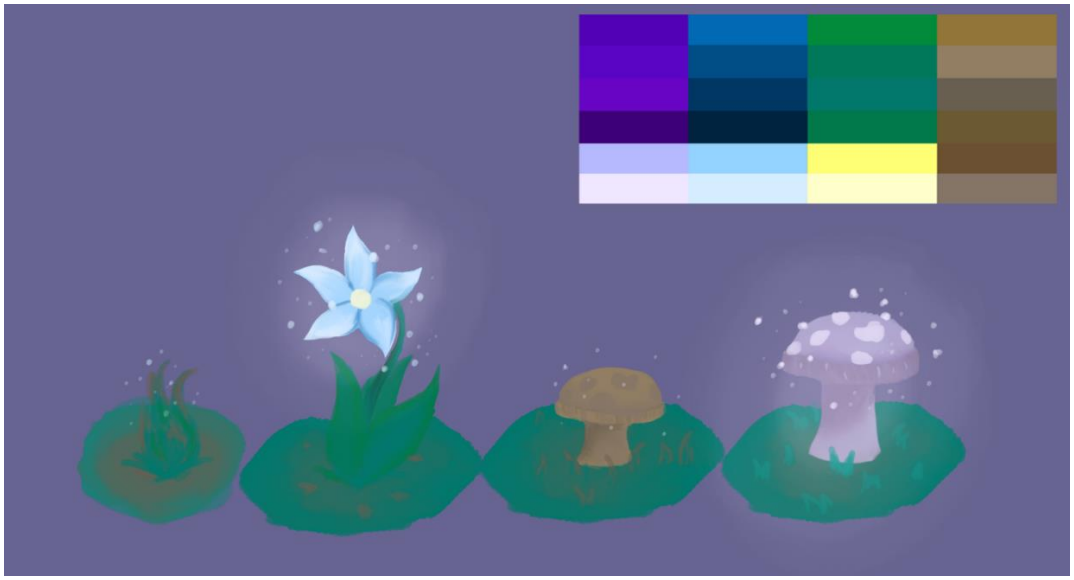

Fig 4.6: Example colours and design for flora growth with particles

Regarding plants to solve puzzles, we want to have the animation change and physically grow out as how plant life would normally grow out. In terms of aesthetic smaller plants, we feel we can use a simple scaling animation as its more feasible for this project, as well as making the aesthetic ones have a smaller feel to them.

As our game is aiming to be systemic, we must identify what pieces for a puzzle are pieces you need to solve the puzzle. We're giving a stronger aura to objects needed to solve the puzzle, giving a better understanding on what is needed for the puzzle and to better identify these key pieces. Another way of conveying this is to have light

particles emitting from the top of these objects, showing them as objects of interest to the player that should be interacted with.

UI Art

In terms of UI, our game doesn't feature any in game when they're controlling Zeph. We felt that it could take away from the immersion if there was UI obscuring areas, particularly in an isometric view.

There is still general UI in the main menu and pause menu. This UI style will follow a "glowy" yellow toned colour guide against a dark navy background similar to our game's colours as well as matching the emotion of our game wherein there isn't hostility or fail states and gives a more soothing feeling in the world. In using contrasting or loud colours, players would feel more alert and excited, opposing the more relaxed nature of our game.

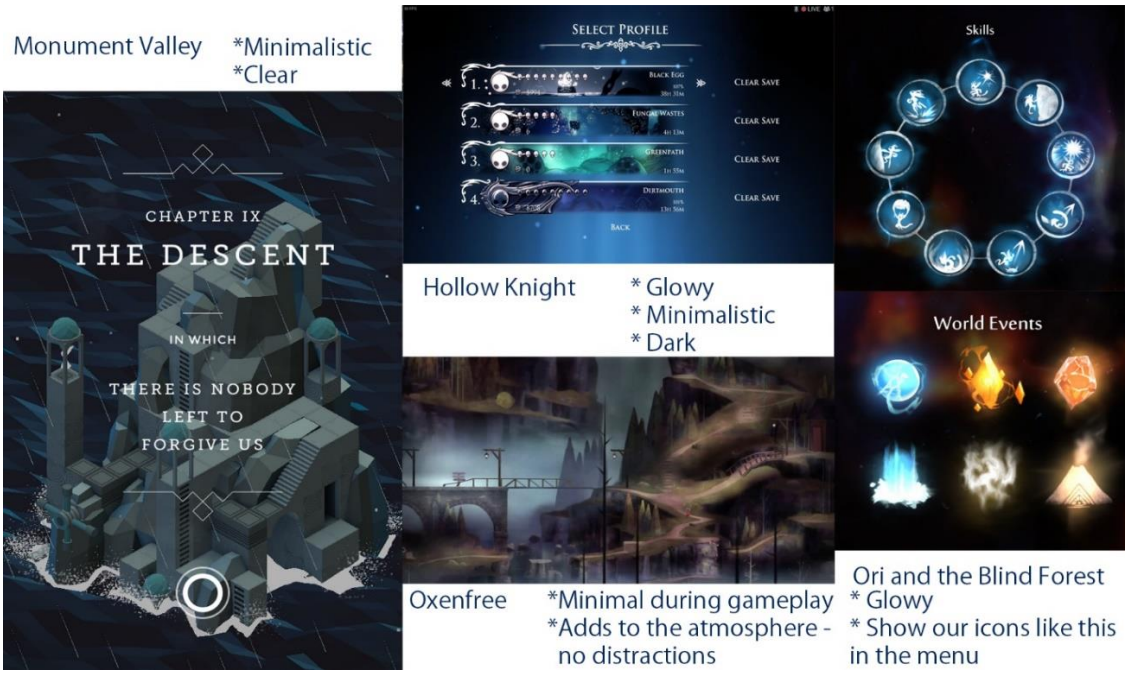

Fig 4.7: UI Design Moodboard.

In the game world, UI will exist regarding the narrative runes and general ruined civilizations structures. This UI acts as an ancient language within the game and serves as an aesthetic addition for world building and immersion. While the imagery of these would be what tells the story, the ancient text adds flavour to the structures and gives a stronger sense of the civilization.

Lighting & FX

As we are trying to create an atmosphere heavy game, we want to make sure we can capture the mystical aesthetic we are going for. As such, lighting and FX are going to play a large part within our game. Below are some examples of games we have taken inspiration from for the look of our lighting and FX.

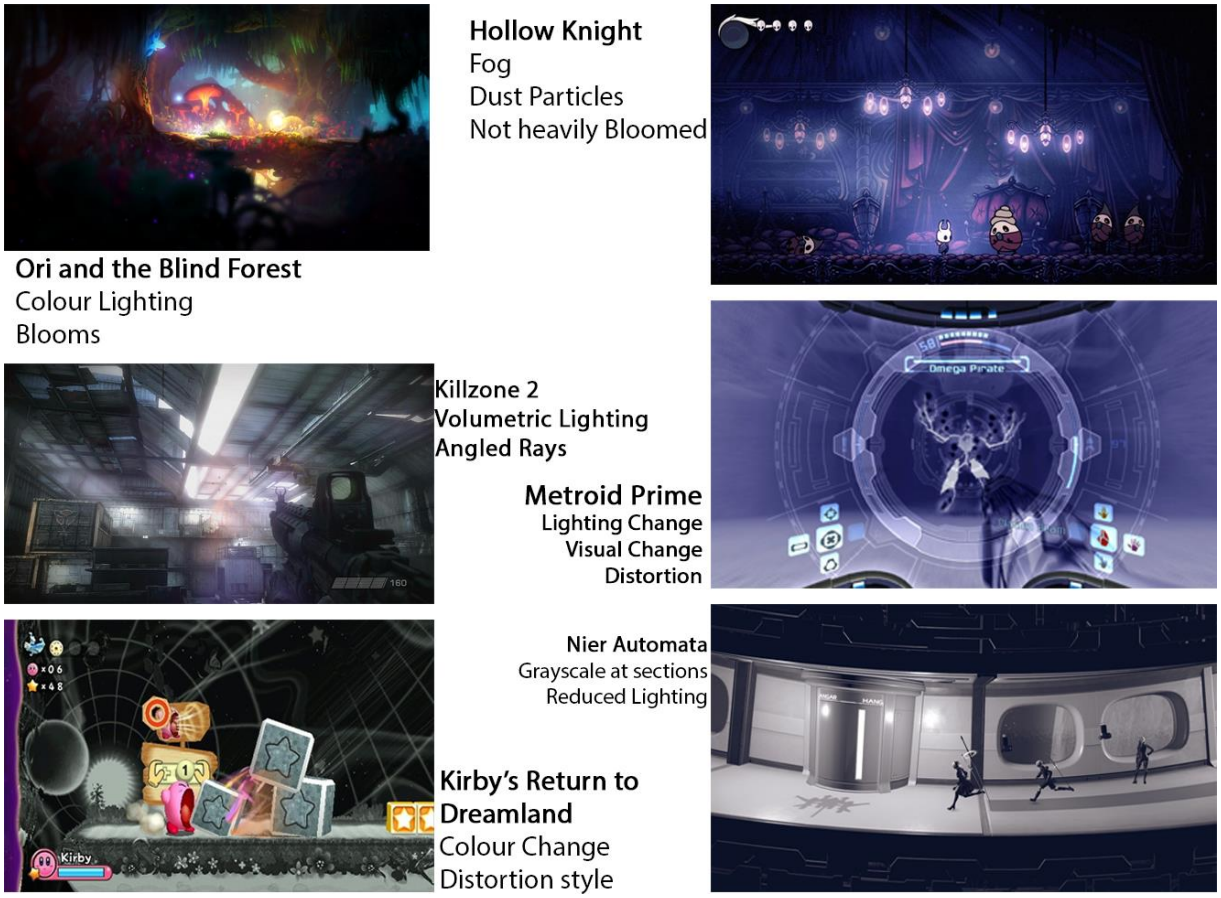

Fig 4.8: Lighting & FX Moodboard – Exploring different effects and colour use in games

In exploring lighting, we want to have a heavy input of it with the player's light, objects in the scene as well as background aspects. The player's powers will all generate some form of light, with Solar Light acting as the main way of lighting up the scene visually, while Solar Flame will generate light through using flame particles. When something is lit on fire, there will be a lighting reflecting that object, giving the area a bloom. We also want to have objects in the scene to have an aura and particle effect to them, making it appear as an object of interest that is to be used to solve puzzles.

We don't want to use too much lighting within the scene, as too much of it could ruin immersion, aesthetic as well as just the general appeal of the game. We are using Shader Graph to give a stronger sense of control to our scene visually, rather than just

have everything glowing. This should give us a stronger sense of control to the visual side, where we can tweak variables of such lighting in order to suitably adjust these aspects in the scene.

FX for our game will be mainly using particle systems and shader graph, in trying to help create highlighted objects, aesthetic effects and Cosmic Distortion. Using particles for highlighting objects won't be overdone and more so act as visual highlights where they can be seen but shouldn't take your eyes away from other parts of the scene. These particles should also help emphasize when machinery in the scene is powered up and act as how we are going to visualize fire. In terms of when an object is set on fire, we do want to have a stronger visual for it, but like the lighting we don't want to take away from the visual charm of our game with the fire dominating the scene visually, especially if only one object is on fire.

Shader graph should help in also creating the aesthetic alongside the fire. We do want to explore aspects like fog and particle specks within the scene, but more as just a background aesthetic to the scene so it doesn't take away too much from the player's movement. We also want to use it to help explore Cosmic Distortion aspects in terms of visual tweaking and changing. This alongside the Unity camera should help in creating these visual distortions. These shouldn't be overcomplex, as distortion elements that exist should be aspects such as camera filters and bending (adding a tint to the camera, a fisheye/pincushion effect).

"Zeph" Narrative

In this game you play as Zeph, a celestial being who has been guarding the now old sun for millennia. Massive changes are underway, however, and she cannot control the star's implosion or the inevitable approaching black hole – or can she?

In Zeph's attempts to save her sun, she is thrown through space by an unknown force and lands on the planet of Brudeon, a vast but largely uninhabited planet.

This planet was once full of life but has been dying for thousands of years. As the sun grew weaker, Brudeon grew colder. Species began to die off, civilisations ceased – only the Dolflings, small, tree-like creatures survive, doing what they can to keep their home safe.

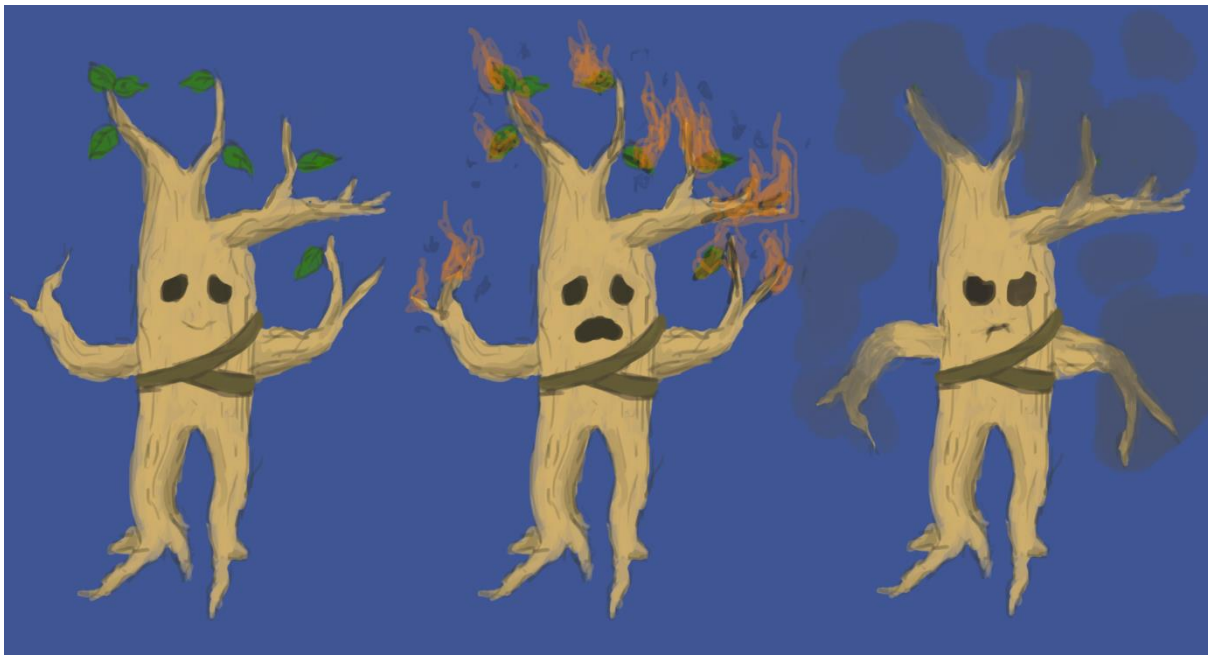

Fig 5.1: Dolflings art – Woodland creatures with a strong nature appearance.

With the recent imminence of the black hole, reality on Brudeon has become distorted. Areas of land are warped and un-crossable, the planet being more and more unliveable.

In this game, Zeph uses her powers as a sun guardian (Solar Light, Solar Flame and Solar Orbit) to traverse the mysterious and dark planet, solving the nature puzzles as you go to try and get back home to the sun, bringing life back to the planet with your warmth and light and repairing reality.

How The Story Is Told

This story is told environmentally with no dialogue or explicit explanation. This gives players with an exploration drive the opportunity to gather elements of the narrative if they choose, or simply go through the game solving the puzzles.

This will be done through cinematic scenes and context from the layout of the world. We wanted to have the option of discovering more detail to the story if the player is particularly interested in narrative games. This is done through glowing runes on stone murals that, when selected, tell you more detail of the prophesised arrival of Zeph and her fixing of the Prism.

Fig 5.2: Story Runes – The way the story will be told in our game.

Name:

Description:

Characterisation

Zeph

For the character of Zeph, we aimed to convey innocence and a sense of being overwhelmed to the player. While she is powerful, harnessing abilities from the sun, she is also lost, small and anxious to get home to the sun.

Visually, she is small compared to the world, but determined to save not only her sun, but the fate of Brudeon that it will affect.

Fig 5.3: Zeph Concept Art

World Building Through Environment Storytelling

Though the story is about Zeph trying to get home and save her solar system, we wanted to have a fully fleshed out world for her to be traversing before she can do this. The cinematic scenes will show the world in detail from different angles than the isometric gameplay camera. This will help give context to the world as well as showing the scale compared to the character.

The bulk of detail for the story will be available through the “story nuggets” which are held within large runic stones that players can discover by activating them with their light power as mentioned above.

CHAPTER 6 AUDIO

Sound Effects

We took inspiration from how the footstep sounds in *Monument Valley* are always prominent in the scene, we plan to highlight the sound of Zeph's movement to reinforce the feeling of Zeph's isolation in the world.

The sound effects featured in the main areas will portray the warm and whimsical ambience of the forest environment which reflects Zeph's hopefulness, while in areas of cosmic distortion the SFX will be altered with heavy use of reverb, other modifiers and a greater emphasis of the environments ambient sounds to create a feeling of unease and air of intrigue as Zeph traverses the unfamiliar environment.

Another influence for the sound design was *Journey's* use of motifs to symbolise the players transitions into different areas of the level, we plan on using motifs to signify when Zeph enters distorted areas and to inform the player when elements cannot be used (e.g. rain or high wind effects in levels where the fire ability can't be used).

Soundtrack

We want the soundtrack primarily comprised of woodwind and acoustic pieces with a calming mystical Celtic/Nordic vibe. We were inspired by the way *Braid* used their time mechanic to affect the soundtrack and we want to use horizontal mixing to add/remove instruments from the score depending on the complexity of the puzzle the player has encountered.

Additionally, to emphasize a feeling of isolation and loss of hope when Zeph enters a distorted area the soundtrack will promptly fade out so that only the eerie ambient sounds of the distortion and the sounds of Zeph remains. When Zeph completes the puzzle, clearing the area of distortion a cheerful soundtrack will begin playing represent Zeph's return to the welcoming and familiar forest.

We comprised a list of audio tracks from other games that we found help capture the mood and atmosphere of our game, using them as an Audio Mood board:

https://www.youtube.com/playlist?list=PLEQm_1BuqX28CkztYX--lsyB9yidTLMk9

Post Launch

Regarding the post submission of this game, we feel strongly about working on it for future development. We planned on having our submission as an Act 1 to our game, introducing the world, mechanics and Cosmic Distortions. In later incarnations, we would plan on introducing new environments, powers and Cosmic interferences.

We feel that a polished Act 1 would help our game feel enjoyable to play and watch. In developing this further after the project, we would plan a Kickstarter to help support the production of the game, aiming to have 3 Acts that the players could experience. We would also revisit Act 1 and to develop it further as our scope for it would be larger.

We would also aim to have console support for this game. The Nintendo Switch feels like the most opportune console to port over too, due to the overwhelming success of it as well as Nintendo actively promoting Indie Games on it for people to play. As well as this, the Switch has a more casual market that appeals to most fans, not just hardcore gamers. As such, we feel our game would be a very suitable title in the Switch's library.

In extra development and polish of the game at its current standing, we would also want to explore submissions for different video game awards for Indie Games. We feel that our game can strive to be a polished and enjoyable experience for fans of exploration and puzzles. As such, we feel that we should apply our game to different game competitions as additional recognition, including Imirt, EGX London and EGX Berlin.