Project Title:

INFRASTRUCTURE AND INTEGRATED TOOLS FOR PERSONALIZED LEARNING OF READING SKILL

Project Acronym:

iREAD

Grant Agreement number:

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Subject:

D6.2 & D6.5 #Batch 1 Games

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PUBLIC

Lead Beneficiary:

UCL

Project Coordinator:

UCL

Contributors:

Fish in a bottle

Revision	Preparation date	Period covered	Project start date	Project duration
V1.1	January 2017	Month 1-11	01/01/2017	48 Months

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1.   EXECUTIVE SUMMARY

This report sets out the Game Design Document (GDD), draft as of 02/01/2018 and includes details of and instructions on, how to play #Batch 1 games (see section 3 – appendix)

2.   GAME DESIGN DOCUMENT (GDD)

1. GAME OVERVIEW

1.1 - GAME CONCEPT

The Island of the lost words sets the player as the leader of a small team of adventuring companions on route to a mysterious secret island in response to a cry for help. As the game continues the player will embark on an engaging exploration of the island's ancient pyramid and its mysterious ever-changing rooms; hunting for treasure, rewards and the answer to the mysterious shadowed force causing havoc in the land. As they grow stronger and work their way through the trap laden, puzzle filled ruins, can they save the island and potentially the world from being entirely shrouded in darkness?

Our gameplay consists of a small island village with simplified RPG elements to give a true game feel, a plot device and user progression. The player navigates the island via a grid based movement, starting out with very little, ranking up as they progress via solving linguistic puzzles and finding treasure. As they move through the game, the player will navigate through different pyramid layouts within which they would find and earn typical gear an explorer would need and in some cases, are required to solve later quests, such as a torch or rope swing. The player would always be offered enough direction to progress, but equally the freedom to explore if they so choose. This exploration would be limited both by equipment needed (a room in darkness requiring the torch to solve) or by its location (a room only accessible once the player has access to a boat).

Early prototype of island locale

Throughout progression the player will encounter (and in many cases, save) other inhabitants of the mysterious island, unlocking side quests, rebuilding destroyed landmarks, earning new gear and new ways to play. The island size and RPG elements would be scaled back to accommodate faster gameplay and exploration and ensure that linguistic learning elements are encountered frequently.

Learning will primarily be in solving pyramid puzzle rooms (alike to dungeons in Zelda), this is where our game mechanics come into play and a grasp of language is the key to progression. Environmental hints, NPCs and companions will help the teaching element. Throughout the journey, the player's adventurer journal will be filled in more and more, offering an on-hand set of tips and guides to ensure the player is able to tackle any learning obstacle they face whilst also looking back at how far they have come.

Whilst not within the pyramid, our game will make use of a random encounter system (alike to Pokémon) to reinforce learning whilst between adventures. Wild creatures, possessed by the mysterious shadow, will try to block your way and can only be repelled by repeating simple language building mechanics. These encounters act as our revision whilst also a primary source of levelling up the characters.

To encourage replay-ability, both during and beyond the core narrative, a job board will be present in the main island. The job board will have a constant stream of randomly generated side quests for the player to tackle which will range from new ruins to battling through an area to collect enough of a certain item. The job board will also allow teachers to push specific customised quests to individual students.

Finally, customisation will be a prevalent theme throughout. The player can customise their characters

Colour & Feel

name, face and hair, equip different outfits to their character at any time (gathered throughout the island and story, as rewards for side quests and challenges) and even make some custom choices on the main village appearance. This level of customisation is key to allow the player to feel like their island adventure is their own and encourage player to player discussion.

1.2 - GENRE

The game is predominantly a puzzle based learning game that is framed within simplified RPG (Role Playing Game) mechanics. This allows a longer game experience with more depth, akin to core games, to increase replay-ability and user retention whilst offering a true game experience.

1.3 - TARGET AUDIENCE

Our target audience for language are relatively new English speakers of any age with 1+ years of English language learning. In terms of gameplay difficulty and complexity our audience focuses on primary

school children, aged 6 – 12. To accommodate this wide range, we aim to offer optional complexity and depth for older ages whilst providing simple visual indication and instruction continually to ensure younger ages are able to play with ease. Whilst there will be a narrative and visible text for players to read and become immersed within, focus will be put into ensuring each objective is understandable to a non-reader.

1.4 - INSPIRATIONS

The Island of the Lost Words takes inspiration from a variety of games enjoyed by both a young and mature audience. To balance an exciting visual style with our large scope of content whilst ensuring a high appeal to any age, our inspiration has been focussed on the below games:

Look and Feel
Environmental Puzzles
Progression Structure

Visual style
Mobile Navigation
Activities and Depth

Random Encounters
RPG Levelling
Item Collection

1.5 - KEY OBJECTIVES

Our key objectives for the game are as follows:
- Improve our player's English vocabulary and capability anywhere from just vocabulary to sentence forming.
- Improve the ability of dyslexic users by using content designed to improve typical difficult language areas.
- Develop a valuable teaching tool offering easy control to teachers for game based lessons.
- Develop an entertaining, visually stunning and enjoyable game that is engaging long term and enjoyed by players both inside and out of a teaching environment.

1.6 - MENU FLOW

1.6.1 - GAME ENTRY FLOW

Given that our game requires a login to the back end adaptive learning service we will need a middle step to login or sign up, however, after first play the user details will be stored privately and used to speed up the process in subsequent play. Both credits and settings will also be accessible via the main menu whilst the settings will additionally be available within the main game itself.
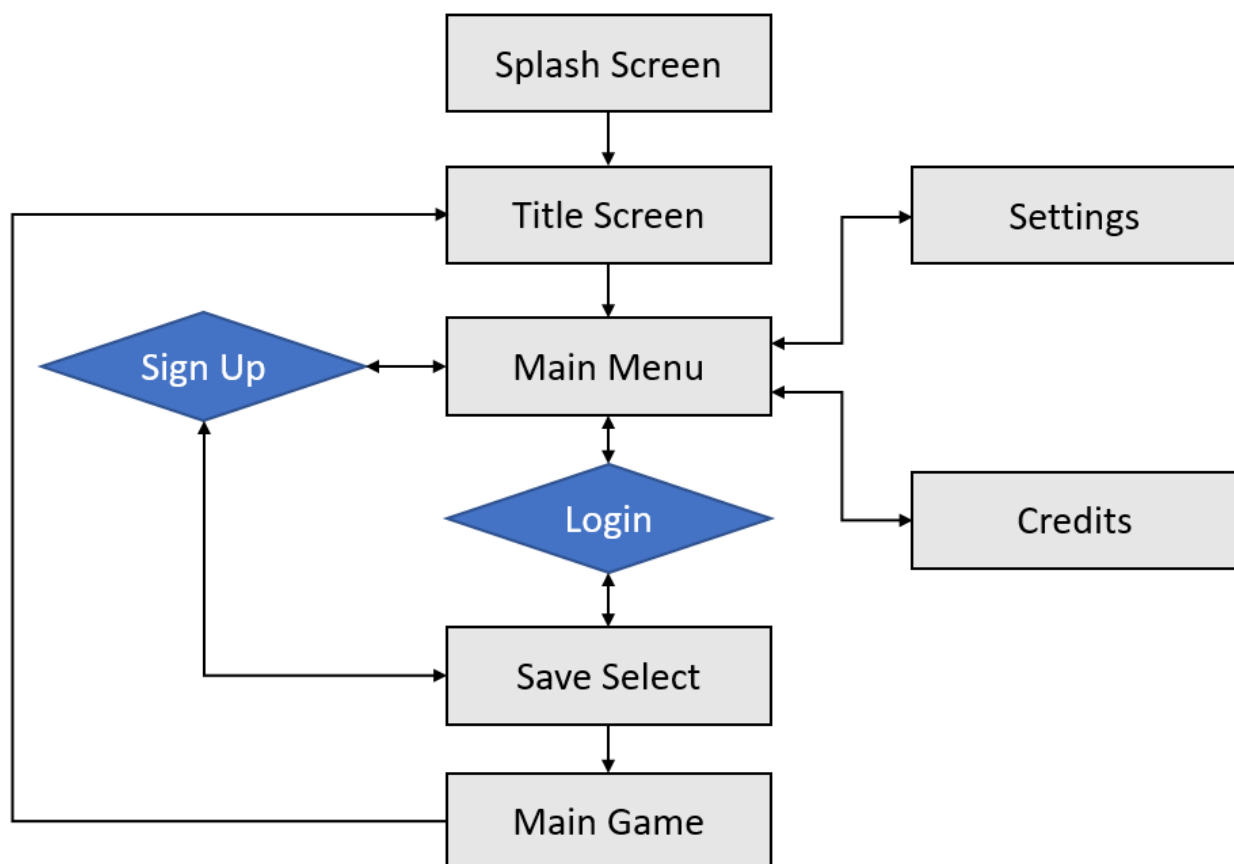
Game Entry Point Menu Flow

1.6.2 - IN GAME FLOW

Once in game our main menu flow navigation is between the open world and the ruin puzzle rooms. Beyond that our UI dock, held in the device's screen corner, when expanded will reveal a group of buttons to navigate into various menus as shown below.

NOTE: For more on each of the menus check the gameplay mechanics section.
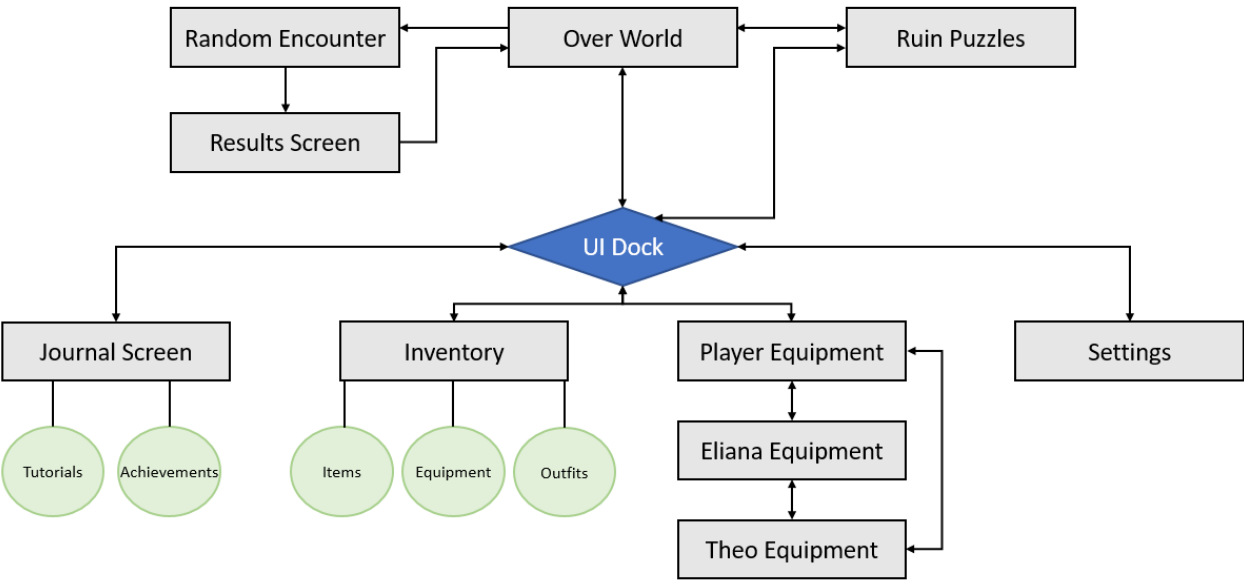
In Game Menu Flow

1.7 - LOOK AND FEEL
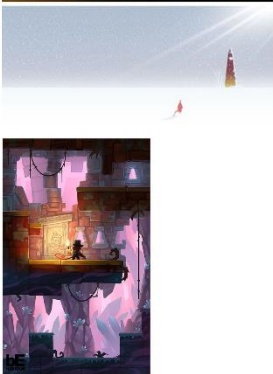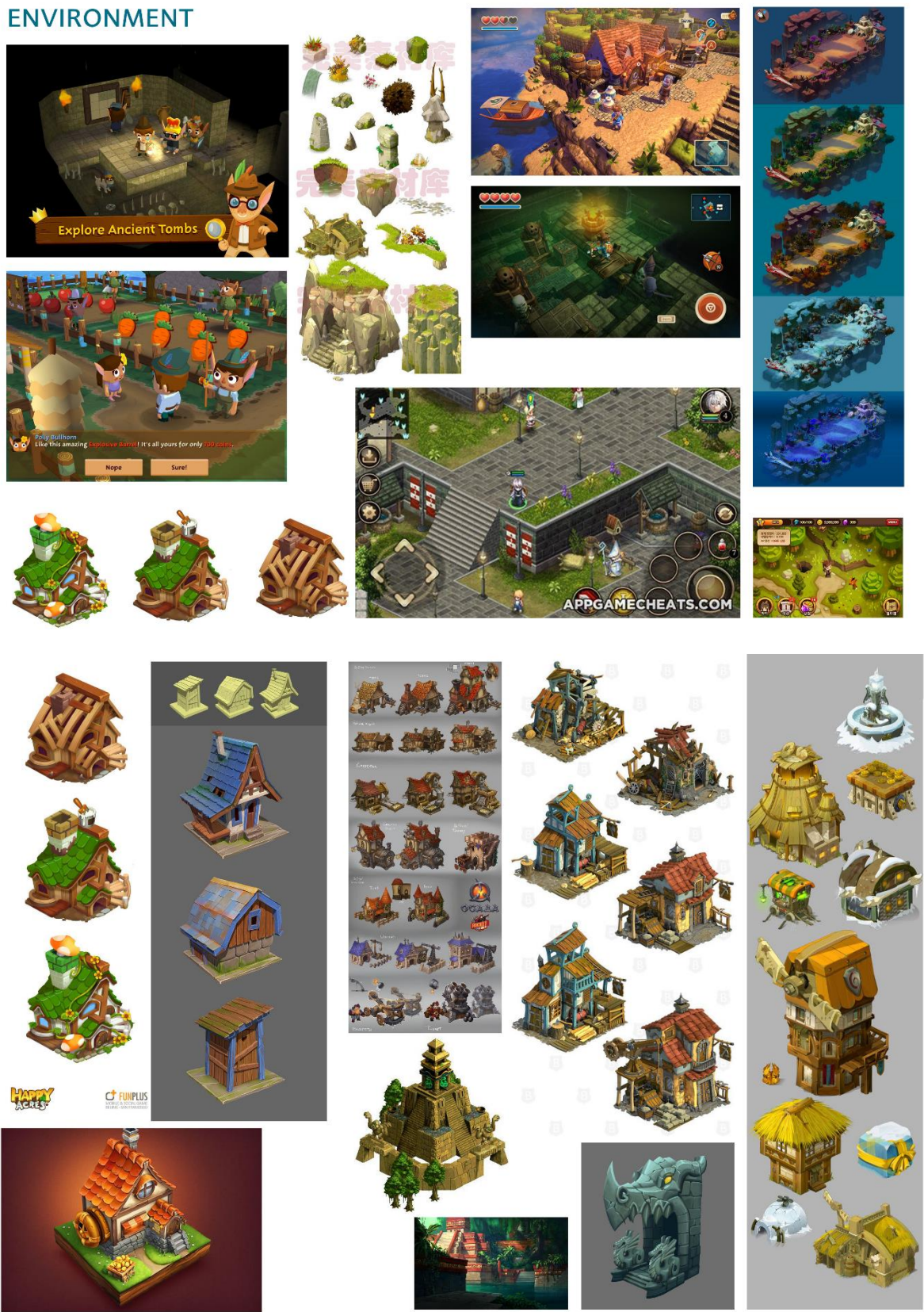
ENVIRONMENT

CHARACTERS
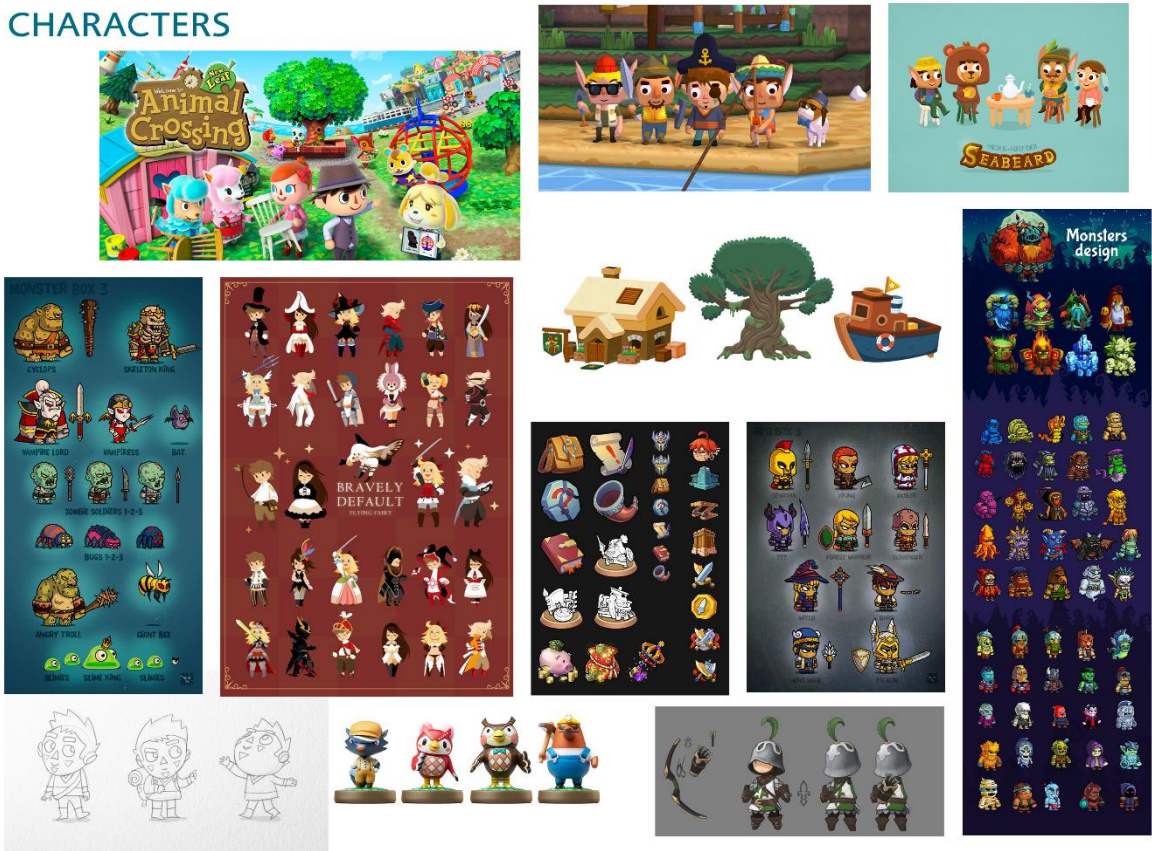
CHARACTERS

EXPRESSIONS
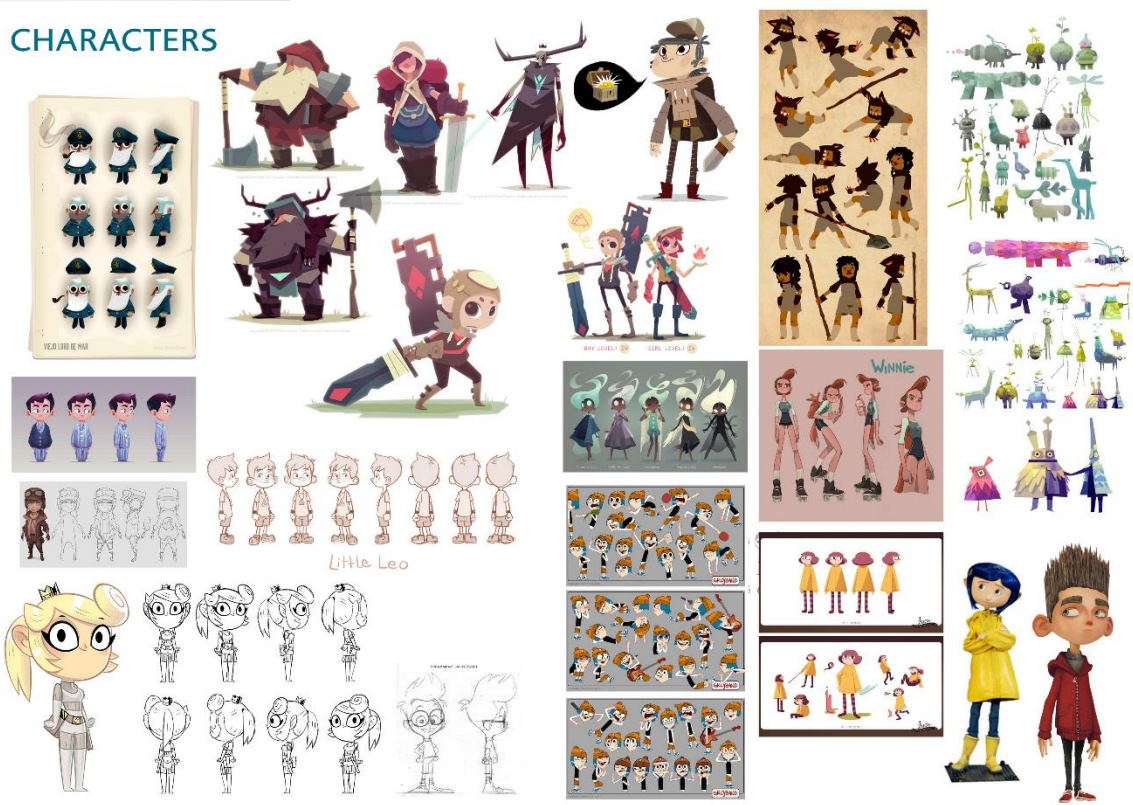
RUSSELL FACIAL EXPRESSIONS
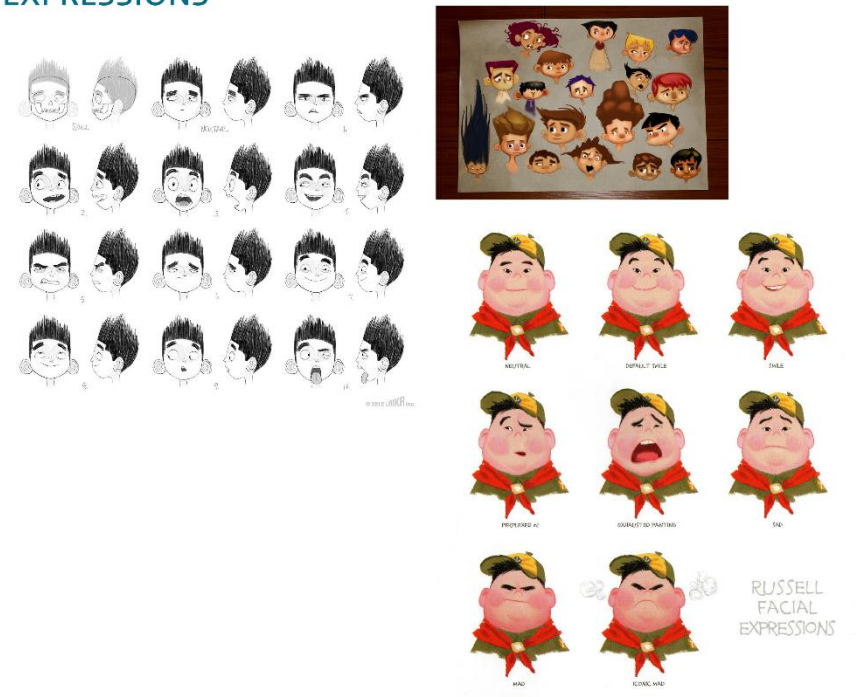
2. GAMEPLAY AND MECHANICS

2.1 – CORE GAMEPLAY MECHANICS

2.1.1 – OVERVIEW

Our core gameplay revolves around a few key mechanics. The player will be navigating around the open world and interior environments, tapping on interactive objects and elements to carry out an action. As they progress through the game and narrative questline they will encounter mini games in the form of ruin puzzles, be flung into random encounters requiring the player to save some of the island inhabitants that have been possessed by the evil shadow being and even take some time off to do some fishing if they choose.

In addition to the above key mechanics, the game is wrapped in an RPG (role playing game) style of character development. Experience points will be accrued for almost everything which will level up the character and their party making them stronger and more capable of making it through the road ahead. In turn, equipment will be continually found and used to further enhance the characters capabilities.

Finally, we are focussing on customisation being at the forefront. Along with customising their main characters appearance the player will be given many outfits to choose from and mix and match as they desire.

2.1.2 – NAVIGATION

Due to our age range of players being so broad navigation needs to be robust and offer a variety of control methods. Our implementation offers two forms of navigation at all times. Our primary movement control is a simple case of tapping the screen to place a marker which the character will then automatically walk along a visible line drawn path, coming to a stop when the marker is placed. Tapping an object that is impossible to walk to will result in an error marker appearing briefly prompting the player to tap somewhere else.

Our secondary movement controls are used by holding down on the screen and offers three different types for the player to choose from. The chosen control type will be introduced early into the opening of the game and easily changed at any time via the settings menu. Equally, after being introduced to the secondary movement control, the player will have an opportunity to practice it, if they stay in the same area for a while and are deemed to be struggling we will prompt them to try out an alternative.

Move from Finger:
When holding a finger on the screen, the player will continually move away from the fingers location. This is typically adopted by a younger audience as they often prefer to play with the device flat on a table.

Move to Finger:
The reverse of "Move from Finger"; when holding a finger on the screen, the player will continually move towards the fingers location. This is typically adopted by a younger audience as they often prefer to play with the device flat on a table.

Virtual Joystick:

When holding a finger on the screen, a joystick will appear in the initial hold position. By maintaining the held state and moving the joystick the player can fully control the player as they wish. This is typically adopted by an older audience / more advanced gamer as they often prefer to play with the device in their hands using their thumbs. It equally gives more finite control.
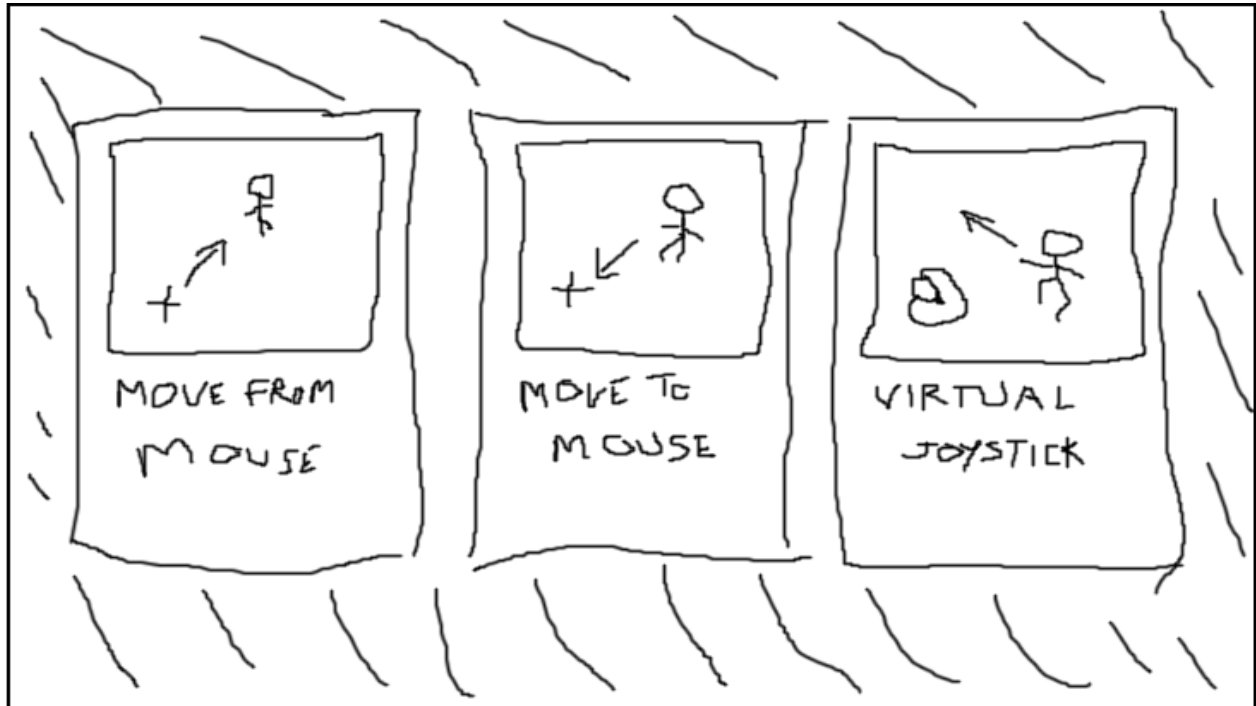
Secondary Control Type Selection UI Mock-Up (Placeholder)

When it comes to interacting with objects in the world, our tap mechanic is used. Tapping an interactive object (such as an item or door) will place a marker on the object, the player will path find up to the object (if a clear path exists) and when reached will trigger the interactive behaviour (such as picking the item up or opening the door and entering).

2.1.3 – MAIN NARRATIVE QUESTLINE

The main narrative questline acts as our primary progression. The story will continually propel the player forward from ruin to ruin as they save more island inhabitants, solve more ruin puzzles and collect the key treasures required to trap the mysterious shadow thus saving the world. As the player progresses from objective to objective more of the village will open up ensuring that the player has a continual feel of progression and discovery. Current story objectives will always be visible on the map and within the journal along with previously completed quest objectives. For details on the main narrative questline see section 4 – STORY & CHARACTERS.

2.1.4 – SIDE QUESTS

Side quests will be offered as an accompaniment to the main narrative questline and be given by each of the main village's inhabitants as they are saved and brought back to the village via the main quest. Side quests will vary from tasks such as collecting a specific number of rare gems or following a treasure map

to find a secret chest. Current side quest objectives will always be visible on the map and within the journal along with previously completed quest objectives. For detail on the side quests see section 4 – STORY & CHARACTERS.

2.1.5 – CHARACTER CREATOR

Due to our focus on allowing the player to customise their character, they will be introduced to the character creator during the intro of the game which allows the player to customise their outfit and visual appearance. The player can customise their face, hair, eyes, nose, mouth and name along with skin and hair colour. There will be no defined gender and our default appearance options will be randomised to avoid a "default white male". For detail on the UI and options for the character customisation see section 8.1 – CHARACTER VISUALS.

2.1.6 – RUIN PUZZLES

The core of our learning experience will take place within the ruin puzzles. Ruins are dungeon like sequences of rooms, each room contains a puzzle that must be completed to move into the next, each puzzle will be tailored to solve a specific language area and the content will scale in difficulty adaptively to the player. For detail on all of the puzzles see section 5 – PUZZLES.

2.1.7 – RANDOM ENCOUNTERS

Random encounters are introduced towards the end of the intro, after the player has explored their first ruin. The encounters act as our revision mechanic and will be repeated frequently. Random encounters can trigger while exploring the open world (not whilst within a ruin) and will begin the encounter screen. Here is where the player statistics and RPG elements come in to play. On one side are the three characters and on the other are randomly selected inhabitants of the island that have been possessed by the mysterious shadow. The players must use their magic to fend off the shadow returning the inhabitants to their normal selves, earning experience points, random items and equipment in the process.

To carry out a spell each character has a different simple language mechanic such as stringing syllables together or splitting the prefix off of a word. The word contents will be taken from data the player has already seen and therefore solidifies what they have learnt. For more detail on encounters and the way they play out, see section 7 – RANDOM ENCOUNTERS.

2.1.8 – MINI GAMES

In addition to the larger puzzle games encountered throughout the ruins, a few mini games will be available after some game progression. These act as an optional set of quests and objectives with rare rewards offered to the players who get involved. The mini games include: Hangman when opening chests, Fishing and Mining. For more detail see section 6 – ADDITIONAL MINI GAMES.

2.2 – ADDITIONAL MECHANICS

2.2.1 – ISLAND MAP

The island map will be accessible from very early on in the game. Initially it will just present a zoomed-out map of the island with no specific locations, however as the player progresses and discovers key locations, pins will appear on the map. In addition to this there will be an indicator at all times that displays the current world location of the player. This will encourage the player to continue exploring and give a true world feel as the map fills up with all the locations visited.

Island Map Mock-Up (Placeholder)

2.2.2 – FAST TRAVEL

Once the player has visited some key locations and their pins have been placed on the map the player will then be able to fast travel to those locations by tapping the pin on the island map and accepting the UI pop up. This will help players get close to objectives easily if they wish to progress without re-treading steps.

2.2.3 – QUEST BOARD

The quest board is found at the base of the main village and acts as a way to deliver infinite quests or teacher defined content. In between story sections the player will need to carry out some quests from the quest board to level up and be capable to continue the core game. These will be randomly generated ruins for players to work through or random encounter areas that may require a certain number of

encounters won to gain enough saved creatures or collect enough of a specific item. The quests presented are split into two main categories.

Procedurally Generated Quests:
- Ruins focussed on one specific learning objective.
- Ruins with a mix of relevant learning material.
- Random encounter areas.
- Balanced difficulties to the player level.

Teacher Generated Quests:
- Pushed by teacher to specific students.
- Ruins built of rooms based on chosen learning objectives.
- Length defined by teacher.
- Only visible for a limited time by defined students.

2.2.4 – JOURNAL

The journal is first encountered in the introduction sequence as they enter their first ruin. The journal has been dropped by the Professor who has been studying these ruins for many years and so is filled with helpful information and sketches on how to do each puzzle mini game.
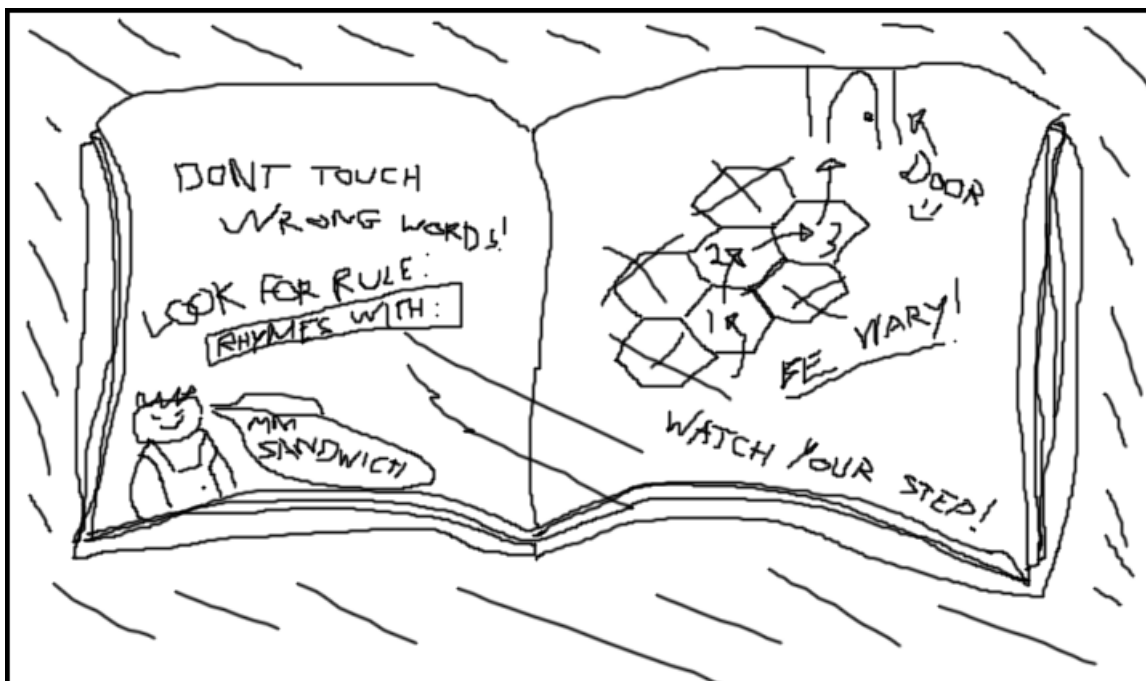
Journal Mock-Up (Placeholder)

As new mini games are reached the player will be prompted to check the journal for a brief on what the learning objective is, how to solve the puzzle and any other tips. This can be accompanied with character narration to act as our teaching delivery method, keeping it optional for more experienced players but always accessible for a player who is struggling. In addition to prompting the player into the journal when they encounter a new mini game we will use voiceover to suggest the player revisits the page if they are deemed to be struggling and may need a refresher. There will be pages that fill throughout progression with story information and act as a reference to look back at what has happened so far, whilst existing pages will also be embellished with doodles drawn by the characters acting as a delivery method for humour and the feel of a living document filled with character that changes over time.

When the journal is opened it will always turn to the most relevant page; if inside a ruin the page shown will be for the current rooms puzzle, whereas if exploring the main world, it will move to the objectives list. The player can then freely turn the pages one by one or skip between sections using swipe actions. Other sections of the journal will be included and easily accessed such as a list of current main and side objectives, a list of completed objectives and our list of achievements.

2.2.5 – LEVELLING SYSTEM

Given that the game revolves around an RPG statistic based system a levelling system is implemented. At the start of the game the characters are all Level 1 with a base set of stats. The player can level up from 1 to 99 with each level gained bumping the characters stats up making them stronger and more capable. Levelling up is carried out by gaining experience points which are earned from everything in the game; completed puzzles, completed mini games, random encounters (these are the main experience points resource) and completing quests from the quest board.

The experience points required to level up is on a curve using $x = 25(y^{1.5})$, where x is the experience points required to level up and y is the character's current level. In this case, levelling from 5 – 6 requires 275 experience points where as level 98 – 99 requires 24,253 experience points. At the same time, the experience points gained from random encounters and other quests scales with level as well.

2.2.6 – OUTFITS

Outfit items are our way of giving the player a massive amount of customisation content. These will be equipped on the character's head, torso, hands, legs or feet to allow players to mix and match content as they please. Initially we will only offer a few basic options but through progression and finishing quests, ruins, battles and achievements the player will unlock many more. The unlockable outfits will vary from generic clothing typical for an RPG game to themed items (such as an Egyptian headdress unlocked in our Desert area) to more humour focussed outfit items (such as a giant fish with its mouth around the top of the player's head). Ultra-rare outfit items will be rewarded for more difficult tasks such as the achievements and act as an opportunity for bragging rights amongst players. For more specific detail on the outfit items and how they are unlocked, see section 8.2 – OUTFITS.

2.2.7 – EQUIPMENT

Equipment can be found around the environment in chests, earned through gameplay, purchased in shops and dropped as a reward for winning a random encounter. Equipment is of two different types, Staffs and Amulets.

Staffs effect:
- Standard Attack Power
- Magic Attack Power
- Attack's Element
- Accuracy

Amulets effect:
- Standard Defence
- Magic Defence
- Defence's Element
- Speed

These would be made of an initial set of meshes, from there we randomly generate a name, set of stat effects and a HUE / visual effect to distinguish it from other equipment. These will bring an extra degree of customisation, depth and enjoyment to the player keeping them engaged and continually growing stronger. For more specific detail on equipment see section 8.3 – EQUIPMENT.

2.2.8 – ITEMS

Items can be found around the environment, earned in mini games, purchased in shops and dropped as a reward for winning a random encounter. These would cover a range of uses such as potions to increase health, repels to prevent random encounters for a period of time, antidotes to fix poisons and consumable items that temporarily increase stats. Some items can be found with no use other than to be sold for money such as small treasures within the ruins. For more detail on the specific items and their use, see section 9 – ITEMS.

2.2.9 – CURRENCY

Currency is earned primarily from completing random encounters but also from selling unwanted items and equipment. Currency can be used at village shops to stock up on items, buy some rare equipment or customisation items. The form of currency will be dependent on the language being learned by replacing the symbol from £ to € for example.

2.2.10 – SHOPS

Within the main village are a number of buildings dedicated to selling you various gear. These shops will initially be ruined, but upon saving each owner the respective shop will return to business as usual. Shops allow the player to sell goods in addition to buying them; items and equipment can be sold to any shop and all will offer the same amount of currency for it, this allows the player to find use for any equipment or items they no longer want. Customisation items cannot be sold as they are unique.

Item Shop:
- Potions
- Repels
- Consumables

Equipment Shop:
- Staffs
- Amulets

Outfit Shop:
- Head clothing
- Torso clothing
- Legs clothing
- Hands clothing
- Feet clothing

2.2.11 – REBUILDING THE VILLAGE

When the player first arrives on the island and enters the main village it is clear a disaster has happened. All of the buildings have been destroyed and lie in ruins with no villagers in sight. As the narrative continues and the player saves more of the villagers from the ruins they return to the village and start rebuilding their home.

Upon the return of a home's owner it will be rebuilt to stage one and the villagers side questline will open up. By fulfilling the side quest requirements, the home will be built up to stage two and then finally stage three. For example, after saving the miner the building will be rebuilt from gathering enough rare gems.

As this continues, debris will be lifted from paths allowing the player to explore previously blocked areas and the village will return to its former glory. Additionally, the rebuilding of the village acts as room for

some customisation, this could be choosing the colours of the building materials or choosing the style of some village features. For more on the customisation aspect see section 8.4 – ENVIRONMENT.

2.2.12 – ACHIEVEMENTS

Achievements, a list of tracked statistics, are now a staple in games that act as an additional incentive for extended play. These could vary from story progression, time played, number of ruins conquered, number of random encounters won and each of them, once completed will give the player a rare customisation item as a reward (along with bragging rights). Achievements will also be used to reveal the player's proficiency in each language area and offer rewards for improvement. For more specific detail on the achievements list, see section 10 – ACHIEVEMENTS.

2.3 - SETTINGS & OPTIONS

2.3.1 – TEXT VISUAL OPTIONS

To both allow some additional customisation and controls for colour blind accessibility it is important to offer some text visual options. Text is used (accompanied with voiceover) to deliver our story using speech bubbles from characters. Within the settings we will allow the player to change the colour of the background of this speech bubble, the colours of the font along with the font size and speed that the text is written on screen. We will also offer a couple of pre-sets that provide typical colour themes that combat the most common forms of colour blindness.

2.3.2 – SECONDARY MOVEMENT CONTROL TYPE

As described in the navigation description the secondary movement control type can be freely changed at any time within the settings menu. As seen in section 2.1.2 – NAVIGATION the player will be able to choose between Move from Finger, Move to Finger and a Virtual Joystick.

2.3.3 – AUDIO SLIDERS

To allow the player to balance the audio as they wish we will provide three audio sliders. The player will be able to control the volume of the SFX, Voice and Music independently.

2.3.4 – EULA & PRIVACY POLICY

Providing a EULA and Privacy Policy is a requirement for all native apps and will be visible via the settings menu. This can be provided internally to the game, but for the sake of changing it in the future easily it would be better to host this online and pull it in to the game. Links that display external content need to be placed behind a parent gate if the app is being provided to a younger audience.

2.3.5 – CREDITS

The credits will be accessible via the main menu and will be displayed using HTML to scroll through everyone involved in the project. Additionally, at the point of finishing the full narrative of the game the player will be navigated to the credits page.

2.3.5 – EXIT TO MAIN MENU

The player can exit to the main menu by using a button within the settings menu. This will return them to the initial screen of the game and allow the player to reload, delete or start a new save and play session. It is very important to carry out a game progress save and if possible push the progress to the back-end system before exiting.

3. LOCATIONS

TBC

4. STORY & CHARACTERS

4.1 – INTRO

4.1.1 – OVERVIEW

PLAYABLE CHARACTERS

PLAYER…………………………………….The main character, controlled by our player and customised as they wish.
THEO………………………………Obsessed with treasure, food and prone to narcolepsy. Playable in encounters.
ELIANA…………….Smart, powerful, intrigued by history and mystery of the islands. Playable in encounters.

NON-PLAYABLE CHARACTERS

PROFESSOR GRAY…….Eccentric, intelligent researcher. Lived on the island for years. Calls party for help.
POSESSED LEADER….First boss encounter. Shadow possessed leader. Returns to normal after encounter.
LEADER JONES………………………….Village leader, companion to Professor. Needs his villagers to be saved.

PLAYABLE LOCATIONS
- Shipwreck interior
- Shipwreck Beach
- Main village (ruined)
- Skull ruin #1

NON-PLAYABLE LOCATIONS
- Ship hull on open sea
- Ship interior (before wreck)
- Main village (flashback)

ITEMS / EQUIPMENT
- Potions
- Journal
- Map
- Staff of fire
- Staff of lightning
- Staff of water
- Amulet of fire
- Amulet of lightning
- Amulet of water
- Pirate outfit
- Magical Orb #1

MAIN QUESTS
- Your heroes have arrived!
- Find out the truth.

SIDE QUESTS
- N/A

PUZZLES
- Exact order TBD

SUMMARY
The player is introduced to most of the mechanics in this extended introduction sequence. The characters are called to the island in an urgent cry for help and arrive to find a ruined village in need of saving. With their ship wrecked, Professor Gray missing and a mysterious shadow taking over the island the player needs to find out what has happened and perhaps how to save the day!

4.1.2 – OPENING CUTSCENE

The game opens on a ship interior, dimly lit, three figures stand around a candlelit table. Theo and Eliana are intently discussing the map laid out before them with the included plea for help, a cloaked figure (our player) watches quietly concerned.

> ELIANA
>
> If the wind and our good fortune keep up, we should arrive within the hour.
>
> CLOAKED FIGURE
>
> I hope we aren't too late. I haven't seen my Grandfather in years and now this strange note!? … "HELP"?
>
> THEO (CHUCKLING)
>
> An old map? A secret island? 'X' marks the spot? Sounds like a treasure hunt to me.

The camera fades to the ship exterior, our three figures stood aboard the hull under a sun-baked sky. Theo idly spins the wheel from left to right to stay on course, Eliana looks out through her telescope, our cloaked figure stands by the sails.

> ELIANA
>
> I SEE IT! ON THE HORIZON!
>
> THEO
>
> Next stop sunny parad-ISE!!!
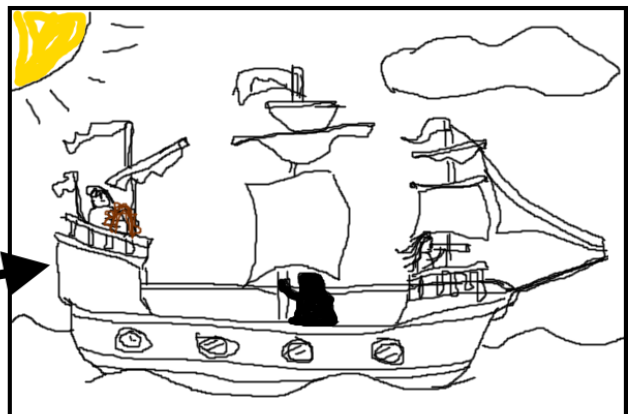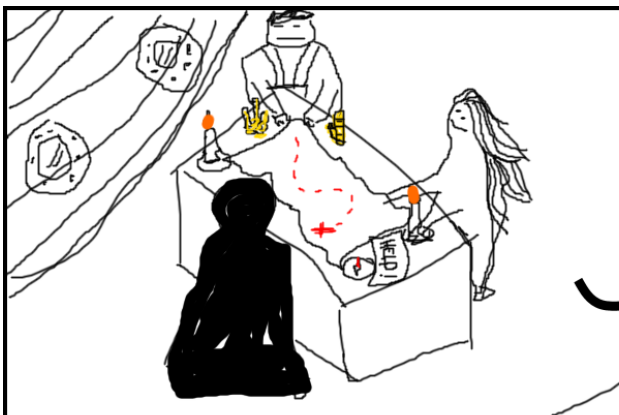
As Theo barely finishes his words a flash of lightning, thunder booms, torrential rain plummets down onto the ship. The camera cuts to an overview of the island, billowing clouds can be seen consuming the mountainous range, at their peak a shadowy face glares menacingly. Within the thunder a deep echoing laugh can be made out. This weather isn't natural.

                         ELIANA (NERVOUS)

     Wh-what is that?

               CLOAKED FIGURE (GRITTING TEETH)

     ...

                    THEO (PANICKED)

     What in the…? I can't stay on course! We're going to
     crash!

               CLOAKED FIGURE (GRITTING TEETH)

     ... ... !

Another bolt of lightning as the camera fades. The camera remains black as the sound continues. Creaking, wind howling, a loud crack tears through the noise. Silence.
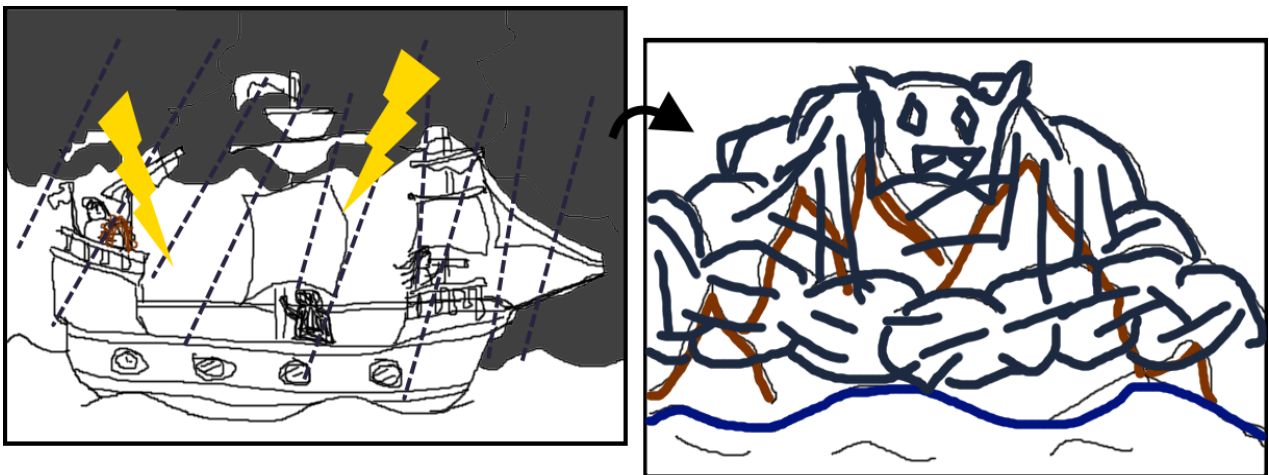
The camera fades in to our beach, the ship hull visible, jutting out of a rock nearby, the cloaked figure face down in the sand, waves lapping at their feet. Theo and Eliana rush over and drag the cloaked figure into the hull of the ship. We cut to a view of the ship interior, the cloaked figures cabin, they awake in bed.

                    CLOAKED FIGURE (COLD)

```
It wasn't a dream. It really
happened…Theo?...Eliana?...I hope they made it.

        CLOAKED FIGURE (CLIMBING OUT OF BED SHIVERING)

So…cold…I had better get out of these damp clothes. I
should find something dry in the wardrobe over there.
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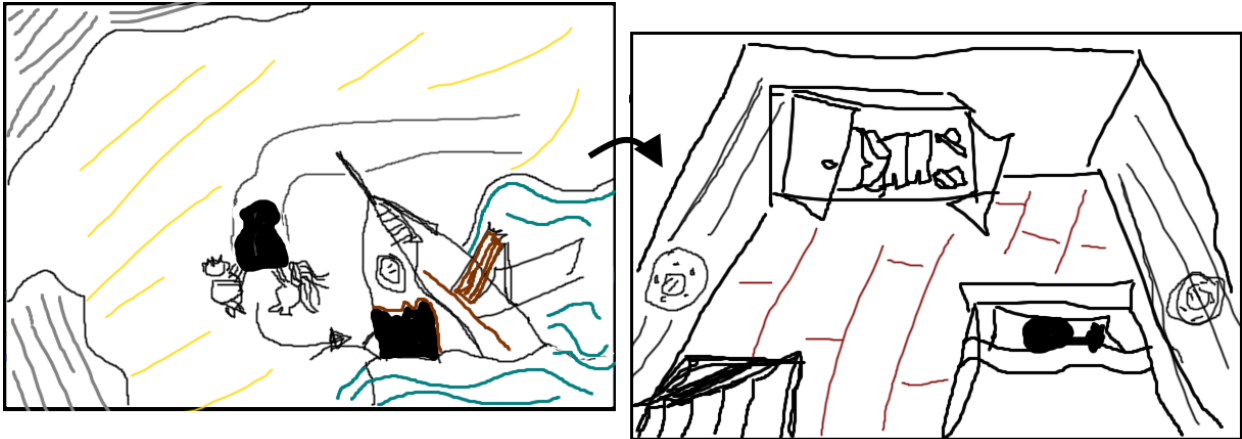

4.1.3 – INTRODUCING TAP TO MOVE

Gameplay commences. An objective marker appears on the wardrobe with an icon indicating to tap on it. The player taps the wardrobe and sees a marker placed and watches the cloaked figure walk over to it. Our character customisation tool opens up.

4.1.4 – CHARACTER CUSTOMISATION

The character customisation tool allows the player to customise their outfit and visual appearance. The visual appearance options will be fairly numerous and all available from the start. Outfits start fairly limited as more exciting and humorous outfits are unlocked through gameplay. For more detail on the UI and options available, see section 8.1 – CHARACTER VISUALS and 8.2 – OUTFIT of the CUSTOMISATION section.

VISUAL APPEARANCE OPTIONS
- **Face** – choose from a few face shapes (think Mii from Nintendo style shapes), choose colour via a few pre-sets and an RGB slider.
- **Hair** – choose between several styles, choose colour via a few pre-sets and an RGB slider.
- **Eyes** – choose between several shapes, choose colour via a few pre-sets.
- **Nose** – choose between several shapes.
- **Mouth** – choose between several shapes.
- **Name** – choose the character's name.

OUTFIT OPTIONS
- **Head** – choose from a few simple hats.

- **Torso** – choose from a few simple tops.
- **Hands** – choose from a few simple pairs of gloves.
- **Legs** – choose from a few simple bottoms.
- **Shoes** – choose from a few simple shoes.

4.1.5 – REAFFIRMING TAP TO MOVE

Once customised we return to the boat interior. Our character's customisation appears on the model.

> PLAYER
>
> There we go! Now, I had better find the others…

An objective marker appears on the stairs/room exit with an icon indicating to tap on it. When tapped, the marker is placed and the player walks to the stairs/room exit and proceeds to the main room of the ship wreckage.

4.1.6 – INTRODUCING THE ISLAND MAP

Our island map will initially just be an empty outline of the islands. As the player progresses and finds key locations it will fill with additional markers to help the player navigate and feel like they are really exploring the island.

In the main room of the ship wreckage Eliana and Theo are talking between themselves.

> ELIANA
>
> A few potions, a soggy cheese sandwich and this one flip flop. Everything else got lost in the crash.

> THEO
>
> MY SANDWICH! Hand it over! Hand it over!

> ELIANA (NOTICING PLAYER)
>
> Oh! *PLAYER NAME* you're up. I was getting worried; you had swallowed a lot of sea water.

> PLAYER
>
> I'm okay. What was that... that… thing… in the clouds?

> ELIANA

```
I don't know. Maybe your Grandfather has answers? He's
a Professor after all. Based on this map the village
should be nearby. Let's go find him *PLAYER NAME*.
```

Our initial UI button appears in the top right corner. An icon appears on the button indicating to tap on it. Tapping it opens up the UI panel (this starts off very basic, we add icons as they unlock features). A new icon appears on the map button indicating to tap on it. Once tapped the map opens up on the screen and shows a rough outline of the islands along with the player location and shipwreck location. An additional icon is displayed (our objective marker) showing the assumed location of the Grandfathers home. The player uses the back button to close the map and return to the game.

```
                              PLAYER

        Maybe you're right. Let's go.
```

The characters walk out of the break in the ship, the camera fades to our beach scene. Only the character is visible, from here on although the characters all fight in battles, only the player is seen walking around the world. At key story points the other characters will run on screen behind the player or already be waiting.

4.1.7 – INTRODUCING SECONDARY MOVEMENT CONTROLS

A UI panel appears with 3 buttons. The player chooses between our three alternative control types. Each button has an animated image and text explanation (they will be able to change this movement type any time in the settings menu). Once chosen, the player can freely roam around the beach. For more on the navigation UI and options see section 2.1.2 – NAVIGATION.

4.1.8 – INTRODUCING PICKING UP ITEMS

Now that the player can roam freely on the beach, they will notice items in the shallows of the water. An icon will appear suggesting to tap on the item. When tapped the player walks up to the item and picks it up. A message appears letting them know they have received Potion x5.

NOTE: THIS MAY NEED MORE FORCEFUL INTRODUCTION DEPENDING ON PLAY TESTING RESULTS.

4.1.9 – REAFFIRMING ALTERNATIVE MOVEMENT CONTROLS

On the thin pathway from exiting the beach to the village a couple more items will be dotted around. This acts as our test to establish the player can pick them up and knows how without future prompting.

4.1.10 – THE MAIN VILLAGE

As they continue down the path the player enters the village. The first thing they see are destroyed shops, no sign of life. They enter the main square (used to show our focus piece and to make all buildings easily accessible). The quest objective pushes the player to the north of the village where Theo and Eliana are stood waiting, staring at the crumbled building. The door is all that remains upright with a note attached to it. Upon clicking the door or the companions we activate the next dialogue sequence.

```
                          THEO

     It's all destroyed? What did this? Where is everyone?


                        ELIANA

     There's a letter… "Need help at the nearby ruin. Come
     quickly! Wear these! They will protect you!"
```


4.1.11 – EQUIPMENT MENU AND AMULETS

A UI message appears explaining the player has gained three amulets. We add a new UI button into the menu anchor and prompt the player to tap it. Upon tapping the character equipment / outfit menu opens up. At this point we guide the player through the equipping feature until all three players have had an amulet equipped. At the same time, we display the change to character stats teaching the player that equipment makes them stronger. Once done the player exits out of the menu.

```
                   PLAYER (CONFUSED)
```

```
                    I feel stronger?!


                              THEO (CONFUSED)


            Me to?!


                              ELIANA


            Let's just go to the ruin up the hill. The Professor
            can explain when we get to him. I've marked it on the
            map.
```

The player is then guided to the ruin, all other paths are blocked off by pieces of the building ensuring the player finds their way successfully.

4.1.12 – INTRODUCING THE JOURNAL

The player enters the ruin; a puzzle room is laid out before them with no guidance on how to complete it. Near the entrance on the floor a journal can be seen. Eliana walks over and picks it up.

```
                              ELIANA
            This is the Professors journal! It's filled with notes
            and sketches, maybe it can help us work out what to
            do? If we get stuck we should remember to check it!


                              PLAYER
            Good idea! Let's take a look…
```

A new UI icon is added to our UI holder for the journal. The player is prompted to click it. Upon clicking the journal opens up on the page relevant to the puzzle. The pages are filled with drawings of the puzzle, notes on what to do, visual help, description of the learning objective (all of which will be narrated by Eliana or Theo). The player is able to scroll through the pages freely seeing information on all other puzzles within the game if they wish. Any time the journal is opened via the UI it will open on the relevant page for the player's surroundings. Once the player exits they are free to play through the puzzles. If they spend too long or repeatedly fail we will suggest looking back at the journal. For more detail on the journal see section 2.2.4 – JOURNAL.

4.1.13 – RUIN PUZZLES

From here the player is free to continue through the ruin rooms solving the puzzles as they go. Each puzzle solved will open the route to the next room and puzzle until the player reaches the end.

EXACT PUZZLE SEQUENCE TBD.

4.1.14 – THE PROFESSOR IS FOUND!

As the player exits the final puzzle into an arena shaped room the characters see the Professor, looking exhausted on the ground, and run up to him. As the camera pans with them, a large shadow filled humanoid monster is revealed.

```
                        PLAYER
    Professor! Are you okay? What is that thing?


              PROFESSOR GRAY (EXHAUSTED)
    You made it! Please…the island leader…the shadows
    came…he's lost control. I tried to stop him but he was
    too strong. Here! Use these to push the shadows back…
```

4.1.15 – EQUIPPING STAFFS

We guide the player through the equipment screen one last time, on this occasion equipping each of the staffs to a player. At this point we introduce the fact that staffs have different elements associated to them and we show the change in player statistics. The element associated with a staff indicates which element the character's basic magic will use e.g. fire – fireball.

```
                        PLAYER
    Here goes nothing!


                POSESSED ISLAND LEADER
    RAAARGHHHH!
```

The three characters charge into the room towards the humanoid monster triggering the first encounter of the game.

4.1.16 – BOSS ENCOUNTER (SAVE THE LEADER!)

Our first encounter will be balanced and scripted to teach each character's magic, using items, healing a character and our special magic. It will also have an opportunity in the middle for players to try out what they have learnt or be given another prompt if struggling. The actual ordered flow will be as follows:

- Eliana Attack (TUTORIAL)
- Player Attack (TUTORIAL)
- Theo Attack (TUTORIAL)
- Boss hits player – player has medium health
- Eliana Attack
- Player Attack
- Theo Attack
- Boss hits all three – Eliana and Theo on medium health, Player low health.
- Eliana Item Potion on Player (TUTORIAL)
- Player Attack / Item
- Theo Attack / Item
- Boss hits Player – Player medium health, Theo medium health, Eliana medium health.
- Eliana Attack / Item
- Player Attack / Item

- Theo Attack / Item
- Boss hits all three – All low health
- Player Special Attack (TUTORIAL) (gets pushed to front of queue because of special)
- Boss Defeated

Upon defeat of the boss our battle results UI will appear. At this moment, we highlight that the players have gained experience and levelled up, we highlight the change in player statistics and then we reward the player with some money and consumable items. This will all be visualised with moving bars and animated reward effects to feel really exciting to the player.

4.1.17 – INTRODUCING HANGMAN

Once defeated the boss (now in human form) will be worn out laid on the ruin floor.

>   PROFESSOR GRAY
>   You saved him! Thank you! Quick, I'll help him to his
>   feet. You three go into the next room, we have to get
>   what we came here for. I promise to explain everything
>   when we are out of here.

The player is instructed into the next room which contains three chests of differing styles. The player then must open all three earning a new staff, a new outfit and a new amulet, along with the first piece of the statue. To do this, the player clicks on a chest at which point the character will walk up to it and trigger the hangman unlocking game. If the player fails the hangman game they can click to try again and will have a different word to complete. If successful, the camera zooms in, the chest opens and the contents raise out dramatically followed by a message on the UI indicating what the player has earned. The player will then return to the Professor in the previous room. For more details on the hangman mini game see section 6.1 – HANGMAN.

>   ISLAND LEADER JONES (EXHAUSTED)
>   Th-thank you…
>
>   PROFESSOR GRAY
>   Let's get back to town. I will answer all of the
>   questions you have.

4.1.18 – FINAL INTRO CUTSCENE

The camera fades to the main village. Our characters along with the Professor and Island Leader are stood in the square near the destroyed statue.

                    ISLAND LEADER JONES (RELIEVED)
          Thank you for saving me. I couldn't control
          myself.

                         ELIANA
          No problem, but what happened here? Everything
          is a wreck! Professor? What was that cloud
          thing? It didn't look natural.

                         PROFESSOR GRAY
          Ah, you saw it too. Let me explain… I travelled
          to this mysterious set of Islands a few years
          ago to research the magic held in these
          mysterious ruins. There are wonders hidden
          here, forgotten by the world. My research led
          me to believe they were protecting something
          but I couldn't find what. Then one day…a storm…

We fade to a greyscale grainy view of the same village as a flashback of the professors. The ruined buildings are unruined giving a taste of what the player can achieve if they progress and repair. The professor can be seen peering inquisitively at the statue as villagers walk idly in view. A bolt of lightning cracks through the sky hitting the statue ripping it into several pieces.

Dark shadowy clouds burst from the statue, lightning sparking amidst the effect, it sweeps through the village flowing the villagers away, covering the buildings. As the clouds clear, the buildings are seen destroyed with only the Professor and Island Leader remaining in the village. We fade back to the present time.

                         PROFESSOR GRAY
          The storm unleashed some kind of ancient
          being…Raiju. It filled the island controlling
          its inhabitants, turning them to raged beasts.
          Now, it's darkness threatens to spread from
          these islands over the world.

                              PLAYER
          Can it be stopped?

                         PROFESSOR GRAY
          I believe so. I theorise that the statue is
          what contained Raiju. If we can collect the
          statue segments and rebuild it, the mysterious
          power that held Raiju captive should force it
          back.

                         THEO (EXCITED)
          …THEN…SAVING…THE WORLD! YES!

                              PLAYER
          Well we already have one piece. Where are the
          rest?

                         PROFESSOR GRAY
          That's why we ventured into the ruin…it seems
          each of the segments have been hidden deep into
          each of the ruins spread across these islands.
          I need you three to help me gather them. It
          won't be an easy task, many traps, ancient
          puzzles and powerful fiends will try to slow us
          down.

                              ELIANA
          No problem. We've got this.

                         PROFESSOR GRAY
          Thank you. Rest up and then come speak to me,
          we will plan our journey to the next ruin then.

The camera fades to black, our intro ends.

4.2 - CHAPTER 1

TBC

4.3 - CHAPTER 2

TBC

4.4 - CHAPTER 3

TBC

4.6 – OUTRO

TBC

5. PUZZLES

5.1 - CART-ASTROPHE

5.1.1 - DESCRIPTION

Cart-Astrophe tasks our player with acting as our mine cart track controller trying to direct the cart, collecting rewards and linking the track together correctly to prevent our character plummeting into the abyss.

The mini game is built up of three parts, initially the player will enter a typical ruin room with a minecart and track in place, the player climbs in and the minecart lurches forward through a door.


Entrance Room Prototype

The second part is our mini game. From a distant side view of the track, the player speeds along the winding mine track. The player is able to jump to grab collectibles scattered along the track. The player must also attempt to jump over and avoid the dangers (such as gaps in the track) to survive the fast-paced plummet. Periodically, the camera will move ahead revealing a gap between the three tracks. The player must place the joining track in the correct place that rebuilds the word based on our language rule, e.g. the three tracks show "LIME", "BASE", "FROG" and the joining track shows "MENT", the player must link "BASE/MENT" to create the correct path.

If done correctly, the word will be read aloud, the minecart will roll into view, cross the track and progress further on to the next question. If answered incorrectly, the player will cross the incorrect track falling down a gap in the track ahead, lose a life and land on a new track which presents a new question. If the player gets a question wrong 5 times they will fail the mini game and have to start at the beginning in the initial room (at this point we may adjust

difficulty depending on learning performance). The player must answer three questions correctly to clear each section of questions. After three question sections, they have succeeded and the minecart will enter the final room to end the game.
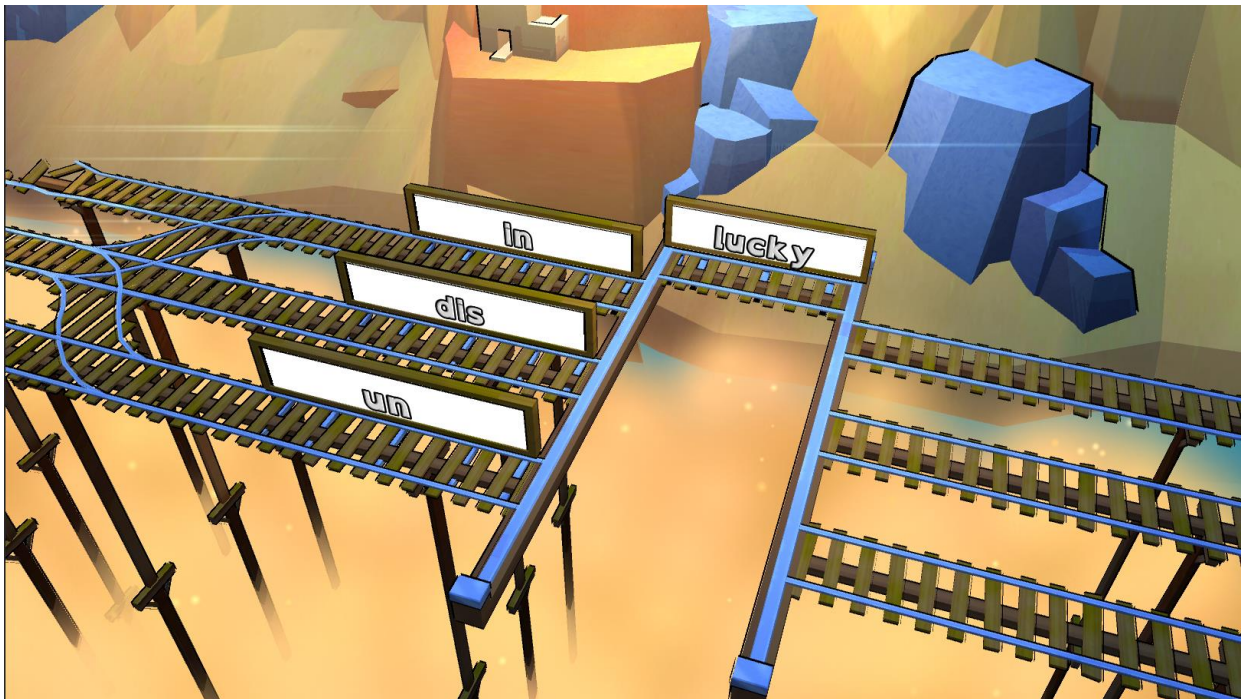
Question Logic Prototype

Our third and final part reverts back to our typical ruin room style, the minecart comes to a rough halt and the player climbs out allowing them to walk through the already open door ahead and enter their next puzzle.

5.1.2 - LANGUAGE MODEL VARIATION

- Moving the first or last half of a word to create a compound word.
- Moving a full word amongst the start, middle or end of a sentence.
- Moving a single, couple or triple set of letters within a single word (e.g. moving "ei" between "th__re", "th__r" and "th__y're").
- Moving the first, last or middle syllable of a word.

5.1.3 - CONTROLS

- Tap the mine cart to climb in and begin the game.
- Tap on screen to jump during the game.
- Hold and drag the track joint into position.

5.2 - GOLD RUSH

5.2.1 - DESCRIPTION

In Gold Rush, the player is being flung down a mineshaft, clinging to the cart, changing lanes to dodge obstacles, breaks in the track and navigate the correct way deeper into the ruin.

This mini game is built up of three parts, initially the player will enter a typical ruin room with a minecart and track in place, the player climbs in and the minecart lurches forward through a door.
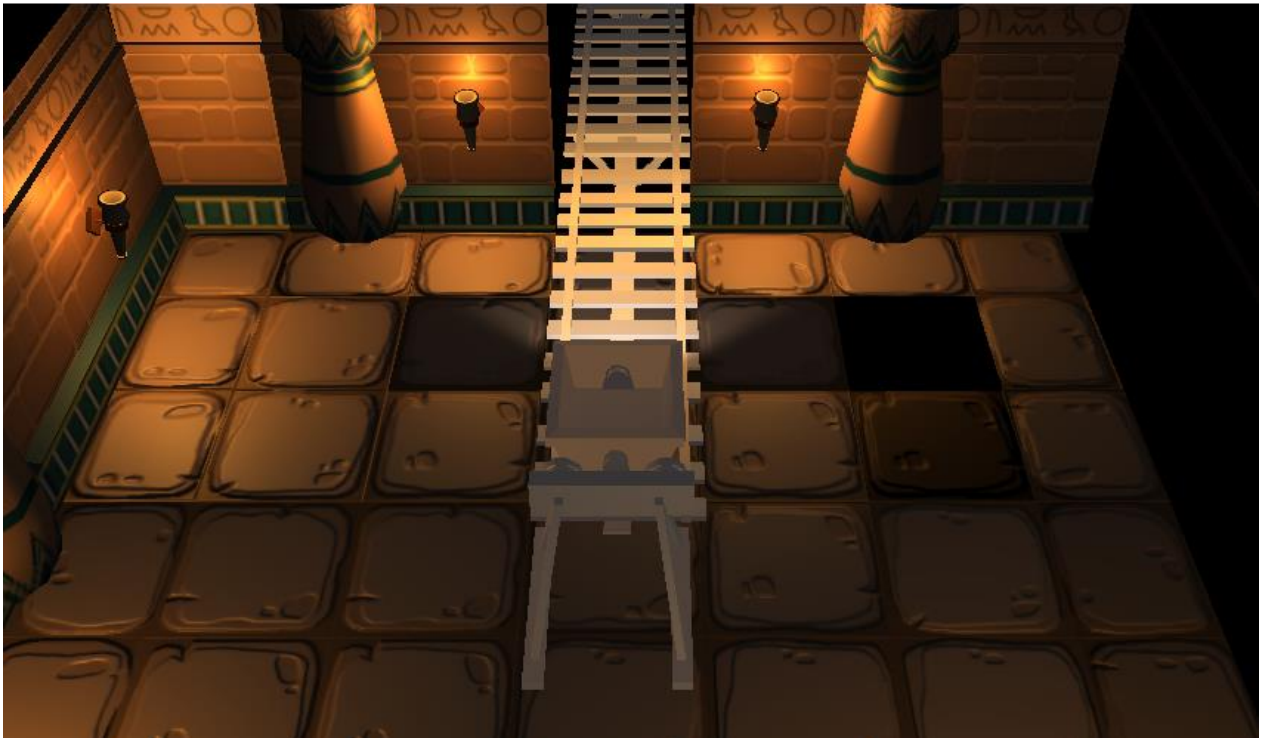
Entrance Room Prototype

The second part is our mini game. From a back view of the character, the player must switch between the three mine cart rails to avoid the dangers ahead. Periodically, the gameplay speed will decrease into slow motion and the player is presented with three tunnel options, each of which represented by a word/prefix/suffix. The player must switch to the lane of the tunnel that follows the linguistic rule e.g. selecting a door out of "_build", "_break" and "_lean" with the question being "Which is the correct joint for the prefix "re_".

If correct, each segment of the word is read aloud followed by the full word, the path is safe and they continue travelling deeper, however, if incorrect they will stumble down a broken path, lose a life (in an Indiana Jones / Scooby Doo humorous way) and land on a new track which present the same question for another attempt. If the player gets a question wrong 5 times they will fail the mini game and have to start at the beginning in the initial room (at this point we may adjust difficulty depending on learning performance). After 5 correct answers, they have succeeded and the minecart will enter the final part via a dark tunnel.
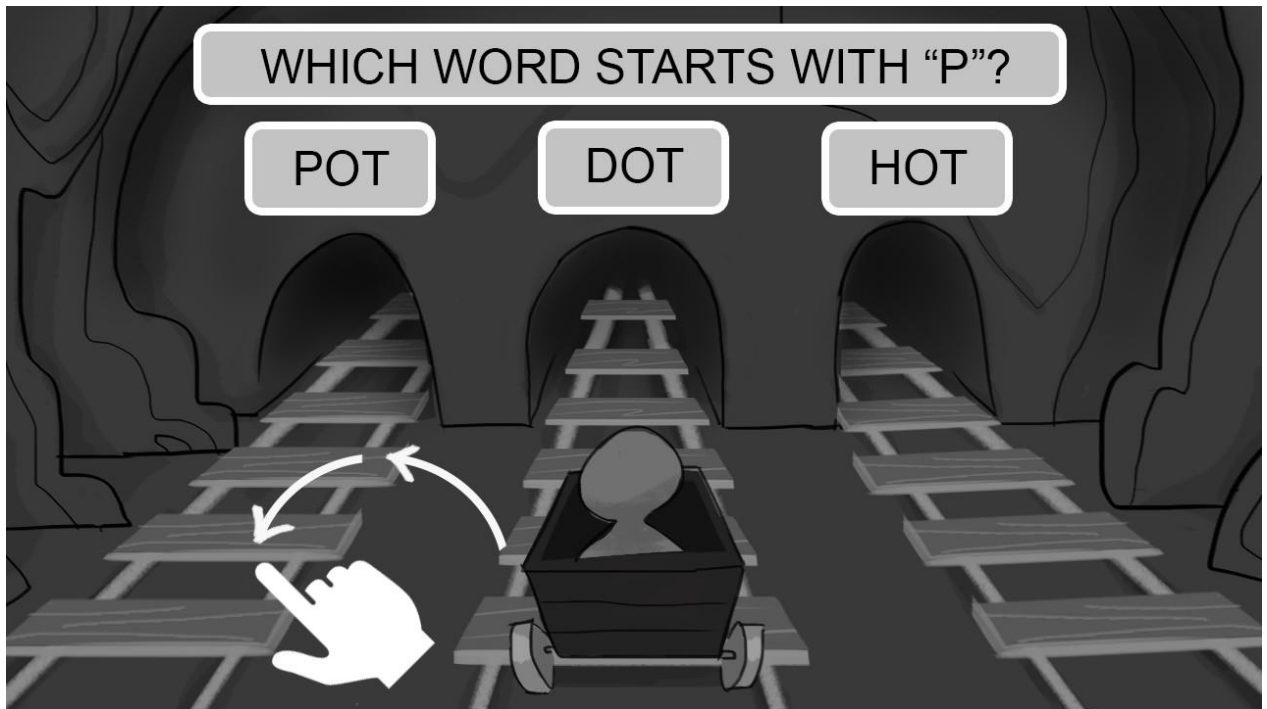
Gold Rush Mock-Up

Our third and final part reverts back to our typical ruin room style, the minecart comes to a rough halt and the player climbs out allowing them to walk through the door ahead and enter their next puzzle.

5.2.2 - LANGUAGE MODEL VARIATION

- Choosing a word that fits into the sentence.
- Choosing a prefix or suffix that fits onto the base word.
- Choosing which word, a prefix or suffix fits onto.
- Choosing which first or second word attaches to the other half of a compound word.
- Choosing which word, a single, double or triple letter set fits into.
- Choosing which single, double or triple letter set fits into the word.

5.2.3 - CONTROLS

- Tap the mine cart to climb in and begin the game.
- Swipe left and right to switch lanes in the respective direction.
- Tap a track to switch to it (additional alternative to the above swipe for increased usability).

5.3 – CLEOMATCHRA (PAIRS)

5.3.1 - DESCRIPTION

A simple game of pairs but with a twist, instead of matching the same picture, or word as in typical pairs, the player must match the pairs that abide our language rule e.g. "BASE-" and "-BALL".

Upon entering the room, the player must tap on the interactive puzzle plaque to trigger the game. At this point the pairs UI will appear and we go to our split camera view, this view shows the puzzle across the left 75% of the screen and a context camera on the final 25%. As the player does well or badly, the context camera will display relevant feedback such as character reactions, environment changes such as a door raising, water level lowering, lights turning on and more to keep the player motivated.

Gameplay Prototype

As the puzzle appears, all tiles turn around to reveal their word segments. The segments are arranged in columns to indicate beginning and end of a word. All tiles then flash indicating that the player should tap one from each column. Upon choosing a tile, the font will glow blue and the word segment is read aloud. Upon choosing two tiles, if correct they will spin and the font changes to green as the completed word is read aloud before changing to a unique pair colour to keep the matches obviously indicated, e.g. dis – appear will change to purple, un – stuck will change to orange. If they are incorrect the tiles with shudder, change to red and return to normal. We do not have a fail state in this game as pairs is equally about memory as it is understanding the language. The player will continue until all pairs have been found and the way forward is opened.

5.3.2 - LANGUAGE MODEL VARIATION

- Building compound words.
- Linking prefixes with the core word.
- Linking suffixes with the core word.
- Linking syllables.
- Linking single, double or triple letter sets with the remaining letters of a word.

5.3.3 - CONTROLS

- Tap the puzzle plaque to walk up to it and activate the mini game.
- Tapping each tile to turn it around and attempt a pairing.

5.4 - PERILOUS PATHS

5.4.1 - DESCRIPTION

Perilous Paths presents the player with a maze-like room layout built up of several branching points that present a multiple-choice question for the player to establish which path is safe and which will lead to disaster.

The mini game uses our typical camera view style as the player tries to navigate through the maze. At each multiple-choice question branch, if the incorrect path is chosen a classic trap will be triggered causing the player to lose a life, that path to be blocked and the player to be respawned back at the point the paths branch. If correct they will progress forwards without difficulty.

Gameplay Prototype

The amount of questions until the maze exit is reached can be tweaked depending on user feedback or current difficulty but will typically be 3 – 6. If the player is incorrect 5 times, they have lost too many lives and will be respawned back at the entrance to the maze room and met with a brand-new maze.

5.4.2 - LANGUAGE MODEL VARIATION
- Selecting a rhyming word.
- Linking prefixes or suffixes with a core word.
- Linking syllables.
- Linking single, double or triple letter sets with the remaining parts of a word.
- Selecting the correct word for a sentence.

5.4.3 - CONTROLS

- Standard navigation controls to navigate the environment such as tapping to path find or using the virtual joystick.
- Tapping beyond the answers of a question will path find the quickest route, NOT choose the correct answer.

5.5 - PILLAR PUSHER

5.5.1 - DESCRIPTION

In the Pillar Pusher puzzle, the player enters a room with several pillars dotted around the environment. Each of these pillars will display a word piece such as "RE" "SEM" "BLE".

The player's task is to use their levitation spell to move these pillars around the area placing the correct ones into the correct positions, this could be as simple as rearranging pillars, with single letters on them, into the right order to build the word, but in higher difficulties could incorporate syllables, incorrect word pieces or more complex rules.

Gameplay Prototype

Often in these style of puzzle, part of the challenge is how to move the pillars to the desired outcome without blocking the required movement of the other pillars. In our case, we want the learning to be the core focus, so this element would only be used very lightly and the levitation spell will be used to speed up moving the pillars around.

Upon entering the centre of the room, the camera will shift upwards providing a more birds-eye view of the puzzle. The player will then be able to drag and drop the pillars around the pillar tracks until they have reached the solution. When completed a short cut-scene will play showing the environment reacting such as the door opening or a bridge being raised to open the way ahead.

5.5.2 - LANGUAGE MODEL VARIATION

- Moving letters around to build a word.
- Moving syllables around to build a word.
- Moving words around to build a sentence.

5.5.3 - CONTROLS

- Tapping a pillar to reveal four directional arrows.
- Tapping an arrow to drag or push the pillar one grid space in that direction.

5.6 - RAFT RAPID FIRE

5.6.1 - DESCRIPTION

As our player flows down a deep cavern river, the raft beneath his feet bobbing worryingly, our player must use their magic to destroy obstacles in fast succession as they pop out of the water, ensuring not to add to the obstructions in the rafts trajectory.

Entrance Room Prototype

The mini game is built up of three parts, initially the player will enter a typical ruin room with a river and a docked raft in place, the player climbs on board, releases the rope and the raft begins flowing downstream toward the centre of the ruins.

The second part is our mini game. From a back view of the character, the player must launch magical orbs at the various targets, made up of barrels that burst out of the water and signposts appearing from the stream banks, in quick succession provided they follow the language rule.

Shooting correct targets will cause the obstacle to no longer obstruct the raft, the word will be read aloud, positive SFX plays and we trigger a reward in the form of treasure, however shooting an incorrect target will cause the word to be read aloud, negative SFX plays and ancient evil magic rises from the crate damaging the raft. Failing to shoot a correct one will cause the obstacle to remain, crashing into the raft leaving some damage. After multiple occurrences of damage to the raft, the raft becomes destroyed and the player is returned to the initial room to start the raft game again. Surviving the puzzle will see the player's raft float into a dark tunnel entering the final part.

Gameplay Prototype

Our third and final part reverts back to our typical view, the raft slows to a half and the player jumps to shore allowing them to walk through the door ahead and enter their next puzzle.

5.6.2 - LANGUAGE MODEL VARIATION
- Shooting vowels or consonants instead of the other.
- Shooting words that rhyme with a core word.
- Shooting prefixes or suffixes that would attach to a core word.
- Shooting words that would attach to a prefix or suffix.


5.6.3 - CONTROLS
- Tap the raft to path find up to it and climb on board starting the game.
- Tap targets to launch a magic orb at them.

5.7 - REMOVE THE RUNES

5.7.1 - DESCRIPTION

A simple game requiring the player to select multiple tiles that follow the linguistic rule.

Upon entering the room, the player must tap on the interactive puzzle plaque to trigger the game. At this point the runes UI will appear and we go to our split camera view, this view shows the puzzle across the left 75% of the screen and a context camera on the final 25%. As the player does well or badly, the context camera will display relevant feedback such as character reactions, environment changes such as a door raising, water level lowering, lights turning on and more to keep the player motivated and understanding on what they are achieving.
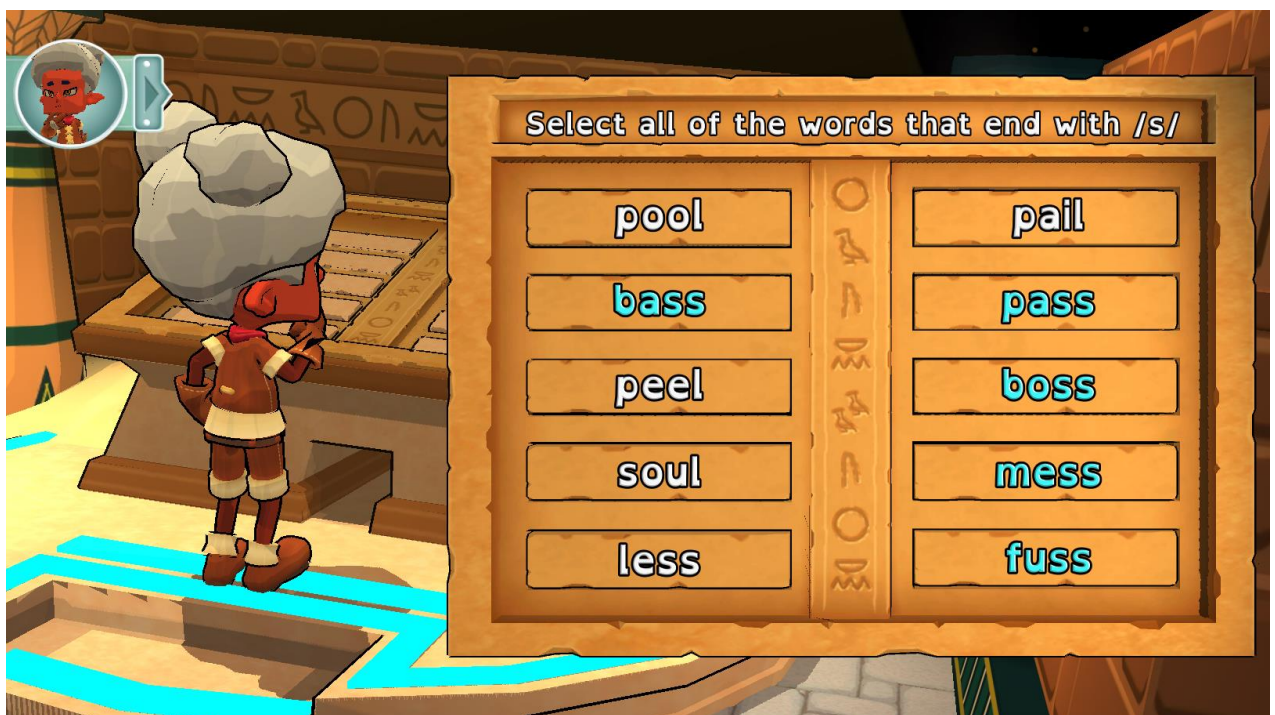
Gameplay Prototype

From here, the player must distinguish which of the tiles match the language rule and which don't, selecting the tiles that match the rule. Once all of the correct tiles are highlighted, the way forwards will open. We do not have a fail state in this game as the game focuses on a freer form of problem solving. The game will continue until the solution is found. When a tile is tapped it will read the word aloud alongside the highlight of the word being toggled on or off.

5.7.2 - LANGUAGE MODEL VARIATION

- Separating words that rhyme with a core word and those that do not.
- Separating vowels from consonants and vice versa.
- Separating verbs or adjectives or nouns.
- Separating words that would apply to a prefix or suffix.
- Separating prefixes or suffixes that would apply to a word.
- Separating correctly spelt words from incorrectly spelt words.

- Separating words that have the correct number of syllables.

5.7.3 - CONTROLS
- Tap the puzzle plaque to walk up to it and activate the mini game.
- Tapping each tile to turn it around and attempt a solution.

5.8 - RULING THE RUINS

5.8.1 - DESCRIPTION

Ruling the Ruins puts our player in the role of specifying which rule each word adheres to. Upon entering the room, a large word pillar appears from beneath the floor followed by four pressure pads, one in each corner. Each of these pressure pads holds a language rule such as "Two Syllables". One or more of the pressure pads contain a rule that the word adheres to and the player must distinguish which one.

Gameplay Prototype

From here, the player must walk onto the correct pressure pads to give their answer. If correct the pressure pad will light up with a green glow and the pillar will light up a correct answer indicator. If the answer is incorrect the pressure pad will glow in red and descend into the floor. Each time a new word appears it is read aloud.

After giving all of the correct answers, the pillar and pressure pads will descend back into the floor and be followed by a new set with a new word and question. After giving an incorrect answer, the chosen pressure pad will close off, the player will lose a life and then be given the opportunity to answer again out of the three remaining. 5 incorrect answers result in failing the mini game, being re-spawned at the entrance to the puzzle room and the mini game starting again. 5 correct answers result in a success and the way forward, deeper into the ruins, will open.

5.8.2 - LANGUAGE MODEL VARIATION
- Establishing if the word rhymes with another.
- Establishing whether a prefix or suffix applies to the word.
- Establishing whether a word applies to the prefix or suffix.

- Building compound words by selecting the first or second half.
- Establishing the number of syllables.
- Establishing types of a core word e.g. "cod" and "bass" are types of "fish".
- Establishing whether the word is singular or plural.
- Establishing whether the word is a noun, verb or adjective.
- Establishing whether the word is a compound word.
- Establishing if any of the above rules DO NOT apply.

5.8.3 - CONTROLS

- Tap a pressure pad to walk onto it.
- Using the current navigation control method to manually walk onto a pressure pad.

5.9 - RUNAWAY MINECART

5.9.1 - DESCRIPTION

Runaway Minecart places the player on a winding rollercoaster ride through a mineshaft tasking the player with slicing overhanging obstacles out of their way to traverse deeper into the ruins.

The mini game is built up of three parts, initially the player will enter a typical ruin room with a minecart and track in place, the player climbs in and the minecart lurches forward through a door.

The second part is our mini game. From a back view of the character, the player must slice the various obstacles that hang overhead in the way of the speeding minecart causing them to tear away from the track. These obstacles will be a variety of vines, overgrowth and other land protrusions. Periodically, the gameplay speed will decrease into slow motion and the player is presented with an obstacle containing a word on a board. The player must then slice in the correct position following the rule, e.g. BASE/BALL.
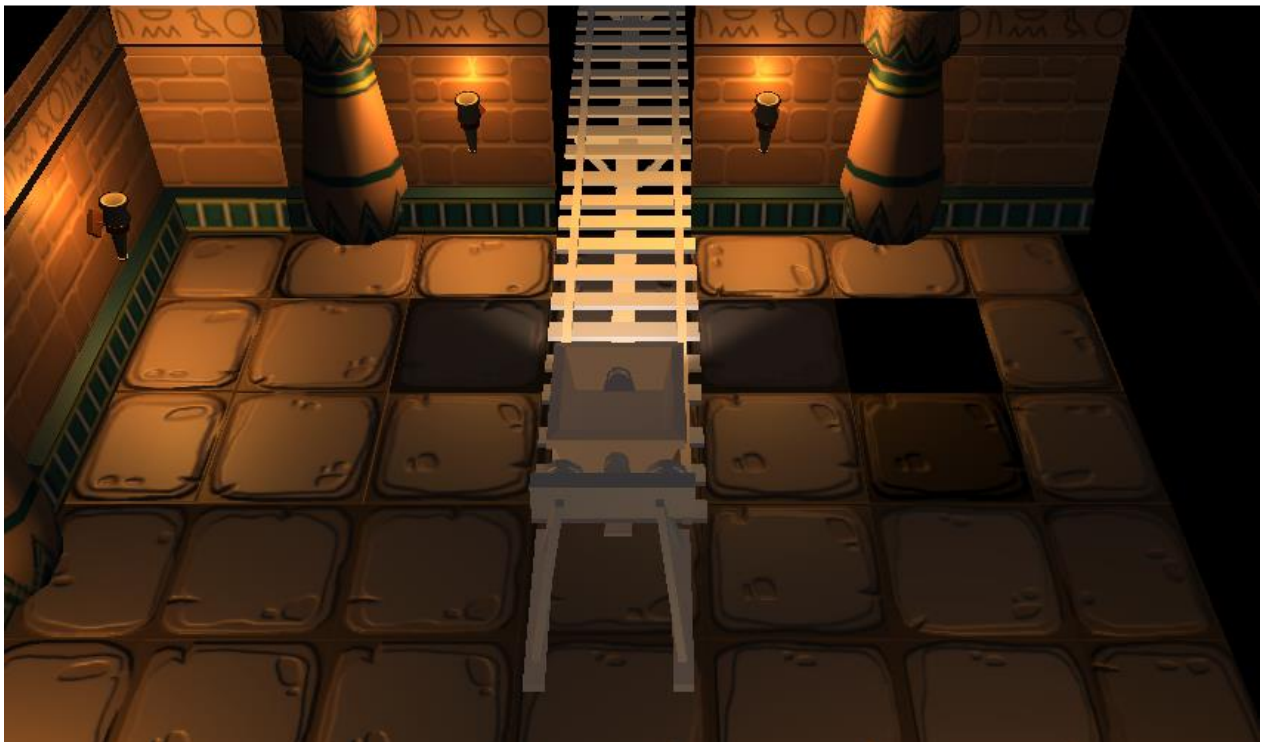
Entrance Room Prototype

If correct, the obstacle will split, each word segment will be read aloud followed by the full word and fall out of the way and the player progresses onwards. If incorrect the word will split and fall onto the track causing the cart to crash, at which point the player loses a life and is respawned back at the questions origin with a new word question to solve.

Gameplay Mock-Up

If the player gets a question wrong 5 times they will fail the mini game and have to start at the beginning in the initial room (at this point we may adjust difficulty depending on learning performance). After 5 correct answers, they have succeeded and the minecart will enter the final part via a dark tunnel.

Our third and final part reverts back to our typical ruin room style, the minecart comes to a rough halt and the player climbs out allowing them to walk through the door ahead and enter their next puzzle.

5.9.2 - LANGUAGE MODEL VARIATION
- Split compound words by each half.
- Split prefix off of word.
- Split suffix off of word.
- Split by syllables.
- Split sections of a sentence (potentially difficult in practice).

5.9.3 - CONTROLS
- Swiping the screen to slice obstacles (Fruit Ninja style).

5.10 - SORT-BY-SIDE

5.10.1 - DESCRIPTION

In this game, the player must slide words into one of two columns depending on which rule it applies to.

Gameplay Mock-Up

Upon entering the room, the player must tap on the interactive puzzle plaque to trigger the game. At this point the sort by side UI will appear and we go to our split camera view, this view shows the puzzle across the left 75% of the screen and a context camera on the final 25%. As the player does well or badly, the context camera will display relevant feedback such as character reactions, environment changes such as a door raising, water level lowering, lights turning on and more to keep the player motivated and understanding on what they are achieving.

From here, the player must distinguish which of the tiles match each language rule, moving the tiles into the appropriate column. Once all of the tiles are in the correct columns the way forwards will open. We do not have a fail state in this game as the game focuses on a freer form of problem solving. The game will continue until the solution is found. The player can hear each rule read aloud by tapping the rule tile. Upon letting go of a dragged tile the key element of the rule (in this case letter P) will be read aloud followed by the placed word will be read aloud.

5.10.2 - LANGUAGE MODEL VARIATION

- Separating words by different prefixes.
- Separating words by different suffixes.
- Separating words dependant on whether they are nouns, adjectives, verbs etc.

- Separating words by past, present or future tense.
- Separating words dependant on whether they are singular or plural.
- Separating words dependant on whether they are spelt correctly or incorrectly.

5.10.3 - CONTROLS

- Tapping the puzzle plaque to path find to it and begin the game.
- Tap and drag the tiles into the appropriate columns, letting go will cause the tile to snap to its nearest relevant position.

5.11 - TOOT-AND-COME-IN

5.11.1 - DESCRIPTION

In this melody building puzzle, the player is presented with a large wall segment, displaying an initially unlit mural along with a multiple-choice question. With each correct answer, another layer of the mysterious ruin music is added.

The players screen view will be split, the left 75% of the screen showing the puzzle and the right 25% showing our second camera used for context based reward. This camera will show the character interacting with the wall, and upon correct or incorrect answers will display the reaction caused in the environment such as the door raising slightly, lights turning on, water level lowering or a secret bridge raising.

As each question is answered correctly, a new piece of the mural will flash green and then light up in blue, at this point that mural piece's audio layer will begin looping. If an incorrect answer is made, an unlit piece of the mural will flash red playing a broken audio effect followed by its glow fading away. As a result of the incorrect answer the wall cracks a little.

Gameplay Prototype

The player must answer correctly until the music sheet is filled up, gradually building the correct score with each answer (this is a great reward response). When the final correct answer is given, the full score will play causing the door to open allowing the player to progress to the next puzzle. If the player answers incorrectly multiple times, the wall will crack more and more until it ultimately breaks. The player will then re-spawn at the door entrance to the puzzle and be presented with a new wall to start the puzzle again.

5.11.2 - LANGUAGE MODEL VARIATION

- Applying a core word to a prefix or suffix.
- Applying a prefix or suffix to a core word.
- Finding the correct syllable missing from a word.
- Creating compound words.
- Finding the correct word for a sentence.
- Finding the correctly spelt word for a sentences context.
- Finding the correct single, double or triple letter set to finish spelling a word.
- Finding a rhyming word.
- Finding a word based on total syllables.
- Finding the odd word out based on NOT APPLYING to any of the above rules.

5.11.3 - CONTROLS

- Tapping the puzzle plaque to path find to it and begin the game.
- Tapping the chosen answer for each multiple-choice question.

5.12 - WATCH YOUR STEP!

5.12.1 - DESCRIPTION

In Watch Your Step the player enters a room covered with hexagonal floor tiles each represented with a word/segment. The only safe way across is to move from hexagon to hexagon along tiles that follow the questions rule e.g. start point -> GET -> SET -> LET -> BET -> MET -> end point.

The mini game takes place solely in this room, as the player tries to navigate the path. Once the player has tapped a hexagon to begin on, the camera will shift into a bird's eye view and the potential hexagons to move to next will flash awaiting the player to tap their choice. When chosen, the player will hop onto the relevant hexagon and the cycle continues.

Gameplay Prototype

If the player steps on a correct hexagon, positive audio is played and the next step begins. If the player chooses an incorrect hexagon a dangerous trap will be triggered, the player will jump backwards out of its way just in time and the hexagon will be destroyed to prevent the player making the same mistake. The player must then try that step again and select a hexagon from those that remain.

If the player sis incorrect five times, they will fail to dodge the trap and be respawned back at the entrance to the room. Upon re-entering the room, the mini game will have been refreshed offering a new question to solve. Provided they make the correct answers, they will reach the other side safely and be able to continue through the door to the next puzzle.

5.12.2 - LANGUAGE MODEL VARIATION

- Building a path of rhyming words.
- Building a path of words with a specific number of syllables.
- Building a path of words that use the same prefix or suffix.
- Building a path of words that are nouns or verbs or adjectives.
- Building a path out of correctly spelt words.
- Building a path out of present, past or future tense words.
- Building a path out of singular or plural words.
- Building a path out of words that would build a compound word when paired with a core word.

5.12.3 - CONTROLS

- Using the active navigation control method to walk onto the starting hexagon.
- Tapping the chosen hexagon to step on to next out of the glowing hexagons available.
- Using the active navigation control method once the end is reached to walk through the exit door.

5.13 – WORDY WHEEL

5.13.1 - DESCRIPTION

Wordy Wheel tasks the player with rotating a word filled set of wheels aiming to create a solution. This may be arranging letters of a word, syllables of a word or even words of a sentence.

To begin the game the player will need to interact with the puzzle plaque which instigates our split screen view. In this view 75% of the screen will be filled with the interactive puzzle UI whilst the remaining 25% displays our context camera. The context camera will show positive and negative actions depending on how the player does, these vary from the player's reactions to environmental reactions such as a door opening or bridge raising.

Within the puzzle UI the player will be shown multiple layered wheels, each of these layers will have multiple words inset into the stone. The player must drag each layer of the wheel to align the solution. In higher difficulty cases, there may be multiple wheels, or even interlocked wheels.

There is no game over state for this puzzle but we will measure capability and success on the player's speed of finding a solution. Once the solution is found, the way forwards will open and we return to our typical camera view.

5.13.2 - LANGUAGE MODEL VARIATION

- Aligning letters of a word.
- Aligning syllables of a word.
- Aligning prefixes or suffices to the words.
- Aligning words of a sentence.

5.13.3 - CONTROLS

- Tap the puzzle plaque to activate the game.
- Tap and drag a layer of the wheel into the desired rotation, the ring will snap into the nearest relevant position if let go unaligned.

5.14 – BRIDGYPTIAN

5.14.1 - DESCRIPTION

Bridgyptian sees the player solving word puzzles in order to create a bridge over a chasm of lava and progress to the next room.

As the player approaches the puzzle, the character will automatically progress up to the platform to the left of the chasm. The character will then be able to use their magic staff to move pillars around the chasm of lava to solve the word puzzle. Some pillars will be correctly placed into the pedestal already and the player must move the correct pillars from the remaining selection to correctly solve the puzzle.
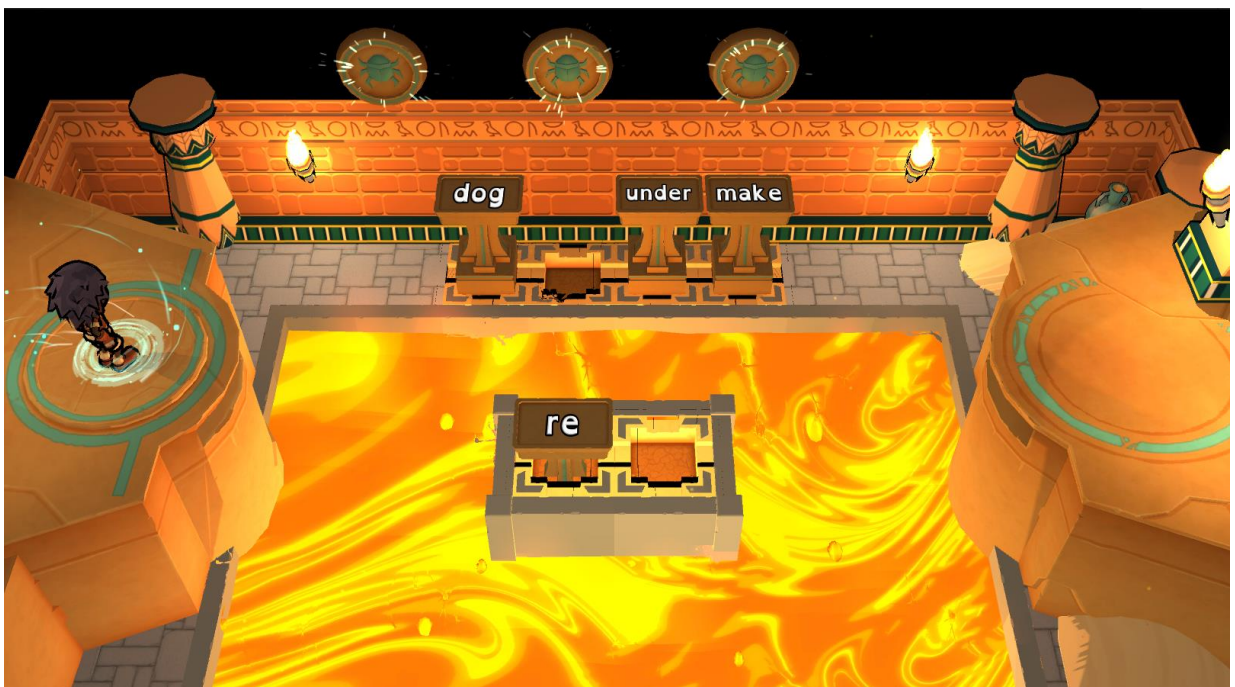
Gameplay Prototype

Once a question has been answered correctly, all of pillars will descend into the pedestals and be replaced with a new question. Once the player has correctly answered three questions, the pillars will remain in the pedestal and a bridge will emerge between the two platforms, supported by the pillars. The player will then be able to cross the bridge to reach the next room.

5.14.2 - LANGUAGE MODEL VARIATION

- Correctly spell words.
- Selecting the correct digraph, trigraph for a word.
- Choosing words that can be applied to the prefix or suffix.
- Choosing the prefixes or suffixes that can be applied to a word.
- Matching syllables of a word.
- Matching words of a sentence.
- Building a word out of phonemes.

5.14.3 - CONTROLS

- Tap or drag to move around the screen and approach the platform.
- Tap and drag the pillars to move them around the screen. Release to place them into the puzzle.

5.15 – HEAROGLYPHS (AUDIBLE PAIRS)

5.15.1 - DESCRIPTION

Hearoglyphs acts as a way for users to link an audio clip to a word. The gameplay is similar to that of Cleomatchra (Pairs). Volume is required.

Upon entering the room, the player must tap on the interactive puzzle plaque to trigger the game. At this point the Hearoglyphs UI will appear and we go to our split camera view, this view shows the puzzle across the left 75% of the screen and a context camera on the final 25%. As the player does well or badly, the context camera will display relevant feedback such as character reactions, environment changes such as a door raising, water level lowering, lights turning on and more to keep the player motivated.

Gameplay Prototype

The player will see a puzzle board containing 3, 4 or 5 audio buttons along with their paired words, arranged around in groups. The audio button and tiles will rotate to reveal their icon and word and begin to flash indicating the player should tap them. Once an audio button is tapped the glow on all other audio buttons will fade, the button will rotate and play the word via text to speech. Once a word tile is tapped it will shudder, the glow on all other word tiles will fade. Once one from each group has been selected if the pairing is correct the audio button will repeat the word followed by the tile highlighting and repeating the word a final time before the font changes to the same colour as the audio button to make it clear which pairs matched with each button. If the pair is incorrect both will shudder, flash in red and return to normal.

The player must continue until all pairs have been made at which point the way forward will be open allowing them to continue through the ruin. The question can be heard in text to speech by tapping the question tile. This puzzle is always many audio clips to many tiles, for cases of one audio clip and multiple word tiles see 5.16 – Saheara (design to be confirmed) which is ideal for cases such as hearing a word and choosing the correct spelling out of distractors.

5.15.2 - LANGUAGE MODEL VARIATION

- Audio of a digraph, trigraph matched against the text.
- Audio of a full word matched against the text.
- Audio of each syllable in a word matched against the text.

5.15.3 - CONTROLS

- Tap or drag to move around the screen and approach the plinth.
- Tap the plinth to begin the game.
- Tap the puzzle board tiles to select pair.

5.16 – SAHEARA (AUDIBLE MULTIPLE CHOICE)

5.16.1 - DESCRIPTION

Saheara (design to be confirmed) tasks the player with selecting the correct answer out of three options that matches the audio clip, this can be word or sentence level and used to distinguish between distractors, phonemes, syllables and more.

5.17 – SLICECOPHAGUS (WORD SLICING)

5.17.1 - DESCRIPTION

Slicecophagus tasks the player with slicing the word at the appropriate location based on a rule. The learning is the same as Runaway Minecart but is a simple puzzle board design. The aim of the game is to split all of the words correctly which will allow the laser to reach the bottom of the board opening the route forwards.

Upon entering the room, the player must tap on the interactive puzzle plaque to trigger the game. At this point the Slicecophagus UI will appear and we go to our split camera view, this view shows the puzzle across the left 75% of the screen and a context camera on the final 25%. As the player does well or badly, the context camera will display relevant feedback such as character reactions, environment changes such as a door raising, water level lowering, lights turning on and more to keep the player motivated.

Gameplay Prototype

The player will see a puzzle board containing 3 or 4 words, arranged vertically. The player must slide each word back and forth to ensure that the laser will split each word according to the rule shown. The player must then click the cut button at the bottom of the board. If the word is correct, each split segment of the word will be spoken and the tile will be split in two. If the tile is incorrect, the whole word will be spoken, the player will receive negative feedback and the laser will stop cutting ready for the player to move the remaining words again.

The player must continue until all words have been cut according to the rule shown, allowing the laser to reach the bottom of the board. This will open the door in the room and allow the player to progress.

5.17.2 - LANGUAGE MODEL VARIATION

- Splitting words into syllables
- Splitting words into prefixes and core words
- Splitting words into core words and suffixes

5.17.3 - CONTROLS

- Tap or drag to move around the screen and approach the plinth.
- Tap the plinth to begin the game.
- Tap and drag the puzzle board tiles to place them at the chosen location.

6. ADDITIONAL MINI GAMES

6.1 – HANGMAN

6.1.1 - DESCRIPTION

Throughout gameplay, in addition to the item pickups, the player will come across treasure chests that contain more exciting and valuable items such as equipment or customisation items. These chests are however locked up tight. The player is tasked to crack the code by playing a simple game of hangman.

To activate the hangman mini-game, the player must click on the chest causing the character to walk up to it and bring up the hangman game UI.

Gameplay Prototype (Placeholder)

Upon successfully finding the solution the camera will zoom into the player's position; the chest will swing open and its contents will rise out dramatically accompanied with a celebratory audio effect If the player fails to get the solution within the allotted guesses they can retry freely but will be given a new word to solve.

6.1.2 – CHEST CONTENTS

Chests are unlike items and therefore will only ever contain key items, staffs, amulets or customisation items for the head, torso, legs, feet or hands. To find specifics on the different equipment and customisation items consult section 8 – CUSTOMISATION.
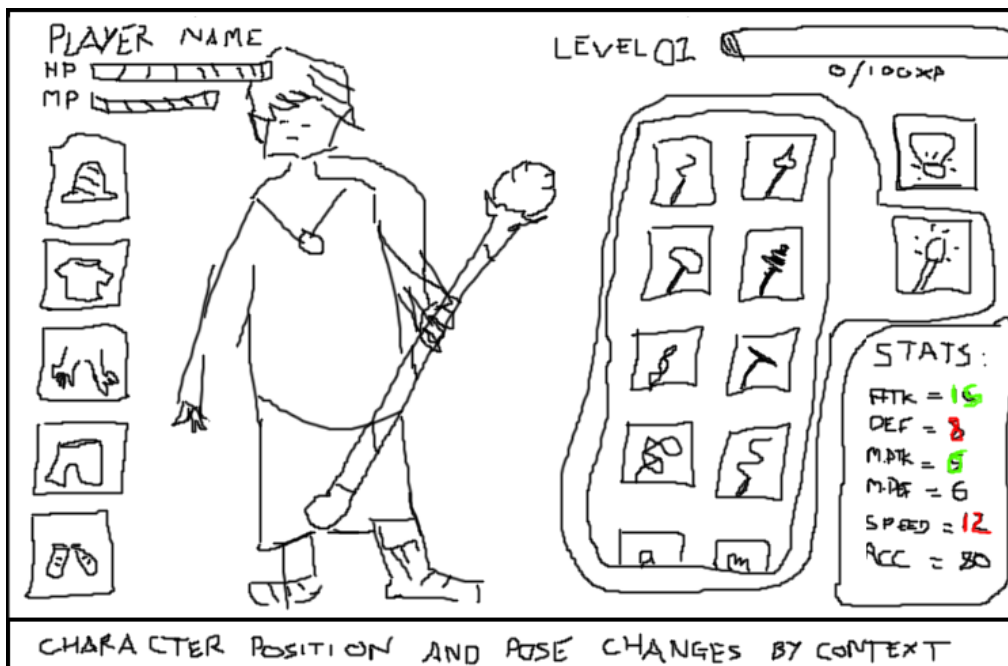
6.1.3 – ACHIEVEMENTS

Achievements will be tied loosely into the chest opening mini game with rare items being unlocked for opening a specific number of chests and ultra-rare items being unlocked for opening a chest without any incorrect letter guesses. For more specific detail check section 11 - ACHIEVEMENTS.

7. CUSTOMISATION

7.1 - CHARACTER VISUALS

7.2 – OUTFIT

7.3 - EQUIPMENT

7.4 – ENVIRONMENT

3.   APPENDIX

3.1 *NaviGo – Island of the Lost Words PC Build 22/12/2017*

Installation:
Access the files contained within the iRead dropbox:
1. Dropbox\iRead Project Dropbox\WP6 games\game builds
2. Unzip file iRead-22122017-WIN.zip . Make sure to retain folder structure/entirety of content. Double click 'iRead.exe' to run the game.

Build Contents
The user flow / content of the test build is as follows:

- Title Screen – Character Customisation – Level Select (Placeholder)
- Cleomatchra (Pairs)
- Bridgyptian
- Hearoglyphs
- Raft Rapid Fire
- Pillar Pusher
- Walk Like an Egyptian
- Remove the Runes
- Slicecophagus
- Cartastrophe

As illustrated by the map, the 9 puzzles above are laid out in the ruin as a cycle, the puzzles will flow through in the order shown on the map and after finishing the 9th puzzle, return to the 1st.

Controls
To navigate the user has two options, they can tap to place a marker and have the player path to it or hold their finger down revealing a joystick to manually navigate the player around the scene.
The user is also able to rotate the screen by using two finger rotation gesture, however this is not final and may not work perfectly.
From any scene the player can tap the top left UI arrow which will pause the action and reveal a "Return to Title Screen" button for navigating back to the map to select a specific puzzle.
At the end of many puzzles, a door or path forward will open, to move to the next puzzle navigate your character through the doorways.

Localisation
Whilst our localisation is set up to take system language and device information to automatically provide the correct language for the purposes of this deliverable we are supplying two builds, one in English and another in Greek. At present, UI and logos localise, all text within puzzles will be pulled in from the domain model (once available WP8) so it is unnecessary to localise puzzle text. Select the "en-GB" pc build for the English version and "el-GR" pc build for the Greek version.

Title Screen / Character Customisation / Level Select
Upon load the title screen will appear with a prompt to tap anywhere. Once tapped, the character customisation screen will appear. If you have played the build before, your character

will be loaded, if not a random character will be created. Within the character customisation, customisation areas are split by tabs on the left side of the papyrus. Tap the tabs to open them and select your asset choice and in many cases colour choice. Tap the username at the top of the screen to change your character name. In addition, there are two buttons on the bottom right of the papyrus, a randomise button that will create a random character and the save button that will save your choices and proceed to the map screen. From the map screen, select whichever puzzle you would like to start at.

Cleomatchra (Pairs)
Teaching Prefixes Together
To start the puzzle, tap the puzzle plinth in the middle of the room. The player will walk up to it and open the puzzle UI. The player must now match the correct prefixes to the correct word stem by tapping a tile from column A and a tile from column B. Audio and visual feedback has been added to indicate correct and negative answers as well as make it clear which previous pairs were made. There are instances where multiple tiles with the same prefix on can appear due to limited sample domain data, however, the answer is calculated by checking the pairs final word so any variation will still work.

Bridgyptian
Teaching Prefixes Alone
Entering the room and climbing the stairs will begin the puzzle. The player must drag and drop pillars that contain the correct stem word from the back wall onto the puzzle holder position. Upon doing so the pillars will disappear into the floor replaced by the next question. Upon 3 correct answers the bridge opens and the player can walk to the next puzzle. **Fun tip:** The player can drop the pillar in the lava – it will respawn.

Hearoglyphs
Same Phoneme Different Grapheme Comparison
In Hearoglyphs the player must pair tiles similarly to Cleomatchra, however in this case, column A is comprised of tiles that will play the word audio and the player must match it with the correct word from column B. The player can tap their selected audio button again to hear the word played again if needed. Audio and visual feedback has been added to encourage the player and ensure paired tiles are clear to the user.

Raft Rapid Fire
GPC Taught Alone
In Raft Rapid Fire the player must tap the barrels that contain correct words as they float and swing into view. Upon getting 10 correct answers, the game will end. If they tap incorrect answers or fail to tap correct answers the raft will take damage. After taking damage 5 times, the player will fall into the river and the game will restart.

Pillar Pusher
Construct Word from Graphemes
In Pillar Pusher the player must walk forwards in the room to begin the puzzle. Once started the player will hear a word they need to recreate. Drag and drop the pillars into the slots to build the word from the graphemes on each pillar. When all slots are filled with pillars, a cutscene will play displaying how well the player has done. If still not correct, rearrange the pillars until the solution is found.

Walk Like an Egyptian
Teaching Prefixes Alone

In Walk Like an Egyptian the player must cross the dangerous chasm by jumping from hexagon to hexagon. As the player steps on the starting grid a group of hexagonal pillars will rise from the depths, the player must tap the pillar that contains the correct word which will trigger the character to jump forwards onto it. If incorrect, the pillar will fall down and the player will jump back into place. Continue jumping across the correct pillars until the character reaches the other side safely.

Remove the Runes
Teaching Prefixes Together
To play remove the runes, tap the plinth to walk up to it and begin the puzzle. To complete the puzzle, tap tiles to activate / deactivate them until only the correct tiles are activated. When the font is glowing blue the tile is active. Once complete, the tiles will spin and repeat the correct words to reinforce learning.

Slicecophagus
Placeholder – non-sample domain model data
To play Slicecophagus, tap the plinth to walk up to it and begin the puzzle. The game will begin and the player is presented with 3 or 4 tiles. Drag and drop the tiles along the horizontal slot to position the tiles. The player must position the tiles so that the laser points at the location they wish to slice the word (in this case to break it into syllables). When the tiles are positioned correctly, tap the laser button at the bottom of the puzzle board to enter your solution attempt. The laser will cut apart all words that are placed correctly. Continue until the solution is found.

Cartastrophe
Teaching Prefixes Together / Teaching Prefixes Alone
Currently Cartastrophe flips between both prefixes together and prefixes alone however in the final product the puzzle would only be teaching one rule at a time. The player must tap to jump, collecting as many gems as they can until they reach a question section. During question sections the player must drag and drop the missing track piece to the correct lane, completing the track and allowing the minecart to continue forwards. After they get 9 correct answers the game ends. If they get an incorrect answer, the correct answer is revealed and the minecart moves forward, falling down a gap in the track and is given a new question.