

THE WITCH'S BREW



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1. OVERVIEW

GAMEPLAY:

The Witch's Brew is a Casual Mobile AR Game. The moment to moment gameplay revolves around an immersive shop management experience themed around Witchcraft. The focus is on player choice, which drives an emerging narrative depending on the players actions.

1.2 PLATFORM

MOBILE:

The Witch's Brew prototype and initial release will be through the Google Play Store for Android devices, with a stretch goal of also releasing an iOS version for the App Store.



1.3 TARGET AUDIENCE

PEGI RATING:

Quote taken PEGI (2019)

“PEGI 7 Game content with scenes or sounds that can possibly be frightening to younger children should fall in this category. Very mild forms of violence (implied, non-detailed, or non-realistic violence) are acceptable for a game with a PEGI 7 rating.”



BARTLE TEST: EXPLORERS

The game will appeal to the explorer player type, due to the gyroscope acting as a 'window' to another world. The player can unlock new areas of the world by earning enough money through their potion making and moving to new shops. Explorers will also enjoy the creative potion discovery, as discovering new things acts as a reward for them.

DEMOGRAPHIC:

According to the research, 65% of mobile gamers are female, however the majority of these players believe only 30% of games on the App Store are 'made for them' [Jen Maclean et al. (2017)]. Therefore, having a game that is inclusive for all genders is important. The art style and themes in our game reflect something that can appeal to anyone. Having a game that can largely appeal to women also means we will be reaching the biggest percentage of players and have a more popular game.

The game has some darker themes, for example killing the king and making arguably 'evil' choices, however the game is not graphic or supposed to be frightening. Therefore, a PEGI

rating of 7 is suitable. The player needs to be able to have a basic comprehension of the story and choices they're making to be able to get the full game experience. The 'cuter' aesthetic of the game also means it will probably appeal more to younger audiences, but it could really appeal to anyone older who also likes the aesthetics and themes.

1.4 THEME

AESTHETIC OF THE GAME:

Harvest Moon DS (2005)



Animal Crossing: New Leaf (2012)



Kiki's Delivery Service (1989)

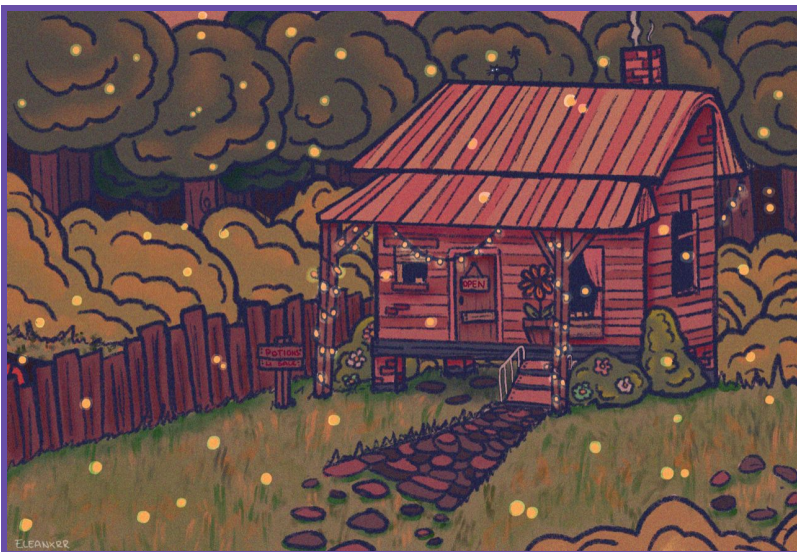


The Art of Tangled (2010)



Mary and the Witch's Flower (2018)

The Witch's Brew Art Style

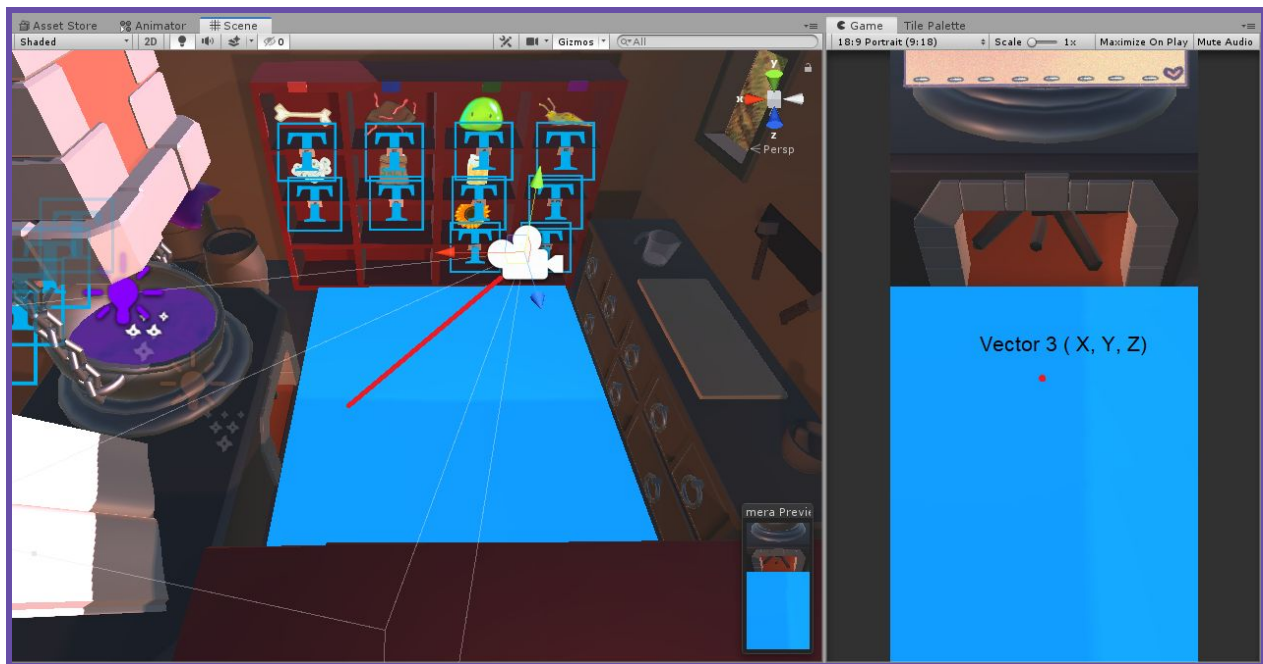


2. GAME MECHANICS

CONTROL SYSTEM:

The control system utilises the gyro information of the phone to move the camera in the 3D space. This system uses full rotation so the player can look anywhere in the shop to interact with different components within it. The interaction with different components will be a tap of the screen, which raycasts out from the camera to highlight the selected object or start a different state.

The floor space the player can move in is restricted to the square or rectangle space in the middle of the shop. If the player wants to move in the shop, they look at the floor and tap. This will raycast out of the forward direction of the camera to the baked navmesh, which will give vector 3 coordinates and set the destination of the navmesh agent to those vector 3 coordinates. The height of the camera is always locked so any person of any height can play the game.



PRIMARY GAMEPLAY LOOP:

1. A customer enters through the door, which is signified by a bell and a UI element. The customer requests a potion. This information is displayed in a text bubble with the potion's name coloured as same category the potion belongs to. The player can choose to accept or decline the customer's request by tapping the tick or cross.
2. The potion book in the shop will update showing the recipe to the current potion being crafted when the tick is pressed. The book displays the ingredients by floating ingredients above the page.
3. The player will move their device and in turn move the camera trying to locate an ingredient needed for the recipe where the ingredient will be glowing.
4. The player then taps the screen on the relevant ingredient. The player can only brew one potion at a time in the Shack, However the player can craft multiple potions at once in the Shop and Emporium. Here the player can select the wrong ingredients, this would only happen if there were multiple potions being crafted at the same time as multiple ingredients will be glowing. This asks the player to apply more thinking into their gameplay further down the players progression to raise the skill level maintaining flow.
5. When the player has selected the ingredient, the ingredient floats in the bottom third of the screen, similar to Pokémon Go (2016).
6. The next station (either the cauldron or chopping board) will be glowing. Not all ingredients need refining so some can be flicked straight into the cauldron. Otherwise, they need refining at the chopping board.
7. The player needs to turn and look at the chopping board, which will be glowing when an ingredient that needs refining is pick up. The player will flick the ingredient using the same mechanic as the cauldron on the chopping board. Each ingredient has a slightly different weight category (Light, Medium and Heavy) so when flicked the ingredient moves through the world space slightly differently within each weight category adding skill to the flicking. The ingredient needs to collide with the chopping board to progress to the next step. If they miss the ingredients, the ingredient is put back on the lower third of the screen where the player can try again.
8. When the ingredient is on the chopping board, the player needs to select the relevant glowing kitchen appliance e.g knife, hammer etc. The player can choose the wrong appliance, which will make them lose the ingredient and they will have to go collect the ingredient from the shelf again.
9. When the player has selected the correct appliance, the 2D canvas is turned with a transition and animation.
10. This starts the refining minigame process which is defined below '8. Workstations'.
11. Once finished, the canvas animates and transition back to the player in 3D space.
12. The refined ingredient is back floating in the lower third of the display. The player then turns to the cauldron where they will need to flick the refined ingredient into the cauldron.
13. The player repeats this process until they have put all the required ingredients into the cauldron. If the player put the ingredients in the wrong order they will obtain a bronze trophine defined below '8.1 Potion Quality'. If the player puts the wrong ingredients in the cauldron during this process the potion is destroyed meaning the player will have to try again.

14. The potion will brew for a specified time, which is shorter in the Shack and increases as the player unlocks more cauldrons, inviting players to micro manage crafting different potions at the same time, increasing skill required and maintaining the players flow through progression.
15. When the potion is finished the coldren will animate a potion leaving the cauldron floating, waiting to be picked up with particle effects. The player will need to tap on the potion to pick it up.
16. The player will need to turn to the customer and tap again on them to complete the transaction, the customer will thank the player and leave. The money during this transaction won't be shown to the player until the day is over and the player closes shop. The player can see the profits accumulated in a summary screen.

Link: Annotated Gameplay Video - https://youtu.be/3PE3m_ULdYg

3. TECHNICAL

TECH IMPLEMENTATION:

The Witch's Brew uses gyro technology using the Unity engine to achieve its desired gameplay and artstyle. However, it won't display what the device's camera would normally be capturing and augmenting. Our approach is more reminiscent of VR or interactive panorama technology.

The device's camera will be used to create markers in the room the device inhabits. These markers will be used as anchor points to render real time 3D graphics and fix them in a 3D space. This means the device can render a 3D room which the player can walk around in. They can move closer and further away from the 3D environment.

Where our implementation differs is that we wish to render a room around the player, as opposed to rendering an object in a real room. Where this process differs from mobile VR (and why we class our title as AR), is that this implementation of markers and depth data isn't used in mobile VR. Traditionally, mobile VR solely relies on gyro data whereas mobile AR relies on the data captured from the camera.

Through research we found that doing the AR technology for iPhone and android would take a lot of time and resources. However, using just the gyro information means that, if the android build is successful, we could then make a build for the Apple platform. Also, utilising the gyro information instead of using bespoke AR software makes it less straining on the hardware and for our own development of the game.

SOFTWARE:

- UNITY ENGINE
- MAYA MODELING SOFTWARE
- MAYA ANIMATION SOFTWARE
- PHOTOSHOP

4. STORY PROGRESSION

BACKSTORY:

The Witch's Brew follows one witch's ambitions on becoming a successful witch who owns their own potion shop. To begin with, the witch's dream is to start a shack outside a local farming village within view of the capital city in the distance. With hard work and dedication, one day the witch will own their own Emporium of Potions in the heart of the capital.

THE CIRCLE OF WITCHES:

The Circle of Witches is a narrative device to push the campaign forward, deliver tutorials, and create agency over the world that the player is inhabiting during gameplay. This is achieved through the Circle of Witches giving the player quests and reports on the events taking place in the overworld outside of the players potion shop.

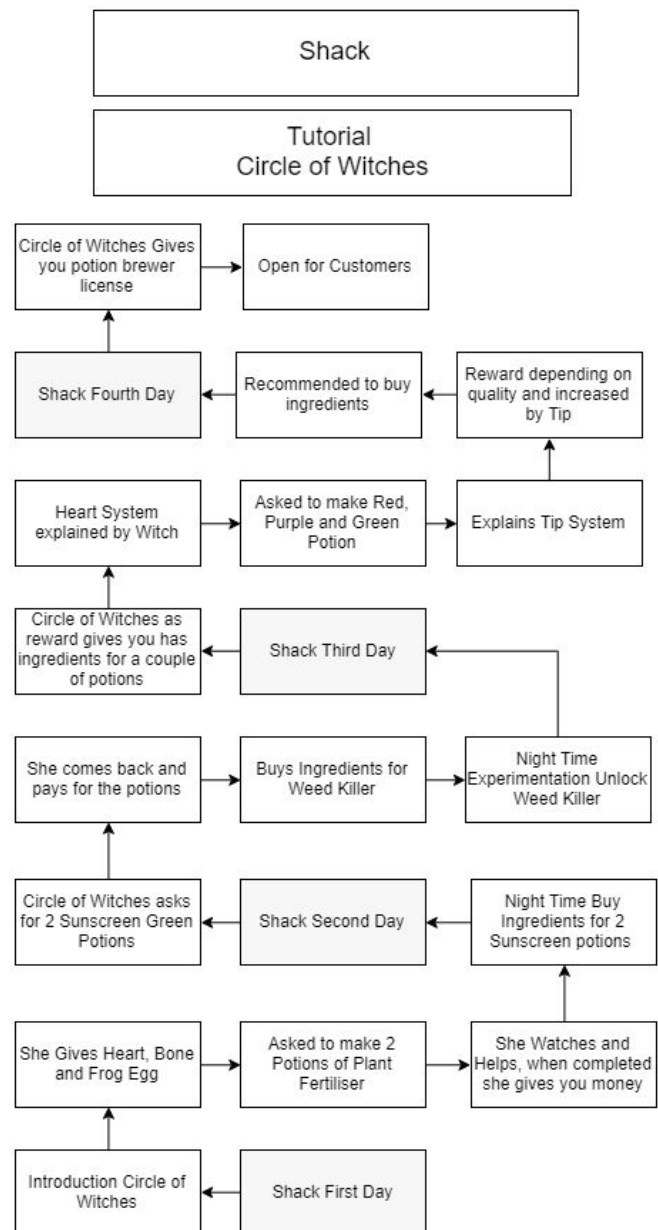
PROGRESSION:

The Witch's Brew's campaign is broken up into three acts:

Act One - The Shack:

The Shack is where the player is introduced to the games mechanics and is taught how to play the game. The player will have one potion of each color unlocked. There is one purple potion which is undiscovered, in order to tutorialize the discovery stage in night time gameplay. To progress to the next shop, the player needs to save enough coins to purchase the upgrade and complete the main story quest line of the Shack.

(Read Flowchart Bottom to Top)



PROGRESSION:

Act Two - The Shop:

This is where the main story quests split between dark and light, giving you a different overarching story. This is for replayability so when you start again from the shop you can play again with different story elements.

TRIALS OF THE CIRCLE:

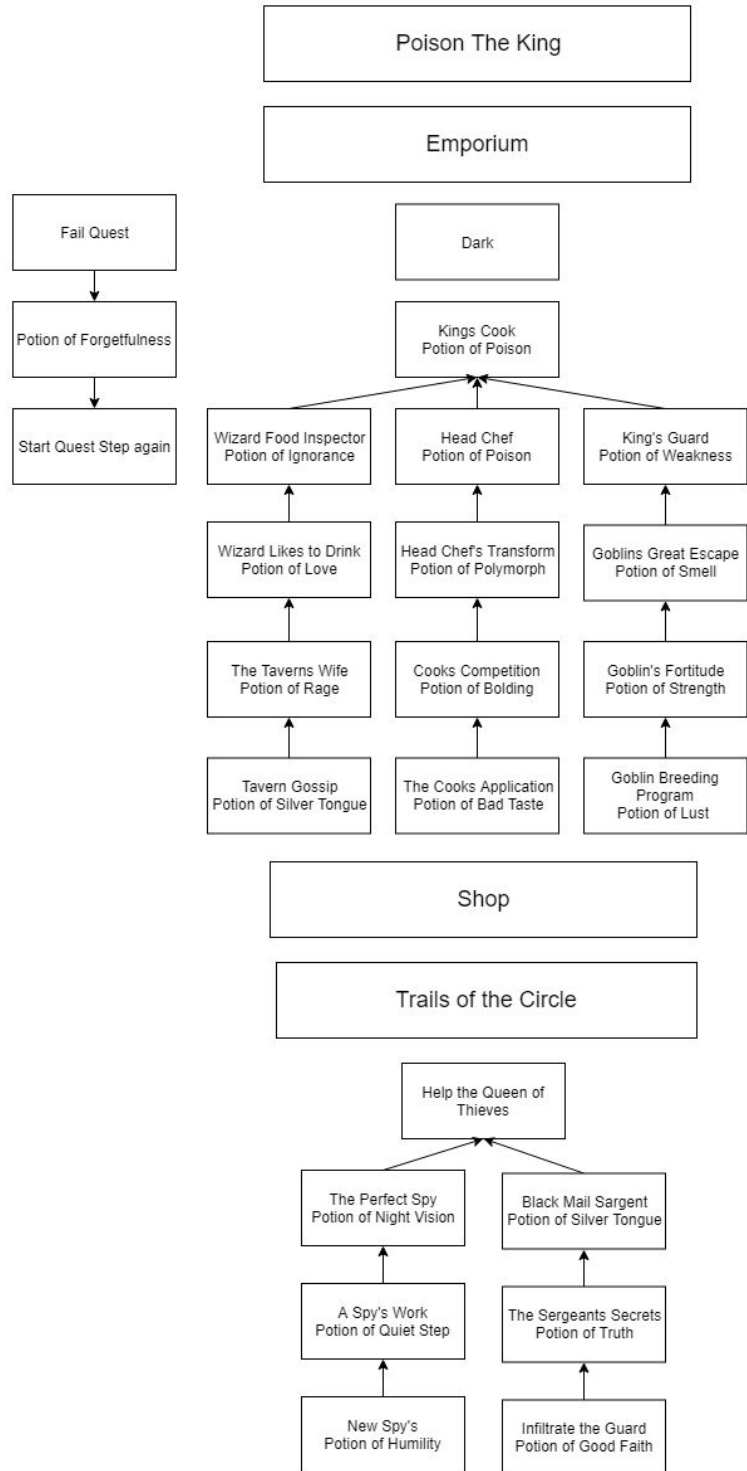
Act Tree - The Emporium:

This is the final shop where you will either try to save or kill the king. After doing so, you can continue to play the game or start from the beginning of the shop to choose the other quest line.

POISON THE KING:

Each act will have its own story arc, side quests, and unique potions and ingredients.

(Read Flowchart Bottom to Top)



5. GAMEPLAY

OVERVIEW:

There are two styles of gameplay found within The Witch's Brew: Daytime, which is an immersive potion crafting simulation, and Nighttime, which is a 2D shop management and potion discovery experience.

5.1 DAYTIME

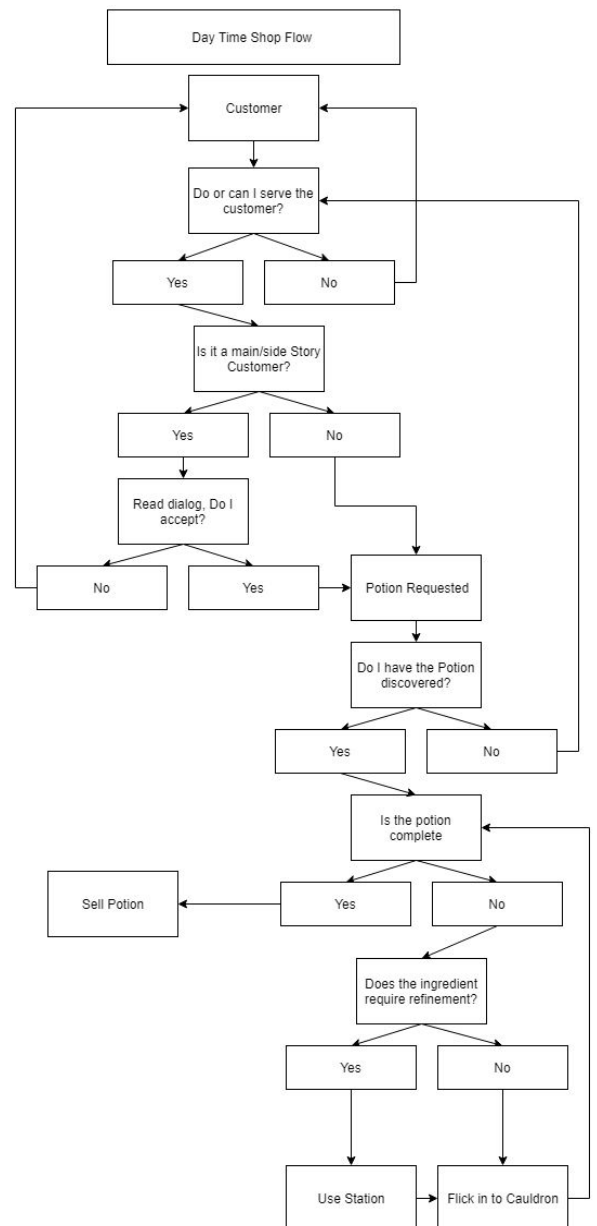
GAMEPLAY LOOP:

Daytime gameplay lasts for ten minutes - five minutes each morning and five minutes each afternoon. The aesthetics of the shop change between the morning and the afternoon, so the player knows how much time is passing e.g. sunset outside the window. During Daytime Gameplay, customers come into the shop and ask for potions that the player must then craft. The recipe to make the required potion will be revealed on screen by a magical recipe book, and the ingredients needed will be outlined with a white glow within the potion shop. When the time has reached 10 minutes, you will be able to finish what you are doing. The player then has the option to close the shop and move on to night time or continue making batch orders if they want. This section of gameplay has no time limit because batch potions require more ingredients. Therefore, the player won't be able to craft every potion, and if they do it means they prepared for it the earlier that day.

The player answers three questions while crafting potions:

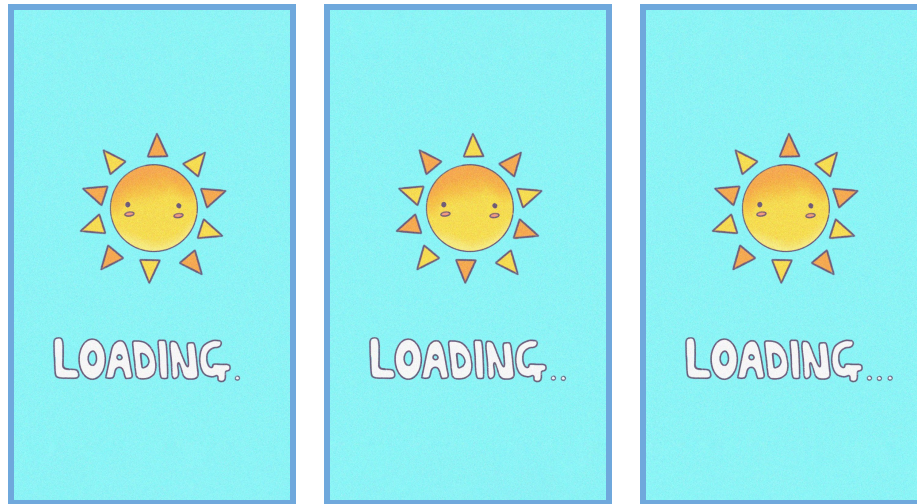
1. What colour is the potion? This will dictate which ingredients the potion will use.
2. Which workstation will be used to prepare the ingredients? As the player holds an ingredient the workstation associated with it will be outlined and glow, helping the player to navigate the shop.
3. What is the remaining stock of the required ingredients? Sometimes customers will ask for potions that use ingredients that have run out. If this happens, The player may have to turn the customers away.

(Read Flowchart Top to Bottom)



5.2 DAYTIME GAMEPLAY FLOW

LOADING SCREENS:



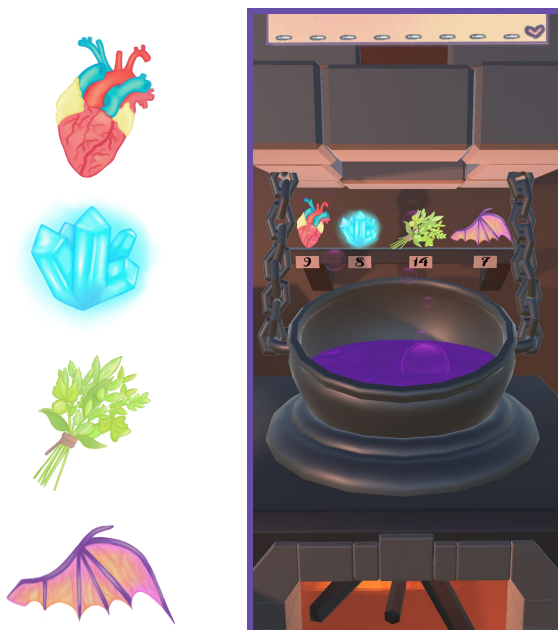
When the Witch's Brew loads Daytime content for the player, the loading animation features the sun and a blue sky.

5.3 POTION SHOP

VIDEO LINK: *INSERT VIDEO OF THE SHACK ONLY.*

(VIDEO CONTAINS WHITE BOXED PROTOTYPE EXAMPLE OF THE SHACK)

CAULDRON:



INGREDIENTS SHELVES:



The player throws ingredients systematically to make potions.

Ingredients are sorted by type: Red, Blue, Green, Purple

COUNTER:



Customers enter through the door and wait to be served by the player.

WORK STATIONS:



There are four workstations that the player uses to prepare ingredients to put into the cauldron.(which will transition to the 2D minigame)

5.4 ART STYLE

The current prototype is to show the 3D space and to test the gyro camera system. Going forward, we would implement a more cartoony art style using different Unity shaders to create that toon feel. The goal is to create a similar atmosphere and art style from the 2D and 3D, also hand painting and designing textures to be utilised in the 3D space. The core ingredients will be 2D and the workbenches will be 3D and transition to a 2D state when preparing ingredients. The reason we did this is to blend the 2D and 3D worlds together.

Right now we are prototyping if the customers are more suited to be 3D or 2D within context of the whole game, this needs more experimentation.

5.5 NIGHT-TIME

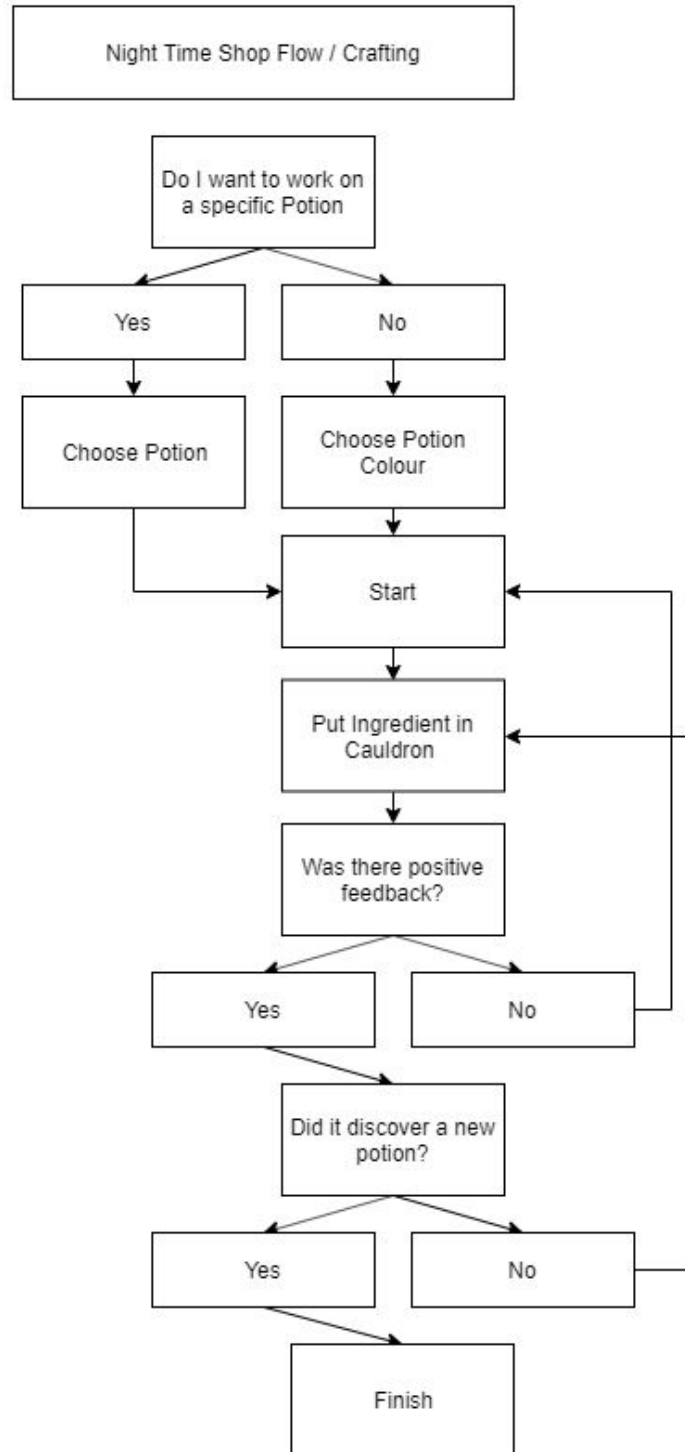
GAMEPLAY:

Nighttime is a 2D UI focused portion of gameplay. Its purpose is to give players down time and a chance to play the game without having to invest in the physical gameplay in daytime. Nighttime can be triggered with a button press from the options menu (*a one finger drag at the top of the screen any time*). The player will be taken through a series of UI screens.

First: A summary screen showing how many potions were made during the day and their quality, which will add to profit.

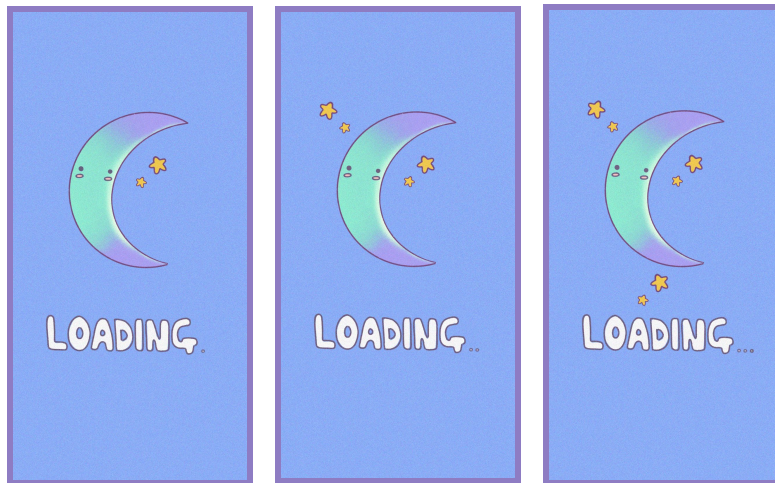
Second: The player will be shown a stock list of how many ingredients they have. The player then has the ability to purchase more ingredients for the upcoming day.

Third: The player is then taken to the creative potion discovery mini game.



5.6 NIGHT-TIME GAMEPLAY FLOW

LOADING SCREENS:



When the Witch's Brew loads Night-time content for the player, the loading animation features the moon and a dark blue sky with twinkling stars.

5.7 NOTEPAD:

Tap the notepad from the top of the screen during gameplay at any time.

STORE:



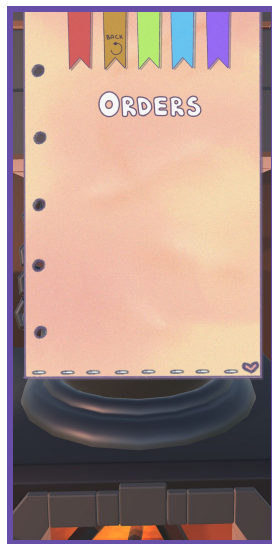
NOTES:



Toggle the Moon switch to close the shop this activates 2D Gameplay. Toggle the Sun switch to open the shop this activates 3D Gameplay

Tap the red bookmark to view Notes. Notes display all active tasks the player needs to complete with a profile of the customer and a description.

ORDERS:



Tap the orange bookmark to view Orders.
Orders display the players side quests, main quests or orders that will take multiple days to complete due to the quantity needed

INGREDIENTS:



Tap the green bookmark to view Ingredients.
Ingredients display the player all the ingredients the player has access to along with helpful descriptions what will hint at the ingredients property within a potion

POTIONS:



Tap the blue bookmark to view Potions.
Potions display to the player every position within the game with a description, all potions at the beginning of the game are greyed out. The player must discover them to populate the entry.

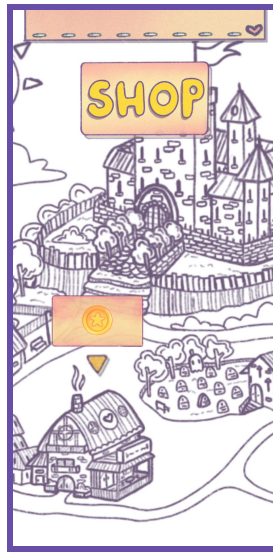
SETTINGS:



Tap the purple bookmark to view Settings.
Settings display to the player options within the game the player can control i.e. volume, quality, time played.

5.8 NIGHTTIME:

LEVEL SELECT & UPGRADING:



When the player closes the shop they will be shown a splash screen where they can 'Tap to Continue' to access the summary screen. If players tap the upgrade button they will access a screen where they can upgrade their Potion Shack into a Potion Shop in the Capital, or even a large Potion Emporium.

SUMMARY:



In the summary screen the game will tally up how many trophies the player has earned during their daytime gameplay session, players earn trophies tied to the quality of the potions crafted in their play session. The total profits will also be tallied during the summery.

STOCK LIST:



In the stock list screen the player can purchase ingredients to use during the 3D daytime gameplay. The player can see the price of ingredients by tapping the ingredient icon or tap the golden coin. Player can scroll through and purchase as many ingredients they can afford.

POTION DISCOVERY:



In the potion discovery screen players are tasked to discover new potions to sell in their shops with the ingredients they have. All ingredients are categorised by a colour, this design is echoed throughout the game. Player will tap the colour category they wish to discover a potion for, this will eliminate all ingredients that don't share the same colour category as the potion the player tapped on. The player must then place the ingredients found left within the colour category in an attempt to discover a new potion. Progress will be signposted with animations from the cauldron. Players can only discover one potion before returning to 3D daytime gameplay.

6. INGREDIENTS

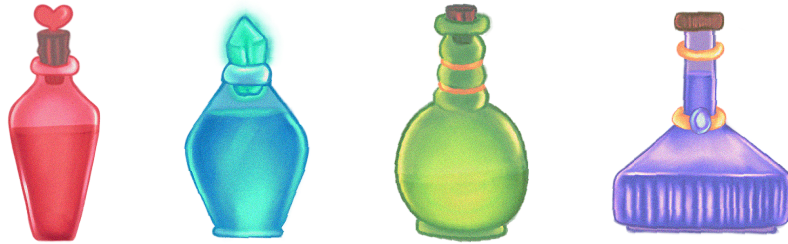
RED: REPLENISHES		Cost	Station	Time
	HEART	2	TS	10
Unlock Shack				
1	Bone	3	PM	30
2	Frog Egg	2	H	30
Unlock Shop				
3	Sugar	8	MJ	30
4	Dried Blood	3	N/A	30
5	Eye Ball	5	H	30
6	Unicorn Horn	16	H & PM	30
7	Holy Water	17	MJ	30
Unlock Emporium				
8	Mermaid Tears	25	MJ	30
9	Phoenix Feather	30	K	30
10	Golem Clay	20	K	30

BLUE: STAT CHANGE		Cost	Station	Time
	BLUE CRYSTAL	2	TS	10
Unlock Shack				
1	Worm	2	N/A	30
2	Salt	6	MJ	30
Unlock Shop				
3	Ginger	5	K	30
4	Shark Fin	14	K	30
5	Spider Eyes	10	K	30
6	Minotaur Sweat	25	MJ	30
7	Fairy Wings	30	PM	30
Unlock Emporium				
8	Griffin Tail	35	K & PM	30
9	Orc Tusk	22	H & PM	30
10	Giants Thumb	32	K & PM	30

GREEN: BUFFS		Cost	Station	Time
	HERBS	2	TS	10
Unlock Shack				
1	Green Slime	6	MJ	30
2	Stardust Chunks	12	H & MJ	30
3	Sunflower	3	H	30
Unlock Shop				
4	Salamanders Fire Gland	3	H	30
5	Turtle Shell	12	H & PM	30
6	Toadstool	8	K & PM	30
7	Ice Giants Hair	10	N/A	30
Unlock Emporium				
8	Four Leaf Clover	70	K	30
9	Hoof Hippogriff	30	H & PM	30
10	Dragon Fang	42	PM	30

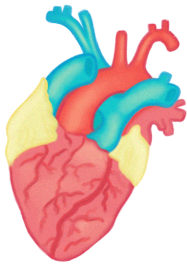
PURPLE: PHYSICAL CHANGE		Cost	Station	Time
	BAT WINGS	2	TS	10
Unlock Shack				
1	Slugs	2	Pluck	30
2	Beetle Juice	6	MJ	30
3	Wool of Bat	3	N/A	30
Unlock Shop				
4	Nettles	3	K & PM	30
5	Graveyard Dirt	4	MJ	30
6	Lavender	6	PM	30
7	Snake Skin	8	K	30
Unlock Emporium				
8	Salamanders Fire Gland	18	H	30
9	Dragon Scales	32	H & K & PM	30
10	Rabbit Foot	14	N/A	30
11	Harpies Feathers	12	K & PM	30

7. POTION LIST



POTION TYPES:

Each Potion requires the base ingredient which makes it the colour of the potion - red, green, blue or purple.



RED - Replenish
Base Ingredient
Heart



BLUE - Stat Change
Base Ingredient
Blue Crystal



GREEN - Buffs
Base Ingredient
Herbs



PURPLE - Physical Change
Base Ingredient
Bat Wings

RED POTIONS:

SHACK: *Unlock Potions*

RED: Plant Fertiliser

SHOP: *Unlock Potions*

RED: Healing

RED: Mana

RED: Energy

RED: Heal burns

EMPORIUM: *Unlock Potions*

RED: Cure disease

RED: Grow Limbs

RED: Restoration

RED: Clear Minded

BLUE POTIONS:

SHACK: *Unlock Potions*

BLUE: Protein Shake

SHOP: *Unlock Potions*

BLUE: Truth

BLUE: Forget

BLUE: Stealth

BLUE: Defence

EMPORIUM: *Unlock Potions*

BLUE: Attack

BLUE: Strength

BLUE: Concentration

BLUE: Agility

GREEN POTIONS:

SHACK: *Unlock Potions*

GREEN: SunScreen

SHOP: *Unlock Potions*

GREEN: Fire resistance

GREEN: Ice resistance

GREEN: Mystic Dagger

GREEN: Summon Familiar

EMPORIUM: *Unlock Potions*

GREEN: Conjure frost

GREEN: Conjure fire

GREEN: Night Vision

GREEN: Water breathing

PURPLE POTIONS:

SHACK: *Unlock Potions*

PURPLE: Slug Repellent

PURPLE: Weed Killer

SHOP: *Unlock Potions*

PURPLE: Shrinking

PURPLE: Hair Dye

PURPLE: Growing

PURPLE: Polymorph

EMPORIUM: *Unlock Potions*

PURPLE: Sleep

PURPLE: Levitation

PURPLE: Paralysis

PURPLE: Awake

8. WORKSTATIONS



WORKSTATIONS INCLUDE:

Cauldron - flicking ingredients into the boiling water with your finger

We took heavy inspiration from the game Niantic Inc. (2019). Pokemon Go, with how the player throws the Poké Ball. Fundamentally, how the player flicks the Poké Ball affects the speed and distance. If you miss the bubbling brew then the ingredient will reset in its position and the player can try and throw again. In Witch's Brew each ingredient will have its own weight and will flick and feel slightly different, when you miss the cauldron the ingredient will automatically go back to the inventory or screen. We will need to playtest if we need to display these values on the screen or not, e.g Light, Medium or Heavy.



Ingredients - when the player picks the ingredient they want it floats and follows the player keeping to the bottom third of the screen out of the way so the player can still see the shop



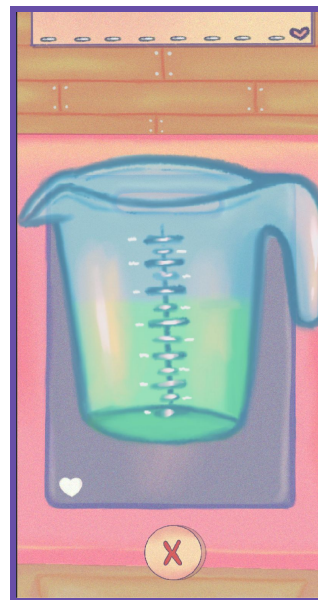
Knife - swiping your finger across the screen



Hammer - tapping the screen with your finger

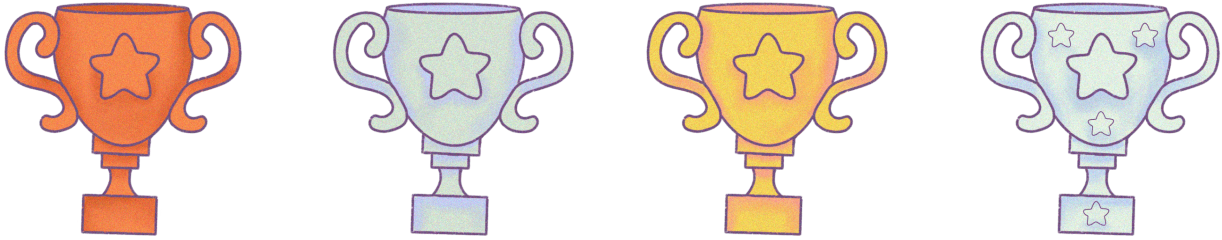


Pestle Mortar - following and completing a circular path with your finger 3 times



Measuring Jug - dragging your finger from the bottom of the display to a precise measurement but, beware you can't swipe down to reduce the measurement

8.1 POTION QUALITY



POTION QUALITY:

The potion quality varies depending on how well the player can prepare ingredients for potions, the order the player adds ingredients when making specific potions and finally how quick can the player take the potion out of the coldren when the potion is ready. Taking the potion out too early or too late degrades the quality of the potion. In early gameplay this is easily manageable but as the player is asked to brew multiple potions and are given more time constraints difficulty will scale naturally.

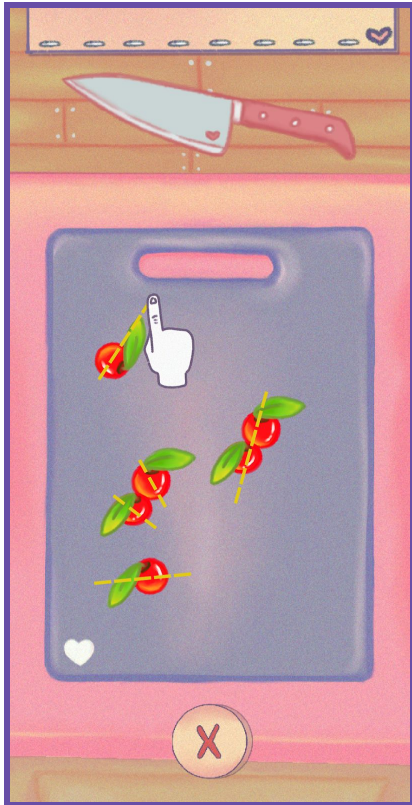
WORKSTATION POTION QUALITY:

Most ingredients require refinement with a workstation,,some Ingredients only require one refinement some ingredients need multiple. Each workstation requires the player to play a mini game which will test the players proficiency with accuracy and speed, along with a time pressure. The player will receive UI feedback on how well they perform from poor, good and perfect which will pop up during gameplay. On completion of the mini game the players performance will be recorded to the ingredient and when added to the cauldron the potion it will update its quality. The metrics created from players performance within the mini games are not finalised as we need to implement and test these dynamic numbers and balance difficulty accordingly.

POTION QUALITY MONETARY EFFECTS:

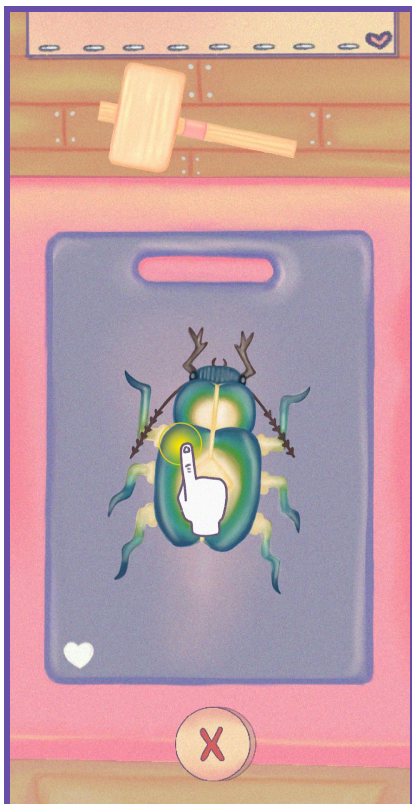
Quality Rarity			
Bronze - Bad	-10%	-0.1	Decrease
Silver - Good	0	0	Flat
Gold - Excellent	10%	0.1	Increase
Platinum - Amazing	30%	0.3	Mega Increase

KNIFE MINIGAME:



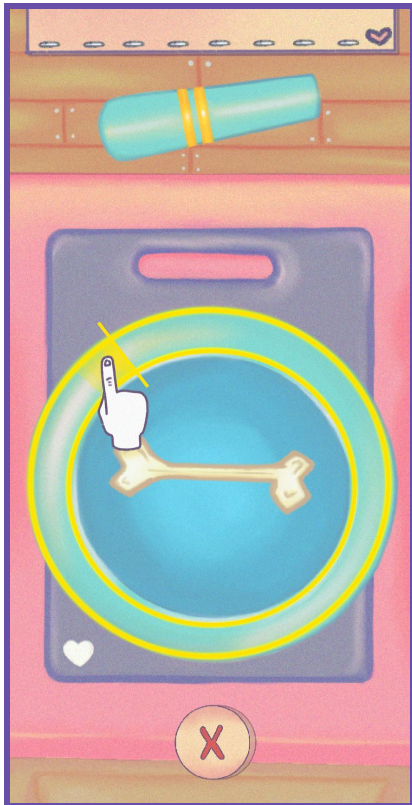
When ingredients are placed on the chopping board and the knife is selected the knife mini game will begin. Cutting lines will be randomly placed on the ingredients, the player must use their finger to swipe along the cutting lines to slice the ingredients. The player will be graded on the smoothness of their slices and the accuracy of how close their slices were to the cutting lines.

HAMMER MINIGAME:



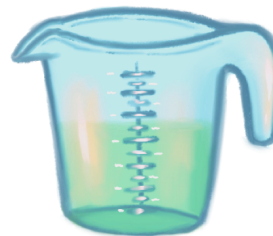
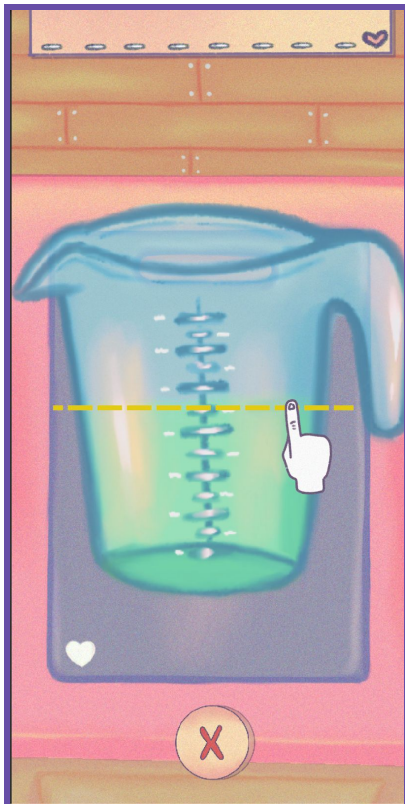
When ingredients are placed on the chopping board and the hammer is selected the hammer mini game will begin. Circles with a faded target appear randomly over the ingredient on the chopping board. This mini game is reminiscent of 'whack a mole'. The randomly generated circles will fade in and out of transparency, the player will be graded on how close they can hit the middle of the target when the circle is at its peak opacity.

PESTLE & MORTAR MINIGAME:



When ingredients are placed on the chopping board and the pestle & mortar is selected the pestle & mortar mini game will begin. A grinding circle is placed over the pestle & mortar with a guide line placed randomly on the radius of the grinding circle. When the player presses the guide line, the guide line will rotate clockwise. The player will have to keep to the guide line's rotation speed within the grinding circle. Each ingredient has a set speed however, the guide line is always randomly placed. The player will be graded on how well they stay within these two boundaries.

MEASURING JUG MINIGAME:



When ingredients are placed on the chopping board and the measuring jug is selected the measuring jug mini game will begin. A line is placed on the jug showing the required amount needed for the player to fill the jug with. The amount needed of each ingredient will change depending on the potion. This is the easiest minigame as the player will be graded on their accuracy by how close to the line players fill the measuring jug. The player achieves this by dragging from the bottom of the jug to the specified line, players can not drag down to empty the jug.

8.2 THE SHACK'S POTIONS & INGREDIENTS

PLANT FERTILIZER - HOW IT'S MADE:

	Plant Fertiliser	Quantity	Station	LQuantity	Time	Cost	Total Cost	Mark Up	Labour Mark Up	Sell Price
1	HEART	1	TS	0	10	2	15	18	19.8	20
2	Bone	3	PM	1	75	9				
3	Frog Egg	2		1	50	4				

PLANT FERTILIZER QUALITY RATINGS & PROFIT:

Rarity	Profit
Bronze	4
Silver	5
Gold	6
Platinum	7

PROTEIN SHAKE - HOW IT'S MADE:

	Protein Shake	Quantity	Station	LQuantity	Time	Cost	Total Cost	Mark Up	Labour Mark Up	Sell Price
1	BLUE CRYSTAL	1	TS	0	10	2	14	16.8	17.64	18
2	Worm	3	N/A	0	45	6				
3	Salt	1	MJ	1	60	6				

PROTEIN SHAKE QUALITY RATINGS & PROFIT:

Rarity	Profit
Bronze	3
Silver	4
Gold	5
Platinum	6

SUNSCREEN - HOW IT'S MADE:

	SunScreen	Quantity	Station	LQuantity	Time	Cost	Total Cost	Mark Up	Labour Mark Up	Sell Price
1	HERB	1	TS	0	10	2	29	34.8	41.76	42
2	Green Slime	1	MJ	1	55	6				
3	Stardust Chunks	1	H & MJ	2	55	12				
4	Sunflower	3	H	1	45	9				

SUNSCREEN QUALITY RATINGS & PROFIT:

Rarity	Profit
Bronze	11
Silver	13
Gold	15
Platinum	17

PURPLE - HOW IT'S MADE:

	Slug Repellent	Quantity	Station	LQuantity	Time	Cost	Total Cost	Mark Up	Labour Mark Up	Sell Price
1	Bat Wings	1	TS	0	10	2	23	27.6	28.98	29
2	Slugs	3	Pluck	0		6				
3	Beetle Juice	1	MJ	1	55	6				
4	Wool of Bat	3	N/A	0	45	9				

PURPLE QUALITY RATINGS & PROFIT:

Rarity	Profit
Bronze	5
Silver	6
Gold	7
Platinum	8

WEED KILLER - HOW IT'S MADE:

	Weed Killer	Quantity	Station	LQuantity	Time	Cost	Total Cost	Mark Up	Labour Mark Up	Sell Price
1	Bat Wings	2	TS	0	20	4	19	22.8	25.08	26
2	Beetle Juice	1	MJ	1	30	6				
3	Wool of Bat	3	N/A	0	45	9				

WEED KILLER QUALITY RATINGS & PROFIT:

Rarity	Profit
Bronze	6
Silver	7
Gold	8
Platinum	10

9. CAMPAIGN & CUSTOMER MECHANICS

CUSTOMERS:

Customers come into the shop in a random order. For example, in the shack, it will be one at a time, as you can only brew one potion at a time. The customers will ask for the same potion every time. If you don't have that potion the first time they ask, you will have to say no. On the second time, the customer will tell you one of the ingredients needed for that potion, giving you a hint at the potion's ingredients. This also updates the potion list in the notepad, which means you can focus on the potion at the night time experimentation stage if the player desires.

If you consistently say no to customers they will have a lower percentage chance of returning. If you brew a potion for the customer and you brew it gold or platinum, it will reward half a heart (gold level potion) or 1 heart (platinum level potion), with the cap being 3 hearts. 1 Full heart gives you 2% increase in total profit, 2 hearts 5%, and 3 hearts 10%.

When you have maxed out the hearts for a customer, they may ask for large batches of potions. For example, they may ask for 5 slug repellent potions which you will have to complete within a certain amount of days - for the shack it would be 5 days.

TIP SYSTEM:

This concept art shows a customer asking for some weed killer. The player has one full heart, meaning he will give the player a 2% increase in total profit from this sale.



BATCH REQUEST:

Once you have received the maximum amount of hearts for a customer, they will give you special requests. These requests are time sensitive objectives which need to be completed in a matter of minutes (single potion) or days (batch potions).

MAIN QUESTS:

The main story quest lines start after the player has upgraded from the Shack. You have a choice between the dark and light paths, which are story elements that give the player some interesting dialog and context on what the potions are being used for in the world. You will have to complete the main story quest of each shop or arc to progress to the next.

10. PROGRESSION AND UPGRADING

The player starts at the Shack and will have to buy the shop to progress to the next section of gameplay. This is behind a gold requirement, which we haven't specified yet as we need to build more of the game to make sure the gold requirement is reasonable. As the Shack is more of a starting tutorial area it will take the least amount of time to complete.

Once inside the shop, the player can buy upgrades. Currently, the only upgrade you can buy is a second cauldron which opens up the ability to brew two potions at the same time. At this moment of development we will have the core mechanics built and we can review the current gameplay loops and implement added gameplay elements to keep retention. For example, adding another mini game with the kitchen appliances for the ingredients, or upgrading the aesthetics of the shop to increase the potential of better paying customers coming into the store. Also, upgrading the player's cauldron to decrease the time it requires to brew a potion.

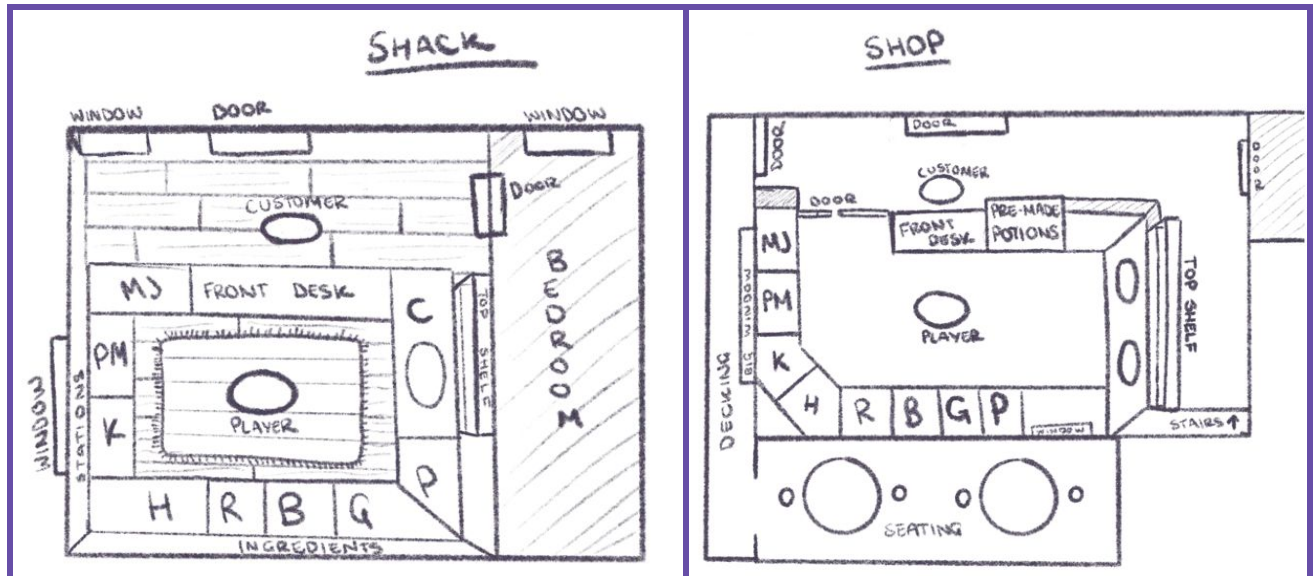
The reason we have not elaborated on these mechanics is because we want to make sure the core gameplay loop is solid before we start implementing more mechanics on top of the core loop. Furthermore, without the core gameplay loop built in the game, we don't want to speculate on what would be “fun” or what we need to add to keep the players retention through unlocking new features.

The upgrades that the player purchases in the shop would be carried through to the Emporium which is the last shop on the list. The Emporium also will need purchasing before the player can progress to it. The Emporium will be a hefty sum, as this is the last section of gameplay.



11. CONCEPT ART

SHOP DESIGNS:



DESIGNING MAPS:

When designing the maps for The Witch's Brew, we looked at examples of maps from other games. (*Story of Seasons 2016*) (*Stardew Valley 2016*) (*Kingdom Come Deliverance 2018*)
The main purpose of implementing maps was to show the player their progression through the campaign. It is also to show the player the different shops they can possibly upgrade to later in the campaign.



(Kingdom Come Deliverance 2018)



(Stardew Valley 2016)



(Story of Seasons: Trio of Towns 2016)

MAP OF THE OUTER WOODS:

The player begins the game in the Outer Woods. The Shack is shown prominently within this map. However, the capital can also be seen in the background in the top left of the image.



MAP OF THE CAPITAL:

Once the player completes the tutorial, they will move their shop into the capital and purchase the shop. Here, magical potions can be crafted and the player can make a lot more money in the capital. Eventually the player will move to the emporium, unlocking the final act of the campaign.



11.1 ARTISTIC DESIGN DECISIONS:

MAP ARTISTIC DESIGN:

We decided to design the maps to incorporate a more stylised art style that focuses on giving the player more relevant information and making spots of interest stand out. It wouldn't make sense to design a geographically accurate map because the player won't be asked to use them to navigate through the world. We liked the idea of incorporating the heavy outlines and odd proportions found in (*Kingdom Come Deliverance 2018*) map design. We feel this will make the maps more interesting to look at for players, this design also promotes positive form and function.

We also took inspiration from the more subdued colour palette from (*Kingdom Come Deliverance 2018*), as it felt less harsh to look at and more inviting for the player. However, We decided upon incorporating a 'cuter' artstyle than the one used in (*Kingdom Come Deliverance 2018*). Instead we looked more towards (*Stardew Valley 2016*) and (*Story of Seasons: Trio of Towns 2016*). We felt that this fit better with the overall aesthetic of the Witch's Brew. We also put in meticulous effort into creating maps that gave the player an idea of the world they're in and the ingredients and customers that the player may interact with during gameplay.

Incorporating the design as we have outlined above, we made the shack bigger than it should be in the Outer Woods map, so the player knows this is the main focus of the map. We also added the castle in the distance but slightly obscured, this was done to show the player that this is something they can work towards.

UI ARTISTIC DESIGN:

The UI for the Witch's Brew incorporates a purple coloured outline textured like pencil line. All UI elements share this design including maps, splash screens and interactable elements. This creates a sense of cohesiveness and a design language the player will come to understand, everything with a purple outline is UI.

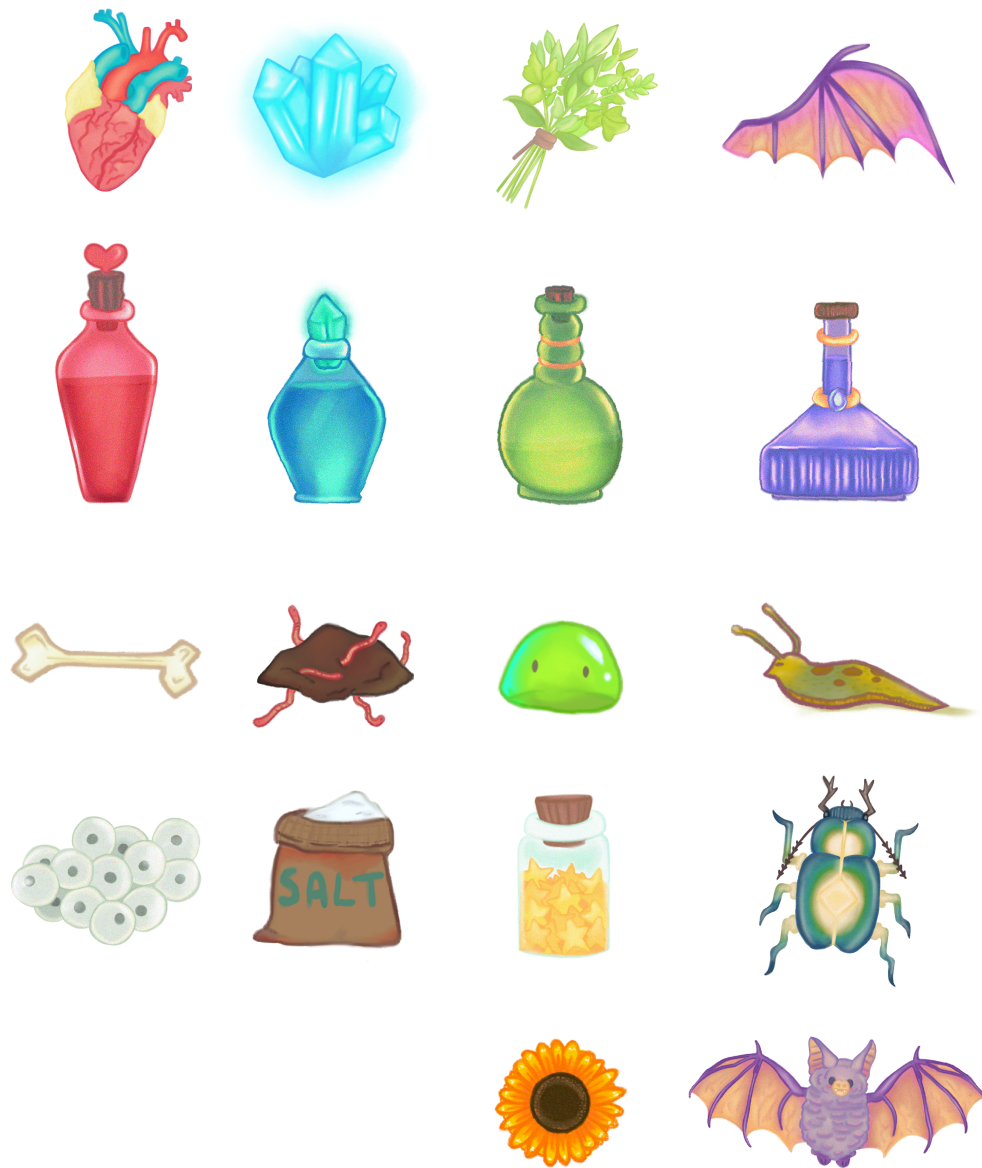
Noise was also added to all of the elements in the game, this gives the art a softer but more worn look, which defines the Witch's Brew's aesthetic.



IN-GAME SPRITE ARTISTIC DESIGN:

When designing AR art/Sprites for the Witch's Brew, We wanted the objects to have a slightly less defined pencil outline, in comparison to the art used for the UI elements. The outlines for these sprites were made with a similar colour to the object itself, this made it easier to blend the outline into the object. This effect gave the sprites a more painted look whilst still maintaining the cartoon artstyle. We felt that objects with a less heavy outline would translate into a more cohesive overall visual when viewed in the AR potion shop environment placed next to 3D models.

SHACK ITEMS:



12. MUSIC & SOUND

MUSIC:

SHACK:	SHOP:	EMPORIUM:
https://youtu.be/BtxRvNYYUUo - 10AM - Animal Crossing: New Leaf https://www.youtube.com/playlist?list=PL_Slik70J1P_9Q8UMcf4DpdqbK6ZlrEm - Season of the Witch (instrumental) - Lana del Rey https://www.youtube.com/playlist?list=PL_Slik70J1P_9Q8UMcf4DpdqbK6ZlrEm - White Winter Hymnal (instrumental) - Fleet Foxes	https://youtu.be/m-gtaG21Sss - Summer's Day [v2] - Jinsang https://www.youtube.com/playlist?list=PL_Slik70J1P_9Q8UMcf4DpdqbK6ZlrEm - Space City - Ibrahim	https://youtu.be/y5r9H1l3C_k - Flamingo (instrumental) - Kero Kero Bonito

SOUND DESIGN:

	AUDIO CLIPS:	LINKS:
1.	Bell Ring for customer	https://youtu.be/hrqIq5hBFSw
2.	Cauldron bubbling	https://youtu.be/UVqPDF0VFCE
3.	Splash when ingredients land in cauldron	https://youtu.be/9mhGaOTschs
4.	Chopping sound	https://youtu.be/AGjDiJ4mfYY
5.	Money sound for when customer takes potion	https://youtu.be/PMENdpCGF3U
9.	Sound for pestle and mortar	https://youtu.be/boUB6OWn5vA
10.	Sound for jug being filled	https://youtu.be/eGcRj9c4cb0
11.	Sound for hammer	https://youtu.be/MdKSVBrbulo
12.	Book opening/turning pages	https://youtu.be/SLH1RS_gu0U
14.	Cat	https://youtu.be/-kXh_GE2fPw
15.	Writing sound for when customer hints at potion ingredient	https://youtu.be/rUp5yjlUqA

13. MONETIZATION

PREMIUM GAME:

Looking at similar games with a similar theme, we have come to the conclusion that £3.99 seems to be standard for this quality of premium game.

ADVERTISING:

We are going to set up a website for the media and news for the game showing its best bits, which will be supported by Twitter and Instagram giving updates. If the game gets more traction then we will add a development blog to the website, setting out a roadmap of the game and update the community on its progress. Other media will include short trailers of the game, and screenshots and grabs, with the premise of the game clearly explained.

LOCALISATION:

If The Witch's Brew becomes successful with the English speaking demographic we could plan to start localising the game for other markets around the world. The Play Store is illegal in China, there are multiple online stores to access games. With these difficulties and language differences, it would require considerable resources to localise to the Chinese market and release the game. French is spoken in multiple countries. Since Germany and France have strong economic markets, these languages would be an easier step to get a development team in the localisation workflow. The third localisation we would be interested in would be Spanish in order to target the growing Latin American demographic and Spanish speaking countries. After localising to our primary markets we can do market research and see if it would be financially viable to enter the market in China, one of the biggest mobile gaming markets.

14.PROTOTYPE DEVELOPMENT

OVERVIEW:

Our aim for this prototype is to create an APK for Android that will highlight the core mechanics of 'The Witches Brew', This will include the 3D and 2D gameplay.

IMPLEMENTED:

18:9 Aspect Ratio Support Only

MECHANICS 3D

- [x] GYRO CAMERA MOVEMENT
- [x] PICK UP HEART
- [x] DROP HEART IN COLDREN
- [x] DROP HEART ON CHOPPING BOARD
- [x] SPRITES

MECHANICS 2D

- [x] ART
- [x] SPLASH SCREEN
- [x] STORE UPGRADE SCREEN (wip)
- [x] SUMMARY SCREEN (wip)
- [x] STOCK LIST SCREEN (working)
- [x] POTION DISCOVERY (one working potion)

PROGRESSION

- [x]SHACK (no story)

UI

- [x] DROP DOWN NOTES PAD
- [x] OPEN STORE
- [x] CLOSE STORE
- [x] NOTES (wip)
- [x] ORDER(wip)
- [x] INGREDIENTS (wip)
- [x] POTIONS (wip)
- [x] SETTINGS (wip)

MINIGAMES

- [x] ART
- [x] KNIFE (wip)
- [x] HAMMER (wip)
- [x] JUG (wip)
- [x] PESTLE AND MORTAR (wip)

BRIEF:

Design a CASUAL MOBILE game.

Game can be made in <1 year by <2 people (assume both can do everything needed).

ANDROID APK LINK:

<https://drive.google.com/open?id=1J2CZY22NYURb4nUMWTZMtPQq7b-wiDsmY>

LINK:

Annotated Gameplay Video - https://youtu.be/3PE3m_ULdYg

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