

CAVE ESCAPE

HACKATHON PRESENTATION

INTRODUCTION

Our Issue

Online video games not having proper
safeguards to protect children.
Leaving them vulnerable to exploitation and
kidnapping

How we chose to help solve it
by creating an online video game
that parents can trust their children
on and that children find fun and
engaging.

- Would be created on Unreal and would be created for PC players
- Age range about 8yrs – 11yrs
- Two types of servers public and private
- A RPG style puzzle game where the main goal of the group is to escape a cave they've been trapped in

Child Safety

Teifion Gibson

Child Safety Law and
Chat Moderation AI

Justin Brighton

Parental Settings +
Menu Design

Game Design

Rebecca Jones

Environment
Design

Chloe Nash

Gameplay

Abigail Jenkins

Avatar and NPC
Design + Financial
Issues

Joshua Critchley

Item Design

CHILD SAFETY LAW AND CHAT AI

Teifion Gibson

Law And other Existing solutions

- With the implementation of the online safety act 2023 [1] it forces online services to require age verification systems handled by the company OFCOM [2]
- Our solution will be implemented to be within the GDPR regulations where relevant [3] - to have our solution follow these regulations we should not save any unnecessary personal data after verification
- Online Games such as Minecraft [4] and Roblox [5] have implemented chat filters, designed to avoid inappropriate language and discussion of inappropriate topics.
- Roblox and websites such as reddit are implementing age verification systems designed to prevent underage users from accessing inappropriate content [5] – these systems utilising ai to have users scan government ID such as passports and driving licences, or having users scan their face and utilising ai to verify their age.

The Roblox logo is displayed in white on a black rectangular background. It features the word "ROBLOX" in a bold, sans-serif font, with a small, stylized "R" icon to the left of the word.

Online Child safety laws

This section of the presentation will go a bit further into detail about how online child safety laws will affect our project.

The Data protection act 2018 – Planned design and implementation of the game application will be compliant to the law, this includes disclosing all collected data such as in game chat logs relevant to a user upon request, and deletion of personally identifiable information if not needed by our application [6].



Child using computer [12]

As we plan to create an online space for underage users we will need to implement some form of age verification, additionally so the program is compliant with uk regulations we must have age verified via OFCOM [7].

Additionally, we are aware if we do not follow this legislation OFCOM can issue fines if we fail to effectively verify the age of users. Additionally, this law also makes age verification needed to allow users to access “mature content”

Existing implemented Child safety features on online services

This section outlines existing implementation on online games / platforms.

Roblox has implementations to moderate content autonomously, to detect illegal and unregistered usage of content on the games platform.

Users can report content that violates Roblox's terms of service.

Roblox adopts usage of automated moderation to aid in the processing of reports [8].

The online mobile game clash of clans [9] utilises a large social element within the game, it is up to users to moderate and create and support an environment within there in game group. However, content can be reported, and is then manually reviewed, then moderated if a user has broken a set of official rules [9].

Nintendo has implemented a few systems to improve minor safety on their services, outlined below are a few of these

- Friend codes that the user must share to add another user
- Nintendo allows for parents to restrict accounts on what content they can access, and how long they are allowed to access their platform [10].



Roblox Logo [11]



Nintendo Logo [13]

Planned implementation of moderation.

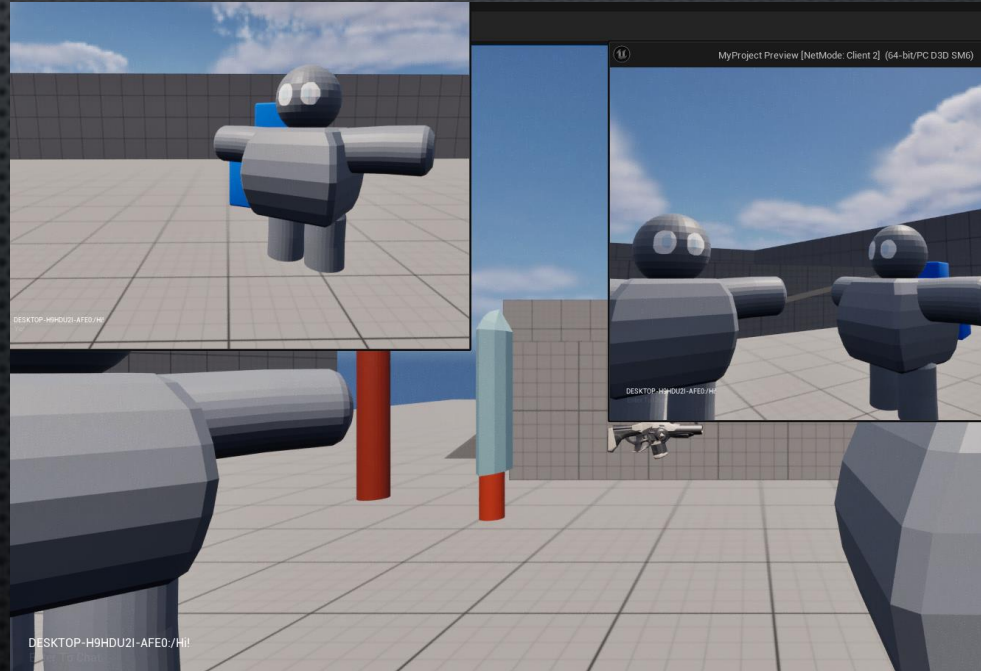
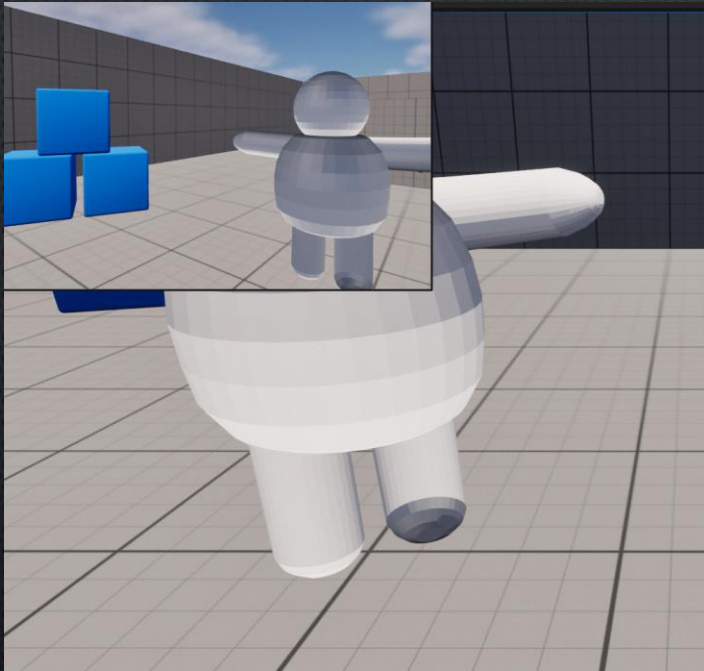
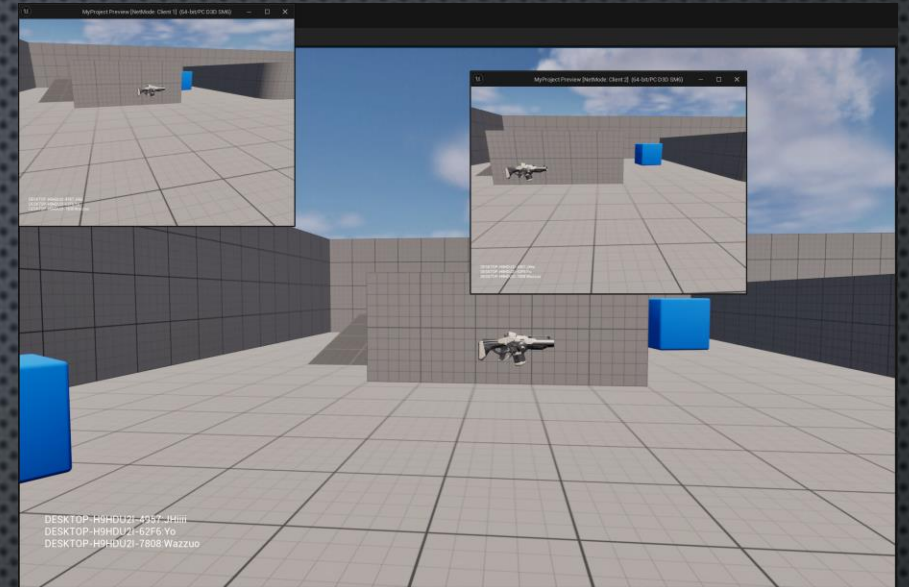
We plan to implement moderation features to help protect other users, based on the research we have done on existing moderation features, these are as follows

- Utilisation of chat filters to ensure that inappropriate language is not used on the platform.
- Ability for users to report messages sent to other users
- Ability for parents to set restrictions on how the user can use the chat – such as disabling the chat/forcing user to use a premade list of chat messages.
- Allow for users to block other users they do not want to interact with.
- Users can be punished for violations via ether a text chat ban or full game ban, depending on severity.
- Moderation will be a mixture of human moderation and ai chat moderation.

Some Developed parts of these concepts are outlined on the next few slides

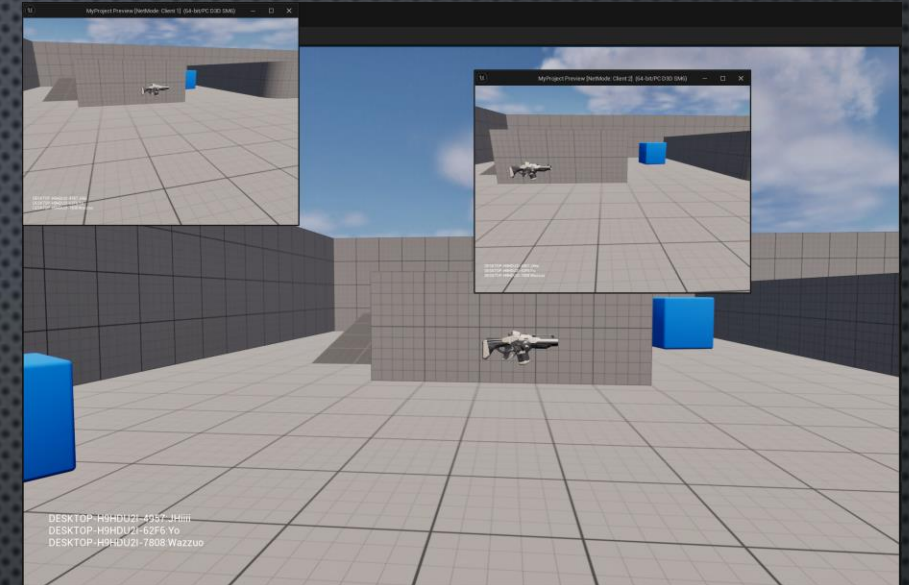
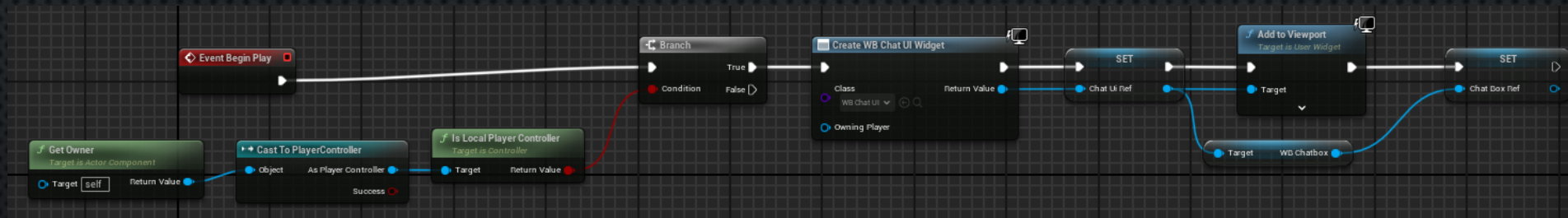
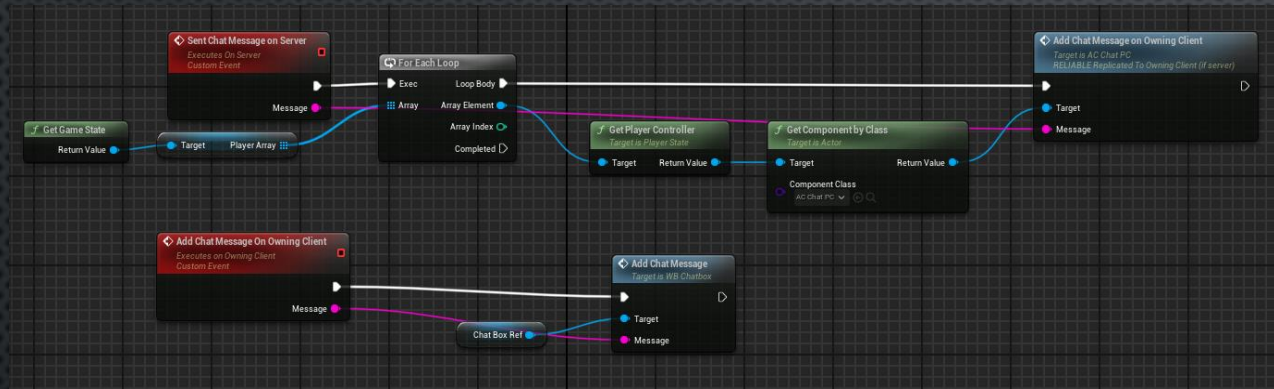
Unreal Prototype

This Part of the presentation is just a short discussion of an implemented prototype, we have implemented a simple chat prototype that can send messages to every user on a server, furthermore each player has a player model, these simple models were used to see if the players are within the same game instance



Unreal Prototype

Code to Send messages to each player instance across a "server", furthermore there is code to focus the chat, so the plyer does not move while using it, finally there is code to initialise and create a chat box that contains the message history. The planned implementation is to add chat filtering utilising a CSV document, creating a Blacklist of censored words



PARENTAL SETTINGS AND MENU DESIGN

Justin Brighton

MENU DESIGN

[1]

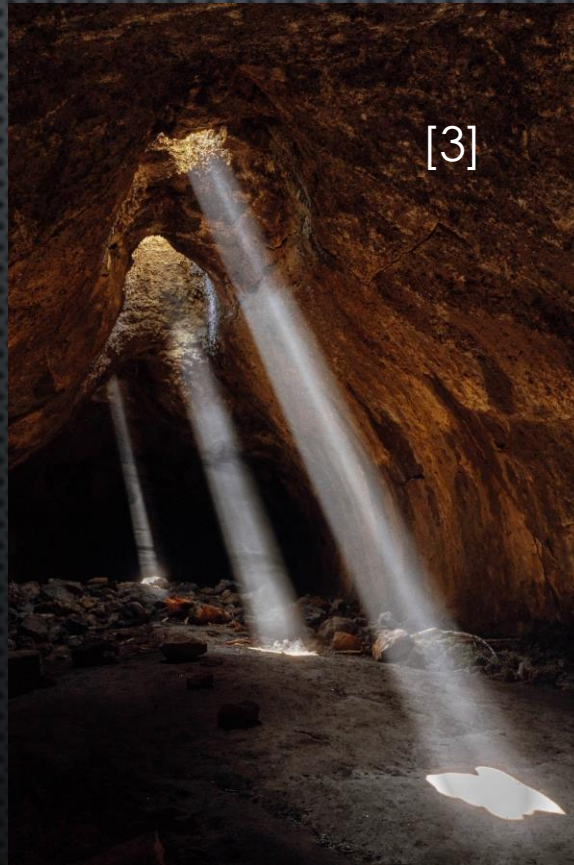
This section is a bit of a mood board for the title of the game "Cave Escape"

MINECRAFT

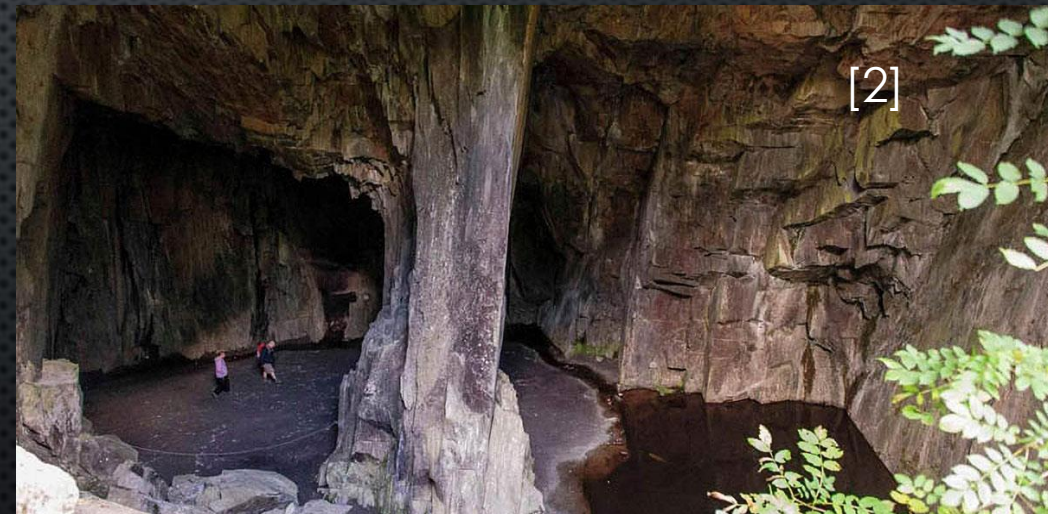
[4]



[3]



[2]



MENU TITLE DESIGN



These 2 images are what I have came up with from the mood board

FINAL DESIGN

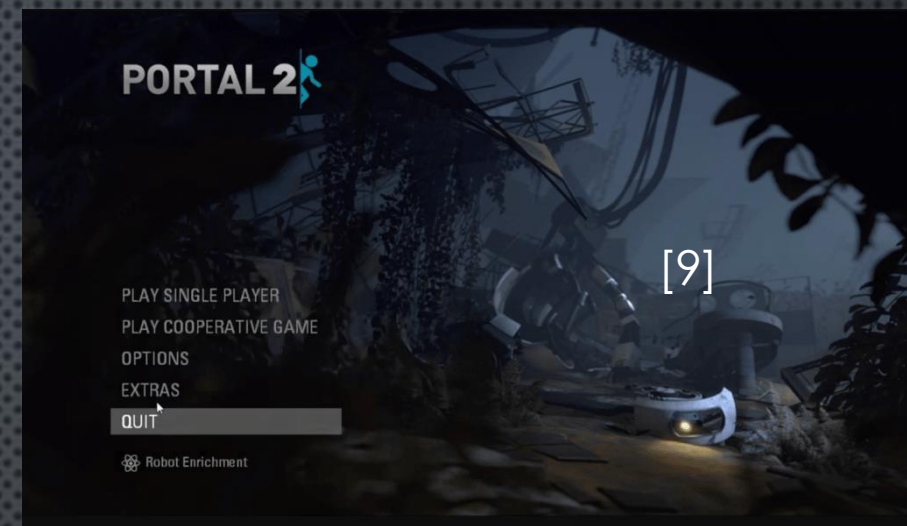
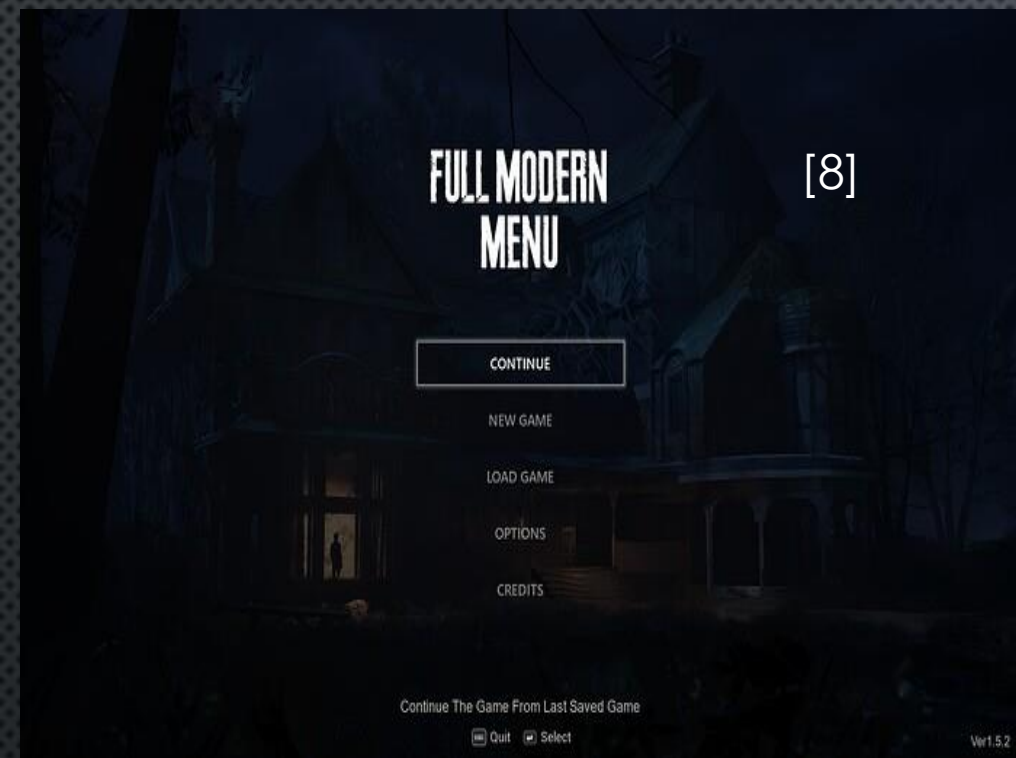


After consulting with the team, we ended up liking the first design.

GAME MENU STYLES – MOOD BOARD



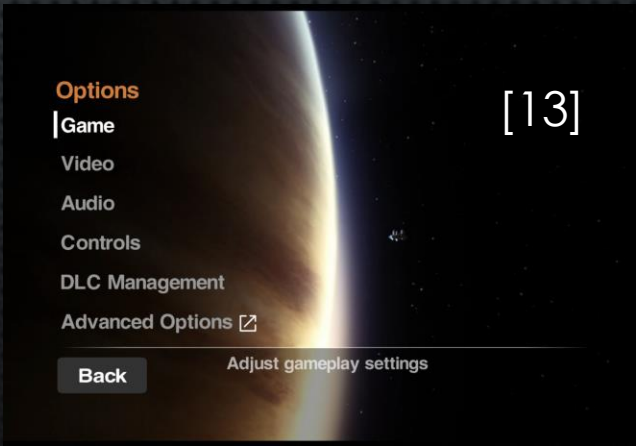
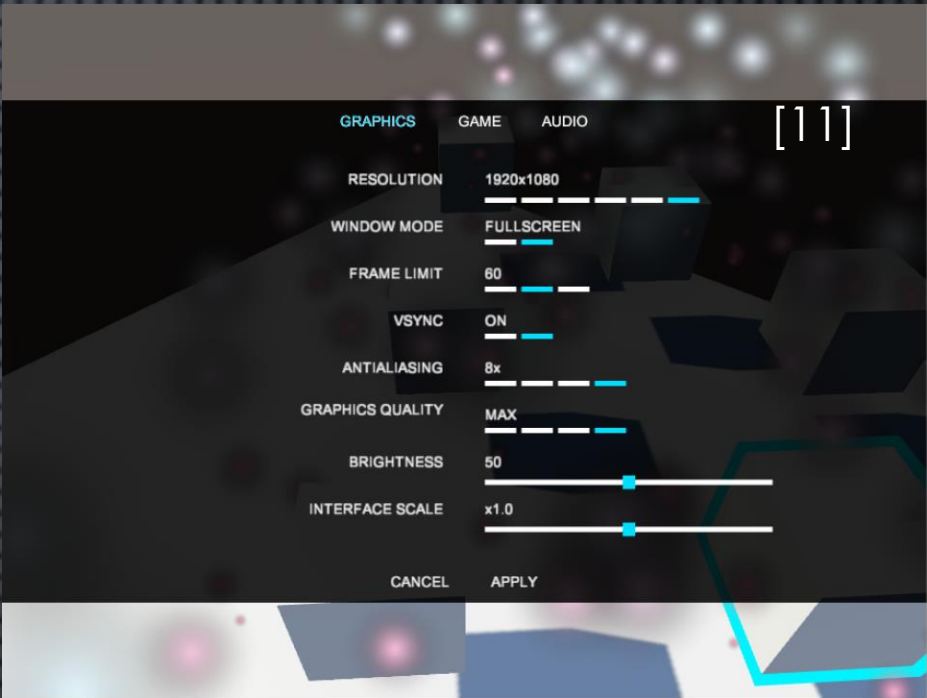
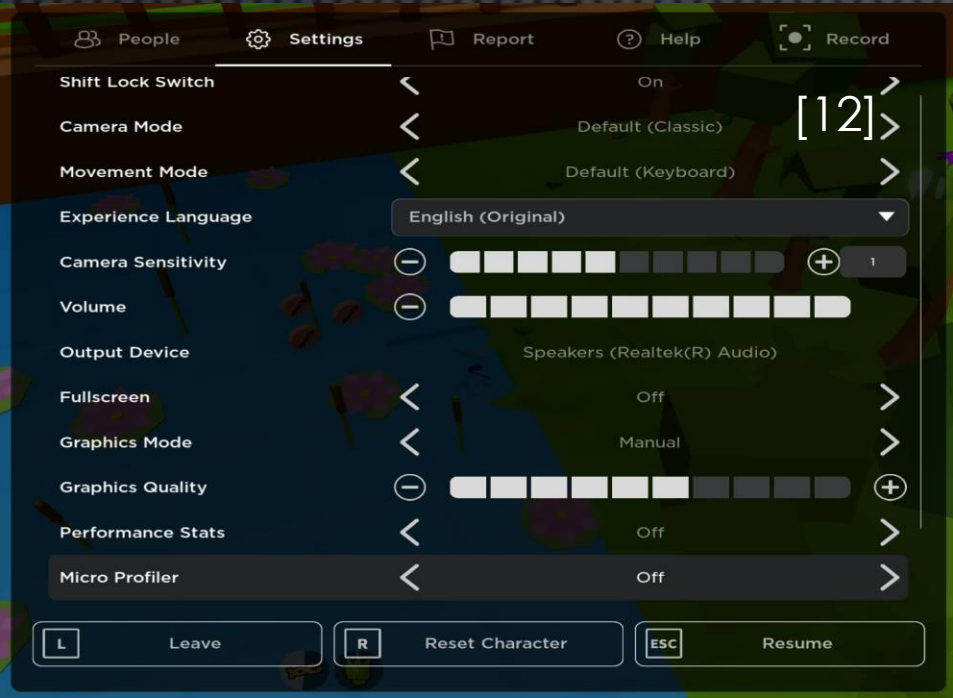
GAME MENU STYLES – MOOD BOARD



DESIGN



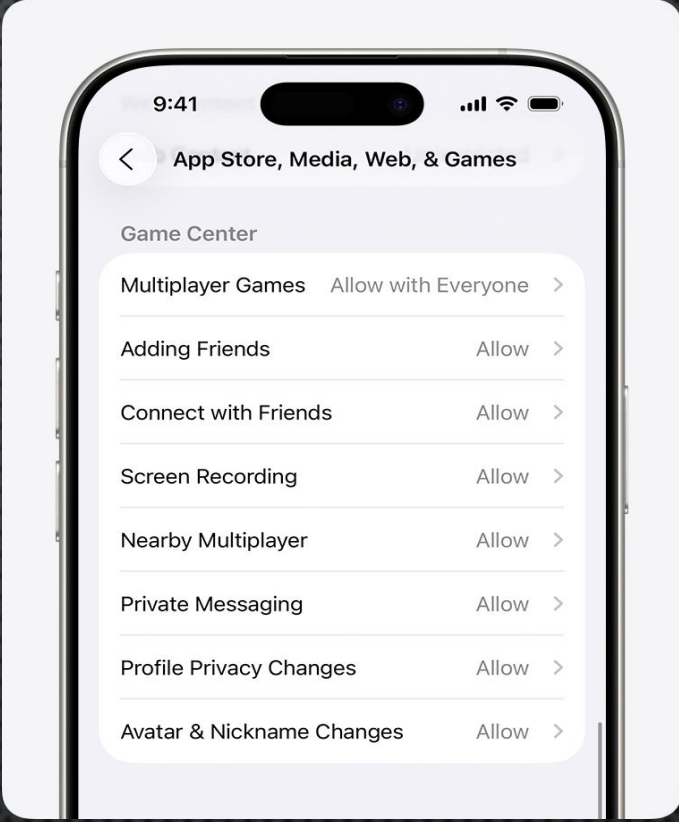
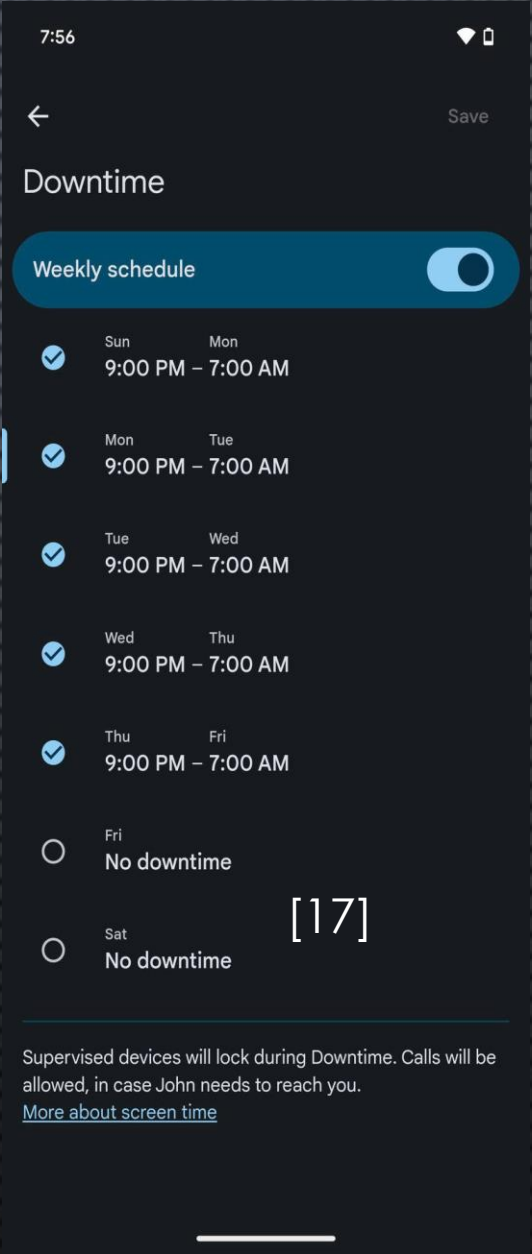
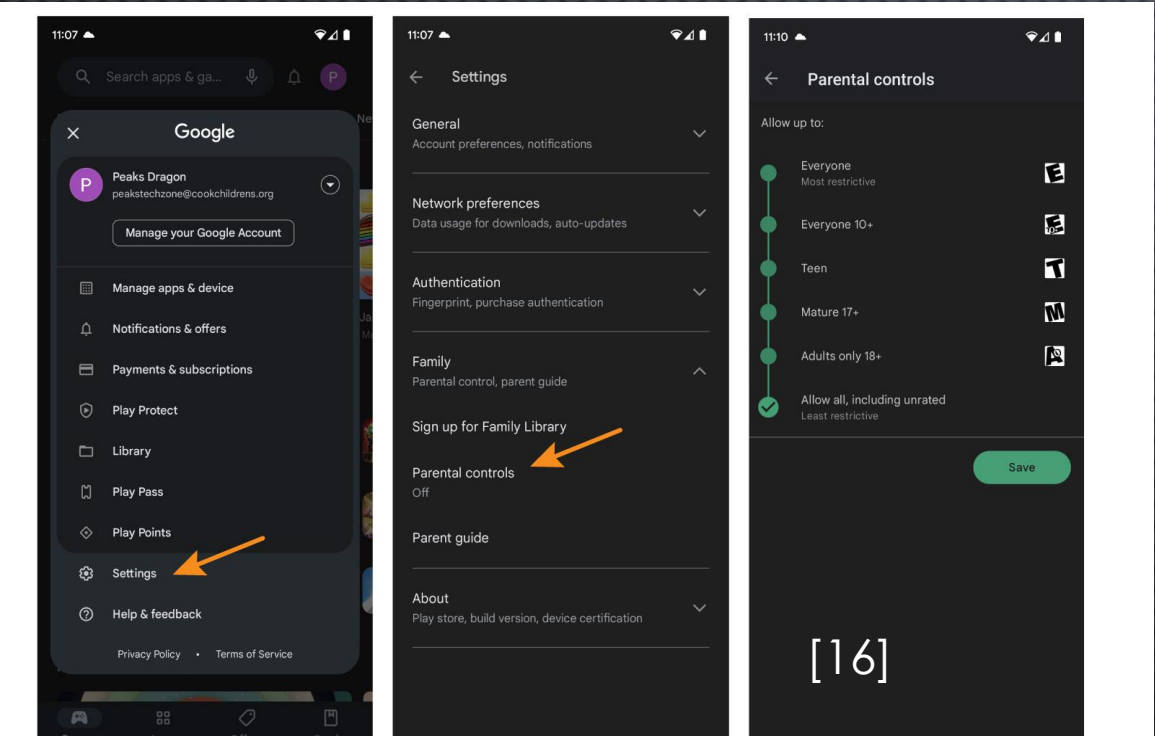
SETTINGS – MOOD BOARD



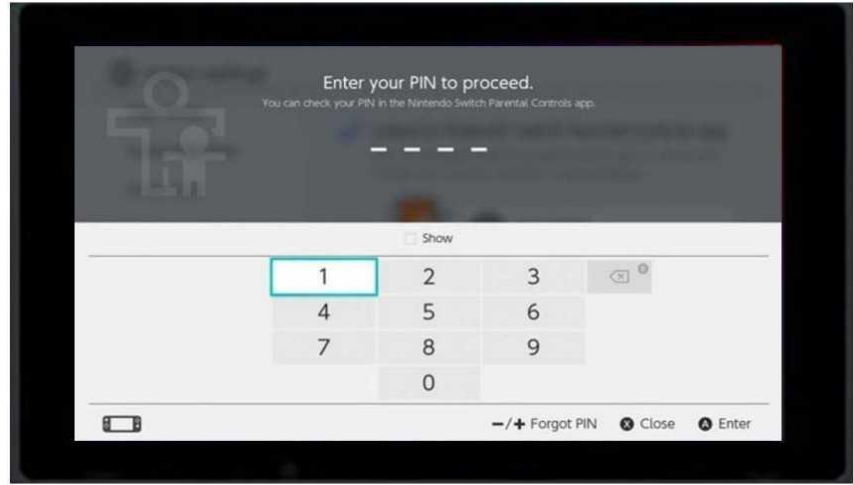
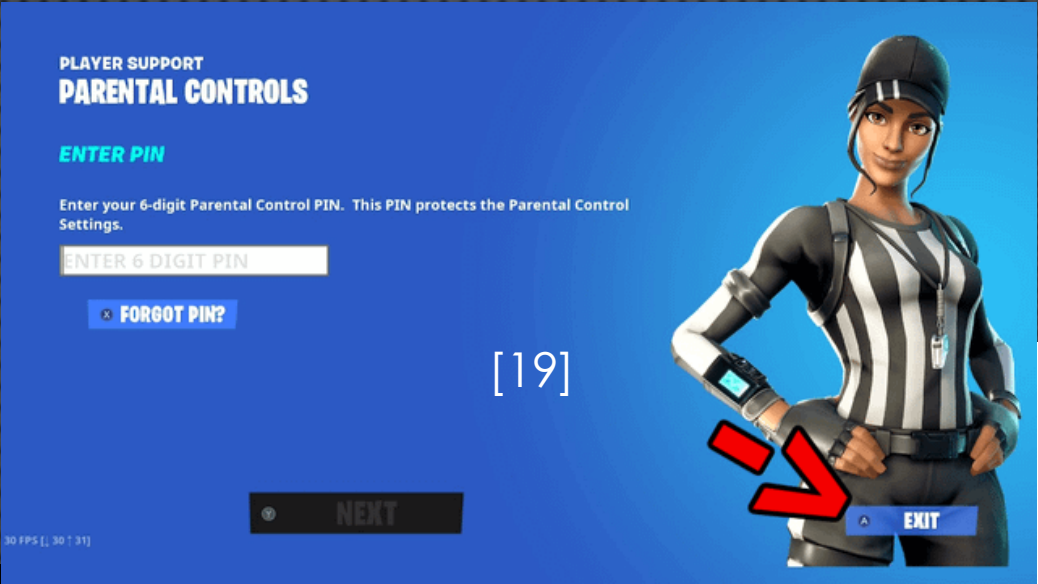
SETTINGS DESIGN



PARENTAL CONTROLS



Parental Control Pin locked



PARENTAL SETTINGS PIN LOCKED

CAVE ESCAPE

SETTINGS



GAMEPLAY



VIDEO



AUDIO



CONTROLS



ACCESSIBILITY



LANGUAGE



PARENTAL CONTROLS



ACCOUNT



PARENTAL CONTROLS

Manage settings to create a safe gaming experience.



PIN REQUIRED

Enter your PIN to access parental control settings.

1

1

2

3

4

5

6

7

8

9

0

✕

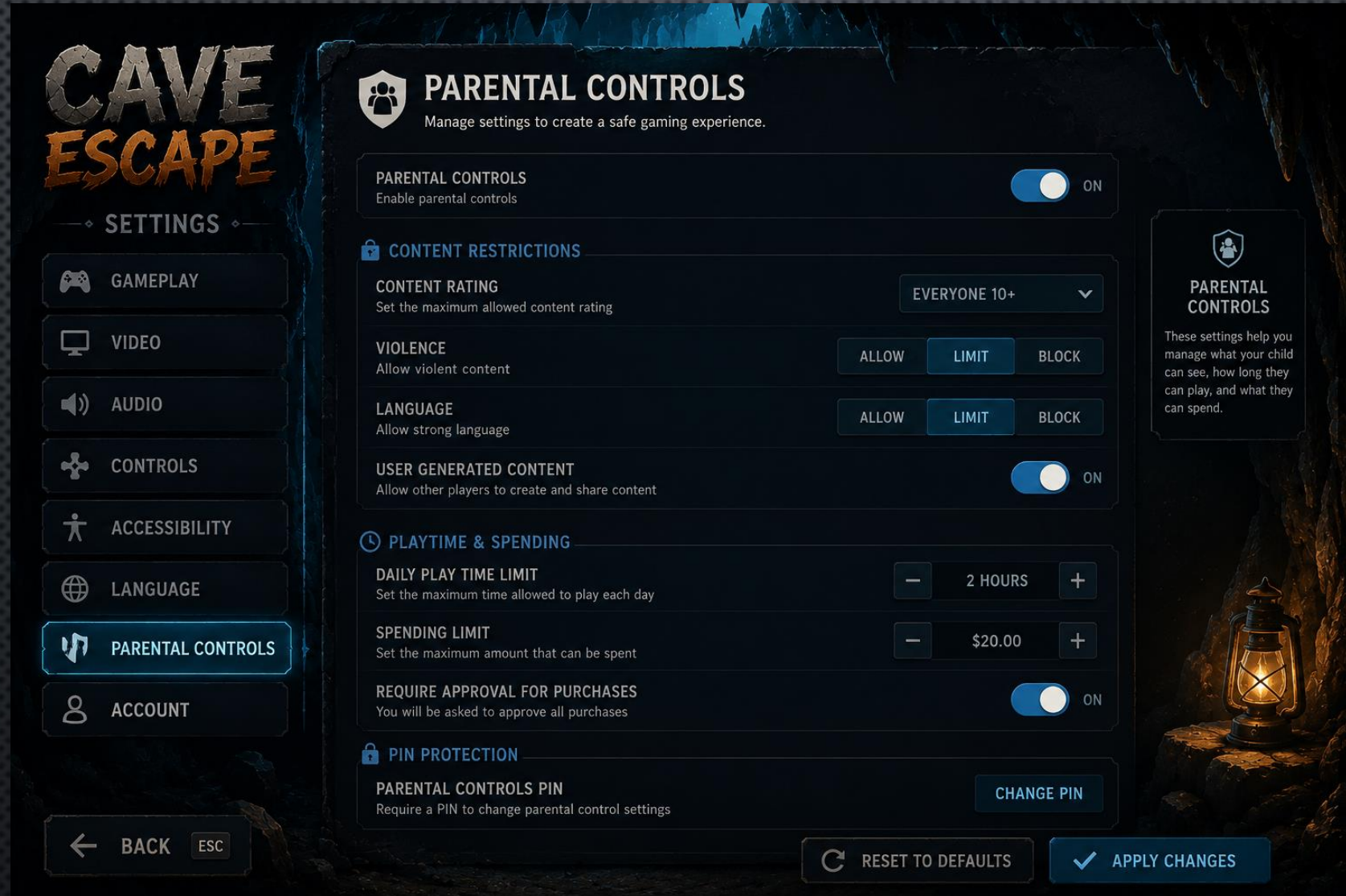


BACK



APPLY CHANGES

PARENTAL CONTROL SETTINGS



MINIGAMES

Chloe Nash

STONE DESIGNS

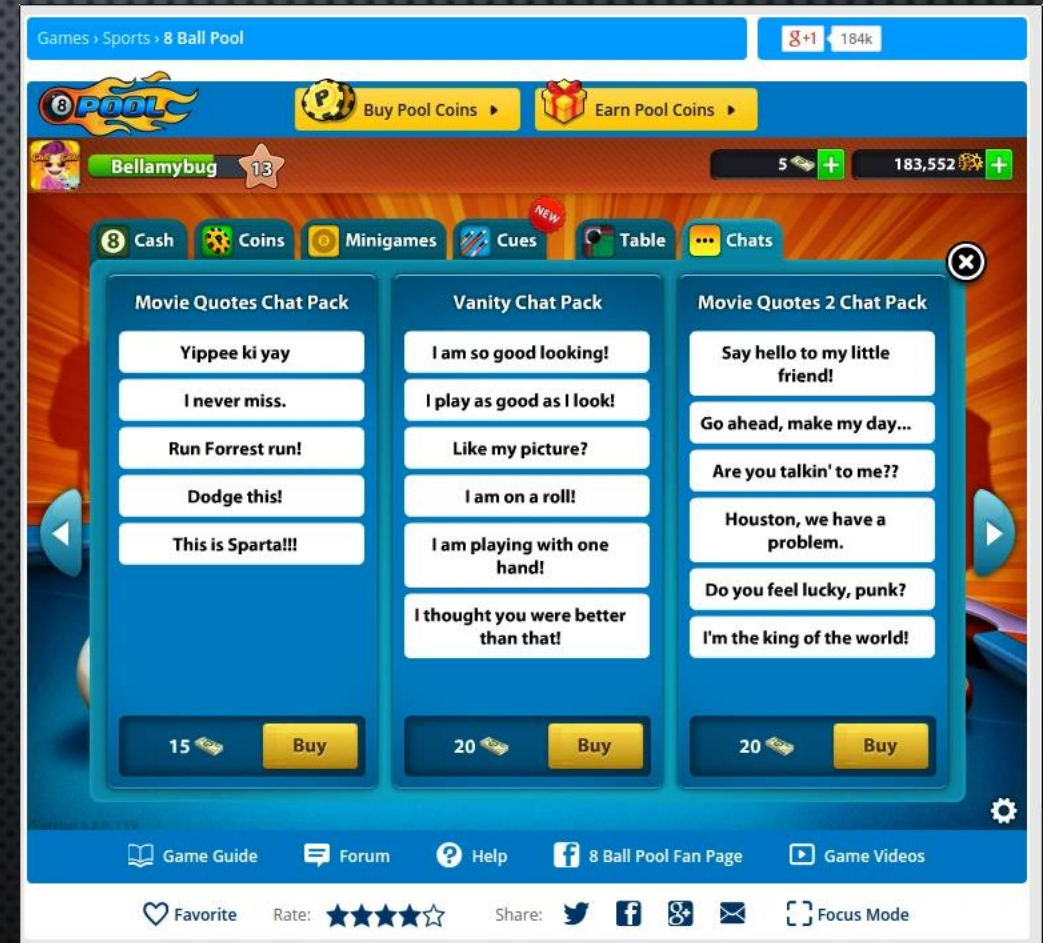
Random sketching and idea
launching



MINI GAME IDEAS



IMPLEMENTING CHAT INTO MINI GAMES



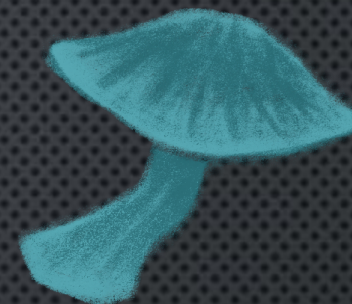
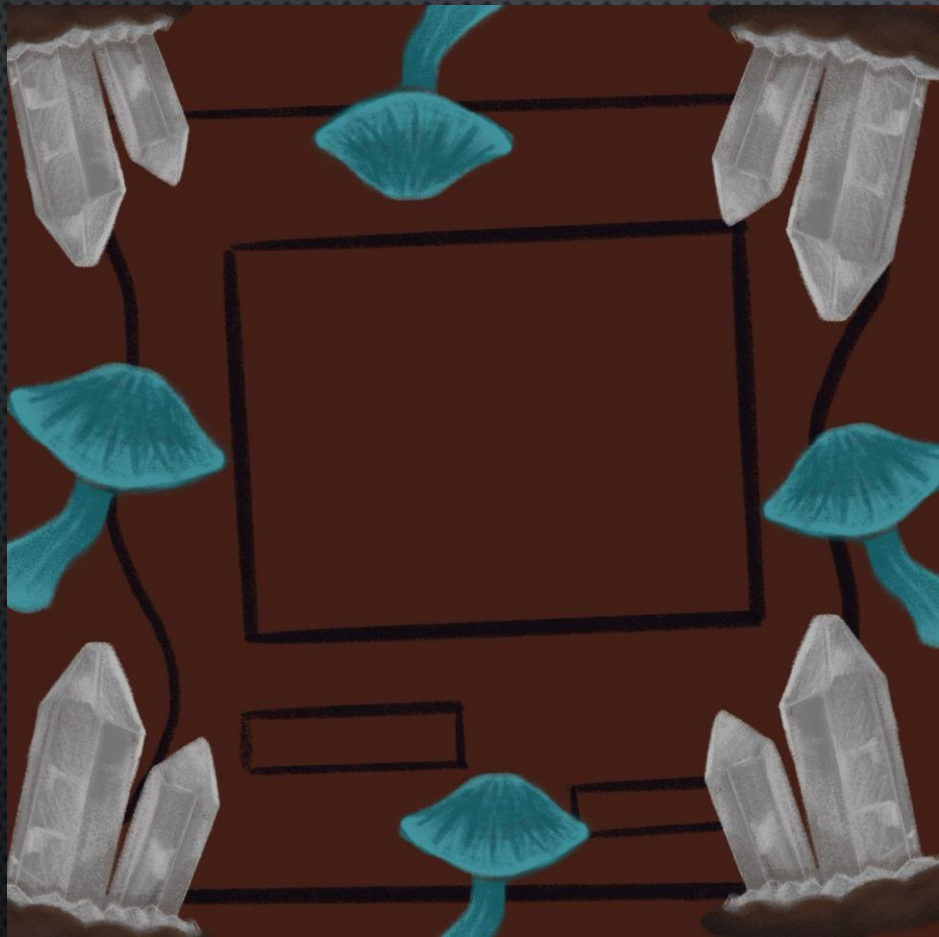
HOW THIS WILL RESOLVE THE ISSUE

This will limit bullying and rude phrases by only letting players use pre chosen phrases

Make the online play option safer as personal details can't be shared

Keep aggression at bay when a player is losing in a mini game

MINI GAME BOARDS



SELECTION

Different modes



Inspiration from Mario party [3]

ENVIRONMENT DESIGN

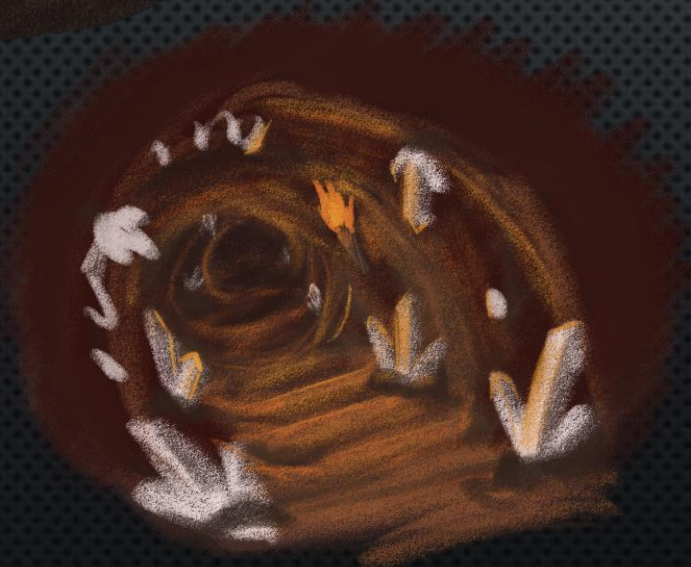
Rebecca Jones

- ## Sketches of elements included in the mood-board

POSSIBLE AREA THEMES



- Drawings of elements that could be used as themes for different areas, made using the mood board
- Glowing mushrooms, glowing moss growing on rocks and crystal caves.



STARTING AREA

- Starting/hub area for cave escape
- Players start the game via climbing the rope through the central exits
- Side exits lead to shop areas for buying and selling items and tools
- Players can jump over the central pit by bouncing on the mushrooms
- Progress sketches show change from bridges to mushrooms and the rope as the way to start the game

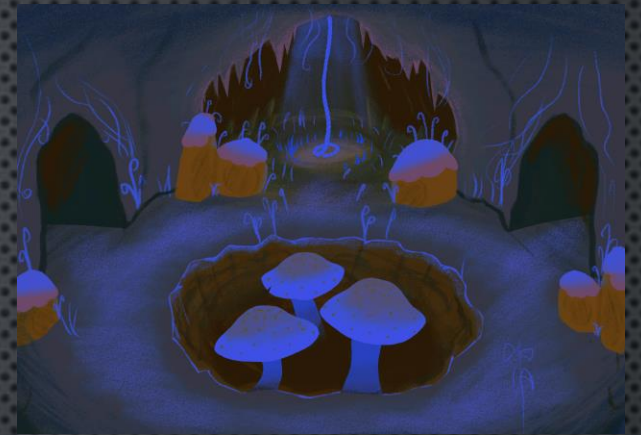
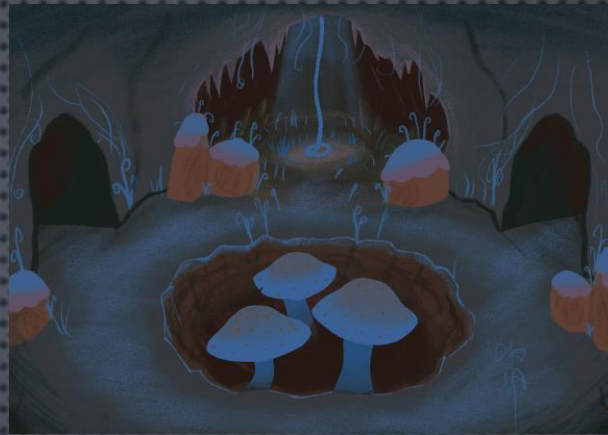
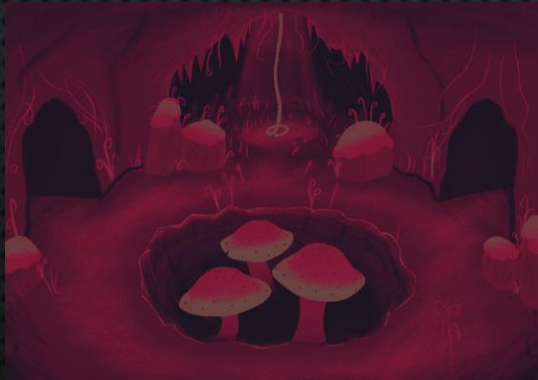
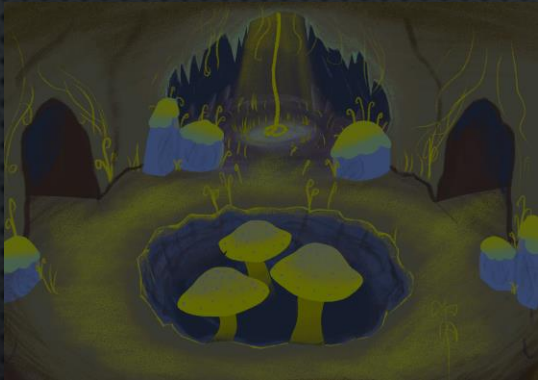
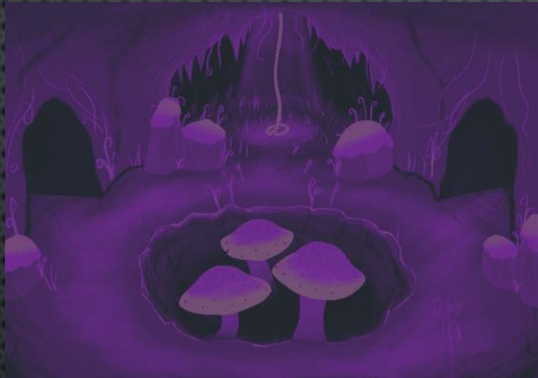


REST AREA

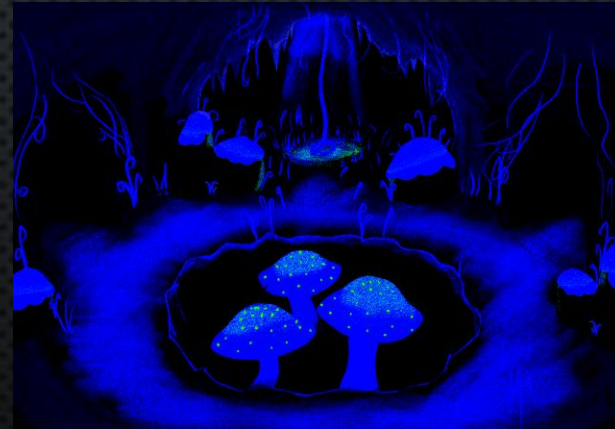


- Rest area for players between sections of the game.
- Players can rest on the benches before heading to the next area
- Can also access shop NPCs from here to buy and sell items and tools.

ALTERNATE COLOURS



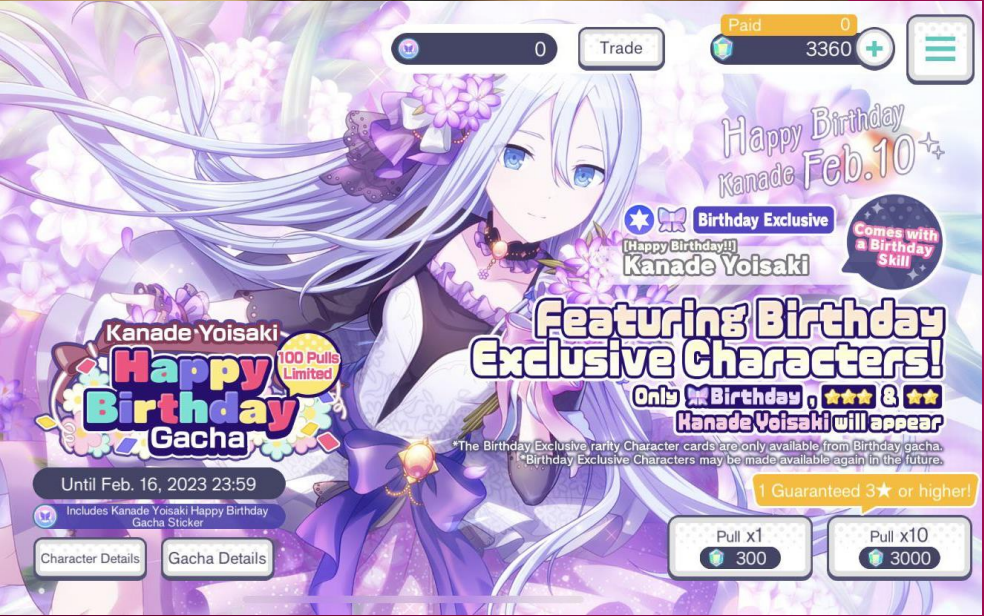
- Alternate colour versions of the starting hub area
- Glow in the dark version could occur if light sources are gone



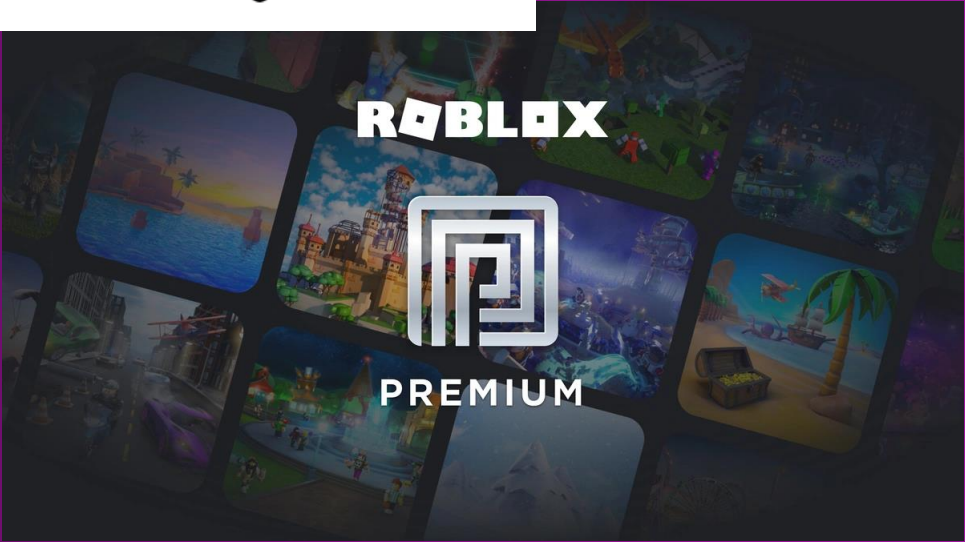
FINANCIAL ISSUES AND NPC & AVATAR DESIGNS

Abigail Jenkins

Gambling



Memberships



One time payment

Pros

- More guaranteed payment

Cons

- Not as accessible as some people would not be able to afford it
- Would be harder to implement parental controls if created for an indie game distributor like Steam

Donations

Pros

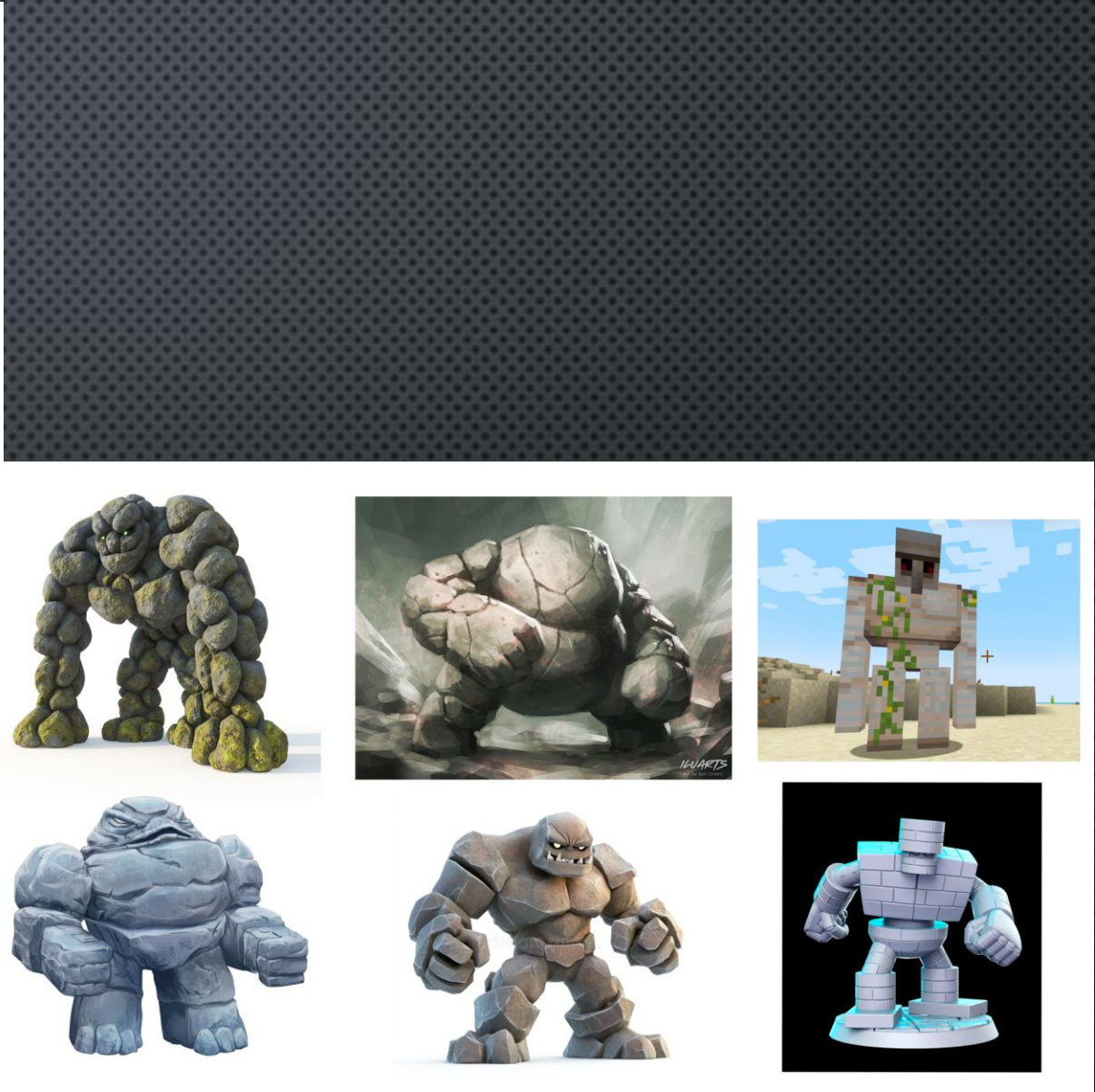
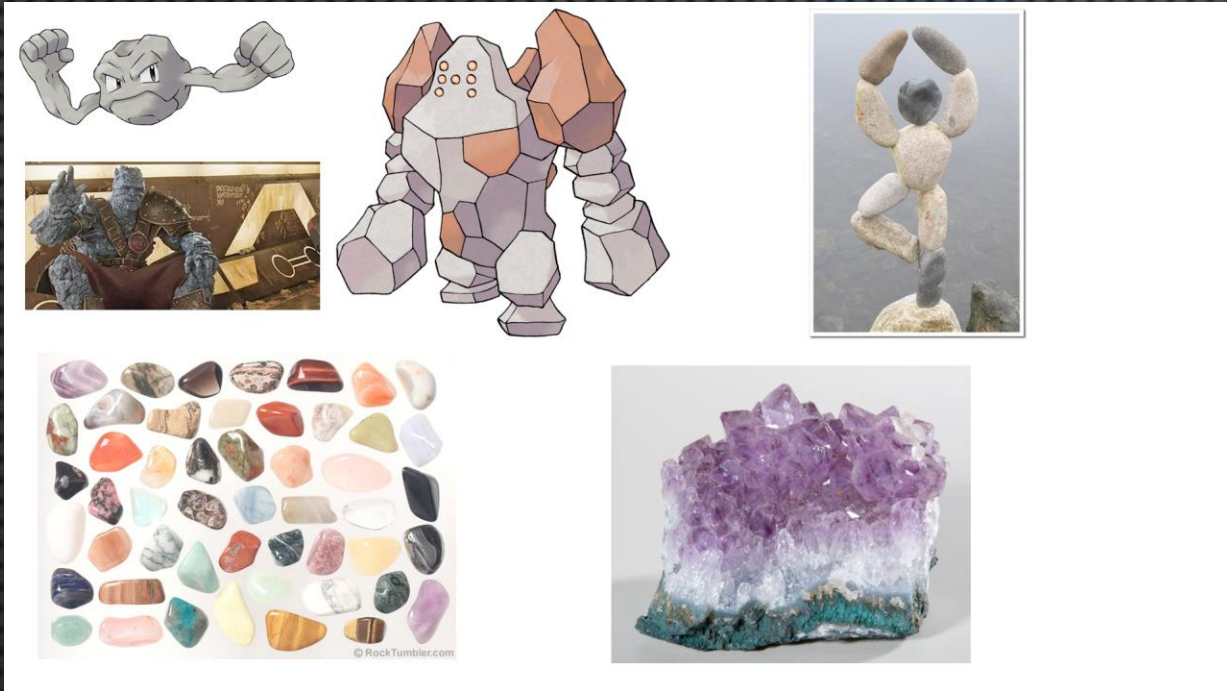
- More accessible, as the game would be free
- Would be easier to implement account links as the game wouldn't be linked to the sellers account.

Cons

- Would have to rely on people donating a lot to generate a significant income
- Would have to build a website to hold the game



Player Avatar Design Research

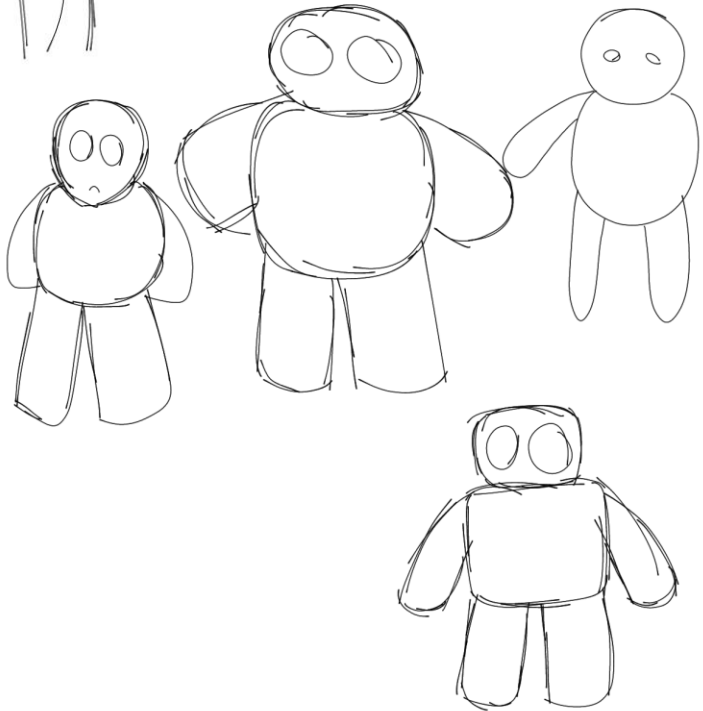
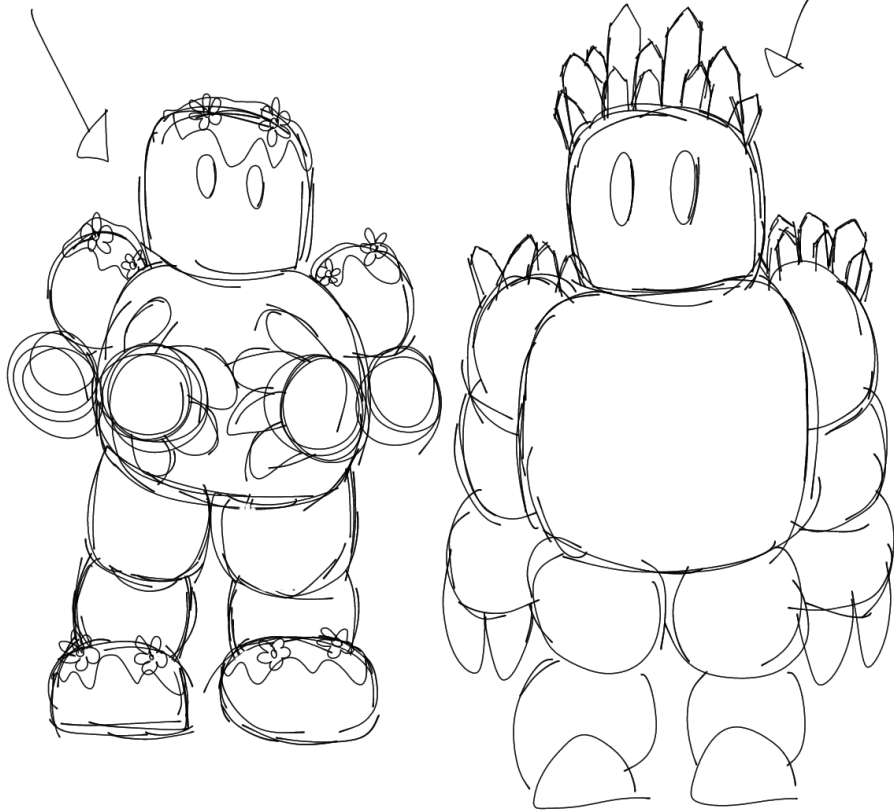


Player Avatar Basic Sketches

9/4/26

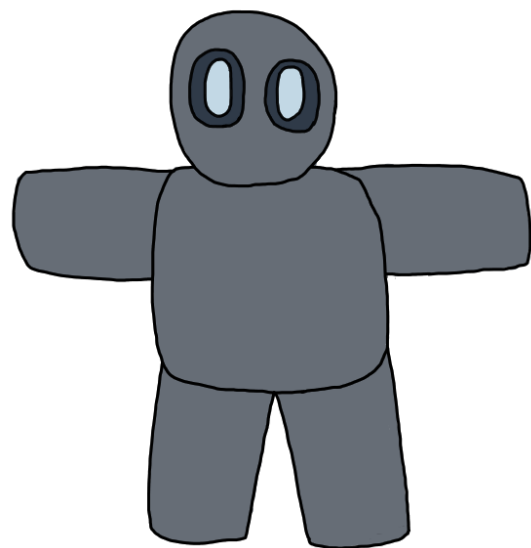
12/3/26

13/3/26

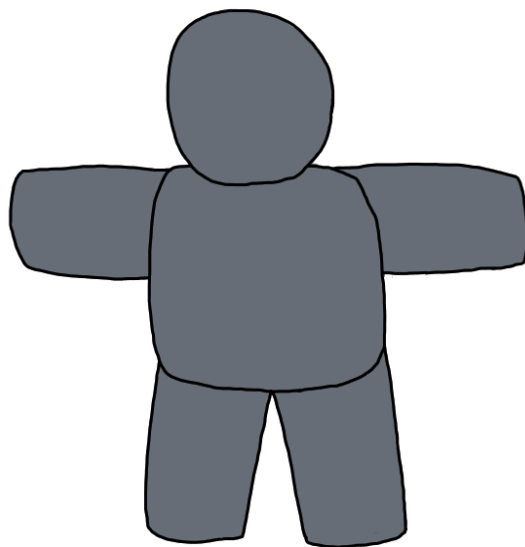


Player Avatar

Front



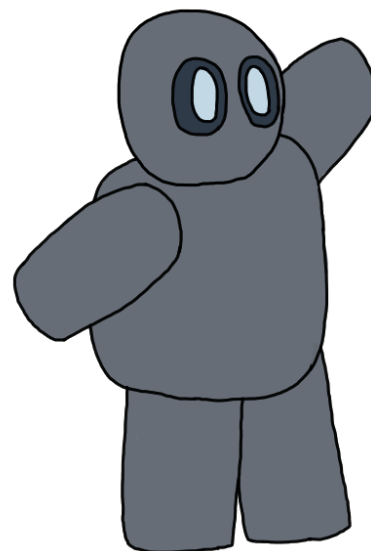
Back



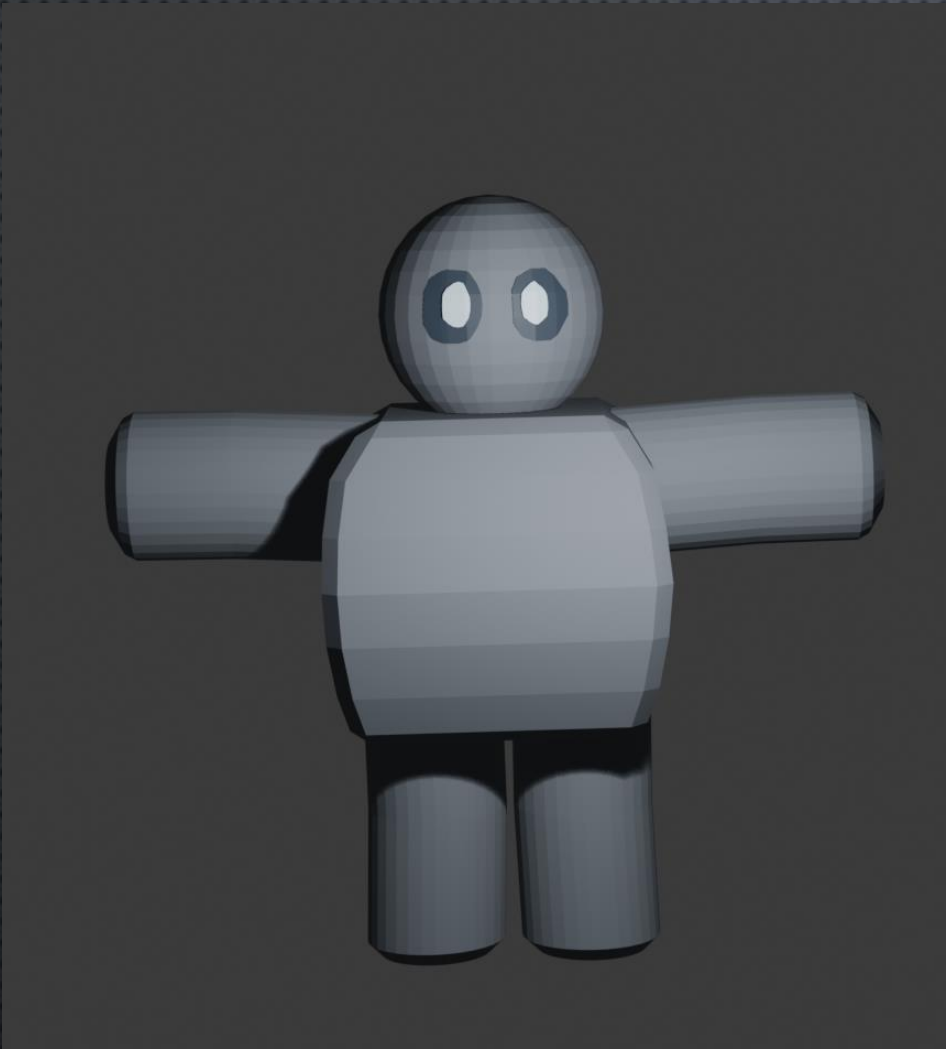
Side



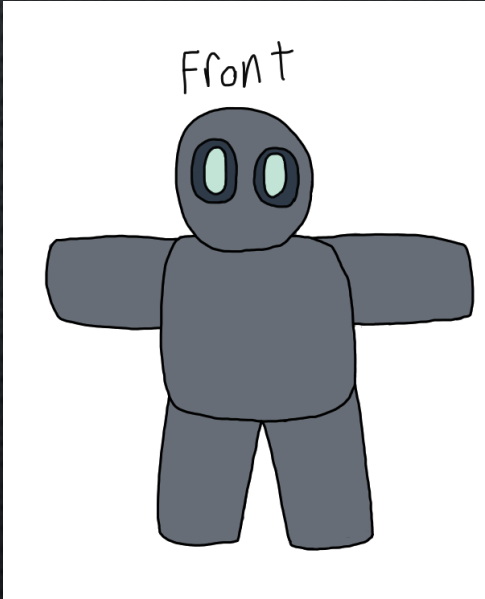
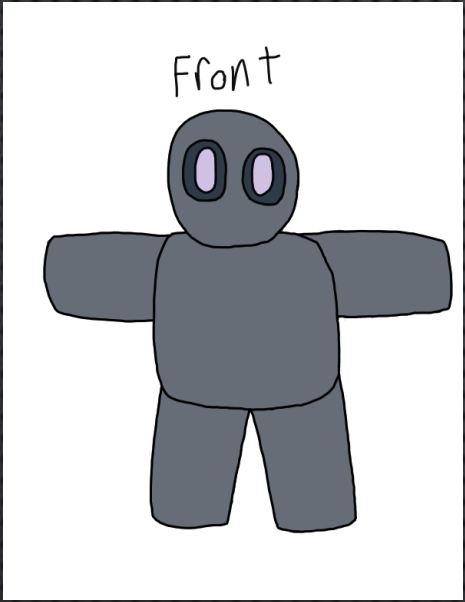
3/4



Player Avatar 3D Model



Player Avatar Customisation Concepts



Relic Mole



Accessory Mole



Item Mole



NPC Designs Basic Sketches

24/3/2

NPCs

All NPCs are moles.
They dig through the caves
and pop up at random
points

Golden
Mole



Item seller.

You go to him to
sell items you collect
whilst exploring in exchange
for in-game items.



Star nosed
mole

Clothes shop

Sells customisable items
for people's avatars

Mole NPC's Roles

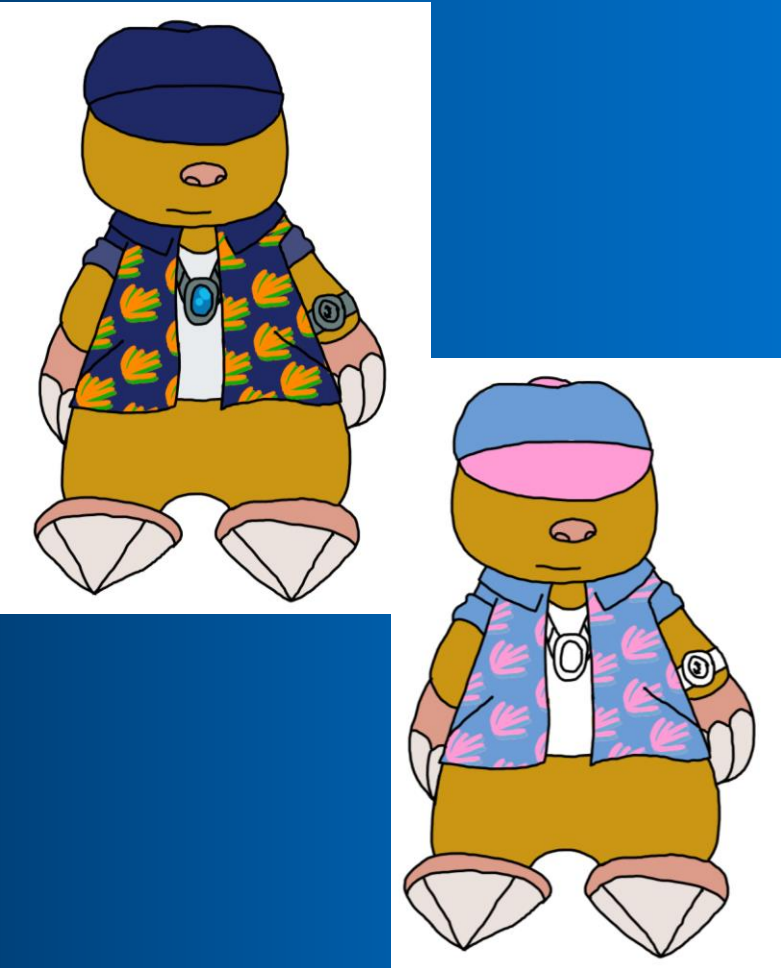
Relic seller (Golden mole)

Accessory seller (star nosed)

Item seller (Common)



Relic Mole



Accessory Mole



Item Mole

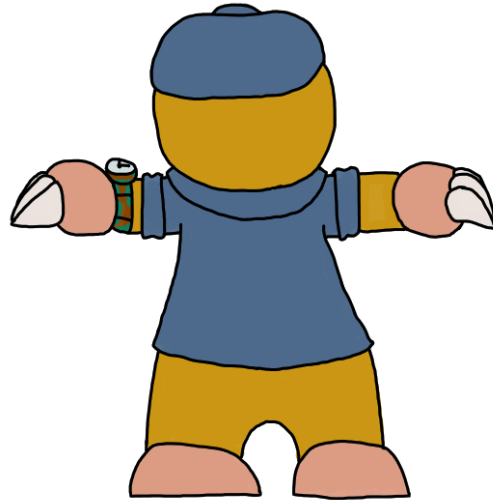


Relic Mole

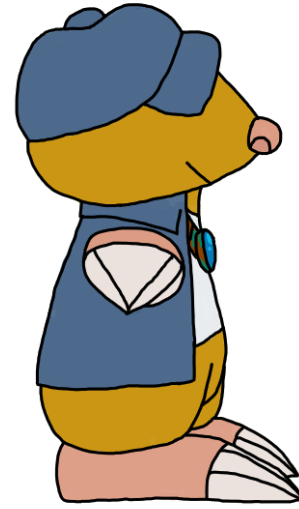
Front



Back



Side



3/4



Accessory Mole

Front



Back



Side



3/4



Item Mole Final Design

Item
Mole

Front



Back



Side



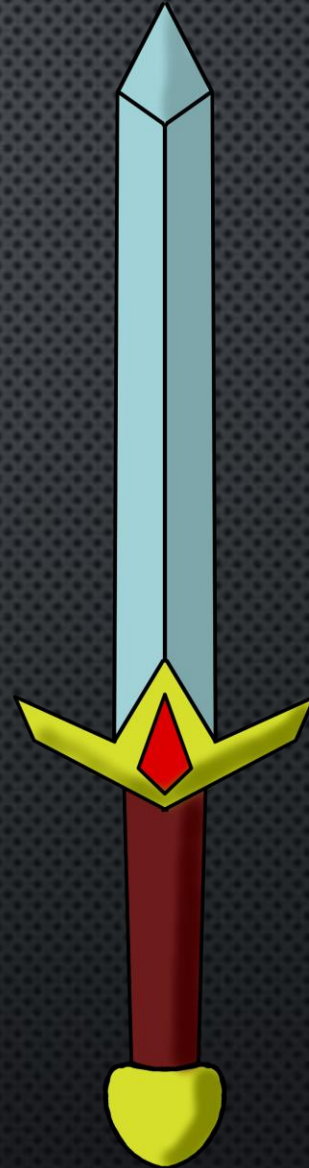
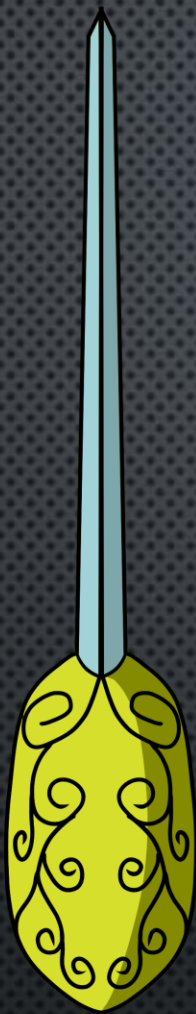
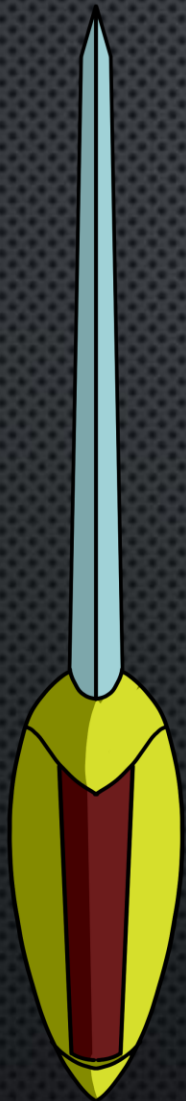
3/4



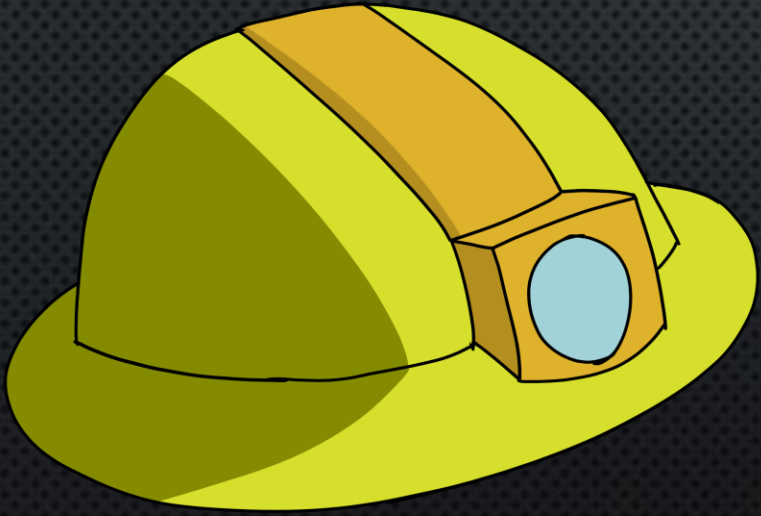
ITEM DESIGN

Joshua Critchley

Sales items.



Tools for exploration



Modeled Tool Set.



REFERENCES

- [1] N. W. Communications, "Video games can have a positive impact on children—if designed with the right features, says new study," *nyu*, May 10, 2024. <https://www.nyu.edu/about/news-publications/news/2024/may/video-games-can-have-a-positive-impact-on-children---if-designed.html> .
- [2] L. Bu and B. Ding, "A comparative study of online gaming between high-performing and low-performing students—A case from China," *Heliyon*, vol. 10, no. 2, p. e24291, Jan. 2024, doi: <https://doi.org/10.1016/j.heliyon.2024.e24291> .
- [3] S. Dredge, "Moshi Monsters and Bin Weevils rapped for promoting subscriptions to children," *the Guardian*, Aug. 26, 2015. <https://www.theguardian.com/technology/2015/aug/26/moshi-monsters-bin-weevils-in-app-purchase-ads-breach-standards> (accessed Feb. 06, 2026). [3] Children's Commissioner, "Gaming the system," *Children's Commissioner for England*, Oct. 22, 2019. <https://www.childrenscommissioner.gov.uk/resource/gaming-the-system/> .
- [4] J. Carr, "Viewpoint: What went wrong at Habbo Hotel?," *BBC News*, Jun. 13, 2012. Accessed: Feb. 05, 2026. [Online]. Available: <https://www.bbc.co.uk/news/technology-18433471>
- [5] H. Michell, "BBC Scotland - The Social - How Club Penguin changed the internet," *BBC*, Sep. 17, 2020. <https://www.bbc.co.uk/programmes/articles/2Chgvsf7FJJXjv9DJhY1T0c/how-club-penguin-changed-the-internet> (accessed Feb. 06, 2026).

- [6] UK Government, "UK General Data Protection Regulation," *legislation.gov.uk*, 2018. <https://www.legislation.gov.uk/eur/2016/679/contents>
- [7] Data Protection Act 2018, "Data Protection Act 2018," *legislation.gov.uk*, 2018. <https://www.legislation.gov.uk/ukpga/2018/12/contents/enacted>
- [8] Roblox, "Content Moderation on Roblox," *Roblox Support*, 2014. <https://en.help.roblox.com/hc/en-us/articles/21416271342868-Content-Moderation-on-Roblox>
- [9] SuperCell, "Offensive Members in Clan | Supercell Support Portal," *Supercell Support Portal*, 2019. <https://support.supercell.com/clash-of-clans/en/articles/offensive-members-in-clan-2.html>.
- [10] Nintendo, "Nintendo Online Safety," *Nintendo.com*, 2025. <https://www.nintendo.com/us/online-safety/?srsId=AfmBOop2GHXmdWDRez9qrruXzKEecsSoOotlkI43u6fjzPCvVzra21u>
- [11] D. Baszucki, "Our Refreshed Logo | Roblox," *Roblox*, Aug. 26, 2022. <https://about.roblox.com/newsroom/2022/08/our-refreshed-logo>
- [12] Getty Images, "Pensive brunette girl puzzled about homework while studying at home isolation. Little kid looking at the laptop screen and smiling. Concept for quarantine and self isolation," *Unsplash.com*, Apr. 22, 2023. https://unsplash.com/photos/pensive-brunette-girl-puzzled-about-homework-while-studying-at-home-isolation-little-kid-looking-at-the-laptop-screen-and-smiling-concept-for-quarantine-and-self-isolation-RtSu1Sn_euI
- [13] T. original uploader was T. at E. Wikipedia, "English: Nintendo logo, SVG format.," *Wikimedia Commons*, Jan. 07, 2009. <https://commons.wikimedia.org/wiki/File:Nintendo.svg>

References (AJ)

- [1] AdElysium, "Reddit - The heart of the internet," *Reddit.com*, Mar. 13, 2025. https://www.reddit.com/r/ClubPenguin/comments/1janc32/i_wish_there_was_more_membership_badges_maybe_not/?solution=f2c26e1ca492bf51f2c26e1ca492bf51&js_challenge=1&token=bbbe4bf1c9a2b5160829c4be34da586132de7b8857e1938a964d3ca6133fdad9&jsc_orig_r= (accessed May 06, 2026).
- [2] Roblox, "Blocked," *Roblox.com*, 2026. <https://about.roblox.com/it/newsroom/2019/09/introducing-roblox-premium> (accessed May 06, 2026).
- [3] B. Cawthorne, "11 things you should know about loot boxes," *UK Safer Internet Centre*, Sep. 19, 2019. <https://saferinternet.org.uk/blog/11-things-you-should-know-about-loot-boxes> (accessed May 06, 2026).
- [4] Ninja_Nun_ICHOR_Form, "Which Gacha should I roll on, new player," *Reddit.com*, 2026. https://www.reddit.com/r/ProjectSekai/comments/10zIncU/which_gacha_should_i_roll_on_new_player/ (accessed May 06, 2026).
- [5] The Pokemon Company, "Geodude | Pokédex | More at Pokemon.com," *Pokemon.com*, 2023. <https://www.pokemon.com/us/pokedex/geodude> (accessed Mar. 03, 2026).
- [6] Bulbapedia, "Regirock (Pokémon) - Bulbapedia, the community-driven Pokémon encyclopedia," *Bulbapedia*, Apr. 10, 2026. [https://bulbapedia.bulbagarden.net/wiki/Regirock_\(Pok%C3%A9mon\)](https://bulbapedia.bulbagarden.net/wiki/Regirock_(Pok%C3%A9mon)) (accessed Mar. 03, 2026).

[7] *Thor: Ragnarok*, (Oct. 10, 2017).

[8] I. Šušmelj, "The Art of Rock," *Pinterest*, Jan. 10, 2010. <https://uk.pinterest.com/pin/rock-person-balancing--709317010076977527/> (accessed Mar. 03, 2026).

[9] Rock Tumbler, "50 Different SemiPrecious Tumbled Stones Collection," *Rocktumbler.com*, 2026. <https://rocktumbler.com/gemstones/40-tumbled-stones.shtml> (accessed Mar. 03, 2026).

[10] Larson Jewelers, "The Difference Between Gemstones, Rocks and Minerals," *Larson Jewelers*, 2026. <https://www.larsonjewelers.com/pages/difference-between-a-gemstone-rock-and-mineral> (accessed Mar. 03, 2026).

[11] TurboSquid, *Stone Golem Model*. 2012. Accessed: Mar. 09, 2026. [Online Image]. Available: https://www.turbosquid.com/3d-models/stone-golem-model-1227290?dd_referrer=

[12] F. James and M. V. Stella, "How to make an Iron Golem in Minecraft and what they're for," *GamesRadar+*, Jul. 04, 2022. <https://www.gamesradar.com/minecraft-iron-golem-how-to-make/> (accessed Mar. 09, 2026).

[13] iluarts, "Stone Golem," *Reddit.com*, 2026. https://www.reddit.com/r/ImaginaryMonsters/comments/t9pv6s/stone_golem/ (accessed Mar. 09, 2026).

[15] dreamstime, *Powerful Stone Golem*. 2026. Accessed: Mar. 09, 2026. [Online]. Available: <https://www.dreamstime.com/d-model-cartoon-stone-giant-showcasing-digital-art-techniques-powerful-fierce-character-formidable-stone-giant-image379137520>

[16] Tabletop XTRA, "Stone Golem | Classic JRPG Vol 23 | Fantasy Miniature | RN Estudio," *TabletopXtra*, 2025. <https://tabletopxtra.co.uk/products/stone-golem-classic-jrpg-vol-23-fantasy-miniature-rn-estudio> (accessed Mar. 09, 2026).

[17] wunc news, "'Pawn Star' Rick Harrison On His 'Deals And Steals,'" *WUNC News*, Jun. 07, 2011. <https://www.wunc.org/2011-06-07/pawn-star-rick-harrison-on-his-deals-and-steals> (accessed Apr. 15, 2026).

[18] S. Kercher, "Academy Rules Can't Stop Pawn Shop Oscar Sales," *Variety*, Feb. 22, 2017. <https://variety.com/2017/biz/spotlight/academy-rules-cant-stop-pawn-shop-oscar-sales-1201993330/> (accessed Apr. 15, 2026).

[19] Anettes Couture, "2018 Collection. Designer Hat. Red Hat. Kentucky Derby Hat. Derby Hat. Royal Ascot Hat. Fashion Hat. Couture Red Hat. Fashion Hat," *Annette's Couture Millinery*, Apr. 07, 2026. <https://annettescouture.com/product/2018-collection-designer-hat-red-hat-kentucky-derby-hat-derby-hat-royal-ascot-hat-fashion-hat-couture-red-hat-fashion-hat/> (accessed Apr. 16, 2026).

[20] C. Lu-Lien Tan, *Picking the Perfect Winter Hat for your Face*. 2012. Accessed: Apr. 16, 2026. [Online]. Available: <https://www.wsj.com/articles/SB10000872396390443328404578020883873131910>

[21] British Caving Association, "New To Caving - You'll always remember your first steps underground...", *Newtocaving.com*, 2020. <https://newtocaving.com/caving-safely.php> (accessed Apr. 16, 2026).

[22] Fandom Wiki, "Gnome Shop," *Kingdom Rush Wiki*, 2026. https://kingdomrushtd.fandom.com/wiki/Gnome_Shop (accessed Apr. 16, 2026).

[23] T. Koumoundouros, "Blind, Sand-Swimming Golden Mole Rediscovered Alive After 86 Years," *ScienceAlert*, Dec. 06, 2023. <https://www.sciencealert.com/blind-sand-swimming-golden-mole-rediscovered-alive-after-86-years> (accessed Apr. 19, 2026).

[24] Fandom Wiki, "Star Nosed Mole," *Creatures of the World Wikia*, 2026. https://creatures-of-the-world.fandom.com/wiki/Star_Nosed_Mole (accessed Apr. 19, 2026).

[25] Happy Beaks, "6 fun facts about moles - Happy Beaks Blog," *Happy Beaks Blog*, Jun. 10, 2020. <https://blog.happybeaks.co.uk/wildlife/6-fun-facts-about-moles/> (accessed May 07, 2026).

Bibliography - JB

<https://hyperpix.net/fonts/minecraft-font/> [1]

<https://www.visitlakedistrict.com/explore/langdale/cathedral-quarry> [2]

<https://www.wanderinraw.com/post/skylight-cave> [3]

<https://spectrumlocalnews.com/tx/san-antonio/news/2018/06/05/10-coolest-caves-in-the-central-texas-area> [4]

<https://interfaceingame.com/screenshots/hollow-knight-main-menu/> [5]

<https://thegamecampaign.wordpress.com/2025/07/04/my-10-favorite-main-menus-in-gaming/> [6]

<https://gamerant.com/minecraft-animated-main-menu-mod/> [7]

<https://forums.unrealengine.com/t/full-aaa-quality-game-menu-for-your-game/2592316> [8]

Bibliography - JB

<https://discussions.unity.com/t/any-new-old-comers-interested-in-this-settings-menu/589487>

[9]

<https://thegamecampaign.wordpress.com/2025/07/04/my-10-favorite-main-menus-in-gaming/> [10]

<https://discussions.unity.com/t/any-new-old-comers-interested-in-this-settings-menu/589487> [11]

<https://devforum.roblox.com/t/allow-developers-to-add-different-settings-to-the-coregui-settings-menu/2545662> [12]

<https://www.gameuidatabase.com/index.php?scrn=26><https://www.gameuidatabase.com/index.php?scrn=26> [13]

<https://support.apple.com/en-gb/105121> [14]

<https://www.cookchildrens.org/services/tech-zone/protecting-your-children/> [15]

<https://www.androidauthority.com/android-parental-controls-explained-3250229/> [16]

<https://www.androidauthority.com/android-parental-controls-explained-3250229/> [17]

Bibliography - JB

<https://www.consolewizard.co.uk/nintendo-switch-original/parental-control-settings-password-removal-service> [18]

https://www.reddit.com/r/FortNiteMobile/comments/cyj8z3/switch_players_cant_type_in_the_parental_controls/ [19]

<https://www.youtube.com/watch?v=9fTnkG7EQGg> [20]