Sugar Pucks: hide and squeak

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Review of game as of 8/22/18

Version: 0.00.0?

Setting up

- The fact that you are reading this should mean you have access to the vjmedia.wpi.edu page for sugar pucks

- Create an account on https://arcgit.wpi.edu/users/sign_in with your WPI email

- Request access to https://arcgit.wpi.edu/sugarpucks

- Download the repository via Tower or as a zip (I use the zip)

  o Tower: https://vjmedia.wpi.edu/index.php/Help_Connecting_to_File_Repository

- Download unity 5.6.4 from https://unity3d.com/get-unity/download/archive

- Open the sugar pucks land project folder inside unity

- assets>sugarpucksAssets>Scenes>MainMenuNew3D

- assets>sugarpucksAssets>Scenes>Level4Trees

Introduction

The goal of this review is to present a basic set of solutions for several issues found in Hide and Squeak. This includes the menu system, core mechanics, difficulty, tutorial, and controls. The issues have not been ordered by importance and teams should not use this review as an ironclad design document. The goal of the game as this review recognizes it is that by the end of the game each player will be able to recognize a target note out of a set of given notes, within a short amount of time, and without mistake. Its target audience is middle schoolers.

The current iteration of the game starts (after the main menu) at one side of the large map, which is an island, with the notes (or pucks) semi-circling you. Each puck plays of a sound and then runs off to a location on the map. The notes will then repeatedly play their noise in order. The player is then intended to receive a target note they can play and find the matching note. Additionally, they can play any note on command via in-game controls and UI. A level would consist of collecting a full set of notes.

The menu system

The main menu currently holds four buttons; Play, level select, options, and exit [image 1]. However, there are several issues with this menu. The simplest issue is that the level select menu is off to the side when it should be with the other buttons. Past this however the issues are a bit bigger. Those relating to the main menu itself include the options menu saying it should hold how to play the game and no actual options, which means there is no proper how to play section, and the level select not allowing proper level selection. The options menu is the biggest of these three issues. This is because as the game stands it holds a large number of controls, which means people may want to change or review these controls. But, to do so they must exit the game. This is incredibly inconvenient and leads to the issue with the level select. If we have working levels but the player must exit the game to fix their controls

how do they get back to the level their on? To solve these issues the main menu ^{image 2} needs to have an options menu that allows for review and changing of the control scheme ^{image 3}, along with a working level select. Which brings us to the last of these three issues; a how to play section. This section should include a complete overview of the mechanics and controls in the game with images included. If this page can't clearly describe how to play the game, then perhaps it is too complicated for the target audience. This as with many things will have to undergo playtesting.

Those aren't the only issues though. The entire main menu is almost useless right now. This is because there is no in game menu right now. This means once you enter the game you can't get back to the main menu. There needs to be an in-game menu that includes; a resume button, help, options, return to main menu, and exit game button ^{image 4}. The help menu would be the primary difference from the main menu. This menu section would include an explanation on the specific level like the how to play section describes the entire game. The other option in this case would be to have a single menu system. The in-game menu and the main menu would be the same. This would include the removal of the return to main button, the inclusion of the level selects (this should also allow for restarting the current level), and changes to the how to play and help sections. For these two sections you would merge them and create sections within the how to play button leading to overview, level ^{image 5}, and any/all other levels. This would also be the case for options if someone decides to include the graphical settings in the options. They will need their own section within options.

Gameplay, difficulty, and level design

As stated the goal of this game is to lead players to a point where they can recognize a given note out of several without mistake. To reach this point there will be several stages to the game and its levels. This first stage will be used to introduce the players to the key mechanics to the game and introduce them to the range of notes that they will be playing with. The second stage will be to introduce them to the mechanics that will increase difficulty as well as the level design for all further levels, this stage will make use of all notes. The final stage will steadily increase difficulty within each level forcing the player to take less and less time to find the target note at each point. By the last few levels the player should be able to recognize the target note and know which note they are looking for immediately such that they don't need to play through all notes available.

Core mechanics

From the start of the game the player will be introduced to one specific system which they will always have to trigger themselves. This is the identification of the target note. When they press the key-bound button the game will quiet all other noises and play back the single note that they player must find. This note only triggering when the player chooses should prevent confusion on the players part. This means the player will never replay the note out of confusion reducing the time needed for a player to find the correct note.

After the player knows what their target note is there are two ways for them to find their target note. The short of this is that they will be playing back the notes placed on the map, which will tell the player which direction to head in. The first of these ways will be to play back all notes on the map. At the start of the game this system should have a small pause between each note to allow the player to clearly differentiate between when each note is being played. Later in the game this pause should be almost gone, resulting in a shorter time playing through all notes. The player should also be able to cancel this play through by pressing the same keybind again. The second way through which players can find the note they are looking through is by playing specific notes at on time. This can be achieved by the scroll wheel and a mouse Button or through the number keys. The mouse controls would be best however since it allows the player to continue to move while they cycle through the notes. But how do they know which note they are on?

Visual mechanic and reliance

To allow players to play notes independently of each other as well as keep track of the specific note they are playing a visual system will need to be placed on the HUD. While this system is important it needs to be kept in check. This is to ensure that the player does not become reliant on it for anything other

than its intended purpose. If the player can become reliant on the visual aid to determine which note they are looking for they will pay less attention to the audio and more attention to the visual aid. For this reason, the target note should never be marked on this aid in any way. Additionally, At the beginning of the game it may be a useful asset to visually mark the note that the player is playing however the assist should be removed as the game progresses. Along with this removal consider removing note colors and remember to mix the order of notes on the map to prevent players just counting across from the left or right once they know which note is the correct one.

1   2   3   4   5   6   7   8   9   10

example only - may be overcomplicated for final product

When showing a reduced number of notes remember to maintain their position and number on the table so that there is no confusion.

4   5   6

Difficulty

Several ways to increase difficulty have already been mentioned however these are not enough to create a situation where the player needs to improve and feels challenged. To reach this point we need at least two more changes. The first is the addition of a timer. The timer shouldn't be in the levels until the player has a proper understanding the core mechanics. The second is fixing how difficulty scales in a level as the player picks up a note. Right now, in a single level there is only one set of notes. So as the player picks up notes the game will get easier and easier, making the hardest part of a level the timer and the start. To solve this the most a player should ever pick up from a set of notes is one note, and more than one set of notes. Level design instead of being a large open world will instead be linear. With each set of notes following the previous set with clear separation between the two. Or remove the previous set after the player properly finishes it. Keep in mind however that with a timer running all other notes should be placed it locations that they can all be reached within a similar amount of time, and in the direction of the next set of notes. Later in the game it can be fine to fail someone for messing up one note, but if there is more than one set of notes in earlier levels let them finish the level. Add a mechanic to the end of a level as well as level select where the number of correct notes picked up is recorded. Allowing players to try and get perfect scores on each level.
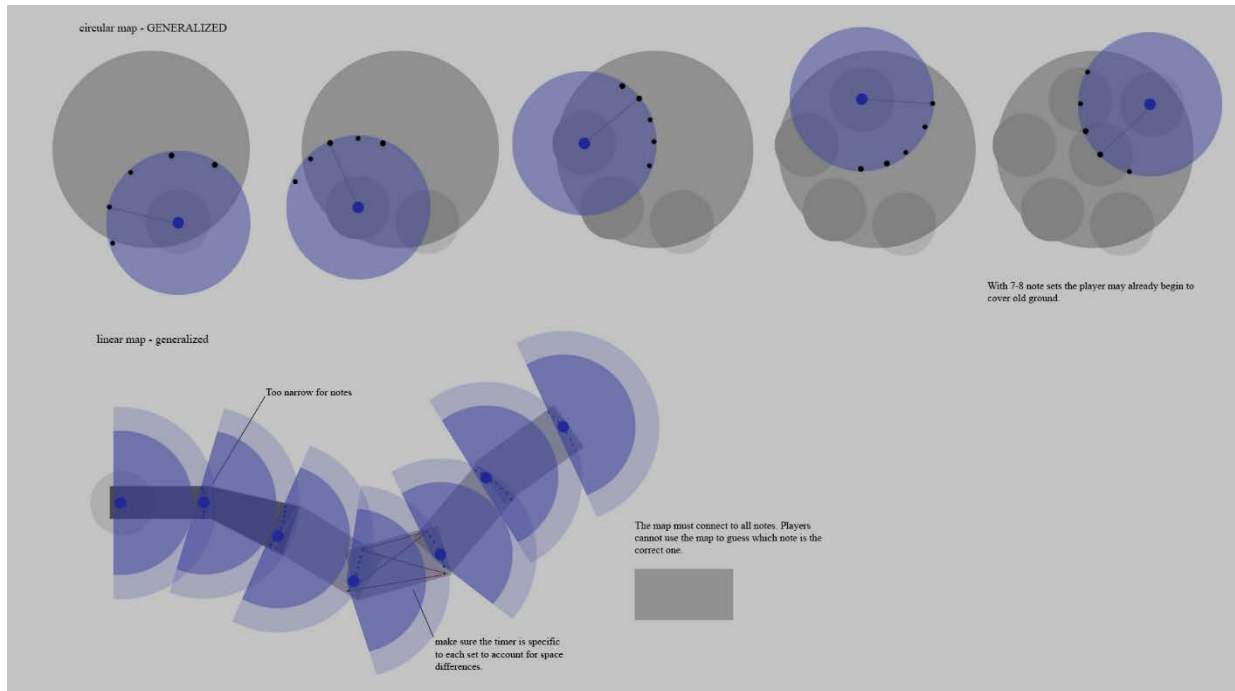
The tutorial

Right now, there isn't a tutorial or even a description of how to play in the game itself. With the addition of the how to play section this issue will be slightly relieved. But, that alone *really* isn't enough to teach players how to play the game. The first few levels need to properly introduce the players to the mechanics within the game, and at a pace that won't cause frustration. The tutorial should include in-game text prompts as well as smaller levels, or sections, specifically designed for the tutorial. Its fine if you use the larger map(s) as long you don't forget that it's a tutorial, there is no need to use the entire map. As with all other levels these will need playtesting.

Map and Level design

With focus placed on the notes, recognition, and other difficulties, maps do not need to be too complicated. Indeed, making the maps too complicated or distracting could have a negative effect on recognition since it will move focus from audio to visual stimuli. As such maps should maintain a simple design with a balanced color scheme. The bonus of this is that it reduces the number of assets that need to be created, found, or bought and more than one map can now be made. You shouldn't just create a gray tunnel though.

When considering the layout for maps it is important to keep several things in mind. These are Map width, note set location, Player speed, time limit, and map length. map width and NS (note set) locations refers to how each set is placed that every note within the set can be reached with a reasonable and roughly equal amount time from the start position, in such a way that each note can be clearly differentiated when it plays, and so that the location and/or layout of the map does not interfere with these placements. Player speed, time limit, and map length refer to the balancing of difficulty, the overall amount of map required for the level, and player experience. We don't want to make the map very small and then make the player take one step every few seconds. This would not be fun. On the other hand, however, we don't want to make the player too fast. Between the start point and any given note players should always have enough time to determine which note is the correct one. Or in the case of higher levels, quickly confirm which is the correct note with the play specific note mechanic. Along with this is that you won't have the time to make a good map on the scale required if you make the player too fast. Or if you do, it may be of poor quality. The player needs to move fast enough that they feel they are moving places but, not so fast that it is a detriment to the game. Time limit needs to take several things into consideration when being determined. First is that it needs to at least be enough time to cross the distance from start to the correct note. This could be viewed as just above max difficulty. However, players need to be able to make mistakes and still complete the level especially at earlier levels, as such level designers will need to consider how skilled they believe the player is at any given level. The timer will be a key value in determining the difficulty of a level.

The current map created for the game is a circular open map that rises in the center. This map layout has an issue however. The benefit of this style of map is that it has a large amount of space with which you can place notes on. This allows developers to easily place notes with space in between them and equidistant from the player. This means that any number of note sets can be placed on the map with only a little difficulty. There is however, an issue with this idea. This is overuse of the area. Depending on the number of levels in the game using this large map, players will inevitably cover old ground, if they spend too much time completing note sets on it. The solution to this is the use of the linear maps. By reducing the number of times the large map must be used there should be little issue with using this large map. Linear maps provide several benefits. The first is the efficient use of space. Only the immediate space surrounding the player needs to be made in any detail. With this design kept in mind designers should be able to extend the length of maps and speed of the player (sprinting?). Not only could the faster pace be more exciting for the character but if the player is traveling more quickly through the map could reduce how much the player pays attention to the map. This should allow the creates to be a bit more modular with their use of core assets for the map. This does however mean that the assets that are going to be reused should be of high quality and designed to be nice to look at but not distracting or 'noticeable'. While the maps need to be nice to look at the map is not what the player is focusing on. The one issue that does arise from these linear maps is spacing between notes. While you could make the level very narrow this could make it very hard to tell the difference between notes. Consider testing narrower maps for higher difficulties.

circular map - GENERALIZED

With 7-8 note sets the player may already begin to cover old ground.

linear map - generalized

Too narrow for notes

The map must connect to all notes. Players cannot use the map to guess which note is the correct one.

make sure the timer is specific to each set to account for space differences.

Consider using the large map for the early tutorials and moving to the linear maps when you begin to get into more difficult time trials and sprinting. This will allow for the reuse of currently existing trials and will create a mood change when you swap to the new map layout.

Controls

The current controls for the game are incredibly outdated. Before any part of the gameplay is changed the controls need to be updated. Controls that are no longer needed need to be removed and controls that remain need to be bound to keys that are easy to use and make sense. This is to prevent confusion as to what is still being used and allows for changes to the controls during the development of the rest of the game(play), increasing the amount of testing on the controls. If they don't work test other layouts.

output	Current control	Advised control
Move - forward	Arrow	W
Move - backward	Arrow	S
Move - left	arrow	A
Move - right	arrow	D
sprint	/	Left shift
jump	space	space
Play target note	1-8	Left mouse click
Play selected note	Z	Right mouse click
Select note to play	/	Scroll wheel |and| Num keys 1-#
Play all notes	/	F
pause	P	T
Open menu	NA	escape
Chord	9	/
Pattern	0	/
Lower octave	-	/
Higher octave	=	/
Action one	d	/

Action two	e	/
submit	Enter/return	/
cancel	escape	/

Image 1 – current main menu

Image 2 – main menu mockup

SUGAR PUCKS
Hide and Squeak

PLAY
LEVEL SELECT
HOW TO PLAY
OPTIONS
EXIT

Sugar Pucks: Hide and Squeak - main menu mock up

Image 3 – options key bindings mockup

SUGAR PUCKS
Hide and Squeak

double click to change keybinding

dot	key bind

RETURN TO MAIN

Sugar Pucks: Hide and Squeak - keybind options menu mock up

Image 4 – in-game separate menu mockup

RESUME
HELP
OPTIONS
RETURN TO MAIN
EXIT

Sugar Pucks: Hide and Squeak - in game menu mock up
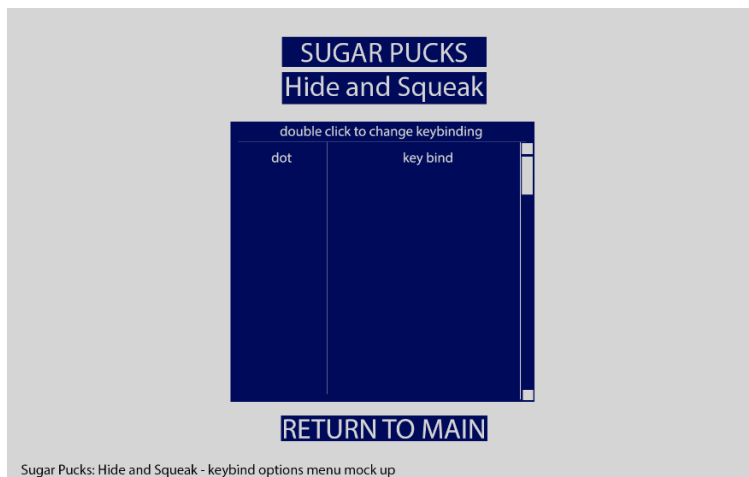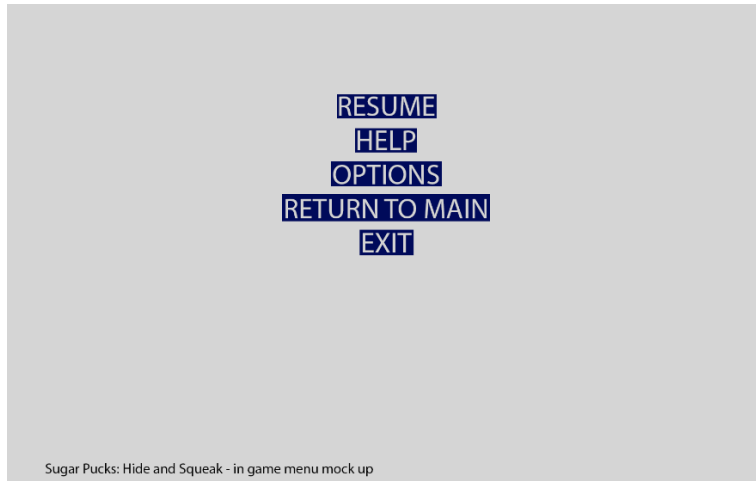
Image 5 – how to play single menu mockup also works for level select with proper changes

HOW TO PLAY
LEVEL 1- [blank]
LEVEL 2 - [blank]
LEVEL 3 - [blank]
LEVEL 4 - [blank]
LEVEL 5 - [blank]

RETURN TO MAIN

Sugar Pucks: Hide and Squeak - how to play single menu mock up