Karmadillos

Aberration Games

Moral Argument: Competition will drive players to impede their friends for their own advantage.

www.aberrationgames.net

Table of Contents

Aberration Games Members

Team Member	*Role*	*Specialisation*
Caerwyn Bartley	Designer	UI Design, Layouts and Transitions, Level Design, Gameplay Testing, Shader Work
Alex Smits	Designer	UX, FX, Gameplay Testing, Shader Work
Duncan Skyes	Programmer	Player Controller, Trap Mechanics, Physics, Website, Audio
Jacob Cooper	Programmer	Gameplay, UI, Multiplayer, Player Controller, Trap Mechanics, Physics
Connor O'rielly	Artist	Character Artist
Elisabeth Buttigieg	Artist	Environmental Artist, UI Artist
Kyra Benton	Artist	Prop Artist

Document Version History

Date	*Doc Version*	*Changes*
6/8/2021	Prototype	Initial creation of GDD
15/10/2021	Alpha	Update to GDD for alpha submission
12/10/2021	Beta	Update to GDD for beta submission
26/10/2021	Gold	Update to GDD for beta submission

Project Overview

One Line Summary

Battle to be the last-armadillo-standing in this 2-4 player party game, knock each player off the level and place traps between rounds to help your efforts.

Description

2-4 player couch party game, players roll around an arena and can charge a dash attack to knock each other off the level until the last player standing wins the round, between rounds the level is dynamically changed by the players placing traps. Traps effect every player in the match and can be used against you without the proper consideration to your placement.

Mechanics | Dynamics

The game is driven by physics and player input. Levels are themed and pose a unique challenge for the players such as a giant unstable lily-pad that tilts like a seesaw, a tide that rises and falls, and a crane that swings across the rooftops of a building. This combined with trap placement strongly supports emergent narrative to create a unique party game feel.

Art Style / Aesthetics

The art style for Karmadillos is a more vibrant, colourful and stylized theme with sculpted mid poly assets and inspirations from games such as Crash Bandicoot 4's and Party Animal's art style.

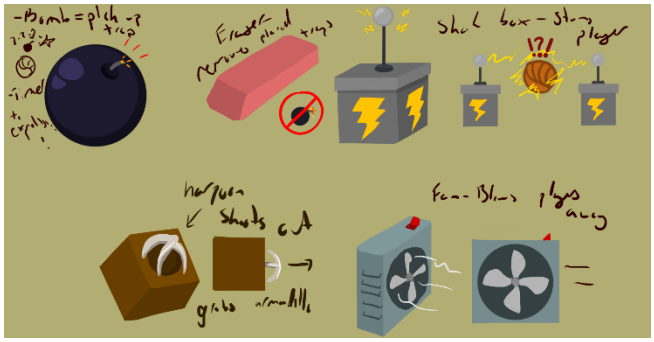
Character Design (Art Bible pages 3 & 4)

The armadillo's design is more stylistic and cartoony version of armadillos who roll up into balls during gameplay

Character Model:

Traps (Art Bible pages 5 & 6)

The traps that are placed by the player between rounds are also stylized and brightly coloured to complement the games art style and aesthetics



Trap models:

Levels (Art Bible pages 16-27)

The levels have unique designs and themes with one being on a tilting Lilypad, another on an island where the tide rises and lowers and another where you are going between two very tall buildings in a bustling city.

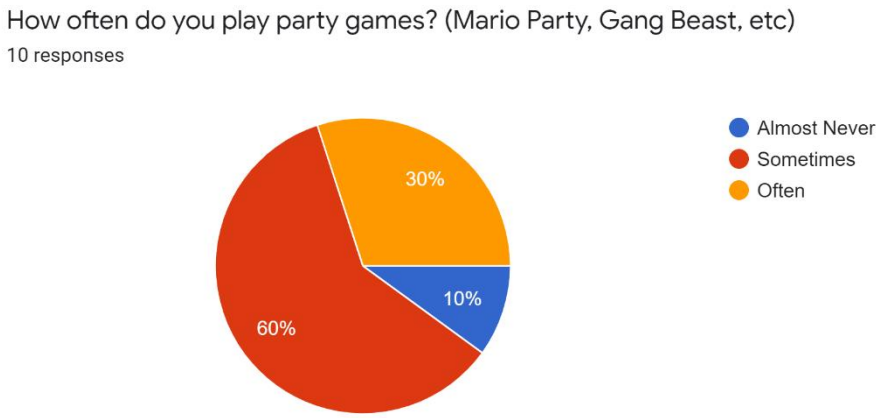
Market Analysis

Market Research

Research conducted using Facebook. Information was sourced from public accounts that showed an interest in similar games such as Ultimate Chicken Horse and Super Mario Party

Shared Interest	Design Implication
Sharing Creations	Public level editor with sharing capability
Private Lobbies	Peer to peer connection
Match Modifiers	Make everything a modifier
Non-repetitive Music	Unique music for each map
The ability to sabotage other players for your benefit	Punishing traps

Anonymous survey to gather research around the general opinions regarding party games and common approaches to playing

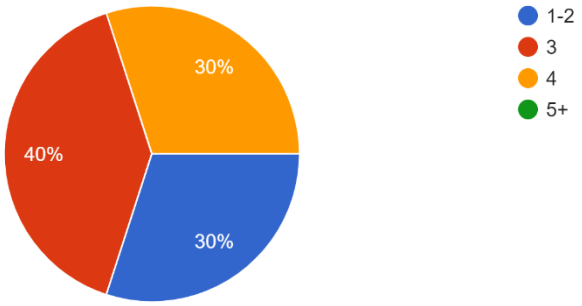


Design Implications / Take-aways

- Party games are widespread in appeal and popular with both mainstream and causal audiences.
- 90% of the people who responded to the survey play party games at least moderately.

How many players do you normally play with in party games?

10 responses

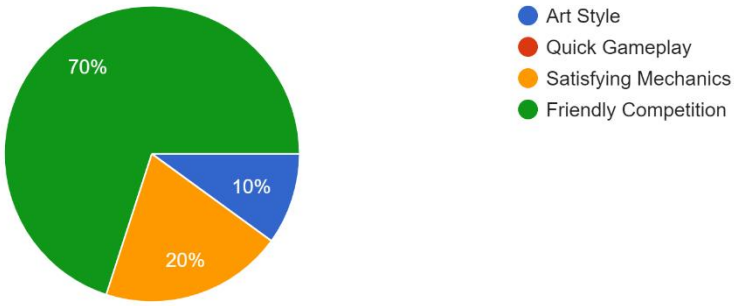


Design Implications / Take-aways

- Majority of players tend to play party games with 3 players, although the number can vary in both directions.
- Levels should be balanced for roughly 3 players but still range between 2 – 4.

What features in a party game most appeal to you?

10 responses



Design Implications / Take-aways

- Players expressed interest in friendly competition over all other aspects of gameplay.
- By utilising trap placement and randomisation, we can support emergent narrative and foster friendly competition.

When given the opportunity, how likely are you to customise your player experience by tweaking rules to create new game modes. (e.g. lower gravity)

10 responses

Design Implications / Take-aways

- Players showed at least partial interest in modifying the player experience.
- A small portion of people expressed the desire to heavily modify parameters in gameplay.

Target Market

This game is targeting a wide audience of players who enjoy competitive couch coop games akin to Super Mario Party and Ultimate Chicken Horse. Players that would be interested in this game have a creative flair; they enjoy contributing to the fun of the game by actively editing the player-space. The ideal audience for the game is a close group of either family or friends. The game is suitable for all ages and therefore, it caters for all skill levels with a low entry point but higher skill cap for more competitive play.

Targeted ACB Rating

General (G)

The content is very mild in impact

The G classification is suitable for everyone. G products may contain classifiable elements such as language and themes that are very mild in impact.

Targeted Platforms

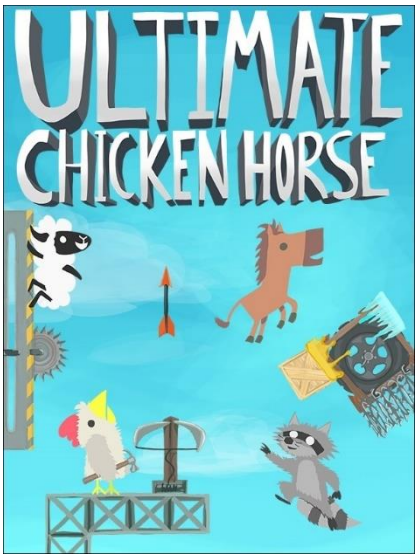
- PC (Steam & Microsoft Game Store)
- Switch
- Xbox

Persona

PowerPoint

Competitor Analysis

Ultimate Chicken Horse



Description

Ultimate Chicken Horse is a party platformer game where you build the level as you play, placing traps and hazards to screw your friends over, but trying not to screw yourself.

Genre

Platforming, Multiplayer, Level Editor

Platform

Windows, Playstation 4, Xbox One, Nintendo Switch

Relevance

- Level Editing
- Couch Coop
- Round Based gameplay

Super Mario Party (Bumper Brawl)

Description

Mario Party is a party video game series featuring characters from the Mario franchise competing in a board game interspersed with minigames.

In Bumper Brawls, players must push their rivals off the arena, also stay in the arena. Players can charge up and slam into other players.

Genre

Party Game

Platform

Nintendo Switch

Relevance

- Character Controller
- Couch Coop
- Win Condition

Design Pillars

Player-Based Trap Placement

- Between rounds players place traps/objects into the level, actively editing the player-space

Unimpeded Gameplay

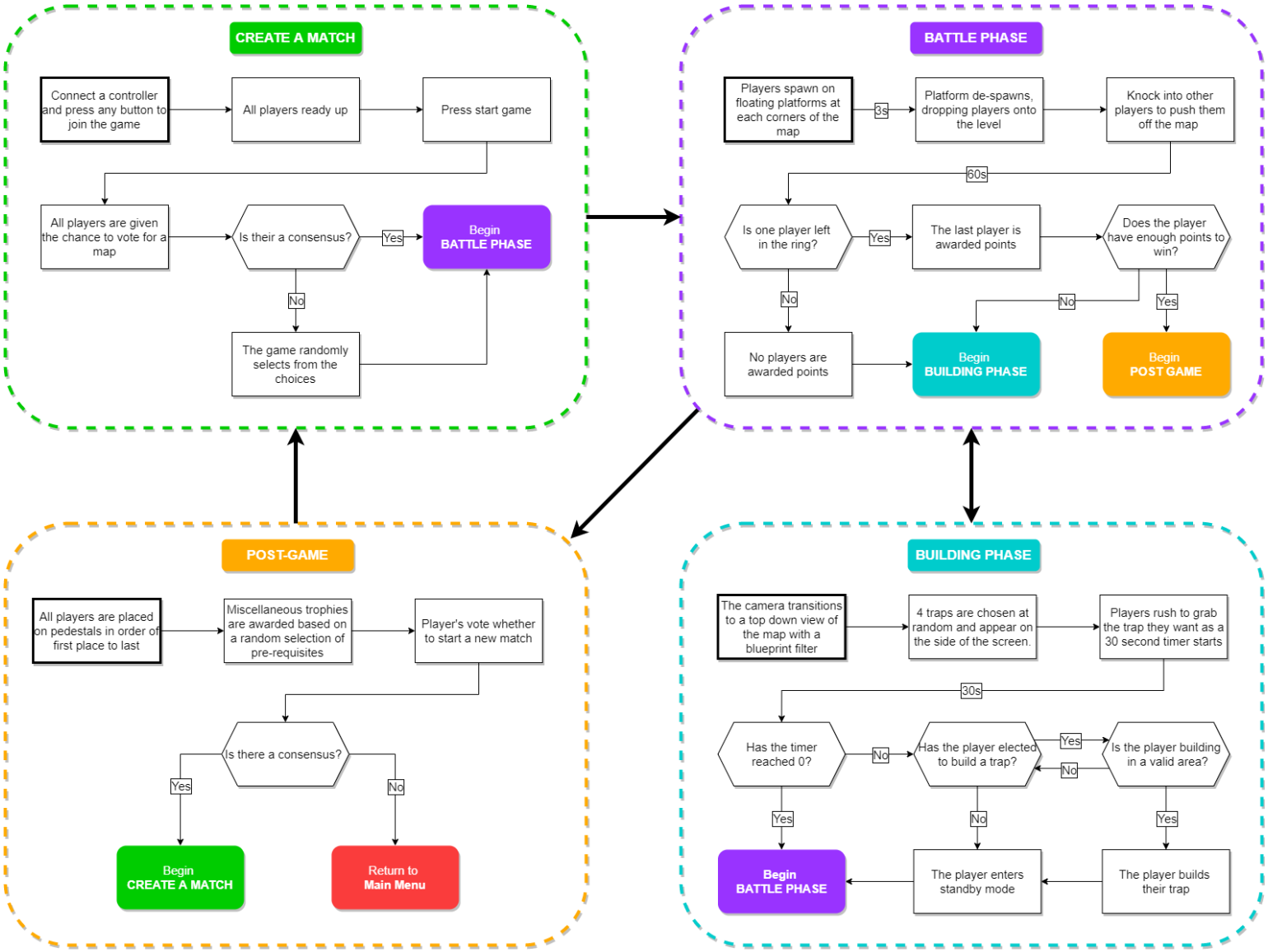
- Players are constantly engaged with the gameplay, reducing wait times and moments of deliberation.

Round Based Gameplay

- Players play several rounds to gain ‘wins’ where the first player to the nominated ‘win amount’ wins the game.

Game Content

Gameplay Loops



Objectives / Goals

Round Win Condition

- Last player standing (per round)

Game Win Condition

- Win amount (base on player decision at start of game i.e. first to 3 wins)

Contributing Goals

- Impede other players with your traps
- Be the first person to grab the trap that you want in rush mode

Mechanics and Systems

Player Controller (TDD Pages 7 & 15)	
Description	Players movement is momentum based. Players can charge a dash spin. - The player can select a direction to face while charging their dash. - Holding the charge button while moving will automatically slow the player. - The longer the player charges, the more powerful it becomes. - Players can over charge and stun themselves. - If another player collides with them during the charge, the player is stunned, and the charge cancelled. - Charge particles shoot out from under the player to indicate the direction they are aiming
Wireframe	Wireframes (Page 2)
Programming Considerations	Physics based movement. Exposed values for: - Acceleration - Deacceleration - Charge time - Charge intensity

Player Input Detection	
Description	Players can join to play if there is a slot open, to do so they must be on the player input menu and press a button on their controller. This creates a new player cursor which can then be used by the new player to select a colour and ready up using the South Gamepad button or Spacebar on keyboard.
Wireframe	Wireframes (Page 2)
Programming Considerations	- Detect new players using the input of controllers, so a controller can be connected but won't create a new player until a button has been pressed - Colour selection is reflected across several UI components and in-game model materials. - Variable Colour values via a player scriptable object.

Spring Trap (TDD Page 12 &15)	
Description	A spring trap that coils up and is shot forward when a player touches it. The launchpad throws players in the direction it is aimed and is always consistent.
Wireframe	Wireframes (Page 13)
Programming Considerations	- Pressure sensitive - Placed in 90° rotation increments - Must reset after each use (modifiable value) - Works on every character that is on top when it is touched

Ice Trap (TDD Page 12 &15)	
Description	A puddle roughly three sizes bigger then the player that shines and is reflective / smooth. The player will slide along the puddle.
Wireframe	Wireframes (Page 12)
Programming Considerations	- Removes all friction for the player - Slippery movement that makes players have less control of their character - Exposed variables for modifying trap during testing

Tar Trap (TDD Page 12 &15)	
Description	A puddle roughly three sizes bigger then the player that oozes and shoots tar bubbles up into the air. The player will loose all momentum and be forced to sludge though the tar at a snails pace.
Wireframe	Wireframes (Page 15)
Programming Considerations	- Slows the players movement - Exposed variables for modifying trap during testing

Shock Trap (TDD Page 12 &15)	
Description	If the player colliders with the trap while primed they are shocked, completely stopping in their tracks. Players and not able to use inputs for a set amount of time. The battery has a lightning effect. When two or more shock traps are placed next to each other, the trap evolves into a tripwire.
Wireframe	Wireframes (Page 17)
Programming Considerations	- Completely stops the players movement and inhibits their ability to control their character for a set amount of time. - The battery can only impact one person at a time. - There is a charge time for the battery. - It activates when someone comes withing range. - Exposed variables for modifying trap during testing

Grapple Trap (TDD Page 12 &15)	
Description	A device that holds a line of sight to the closest player and will shoot out when you pass in front of it, grabbing the player and pulling them towards itself before releasing them as to sling shot them into the pulled direction. The harpoon can be dodged if timed right and only affects one person.
Wireframe	Wireframes (Page 18)
Programming Considerations	- Charge time to load harpoon. - Shoots in a straight line. - Displays harpoon head and laser sight when the trap is ready. - Can only affect one person at a time. - Speed of harpoon shooting and retracting should be modifiable.

Fan Trap (TDD Page 12 &15)	
Description	A standing fan that aims in a direction and blows air in a fixed range. The fan adds force to the player and pushes them away from it gradually. Works at a constant speed and force. Has dust and wind particles with wind lines / trails.
Wireframe	Wireframes (Page 19)
Programming Considerations	- Constant force. - Exposed variables for modifying trap during testing

Bomb Trap (Trap Removal) (TDD Page 12 &15)	
Description	A bomb that destroys all traps in the immediate vicinity and knocks back if they are within the explosion radius.
Wireframe	Wireframes (Page 21)
Programming Considerations	- Deletes traps within a certain radius - Exposed variables for modifying trap during testing

Bumper (TDD Page 12 &15)	
Description	Knocks players back in the direction they impact, akin to a pinball bumper
Wireframe	Wireframes (Page 20)
Programming Considerations	- - Exposed variables for modifying trap during testing

Trap Placement (TDD Page 16)	
Description	In-between rounds, players are given the opportunity to construct one trap each on the map. - Transition to top-down screen with blueprint filter. - Players can move their cursor to the preferred trap and place it anywhere on the map that is a valid building zone. - The trap highlights red if it is in a non-build zone. Traps can not be placed on top of each other.
Wireframe/s	Wireframes (Page 9)
Programming Considerations	- 45 Degree rotational snapping

Post-Game Breakdown	
Description	At the end of a match, players score is tallied up and a winner is determined by the player with the most points. The words “Winner” appear above the player with the most points score.
Wireframe	Wireframes (Page 22)
Programming Considerations	N/A

Map Voting (TDD Page 12)	
Description	Before the start of a round, just after all players select their colours, the players can vote on which map they'd like to play. Each player's selection is visualized by their colour appearing on the map image they selected. After the countdown hits 0 the map with the most votes are selected. If there is a tie a random map from the tied selections is chosen. At the end of a game players are provided with two options, Continue Playing or Exit to main menu. If the players choose to continue playing a map selection appears and all players are returned to the map selection menu.
Wireframe	Wireframes (Page 7)
Programming Considerations	Modular Menu to allow for increased selection over time

Dynamic Camera (Cinemachine) (TDD Page 7)	
Description	The in-game camera reacts to the position of all players on screen, dynamically zooming to ensure that all players are visible on screen at all times.
Wireframe	Wireframes (Page 24)
Programming Considerations	N/A

Lily Pad Tilting	
Description	An unstable lily pad that sits on a configurable joint and will tilt on a fixed range.
Wireframe	Wireframes (Page 28)
Programming Considerations	- Traps need to be placed onto the lily pad as children - Lilypad collider is required to be a convex collider due to its rigid body component.

Island Changing Tides	
Description	The water surrounding the Tides Up island rises and falls to restrict player space to the top of the island's plateau.
Wireframe	Wireframes (Page 30)
Programming Considerations	- If players are in the water over waist hight they must turn off collisions and fall into the ocean to hide their bodies.

Vertigo Crane Swoop	
Description	A crane, periodically swoops through the level, moving a large cargo container that knock players off the level if they remain in its path.
Wireframe	Wireframes (Page 32)
Programming Considerations	N/A

Maps / Level Design

Lilly Pad

Description: A circular level set in a lush rainforest. The map floats in the middle of a large body of water and is surrounded by various platforms featuring vegetation and onlookers. These platforms are separated by a large waterfall in the centre of the background.

USP: The Lilypad is unstable and tilts when weight is added to either side. This makes it easier to push players off the map if they find themselves on the slightly submerged portion of the level.

Recommended Player Count: 2

Tides Up

Description: A circular level consisting of a lone island in the middle of the ocean. The island features palm trees and dotted around seashells. The island has a plateau which creates a natural divide between the higher and lower sections of the map. Some buried treasure can be seen half submerged under a large palm tree at the top of the map and the surrounded water is decorated with bright coral and fish.

USP: The tide surrounding the island is constantly changing meaning that the ocean level rises and falls. When the tide is high, the lower portion of the island becomes submerged underwater, restricting the player space to only the plateau.

Recommended Player Count: 3

Vertigo

Description: Level consist of two buildings that are joined by a makeshift bridge. The two are similar in size but vary in shape and sit level with each other. Next to the bridge are ramps that allow the player to cross the gap by charging across. A crane sits next to one of the buildings and will periodically sweep the top of the building in a predetermined path conveyed by scrape marks on the floor.

USP: Crane and ramps.

Recommended Player Count: 4

Player Spawns:

- Players start on a platform and can roll off in any direction to avoid any traps placed near their spawn
- The platforms only last for a few seconds and if the player doesn't hop off the platform, they will just drop under the platform's location.

Placeable areas:

- The edges of the level and a certain distance around level objects (like level walls/pillars) are non-placeable areas
- Areas around certain traps are non-placeable areas
- Traps like Ice can be placed next to each other but not on top of each other.

Menu Layouts

Main Menu:

Local Play

- Button to host a match and set game conditions

Online Play

- Button used to open the search for games menu

Settings

- List of changeable settings, allows players to change control schemes and visual options

Credits

- List of the developers and any credits for used assets/thanks

Quit Game

- Closes game

In Game UI:

- Shows all player's characters and their colours at the bottom of the screen.
- Tallies the amount of wins the player has on the between round scoreboard.

Between Round Trap Placement:

Trap Buttons

- Button to place a selected trap

Ready Up

- Button that when clicked adds to the totals the number of ready players and when the amount ready hits the total player amount the round starts.

Local Play Menu

Input Menu

- Looks Similar to the Host a Match Menu
- Shows all the players with connected controllers as Player 1 to 4
- Players can choose from 8 different colours and ready up once they have selected a colour

Map Voting

- Buttons for each map with an image for each map and text that gives a minimum player amount recommendation
- Countdown and player ready number that increases as players select to vote for a map
- When players vote for a map their colour appears on the map image to visually display their vote.

End of Match Winner Menu

- Shows all players standing around 3 pedestals

- Person who scored the most points is on the top pedestal and so on and so forth with the number of points.
- Players can tie for spots.

Sound Design

Utilizing Unity's default audio engine as Karmadillos has no complex audio requirements

Please see Please see ***Required Sounds list*** *in the Karmadillos Economy spreadsheet.*

SFX

SFX for player feedback (players knocking into each other, trap sounds, players falling off the platforms, etc) and random level specific audio (rushing water for Lilypad level).

Trap Sound	Status (Created / Sourced / Missing)		Player Sounds	Status (Created / Sourced / Missing)
Spring Trap Launch	Sourced	x	Player Impact	Created
Spring Trap Retracting	Sourced		Player Death	Sourced
Shock Trap Fully Charged	Sourced	x	Player Charge	Created
Shock Trap Discharge	Sourced		Player Rolling	Missing
Harpoon Trap Firing	Sourced		Player Splash	Created
Harpoon Trap Retracting			Player Victory Noise	
Bumper Trap Bounce	Sourced	x	Player Defeat Noise	
Fan Trap Blowing	Sourced			
Trap Building Construction Sound	Created	x		
Trap Removal Construction Sound	Sourced	x		

Level Sounds	Status (Created / Sourced / Missing)		UI Sounds	Status (Created / Sourced / Missing)
Tides Up Ocean Waves	Sourced		Player Ready Up Affirmation	Sourced
Lilypad Waterfall Crushing	Sourced		Interact Click	Created
Elevator Breaks Screeching	Sourced		Transition Swoosh	Sourced
Rooftops Crane Swinging / Creaking	Created		Option Toggle	Sourced
Rooftops Vent Humming	Sourced		Open Pause Menu	Sourced
Rooftops Car Horn Beeping	Sourced		Close Pause Menu	Sourced
Sumo Ring Crowd Cheering	Missing			
Boat Bumping Against Rock	Created			
Lilypad Lake Sounds	Sourced			
cicadas/insect noises	Sourced			

Soundtrack

All soundtracks and background music for Karmadillos has been outsourced to a music composer.

Main-Menu Theme

Main_Menu_Theme.mp3

Lilypad Theme

Lilypad_Theme.mp3

Tides Up Theme

Tides_up.wav

Economy

Player Stats

Player Stats	Value
Speed	5
Breaking Power	3
Knockback Amount	2
Charge.V1 Time	2 Seconds
Charge.V1 Power	2x
Charge Cooldown	1 Second
Knockback Meter Increase	15%

Match Stats

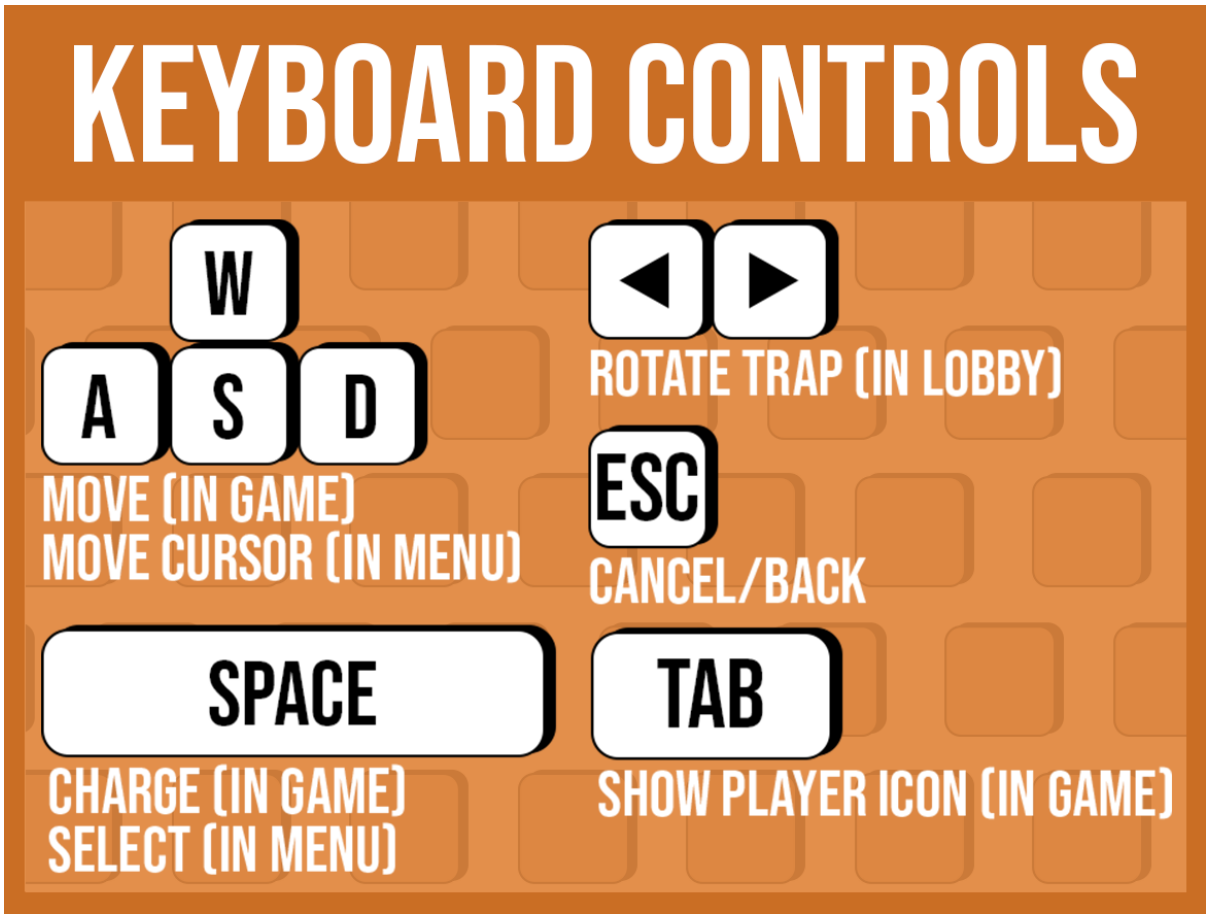
Match Stats	Value
Round Start	3 Seconds
Round Timer	90 Seconds
Build Timer	30 Seconds

Trap Stats

Player Stats	Value
Speed	5
Breaking Power	3
Knockback Amount	2
Charge.V1 Time	2 Seconds
Charge.V1 Power	2x
Charge.V2 Time	4 Seconds

Controls

Keyboard Layout



Gamepad Layout