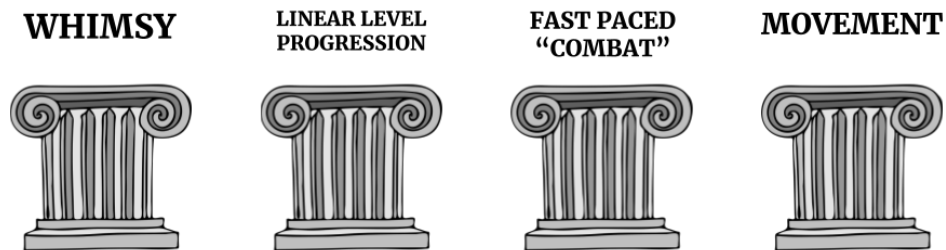


Preproduction

Design Pillars

The design pillars for *Food Fight* are a mix of emotions and concepts, taking ideas from Tim Keenan and Level 0 Gamedev. These pillars shape the foundation of this game, but I want to keep these ideas alive and evolving, similar to how Keenan did with *Duskers*.

The Four Pillars



Whimsy

Food fights are childlike; they are goofy, fun, and whimsical. This will be reflected in how the game plays, the aesthetic, and the reaction I hope the player may have to the gameplay.

Linear Level Progression

Similar to *Super Mario Bros.* and *Overcooked*, this game is going to be level based and have linear progression, with a few branching paths as hidden challenges. As the player gains more experience and knowledge, the levels will grow in difficulty and test the player's ability.

Fast Paced "Combat"

"Combat" in this game is all about quick thinking and reactions, similar to the classic *Super Dodge Ball* for NES. Players will have to be aware of their surroundings as well as their opponent's actions, reacting to a quick throw, a super throw, or quickly getting a good item that spawns at your table.

Movement

Movement is key in this game, as it is for *Overcooked* and *Super Dodge Ball*, two of my reference games. Running, jumping, dodging, and throwing are what make the foundation and separates the wheat from the chaff.

Design Pillars and Mechanics

Whimsy	Linear Level Progression	Fast Paced “Combat”	Movement
Throwing food	Overworld	Dodge/dash	Jumping
Getting hit with food	Difficulty scaling	Reflect	Throwing
Dashing	Adding mechanics through progression	Reacting to new food available to throw	Dodge/dash
Super throws?	Level selection	Reacting to opponent throwing food	Running
Cartoon aesthetic	Level replayability		Maybe crossing the boundary of court?

Reference Deconstruction

Deconstructing “Super Dodge Ball (NES)”

Overview

- “Super Dodge Ball” is a 2D sports game focused on the game of dodgeball with some added rules/abilities.
- The game has 3 game modes:
 - **World Cup Play** (campaign): in this single-player game mode, the player is Team USA and competes against 8-9 different teams across the world, usually ending with the USSR (or the “Shadow Team” if the player wins without any loss of teammates against USSR).

- **Versus Play** (local PvP): this competitive game mode pits two players against each other, allowing them to choose any of the international teams, with the same rules as World Cup Play.
- **Bean Ball** (free for all): this free for all game mode allows one to four players to play against one another as well as other players from Team USA. The map has no court, just open space for players to roam and throw/catch the ball until one remains.
- Standard rules:
 - Six players on each team
 - Three on the field
 - Three around opponent's side as "rebounders"
 - Rebounders cannot take damage but can throw the ball at players on the field
 - Two sides to the court
 - Players can't cross the line unless they are jumping (must throw the ball before landing though)
 - Players throw the ball in various ways
 - Standard throw
 - Sprinting throw
 - Jumping throw
 - Special throw (different for every player)
 - Special jumping throw (different for each player)
 - Players take damage if hit by the ball
 - Damage taken is dependent on what kind of throw they were hit by
 - Players can catch the ball or crouch to dodge
 - Players can pass the ball between each other
 - Losing all health points means that player is out

- Game is won when no players on a single team stand

Player Character(s)

Character Types:

There are 6 character types. Each country has one of every type on their team, though some specials are different for various players. Specials mentioned below are only for Team USA (Player's team).

- Type A
 - Sam
 - Power: throws do most damage
 - Usually highest health bars
 - Health: 40 (10 bars)
 - (Special) The Blaster: Fast ball, deals lots of damage, always hits and goes through all targets
- Type B
 - John
 - Endurance: take less damage regardless of health bars
 - (Special) The Psycho: in air, throws three balls that merge into one
 - Sidewinder on ground special
 - Health: 28 (7 bars)
- Type C
 - Mike
 - Catching: best at intercepting balls thrown by other team
 - (Special) The Sidewinder: moves like a wave, hard to dodge
 - Health: 28 (7 bars)
- Type D
 - Bill
 - Agility: move around and recover the fastest
 - (Special) The Stinger: follows opponent until it hits them

- Health: 32 (8 bars)
- Type E
 - Randy
 - Finesse: ball can be easily controlled after throwing
 - (Special) Frisbee: power full throw that wobbles like a frisbee
 - (Air Special) Around the World: hits opponents through the right side of the screen to reappear on left side of the screen
 - Health: 32 (8 bars)
- Type F
 - Steve
 - Throws: powerful throws without specials, and can usually go through enemies into rebounder hands
 - (Special) The Uppercut: when opponent is hit, flies into the air with the ball
 - Health: 36 (9 bars)

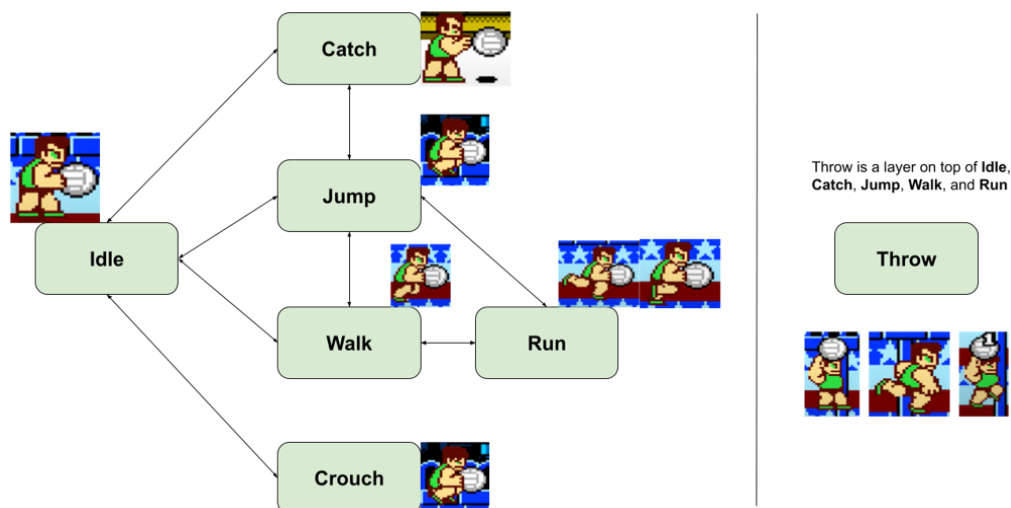
Metrics:

- The unit of measurements used is meters



- In the picture above, I have boxed out measurements of players and the ball
 - The yellow box is a player in neutral which stands about 2 units tall, 1 unit wide
 - The black box is the ball (in speed throw animation but still roughly the same size) and is 1 unit wide, 1 unit tall
 - The white box is a player in the jump/crouch animation which is 1.5 units tall, 1 unit wide
- The field, which I measured out using the yellow box, is roughly 10 units wide on a single side, meaning 20 units over the whole field, equaling 60 ft. A standard dodgeball court is 60 ft. long so this is accurate.

States:



Input Logistics:

- Walking across one half of the court takes 3 seconds
 - Walking speed = **3.33 units**
- Running across one half of the court takes 2 seconds
 - Running speed = **5 units**
- Jumping takes player's feet 1 unit above other player's head
 - Jump height = **3 units**
- Slightly faster jumping up than falling down
- Catch button can be pressed anytime after the ball is thrown but after 2 seconds, will not catch ball

- Cannot catch when facing away from ball
- Non-special throws take 3 seconds to cover 3/4 of the field
 - Non-special throw speed = **5 units**
- Special throw speeds vary
- Takes 1.5 seconds to ramp running speed up enough to perform special throw
 - Same with jumping special throw
- Endurance is lowered after reaching 3 health points
 - Lower endurance adds 3 seconds to recovery time
- Recovery time from being knocked down is 2 seconds with good endurance

Camera:

- Tracking:
 - Camera is 1 screen tall and does not move on Y-axis
 - Camera will move in the direction player is facing until:
 - Player is on the edge of the screen
 - OR camera hits a wall at the edge of the field
 - Camera moves when player moves (if it hasn't hit a wall)
- Transition:
 - Once player has defeated the opposing team, camera waits until ball stops moving, then transitions to player's team celebrating
 - After that, screen transitions to pre-match screen
 - Pre-match screen first shows opposing country, then asks player if they'd like to change their line-up before proceeding to start of the match
 - At start of the match, player is holding the ball and camera is in the middle of the field

Health and Damage:

- Health bar numbers does not mean the player can only get hit x amount of times

- Health (energy) is a hidden value in game
 - Health values are displayed as numerical value in the rule book
 - 1 bar of health = 4 points of health
- Damage values are displayed when player or opponent are hit
 - Damage value of normal and special throws vary dependent on speed, special throw used, and character attributes (endurance for player being hit, power for player throwing)
- Reaching 0 health points means character is out of the game
 - Ghost/angel sprite appears and floats upward

Opponents:

- Pro All-Stars
 - Fancy throws (special moves)
 - Weak defense
 - Star Player: Jack
 - (Special) Uppercut: opponent gets knocked in the air when hit
- England
 - Fast throws and ball technique
 - Weak defense and low health
 - Star Player: James
 - (Special) The Wave: ball moves like a wave and slams opponent when hit
- India
 - High health and defense
 - Weak catching and low energy
 - Star Player: Rajiv
 - (Special) The Stinger: tracks enemy until hit
- Iceland
 - High energy and strong throws

- Low agility and slow
- Star Player: Helgi
 - (Special) The Warp: ball disappears and reappears when hitting opponent
- China
 - Good catching and strong throws
 - Weak defense
 - Star Player: Wang
 - (Special) The Breaker: follows one opponent but curves to hit a different one
- Kenya
 - Very high agility, and decent all around
 - No weaknesses
 - Star Player: Yami
 - (Special) The Boomerang: misses opponent then comes back to hit them
- Japan
 - Very powerful shots and good ball control
 - Relatively low agility
 - Star Player: Fuji:
 - (Special) The Compressor: compresses ball to be small but explodes when about to hit opponent
- USSR
 - Strong in every category
 - Don't have a player with Blaster ability
 - Star Player: Boris
 - (Special) The Accelerator: balls gets faster as it approaches opponent

Stage Gimmicks:

Most stages are the same except for the background and music, but here are some that have gimmicks to them:

- Iceland: the ground is ice so players slide when running, catching, and after being knocked down. Icelanders know how to play here so are less easily knocked down
- Kenya: the ground is sand and makes it hard to gain momentum to throw a power shot, so the player must run longer in order to use their power shot. Kenyans have high agility so they are able to gain traction faster

Resources:

CSG Imagesoft. (1989, June). Super Dodge Ball Instruction Manual. Los Angeles.

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Video Games 101. (2024, April 9). *Super Dodge Ball NES Guide | Full Character/Moves Guide, Facts, and Walkthrough | Video Games 101*. YouTube. [Super Dodge Ball NES Guide | Full Character/Moves Guide, Facts, and Walkthrough | Video Games 101](#)

Feature Breakdown

Food Types:

Objective - To provide varied and unique abilities, advantages/disadvantages for the player, and make each match more unique and interesting.

Summary - This feature will make every food item spawned on the counter around the player and opponent(s) a different kind of food with a specific added effect that it has. The foods will have distinct art and design so that no two foods look the same and can be easily differentiated. The player will have to learn the different types of food by using them and seeing their added effects,

forcing the player to learn the game and what advantages/disadvantages this item may have on them.

Detailed Design - This is where you detail specifics about the feature, the mechanics, the rules, how everything works. Include how your feature stresses the player, how the player relieves the stress, how the player grows upon success, and how the game progresses post-success with this feature. Do not leave anything out! *This can be improved through bullet-points, diagrams, and other forms of mock-ups.*

Here is a **living** list of all food items included:

- Tomato - this is the base food type that gives the thrower (1) point if it hits the target.
- Mashed Potatoes - this food type flies slightly slower than tomatoes but blinds the target for a (3) seconds when hit, and provides (1) point.
- Banana - this food type has two uses; first, it can be shot like a pistol and flies faster than tomatoes, giving the player (1) point on hit; second, the peel can be thrown in the opponent's court to make them slip and be stunned for (2) seconds.
- Spaghetti - this food type works like a shotgun where it can be thrown in a scatter shot. It only throws out 5 pieces, but it's cone will be set so that only a max of 3 pieces can hit the opponent. Each piece that hits will give the thrower (1) point.
- Croissant - this food type works like a boomerang. The thrower can throw this food and have it return to them, but they have to either deflect it or dodge it. Deflecting it makes it give the thrower (1) less point if it hits. Hitting the opponent grants (2) points first throw.
- Sticky Pudding - this food type does not grant points, but has utility value. When it is thrown and hits the opponent, it causes the opponent to be slowed by (15%) for (5) seconds. If it is thrown on the ground, each time the opponent walks over it they are slowed by (20%) for (3) seconds. Slowing does not stack. Slowing can only happen on the ground pudding (3) times before it disappears.
- Watermelon - this food type is a slow moving projectile, slower than mashed potatoes, but when it hits, it grants the thrower (3) points.
- The Golden Cookie - this food type is incredibly rare, with a (1%) chance to spawn, but when thrown, it chases the opponent down and grants (5) points when it hits.

Rules:

- Only one food can be held at a time, but that does not include a frying pan, which can be stored and used later to deflect an item **once**, but that is a different feature.

- Using the dash can dodge food, but it does not give invincibility frames so player could still dash into, for example, the outer cone of spaghetti and still get hit.
- Food sitting on the counter too long will start to rot and eventually disappear
 - This allows players to choose which food they want, or let a food they don't want disappear and make room for new food
- Foods that land on the ground will only stay there for a maximum of (20) seconds

This will stress the player by forcing them to make quick decisions on which food to throw, be worried about the added effects benefitting the enemy if player is hit, and have to constantly be thinking about different mechanics. This will relieve the player when they get a food item that really helps their playstyle/they like to use, or when they get the really rare item that can help swing the outcome of the match. The player grows by learning the mechanics of the different foods, that will be periodically introduced (to not overwhelm the player), and by learning how they want to play the game. The game progresses by periodically introducing new food types as the player progresses through the levels.

Design Risks - On the design side of this, the risks lay mostly in balancing since there are many different types of food, each of which need to be tested individually, comparatively to each other, and collectively in matches. On the player side of this, the risks lay with enjoyment and being overwhelmed. There are a lot of food types, and if each has a chance to appear in each level, then there will be utter chaos during matches, which is what I want as a designer, but if it is too overwhelming to the player then the chaos may backfire.

References - It's been hard to find a reference for this feature because it is pretty niche, but I think Overcooked 2 is the game I want to focus on here. Particularly how each level has certain foods that they include, and how each food has it's own form of a feature. To elaborate, each food either has to be chopped and/or cooked and/or mixed with another food to make a dish, and there are usually only about 3 dishes that that level will make the player make. I'm using this as a reference because I think deciding which foods will be spawned during each level is a great way to mitigate overwhelming the player like I mentioned earlier. This will also allow for different ways to interact with each level rather than playing each opponent the same way.

 [Overcooked 2](#) | [Overcooke](#)

[d 2 PS4](#) | [Team17](#)

User Story - As a player, I want to throw different foods, so I can beat my opponent in unique ways.

Completion Criteria -

- Create a base projectile template
- Detect if player is close to projectile to pick it up
- Check if player is holding food

- If true, throw food in direction of mouse
- Detect if food overlaps with opponent
 - If true, hit opponent and give X points
- Create child blueprint for each food type
 - Change projectile speed as needed
 - Change points given as needed
- Add secondary effects, for example:
 - Mashed potatoes, on component begin overlap with bp_thirdperson, create widget (BP_mashedpotatoes), add widget to viewport, delay 3 seconds, remove widget
 - In AI behavior tree, set to wander between 3 points and can't pickup food
- Add unique sound effect