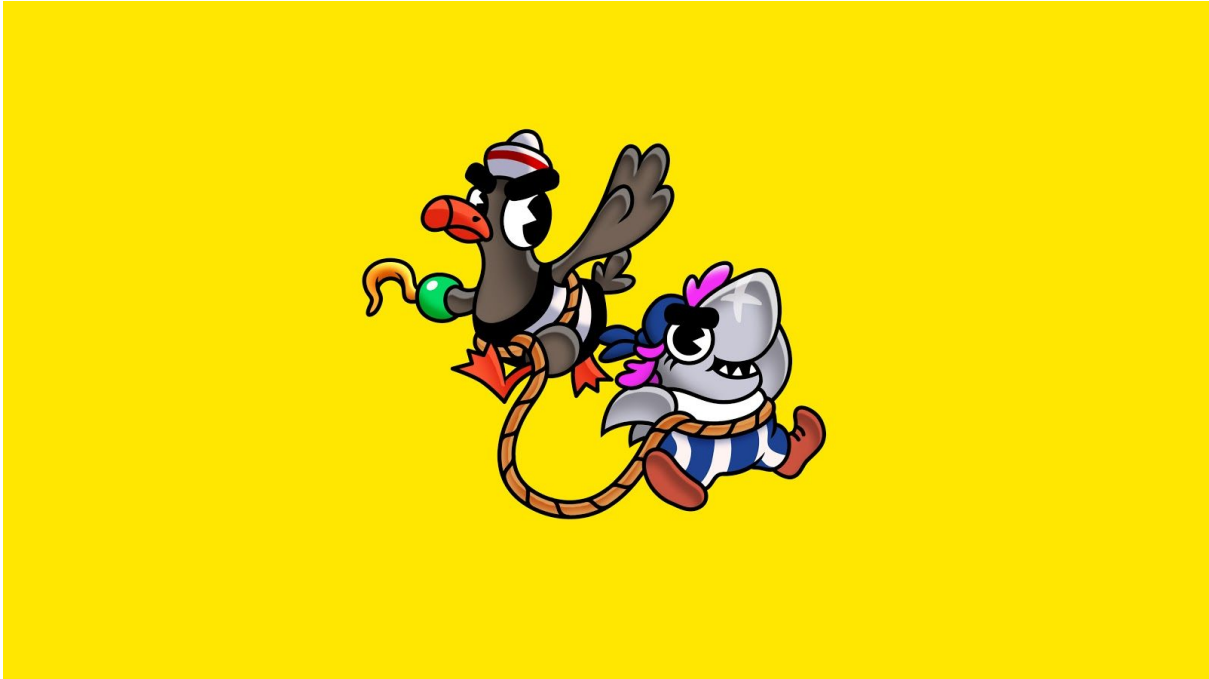


# Gill & Gull's Skyhigh Adventure



Revision: 2.3

Latest Change: 2018-05-09

Changes:

- [Defined collectable HUD in wishlist](#)

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## Overview

### Theme

The game Gill & Gull's Skyhigh Adventure is a **co-op platformer** for **2 players** where you will have a **rubber band** tied between your characters. The game will be played through 2.5D similar to the newer installments from the Donkey Kong Returns series. The player will be able to move in a 2D space, but the world itself will be in a 3D world. The theme for the game takes much inspiration from the Rayman series in the sense that it's **lighthearted, random** and **quirky**. Which will also be coherent with the core mechanic of the game, the rubberband. The game characters will be two ~~amphibian creatures/mascots~~ pirate treasure-hunters, a shark and a seagull. ~~which will have their tongue stuck together by a knot.~~

### Core Gameplay Mechanics Brief

As mentioned earlier the game will utilize a "rubber band" mechanic between the characters. As a reference, similar to how the Tether is used in the game Knuckles' Chaotix in the way that it will have similar traits as rubber band, both players will be limited by how far away they can move from each other. Note that even if we describe the mechanic as a rubber band, many exceptions will be made since it will have some unique functionalities that doesn't translate correctly to real life physics. The ~~5~~ **4** core player mechanics will be the following (and will be explained further down in the document):

- ~~Stretch~~
- Grab
- Rubber Band
- ~~Swing~~
- Walk
- Jump

### Targeted platforms

PC

## Project Scope

- <Game Time Scale>
  - 7 week feature complete
  - 8 weeks to internal deadline - Polish
  - 9 weeks to external deadline

## Influences (Brief)

### - Donkey Kong country: Tropical Freeze

- This is how we imagine we see the world. 3D style played out on a 2D plane.



- Link: <https://www.youtube.com/watch?v=JY3KVVIGqrA>

### - Rayman Legends

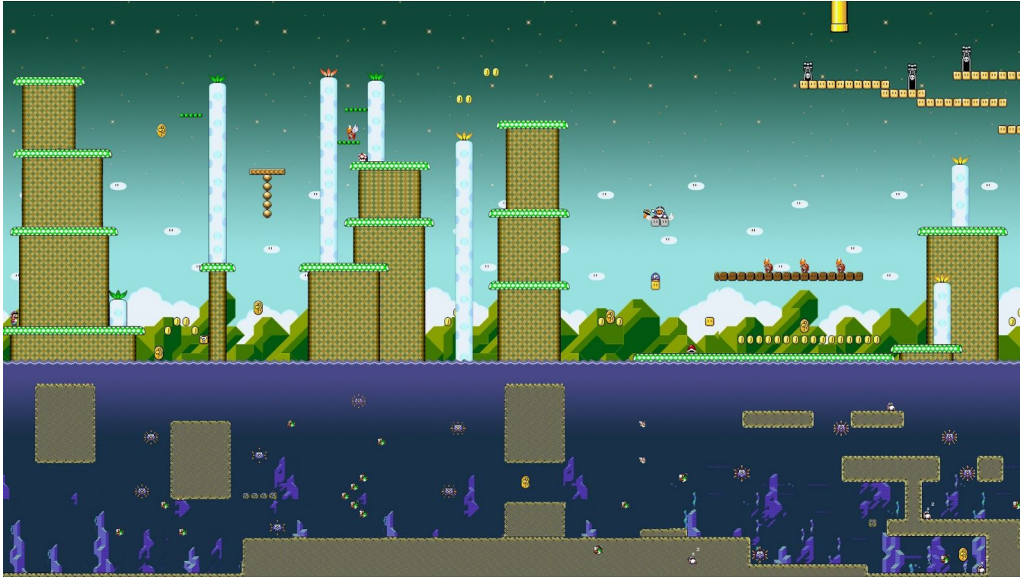
- It's a high-energy quirky game that does thematics and mechanical consistency really well.



- Link: <https://www.youtube.com/watch?v=Ea6XJRqHUU4>

### - Super Mario All-stars(SNES)

- Masterfully paces the platforming genre and provides meaningful choice in somewhat branching paths. At the end it rewards the player with the opportunity to gain additional point with the help of the flagpole.



- Link: <https://www.youtube.com/watch?v=30Mr7q-v-64>

### - Knuckles' Chaotix

- In this Co-op Sonic game the both player uses a magical bond Between the both characters that will have similar functionalities As a rubber band. Even if the game is more focused around running at a high speed game it still uses some mechanics that will somewhat work as a reference for **Gill & Gull's Skyhigh Adventure**.

How it will take inspiration from Knuckles' Chaotix will be that the band will be elastic and the player will be able to anchor themselves and by doing so the other player can run in another Direction. By doing so the band will stretch and it will send both players away in a high velocity.



- Link: <https://www.youtube.com/watch?v=xbyZpxnsiU0>

### - Getting Over It

- This amazing game is a sort of platformer that aims to please players through adversity. It's designed to be unfairly punishing to fail at and ecstatically rewarding when completed.



- Link: <https://www.youtube.com/watch?v=dH9w9VlyNO4&t=2s>

### The elevator Pitch

A chaotic co-op game, where 2 players that are joined together by a rubber band must work together to reach higher levels. You can expect to grab, swing and propel yourselves using rubberband-mechanics. Feeling like a mix between a high-energy

Donkey Kong and Getting Over It, our co-op platformer aims to test friendships and platforming-skills.

## **Player-Centric Mechanics (Detailed)**

### **- Rubber band**

#### - <Details>

This mechanic is primarily used on & by the players, but will also appear as world-mechanics. ~~The primary idea is that the band will always be straight due to the difficulty of creating a loose one. Due to this fact, we have to communicate whether it's stretched or not by other means.~~

~~This can be sound, colour, particles, animations on the characters etc.~~

The rubber band will be the main mechanic, allowing players to shoot themselves across distances, fling themselves around objects and forces cooperation between the two players.

#### - <How it works>

The rubber band is a series of interconnected bodied, making it coil like an actual rope. This can be stretched around collision or just stretched straight.

The two ends of the rubber band will be tied to the player characters. End A on player A & end B a player B. The band will have different thresholds in which it affect players differently.

#### -First Threshold

If the players are within [X][UNITS] away from each other, their movement will be unaffected by the band.

#### -Second Threshold

If the players are more than [X][UNITS] away from each other, the band will start to pull them towards each other. If they then grab a grabbable surface and climb away from each other, the band will get "stretched" and the players will ~~walk~~ climb slower. If the a player at any point during this threshold stop ~~walking~~ climbing away from the



other player that player will be flung towards the other player. The further away the players are from each other, the further they'll be flung.

-Max Distance

When the players are [Y][UNITS] from each other, they can no longer move away from each other, but all the other rules from the second threshold applies.

### - **Gabbing / Sticking**

- <Details>

The player characters can grab onto the background and climb at a slow pace.

The “**climbable**” areas will be clearly defined for the players. These areas can be used next to walls, ceilings, ground or just **floating** by some ~~magic or sci-fi~~ means.

This is primarily to enable the rubber band being stretched to the maximum, as well as enabling swinging from ceilings.

Players will be able to move while grabbing, but only when on grabbable surfaces, and moving while grabbing will be marginally slower than walking.

- <How it works>

When players press then hold **R2** and collides with a grabbable background-surface, they grab that surface. If the surface the player tries to grab is NOT grabbable the grab simply fails ~~and plays a fail sound~~. When grabbed, the physics is turned off and gives players total 360 control of their movement. Players move at [SetClimbSpeed]. If a player moves **out of bounds** from the area, the grab fails and the player falls as physics resumes control.

### - **Swinging**

- <Details>

Due to the fact that a player is able to grab a ceiling and the subsequent fact that a player then dangles from the rubber band, we give the “hanging” player the power to swing left and right using the analogue stick.

The idea is that players can swing and stick to the roof, enabling the other player (previously stuck to the roof) to let go and continue the swinging process.

- <How it works>

### - Walking

- <Details>

Standard 2D movement. Moving the left analogue stick left or right make the player character move the corresponding direction. While airborne this directs the player the same way as on ground. but at [SetAirAcceleration] speed.

- <How it works>

### - Jumping

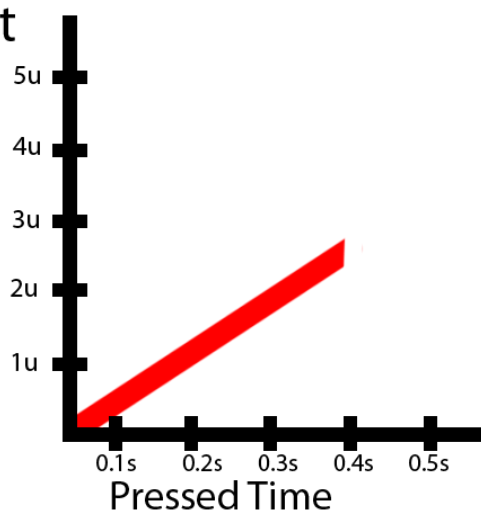
- <Details>

Similar to other platforming games the players will be able to utilize a jump mechanic. When using this mechanic the player will jump up in the air [SetJumpForce] for [SetMaxJumpTime], depending on how long the player pressed the jump button the height of the jump will increase.

## Jump Height

u = Unit

Unit = Player character length



Note: The values that are demonstrated in this graph are not final.

How long time you have pressed the Jump button

When the character is located in the mid-air the character will still be able to handle movement input, in the sense that if the player move towards a direction the player will fall towards it.

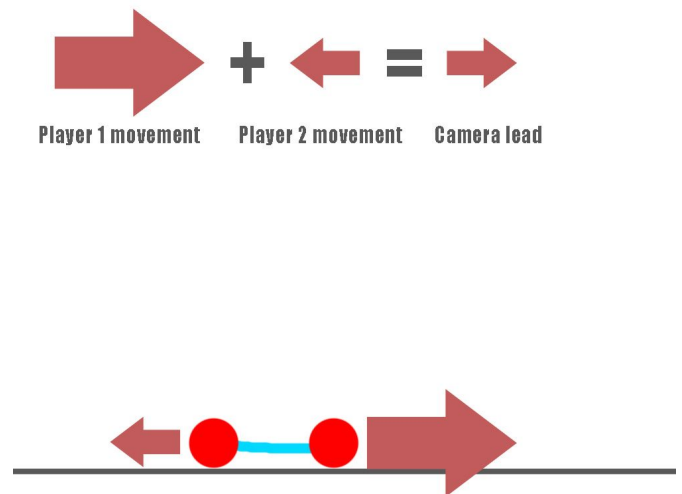
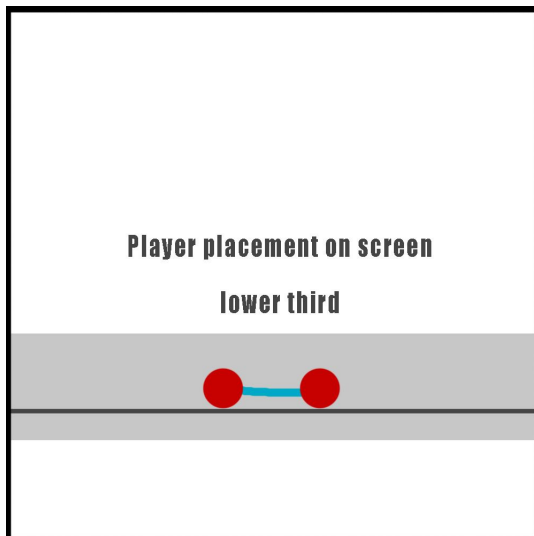
## -Camera

### -<Details>

The camera dynamically follows the players. It leads them slightly by [SetMaxLead][SetMinLead], meaning if their general velocity goes to the right, it shows them more to the right. The players should be put in the bottom third of the screen.

### -<How it works>

The camera follows the point between the players with [SetLerpSpeed] speed. It also leads them in the direction of their general velocity. The amount offsetted by the lead from the point between the players should be tweakable.



## Death

### -<Details>

The players die if they fall off the world. Both players need to fall out of the level for death to take place. The other scenario would be that one player falls out of bounds, then the other player should have a chance of pulling them back up.

*Wishlist: single players can die by traps and be resurrected by the other player.*

### -<How it works>

In places where the players can fall out of the map, they can die. Death means reloading from the last checkpoint (ALPHA: Reload level). When both players enter a "deathbox" at a pitfall, they are considered *dead*. When they are considered dead the camera stops following them. After [SetRespawnTime] seconds the players respawn at the checkpoint.

## Checkpoints

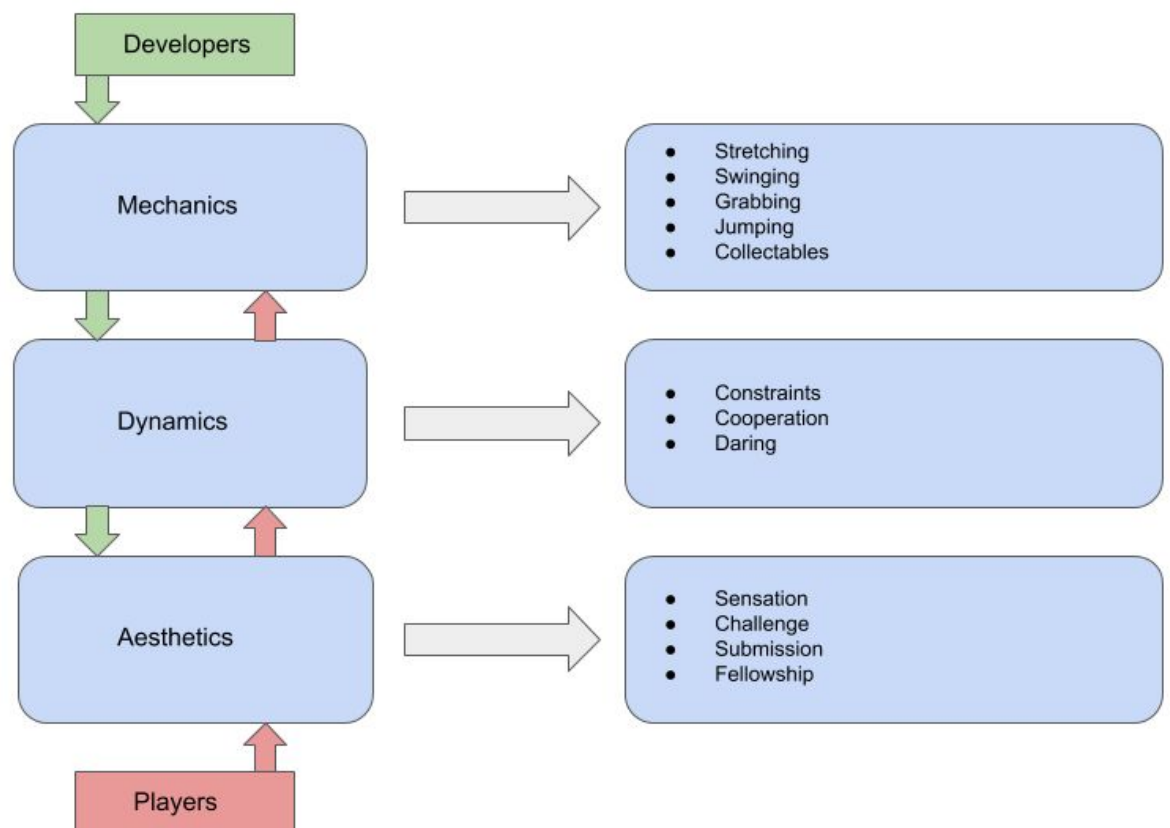
Hand placed by the designers, these are triggers that the players need to activate by collision. When the players die, they respawn at the checkpoint that's furthest away on the map that they've activated. That means if they've activated checkpoint 1, 2 and 5, but not 3 & 4 then die; they'll respawn at checkpoint nr. 5.

If no checkpoint has been activated the players respawn at the start of the level.

## MDA - Framework

The MDA framework for **Gill & Gull's Skyhigh Adventure** will show which Mechanics, Dynamics and Aesthetic the game is going to communicate to the players. The MDA - Framework is going to work as a thread about what the game is

actually is going to be.



To put it roughly the **mechanics** in this model are the core **rules** for the game. The **dynamics** in this case are the **behaviours** of the player. While the **Aesthetics** is the **feelings** that the player will experience. As you can see on the picture above, the **players** will experience the MDA in the opposite way as the **developers**. All the player Mechanics and in combination with the level design will create a player behaviour where the player will behave with constraints, cooperation and to be daring. These behaviour will in turn create different feelings for the player which are the following:

- Sensation - Game as sense-pleasure
- Challenge - Game as obstacle course
- Submission - Game as pastime
- Fellowship - Game as social framework

# ELControls

## While in game:

Left analogue stick: Move character

RT: Grab/Climb

A: Jump

Start: Pause



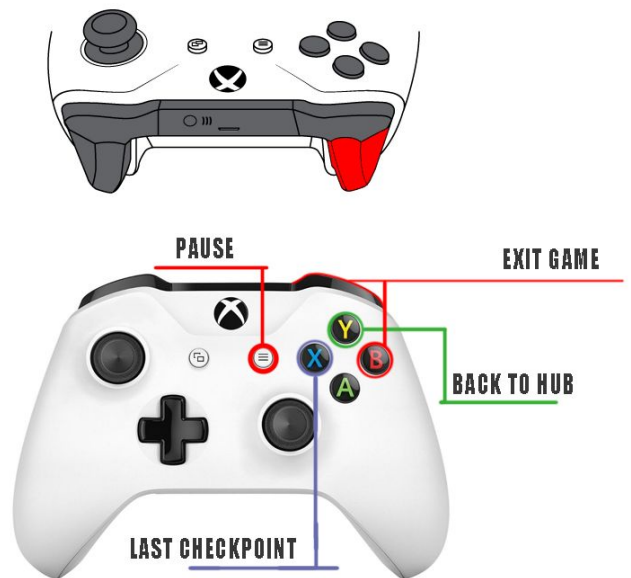
## While paused:

Start: Resume game

X: Last checkpoint

Y: Back to Hub

RT + B: Exit Game



## **Gameplay**

### **(Brief)**

The two players encounter problems that they work out through the core mechanics. The players start at a safe location and need to traverse perilous areas to reach a clear end. When the end is reached the players load into the next level and repeats.

### **(Detailed)**

The players are first introduced to the world. ~~A simple text box explains the disposition and goal of the game.~~ The level-select level and first level acts as a tutorial for the players. They should introduce all game mechanics in a manageable pace. When they reach the end a sound and an animation plays and the screen fades, and the game loads the ~~next level~~ level-select level.

The next level assumes the player now knows enough about the game to ramp up the difficulty. ~~Now every surface isn't grabbable anymore.~~ They have to combine grabbing with swinging and shooting (with the rubber band) more cleverly. Here we introduce more obstacles as well.

The level after that we ramp up the difficulty again by asking for more precise movements, using the obstacles more frequently and in new ways.

The levels after that follows the same trend, until we come to the final level.

## **Level / World Design**

### **Summary / High Concept**

The goal of the game is to go from point A(start) to point B(end of level). The size and the philosophy behind the level design will be somewhat between a level from Super Meat Boy and a level from Super Mario Bros (1986). Despite taking inspiration from these game the level design will be more focused around moving in a ~~vertical~~ diagonal direction. The level design of the game is gonna be focused on letting the player get a feeling that they are climbing ~~a mountain~~ in a ridiculous way. Comparing the level design to a mountain would be that we want the player to feel a sort of

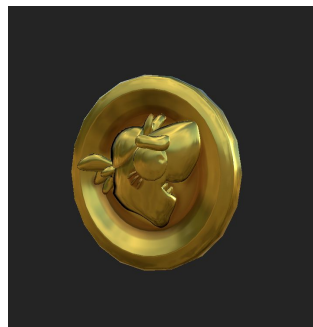
progress but also letting the player fail and by doing so fall down and towards earlier installments on the map. By having this level design it would create a thrilling feeling for the players where they can get punished by actually fall down to earlier installments.

### **Dynamic environment objects**

In the different level there will exist different kinds of objects that the player will be able to interact with in different ways.

### **Collectables**

The game will feature **one collectable** to start with. That collectable will fill the role of a *road to follow* that shows players' the way and the **optimum path**. These will be many in number. See bananas in Donkey Kong.



Each time you have picked up an collectable in the current level a [current\_level\_counter] and [total\_counter] will increase by 1. These counters will keep track on how many collectables that both players have collected together. The amount of coins collected in [current\_level\_counter] will be exclusive to the current level, meaning that if the players switch levels the [current\_level\_counter] will reset to 0. So the next time we play the same level, the [current\_level\_counter] will be back at 0. This counter will always be visible as a HUD element as first iteration. See wishlist for iteration 2. If the player presses the pause button the counter will appear as well.



When the players have picked up 100 **[Collectable Items]** the counter will give the player some feedback and the counter will sparkle, after this effect has happened the counter will reset to 0. What also happens is that the player will earn 1 of a new currency called **[Increment Item]**. The players will use this currency to unlock bonus levels in the game.

In the level-select level all the collected coins will be seen using `[total_counter]`. These are all the coins accumulated from playing levels.

## **Progression**


### **Level selection**

When you go through the menu you will come across a menu screen which will show you which levels you can choose from. Similar to games like Yoshi's Island the player will choose the different levels by selecting the portraits that will represent the levels. The level that is selected will be highlighted while the ones that is not will be darkened instead. The levels that you haven't finished yet will be darkened and also have a keylock icon in front of it.

The game is going to use a level as a menu, much like Mario 64, Sonic Generations, Fancy Pants Adventure and many others. The level-select level if you will, will boast a minor tutorial in itself, and doors to the various levels.

### **Levels**

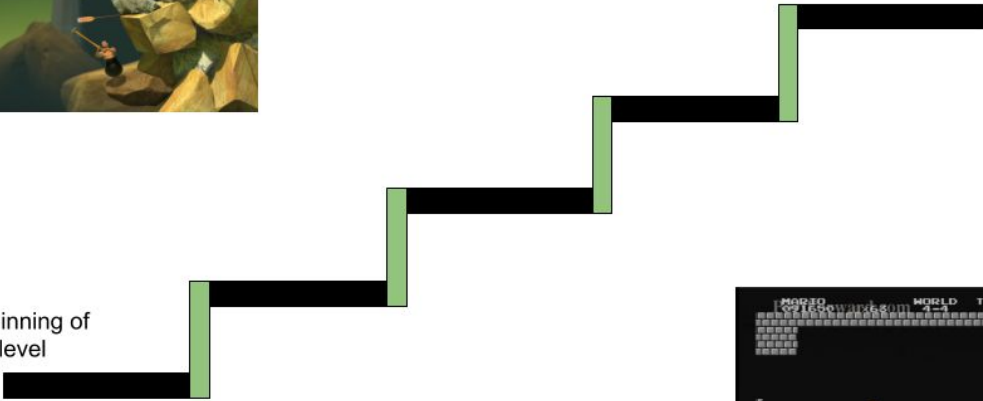
The progression in the game will be linear and the purpose for the level is to get from the start location to an end location on the level. Between the levels there are going to be challenging obstacles that the player have to comprehend and also collectables that the player will be able to pick up. During the level there will also be several checkpoints that the player will be able to reload at if they would in any way get stuck or die during their playthrough.


 = More focus on moving vertically



End of the level

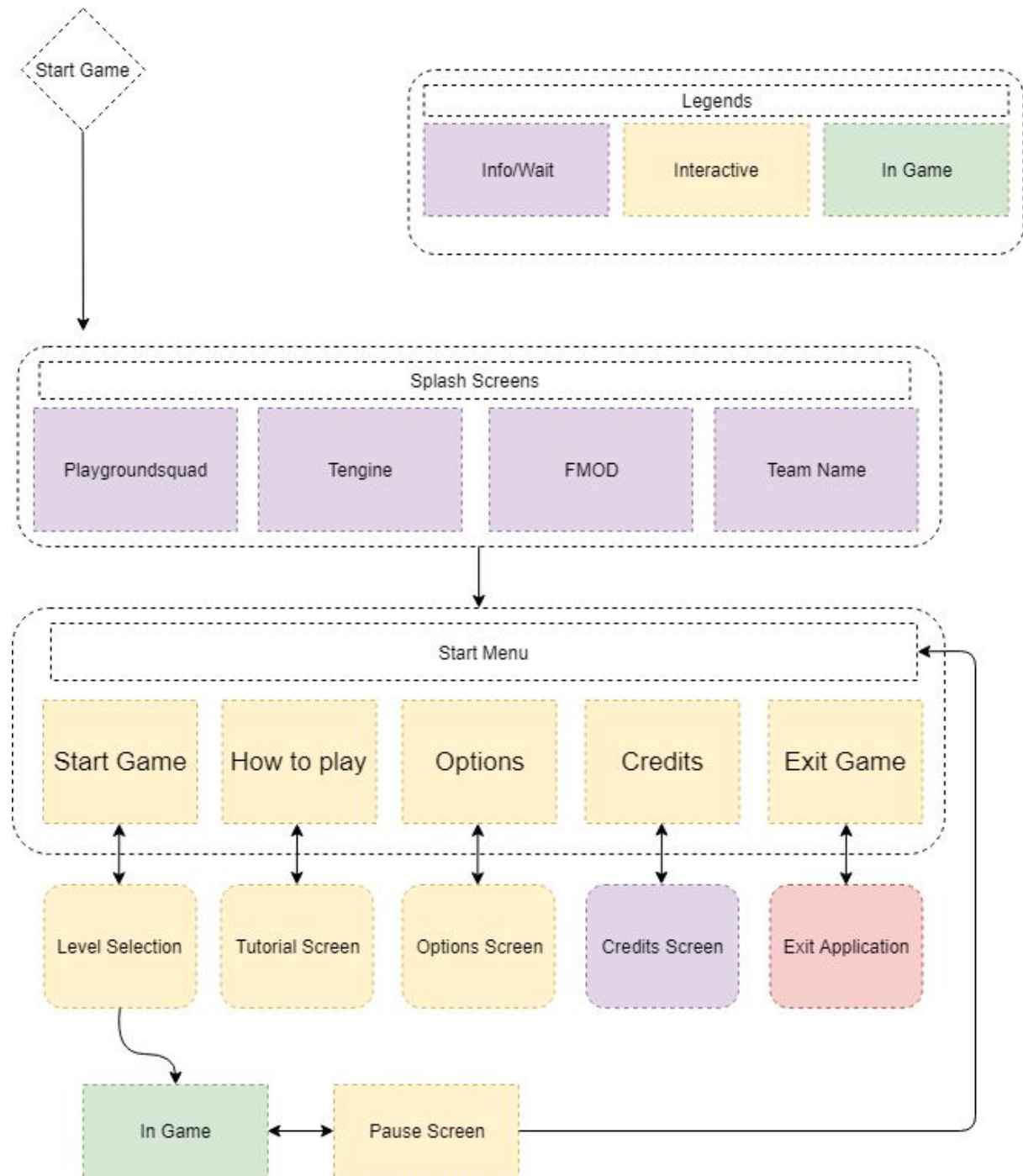
Beginning of the level



 = More focus on pitfalls



# Menus/Screens Flowchart



## Wishlist

- Collectable hud element will only appear when you have picked up the [Coin] and after [1.9] seconds the HUD element will **fade away**. The count-up will only occur when the HUD-element is visible, meaning that the count-up won't occur before we can see it. When another coin is collected within the [1.9] seconds, the timer resets.
- After a level is finished a win-screen appears that counts up the collected coins.
- **Second collectable** that fills the role of being an optional **challenge**. These will be harder to reach and fewer in number. See KONG letters in Donkey Kong.



## Time attack

If we got the resources and time during the project, the game would earn a lot in replayability if we could implement a visible timer for the player. This timer should work similar to how it's used in most racing games. The counter should count upwards and when the players have reached the goal the timer will stop and show more explicit the time that the players got. The time would later be saved in a high score board. By adding this feature it would create an interesting dynamic for the player by making them wanna speed up their game and get a better time.

## second collectable

The second collectable that fills the role of being an optional **challenge**. These will be harder to reach and fewer in number. See KONG letters in Donkey Kong.

## Traps

Traps are things that incapacitates the player that touches the trap. It's happens on collision. The first iteration of traps would be static, but the next step would be to make them move.

Early versions of traps would have both players respawn if one hit a trap. But the later and intended functionality would see individual incapacitation.

### **Individual incapacitation**

If a player touches a trap he becomes unable to control his character. That player can be resuscitated by the other player by jumping on the unconscious player.

### **Platform climbing**

If the player grabs near a wall, ceiling or ground the character grabs that instead of a background trigger. This would be separate animations from the background-climbing that needs to be aligned with the collision-boxes.

### **Catapult using moving platforms**

## Assets Needed

### - Design Environment Kit

The measurement units are not currently set.

The left value in 1x1 will refer to the horizontal size while the right value in 1x1 will refer to the vertical size of the asset.

plain tile 2x1

plain tile 3x1

Plain rounded end left 1x1

Plain rounded end right 1x1

Movable tile 4x1

Movable tile 5x1

Spike trap tile 1x1

Spike trap tile 2x1

Spike trap tile 3x1

Slope 45° tile 1x1

Slope 45° tile 2x2

Slope 45° tile 3x3

Slope 20° tile  $\approx 0.6$ x2

Slope 20° tile  $\approx 1.3$ x4

Slope 20° tile  $\approx 2$ x6

Grabbable tile 1x1

Grabbable tile 2x1

Grabbable tile 3x1

Spinning platforms 4x1

Trap Falling platforms 4x1

Jump on direction platforms 4x1

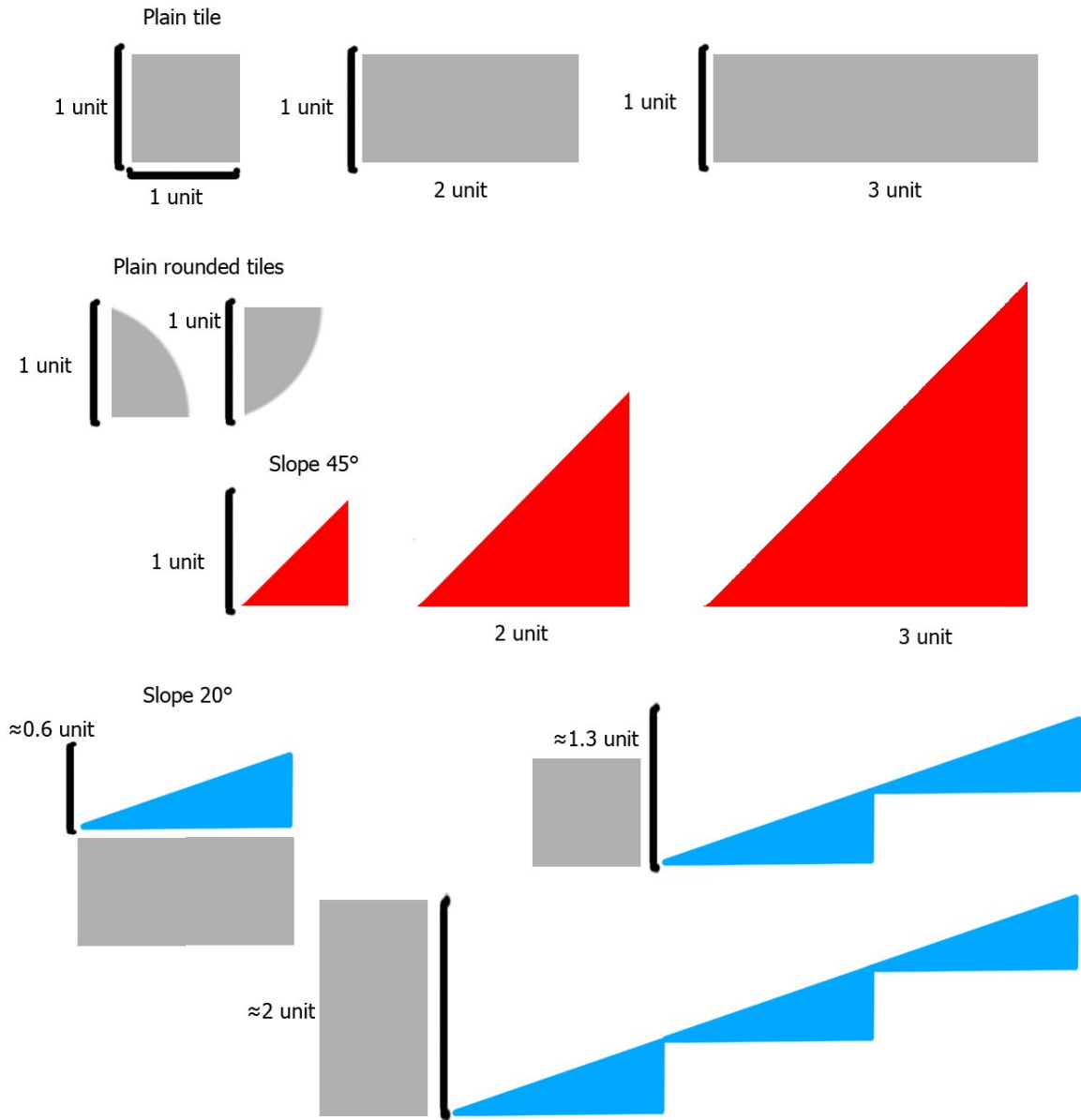
Background Grabbable tile 1x1

Background Grabbable tile 2x2

Background Grabbable tile 3x3

Placeholder coins

# Measurement reference





## - 2D

- Background planes
  - Level 1
  - Level 2
  - Level 3
  - ...
- Foreground planes
  - Level 1
  - Level 2
  - Level 3
  - ...
- User Interface(???)
- Home Menu
- Credits Menu
- How to Play Menu

## - 3D

- Character 1
  - Concept
    - Thumbnails
    - High Concept
  - Production
    - Mesh High Poly
    - Mesh Low Poly
    - Texturing
- Character 2
  - Concept
    - Thumbnails
    - High Concept
  - Production

- Mesh High Poly
- Mesh Low Poly
- Texturing

- Environmental Art Lists **TBD**

- Example #1
- Example #2
- Example #3
- etc.

**- Sound**

- Sound List (Ambient)

- Outside

- Level 1
- Level 2
- Level 3
- etc.

- Inside

- Level 1
- Level 2
- Level 3
- etc.

- Sound List (Player)

- Jump
  - Start - voice
  - Middle - (tone and vol up when velocity goes up & vice versa) - loop
  - End
- Swinging - (Jump middle)
- Rubber Band
  - Straining - (pitch up) when stopping in state 2 the sound stops.

- Max strain - (character sounds, rope crackling)
- Released -
- Grab
  - Initial grab
  - Letting go - voice
- Collectables
  - Coins - pitch up parameter
- Level
  - Finish

- Character Hit / Collision Sound list

- OUMFFff - tied to velocity

- Example 2

- etc.

- Character on Injured / Death sound list

- Example 1

- Example 2

- etc.

#### - Code

- Character Scripts (Player Pawn/Player Controller)

- Ambient Scripts (Runs in the background)

- Example

- NPC Scripts

- Example

- etc.

#### - Animation

- Environment Animations **TBD**

- Floating islands

- Ships

-Clouds

- etc.

- Characters

- Walk

- Jump

- Mid

- End

- Grab

- Background

- Idle

- Rubber Band

- Stretching Not in game for school presentation

- Max Stretch Not in game for school presentation

- Flying (from shooting rubber band) Not in game for school presentation

- Airborne instead of “Swinging”

- The anchor point. Not in game for school presentation

- Falling instead of The Swinger

- Flying/Airborne (Middle Jump) Not in game for school presentation

- Hurt/Ouch(maybe) Not in game for school presentation

- Finish/Goal Not in game for school presentation

## -VFX

- Impact/landing

- Booster

- Coin grab

- Maximum stretch

-