**Research Write-up**

In order to develop my understanding of level design and also how to properly utilise a grappling hook mechanic, I researched multiple games-mainly 2D and single player-as this description fits the brief the most. For this write-up, I will summarise what my main points I took away from each game were, and how they can be used as inspiration for the project.

**1: *Metal Gear* (MSX)**

*Metal Gear* was the codifier for the stealth genre, and while it does not have a grappling mechanic (or a jump), the design for the levels is what I focused on. Each area (or screen) is usually comprised of at least two enemies with some form of cover-a crate, tables to crawl under or a vehicle-and the player is tasked with avoiding the enemies while navigating the military base. The player is given enough hiding places and empty space to see how the enemies patrol the area and strategize to get past without being spotted. This type of “show, don’t tell” level design encourages the player to learn how the game operates for themselves instead of bogging them down with tutorials.

**2: *Super Metroid* (SNES)**

The “show don’t tell” principle also applies to *Super Metroid*, and perhaps more strongly considering the critical acclaim the game garnered (and still holds to this day). The grapple beam’s primary use of crossing gaps is given attention with the environmental design, so the player remembers where the grapple beam areas are. The additional hidden uses of the grapple beam-such as in a particular boss fight where the boss can be electrocuted with the beam by grabbing hold of electricity on the wall-encourages the player to experiment with the tools at their disposal, and try using unconventional methods to solve problems.

**3: *Speedrunners* (PC)**

*Speedrunners* is a competitive racing game, and the grappling hook is used not just to clear gaps but to pester the other players by using it to piggyback off of them, which pulls them towards the back of the pack and propels you forward. Using this type of multi-purpose usage for the grappling hook allows for a higher skill ceiling as the players attempt more and more risky moves to get ahead, and would allow me to design levels that allow players to move through them as quickly as possible, however I would need to take balancing into account so that the levels aren’t too easy or empty.

**4: *The Legend of Zelda: Ocarina of Time* (N64)**

*Ocarina of Time* is a timeless game (no pun intended) in many ways, its dungeons and their puzzles stand out above the rest. The hookshot is used for a few of these puzzles (and at least one boss fight), and while this game is 3D so the level design cannot apply as much to our 2D project the core principle of the puzzles can. Using the hookshot to reach items and hit switches that would otherwise be out of reach, climbing up obstacles to find hidden areas and stunning enemies to make them vulnerable are all concepts that can easily be implemented into my level design.

**5: *Super Castlevania IV* (SNES)**

*Super Castlevania IV* gives the player a lot of choice for how they want to fight enemies. The free control the player has over the whip for crossing gaps, deflecting projectiles and attacking enemies on all sides. Additionally, the whip is upgradable for more damage and reach, so the player is reward for not getting hit and taking risks. Being able to use the grappling hook as a weapon as well as a replacement for the jumping mechanic would allow there to be variety in my level design, as I can choose to make the player do platforming puzzles, fight enemies or try and sneak around said enemies, which gives the player choice and more incentive to replay the game using different tactics.

The main concepts for my level design will be as follows: How can the player deal with obstacles? How will I make areas memorable so the player knows to return there at some point? How will I design puzzles to make the most of the player’s toolset? What sort of options should the player have to deal with enemies? These are all questions I must answer if I want my level design to succeed.