

Wall Jump

Super Smash Bros Wii U

In many games where there is a wall jump mechanic you either have to time your jump precisely in order to execute it, or else fall, or you need to time it somewhat precisely as you slide slowly down the wall otherwise. *Super Smash Bros* for the Wii U is interesting because your character has neither of these limitations. The main limitation when it comes to the wall jump mechanic is actually your choice of character, as some have this ability while others do not and they differ in the power of their jump. When using a character with the wall jumping ability, you can hold your movement stick in the direction towards the wall you are up against in order to stick in place on the wall. As long as you hold your movement stick in this direction you stay stuck in place, and for the duration of this time

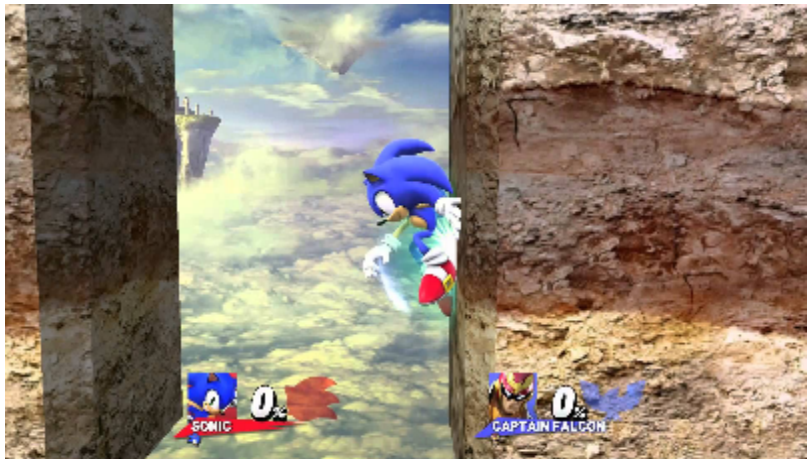


Image 1: Super Smash Bros Wii U

you can press the jump button to jump off of the wall at an angle. This allows you to jump to a nearby wall, like in the situation pictured above, so that you can wall jump again and continue to move upwards by going back and forth. An interesting design choice here is that you can use an opposite wall nearby, but you can't move back through the air to jump off of the same wall again and move further upwards without using some sort of double jump or upwards boost. This makes the developers able to control in which places you are able to traverse upwards by wall jumping so that you can't use this to move up a wall they don't want you to be able to.

Super Meat Boy

The wall jumping mechanic in *Super Meat Boy* is slightly different from the mechanic in *Super Smash Bros Wii U* because of how it forces you to time your jumps and the way that you're able to traverse the level by using it. While in *Super Smash Bros Wii U* you aren't able to wall jump



Image 2: *Super Meat Boy*

up a single wall continuously to traverse upwards, in *Super Meat Boy* you are able to and expected to in order to complete many of the levels. This changes the way that the developers have to think when designing levels, as the player can move up any wall in the game infinitely until reaching some other type of obstacle, and the developers have to carefully manage

which areas the player can reach and which they can't according to the intended design of the level. The timing of the wall jumps is another important factor in *Super Meat Boy*. You can sit against the wall for any length of time by holding the movement stick in the direction of the wall, but as you do you slowly slide down the wall. This means that there is a specific window of opportunity to make your jump during your slide downwards. It's generally a fairly large window, as you slide down slowly and the controls of the game allows for accurate movement in the air, but this still is a large difference from the limitless window of *Super Smash Bros Wii U*.

Grappling Hook

The Legend of Zelda: The Wind Waker

The grappling hook is an integral piece The Legend of Zelda series and just like the series itself, it has evolved over time. The grappling hook in The Legend of Zelda: The Wind Waker is one of my favorites in the series due to the hook's usefulness and freedom in navigation. The grappling hook requires Link to enter a first-person view with a dot appearing in the middle of the screen.

The hook can only be shoot at certain objects in the game world. When the dot in the middle of the screen is over an object which may be hooked, the dot flashes and an audio signal plays as seen in image 3. When Link deploys the grappling hook, a short animation plays showing the hook wrapping around the object.



Image 3: The yellow flash indicates Link can grapple onto this object

Following this, Link will automatically jump and swing forward on the rope.

From here, the player can swing backwards and forwards on the rope in order to gain momentum to make the jump to the next platform or hook point. The player also has the option to stop swinging on the rope and climb up or down it as well as change Link's direction. This mechanic of the hook allows for interesting level design and usage of the hook. This game features a few puzzle-esque rooms and levels in which the player needs to climb and turn on the rope in order to jump from platform to platform. This allows the player much more freedom using the hook than if it was strictly a backwards/forwards swing.

Just Cause 3

Just Cause 3 features a grappling hook which is a very useful element to navigate a very large open-world map. This grappling hook works quite differently from the one in The Legend of Zelda: The Wind Waker. The main differences being that the hook in Just Cause 3 pulls the



Image 4: Rico grappling hooks to a helicopter flying through the air

player to the hooks contact point instantly, the player can fire the hook while moving and doesn't need to enter a first-person view to fire, and the hook can be attached to about any surface in the game with the exceptions just causing the hook to bounce off the surface. The grappling hook in Just Cause 3 also travels an

arguable very unrealistic distance that allows the player to use the hook to travel very quickly and reach heights unobtainable through running and jumping. An example of this can be seen in image 4. The hook is also capable of a very unique property: hooking things together. Rico can use the hook to link helicopters to the ground, people to cars, and anything in between. This creates some interesting situations and gives the player a lot of power to be creative. This mechanic works well in this game due to the huge map size and the open world aspect. This hook would not work well in The Wind Waker because it could allow to traverse maps in a way which breaks the planned progression through the quests. This is not a concern in Just Cause 3 because quests do not follow the same step-by-step structure that is seen throughout the Zelda games.

Our Game

The wall jump mechanic we are planning for our game is much more similar to mechanic from *Super Meat Boy* than from *Super Smash Bros Wii U*. It will allow you to jump at any point as long as you are against a wall, which is the same as both games, but you won't stick in place or slide downwards slowly like either game. You will fall slightly slower due to friction while against a wall, but we want the timing of the jumps to feel important to platforming so it will still be much faster than in *Super Meat Boy* so that the window of opportunity is much smaller. The main similarity with *Super Meat Boy* is that the ability to move yourself through the air will make it very easy to jump up one wall continuously. This somewhat limits design space, but we want the game to be fast paced, with the ball bouncing off of surfaces and traversing levels quickly, and being able to jump a large distance off of a wall is more fun and exciting.

The Grappling hook we plan to implement for our game will be similar to the hook from Just Cause 3 in terms of pulling the player to a location with possibly similar hookable objects to the Legend of Zelda. We originally thought a grapple similar to the Legend of Zelda would be fitting, but upon further consideration it feels like the attachment to a wall could feel awkward when trying to move up and down the rope. We are still expanding on this and don't have a final designed planned. It seems aspects of grappling hooks from both games would fit well in our platformer and these implementations will reveal themselves as we move further into game and level design.