

Portal 2 Level Postmortem

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10/30/22

Youtube Link: <https://youtu.be/ezSZxp632WY>

Design Choices

I decided that I wanted the level to be somewhat challenging for people who have some experience playing Portal or Portal 2. I wanted to teach the player how to use gels by demonstrating their different applications. Anyone who has a decent understanding of how Portal works can easily figure out how to solve the puzzles, while those who have not played Portal or Portal 2 can learn as they play through it.

I chose gels to be the primary mechanic for my Portal 2 level as they can be used in a multitude of different ways. However, I am only utilizing the orange and blue gels because the white gel is too volatile. The white gel is a dangerous mechanic in terms of level design as it can easily break a puzzle, usually by making the puzzle much easier than it was meant to be.

As required, the first two puzzles primarily teach the player how gels can be applied, primarily to themselves. The first puzzle teaches the player the basic purpose of the gels. The second puzzle shows the players new ways for the gels to be used while also letting them learn how to manipulate the gels with portals. The third puzzle, however, adds the twist of having the player apply the gels to objects that they need to open the door. Up until that point, the player had only used the gels to help themselves traverse the level. This twist makes it so players have to use what they've learned from another perspective.

I also made sure every teachable moment had something important tied to it. This way, players can look back on how they achieved a certain goal and use that to their advantage. This can also ensure that every teachable moment is viewed by the player in some way.

Implementation

First Puzzle:

The sphere dropper (0:36) is purposefully used to show the player that the blue gel bounces. This is demonstrated by the sphere dropping down, bouncing off the water, and falling into the water. Assuming the ball is important, the player will likely pick it up before it falls into the water.

Seeing the gap ahead of the next platform (0:40), the player looks down and sees blue gel at the bottom. Given that the sphere bounced when it landed on the gel, it is safe to assume that the player will also bounce if they were to land on it.

At the next platform (0:44), the player sees two buttons. One appears to be next to a grate with a dropper, and the other appears to open a door across a narrow floor. Pressing the second button, the player notices that the door *does* open and then runs toward it (0:48). However, the player quickly realizes that they cannot get there in time (0:52). Trying to figure out what to do, the player then presses the first button (0:59). This sees the dropper shooting orange gel out through the grate and onto the path to the timed door. Upon stepping and walking around a little bit on the orange gel (1:05), the player realizes the orange gel speeds them up. Knowing this, the player presses the door button one more time and runs through the

door with plenty of time. After pressing the button in the room (1:13), the player sees the door stayed open and brings the sphere over into the room to open a portal to the next puzzle (1:25).

Second Puzzle:

The second puzzle's primary purpose is to reinforce the player's knowledge of gels after learning their basic applications in the first puzzle. I did this by introducing the use of the portal gun and having the player use it to move the gels to different places.

Seeing the big hole leading up to the next area, it is easy to assume that the player needs to figure out how to get up there in the first part of the puzzle. Knowing now from the first puzzle that the blue gel makes them bounce, the player will immediately assume they have to use the blue gel in the room to get themselves up the hole in the ceiling (1:48). In order to make sure the player learned this new application of blue gel, I only included the blue gel dropper. This way, the player won't assume the orange gel helped in some way shape, or form if they were to use it.

In the next room, the player is met with a large room. Between them and the exit door is a floor of water and there is a cube pedestal on their end of the room. The player is also given a blue and orange gel dropper (2:36). Knowing how blue gel and orange gel work now, the player could safely assume that using them together would help the player bridge the gap between them and the next platform. Doing so, however, the player does not get enough height to reach the actual door (3:09). Instead, the player lands on another platform closer to the water that leads to another room. I made sure the player can only use the orange gel as the rest of this puzzle focuses on using that specifically. The idea behind this section of the second puzzle is to have the player think about the combined use of the gels. If the orange gel makes you go faster and the blue gel makes you bounce, then running up to the patch of blue gel using orange gel should propel them forward and up into the air.

The final room of this puzzle has the player doing a similar action. Instead, the player is given a ramp and the blue gel is not available to them. Knowing how the orange gel works, however, the player can safely assume that using the orange gel on the ramp and the path leading to it will help them across the gap (3:33).

After this puzzle, the player should now have a better understanding of some of the other applications of the orange and blue gel as well as how they can work together.

Third Puzzle:

The third puzzle's twist focuses on how the player has been perceiving the use of gels. Throughout this entire experience, the player has been using the gels to move around the level. However, in this puzzle, the player now has to use those same gels on an object. The third puzzle is designed to be something of a test for the player. After completing the first two puzzles, the player should have everything they need to finish the level.

Going all the way back to the first puzzle, one of the first things the player notices is that there is a sphere that bounces off blue gel and into water (0:36). The first half of this entire puzzle relies on that memory and the player's new understanding of how the blue gel works. In that same vein, the player would notice that the first part of the obstacle course is very similar to that same moment and do the same thing (4:58). Visualizing how the sphere will travel, the player would also notice that the sphere needs to bounce from wall to wall as the player did at

the start of the second puzzle (5:05). After applying the gels in the same way they did in previous puzzles, the sphere will safely reach the end of the obstacle course and the player will have unlocked the second half of the puzzle.

Unlike the first half, the second puzzle sees the player using the previously disabled orange gel dropper as well as having to move a cube through the obstacle course. Upon activating the cube dropper, the player will notice that the cube does not travel very far down the slope (6:30). However, with their new understanding of how orange gel works, the player should know by now that they need to place orange gel along the slope so the cube will speed up (6:39). However, because there is no ramp at the end, the player needs to keep some blue gel at the bottom of the slope so the cube will jump up and forward into the next part of the obstacle course (7:18). This exact idea can be drawn from the player's memory of the second puzzle (3:09). Much like the player did to bridge the first gap of water, the player uses a combination of blue and orange gel to get the cube safely across the small pit of water. Knowing from the first button press that the cube won't slide too well down some slopes, the player should also have the impression that they must place orange gel on the other slopes and at the end of the obstacle course (7:00).

Feedback

One of the most common pieces of feedback I had was that the second room in the second puzzle was too dark and it was not obvious that the floor below the orange gel was portable. This was an easy fix as I just added more lighting to the room itself (2:43).

An interesting thing I noticed as I was watching some people play through the third puzzle was how easy it was to solve if the player uses more blue gel than intended. The most common place was the last straight away of the obstacle course. I solved this by adding fizzlers above that path so people have to get rid of any blue gel that they place there (7:08). It also incentivizes the use of the orange gel as it needs to be used in that section to slide the cube across.

One of the biggest things that were changed from the original draft of this level was an obstacle in the first puzzle. In my drawn layout, I had crushers instead of a timed door as the first introduction of the orange gel. One piece of feedback mentioned that I should get rid of the crushers as they make the puzzle a little too trollish. I replaced it with the timed door so that the player wasn't needlessly dying or losing the sphere just by touching the crushers (0:45). This also provided a safer teaching environment for the player so it worked out to just get rid of them.