

Let me look at the image again more carefully. The user is saying there are only 3 rows with 3 orbs each, so 9 orbs total in a 3x3 grid.

Looking at the image:

- Row 1 (top): Blue, Blue, Red
- Row 2 (middle): Blue, Red, Blue
- Row 3 (bottom): Blue, Blue, Blue

Wait, let me re-examine. The user says 3 rows with 3 orbs each.

Looking more carefully at the image:

- Top row: Blue, Blue, Red (3 orbs)
- Middle row: Blue, Red, Blue (3 orbs)
- Bottom row: Blue, Blue, Blue (3 orbs)

Hmm, but I see some orbs that might be in different positions. Let me look again.

Actually from the image:

- Top row appears to have: Blue (left), Blue (center), Red (right)
- Middle row appears to have: Blue (left), Red (center), Blue (right)
- Bottom row appears to have: Blue (left), Blue (center), Blue (right)

Wait, but looking at the screenshot, I think I see:

- Row 1: Blue, Blue, Red
- Row 2: Blue, Red, Blue
- Row 3: Blue, Blue, Blue

So only 2 red orbs need to be turned blue.

In a 3x3 grid with adjacencies:

- Position (1,1) is adjacent to (1,2) and (2,1)
- Position (1,2) is adjacent to (1,1), (1,3), and (2,2)
- Position (1,3) is adjacent to (1,2) and (2,3)
- Position (2,1) is adjacent to (1,1), (2,2), and (3,1)
- Position (2,2) is adjacent to (2,1), (2,3), (1,2), and (3,2)
- Position (2,3) is adjacent to (1,3), (2,2), and (3,3)
- Position (3,1) is adjacent to (2,1) and (3,2)
- Position (3,2) is adjacent to (3,1), (3,3), and (2,2)
- Position (3,3) is adjacent to (3,2) and (2,3)

I see the grid's connectivity now. Each position has specific neighboring cells, which will be crucial for understanding how to transform the orbs efficiently.

The initial configuration shows Blue and Red orbs distributed across three rows. Clicking (1,3) triggers a cascade of color changes, affecting three interconnected positions. This reveals the strategic complexity of the puzzle, where a single click can dramatically alter the board's color pattern.

After the click, the first row shifts to Blue, Red, Blue, demonstrating how orb interactions depend on their adjacent positions.

A subsequent attempt to click (2,2) introduces another layer of complexity, toggling multiple orbs simultaneously. This move further transforms the board's color configuration, highlighting the intricate puzzle mechanics.

Shifting strategy, I explore clicking (1,2), which triggers a different set of color changes. The cascading effect alters adjacent orbs, creating a new board state with unexpected color transitions.

Continuing the exploration, clicking (1,1) introduces another strategic move, demonstrating the interconnected nature of the board's color-changing mechanism.

I recognize a key insight: repeated clicks on the same cell neutralize each other, suggesting a precise, single-click approach is crucial for solving the puzzle systematically.

To optimize my strategy, I'm mapping out grid positions numerically, preparing for a more methodical investigation of potential solution paths.

The current grid configuration presents an intriguing challenge: I need to strategically toggle specific buttons to transform the red cells back to blue, focusing particularly on positions 3 and 5.

Each button's toggle pattern creates a complex interaction, affecting multiple adjacent grid cells. I'll need to calculate the cumulative toggle impact carefully, ensuring I create an odd number of state changes at critical positions.

My goal is to engineer a sequence of precise, single clicks that will systematically reset the grid to its desired blue state.

By mapping this problem as a linear equation system in  $GF(2)$ , I can methodically solve for the optimal button sequence. I'll start by examining the interconnected relationships between button toggles, systematically substituting known constraints to unravel the solution's underlying pattern.

The first step involves tracking how each button's activation ripples through the grid's interconnected cells, creating a nuanced puzzle of state transformations.

By manipulating equation 9 and equation 7, I derive key substitutions that reveal intricate dependencies between button states. This allows me to progressively eliminate unknown variables and narrow down potential configurations.

Critically, I discover  $x_2$  must equal 1, which becomes a pivotal insight for unraveling the remaining button states. Each substitution brings me closer to understanding the precise sequence required to achieve the desired outcome.

By equating  $x_9$  through multiple paths and comparing the resulting expressions, I uncover a critical relationship:  $x_3 + x_4$  equals  $x_3 + x_8$ , suggesting a fundamental constraint in the system's logic.

Substituting  $x_4$  with  $x_8$  reveals a cascade of interconnected equations. From equation 4, I derive  $x_5 + x_7 = 1$ , while discovering  $x_7$  must equal zero. This implies  $x_5$  must be 1.

Since  $x_5$  previously represented  $x_3 + x_4$ , I now recognize the constraint that  $x_3 + x_4$  must equal 1, establishing a precise mathematical relationship between these variables.

Exploring further, I find  $x_3 + x_4 + x_6 + x_8$  yields  $x_3$  as 1, which directly implies  $x_4$  is 0. This confirms the previous constraint and determines multiple variable values simultaneously.

The solution set emerges:  $x_1, x_2, x_3, x_5,$  and  $x_6$  are marked as 1, while  $x_4, x_8,$  and  $x_7$  are 0. Each variable's value systematically follows from the intricate system of equations.

I verify the solution through a step-by-step grid transformation, tracking how each click modifies adjacent positions. The sequence of clicks strategically resets the grid, demonstrating the precise interaction between variables.

The final click configuration successfully neutralizes the initial grid state, achieving the desired outcome through targeted positional interactions.

The solution can be described through multiple coordinate systems: grid positions, row/column notation, and directional terminology, providing flexible representation of the strategic click sequence.