Mirror, Mirror

A Rivalrous Puzzle

Have you seen those tile-sliding puzzles? You know the kind I mean: square tiles, arranged in a little box, with one spot missing. By sliding the tiles one by one into the missing spot, you try to rearrange them, perhaps to make a picture appear.

This puzzle, when it debuted in 1880, launched a worldwide craze. It became the bestselling toy of its day, drew rapturous coverage in the New York Times, and set the template for dozens of crazes to come, from manufactured toys to viral phone apps.

This game takes that classic puzzle, and turns it into a two-player competition. The twist: you’re trying to solve the same puzzle at once, but with different ideas of what a “solution” means.

How to Play

How many players? Two.

What do you need? 11 coins or markers: 4 of one kind (e.g., pennies), 4 of another (e.g., nickels), and 3 of a third (e.g., stray buttons).

To set up, lay them out in random order on the table, creating three rows of three, followed by a row of two.

What’s the goal? Arrange the pennies into a formation with left/right mirror symmetry before your opponent can do the same with the nickels. (Or vice versa.)
For example, here are some victories for the penny-player.

Notice how in each case, the pennies have left/right bilateral symmetry. (In other words, the first column is identical to the third one, penny-wise.)

What are the rules?

1. The younger player gets to choose which set of coins they want to symmetrize: nickels or pennies. (Before that choice, though, the other player may rearrange the coins however they see fit, to avoid an obvious imbalance between the two sides.)

2. Then the game begins, with the older player going first. On each move, you slide a coin horizontally or vertically into the empty space. Note: you cannot simply undo the previous move, but must move a different coin.
3. You win when your set of coins reaches a formation with left/right mirror symmetry.

In other words, the nickels in the left column must appear in the same spots as the nickels in the right column, as in the example above.

**One-Player Version: “Change, Change”**
*(designed by Sid Sackson)*

1. Grab a slightly different arrangement of coins: 4 pennies, 4 nickels, 2 dimes, and 1 quarter. (Feel free to substitute other denominations, such as Spanish doubloons.)

2. Arrange the coins in random order on the table, as in the two-player version.

3. Try to shift them so that the entire formation has left/right mirror symmetry. This means that the first and third columns should be identical.

4. Count your moves as you play. If you can solve 7 such puzzles in less than 100 total moves, then you are a champion.