## Swag Worksheet Why the Swag Strategy Works

Name $\qquad$
You have just completed your turn, and it is now your opponent's turn. He or she is faced with 5 coins, 1 coin and 4 coins. Let's see why you are now guaranteed of being able to create another winning pattern on your next turn.


What are your opponent's options when faced with the 5-4-1 pattern? Then what should your next move be? And finally, what is the resulting pattern?

Row 1 shows that your opponent could take 1 coin from the first bag (the coin with the white X ). Then your correct move is to take 1 coin from the second bag (shown as the coin with the two white slashes), which results in the winning pattern 4-4.

Row 2 shows that your opponent could take 2 coins from the first bag. Then your correct move is to take 2 coins from the third bag, which results in the winning pattern 3-2-1.

The rest of the rows need to be filled in to show the rest of your opponent's possible moves when faced with the 5-4-1 pattern, what your move should then be and what the final result would be. You can use a marker or highlighter to identify the coins that are being removed and then color in the remaining coins in the last column.
1.

| Opponent's Move $\boldsymbol{\Sigma}$ | My Move \% | Result |
| :---: | :---: | :---: |
| $0$ | $0 \cdot 0$ | $0_{0}^{0} 0^{0} 0^{4-4}$ |
| $\left.\begin{array}{l} 0 \\ 0 \\ 0 \end{array}\right)$ | \% 0000 | $0_{0}^{0} 00^{0} 0^{3-2-1}$ |
| $0000$ |  | $\left.\begin{array}{l} 0 \\ 0 \\ 0 \end{array}\right)\left(\begin{array}{l} 0 \\ 0 \\ 0 \end{array}\right)$ |
| $0800$ |  | $\left(\begin{array}{l} 0 \\ 0 \\ 0 \end{array}\right]\left(\begin{array}{l} 0 \\ 0 \\ 0 \end{array}\right)$ |
| $0800$ |  | $\left.\begin{array}{l} 0 \\ 0 \\ 0 \end{array}\right)\left(\begin{array}{l} 0 \\ 0 \\ 0 \end{array}\right)$ |
| $0 \cdot 0$ |  | $\left.\begin{array}{l} 0 \\ 0 \\ 0 \end{array}\right)\left(\begin{array}{l} 0 \\ 0 \\ 0 \end{array}\right)$ |
| $0000$ | 000 | $\left(\begin{array}{l} 0 \\ 0 \\ 0 \end{array}\right]\left(\begin{array}{l} 0 \\ 0 \\ 0 \end{array}\right)$ |
| $080$ |  | $\left(\begin{array}{l} 0 \\ 0 \\ 0 \end{array}\right)\left(\begin{array}{l} 0 \\ 0 \\ 0 \end{array}\right)$ |
| $080$ |  | $\left(\begin{array}{l} 0 \\ 0 \\ 0 \end{array}\right)\left(\begin{array}{l} 0 \\ 0 \\ 0 \end{array}\right)$ |
| $0800$ | $0 \%$ | $\left.\begin{array}{l} 0 \\ 0 \\ 0 \end{array}\right)\left(\begin{array}{l} 0 \\ 0 \\ 0 \end{array}\right)$ |

