

The Game of Chomp

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1 Introduction

Chomp is a two-player strategy game played on a rectangular grid composed of smaller square cells, resembling the blocks of a chocolate bar. Players take turns selecting and "eating" (removing) one block along with all blocks positioned below it and to its right. The top left block is "poisoned," and the player who consumes it loses the game.

1.1 Example



Player A eats two blocks from the bottom right corner; Player B eats three from the bottom row; Player A picks the block to the right of the poisoned block and eats eleven blocks; Player B eats three blocks from the remaining column, leaving only the poisoned block. Player A must eat the last block and so loses.

Check this [website](#) out to play a game of Chomp against the computer. It would be recommended that you form a strategy without repeatedly playing against the computer to challenge yourself.

2 Questions to ponder about

The questions to ponder about are the same as that from the game of Nim:

1. Does there always exist a sequence of moves such that the player making the first move wins?
2. Given a Chomp position, is there a way to determine whether it is possible to win for any player with perfect play? If not, why? If yes, how?

3. If a sequence of move which guarantees a win does exist for a Nim position, how will you determine the sequence of moves? That is to say, how is the computer coded to play the most optimum way?

3 To do

Same as the game of Nim, try to answer all of the questions above and then try it out against the computer. Again, you will find the solutions online, but that won't be very entertaining :D.