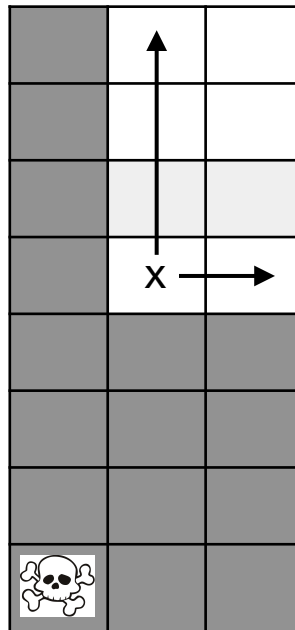


CHOMP with AWM!

Chomp is a chocolate eating game! Two players take turns choosing blocks from a rectangular bar of chocolate. A player gets to eat the block she chooses, along with all the blocks that are above it and to the right.



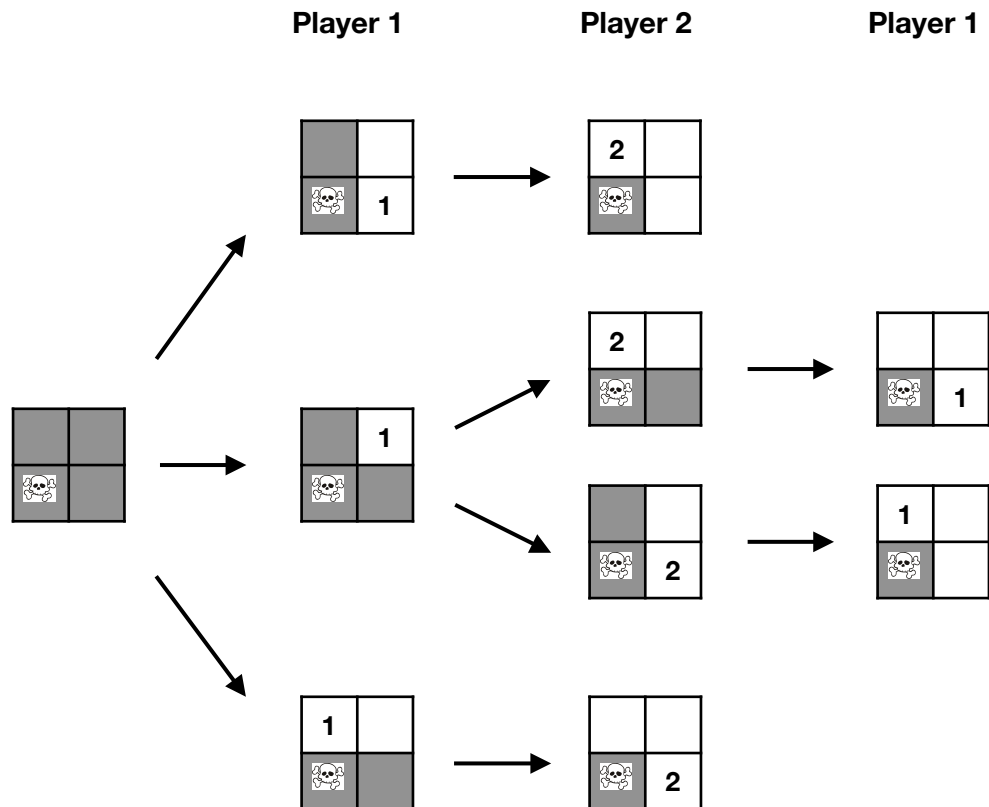
But there's a catch! The bottom left block is poisoned and whoever eats it loses the game. In other words, you want to remove all the blocks, leaving the poisoned one for your opponent.

It turns out, whoever goes first can always win. *Well, you may ask, then why even play??* Because knowing you *can* win, and knowing *how* to win are two different things!

A *winning strategy* is a sequence of moves, taking into account moves by the opposing player, which **guarantees** victory. For some types of boards — square ($n \times n$) or “thin” ($2 \times n$) — the winning strategies for Player 1 are known.

On the back of this page, you can start figuring out the winning strategies for some of these boards!

Below are all the possible sequences of play for a small 2 x 2 board. Who's the winner for each sequence? Remember, when you choose a square you get all the squares that are above it and to the right, and the player left with the poisoned square loses! Circle the winning strategies for Player 1.



Bonus problem! Can you figure out the winning strategies for larger square boards? Try starting with a 3 x 3 board using our magnetic grids and tiles.

For other boards (not square or “thin”), we know a winning strategy exists for Player 1, but it’s much harder to figure out what that strategy is! Computers are pretty good at this though, for “reasonable” sized boards. Try playing against our computer and see how you do!

You can also download the Choco Chomp app yourself for free from your App Store to play at home!