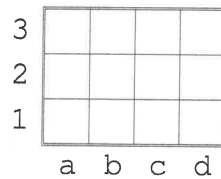


Semaphore

This game was invented by Alan Parr in 1998. Semaphore, despite the very small board, possesses an unexpected complexity, demanding attention from both players until almost the last moves.

Materials

A rectangular board with three rows and four columns, 12 green, 12 yellow, and 12 red stones.



Rules

On each turn, each player must execute one of the following options:

1. Drop a green stone on an empty square.
2. Replace a green stone with a yellow stone.
3. Replace a yellow stone with a red stone.

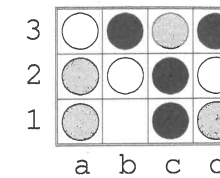
Goal

The player that makes a three-in-a-row with stones of the same color wins the game.

Notes

Here, since this book does not use colors, green stones are represented as white, yellow as grey, and red as black.

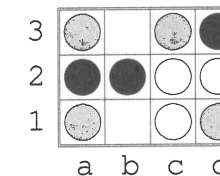
The next diagram shows a position with three immediate wins: (i) replace the green stone at a3 (making a vertical line of yellow stones), or (ii) replace a yellow stone at d1 (making a diagonal line of red stones), or even (iii) replace the yellow stone at c3 (making a horizontal line of red stones).



The game's outcome depends on the number of available moves until a winning pattern emerges. If that number is even, the next player wins, if odd, the next player loses. The problem (and interest) is that is not easy to evaluate that number of moves in an initial phase. The first player that deduces that number has a definitive advantage.

It is important to keep open as many options as possible. Players share all pieces, and so making a trap is always dangerous if the adversary understands it. The game is not a strategic one, but the short duration of each game and the simplicity of the rules make it a funny and fast game, easy to explain to children.

The next example shows an endgame. The board has only two moves until a winning pattern is made: (i) drop a green stone at b1, or (ii) replace the green stone at d2. That means the next player loses the game (if the other player is aware of these two moves, of course).



On the reduced 3×3 board (the tic-tac-toe board), there is a winning strategy for the first player. Drop a green stone at the center. The next player must replace it with a yellow stone. (Any other move means immediate defeat.) Then the first player replaces the yellow with a red stone. All other moves from the second player should be played symmetrically (around the center) until a winning move is available.