

# Spora

2025, João Pedro Neto, <https://boardgamegeek.com/boardgame/443703/spora>

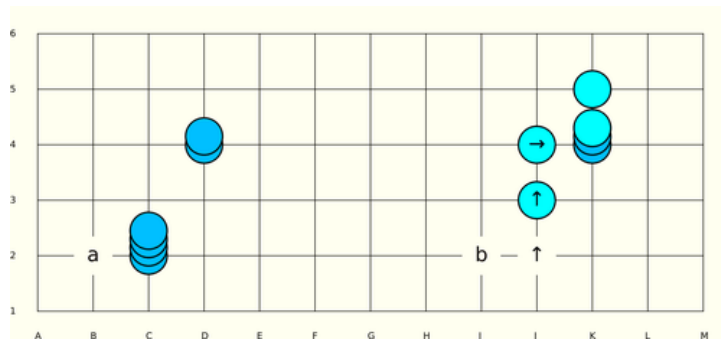
**Spora** takes the concepts like group, liberty and territory, known from territorial games like Go, and adds support for stacks. Stacks can sow their pieces to adjacent intersections, capturing enemy pieces or supporting near friendly structures. The total number of pieces is limited, so players need to manage their finite budget to reach endgame controlling as much territory as possible.

*Spora* is the Greek σπορά, meaning 'sowing'.

## Definitions

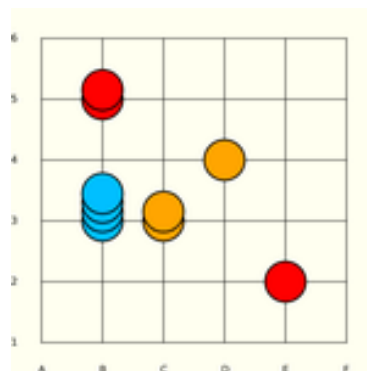
- A **stack** consists of one to four pieces of the same color, placed on the same intersection
- A **group** is a set of one or more stacks orthogonally connected
  - A **living group** is one with a path of orthogonally adjacent empty intersections to another friendly group, otherwise it is a **dead group**
  - A group is also living if there has never been more than one group of its color on the board.
- A **territory** is a part of the board that is surrounded by living groups of the same color
  - An **empty** territory is one without enemy stacks inside
- **Sowing**: pick a stack -- or part of it -- and leave one piece per orthogonal adjacent intersection
  - sowing can turn left/right after each placed piece
  - sowing a stack is only legal if the player can legally place all pieces of the stack
  - if a stack gets more than four pieces, the extra pieces are simply removed from play

In the next diagram, Blue decided to sow the stack at c2, placing pieces in a north, north, east, north path (in notation: c2@nnen)



diagrams [a] and [b] are showing the before and after (the pieces didn't change place!) sowed pieces are shown in light blue (for presentation purposes only)

- **Capturing:** stacks capture by enclosure (i.e., by closing paths and, thus, making dead groups) and/or by sowing.
  - in the process of sowing, a stack may move onto an enemy stack (and capturing it) if the moving stack has at least twice as many pieces as the enemy stack.
  - captures, either by enclosure or by sowing, are immediate
  - so, during the sowing, any dead groups are also immediately captured
  - the player may not sow onto an enemy stack if he cannot capture it
  - the sowing must be completed, even if captures are made



the blue stack at b3 can capture the orange stacks but not the red stacks  
(here too, the different colors are for presentation purposes; there are only two  
players, Blue and Red)

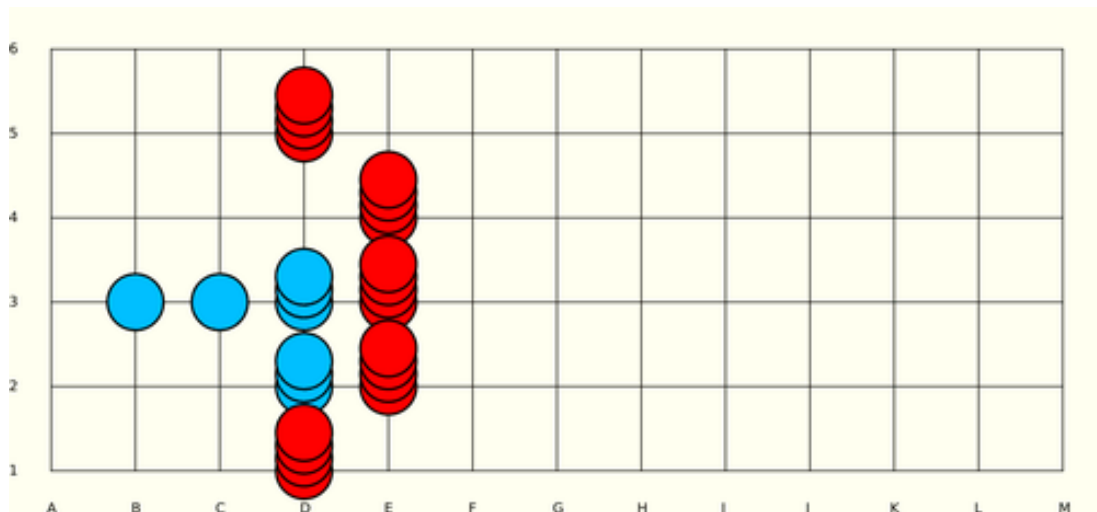
## Rules

- The game is played on an initially empty 13x13 board, with 99 stackable pieces per player, starting in each player's reserve
- Initially, each player drops one friendly stack on an empty intersection
- In his turn, the player:
  - first drops a friendly stack on an intersection not occupied by the adversary, provided that its group, after the end of the turn, is still living
  - second, optionally, sows a different friendly stack
- When one player empties his reserve, the other player drops his pieces in sequence (no sowing is allowed), removing all dead groups after each placement, and the game ends
- The winner is the player with the highest sum of number of occupied intersections plus the number of intersections inside the player's *empty* territories.

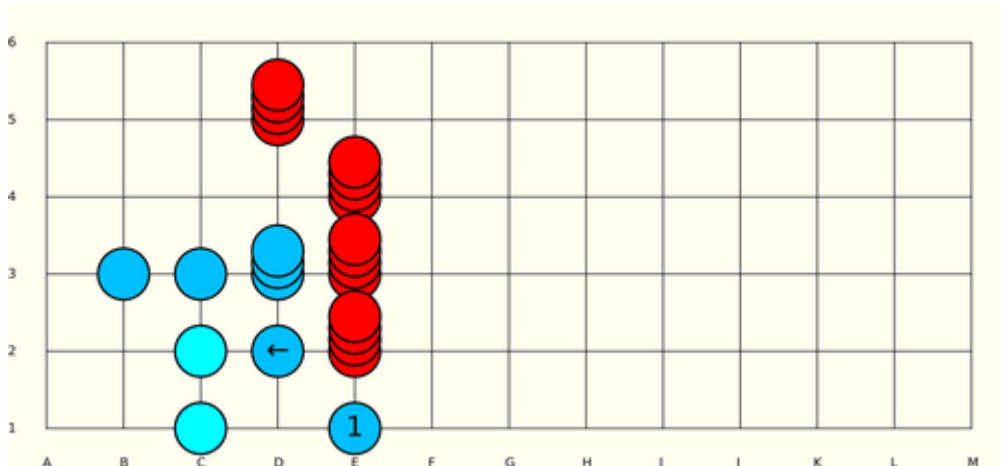
## Balancing Rules

- One player, given an integer  $X$ , defines a komi of  $X+0.5$  for White (the second player), the other player chooses sides
- Suggested value for equal-strength players,  $X = +3$

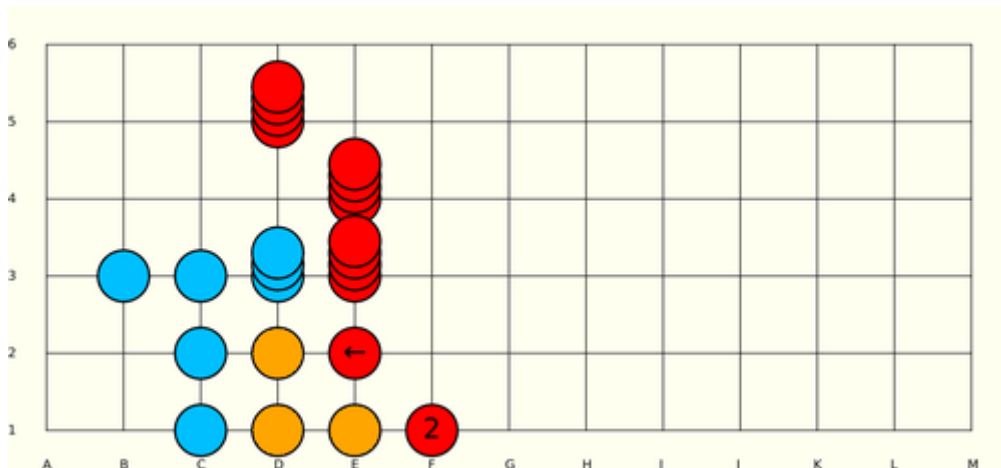
## Some Examples



*Given this position, where Red is using more material to attack Blue position.*



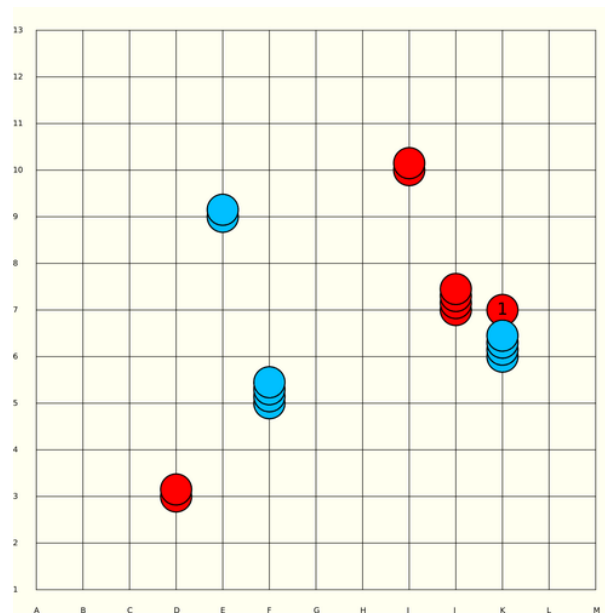
Blue tries to defend by placing [1], a single piece, at e1 and sowing his d2 stack in move d2@ws (note that Blue only sowed part of the stack). Piece d1 was capture by enclosure (like in Go).



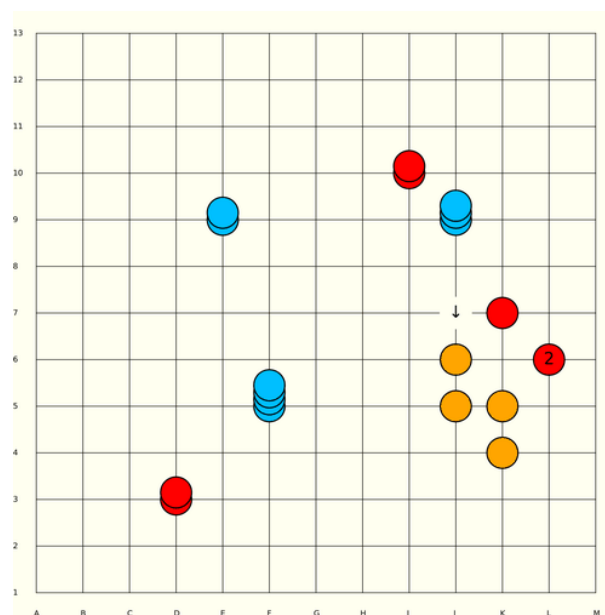
After Blue's capture, Red answers by dropping [2] at f1, and then sowing e2@wse, capturing d2 and e1. Notice that e1 was not captured by sowing, but by surrounding when the sowing, still unfolding, reached d1. With that capture, Red could place at e1 his last sowing piece. This was possible because sowing captures are immediate.

Note also that Blue, in his next turn, cannot capture that red group by placing a stack of size three at f2, and then show f2@es. This is invalid because the player must sow a different stack than the one just placed.

Consider the following board position:

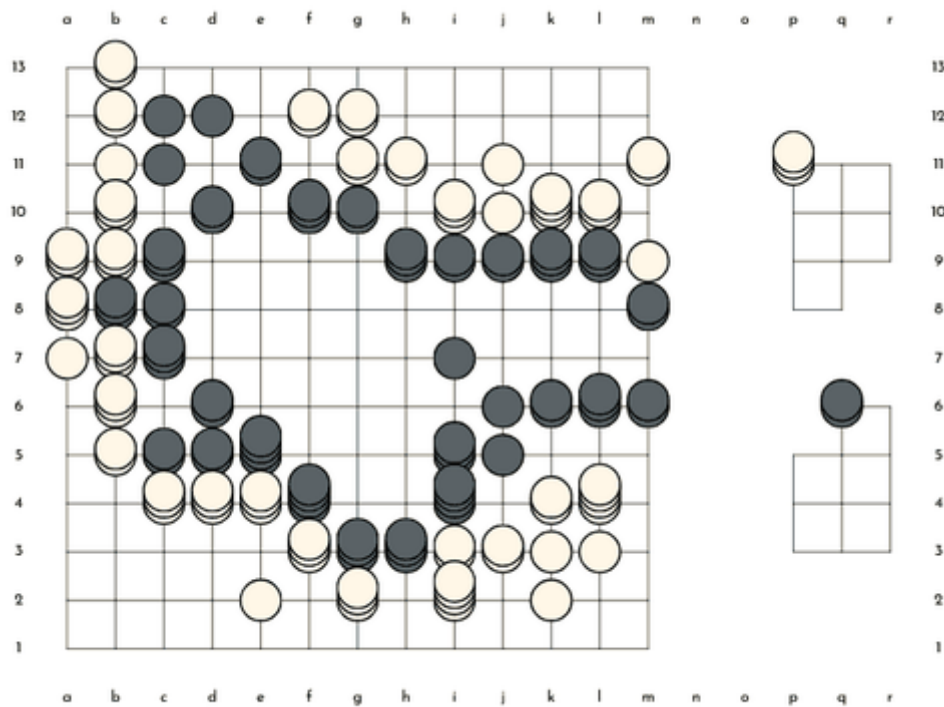


After Red placed [1] the blue stack at k6 is in atari. Why?



Because if Blue doesn't defend it, Red places a stack at [2] and then sows j7@sses, capturing it by enclosure. Stacks of size three and four are immune to sowing, but are still liable to be captured by enclosure.

Here's a picture of an endgame (I'm Black, Samraku is White) played in the Game Designer at AbstractPlay:



Black to move. White was winning but forgot the attack at h2. Black, after sowing south from h3, will capture the bottom-right white group. This error gave the game to Black.

Some comments about the rules:

- A player can drop pieces on top of friendly pieces already on board
- Empty territories are secure from drops but not from sowing attacks
- By the rules of sowing:
  - single pieces can move to adjacent empty squares
  - a stack of size four can return to its starting square by turning, say, three times left
  - sowing can strengthen adjacent friendly stacks
  - sowing is allowed over a friendly stack of size four (that 5th piece is simply removed)
  - a player can pass his turn by placing one piece on top of a stack of size four (so, it costs to pass)
- By the rules of capturing by sowing:
  - a single piece cannot capture
  - a stack of size two can only capture adjacent single pieces
  - stacks of size three or four cannot be captured by sowing
- Players have a good initial budget of pieces, but it is finite, and they must

measure well when and how to deploy stacks with multiple pieces (like having an arsenal of daggers, but always being hesitant when to use them)

- One implication of the limited budget is that there is no need for a Ko rule. The game state never repeats. If both players insist on a capturing cycle even without doing any sowing, the player who's ahead will win the game after all pieces are depleted.

- A territory is not controlled if some gaps are left open, or enemy pieces are inside

- Only stacks are counted at the endgame, not pieces

- A player with less pieces can decide the best time to stop. If you have four pieces, you can decide to stop now or prolong the game for more three turns. This is valuable!

- If we consider the number of stones to be  $1/2$  or  $2/3$  of the board intersections, as reasonable lower and upper bounds for the amount of stones each player should have, then the arithmetic mean of these two bounds give us the initial budget of 99 stones. So, to play on a 19x19 board, each player would require 211 stones. I wish to thank Samraku for this idea.

- A consequence of the rules is the size of the game-tree. After the opening, I estimate that the branching factor will reach five orders of magnitude, producing a gigantic game-tree, much larger than Go, without, hopefully, much loss of clarity. Game-trees, of course, are not a measure of game quality, but they provide space for depth, if humans can find it. In this aspect, Spora can be a replacement of Arimaa, being perhaps more resistant to AlphaZero approaches due to its strategic features (after all, it is much closer to Go than Chess or Checkers).