Pylon

Pylon is similar to Go, except that it's played with marbles which may stack up to form piles. A special in-place capture rule is used to resolve potential problems with retrieving buried pieces after capture; instead of removing surrounded pieces from the board, the attacker adds pieces to cover surrounded groups.

Rules

Players take turns placing a piece (marble) of their colour at any valid empty point. A point is valid if it is: 1) a board point, or 2) supported flatly by four existing pieces.

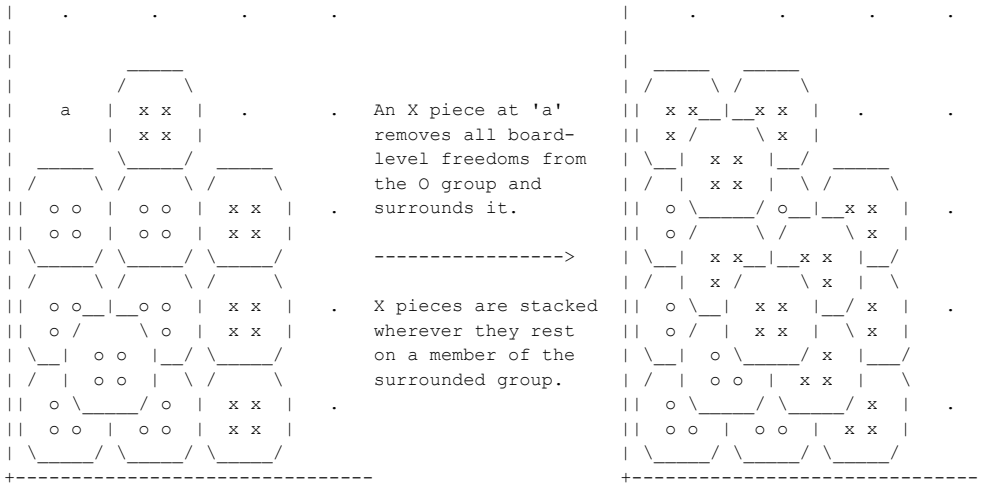
- ***Connection***: Two pieces of the same colour are connected if they are squarely adjacent to each other, or one rests directly upon the other. A group is a visibly connected set of pieces which may visit multiple levels.
- ***Freedom***: A piece has freedom if it is adjacent to at least one valid empty point on the same level. A group has freedom at level *l* if at least one of its members on level *l* has freedom.
- ***In-place capture***: If playing a piece removes all same-levelled freedoms from any adjacent enemy groups, then those groups are considered to be captured and additional pieces are stacked on top of them where possible. Each additional piece must rest directly upon at least one member of a surrounded enemy group.
- ***No suicide rule***: A move is not valid if the piece would have no freedom after being placed and all resulting in-place captures performed.
- ***Over/under rule***: A connection passing over an enemy connection cuts it. Buried pieces (those with a piece directly above them) do not count in any connections; groups must be visibly connected.

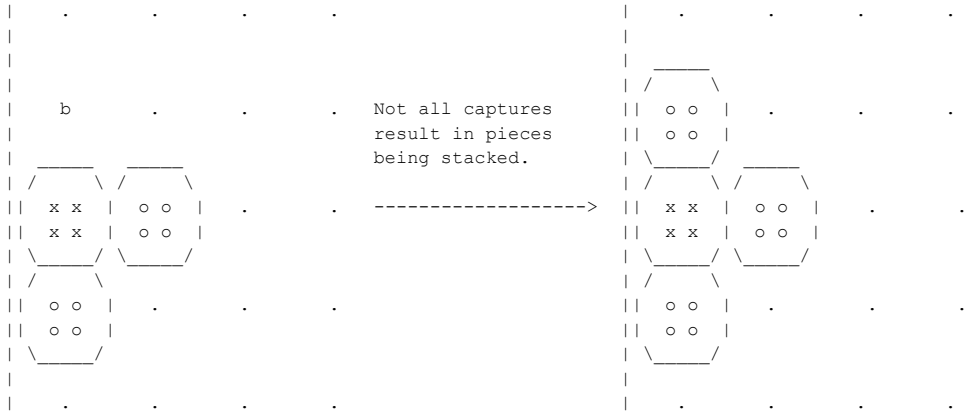
Players may not voluntarily pass, but are forced to pass if there is no legal move.

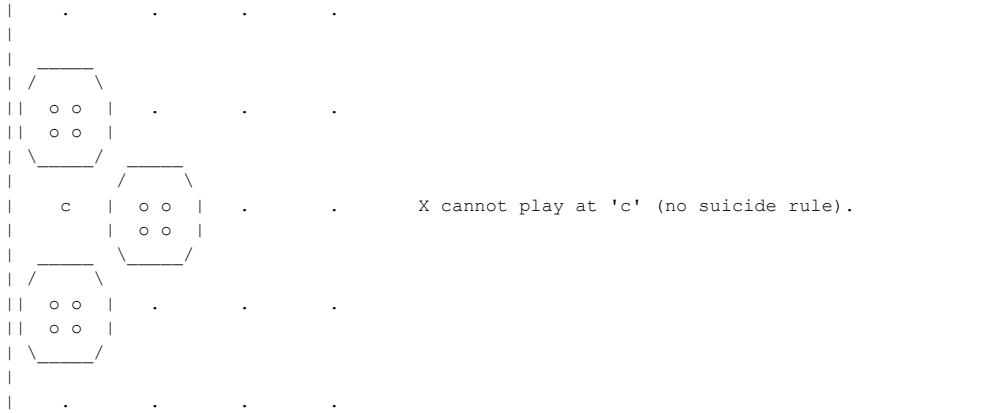
The game ends when neither player can make any further move. The player with the most pieces in play wins.

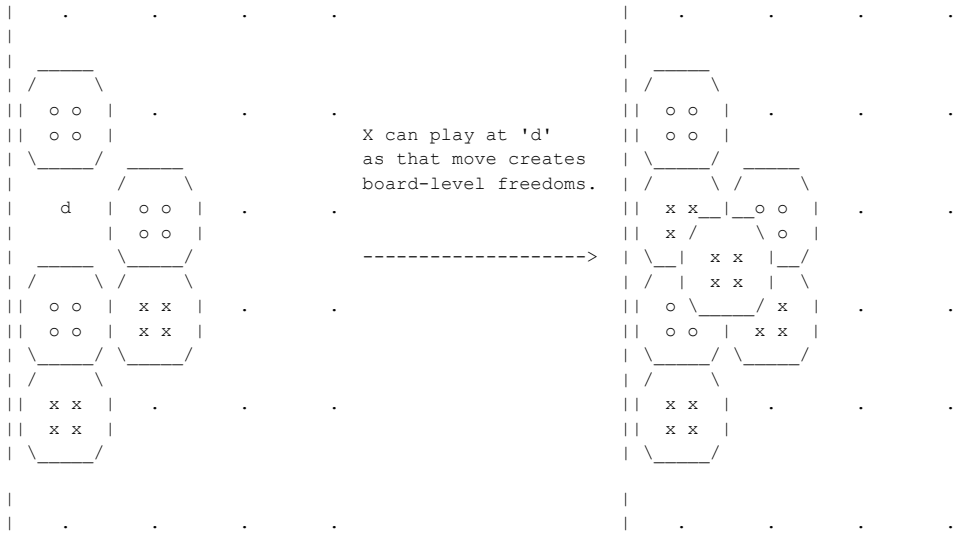
Examples

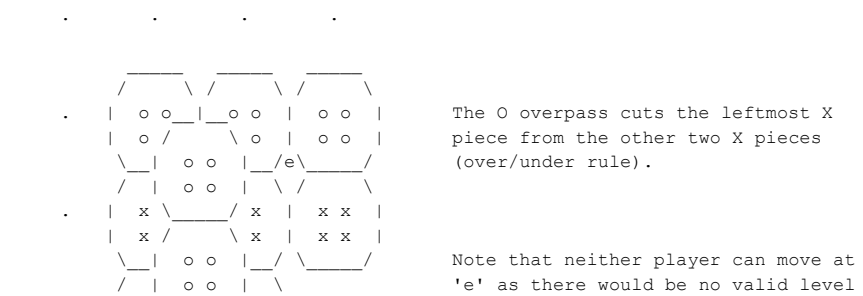
The following examples show freedoms and the in-place capture mechanism in action.





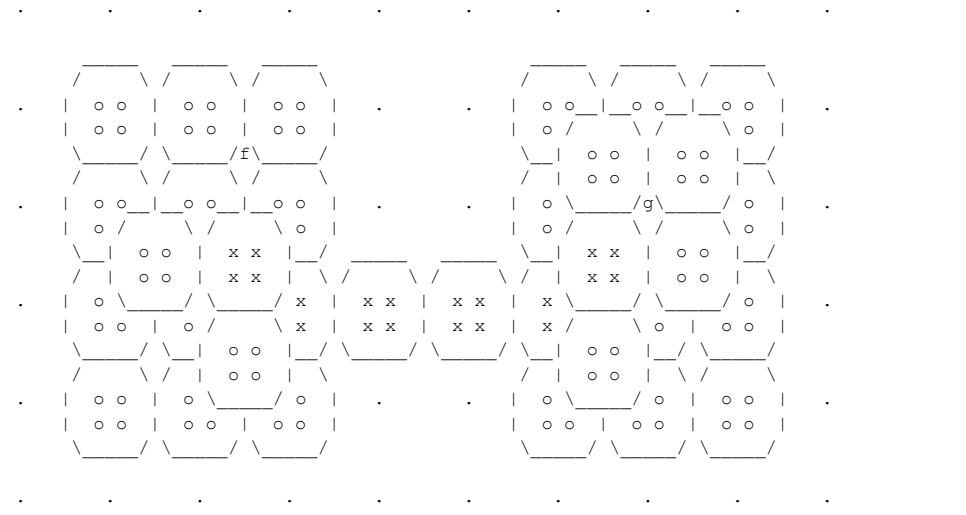






The O overpass cuts the leftmost X piece from the other two X pieces (over/under rule).

Note that neither player can move at 'e' as there would be no valid level 1 freedoms for a piece there.



An O piece a 'f' would remove all level 1 freedoms from the X group, capturing it and resulting in O stacking an additional piece at 'g'; this is the only point at which a piece can be stacked on this group.

The X group visits the board level (where it has freedoms) but these do not count since 'f' is a level 1 move.

Notes

Determining the freedom of an adjacent group may be simply described as looking for any freedom within the group on the same level as the piece being played. The search is effectively reduced to a plane slice of the group.

Covering enemy pieces according to the in-place capture rule has three main benefits:

1) Buried enemy pieces are effectively removed from the game (apart from adding 1 to their score).
2) It allows the capturer to add multiple pieces per turn.
3) It accelerates the game.

Freedoms are only counted on the level played so that the attacker may cover surrounded groups with additional stones. If this condition were relaxed and freedoms counted on any level, then any point at which the attacker could potentially place a covering piece would be a freedom, and the group would no longer be surrounded.

Adjacent friendly pieces on the outermost row or column of any level cannot be cut, as it's not possible to bury them or separate them with an overpass. Edge moves can therefore be quite strong, despite the fact that the edge removes a potential freedom.

Removing buried pieces from connection calculations means that players do not have to remember the colour of hidden pieces (expect when it comes to counting the score at the end of the game).

Translating Pylon to the hexagonal grid is complicated by phase problems; for any packed level there are two ways to pack the level above, both of which are valid but incompatible. The square grid is better suited to ball-stacking games of this type.

The board, when fully stacked, forms a pyramid. The maximum number of pieces that may be played on a board of size n is given by the pyramidal number: $Pn = n\ (n + 1)\ (2n + 1) / 6$.

Some multiplayer Go variants relax the connection definition so that enemy groups may consist of stones of any colour except the current player's. Pylon maintains the

stricter definition (that any group may only consist of one colour) to encourage captures.

History

Pylon was named after the in-place capture rule, which lets players "pile on" pieces to cover surrounded enemy groups.