Introduction

Scaffold is a new drawless square grid connection game. The rules were originally posted on Boardgamegeek's Abstract Games forum in April of 2022 and can be played online at *mindsports.nl*. A multi-action move protocol inspired by David Smith's *Trax* is used to address the problem of dead-locks inherent to connection games played on a square grid when connectivity is limited to orthogonal adjacency. Fortunately, similar to the "forced plays" in *Trax*, the secondary placements also create a number of interesting tactics.

Rules

Object

Scaffold is played on the intersections of a square grid (19x19 is recommended) using stones. Black is trying to connect N-S edges of the board, White E-W with an orthogonally connected group.

Definitions

Group: Either a single stone (a group of one) or any number of stones of the same color connected through a continuous series of orthogonal adjacencies.

Play

First player places a single black stone on any grid intersection, after which the second player decides which color they will play (pie rule). Players then alternate taking turns.

On your turn, place a stone of your color on an empty point. Then, if possible, place a stone of your color on an empty point that is orthogonally adjacent to two groups of your color, and keep making such placements until no more are possible.

Bridges and Inline Patterns

There are two basic situations in which a secondary placement is made (Figure 1) – when an empty intersection is (1) the vertex of a right angle between two groups or (2) flanked by groups on both sides. However, secondary placements may cascade, one leading to another. To do so, the primary placement must be within an existing formation of the player's pieces. The most basic formations which lead to more than one secondary placement are those comprised of only two pieces and can be broken into two groups – *bridges* and *inline patterns.*

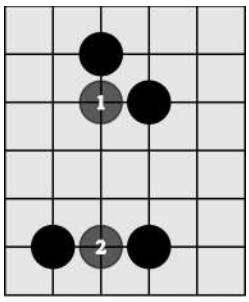

Figure 1.

Bridges

A *bridge* in Hex is a pair of non-adjacent pieces that share two adjacent empty points and can generally be considered to be safely connected (Browne 2000). Scaffold *bridges* differ in structure but are functionally analogous. As in Hex, a Scaffold *bridge* requires a single turn to connect, but two turns for an opponent to sever.

While Hex has a single type of *bridge,* Scaffold has three – a *long, diagonal,* and *knight's bridge*. Each type of *bridge* spans a different distance and can be connected in multiple ways producing a variety of secondary placements. Figure 2 shows the intersections where a stone can be played to connect each type of bridge. In figure 3, the dotted circles indicate the intersections which represent a threat if occupied by an opponent's piece.

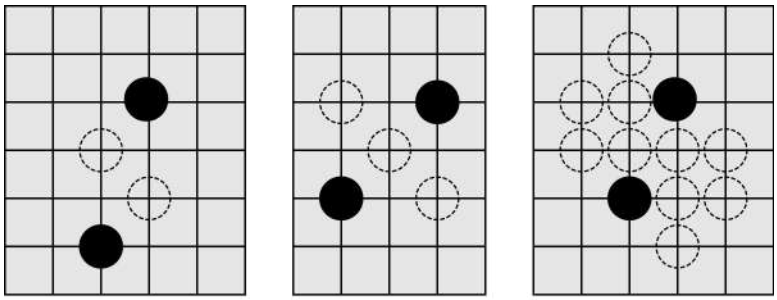

Figure 2. Placements which connect.

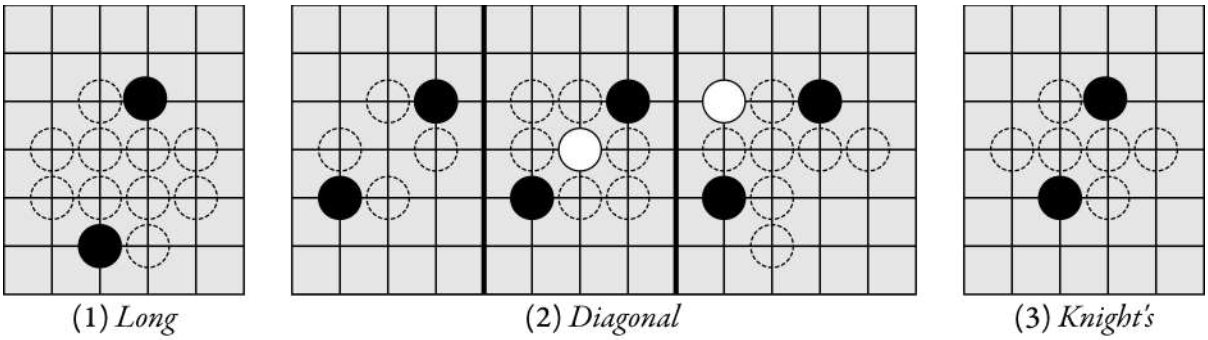

Figure 3. Intersections which represent threats if occupied by the opponent.

Inline Patterns

Unlike *bridges,* the *inline patterns* do not represent safe connections – an opponent can prevent the two pieces from connecting with the placement of a single stone in between them. However, they do traverse long distances and can present a dilemma for an opponent if a separate threat is simultaneously formed. There are two *inline patterns* the *4-inline* and *5-inline* (Figure 4).

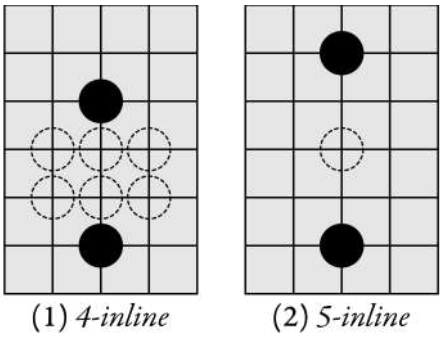

Figure 4. Placements which connect.