A Sampling of Chess and Chip Games

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http://cs.gettysburg.edu/~tneller/games/chessnchips.html
Motivation

• “How could one get the most varied, quality gaming for the least cost?”
• My top 5 game equipment picks for fun and variety at low cost:
  – Pencil and paper
  – Playing cards
  – Dice
  – Chess set
  – Poker chips
• Chess set + poker chips = greatly expanded possibilities
A Sampling of Chess and Chip Games

• Amazons
  – invented in 1988 by Walter Zamkauskas of Argentina
  – “El Juego de las Amazonas” is a trademark of Ediciones de Mente.

• Ataxx
  – Invented by Dave Crummack and Craig Galley in 1988 and was originally called Infection
  – First appeared as a Leland arcade game in 1990
  – Believed to be in the public domain

• Lines of Action
  – Invented by Claude Soucie
  – A focus of AI competition in the annual Computer Olympiads
Amazons

- Object: To be the last player with a legal move.
- Board: square grid (10x10 standard, but smaller works)
- Pieces:
  - 4 Amazons each in light/dark colors (e.g. Chess pawns)
  - Markers to mark “arrows” on grid (e.g. Poker chips)
- Initial setup: (see figure)
- The light color plays first.

On a chess board, pieces can be placed at a3, c1, f1, h3 and a6, c8, f8, h6.

Amazons: Move

• A move consists of two parts:
  – An Amazon of one’s color makes a non-capturing queen move.
  – The moved Amazon then shoots an arrow a non-capturing queen move away from the Amazon’s new space.

• Amazons and arrows block spaces. Amazons do not capture. Pieces may not move on or beyond blocked spaces.

Amazons: Game End

• Play sometimes ends by mutual consent when all Amazons are separated and the number of remaining legal moves is easily counted.

Ataxx

- **Object:** to have the most squares with your color at game end.
- **Board:** 7x7 square grid
  - Variations: some squares may be blocked, hex grid, grid size
- **Pieces:** 2 contrasting color poker chips per grid square, stacked as in Reversi/Othello.
- **Initial setup:** Usually two light-color-on-top stacks in two corners, and two dark-color-on-top stacks in the other two corners.
- **Light goes first.**
Ataxx: Move

• Two types of actions:
  – Move a piece to an empty square 2 away. (by single orthogonal/diagonal steps)
  – Grow a new piece into a square 1 away.

• All opponent pieces adjacent to the destination square are flipped and become your pieces.
Ataxx: Game End

• The game ends when neither player can move (two consecutive passes).
  – Alternatives: “...when the board is full”, “... when a player has no more pieces”.
• Then, the player with the most pieces wins.
• Draws may occur on boards with an even number of squares.
Lines of Action

• Object: To be the first player to connect all of their pieces.
• Board: 8 x 8 square grid
• Pieces: 12 chips in each of two contrasting colors
• Initial setup: (see figure)
• The dark color plays first.
Lines of Action: Move

- Chips move orthogonally/diagonally
- A chip moves *exactly* as many spaces as there are chips of either color along the line of movement. This includes the chip itself.
- A player’s chip may not jump over opponent’s chip(s), but may capture one by landing on it.
- A player’s chip may jump over that player’s chip(s), but may not self-capture.
Lines of Action: Game End

• The game ends when there is a single, completely connected group of one player’s pieces.
  – Connections are made by orthogonal/diagonal adjacency.

• Special case: **simultaneous connection** – a capture move both completely connects the player’s group and removes the only disconnected piece of the opponent.

• Is this a draw?
  – NO. According to the game inventor Claude Soucie and Sid Sackson in his 2nd ed. of *A Gamut of Games*, the player making the simultaneous connection wins.
  – YES. According to Sid Sackson’s 1st ed. of *A Gamut of Games* and most present-day tournament rules, this is a draw.
Conclusion

• These are but a few game possibilities when one combines a Chess set with Poker chips.
• What interesting Chess and Chip games might you invent?
• More Chess and Chip games at http://cs.gettysburg.edu/~tneller/games/chessnchips.html
• Enjoy!
• Sources: A Gamut of Games by Sid Sackson, Wikipedia, Google images