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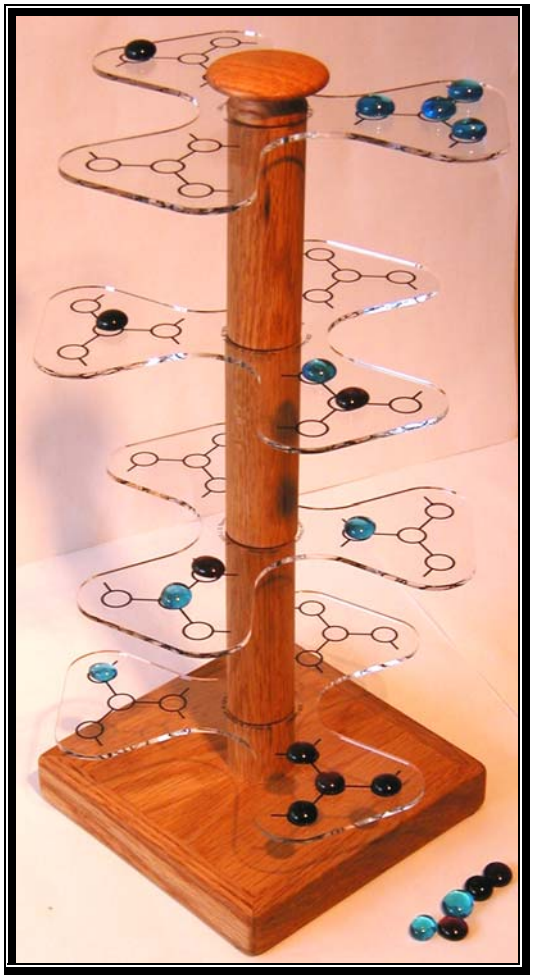
JDB Games

Crystal Draughts™ Game Manual



Crystal Draughts™

Molecular Chinese Checkers

For 2, 3, 4 (in teams of 2), or 6 players ages 8 and above. No knowledge of chemistry or molecular science is necessary to learn and play the game, though the game uses terms and depictions of chemistry concepts.

The Game Board

Parts List:

4 – printed clear plastic boards

1 – square wooden base

3 – 4" wooden posts & 1 – wooden top

36 – colored glass tokens (12 each of two different colors, and 4 each of 4 other colors).

1 – fabric token bag

1—Game Manual

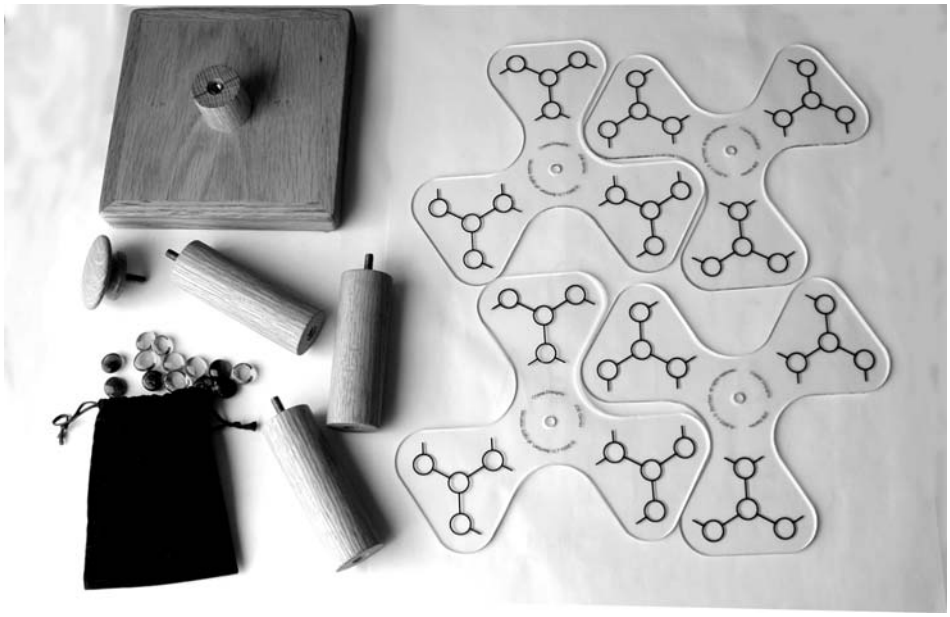


Figure 1 Parts included in the game box. Photo does not include this game manual which is also included.

WARNING! THE TOKENS MAY CONSTITUTE A CHOKING HAZARD TO CHILDREN AGES 3 AND UNDER.

Assembly Instructions

1. Peel the paper backing off of the plastic game boards.
2. Place a plastic game board on top of the base with the holes aligned.
3. Place a 4" wooden post on the plastic board so that the bolt goes through the center hole. Screw the post in firmly. It may help to set the plastic board on its edge or hold the board while you tighten the post securely to the base. Do not over-tighten or damage not covered by the warrantee may occur. (Should you need, replacement parts are available.)
4. Place a plastic game board on top of the 4" wooden post. The plastic boards should all be arranged so that *spaces* between the three playing surfaces on a board align directly above the *playing surfaces* of the level below (see *cover photo*). This should result in a "woven" effect with boards aligned with the empty spaces between boards of the levels above and below.
5. Place a 4" wooden post on the plastic board so that the screw goes through the center hole. Screw the post in firmly. It helps to look at the board from directly above to align the boards. See *Figure 2*.
6. Repeat instruction #4. (Install plastic game board.)
7. Repeat instruction #5. (Install post.)
8. Repeat instruction #4. (Install plastic game board.)
9. Screw the wooden top through the hole on the last plastic board. Again it may help view the game from directly above to keep the game set aligned as you tighten the top piece.
10. Separate the game pieces into separate colors.

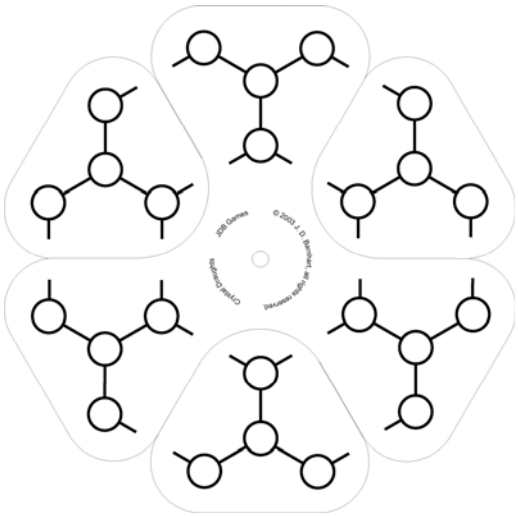


Figure 2. Top view of Crystal Draughts showing the alignment of two tiers.

Terms to Know

Molecule: Each printed pattern of 4 circles connected by lines is referred to as a **molecule** (see *Figure 3*). There are three **molecules** on each *tier* and twelve **molecules** total on the game board.

Tier: Each plastic board on a different vertical level with three *molecules* on it is a **tier**.

Atom: Each small circle on each *molecule* is called an **atom**. Atoms are the game spaces. Each atom will contain only one token (*electron*) at a time.

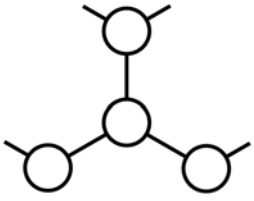


Figure 3. A molecule.

Path: The lines of travel between *atoms* are **paths**. *Electrons* travel along paths between *atoms*. Paths also include the lines appearing to lead off the board, which connect *atoms* between adjacent levels. The inter-level paths are easier to see from directly above the game board. The matrix of paths forms a woven 3D fabric of hexagons around the center post. Paths do **not** lead from one *molecule* of

a *tier* to another *molecule* on the same *tier*. Paths between *molecules* always change vertical levels.

Electron: Each token is an **electron**. Each time a token is placed upon an *atom* it "charges" the *atom*.

Dimension and Molecular Structure: **Crystal Draughts** uses an actual representation of three **dimensions**: height, width, and depth. It is also a representation of an imaginary *crystal molecule* with each circle viewed as an atom, and the lines as connecting paths of electrons. The lines which do not connect directly to circles lead to the lines directly above and below on the interwoven layers of boards— providing a network of connectivity throughout the board. This connectivity can be seen more clearly when the board is viewed from directly above.

Crystal: The entire game board is an imaginary **crystal** comprised of individual **molecules** in a 3D woven fabric.

Vertical Paths

A visible path directly connects atoms of each molecule. Vertical paths between molecules use the unconnected lines of atoms (see *Figure 4*). The path leads from the unconnected end of the line to the level above or below and to that side of the origin molecule. It is easy to see how the unconnected ends line up if you view the game board from directly above.

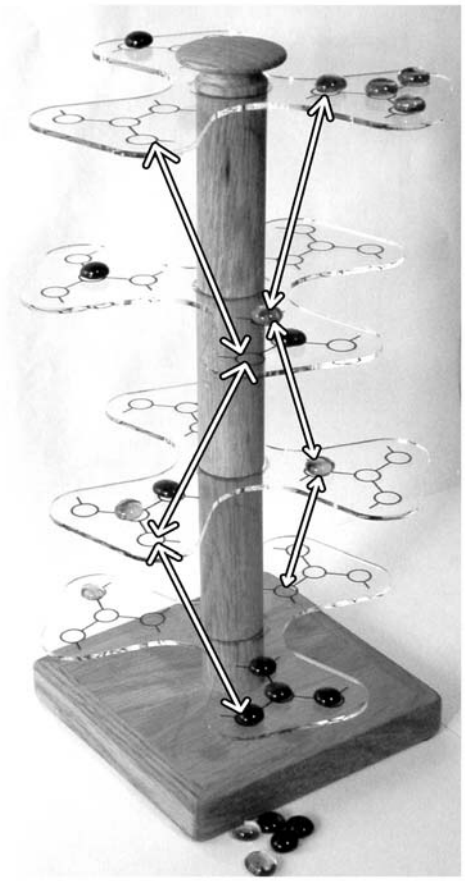


Figure 4. Arrows showing some examples of vertical paths between atoms of different molecules on the Crystal Draughts game board.

To Play the Game

Two-player Game

The players each choose 12 of a unique single color of tokens (called electrons) each. One player choose the top tier, the other the bottom, and each cover all atoms on his tier with his/her tokens before the start of the game. Decide who goes first, and alternate turns.

On each turn, a player may move either one of his/her electrons to an atom one path away, or jump over an electron with one of his/her electrons. To jump an electron, the neighboring atom one path away must be occupied by an electron (charged), and the destination atom one path beyond that must be unoccupied (uncharged). You may jump across any player's electron. A series of jumps may be completed in one turn if there are a series of occupied and unoccupied (charged and uncharged) atoms forming a chain of single jumps all the way. No electrons are removed when jumped.

The object of the game is to transfer all your electrons across to the other end of the crystal (game board) first. The top goes for the bottom and vice versa.

Four players may participate in teams of two. Turns are rotated among team members as well as teams alternated. Players of the same team share the same color electrons.

Six-player Game

Each player chooses four tokens of one color. Each player should have a different colored group of four tokens from one another. Before the game each player chooses a molecule on either the top or bottom tier and covers the atoms with their tokens (electrons).

Play follows as in the two-player game with each player taking a turn. The object of the game is to be the first player to get all of your electrons to the opposite molecule at the other end (top or bottom) of the crystal (game board). Moves are of either a single path or a jump as in the two-player rules.

Three players may participate by each choosing four tokens as above in the six-player version. Each starts on a molecule of the same tier (top or bottom) and races the others to the opposite molecule on the other end of the crystal to be first to get all his/her electrons to the destination and win. A variation of this is to have the destination be any atom on the other end of the crystal from the starting tier.

Watch for More Game Variations on the JDB Games Website

There are more games possible on the Crystal Draughts game board. We have provided this initial game to introduce the board, but we will post variations we receive from players and our own different games as we develop them.

Keep watching the JDB Games website at: www.jdbgames.com for more games involving use of the **Crystal Draughts** game board as well as to explore other fascinating games: