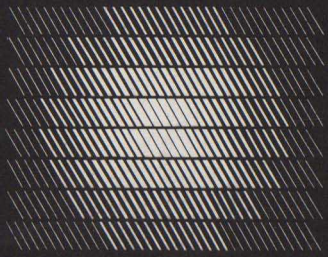
VideoBrain™

Family Computer
Cartridge Program
Instructions



Entertainment

Checkers
EN04

For best results,
read this brochure before
using cartridge

VideoBrain™

Dr.Samuel's Checkers

Entertainment Cartridge

- A computerized update of the old favorite
- For adults and children 7 and over

FOR BEST RESULTS READ THIS BROCHURE BEFORE USING CARTRIDGE

Cartridge #EN04

Dr. Samuel's Checkers Introduction

Dr. Arthur Samuel is a Professor Emeritus at Stanford University who has been a pioneer in the computer industry from its very beginning. In 1949 he joined IBM and has been involved with just about every phase in the research and development of digital computers. He wrote the first computer checker program to run on an IBM computer as a means of investigating new techniques of artificial intelligence.

Since 1966 Dr. Samuel has been in the Computer Science Department at Stanford University. He holds over 50 U.S. patents and has published many technical papers. He was made a fellow of the American Physical Society, of the Institute of Radio Engineers and of the American Institute of Electrical Engineering and has received numerous other professional honors.

Now, thanks to Dr. Samuel's brilliant work—and the advanced technology of VideoBrain—four clever, if not relentless, computerized opponents are here to play checkers with you in your own home tonight!

Meet Abe, Betty, Charlie, and Dorothy.

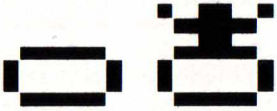
And . . . good luck!

The Basic Rules of Checkers

Checkers is a game played on a checker board in which two opponents take turns moving one of their pieces.

Objective
The objective of checkers is to have the last move, usually by capturing all of your opponent's pieces.

Pieces
Pieces are of two kinds: MEN and KINGS



MEN can only move forward toward the opposing side of the board. MEN reaching the last row on the opponent's side become KINGS. KINGS can move backward and forward.

Moves and Jumps
Pieces move along diagonals, one square at a time except when "jumping" an opponent's piece. Opponent's pieces are "captured" by jumping and removing them from the board.

A jump move *must* be made whenever such a move is available. To jump, you must have one of your pieces in position next to an opponent's piece, along a diagonal in a legal direction, and with an empty square just beyond the opponent's piece in the same direction. You then move your piece to this empty square and VideoBrain removes the captured piece.

Occasionally, it is possible (and also compulsory) to jump more than one piece when the jumping piece lands on a square which puts it into a position to make still another jump. There is one exception to this rule: a piece promoted to KING on reaching the last row cannot continue to jump until after an opponent's move.

Inserting the Cartridge

1. Make sure your VideoBrain computer is attached to your TV as described in the Owner's Manual. Check that power is on.

2. Push the cartridge carrier release button above the VideoBrain keyboard in order to swing the cartridge carrier door up.

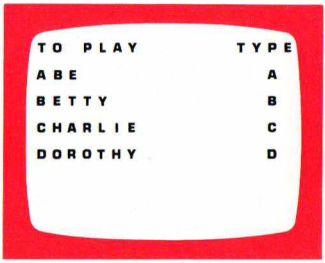
3. With the label facing up, slide the cartridge all the way into the tracks suspended from the cartridge carrier door.

4. Gently push the cartridge door down into the computer until it locks.

5. Push the *Master Control* button. The title of the cartridge should appear on your TV for two seconds.

Operating the Program

After two seconds, the title display on your TV screen will change to look like this:



Dr. Samuel's Checkers gives you a choice of four different opponents —each with a different degree of skill. All the opponents use the same program, it's just that Dorothy looks further ahead in the game than Charlie, Charlie looks further than Betty, and Betty looks further ahead than Abe. The extent to which they look ahead does give these computerized opponents certain personalities.

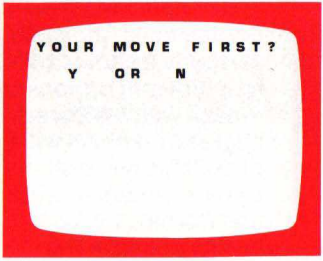
ABE is quick, aggressive, not very bright, but he'll beat you soundly if you're out of practice.

BETTY is quick and pretty sharp, perhaps the most satisfying player.

CHARLIE is a real challenge.

DOROTHY is conservative and very difficult to beat. You'll need all your strategic skills to win.

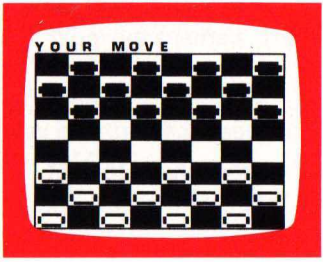
Make your opponent choice and type in the letter A, B, C, or D on your VideoBrain keyboard. Then this display screen will appear:



If you want the first move (it gives you a certain advantage and children generally prefer it) type Y for "YES." If not, type N for "NO."

The next screen on the VideoBrain Checkers program will display an actual checkers board, the pieces lined up for play.

The BLACK pieces (actually outlined in red) always play first, so if you've typed Y, the checker board is shown with your BLACK or outlined pieces at the bottom of the board. The message YOUR MOVE is displayed and a small square spot (called the cursor) will appear somewhere on the board.



If you typed N, the VideoBrain will play BLACK and it will move first. Your RED, or solid, pieces will appear at the bottom of the screen.

Joystick Operation

Moves are made by using the *Joystick* (you may have to rotate the lever a few times to get it warmed up) to guide the cursor to the piece you want to move, and then to the square you want to move it to.

When you have the cursor in the same square as the piece you want to move, push the *Hit Button* on the side of the *Joystick*. You will find it easiest to push the *Hit Button* as the cursor moves over the square rather than trying to stop the cursor on the square.

If the selected piece can move, a corner of the square will begin to blink.

If the selected piece cannot move, a *try again* message will inform you of this fact and you must select a different piece.

When you have the cursor on the square to which you want to move the piece, push the *Hit Button* again and the piece will automatically move to that square.

If you try to make an illegal move, VideoBrain will signal

and wait for you to make a legal move. After four illegal attempts on the same piece, VideoBrain will cancel the piece selection and ask you to select a new piece to move. (This is handy if you change your mind about which piece you want to move.)

If you have a double jump (see explanation on page 4) make the first jump as described above. VideoBrain will then prompt you by displaying

Now move the cursor to the next square and press the HIT button again. If you have a triple jump, repeat this process once more.

How the Computer Moves

When it's VideoBrain's turn to play, it shows you that it's thinking: you'll actually see blinking lights at the top of the screen displaying computer memory changes.

When it makes its move it signals you with a "beep"—then repeats the move in four instant replays so you can see what it did.

If, at the end of the game, the computer sees that your winning is inevitable, it is programmed to let you take its last piece so you can go on to a rematch. The computer will not recognize a draw.

How VideoBrain Decides Its Moves

You and your computer do not think the same way.

VideoBrain looks at a multitude of possible moves for several turns ahead—including many sequences that you would immediately recognize as trivial or suicidal.

As the table below shows, the program looks farther ahead when you select the tougher opponents:

	Minimum Number Moves			Maximum Number Moves		
Game	**Computer**	**User**	**Total**	**Computer**	**User**	**Total**
Abe	2	1	3	6	5	11
Betty	2	1–2	3–4	6	5	11
Charlie	2–3	2	4–5	6	5	11
Dorothy	3	2–3	5–6	6	5	11

The program looks ahead the *minimum* number of moves if none of those moves are jump moves and looks further ahead if some or all of them are jump moves. The minimum is not fixed for Betty, Charlie and Dorothy but depends upon the number of different moves available at the time.

VideoBrain looks for combinations of moves that will either take more of your pieces, give it more KINGS or give it control of the center of the board without losing king row control. It is precise and thorough and will leap on you like a fiend if you make a mistake. Nonetheless, the computer has no concept of long-range strategy or what a generally good position looks like (such as pinning your opponent to the edge of the board with your KING.)

In short, the computer's strength is that it looks at many alternatives very thoroughly and very quickly. Relatively speaking, the strength of the human mind is that it can exercise much better judgement about which alternatives are more worthwhile to look at and to pursue with a move. You also have another advantage over Abe and his friends—you can learn to play checkers better and better but Dorothy will never get any smarter than the first time you play her.

Note: Dr. Samuel's Checkers is a very sophisticated program. Though it has been tested extensively, there are many sequences of moves which you will be the first to play on this computer. If your opponent ever acts strangely (or breaks the rules) we would appreciate very much your writing the details of the infraction down and sending them to the VideoBrain Computer Company.

Dr.Samuel's Checkers is just one of many exciting cartridges brought to you by the VideoBrain Computer Company. We suggest you try all the VideoBrain Cartridges to help you around the home, educate your children and entertain the whole family.

Money Management

VB-59 The Programmable
VB-81 Financier
VB-1000 Money Manager
VB-1200 Information Manager

Communications

CM01 Timeshare

Education

ED01 Music 1
ED02 Math Tutor 1
ED03 Wordwise™ 1
ED04 Wordwise™ 2
ED05 VideoArtist™
ED06 Lemonade Stand
ED07 Music Teacher 2

Entertainment

EN01 Gladiator
EN02 Pinball
EN03 Tennis
EN04 Checkers
EN05 Blackjack
EN06 Vice Versa™
EN07 Challenge Racer
EN08 Music Programmer

Limited 90-Day Warranty on Cartridges:

For 90 days from the date of purchase, VideoBrain Computer Company will repair any defect in material or workmanship in this Cartridge free of charge.

To obtain warranty service, return the Cartridge post-paid, with sales receipt showing date of purchase, to the VideoBrain Service Center with address shown below.

Under no circumstances will VideoBrain Computer Company be liable for any special, incidental or consequential damages resulting from use or possession of the VideoBrain or its accessories. However, some states do not allow the exclusion or limitation of incidental or consequential damages, so that the above limitations or exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

150 South Wolfe Road
Sunnyvale, California 94086

Printed in U.S.A.