

# PRODIGY<sup>TM</sup>

## COMPUTER CHESS COMPANION

### OPERATION MANUAL



 **DESTINY<sup>®</sup>**

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## THE GAME OF CHESS

### The History of Chess

In the fifth century A.D., a game called "chaturanga" made its appearance in historical records in northwestern India. "Chaturanga" as it was played then is easily recognizable, with few differences, as our modern chess. The game spread west into Persia, and from thence along the ancient trade routes to the shores of the Mediterranean, reaching Europe by about 1000 A.D. The Norman Conquest brought chess with it into England; the Spanish soldiers and French explorers introduced it first into the New World of the Americas. By the 17th century chess had developed the exact form we enjoy today, although slight rule variations have been added, and fashions in strategy continue to change from decade to decade.

### The Game

Chess is the classic game of maneuver and control. It is played on an 8x8 *board* between two players, each with initial armies of 16 *pieces* set up as shown (Figure 1):

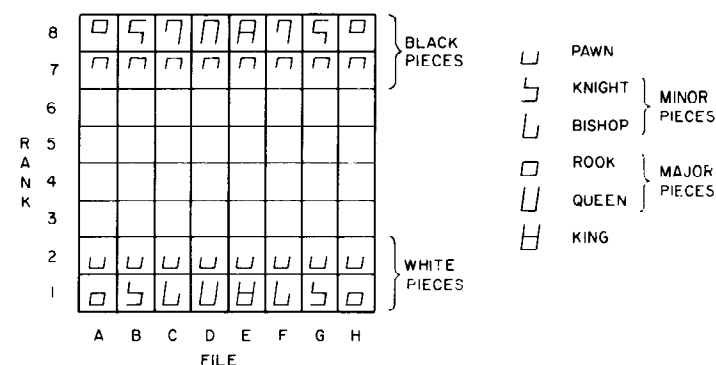


FIGURE 1

The players take turns, starting with White, each moving one piece per turn with the goal of capturing the enemy King. Only one piece can occupy a square at a time, and an enemy piece may be *captured* by occupying its square and removing it from the game.

The eight columns or *files* of the board are lettered A-H and eight rows or *ranks* are numbered 1-8 as shown. Each square is identified by its file and rank; thus the Black King is initially on square E8.

### The Pieces

There are six kinds of pieces as shown, each with its own pattern of movement:

*The Pawn*, represented by [ U ], can advance along its file in the direction of its open end one square per turn onto an unoccupied square, as shown by the solid arrow in Figure 2. It is, however, able to capture an enemy piece diagonally ahead of it, as shown by the dotted arrows, and is the only chess piece to move and capture differently. The Pawn is the foot soldier of chess, needing support from the other pieces to advance safely, but vital in holding territory. See also Double Advance, En Passant, and Queening below.

*The Knight*, represented by [ ♃ ], moves obliquely, 2 squares laterally and 1 to either side, as shown in Figure 2. It does not travel directly over any other squares and therefore cannot be blocked, making the Knight ideal for behind-the-lines raids. It is worth about three pawns.

*The Bishop*, represented by [ ♜ ], moves diagonally any number of empty squares as shown in Figure 2. It may capture an enemy encountered on the diagonal, but cannot continue beyond an occupied square. A Bishop can never encounter its brother since they are confined to squares of opposite color, but is a nimble piece, able to cross the board in a single move. It is worth about three pawns.

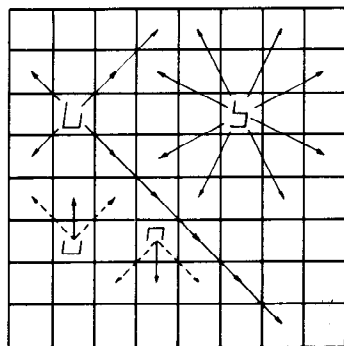


FIGURE 2

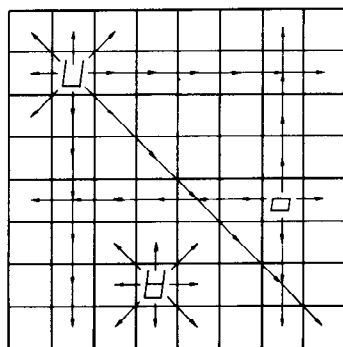


FIGURE 3

*The Rook*, represented by [ ♖ ], moves laterally any number of empty squares as shown in Figure 3. It may capture any enemy encountered, but cannot continue beyond an occupied square. Although too valuable and confined to risk in the opening game, it is a powerful piece, able to force checkmate of a lone enemy king. It is worth about five pawns. See Castling below.

*The Queen*, represented by [ ♚ ], moves diagonally or laterally any number of empty squares as shown in Figure 3. It combines the moves of bishop and rook and is the most powerful piece by far, but must be used carefully since its uncompensated loss is generally fatal. It is worth about nine pawns.

*The King*, represented by [ ♔ ], moves one square in any direction as shown in Figure 3. It is vulnerable to attack if exposed, but must nonetheless be ready to play an active role once the major pieces have been captured. It is of course invaluable; any other piece must be sacrificed if necessary to save the King. See Castling below.

If a player moves so that he could capture the enemy King with his next move, the King is said to be in check, and is customary to warn the opponent of this. It is illegal for a player to expose his own King to check, or to leave it in check when it can be saved. If it cannot be saved, the check is *checkmate*, and the game is then ended before the King is actually captured. A game is considered a draw if neither player can proceed to checkmate. A player must move when it is his turn, but if every move would expose his King to capture and thus be illegal, the game is considered a *stalemate* or draw; achieving this may be the strategem of last resort for a losing side.

## Special Moves

To improve the pace of the game, the following special moves have been added:

*Double Advance and En Passant.* For faster development, a pawn may advance two squares, provided they are unoccupied, from its initial position. However, this is not intended as a move to bypass an enemy pawn that would have been able to capture had single advance been made. In such a situation (Figure 4), the double advance is permitted, but the opponent has the *en passant* option, for his next turn only, of returning the pawn to a single advance and capturing it there.

*Queening* If a pawn successfully reaches the opposite edge of the board, it is *promoted* to any other piece, except a duplicate king. The choice is usually a queen, and this dramatic increase of power makes the advance and *queening* of a pawn the critical feature of the end of many games.

*Castling* safeguards the king while centralizing the rook. If a previously unmoved rook can move next to the previously unmoved king and be unattacked there, the player may place the king on the other side of the rook (Figure 5). Castling out of check is not permitted.

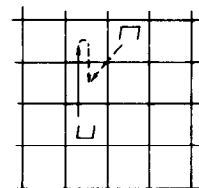


FIGURE 4

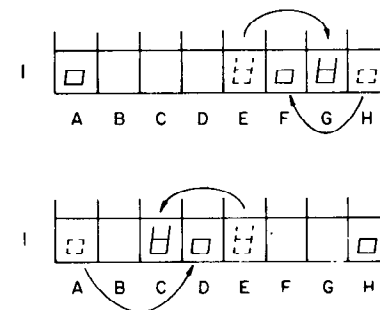


FIGURE 5

## II. HOW THE PRODIGY WORKS

PRODIGY is the newest Destiny chess computer from Applied Concepts, Inc. It is the only low-cost electronic chess game on the market today allowing for both complete sensory play, or keyboard input play. Moves can be made on its sensory playing board or entered on the 20 position keyboard. Or, the game can be played using both modes of input.

### The Sensor Board

Each square on the chess board is identified by a file letter and a rank number. An LED light is also placed vertically alongside each rank (on the left side of the playing board) and horizontally on each file (along the bottom of the board). See Figure 6.

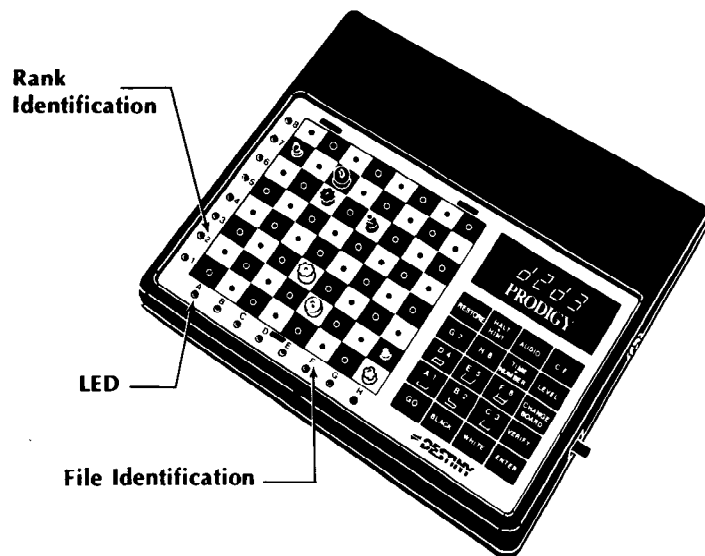


FIGURE 6

In the middle of each square is the sensor socket which can hold the pegged chess pieces. Merely pressing the piece slightly in the socket identifies for PRODIGY the piece you are moving. Moving the piece to the desired square and pressing it in its new socket tells PRODIGY the square to which you have moved.

PRODIGY indicates his move by the LED lights on the playing board. For example, if he wants to move C7 to C5, he would first light the LED's on the 7 rank and the C file. As you press the pawn slightly into the socket and remove it, PRODIGY will light the LED's on the 5 rank and the C file, indicating the square to which he wants the piece moved.

All moves are also displayed algebraically on the PRODIGY's display, but it is not necessary to verify those moves unless you choose. A complete game can be played using the sensory playing board alone.

### Key Pad

PRODIGY also has a 20 position key pad which allows you to play chess with it by keying in the entries on the key pad. You will note that eight of the keys have both letters and numbers on them. These keys allow you to play on a separate chess board if you do not wish to use the sensory board and pieces. When PRODIGY outputs his move, he will not normally allow other entries until his move has been made by you on the sensory board. To circumvent this, when playing with a separate board, simply press [ENTER] on the key pad to indicate that PRODIGY's move has been made elsewhere.

Six of the key pad keys are identified with PRODIGY's special chess piece symbols. The piece symbols are used in setting up the board or changing the board for special chess play. (See CHANGE BOARD in the Special Features Section of this manual.)

When you make your move, key in the square you *moved* from immediately followed by keying in the square you moved to, using the multipurpose keys.

Example: After advancing your king pawn two squares, press these four keys:

E2 E4

You can check that the display shows your move correctly. If there is an error, clear the entry using the [CE] key and start over. When the display is correct, enter the move by using the [ENTER] key. PRODIGY will indicate his move both in the display and on the sensor board. Other keys on the key pad will be explained in the Special Features section of this manual.

### III. PLAYING A GAME WITH THE PRODIGY

1. Remove the plastic chess board cover and place nearby. This cover can serve as a receptacle for captured pieces.
2. Set up the chess board, inserting the chess pieces into the sensor sockets on the appropriate squares. Remember that generally you play White, the computer plays Black. Verify on each side of the board that the Queen is on her color.
3. Switch the PRODIGY On. The display will indicate Level 0. NOTE: This is the only time Level 0 can be played. There is no 0 on the key pad for switching back to Level 0 from a higher Level.
4. Determine the level of play that you choose. By pressing the [LEVEL] key and the number that you wish to play on (the PRODIGY has nine levels of play 0 - 8). Then verify in the display that the appropriate level is noted, and press [ENTER].
5. Make your move on the chess board. Lightly press the piece you wish to move, then remove it from the socket and place it in the socket on the square you wish to move to and press again lightly. You may want to verify that PRODIGY got your move by watching the display. It will momentarily show the algebraic notation of the square you moved from and the square you moved to.
6. After you have made your move, PRODIGY will begin calculating his own move. When he has decided on the move he will light the LED of the rank and the LED of the file of the piece that he wants moved (he will also indicate the algebraic notation of the move in the display). Press the piece lightly in its socket, remove it and move it to square designated by the two lighted LEDs and press again. The LED lights will go out when you have made the appropriate move. NOTE: If you have attempted to move to the wrong square PRODIGY will not accept this move and will not allow the game to go forward until you have made the correct move.
7. If you make an Illegal Move when it is your move, PRODIGY will emit a low pitched tone and display four question marks in the display. It will then display the algebraic notation of the illegal move you made. It is only necessary then to move the piece to the correct location. If you have started to enter a move and change your mind, or have made an error in entry, press [CE] on the key pad to clear the display and start over. If you stalemate PRODIGY he will beep 8 times and show (St) on the display.
8. If you Checkmate PRODIGY, he will beep 8 times then display (LOSE). To start a new game press [ENTER].

#### Entering Special Moves

**Queening.** PRODIGY automatically turns a pawn into a queen when it reaches its far rank. You can override this if you wish; see Underpromotions in the Special Features section.

**En Passant.** When making the en passant move, just move your pawn diagonally one square and remove PRODIGY's captured pawn.

**Castling.** When castling, move the King first before moving the rook. Or, if entering moves from the key pad, enter the move for the King only. For example, E1 C1 describes queen side castling, and E1 G1 describes king side. By the same token, PRODIGY will tell you in a similar fashion when he has decided to castle. He will give you the king move first.

### IV. SPECIAL FEATURES

The PRODIGY plays an improved version of the world famous Morphy program. At level 0 it is a wonderful teacher as well as stimulating chess partner. At the higher levels it will challenge even the most skillful chess player. The following are some of the special features of the PRODIGY with its Morphy program.

#### Audio ON/OFF

The PRODIGY is equipped with a feature that allows you to turn off the audio responses should you desire. Just depress [AUDIO] key to stop the sound. Depress it again and the sound will return. The audio function is always ON at the start of any new game.

#### Opening Book Moves

For your enjoyment PRODIGY has the versatile Morphy opening book, and he can select randomly from a repertoire of over 50 different opening lines. Some lines are played often, others seldom enough to surprise.

The opening book is designed to afford you maximum variety in the style and character of the opening and the whole game.

#### Restore

The Restore key allows you to take back moves during the game. Each time [RESTORE] is pressed, both PRODIGY's last move and your last move will be unmoved. It will be up to you to restore the board to its positioning depending on the number of moves you have taken back. It may be necessary for you to verify positioning utilizing the VERIFY function of the PRODIGY. (See below) PRODIGY only allows up to three pairs of moves to be taken back at one time.

#### Level

PRODIGY has 9 levels of play designed to challenge players of various strengths and/or patience. To set the desired level press the [LEVEL] key. You will note that level 0 is only obtainable when you power ON. To change the level press any one of the 1-8 keys. The new level number will be displayed in place of the 0. Now press [ENTER]. PRODIGY's level of play may be changed whenever it is your move in the game. While PRODIGY is thinking, you may display the current level but you cannot change it (press [ENTER] to return to normal display).

The Levels and their meanings are as follows:

Level	Description
-------	-------------

- |   |   |
|---|---|
| 0 | A special beginner's level or used for speed chess. PRODIGY finds any mate in one at this level. Power On is the only time this level is available. |
| 1 | A fast paced game. Playing strength is about USCF 1000.   |
| 2 | The whole game should last about 1 hour (if you move at PRODIGY's pace). Playing strength is about USCF 1200.                                       |
| 3 | PRODIGY can solve any mate in two problem at this level. Playing strength is about USCF 1400.   |

- 4 PRODIGY should have no trouble making 40 moves in 90 minutes at this level.
- 5 PRODIGY can solve any mate in three problem at Level 5. For the patient player, PRODIGY provides solid chess approaching the 1800 level.
- 6 At level 6 playing PRODIGY is more like postal chess. A single game could last up to a month. At this level PRODIGY can find some mate in four problems.
- 7 Tournament Level designed to play 30 moves per hour.
- 8 Tournament Level designed to play 40 moves every two hours (120 minutes).

### Changing Sides

You may change sides with PRODIGY at any time during a game. Just press [GO] key when it is your turn to move. PRODIGY will immediately begin thinking with colors reversed. If you wish to play Black from the start of the game, press [GO] instead of making your initial move.

### Hint

You can use PRODIGY as a Chess Tutor, to see what he would do in your place. When it is your turn to move, press the [HALT/HINT] key. PRODIGY will suggest a move on the feedback/move indicator. To play the suggested move, either make the move on the sensor playing board, or if you're using the key pad for entry, press the [ENTER] key. The Hint feature is not available when PRODIGY is playing from his opening book. Also, no hint is available immediately after changing the board.

### Halt

While PRODIGY is thinking he flashes the best move he has found so far on the display. You can halt PRODIGY's thinking and force him to make that move by pressing [HALT/HINT]. Immediately the LED lights will indicate on the sensor board indicating the desired move. The Halt feature is useful if you have PRODIGY set on a high level and are now tired of waiting for his move, or if you discover that you have just made an error.

### Timer

PRODIGY is equipped with an automatic chess clock. The Timer keeps track of the amount of time taken by each player during a move, it also gives the total amount of time taken by a player as well as the move number of the current move. For example, to check the time for the current move, press [TIME NUMBER] followed by either [BLACK] or [WHITE] to show how much time black or white has taken for the last move. You may press the other color key to see time for that color. The display will indicate time in minutes and seconds until the time elapsed has passed one hour, then the indicator will be the time in hours and minutes. For example, ten minutes and 8 seconds will show:

1008

If the time has been two hours and 14 minutes the display will show:

- 2 14

If you press [TIME NUMBER] a second time, you will get the total overall time taken in playing the game by that color. If you press [TIME NUMBER] a third time it will give you the move number of the move you are currently anticipating. While displaying the time for the current move, the total time, or the move number, you may easily examine these numbers for either side by pressing either [BLACK] or [WHITE].

### Verifying The Board

This is a very helpful feature to verify the sensory playing board if you come up with an illegal move that you do not understand. Here is how Verify works.

1. Press [VERIFY]
2. Press [WHITE] and then the symbol for Pawns [ P ]. The LED's on the playing board will show the position of the first pawn. For example, if it were the pawn at A2 the LED on the 2 rank and the LED on the A file would light.

To verify the positions of the other pawns you continue to press [VERIFY]. It will move first through the files and then through the ranks until you have located all of the white pawns.

When you are ready to verify the white rooks, press the symbol for rook [ R ] followed by [VERIFY] until you have located all the White rooks. To locate where the Black pieces are press [BLACK] and the symbols for each piece followed by [VERIFY] until all pieces are found.

This is a helpful procedure if you have used the Restore function and need to verify the positioning on the board. To resume the game after verifying positions, press [ENTER].

### Changing The Board

This special feature of PRODIGY allows you to easily set up the sensor board to handle chess problems. There are two ways to change the sensor board to set up a chess problem.

1. After power ON, set the board for a regular game. Then press [CHANGE BOARD]. To move a pawn from D2 to D4, press the pawn located at D2 and move it to D4, pressing it lightly to activate the sensor. To remove all other White pawns on the board you simply press each pawn and remove it. The lights blink out to indicate that piece has now been removed from internal memory. To locate the White King on G5, press the King at its current position, move it to G5 and press again to activate the sensor. You may remove all remaining pieces simply by sequentially pressing and removing them. This leaves white with only a pawn at D4 and a King at G5. The same procedure may be followed to set up the starting position for the black pieces.  
Or if you prefer;
2. After power ON, immediately press [CHANGE BOARD] followed by the [CE] (clear) key. This removes all pieces from PRODIGY's internal playing board. To add white pieces to the empty board, you press [WHITE], and, if you are entering white pawns, then press [ P ]. Press all desired white pawns in their sockets sequentially. To enter a White King at G5 press [WHITE] [ K ] and then press the King into the sensor socket on the G5 square. To add the Black pieces you would

press the [BLACK] key, the piece identification key, and merely place the appropriate piece in the sensor socket on the square that you wish it, pressing down to activate the sensor. (There is a third way of course, and that is keying in to the PRODIGY not only the color and piece keys, but the algebraic notation of the location of the square where you want it.) To begin play, exit Change Board by pressing [ENTER].

**Important Note:** The color whose piece is changed last will have the first move. If at the beginning of play of your chess problem you want it to be White's move then it is important for you to enter Black pieces first and then White's pieces. Once you have the board set up the PRODIGY will automatically assume that it is White's move. If you want it to be Black's move then enter White's pieces first, and then Black's pieces.

#### Underpromotion

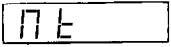
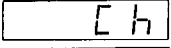

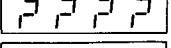


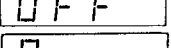
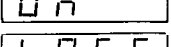
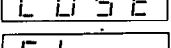
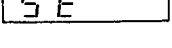
PRODIGY automatically promotes a pawn to queen when it reaches the eighth rank. If you want to promote a pawn to a lesser piece than a queen, you may perform your move through the Change Board technique outlined above. Remove your pawn on the seventh rank and create the promoted piece on the eighth rank.

#### Illegal Moves

As noted earlier PRODIGY will not allow illegal moves. If you make an illegal move when it is your turn, PRODIGY will indicate by a low pitched tone and four question marks on the display. Return your piece to its original square and move again — PRODIGY will automatically disregard the illegal entries. If you attempt to make an improper move while making PRODIGY's move, PRODIGY simply will not allow it. The LED lights will stay on indicating that you have not positioned his piece properly, and play cannot continue until the move is corrected.

#### Messages

The PRODIGY has certain messages it gives you on its display. The following are those messages:

	=	PRODIGY HAS MATED YOU
	=	PRODIGY HAS CHECKED YOU
	=	LEVEL
	=	ILLEGAL MOVE
	=	WHITE
	=	BLACK
	=	AUDIO OFF
	=	AUDIO ON
	=	YOU HAVE MATED PRODIGY
	=	STALEMATE

If you put PRODIGY in check, the check indicator does not come on. However, if PRODIGY checks you, the indicator does come on. If you make an illegal move the message is shown on the display. If you attempt to move PRODIGY's pieces illegally it simply will not permit the game to proceed.

#### Optional Power Adapter

The PRODIGY has optional power adapters (either 115 or 220 VAC) available that may be used to power the unit or charge the NiCad batteries (if you have them).

#### Battery Compartment

The PRODIGY has a battery compartment that will accept 6 C-cells. To open the battery compartment for installing or changing batteries, slide a pen knife, nail file or similar tool into the three battery compartment lid latches and snap it open. You may install either 6 alkaline or 6 NiCad cells into the compartment (user supplied) respecting the polarity engraved inside the compartment. The NiCad batteries can be recharged overnite using the optional adapter with the switch in the "OFF" position. CAUTION: Do not operate the unit with alkaline or other non-rechargeable batteries with the power adapter or leakage of battery acid into the battery compartment may result.

## V. CARING FOR THE PRODIGY

The unique design of the PRODIGY allows you to keep the pegged chess pieces in the sensor sockets on the different squares on the playing board. By installing the locked chess board cover securely on the PRODIGY, you may carry it with you anywhere. The pieces cannot fall out of their sockets.

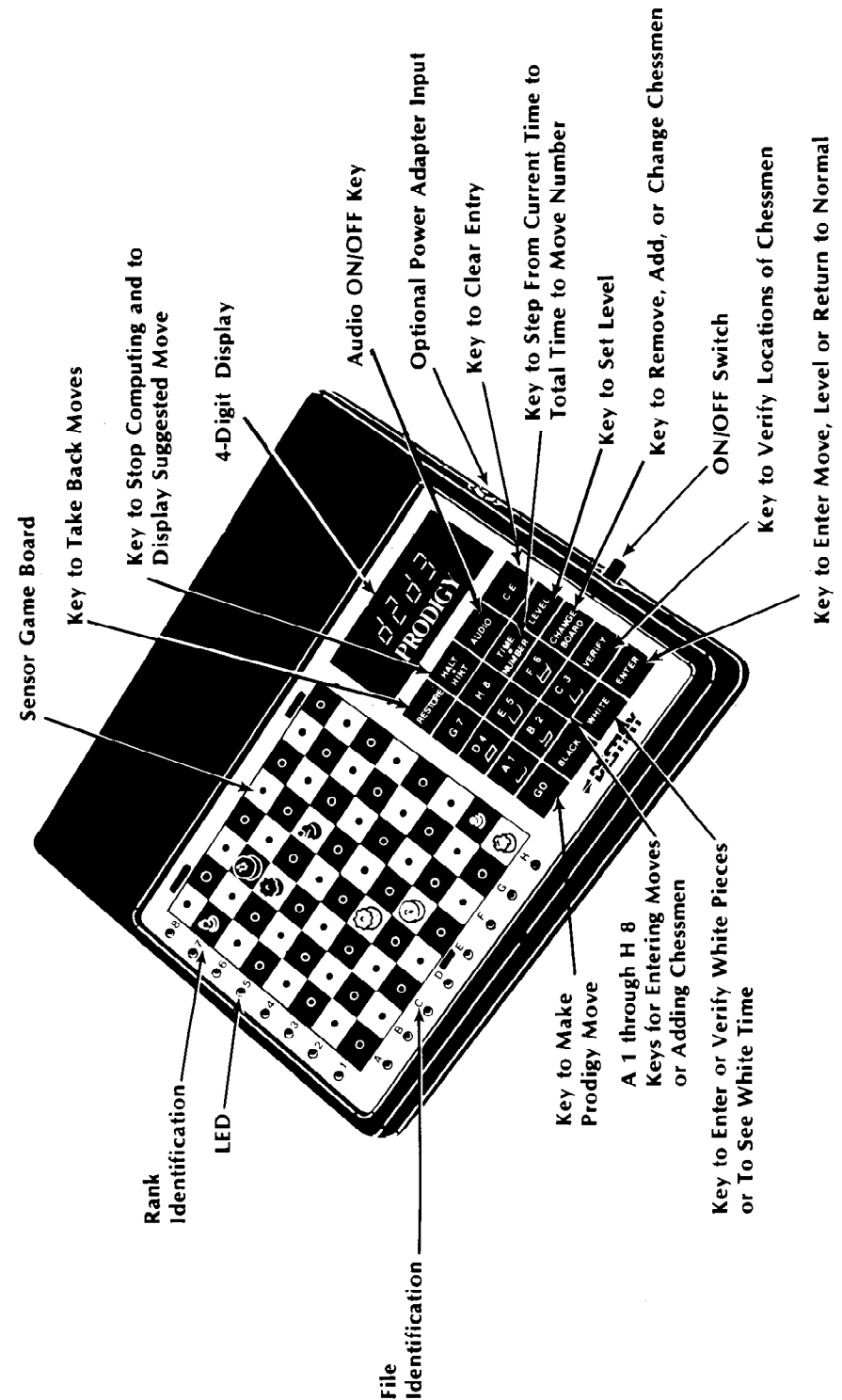
Obviously the PRODIGY is a sensitive, electronic micro-processing computer and appropriate care should be taken with its use at all times. Such care will ensure years of trouble-free, enjoyable entertainment.

1. In cold, dry climates, discharge any static electricity your body may have acquired before handling the PRODIGY.
2. Avoid exposing the PRODIGY to temperature extremes.
3. Avoid exposing the PRODIGY to moisture (for example, spilled drinks or rain).
4. Avoid complete battery discharge.

### Factory Service

If the PRODIGY does not perform as it should, and you are following instructions, check your electrical outlet voltage or use a different outlet. Improper voltages will often cause a problem. If a problem still exists, record the events and moves leading to the problem and contact the Factory by mail or phone.

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