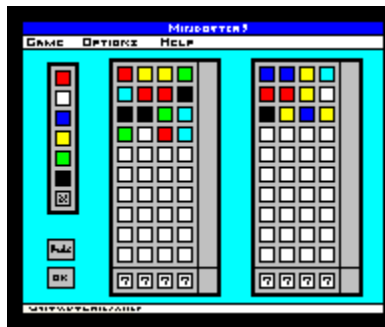


MindBuster!

A Computerized Version of Mastermind

Version 4.0



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1 Introduction and Overview

MindBuster! is a computerized version of the classic game of logic, wits, and deduction known as Mastermind. Mastermind has captured the imagination of gamers for years. Mastermind is a registered trademark of Invicta Plastics (USA) Ltd.

MindBuster! adapts the game for play on the computer and, in addition, provides a number of useful enhancements.

MindBuster! should be considered shareware. This means that one can obtain copies of it free. However, the programmer would like some compensation for his work on this product. Quite a few hours were spent in developing and enhancing the program. It is hoped that the program will reward the user with a similar number of enjoyable hours of playing it.

1.1 Object of the Game

The rules of MindBuster! are essentially those of Mastermind, adapted to play on a computer. The game is a struggle between the one who **MAKES** a code or pattern and the one who tries to **BREAK** that code. Thus: Guess a secret Hidden Code or Pattern. Obviously the fewer guesses the better.

The guesser is supplied with a collection of colored pegs. A turn or guess in MindBuster! consists in entering a pattern of colors and then having that pattern scored. The score gives the guesser some feedback on how close (or far) the pattern is from the hidden pattern.

A number of variations to the standard game are possible. These include: (a) the number of holes per row, (b) the number of available colors, and even c) the number of players. Within all these variations, the basic idea is the same: **Try to Guess a Hidden Code**. Unless stated otherwise, the following description will assume you are playing a game with the standard settings of 4 Holes per row and 6 possible colors.

Depending upon the type of game being played, the basic object is to guess the hidden code in a few guesses as possible and (if playing against someone) before your opponent does. The board game (and this implementation) places a limit of 10 guesses in attempting to figure out the hidden code.

1.2 Layout of the Screen

The screen is laid out as follows:

- A Menu Strip across the top
- A Palette of Colors at the left edge
- Two Buttons, [Random] and [OK] in the lower left
- A small Status Strip along the bottom
- The actual playing Board(s) in the major central portion

The actual playing board--or boards--occupy most of the real estate on the screen. Each board has 10 rows, and an additional row at the bottom where the hidden codes are placed. Depending upon the type of game being played, there will be 4 or 5 holes in each row.

Off to the left is the palette of available colors, the last of which is labelled [No Peg] meaning blank. The number of colors shown depends upon how many colors you have decided to play with. The number can vary from 3 to 8.

The two buttons on the screen, [Random] and [OK], may or may not be enabled, i.e. active and

able to be clicked. When a button is not enabled is it grayed-out. In addition one or other of them may have the focus. This means that it is the currently active button -- the one which would be "clicked" if one simply hit the ENTER key. When a button has the focus, there is a small dotted outline around the word on the button.

The [Random] button, when enabled and clicked will generate a random pattern for a guess. When a turn starts, this button automatically has the focus. Thus when it is your turn to guess, you need only hit ENTER to get a random selection of available colors.

The [OK] button, when enabled and clicked will terminate the turn. It essentially means "I'm done!" [OK] will automatically get the focus when is it possible to say "I'm done!" Thus it will not be enabled until you have filled in all the slots for a guess. Notice that once you hit the [Random] button, the [OK] button will have the focus.

If both buttons are enabled, only one of them will have the focus. You can use the TAB key to toggle the focus between them.

At the very bottom of the screen there is a single line which gives the status of the game and briefly indicates what is to happen. You can usually ignore it, but it is there to remind you of certain options at certain times.

1.3 How to Play

When it is your turn you must (1) formulate a guess, (2) tell the computer that your guess is ready, and then (3) receive a score for that guess. The main way to compose or formulate a guess is to drag-and-drop colors from the palette (on the left side of the screen) to the current row. You can drop colors on top of previously-placed colors, since your turn is not completed until you click the [OK] button. It is then that you guess will be scored.

There are a number of alternate ways to accomplish the above. These include: using the Move Colors command, Random Selection, Copying a Previous row. These alternatives are useful for playing without a mouse, or in a mouse-minimal fashion.

1.4 Scoring a Guess

One of the more unusual aspects of MindBuster! is its scoring mechanism. Each pattern of colors played is compared to the hidden pattern and awarded a "score". This "score" is reported by means of black and white pegs. On the computer, these pegs are represented by small black and white circles or dots to the right of the pattern played.

The key to winning is to understand the meaning and import of the black / white pegs. The total number of pegs awarded indicates the number of pegs in the guess which correspondent to pegs in the hidden code. The black pegs as mean Direct Hits (correct colors in the correct position) and the white pegs mean Near Misses (color is in the code, but in a different position).

When scoring a pattern, the first thing that is looked for are the Direct Hits -- when a color in the guess corresponds both in **COLOR and in LOCATION** to one in the hidden pattern. Thus if the hidden code has green in position 3 and the guess also has Green in position 3, this will merit a Black peg or dot.

After the Direct Hits are noted then any Near Misses are recorded. A Near Miss occurs when there is a color in the guess which also appears in the hidden pattern, **but in a different position**.

A score of **TWO BLACKs** and **ONE WHITE** would mean (a) that three of the colored pegs in the guess are also in the hidden code, (b) two of the three are even in the correct position, while (c) one of them, although in the hidden code is in a different position than it is in the hidden code.

There is nothing in the scoring to indicate which positions are being referred to. That is the challenge. A score of **TWO BLACK** pegs would simply mean that the guess and the hidden code share two colors in the exact same positions -- which positions are up to you to figure out.

One must use logic and deductive reasoning to figure out which possible hidden pattern would result in the series of scores given.

1.5 Examples of Scoring

The scoring method of MindBuster! can seem a bit strange. Perhaps the easiest way to think about the scoring is that (1) we check if there are any Direct Hits -- right colors in the right slots. If there are, we award a Black Peg for each such hit. Once that is done, we look at the OTHER (non-matched colors) in the guess and the pattern. If any of them is a Near Miss -- i.e. the colors match but are in different slots, then we award one White peg for each such Near Miss.

If a given color would merit both a Direct Hit and also a Near Miss, it is awarded a Black Peg only, since the Direct Hits are scored before the Near Misses.

Here are a few examples.

(a) **WH YE BL BK** <== Guess
RD WH BL GR <== Hidden

Score: (B) (W) [1 Black, 1 White peg]

The reason for that score: There was 1 color [Blue] which was the right color in the right place, and another [White] which was correct but in the wrong position.

Some more examples. If you understand them you understand how the scoring works.

(b) **RD BL GR BK** <== Guess
WH YE GR GR <== Hidden

Score: (B)

(c) **YE BL YE BK** <== Guess
RE BK YE BL <== Hidden

Score: (B) (W) (W)

(d) **RE WH GR GR** <== Guess
GR WH RD GR <== Hidden

Score: (B) (B) (W) (W)

1.6 Variations and Enhancements

The board game itself comes in several versions. MindBuster! includes these. This computerized version provides a number of ways in which you can set up and play the game. The standard game being one with four (4) holes per row and a palette of six (6) possible colors.

Holes The number of holes can be changed from the standard 4 holes per row to 5, if desired. Clearly this will increase the difficulty and complexity of the game.

Colors The number of colors in the palette can be set to any number from three (3) to eight (8). Generally, the fewer the number of possible colors, the easier the game. It is possible to play .p(supermaster,SuperMastermind) if desired.

Players One can play the game by oneself (Solo). You can also have the computer try to guess your hidden code (Duel). Thirdly, two humans (Two-Players) can play against each other.

Scoring Assistance Since the method of scoring may be unfamiliar, the computer will automatically (and accurately) score each of the moves. In addition if you wish the computer will give you some visual feedback on just how the score was achieved. This is possible only in the Duel form of the game.

Other enhancements include: (a) Ability to generate a Random Guess, (b) Sound Effects, (c) Setting the IQ level of the computer, (d) Moving colors using a dialog box, (e) Copying the colors from a previous row , (f) Illustrating the scoring visually (in the Duel version only), (g) Keeping track of the best games (Hall of Fame). All of these variations and enhancements are described in detail below. (See the various Menu Commands.)

2. Menu Structure

A standard Windows convention is followed when referring to menu and submen commands. Most of these commands have an underlined letter which is a keyboard alternate or accelerator to clicking with a mouse. This game has a top-level menu with the items:

Game Commands Options Help

In place of clicking on these items, you can activate them by means of an ALT+letter combination. In our case, these are **ALT+G**, **ALT+C**, **ALT+O** and **ALT+H** .

Once one of these has been activated, a submenu will pop open. These submenus typically have a number of items, each of which will itself have an underlined letter. Once the submenu is visible, one need only hit the underlined letter to activate the item. In this document, these keystroke shortcuts are indicated by notations like: Game | Exit . The keystrokes required would be, therefore, **ALT+G** followed by **X** .

The discussion below will cover, in turn, each of the main menu items with their various submenus.

2.1 Game

Start (F2)

The Start command initiates the play of a game. The game will be played with the settings and options currently in effect. Note that you cannot change the game configuration once a game as started. If a game is in progress and you wish to forget it and start another one, you must first use the Quit command to terminate the currently active game.

Quit (Ctrl+Q)

The Quit command terminates a game in progress. In addition, it will display any hidden code(s). After using a Quit command, you can begin another game, via Start, or Exit the program altogether.

Hall of Fame

This allows you to view the Hall of Fame. It gives you a listing of the names of the persons who have played the best games of the various configurations available. Statistics are not kept on how the computer plays -- it would be discouraging.

Exit (Ctrl+X)

The Exit command (which requires a verification) will cause the MindBuster! program to terminate and return to Windows. If a game was in progress, any hidden code(s) will not be displayed. You should use the Quit Current Game command if you wish to see the hidden code(s) before exiting.

.2.2 Commands

Random Selection (F3)

Often, especially at the beginning of a game, you would be satisfied with a purely arbitrary, i.e. random selection of colors. This could be either for generating the Hidden Code or for one of your guesses.

This command has the same effect as clicking on the [Random] button (or hitting ENTER when the [Random] button has the focus). What is this effect?

This command will cause the program to generate a totally random selection of colors for the currently active guess. (In case one is in the process of making a Hidden Code to be guessed, the program will generate a random pattern for this too.)

In case you don't like or want the pattern generated, you can repeat the process and get another random pattern. There is no limit to the number of times you can do this in any given situation. Once a pattern has been generated in this fashion, you may override any or all of the colors by any of the other available means, such as drag-and-drop).

Notes:

(1) Generating a random pattern will wipe out any colors which may already have been placed in that pattern.

(2) The random pattern will **never** contain an empty hole -- i.e. it never generates the [No Peg] color.

(3) There is no guarantee that the pattern generated is clever or useful as a guess. It is just what it says: random.

Move Colors (F4)

This command brings up a dialogue box. This box will allow you to move the colors from the palette to the currently active row (while guessing or hiding a code). This command has been added primarily to assist those who wish or need to play the game without a mouse. It results in a dialog box being presented which allows one to move the colors by indicating the color to be move and the number of the slot where it is to go.

You indicate both color and slot by clicking on the appropriate item. Alternatively, you can use key-strokes: ALT+R for Red, etc. Similarly ALT+3 will select slot 3.

The dialog box remains on the screen until it is explicitly removed. It is also possible to mix this method with the drag-and-drop method.

Copy a Row (F5)

This command brings up a dialog box which allows you to copy all the colors of a previously played row into the currently active row. This box is illustrated to the right. You should note that the rows are always automatically numbered to facilitate using this box. Only the rows preceding the current row are enabled. When you click on the Copy button, the selected row will be duplicated into the current row. At that point you can accept it as is (which would not be too helpful) or modify one or more of the colors placed there.

You can select a row either by clicking on its number, or if you want by hitting ALT+1, ALT+2, etc. ALT+C will cancel the box and ALT+O will be the same as clicking the [OK] button.

Why is this wanted or useful? It can happen that you get to a point in the game where your guesses are fairly similar. E.g. you might know that the hidden code is either **RD BK BK WH** or **RD BK GR WH**. So, after flipping a coin or consulting your horoscope you decide on the first alternative. It is wrong! If you could copy that last-played row into the current one, then you would need change only one color for your next guess, rather than having to move four colors.

A previous row can be also copied simply by clicking with the mouse. To copy a previous row using the mouse all one has to do is to click anywhere in that previous row. The colors will be copied down to the current row. -- it is that simple. Try it! You'll like it.

Illustrate Last Score (F6)

If you are new to MindBuster! (Mastermind) you may find the scoring mechanism a bit confusing. In order to assist you, several options have been provided which graphically illustrate exactly how the score for a given move was obtained.

The scoring, in terms of black and white pegs, is based on direct hits and near misses, this option shows them to you visually. The direct hits are shown by means of solid lines; the near misses by dotted lines. There is a line for each type of hit. The score of black / white pegs corresponds exactly to the number of solid / dotted lines.

This "Show me how that score was arrived at" can be activated after any turn. It should be obvious that showing the scoring method only makes sense when one is playing the Duel form of the game. (Otherwise, you would see the answer you are trying to guess) This command will

illustrate the direct hits and near misses of the last guess which the computer made in attempting to guess your hidden code. It is a useful tool to get accustomed to the scoring method.

Note that this is different from the option which is available to have this done automatically. This latter option is selected under the Options menu discussed below.

2.3 Options

The Options submenu lists a number of the ways in which the user can tailor the game to suit his or her own personal preferences. The value of the option in effect is indicated by the presence of a check mark.

Type of Game (# of Players)

MindBuster! can be played in three modes.

Solo. In this version, the computer generates a hidden code and you attempt to guess it. You are on your own. The computer does nothing else but score your moves for you.

Duel. In this version, both you and the computer generate a hidden code for the other to guess. Play alternates between your guesses and those of the computer. If the computer guesses yours first, it offers you the opportunity to continue to play just to see if you can guess its code.

Two-Player. In this version, two human beings enter hidden codes and play against each other. The computer will do all the scoring for you.

Number of Colors

.The basic, standard, out-of-the-box version of Mastermind, and therefore MindBuster!, has a supply of pegs which come in six (6) colors: Red, White, Blue, Yellow, Green, and Black. If you wish, you can play the game with as few as three (3) of these colors, or with as many as eight (8) colors. The additional two colors available are Magenta and Cyan blue. Increasing or decreasing the number of colors clearly affects the difficulty of the game.

This option is independent of the number of holes, which can also be changed.

Number of Holes

The basic, standard, out-of-the-box version of Mastermind, and therefore MindBuster!, has ten rows each with four (4) holes. This means that the hidden code as well as the guesses are composed of four slots. If you desire, you can change this to five (5) holes per row. This provides a more challenging game since the possibilities for patterns increase dramatically.

This option is set before a game begins. This setting does not change essentially how the scoring is done. The only difference is that a score can consist of up to five (5) black or white pegs. This setting is also independent of the number of colors available.

A game in which there are 5 holes per row and 8 possible colors is often called Super Mastermind. On the computer it should probably be called Super MindBuster!

IQ Level of the Computer

One of the options which can be set is the "IQ Level" of the computer. Simulations have shown that the computer, if properly programmed, can often guess a hidden pattern within 4 or 5

guesses. Since this can be disheartening to us mere mortals, it was thought prudent to "dumb down" the computer a bit.

This program has been written so that the computer will always play rather blindly for the first few turns. This gives the human player a sort of handicap in his/her favor and somewhat evens the playing field. In addition, the program has been designed so that YOU can set the IQ Level of the computer to either a "Homer Simpson" or "Albert Einstein" level. What this does is determine when the computer will really start to use its capabilities to the fullest. Obviously a beginner would do better to play Homer rather than Albert. It has been suggested that additional levels be implemented like a Beavis-level, an Al Bundy-level or a Roseanne-level of play. This has not been done in this version of MindBuster! A check mark will indicate which option is and will be in effect.

Sound Effects

This command will turn on or off noises made at very points in the game. A number of files are included which will provide some minimal sound effects for those with the proper hardware. This can range from a speaker driver to run the tiny (and usually tinny) speaker included in most PCs to a full-blown audio subsystem. This option allows you turn these sounds On or Off. The presence or absence of sound drivers and associated hardware does not effect the playing of the game at all.

Keep Statistics

It is possible to keep track of the best games played in the various configurations. Thus, the computer will record the name of the best player in a 4-Hole & 6 Color game, 5-Hole & 3 Color, etc. in its Hall of Fame. These statistics are kept only if this option is set ON.

If the option is ON and you win a game which is the best so far in that particular category, you will be prompted to enter your name for posterity. You can enter your real name, initials, a nickname, or whatever. Feel free to enter made-up names, names of friends, enemies and the like. A list containing names like Miss Piggy, Purple Panda, etc. is more interesting than one containing only the same name or initials over and over again. If at any time you wish to clear all the names and start with a clean slate, there is a [Reset] button which will do just that.

One can simply **view** the current list of names in the Hall of Fame by choosing that command which appears under the Game menu.

Number the Colors

This option associate a number with each color, and displays that number in the squares where the colors appear. This option might be useful in several situations.

- (1) If the game is being played on a machine with only a monochrome screen, or perhaps even on one with 16 wonderful shades of gray. In these case it may be very difficult or impossible to distinguish between the "colors". Numbering the colors provides another way in which to distinguish the various colors.
- (2) It allows someone who is color blind to play easier.
- (3) An individual may be able to reason better with numbers rather than colors.

Automatic Scoring Lines

If you wish the computer to **automatically** show you how its guesses have been scored, you can turn this option ON **before** a game begins. This option is available only if one is playing the Duel version of the game. If you only wish to see the scoring occasionally, then you can use the Illustrate the Last Score Command discussed above.

2.4 Help

Contents (F1)

This brings up the first page of the on-line Help system. MindBuster! Help is a standard Windows .HLP file and was created in part using the shareware program HelpGen.

Rules of MindBuster!

This command gives the user the Rules of MindBuster! The form in which they are presented is in a form different from the standard Help format. The various portions of the rules are itemized and the user can peruse whatever section(s) of the rules he or she wishes. These rules apply to Mastermind also and could be used when playing that game on a real board. For the record, the sections presented there are:

- (1) Introduction
- (2) Number of Players
- (3) Sequence of Play
- (4) Scoring the Guesses
- (5) Scoring - Examples
- (6) Some Basic Strategy
- (7) Miscellaneous

About MindBuster!

Selecting the About command will display a small, informative box with the copyright notice, author's name, etc. It is typical of all such forms in Windows programs.

3. Playing the Game

3.1 Sequence of Play

Whenever you start playing, the computer in a gesture of humanity will ask for your name (or names if two persons are playing). This serves to personalize a few of the messages which will be generated. An input box will appear asking you to enter your name. Since no one is looking, this is your chance to be cute, bawdy, or the person of your dreams. The names entered will be used until the configuration of the game has changed. Specifically, the same name(s) will be used until you change either (1) the number of holes, (2) the number of colors, or (3) the style of the game. If you change one or more of these, you will again be prompted for a name. You can accept the default name by simply hitting ENTER. If you erase the default and simply enter no name at all, a very boring default name will be used.

These names are independent of any you may enter into the Hall of Fame. The current name by which you are being identified will, however, be offered as the default name when entering your name in the Hall of Fame. Simply hit ENTER to accept that name or enter another, possibly more creative, name for the list.

After entering the names the game proceeds as follows:

Solo version

The PC generates a code and you then have 10 turns in which to guess it. All the computer does for you is score your guesses.

Duel version

You create a hidden code for the computer to guess. Behind the scenes the PC will generate a code for you to guess. Thereafter turns alternate between you and the computer as you each try to guess the other's code. The computer will score each of the guesses.

Two-Player version

This is essentially the same as the Duel version, except that the second player is another human being. The computer, however, will continue to do the scoring for you both.

This sequence of guessing and scoring continues either until 10 turns have been used up or one of the guesses is correct!

3.2 Dragging and Dropping

Drag and Drop is Window-ese for an operation common to many Windows programs. The basic concept is that an object on view is dragged by using the mouse from one location on the screen to another. It is accomplished by:

- (1) **Position** the mouse over the object to be moved.
- (2) **Click and Hold down** the left mouse button.
- (3) While the button is still down, **drag** the object, by moving the mouse to the desired target location.
- (4) When the mouse pointer is over the desired location, **drop** the object by releasing the mouse button.

In MindBuster! this operation is used to drag colors from the palette to the holes on the board for guesses. It is also used to create the initial hidden codes.

Drag-and-drop can also be used to override either a portion of a random guess selection or to override a part of a guess which was obtained by copying the guess of a previous row.

3.3 Keyboard Shortcuts

A number of the choices and commands available to the player during the game can be accessed quickly by means of shortcut or accelerator keys. They are listed below.

- | | |
|----|-----------------------|
| F1 | Help Contents |
| F2 | Start a New Game |
| F3 | Random Selection |
| F4 | Move Colors |
| F5 | Copy a Row |
| F6 | Illustrate Last Score |

CTRL+Q Quit Current Game

CTRL+X	Exit
TAB	Moves focus to next field / key
ENTER	Selects item with the focus
ESC	Same as Exit

3.4 Mouseless Play

Since it is a Windows program, MindBuster! was designed primarily to make use of a mouse. However, even the most die-hard of Windows programs often provide the user with ability to access various menus, features, and commands using one or more keystrokes rather than mouse clicks.

MindBuster! is designed so that the user can play and make use of keyboard shortcuts to access many, if not all, of the features of the program with key strokes. This should make it easier for persons with physical limitations to play the game.

The most significant Windows-style operation which is difficult in this fashion is a drag-and-drop operation. Unfortunately this particular operation is very common in MindBuster! since it is the most common way of moving colors into a guess. To expedite this latter operation, a dialog box entitled Move Colors has been added. Although using this dialog box method is not a cute as dragging the colors, it does make it possible to play the game entirely without a mouse.

3.5 Some Basic Strategy

After several guesses you can usually begin to deduce what colors might be in the pattern, even if you don't know exactly what slots they are in. You can also sometimes deduce that certain colors are NOT in the hidden pattern. Often this negative-type knowledge is most useful. Knowing that certain colors are no in the hidden code, can lead you to know that certain colors are, based on previous guesses.

(A) 4 Black pegs (in the standard game) means that you have hit them all right on the head. The game is over. No more thinking is required.

(B) 4 White pegs would mean that you have all the correct colors, but none of them is in the right position.

(C) NO pegs would mean that the colors in your guess do not appear anywhere in the hidden pattern.

Although there are no "best" guesses, in general it is usually best to first try to establish the colors in the code, and then, once the colors are known, figure out in which positions they belong.

A set of suggested "opening moves" follows. Letters are used here to represent colors. Thus, if it is suggested that a move be A B C D what is intended is that you play four **different** colors -- any four of your choosing. On the other hand, A A B C would represent a move with three colors, the first two positions being the same color.

A suggested set of opening moves is:

- (1) A B C D
- (2) E A B C

(Note the repetition of three of the four initial colors.) Experience has shown that the results of the above two guesses can in fact give a lot of information, depending on the results. For

example, if you have only 5 colors, then count up the various hits in both moves. If they are less than 5 it means that one of the colors is duplicated.

Another set of opening moves, if you have 7 colors, might be:

- (1) A B C D
- (2) E E F G

This combination has the advantage of quickly identifying the use of doubles in the hidden code. Further examples and strategy are illustrated and can be found by using the HELP command or [F1].

4. Other Topics

4.1 Some Frequently-asked Questions

After understanding the basic rules, players of MindBuster! often come up with one or more questions. Here are a few of the most common such questions.

1. Can the same color be used more than once in a guess or code?

You can play as if you had an unlimited supply of pegs of each color available. Thus there are no restrictions on doubles, triples or even quadruples of one color. It can even be desirable to make a hidden code with two or more pegs of the same color. This actually makes for a slightly more difficult pattern to guess. Codes with 3 or more of the same color are much more risky and dangerous.

2. Can one or more of the holes in a guess be left blank?

The official rules of Mastermind do not prohibit leaving a slot in a guess blank. In fact, there are situations where it is desirable to do so in order to pinpoint some of the information already known. In this computer version, one leaves a hole in a guess blank by the [No Peg] "color" there. Thus, one must explicitly leave a hole empty.

- .3. Can one or more of the holes in a hidden code be left blank?

This version of MindBuster! **DOES NOT** allow one to leave a hole in a hidden code pattern blank or empty. Hence, "real" colors must be used when setting up a hidden code. The [No Peg] "color" will not be allowed. To allow a blank hole in a hidden code would essentially be the same as introducing another color. It would also make the strategic use of blanks in guesses less effective.

4. What are the chances of breaking the code on the first guess?

There is a small chance that a code can be guessed on the very first turn. With 4 holes and 6 colors there are 1,296 possible different codes or patterns which can be concocted. So, on a purely random basis, the one has a 1 in 1296 chance of doing it.

If the hidden pattern has 4 **distinct** colors, then there are only 360 possible patterns. For the mathematically inclined, here is how the possible 1296 codes break down. (The symbol 3-1 stands for any pattern in which there are three of one color and 1 of another color -- in any order; 2-1-1 would mean that there are 2 of one color, 1 of some second color and another one of some third color. Again, the order makes no difference).

Pattern	Number with that Pattern
4	6
3-1	120
2-2	90
2-1-1	720
1-1-1-1	360
Total:	1296

5. Is there an element of luck in winning MindBuster! ?

MindBuster! is a game which combines skill with a certain amount of luck. All the skill in the world will not help you if it is your 10th guess and you know for certain that the hidden code is one of only two possible patterns. At that point, all you can do is guess and hope!

Occasionally a player will make a lucky guess early. However, from about the 3rd guess on, skill and logical play becomes very important. All we can say is Good Luck!) Remember that it is possible to dumb the computer down a bit. This can be accomplished by setting the IQ Level of the Computer to be that of Homer Simpson.

6. What happens when all 10 rows have been used up?

All things must come to an end--even a game! When all 10 rows have been filled with guesses the game is over. The answer(s) or hidden code(s) will be shown. Your torment is over. You can either play another game or exit the program completely.

7. Can / Does the computer play better than a human being?

It is probably the case that the computer can play a better game than a human. It is able to make thousands of calculations and comparisons within seconds. How "smart" the computer plays depends entirely on how it was programmed to play. In this version, after the computer is allowed to use its smarts, it actually "knows" which patterns are no longer possible answers. Properly programmed, a computer could use this information to maximize its subsequent guesses.

There is really no way to "psyche out" the computer either by your style of playing or by using what you consider to be weird codes.

4.2 Files Needed

This program requires several files in order to be run successfully:

MINDBUST.EXE	The executable program itself.
MINDBUST.INI	A file which saves the game parameters, settings, and Hall of Fame information from run to run.
MINDBUST.HLP	The Help file for MindBuster!
MINDBUST.RUL	A file containing the Rules of the Game. Although it is in a somewhat specialized form, it is basically an ASCII text. It could be imported into Write or some similar word processors.
*.WAV	Various sound files. Not absolutely necessary to run the program.
VBRUN200.DLL	A runtime support file required by Visual Basic the language in which the program was written).

It is not necessary to have a copy of Visual Basic, itself, on your computer. The file VBRUN200.DLL should present in one of the following locations: (a) your Windows directory, usually C:\Windows, (b) your Windows System directory, usually C:\Windows\System, or (c) The directory where the rest of the game files reside.

If you are critically short on space, the .HLP file and the various .WAV files could be eliminated. Of course, you would then not have the benefit of having on-line Help and no sound effects.

4.3 Resources

If you are hooked by MindBuster!, i.e., Mastermind, you might want to read something about it. If you can find it, there is a paperback of some interest. *The Official Mastermind Book* by Leslie H. Ault, Revised Edition. A Signet Book, New American Library, 1976. It contains the rules and a good bit of strategy for Mastermind. It covers topics such as code solving, code searching, and tournament play.

4.4 Shareware

This version of MindBuster! is Shareware. That means that we depend on your honesty to support its developer. Quite a few hours were spent in developing the program. It is hoped that it will reward the user with a similar number of enjoyable hours of playing.

Registered users will be rewarded with information concerning future enhancements and able to receive them at a reduced cost. The suggested support is \$10.00

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