## Introduction

Welcome to Flash Card!. I created Flash Card! for my first grade son to practice his math skills. The object of the game is to answer the math problem at the top of the screen correctly. If the problem is answered correctly then a piece of the puzzle is shown. The puzzle is an graphical image which should interest a first grader. As each problem is answered correctly another piece of the puzzle is displayed. Finally after the entire puzzle is displayed, a new game is started.


The game is very easy to play. At the top of the window is the current problem. This is the problem the student is to answer. Beneath the problem and to the left are a number of designs. These designs hide the puzzle. When the student answers the problem correctly one of these designs turns into a piece of a puzzle. To the right of the puzzle are two boxes of option buttons containing the numerals 0 to 9 . The box on the left contains the 10's digit and the box on the left contains the l's digit. The student is to indicate the correct answer by clicking the appropriate options button. When the student has set his answer in the two boxes then he clicks the OK button. If the answer is correct then a piece of the puzzle is displayed and the OK button is then labeled "New". Press this "New" button is start a new problem. If the answer is incorrect then the computer beeps, a line is drawn through the incorrect answer, and the incorrect answer is displayed in red. If hints have been enabled then an arrow or hand may be displayed to help direct the student to the answer. The student is then given a chance to answer the problem again. After all the pieces of the puzzle have been displayed a new game begins when the "New" button is clicked.

## Menu Commands

Three menu items are available in the Menu Bar:
Game Menu - This menu allows one to show a hint (if enabled) and to exit the program.
Options Menu - This menu consists of three choices, Problem, Puzzle, and Hints.
Selecting one of these menu items displays a dialog box which allows one to change various default options for the program.

Help Menu - This menu allows provides help on the program.

## Problem Options

Selecting the Problem menu item from the Options menu displays the Problem Options dialog box. In this dialog box any of the math operators (addition, subtraction, multiplication, and division) may be selected. Check the desired operator by clicking the box to the left of the operator name. Beneath the addition and subtraction check boxes is a box containing the maximum number which will be used for the problem numbers on addition and subtraction. One should set this option based on the skill level of the student. Beneath the multiplication and division check boxes is a box containing the maximum number which will be used for the problem numbers on multiplication and division. One should set this option based on the skill level of the student. Division will always result in a whole number answer.

Click the OK button after the desired options have been set. Click the Cancel button to exit the dialog box without changing and parameters. Click the Help button to see this help screen.

## Puzzle Options

Selecting the Puzzle menu item from the Options menu displays the Puzzle Options dialog box. In this dialog box the design which covers the puzzle and the size of the puzzle are set. Click on the design which should be used to hide the pieces of the puzzle. A box is drawn about the currently selected design. To the left of the cover piece designs is a grid which represents the size of the puzzle. The area which is black represent the selected size of the puzzle. Click on the grid to expand on contract the puzzle size. The minimum size of the puzzle is one piece. The maximum size is 36 pieces or a 6 by 6 puzzle.

Click the OK button after the desired options have been set. A new game will be started if the size of the puzzle is changed. Click the Cancel button to exit the dialog box without changing and parameters. Click the Help button to see this help screen.

## Hint Options

Selecting the Hints menu item from the Options menu displays the Hints Options dialog box. In this dialog box the arrow hint or the hands hint can be enabled. Hints are displayed automatically after the problem is answered incorrectly. The hands hints can be displayed at any time by choosing Show Hint from the Game Menu.

The arrow hint is an arrow which points up if the incorrect answer is less than the correct answer. The arrow points down if the answer is less than the incorrect answer. The arrows are displayed at the end of the problem line. Click the Display Arrow check box to enable the display of the arrow. In the scroll bar beneath the Check box set the number of incorrect answers which must be made before the arrow is shown. The maximum number of incorrect answers can vary from 1 to 7 .

The hands hint are hands which point to the correct answer in the 10's box and the 1's box. The hands are displayed to the left of the 10's box and to the right of the 1's box. Click the Display Hands check box to enable the display of the hands. In the scrollbar beneath the Check box set the number of incorrect answers which must be made before the arrow is shown. The maximum number of incorrect answers can vary from 1 to 7 . Beneath the scrollbar is the On Game Menu Check box. Click this check box to display the Show Hints menu item on the Game Menu. Selecting the Show Hints menu item will display the hands at any point in the game.

Click the OK button after the desired options have been set. Click the Cancel button to exit the dialog box without changing and parameters. Click the Help button to see this help screen.

## Game Menu

This Menu contains two choices:
Show Hints - Selecting this menu item displays the Hands which point to the correct answer. This menu item is enabled in the Hints Option dialog box.

Exit - Selecting this menu item exits the game. If any options have been changed a dialog box appears asking the student if he wants to save the changes permanently. If yes is selected the options will be saved. If no is selected the changes will be lost. If cancel is selected the game is resumed at the point that the exit menu item was selected.

## Options Menu

This menu contains of three choices:
Problem - Displays Problem Options dialog box.
Puzzle - Displays the Puzzle Options dialog box.
Hints - Displays the Hints Options dialog box.

## Credits

This program is offered as freeware. Please pass it on to whoever wants it. I do plan to upgrade the program in the future. Check the bulletin boards for future revisions. If you like the program and use it for an extended period of time, I ask that you send me a message on Compuserve $(73125,1117)$ or Prodigy (TTJR97A). I would like to know your name, city, and state. Please informed me of any bugs you discover or any features you would like added to the program. If you do not have access to Compuserve or Prodigy then please mail me a note addressed to:

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I will consider contracting to create custom Window Programs.

