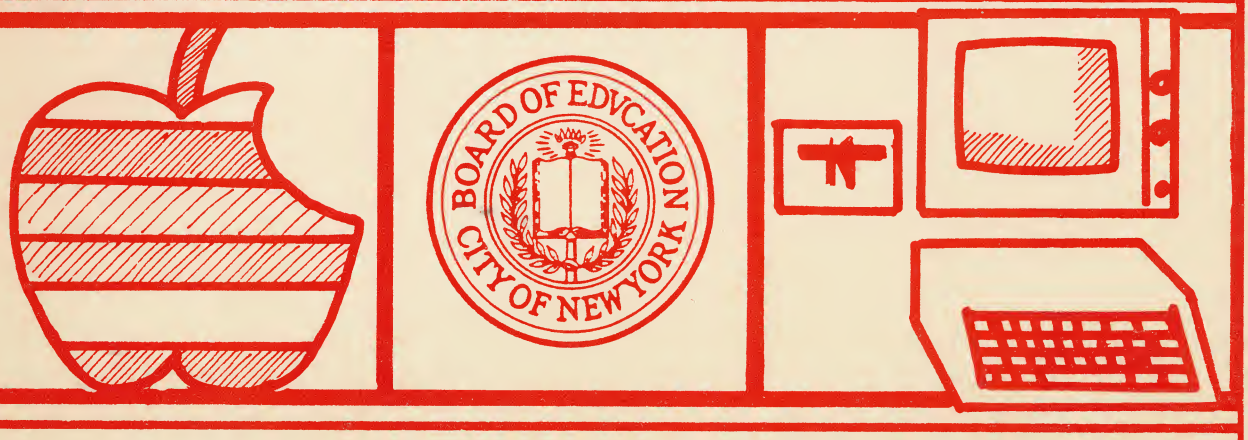
A GUIDE TO THE USE OF TOOL SOFTWARE FOR THE APPLE COMPUTER



NEW YORK CITY BOARD OF EDUCATION

DIVISION OF CURRICULUM AND INSTRUCTION
AND THE OFFICE OF TECHNOLOGY

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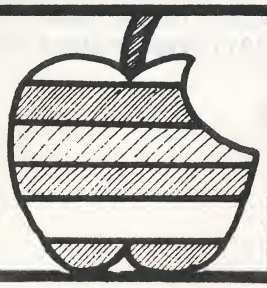

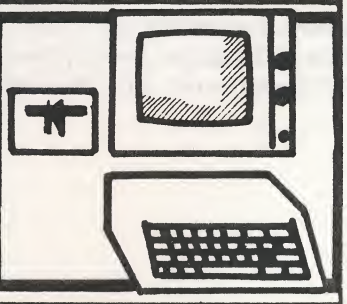

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FOREWORD

In response to the need of teachers and students to keep pace with the rapid technological development of the information age, the New York City Board of Education is engaged in large scale staff development in computer education. It is a goal of the Division of Curriculum and Instruction to train a computer leadership team of administrators and teachers in every school in the City of New York. This booklet is another step towards the fulfillment of that goal.

These materials were originally developed to complement the High School Facilitators' Workshops held in April of 1985. They served to introduce participants to computing through generic programs adaptable to individual instructional needs. This guide and the companion data disk introduce users to functional application software in word processing (text editing), database management (file handling), spreadsheet analysis and graph generation.

We trust this guide will assist all teachers in bringing current computer technology to their classrooms. An evaluation form is included at the end of the guide, and we encourage you to complete the form and return it to us so we may incorporate your suggestions in our future staff development efforts.

Charlotte Frank

Charlotte Frank
Executive Director
Division of Curriculum and Instruction

ACKNOWLEDGMENTS

A Guide to the Use of Tool Software for the Apple Computer is a joint project of the Division of Curriculum and Instruction, Charlotte Frank, Executive Director and the Office of Technology, Irwin Kaufman, Director.

Morris Freedman, Deputy Executive Director, Division of Curriculum and Instruction, provided overall supervision of this project.

Marc Licht, Director, Computer and Information Sciences Unit, and Joseph H. Eaione, Assistant Director, provided specific direction and support.

Stephen Radin, Director of Curriculum Development, Office of Technology, served as coordinator for the second edition.

The principal authors, Charles R. Collett and Fred S. Goldberg, were responsible for planning, writing, coordinating and sequencing the first eidition of this guide. They were assisted by Peter Brennan and Joseph Eaione with file design, data management, and editing.

The manuscript was prepared for publication by the Editorial and Production Unit under the direction of Alaire Mitchell, Assistant Director of Curriculum Research (Acting).

Vincent Puglia of the Editorial and Production Unit was responsible for the final editing, sequencing, and overall production of the manuscript.

Victor Roseman designed the cover and Ernest Mortuzans designed the chapter title pages.

Word Processing: Janet Taylor, Patricia Broadnick and Bessie Jones

INTRODUCTION

The use of computers in the classroom has become more prevalent during the past few years. Through this use we have developed a knowledge of their functions and a better vision of their potential. We encourage our colleagues to freely experiment and attempt new approaches. Only with all of us working in concert, can we fulfill our vision for an effective integration of school technology into all subject areas. From these beginnings, we will nurture the critical thinking and practical skills our students will need to succeed in the information age. If children are not comfortable with computers, they will be as unprepared for the future as an adult who cannot read or write.

The purpose of this guide is to give teachers and supervisors a working knowledge of various approaches to enhance pupil learning. Our guides are intended to be open ended and flexible in nature. As a 1920 car is not efficient by 1980 standards, outmoded computer education ideas of the seventies have been replaced by the new visions of the eighties. Classroom use of technology has doubled and redoubled in the past few years. Teachers are continually devising new ideas for the use of this technology.

Our primary responsibility in this area and our reason for writing this book, is to see that computers are used as an efficient classroom tool. Only through a real sharing can we move forward in this rapidly changing field of technology. Feel free to write to me directly with your comments and suggestions concerning this curriculum guide, so that we may improve and update it to meet your needs.

Irwin Kaufman

Irwin Kaufman
Director
Office of Technology

NOTES ON THE USE OF THIS GUIDE

This publication is designed to introduce teachers and/or administrators to software application programs. Presented in a hands-on scripted format, it supports a dual purpose, that is, as an individual tutorial or a turnkey staff development tool. All program files referred to in this book may be found on the companion data disk. The application tutorials are written for use with these files. Duplication ("back-up") of this disk before you begin is strongly suggested. If you are not familiar with the procedure for disk duplication, read the appendix entitled "Apple Disk Operating Systems" for step-by-step instructions.

Each chapter in this book with the exception of "Graph Generation" may be used as a stand-alone tutorial. "Graph Generation" should be used following "Spreadsheet Analysis," since spreadsheet program files are required for its use. We suggest, however, the book be used sequentially from beginning to end. It is expected that the classroom teacher will take this tool software guide one step beyond by using ingenuity to create tailor made lesson plans. If you have any technical questions, or require assistance with the implementation of its design, feel free to contact the Computer and Information Sciences Unit at 131 Livingston Street, Brooklyn, NY 11201.

TABLE OF CONTENTS

AN INTRODUCTION TO APPLEWORKS

AppleWorks, a ProDOS-based program, is an integrated software package. This means it performs more than one distinct function, functions you would ordinarily have to use different software packages to accomplish. AppleWorks incorporates three such functions: word processing, spreadsheet analysis, and database management.

A major advantage of AppleWorks, in addition to not having to purchase three programs, is that you can move back and forth from program to program and combine three kinds of data formats into one document. (AppleWorks refers to this as moving from Desktop to Clipboard and back again). This allows you to be even more effective and efficient in your work.

The three AppleWorks components are:

Word Processing -- designed to produce written documents in the form of letters, memos, reports, etc.

Spreadsheet Analysis -- used with information that would typically be found on a paper spreadsheet. This kind of data is found in budgets, income and expense statements, financial forecasting and so forth. The information in this format can be manipulated. Mathematical operations can also be performed.

Database Management -- designed to store and retrieve information usually found on lists, index cards, files, etc.

System Requirements

For AppleWorks to work properly, certain minimum conditions, known as system requirements, must be met. These requirements are as follows: an Apple IIe, and 80-column text card, a monitor, and one disk drive.

However, we also recommend the following: an extended 80-column text card, a second disk drive, and a printer.

USING APPLEWORKS

In this section, you will learn how to use the OPEN-APPLE key to ask for help, how to use the ESC Key to bail out of an unwanted situation, and how to respond to prompts and perform certain basic editing functions.

OPEN-APPLE

AppleWorks' special features are accessed through OPEN-APPLE commands. To issue an OPEN-APPLE command, hold down the OPEN-APPLE key while striking another key.

- The combination of the OPEN-APPLE key and the "?" key produces the HELP command. This will give you a "help screen" which lists the keystroke and function of each keyword.

- A copy of AppleWorks' quick reference guide is included in the appendix. Feel free to use it as a summary of keystrokes and functions.

Responding to Prompts

Prompts either ask you to make a selection from a menu or list, or require a typed response.

- To help you make a selection, you will find four arrow keys to the right of the CLOSED-APPLE key. These arrows keys control the direction of cursor movement.

  - The UP and DOWN ARROW-CURSOR keys move the cursor vertically. They are used to highlight a choice.

  - The RIGHT and LEFT ARROW-CURSOR keys control horizontal movement and are used to make a selection (right cursor) or delete a selection (left cursor).

ESC Key

This is the "bailout" key. Using it either returns you to the previous display screen or allows you to cancel your response.

- If the MAIN MENU is displayed, pressing the ESC key will return you to the last file you worked on.

- This is not the case when you have saved a file or used one of the "Other Activities" options. (You need not be concerned about this feature at this time.)

Typing and Editing

1. AppleWorks gives you a choice of two cursors:

   - a blinking bar which is the insert cursor, and

   - a blinking rectangle which is the overstrike cursor.

   - To change from one to the other, hold down the OPEN-APPLE key while you press E (E = edit) key.

2. When deleting characters you also have three choices:

   - The DELETE key removes one character to the left of the cursor.

   - Pressing two keys, CONTROL and Y, will delete all characters from the cursor to the end of the line or entry.

   - Holding down the OPEN-APPLE and D keys together (D = delete) places you in the delete mode.

     - Once in the delete mode, you can highlight the character or block of text you wish to delete by moving the cursor with the arrow keys.

     - When you have highlighted the objectionable text, press the RETURN key to execute.

     - The ESC key is used to exit the delete mode without deleting any text.

CRUISING APPLEWORKS MENUS

AppleWorks uses menus to help direct you through the program. Selecting an option from one menu often results in the display of another. This selection process may continue several times until the program has enough information to execute your request. Below is a simulated trip through the menu selection process. It is intended to illustrate the sequence and design used by AppleWorks.

1. Refer to Figure 1.1; the default option (what the computer will do unless told otherwise) is "1. Add Files to the Desktop."

   . Press the RETURN key (If you had wanted to make another selection you would have entered the number desired or moved the cursor to highlight your selection).

```
Disk: Drive 1                          MAIN MENU
_____________________________________________________________________________
 _____________________
|    Main Menu        |_____________________________________________________
|                                                                           |
|                                                                           |
|    1.  Add files to the Desktop                                           |
|                                                                           |
|    2.  Work with one of the files on the Desktop                          |
|                                                                           |
|    3.  Save Desktop files to disk                                         |
|                                                                           |
|    4.  Remove files from the Desktop                                      |
|                                                                           |
|    5.  Other Activities                                                   |
|                                                                           |
|    6.  Quit                                                               |
|                                                                           |
|___________________________________________________________________________|
_____________________________________________________________________________
Type number, or use arrows, then press Return                    ⌘-? for Help
```

FIGURE 1.1

2. The "ADD FILES" screen should be displayed on the monitor (Figure 1.2).

```
Disk: Drive 1                          ADD FILES                Escape: Main Menu
_____________________________________________________________________________
 _____________________
|    Main Menu        |_____________________________________________________
|  _________________________                                                |
|  |    Add Files         |_____________________________________________|__|
|  |                                                                       |
|  |                                                                       |
|  |        Get files from:                                                |
|  |                                                                       |
|  |    1.  The current disk: Drive 1                                      |
|  |    2.  A different disk                                               |
|  |                                                                       |
|  |        Make a new file for the:                                       |
|  |                                                                       |
|  |    3.  Word Processor                                                 |
|  |    4.  Data Base                                                      |
|  |    5.  Spreadsheet                                                    |
|__|                                                                       |
   |_______________________________________________________________________|
_____________________________________________________________________________
Type number, or use arrows, then press Return                      55K Avail.
```

FIGURE 1.2

3. At this point you have three choices:

   - Get files from the "1. The current disk: Drive_____,"
   - Get files from "2. A different disk," or
   - Make a new file.

4. Type a number or use the cursor keys to highlight your selection and then press RETURN.

   - If you choose to get a file and you have a single disk drive configuration, you will be asked to insert your data disk into disk drive #1.

     - Every so often you may be asked to swap your disks. Simply follow the screen directions.

   - If you have a dual disk drive system, your data disk remains in disk drive #2 and you do not have to swap disks.

   - In either case you will be presented with the "APPLEWORKS FILES" screen (Figure 1.3).

```
Disk: Drive 2                    APPLEWORKS FILES                Escape: Add Files
_____________________________________________________________________________________
 ___________________
|   Main Menu       |_____________________________________________
|  ___________________                                            |
| |   Add Files     |_____________________________________________|__
| | ___________________                                            |
| | |   AppleWorks files  |_____________________________________________|__
| | |   Disk volume /CISU.DATA.DISC has 110K available                    |
| | |      Name          Type of file    Size    Date       Time         |
| | |   ==================================================================|
| | |   APPLEWORKS.MEMO  Word Processor   2K   6/19/85                    |
| | |   LETTER.TO.MOM    Word Processor   1K   6/19/85                    |
| | |   CLASS.PROFILE    Data Base        4K   6/19/85                    |
| | |   PLANETS          Data Base        2K   6/19/85                    |
| | |   US.GEOGRAPHY     Data Base        3K   6/19/85                    |
| | |   HS.GRADES        Spreadsheet      8K   6/19/85                    |
| | |   PSEN.SCORES      Spreadsheet      1K   6/19/85                    |
|__| |   PURCHASE.ORDER   Spreadsheet      2K   6/19/85                    |
   |__|                                                                   |
      |_____________________________________________________________________|
_____________________________________________________________________________________
Use Right Arrow to choose files, Left Arrow to undo                    55K Avail.
```

FIGURE 1.3

5. This menu allows you to view the names of the various files on your disk so you can select them for processing.

   - To select a file from you data disk use the UP and DOWN ARROWS-CURSOR keys to highlight individual files.

   - To make several selections use the RIGHT-ARROW-CURSOR.

   - After the choices are made press the RETURN key. See Figure 1.4.

```
File: None                    APPLEWORKS FILES                Escape: Add Files
_____________________________________________________________________________
 _____________________
|    Main Menu        |_____________________________________
|  ___________________|                                     |
|  |   Add Files      |_____________________________________|__
|  |  _________________|                                    |  |
|  |  |  AppleWorks files  |_____________________________________|__
|  |  |                                                              |
|  |  |                                                              |
|  |  |                                                              |
|  |  |                                                              |
|  |  |        3 files were added to the Desktop.                    |
|  |  |                                                              |
|  |  |        Press 2-Q to work with one of the                     |
|  |  |        files on the Desktop.                                 |
|  |  |                                                              |
|  |  |                                                              |
|__|  |                                                              |
   |__|                                                              |
      |______________________________________________________________|
_____________________________________________________________________________
Press Space Bar to continue                                       49K Avail.
```

FIGURE 1.4

6. If you have more than one file on the Desktop, use the OPEN-APPLE-Q keys to get an index and make a selection -- Figure 1.5.

```
File: None                    APPLEWORKS FILES                Escape: Main Menu
_____________________________________________________________________________
 _____________________
|    Main Menu        |_____________________________________
|  ___________________|                                     |
|  |   Add Files      |_____________________________________|__
|  |  _________________|                                    |  |
|  |  |  AppleWorks files  |_____________________________________|__
|  |  |                                                              |
|  |  |              _________________________                       |
|  |  |             |      Desktop Index      |                      |
|  |  |             |-------------------------|                      |
|  |  |             | 1.  APPLEWORKS.MEMO  WP |                      |
|  |  |        3 f  | 2.  LETTER.TO.MOM    WP |                      |
|  |  |             | 3.  CLASS.PROFILE    DB |                      |
|  |  |        Pre  |_________________________|                      |
|  |  |        fil                                                   |
|  |  |                                                              |
|  |  |                                                              |
|__|  |                                                              |
   |__|                                                              |
      |______________________________________________________________|
_____________________________________________________________________________
Type number, or use arrows, then press Return                     49K Avail.
```

FIGURE 1.5

7. If you wish to create a new word processing file from the "ADD FILES" screen, highlight or type the number of your selection and then press RETURN. You will see a function menu on your monitor screen (Figure 1.6).

```
Disk: Drive 2                    WORD PROCESSOR                    Escape: Add Files
____________________________________________________________________________________
 ___________________
|   Main Menu       |_____________________________________
|  ___________________
|  |   Add Files    |_____________________________________|__
|  |  ___________________                                   |
|  |  |  Word Processor  |_____________________________________|__
|  |  |                                                          |
|  |  |                                                          |
|  |  |   Make a new file:                                       |
|  |  |                                                          |
|  |  |   1.  From scratch                                       |
|  |  |                                                          |
|  |  |   2.  From a text (ASCII) file                           |
|  |  |                                                          |
|  |  |                                                          |
|__|  |                                                          |
   |  |                                                          |
   |__|                                                          |
      |__________________________________________________________|
____________________________________________________________________________________
Type number, or use arrows, then press Return                          49K Avail.
```

FIGURE 1.6

8. Select "1. From scratch."

   - At this point you will be prompted to name your file. The name should be any unique, descriptive identifier (15 letters maximum).

   - Type in the name of you file and press RETURN. Begin typing your document.

SAVING YOUR WORK

1. After you have created or modified a document, you will want to save your work. AppleWorks provides you with two methods of doing this:

   - You can simultaneously press the OPEN-APPLE and S Keys (S = save) to save the file on Desktop, or

   - you may choose to go back to Main Menu and exercise the "Save Desktop files to disk" option.

     - To get the Main Menu (Figure 1.1), you press the ESC key.

     - Highlight option 3 and then press RETURN.

     - You will see the "SAVE FILES" screen on your monitor (Figure 1.7).

```
Disk: Drive 2                    SAVE FILES                    Escape: Main Menu
_____________________________________________________________________________
 _____________________
|    Main Menu        |_____________________________________________________
|  ___________________|                                                     |
|  |    Save Files    |_____________________________________________________|__
|  |    Name                 Status     Document type    Size              |
|  |    ==================================================                 |
|  |    APPLEWORKS.MEMO      Unchanged  Word Processor    2K                |
|  |    LETTER.TO.MOM        Unchanged  Word Processor    1K                |
|  |    CLASS.PROFILE        Unchanged  Data Base         4K                |
|  |                                                                        |
|  |                                                                        |
|  |                                                                        |
|  |                                                                        |
|  |                                                                        |
|  |                                                                        |
|__|                                                                        |
   |                                                                        |
   |________________________________________________________________________|
_____________________________________________________________________________
Use Right Arrow to choose files, Left Arrow to undo                 49K Avail.
```

FIGURE 1.7

2. Identify your choice by pressing the RIGHT-ARROW-CURSOR key. You will be presented with a new menu, one which lists the name of the file you wish to save (Figure 1.8).

```
Disk: Drive 2                    "APPLEWORKS.MEMO"              Escape: Save Files
____________________________________________________________________________________
 ____________________
|    Main Menu       |____________________________________
|  ____________________                                   |
|  |    Save Files   |__________________________________|__
|  |  ____________________                                  |
|  |  |  "APPLEWORKS.MEMO"  |__________________________________|__
|  |  |                                                        |
|  |  |                                                        |
|  |  |    You made NO changes to this file                    |
|  |  |                                                        |
|  |  |    1.  Save the file on the current disk               |
|  |  |                                                        |
|  |  |    2.  First change to a different disk or directory   |
|  |  |                                                        |
|  |  |                                                        |
|  |  |                                                        |
|__|  |                                                        |
   |  |                                                        |
   |__|                                                        |
      |________________________________________________________|
____________________________________________________________________________________
Type number, or use arrows, then press Return                          49K Avail.
```

FIGURE 1.8

3. Choose either option 1 or 2.

   - You will be given two additional choices (Figure 1.9):

     "1. Let the new information replace the old."

     "2. Save with a different name."

   - If you choose to save with a different name you will be prompt to supply the new name.

```
Disk: Drive 2                    "APPLEWORKS.MEMO"              Escape: Save Files
____________________________________________________________________________________
 ____________________
|    Main Menu       |____________________________________
|  ____________________                                   |
|  |    Save Files   |__________________________________|__
|  |  ____________________                                  |
|  |  |  "APPLEWORKS.MEMO"  |__________________________________|__
|  |  |                                                        |
|  |  |                                                        |
|  |  |    This file already exists on Drive 2                 |
|  |  |                                                        |
|  |  |    1.  Let the new information replace the old.        |
|  |  |                                                        |
|  |  |    2.  Save with a different name.                     |
|  |  |                                                        |
|  |  |                                                        |
|  |  |                                                        |
|__|  |                                                        |
   |  |                                                        |
   |__|                                                        |
      |________________________________________________________|
____________________________________________________________________________________
Type number, or use arrows, then press Return                          49K Avail.
```

FIGURE 1.9

4. After this selection has been made, your file will be saved.

WORD PROCESSING

OVERVIEW

The writing process is at times a frustrating experience. This frustration is often rooted in the editing and structuring of a document. Word processors were designed to ease these frustrations by allowing us to make desired editing changes quickly and easily. With respect to formatting, you can determine the layout and arrangement of each document according to individual needs and the document's objective. Finally, a word processor can allow us to concentrate on thought rather than transcription.

OBJECTIVES

By the end of this chapter you will be able to:

- enter and edit text using the insert mode,
- enter and edit text using the overstrike mode,
- global search and replace text, and
- move and delete blocks of text.

APPLEWORKS TUTORIAL

1. After making sure the STARTUP side is face up, insert the disk into disk drive #1.

2. Turn the computer on. Once the red in-use light on the disk drive goes off, remove the disk.

3. Flip the disk over so that the PROGRAM side is face up, then insert it into disk drive #1. Press the RETURN key.

4. At the prompt (Figure 2.1), type in today's date and press RETURN.

```
File: None                    GETTING STARTED
================================================================================


                The date must be 1983 or later,
                and in this form:  3/20/84


--------------------------------------------------------------------------------
Type today's date or press Return:  3/20/84                          55K Avail.
```

FIGURE 2.1

5. You will now see the MAIN MENU on the monitor screen (Figure 2.2).

```
Disk: Drive 1                 MAIN MENU
________________________________________________________________________________
 ____________________
|    Main Menu       |_____________________________________________________
|                                                                          |
|                                                                          |
|    1.  Add files to the Desktop                                          |
|                                                                          |
|    2.  Work with one of the files on the Desktop                         |
|                                                                          |
|    3.  Save Desktop files to disk                                        |
|                                                                          |
|    4.  Remove files from the Desktop                                     |
|                                                                          |
|    5.  Other Activities                                                  |
|                                                                          |
|    6.  Quit                                                              |
|                                                                          |
|__________________________________________________________________________|

________________________________________________________________________________
Type number, or use arrows, then press Return                     @-? for Help
```

FIGURE 2.2

- Select the first option -- "1. Add Files to Desktop." -- by pressing the RETURN key.

6. The "ADD FILES" MENU will appear on your monitor screen.

   - Single disk drive users will press RETURN since the highlighted default is "1. The current disk: DRIVE 1." You will be asked to insert the data disk which has been supplied to you. Insert the disk, close the drive door and press the RETURN key again.

   - If you have a dual disk drive, insert your data disk into Drive #2 and press the number 2 key. This will highlight the "2. A different disk" option on the menu. Press RETURN. You will then be asked to select the disk drive location of your choice. Select #2. Drive 2," and press RETURN. You will no longer have to swap disks.

   - In either case, press RETURN once more to display the "APPLEWORKS FILES" screen.

7. It is time to get a file from your data disk and edit it.

   - Once the red in-use light on your disk drive goes off, look on your monitor for the file entitled LETTER.TO.MOM.

     - Use your UP and DOWN ARROW-CURSOR keys to highlight it.

     - Press the RIGHT-ARROW-CURSOR key to select the choice. (The Left-ARROW-CURSOR is used to deselect a choice.)

     - Press RETURN to load the file you have selected. The in-use light will go on while the file is being loaded.

   - Single disk drive users will have to remove the data disk from the drive and insert the PROGRAM disk (it is important that the PROGRAM side is face up and <u>not</u> the STARTUP side). Press the RETURN key.

8. At this point you should see the LETTER.TO.MOM. file on your monitor screen. You are ready to edit your first document.

   - The first thing you should notice is that the youngster who produced the letter you are viewing can't spell and doesn't realize that every sentence should begin with a capital letter.

9. Let's begin by overstriking all words that should begin with a capital letter.

   - Make sure that you are using the overstrike cursor -- you should be able to see a blinking rectangle in the upper left-hand corner of the screen.

- If you see a blinking line in the upper left-hand corner of the screen, press OPEN-APPLE-E to switch back and forth between the insert (blinking line) and the overstrike (blinking rectangle) cursors.

. Move the cursor with the arrow keys until it is over the "d" in "dear mom." To replace the lowercase "d" with an uppercase "D," simply type over (overstrike) the character; that is, hold down the shift key and then press the "D" key.

. Find all the words that should be capitalized and replace them accordingly.

10. Let's correct the misspelled "grils" by replacing it with "girls."

. To do this, press OPEN-APPLE-R (R = replace). You will see two choices at the bottom of the screen.

- Select the default value "TEXT" by pressing RETURN.

- When asked "Replace What?" type in the word **grils** and press RETURN.

- You will then be asked to provide the word you wish to replace "grils" with. The prompt "Replace with what?" will appear on the monitor. Type in the correct spelling **girls** and press the RETURN key.

. The computer will locate each occurrence of the word "grils."

- At each, you will be asked "Replace this one? No/Yes." Select "Yes" and press RETURN. Press return once more to select the highlighted option, "one at a time."

- You will then be asked "Find the next occurrence? No/Yes." Answer yes to each question and press RETURN.

- After you finish, check you work.

. The computer erred! It did not correct all the mistakes. This is true; it only changed the plural forms ("grils") because this is what you told it to do. You see that the computer does only what you tell it to do; it cannot think for itself!

11. We are now at the point where we should explore some of the other editing capabilities of AppleWorks.

. One of the program's most powerful features is its ability to switch words and paragraphs within the document you are working on and to transfer data (text, graphs etc.) to other documents as well. Different word processors identify this capacity to move blocks of text around by different terms; AppleWorks calls this function "Cut and Paste."

12. If you haven't already done so, press the SPACE BAR to continue.

- Move the cursor to the first word in the second paragraph ("It is raining here...").

  - To "Cut and Paste," press the OPEN-APPLE-M (M = move) keys.

  - At the bottom of the screen you will be asked to identify where you wish to "Move Text? Within document to clipboard (cut) from clipboard (paste)." Choose within document (the default) and press RETURN.

  - You will then be requested to move the cursor to highlight (sometimes called "paint" in other programs) the block you wish to move.

  - Use the DOWN-ARROW-CURSOR key to move the cursor down two lines. The entire paragraph should now be highlighted.

  - Press the RETURN key.

  - Note: if you are not at the beginning of the block you wish to move, press the ESC key. This will return you to the document on Desktop -- AppleWorks' term for the document you were last working on. Move the cursor to the beginning of the block you wish to move and repeat step #12.

- You will then be asked to move the cursor to the place you wish the block to be inserted; move the cursor to the first letter of the first word of the last paragraph ("Well they are calling..."). Press the RETURN key. Look at the monitor; it's done! The paragraph has been moved.

13. Use the skills you have learned thus far to modify the document as you wish.

Unedited Wordprocessing Practice Document

dear mom

being away at camp is alot of fun. all the boys and grils arre nice. I became friendly with a gril named Mary. She is on of the nicest grils I have ever met. I hope to invite her home with me this fall and meet my other grilfriends. Grilfriends like her are hard to find!

It is raining here. That is why I am writing, because I am bored and I need some more money to buy sone candy and stuff.

How is that little rotten brother of mine. i hope you aren't letting him touch any of my things. You know how he is, he steals all of my stuff.

Well they are calling us for dinner so I'll close now.

Love.

Johnny

DATABASE MANAGEMENT

OVERVIEW

A database or file management system is a computer program which allows the user to design, build, and manipulate collections of information. These collections of information are called files, data files, or databases. The data, once entered into the computer, can be manipulated to suit specific needs. Most database programs include report-generation features so the user can format and print the information that has been gathered and arranged.

OBJECTIVES

By the end of this chapter, you will be able to:

- identify fields in a record,
- modify a field's format,
- manipulate section criteria, and
- sort and/or merge records.

Listed below are some common database terms with which you should become familiar.

A Database

- A database is a collection of files. Think of a database as a series of file cabinets or a large file cabinet with many drawers. This cabinet may contain related or unrelated individual files. For example, we could construct a social studies database (electronic file cabinet) to describe the many different countries on the seven continents. We might call our database CONTINENTS.

A File

- A file is a collection of related pieces of information. Our CONTINENTS database would most likely contain seven separate files (electronic drawers within the cabinet): NORTH AMERICA (electronic drawer #1), SOUTH AMERICA (electronic drawer #2), AFRICA (electronic drawer #3), EUROPE (electronic drawer #4) ASIA (electronic drawer #5). . .

A Record

- A record is an individual element of a file. Let's continue the analogy by using our imaginary EUROPE file. The EUROPE file would no doubt contain the names of many countries. Remember, our database CONTINENTS was created to describe the countries on each of the continents. Each individual country would therefore represent a single record in our EUROPE file: ENGLAND, FRANCE, GERMANY ... would all be individual records.

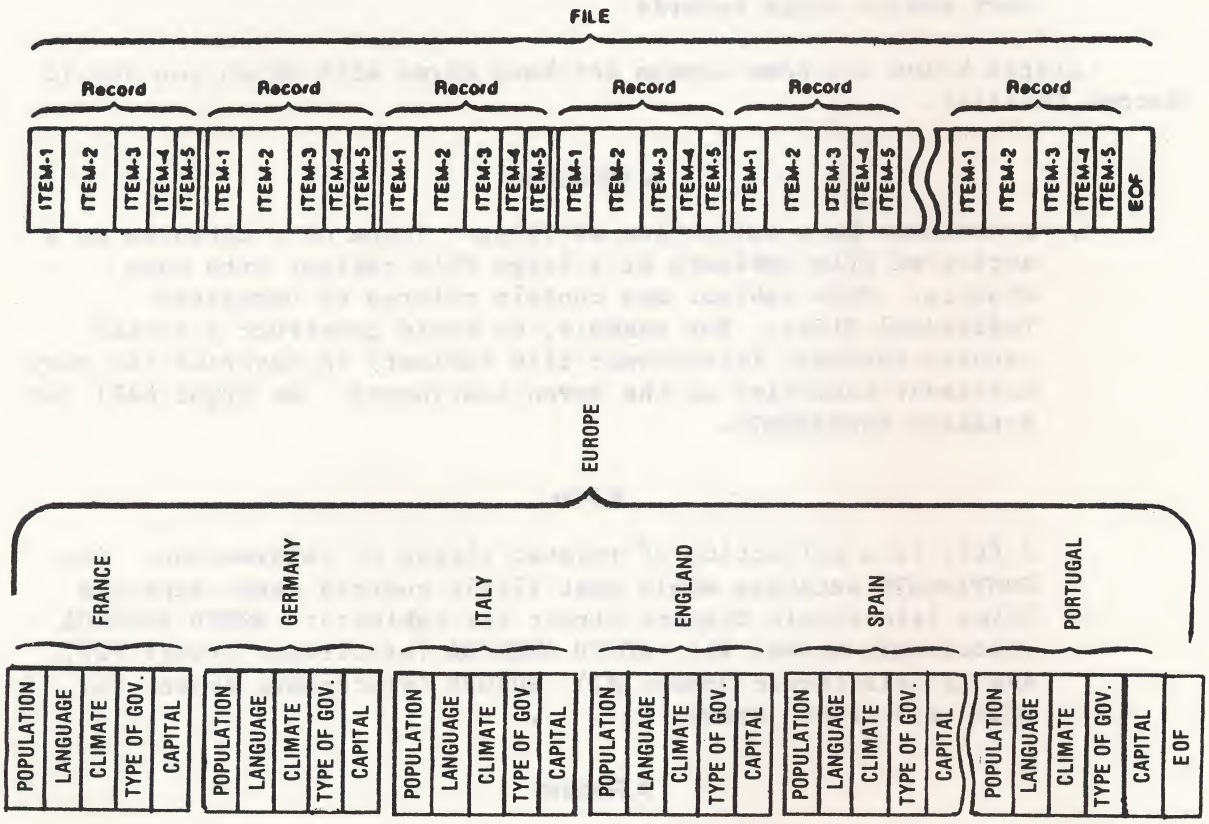
A Field

- A field is a series (string) of related letters (characters) within a record. Each field, in turn, may store one piece of data. If we were to type out our FRANCE record, for example, we would want to include some very important fields: POPULATION, PRINCIPAL LANGUAGE, TYPE OF GOVERNMENT, CLIMATE...

Data

- Data is a raw fact entered into a field. Our FRANCE record would have the data "French" typed into its PRINCIPAL LANGUAGE field.

Two Views of A Database File



CREATING A DATABASE

1. Analyze your needs.

   - Output determines all functions, especially input. What do you want to get out of your file? You need to decide this first.

   - Either use the form on the following page or prepare a similar one.

2. Create your file structure.

   - Enter the names of the items/fields you want as listed in your design questionnaire.

3. Enter a small sampling of your data.

   - Ten records are usually enough to practice with. This is just to help you design reports and check for missing item/fields of information. DON'T spend a lot of time entering data yet.

4. Try searching for specific types of data.

5. Design and create reports.

6. If needed, modify your file structure, input screens and any reports.

   - Repeat steps 2 through 5 until you are satisfied your file contains all the items/fields you will possibly need. Do NOT go on to the next step until you are sure. If you are brave, design customized data entry screens or complex reports and write the programs necessary to generate them.

7. Enter your data.

   - Be sure to think about the editing of data and checking for transcription errors.

   - BACKUP your data frequently (you know your own tolerance -- or your secretary's -- for re-entering data). Never shut off the computer without making a backup of any database into which changes have been made.

8. Document your system.

   - Get paper copies of your file structure, sample reports, and instructions for data entry and system use.

9. Produce your reports.

   - This part is easy if you've done steps 5 and 6 thoroughly.

DESIGNING A DATABASE

1. Answer these questions before you try to create your database.

2. What items of information do you want to keep in this database? Think of your reports and your source documents to help you decide.

   . Abbreviate your item/field descriptions. A maximum of 10 characters is allowed.

	Item/Field	Description	Type	Width	Decimals
1.					
2.					
3.					
4.					
5.					

   . Add additional lines if you need them.

   . Valid item/field types are: Character/Text, Numeric, and Date.

3. Add up the field widths _____

   How many records do you anticipate?_____

   Will the hardware and software accommodate this?_____

4. What is the source of your input data? Will this have an effect on your screen design?

   _____ one paper document for each record _____ computer file

   _____ multiple documents for each record _____ other

5. List the reports you want to produce.

	Report Title	Description	Items/Fields to be included	Sorting order
1.				
2.				
3.				
4.				
5.				

   . Add additional lines if needed.

USING A DATABASE IN A SCHOOL ENVIRONMENT

The following is a list of possible applications of AppleWorks, or any simple database (electronic filing) program in a school environment. Applications include, but are not limited to, instructional uses.

1. Classroom Applications

   - Creation of databases of facts and figures related to specific topics; plant/animal classification in science; countries and their socio-political systems in global studies; vocabulary lists in foreign language; census information in social studies and community studies.
   - Research organization
   - Bibliographical references

2. Student Record Management

   - Parent/guardian mailing labels
   - Emergency home contact
   - Teacher class reports
   - Special program registration
   - Transportation information
   - Homeroom, advisor and locker information
   - Student lists
   - Student-Parent information
   - Immunization charts
   - Native language categories
   - Delinquent book accounts (Library Science)

3. School Property

   - Records of property
   - Sources of funding
   - Property on loan
   - Locations of property
   - Repair cost analysis

4. General Purpose

   - Room utilization reports
   - Special events schedules
   - School supplies inventory
   - Teachers' programs
   - Library files
   - Teacher coverage - file

Loading a Database File

1. Insert the AppleWorks disk with the STARTUP side face up into disk drive #1.

2. Turn the computer on. After the red in-use light on the front of the disk drive goes off, remove the disk.

3. Flip the disk over so that the PROGRAM side is face up; insert it into disk drive #1. Press the RETURN key.

4. Type in today's date (Figure 3.1) and then press the RETURN key.

```
File: None                    GETTING STARTED
================================================================================



                 The date must be 1983 or later,
                 and in this form:  3/20/84



--------------------------------------------------------------------------------
Type today's date or press Return:  3/20/84                          55K Avail.
```

FIGURE 3.1

5. The MAIN MENU (Figure 3.2) will appear on your monitor screen.

```
Disk: Drive 1                 MAIN MENU
________________________________________________________________________________
 ___________________
|  Main Menu        |_____________________________________________________
|                                                                          |
|                                                                          |
|   1.  Add files to the Desktop                                           |
|                                                                          |
|   2.  Work with one of the files on the Desktop                          |
|                                                                          |
|   3.  Save Desktop files to disk                                         |
|                                                                          |
|   4.  Remove files from the Desktop                                      |
|                                                                          |
|   5.  Other Activities                                                   |
|                                                                          |
|   6.  Quit                                                               |
|                                                                          |
|__________________________________________________________________________|
________________________________________________________________________________
Type number, or use arrows, then press Return                    @-? for Help
```

FIGURE 3.2

- Select option "1. Add Files to Desktop." Press the RETURN key.

6. The ADD FILES MENU will appear on your monitor screen.

   - Single disk drive users will press RETURN since the highlighted default selection is "1. The current disk Drive 1." You will then be asked to insert the data disk (supplied to you) into disk drive #1. Insert the data disk, close the disk drive door and press the RETURN key.

   - Dual disk drive users should insert their data disk into disk drive #2 and press the number 2 key. This will highlight the "2. A different disk" option on the menu. Press the RETURN key. You'll see the "CHANGE CURRENT DISK" screen on your monitor. Select the "2. Drive 2" option by pressing the 2 key, and press RETURN. From this point on, it will no longer be necessary to swap disks during the session.

   - Press the RETURN key to get the files from disk drive #2.

7. It is time to load a file from the data disk.

   - Once the red in-use light on your disk drive goes off, look for the file entitled PLANETS.

   - Use your UP or DOWN ARROW-CURSOR keys to highlight that file. Press the RIGHT ARROW-CURSOR key to indicate your choice (the LEFT ARROW-CURSOR key is used to remove a selection).

   - Press the RETURN key to load the file you have selected (PLANETS).

   - The disk drive in-use light will remain on for a short time. When the light goes off, the file has been loaded.

   - Single disk drive users will have to remove the data disk from disk drive #1 and once again insert the program disk (it is important that the PROGRAM side is used and <u>not</u> the STARTUP side). Follow all instructions which appear below the prompt line at the bottom of the screen.

   - Dual disk drive users are ready to proceed.

8. The PLANETS file should be displayed on your monitor.

   - When an existing AppleWorks database first appears on the screen, it is displayed in a table layout. The first fifteen records are shown. Since our PLANETS file only contains nine records, you see the entire file (Figure 3.3).

```
File: PLANETS                    REVIEW/ADD/CHANGE                Escape: Main Menu

Selection: All records

Planet          To Sun  Diameter  Moons    Rotation  Revolution  Rel. Weight
================================================================================
Venus           67      7700      0        249       .614        88
Neptune         2783    28000     2        .65       165.301     141
Uranus          1783    30000     5        .44       84.014      105
Saturn          886     71500     10       .43       29.467      117
Mercury         36      3000      0        59        .242        38
Pluto           3675    6500      0        7         248.518     65
Mars            142     4200      2        1.06      1.876       39
Earth           93      7900      1        1         1           100
Jupiter         483     86700     12       .42       12.023      240

--------------------------------------------------------------------------------
Type entry or use ∂ commands                                      ∂-? for Help
```

Figure 3.3

- Notice the planets are not in any familiar order. For now, let's look closely at the structure of this file.

- At the top of the screen you will see the title (or present mode) of this feature of the database program, "REVIEW/ADD/CHANGE." From this screen, as its title would imply, we can "REVIEW" all records, "ADD" new records or "CHANGE" existing records.

- Note the location of the flashing cursor. The location indicates we are currently in position to "REVIEW/ADD/CHANGE" the record "Venus."

9. Press the OPEN-APPLE-Z (Z = zoom) to zoom in on the "Venus" record. You will see the entire "Venus" record displayed on the screen (Figure 3.4).

```
File: PLANETS                    REVIEW/ADD/CHANGE                Escape: Main Menu

Selection: All records


Record 1 of 9
================================================================================
Planet: Venus
To Sun (mil.mi.): 67
Diameter (mi.): 7700
Moons: 0
Rotation (days): 249
Revolution (years): .614
Rel. Weight: 88


--------------------------------------------------------------------------------
Type entry or use ∂ commands                                      ∂-? for Help
```

Figure 3.4

- This file was constructed with seven fields for each record:

  - Name of the planet
  - Distance to the Sun in millions of miles
  - Diameter in miles
  - Number of moons
  - Period of rotation in days
  - Period of revolution in years
  - Relative weight on the planet (Earth=100 lbs.)

- AppleWorks and many database management progams make provisions for the insertion or deletion of fields after a file has been created. We won't insert or delete fields today. However, this feature is an important consideration when deciding which program to buy.

10. The ability to arrange and sort data is perhaps the most powerful feature of a database program.

- Zoom back to the table layout (press OPEN-APPLE-Z) so that we can put the planets in their ascending distance from the Sun. Press the OPEN-APPLE-A (A = arrange) keys. You will see the "ARRANGE (SORT)" screen. Let's study this screen for a moment. (Figure 3.5).

```
File: PLANETS                    ARRANGE (SORT)        Escape: Review/Add/Change

Selection: All records

==========================================================================

                    This file will be arranged on
                    this category: Planet

                    Arrangement order:

                         1.  From A to Z
                         2.  From Z to A
                         3.  From 0 to 9
                         4.  From 9 to 0


--------------------------------------------------------------------------
Type number, or use arrows, then press Return                    53K Avail.
```

FIGURE 3.5

- In AppleWorks, you're able to perform alphabetical and numerical sorts. You can sort either in ascending or descending order. If you have a "Date" field you are given two additional sorting options. Also, these sorts can be performed on any field in the record.

- In order to get the records so that the planets are in their correct order from the Sun, we would need to do an ascending numerical sort on the "To Sun" field.

  - Press the ESC key to bail out from the current screen and return to the "REVIEW/ADD/CHANGE" screen. Now press the TAB key (located below the ESC key) to move the cursor to the "To Sun" field.

  - We have just moved the cursor because the program will sort on the field indicated by the position of the cursor.

  - Press the OPEN-APPLE-A keys, then use the DOWN-ARROW-CURSOR key to select option "3. From 0 to 9" (ascending numerical order). Press the RETURN key. The planets are now in ascending distance from the Sun, as shown in the "To Sun" field.

  - Notice this arrangement also sorted the "Revolution" field as well. To verify this, use the TAB key to move the cursor to the "Revolution" field. Follow the same sort procedures as before (OPEN-APPLE-A, Option #3, RETURN). Notice the order of the planets has not changed, indicating the field has already been sorted.

  - In an instructional setting, this would be an ideal time to raise the concept of the relationship between a planet's distance from the Sun and its period of revolution.

- Now sort the planets according to ascending size. Sort on the "Diameter" field. When the sort is completed, your screen should look like the one depicted in Figure 3.6.

File: PLANETS REVIEW/ADD/CHANGE Escape: Main Menu

Selection: All records

Planet	To Sun	Diameter	Moons	Rotation	Revolution	Rel. Weight
Mercury	36	3000	0	59	.242	38
Mars	142	4200	2	1.06	1.876	39
Pluto	3675	6500	0	7	248.518	65
Venus	67	7700	0	249	.614	88
Earth	93	7900	1	1	1	100
Neptune	2783	28000	2	.65	165.301	141
Uranus	1783	30000	5	.44	84.014	105
Saturn	886	71500	10	.43	29.467	117
Jupiter	483	86700	12	.42	12.023	240

Type entry or use @ commands @-? for Help

FIGURE 3.6

********** Bulletin! **********

*** Noted astronomer Professor I.M. Joeaione announces the ***
*** long-awaited discovery of the tenth planet in our solar ***
*** system. The professor, in all modesty, has named this ***
*** new planet Joeaionius. ***

********** Bulletin! **********

11. Let's update our database by adding this new planet (record) to our file. To do so, we must first go to the end of the file.

- AppleWorks provides a way to move about quickly within a file.

- By using the OPEN-APPLE key and a number from 1 (beginning of file) to 9 (end of file), you can move proportionately through the file. In our present table layout, let's jump to the last record by pressing OPEN-APPLE-9.

- The cursor position should be on the last (9th) record of our file -- "Jupiter." Press OPEN-APPLE-Z to zoom in on the record. Move the cursor to the last field (Rel. Weight) by pressing the TAB key four times.

- Press the TAB key once more. You will see the "INSERT NEW RECORDS" screen (Figure 3.7).

```
File: PLANETS                    INSERT NEW RECORDS     Escape: Review/Add/Change

Selection: All records

Record 9 of 9
================================================================================


                    You are now past the last record
                    of your file and can now start
                    typing new records at the end.


--------------------------------------------------------------------------------
Do you really want to do this?  No  Yes
```

FIGURE 3.7

- The message appearing in the center of this screen indicates you are past the last (9th) record of your file. You may now exit the "INSERT NEW RECORDS" screen or begin typing in a new record.

- Select the "YES" option appearing below the prompt line (at the bottom of your screen) by using the cursor key. Press RETURN.

- Record #10, which is blank, appears on the screen (Figure 3.8).

```
File: PLANETS                    INSERT NEW RECORDS     Escape: Review/Add/Change


Record 10 of 10
================================================================================
Planet: -
To Sun (mil.mi.): -
Diameter (mi.): -
Moons: -
Rotation (days): -
Revolution (years): -
Rel. Weight: -


--------------------------------------------------------------------------------
Type entry or use ∂ commands                                          53K Avail.
```

FIGURE 3.8

- Joeaionius has the following characteristics:

  - Name of planet: Joeanionus
  - To Sun (mil.mi.): 648
  - Diameter (mi.): 5185
  - Moons: 2
  - Rotation (days): 26
  - Revolution: 17.918
  - Rel. Weight: 74

- Enter the data for the new record.

- After the data for each field is entered, press RETURN to move the cursor down to the next field. When data for the last field (Rel. Weight) has been entered, the program will offer you another blank record (record #11).

- We don't want to enter any more planets (records) to our file, so press the ESC key to leave the "INSERT NEW RECORDS" screen and return to the "REVIEW/ADD/CHANGE" screen. Press OPEN-APPLE-Z to bring us back to the table layout and then press OPEN-APPLE-1 (number one) to move quickly to the beginning of the file.

- Notice Joeaionus is not in its proper order according to "Diameter." This is because we added Joeaionus <u>after</u> we did our sort.

- Sort the file in ascending numerical order according to the "Diameter" field (Figure 3.9).

File: PLANETS REVIEW/ADD/CHANGE Escape: Main Menu

Selection: All records

Planet	To Sun	Diameter	Moons	Rotation	Revolution	Rel. Weight
Mercury	36	3000	0	59	.242	38
Mars	142	4200	2	1.06	1.876	39
Joeanious	648	5185	2	26	17.918	74
Pluto	3675	6500	0	7	248.518	65
Venus	67	7700	0	249	.614	88
Earth	93	7900	1	1	1	100
Neptune	2783	28000	2	.65	165.301	141
Uranus	1783	30000	5	.44	84.014	105
Saturn	886	71500	10	.43	29.467	117
Jupiter	483	86700	12	.42	12.023	240

Type entry or use @ commands @-? for Help

FIGURE 3.9

12. Now it's time to remove the PLANETS file from our Desktop and work with another file.

. To do this, press the ESC key to return to the MAIN MENU.

- From the MAIN MENU, select option "4. Remove files from Desktop" either by moving the highlighted bar down to the 4th option (with the cursor keys) or by pressing the 4 key.

- Once option #4 is selected, press RETURN. Notice the "Status" column on the "REMOVE FILES" screen (Figure 3.10).

Disk: Drive 2 REMOVE FILES Escape: Main Menu

Main Menu

Remove Files

Name	Status	Document type	Size
PLANETS	Changed	Data Base	2K

Use Right Arrow to choose files, Left Arrow to undo 53K Avail.

FIGURE 3.10

- The "Status" column indicates "Changed" for the PLANETS file. Press RETURN again. Since changes were made to the file, AppleWorks offers three options (Figure 3.11).

```
Disk: Drive 2                    "PLANETS"                Escape: Remove Files
____________________________________________________________________________
 ___________________
|   Main Menu       |_____________________________________________________
|  ___________________________________________________________________________
|  |   Remove Files        |_____________________________________________|__
|  |  ___________________________________________________________________
|  |  |   "PLANETS"          |_____________________________________________|__
|  |  |                                                                      |
|  |  |                                                                      |
|  |  |   You made changes to this file                                      |
|  |  |                                                                      |
|  |  |   1.  Save the file on the current disk                              |
|  |  |                                                                      |
|  |  |   2.  First change to a different disk or directory                  |
|  |  |                                                                      |
|  |  |   3.  Throw out the changes to the file                              |
|  |  |                                                                      |
|__|  |                                                                      |
   |  |                                                                      |
   |__|                                                                      |
      |_______________________________________________________________________|
____________________________________________________________________________
Type number, or use arrows, then press Return                     53K Avail.
```

FIGURE 3.11

- Select option "3. Throw out the changes to the file." This will keep our original PLANETS file intact.

- Notice the question "Do you really want to do this?" at the bottom of the screen. This double-check feature of the program safeguards new data from human error.

- Select "Yes" by pressing the RIGHT-ARROW-CURSOR key. Press RETURN. We're ready to proceed.

13. The MAIN MENU should be on your screen.

- Press RETURN to select the highlighted choice, "1. Add files to the Desktop."

  - Follow the same procedure as previously outlined to display the "APPLEWORKS FILES" screen.

- When the "APPLEWORKS FILES" screen is displayed, select the database file CLASS.PROFILE from the menu. Press the DOWN-ARROW-CURSOR key until CLASS.PROFILE is highlighted and then press RETURN.

- Examine the file information as it appears on the screen. Review the file's first record in detail by pressing OPEN-APPLE-Z.

- As you can see, there are nine fields in each CLASS.PROFILE record. Note the names of each field.

- When you feel familiar with the names, press OPEN-APPLE-Z to return to the table layout.

- As you can see, some fields are missing. There are too many fields in each record to be seen in the table at one time. To compensate, AppleWorks allows the user to select the fields, and their widths, to be displayed in the table layout.

- Let's change the display to see other data on the screen. Press the OPEN-APPLE-L (L = layout) keys to move to the "CHANGE RECORD LAYOUT" screen (Figure 3.12).

```
File: CLASS.PROFILE          CHANGE RECORD LAYOUT    Escape: Review/Add/Change

==============================================================================

                  --> or <--  Move cursor
                   >  a   <   Switch category positions
                  --> a  <--  Change column width
                  a-D         Delete this category
                  a-I         Insert a previously deleted category

------------------------------------------------------------------------------

LAST NAME       FIRST NAME      ADDRESS                 BORO & ZIP
--------------- --------------- ----------------------- --------------------
GOLDBERG        FREDDIE         123 S. MAIN ST.         BKLYN., N.Y. 10462
HERNANDEZ       MIGUEL          400 PENN ST.            BKLYN., N.Y. 11202
WILLIAMS        CHARLES         508 ASH ST.             BKLYN., N.Y. 11203

------------------------------------------------------------------- More --->
Use options shown above to change record layout                  52K Avail.
```

FIGURE 3.12

- Directions appear in the center of this screen.

- The LEFT and RIGHT ARROW-CURSOR keys act as tabs, moving the cursor from field to field.

  - Press the RIGHT-ARROW-CURSOR key four times. A fifth field, "SCORE," appears on the display. Press the LEFT-ARROW-CURSOR key four times to return to the "LAST NAME" field.

- Hold down the OPEN-APPLE key and press the LEFT-ARROW-CURSOR key six times. Watch the three fields to the right of the "LAST NAME" field shift left.

- Press the RIGHT-ARROW-CURSOR key by itself twice to tab to the "ADDRESS" field. Shorten this field as before by pressing the OPEN-APPLE and LEFT-ARROW-CURSOR keys six times. The "SCORE" field will become visible on the right side of the screen.

- It is important to realize you are NOT altering any data in the file but merely changing the way data is displayed.

- We will now insert the missing "TEST" field into the shortened display.

  - Tab to the "SCORE" field by pressing the RIGHT-ARROW-CURSOR key twice.

- Press OPEN-APPLE-I (I = insert). When the "INSERT A CATEGORY" screen appears, you will see a list of four fields. These fields were not chosen to be part of the original display.

- We now have the option of inserting fields into the record layout.

  - Select "TEST" by typing 4 or using the cursor key, then press RETURN. The field "TEST" will be inserted. Press the OPEN-APPLE and LEFT-ARROW-CURSOR keys ten times to shorten the "TEST" field. When finished, the screen should look like Figure 3.13.

```
File: CLASS.PROFILE          CHANGE RECORD LAYOUT    Escape: Review/Add/Change
==============================================================================

                    --> or <--  Move cursor
                     >  @   <   Switch category positions
                    --> @  <--  Change column width
                    @-D         Delete this category
                    @-I         Insert a previously deleted category

------------------------------------------------------------------------------

LAST NAME  FIRST NAME    ADDRESS          BORO & ZIP            TEST  SCORE M
---------- ------------- ---------------- --------------------- ----- ----- A
GOLDBERG   FREDDIE       123 S. MAIN ST.  BKLYN., N.Y. 10462    MAT   6.7   R
HERNANDEZ  MIGUEL        400 PENN ST.     BKLYN., N.Y. 11202    CAT   8.3   G
WILLIAMS   CHARLES       508 ASH ST.      BKLYN., N.Y. 11203    CAT   8.3   I
                                                                            N
------------------------------------------------------------------------------
Use options shown above to change record layout                   52K Avail.
```

FIGURE 3.13

14. We will now place the records in ascending alphabetical order.

- Sort on the "LAST NAME" field employing the same procedure used for the PLANET file (OPEN-APPLE-A, "1. From A to Z," RETURN).

- Study the results. Note that Mary Brown's record appears before Eric Brown's.

  - They are out of alphabetical order because AppleWorks sorts only on one field at a time, with no "tiebreakers."

- To remedy this, sort on the "FIRST NAME" field, and then on the "LAST NAME" field. When sorting on two or more categories (fields), the rule is to sort the least significant, or minor category, first.

- TAB to the "FIRST NAME" field, the least significant of the two fields. Sort it in ascending alphabetical order.

  - Once the "FIRST NAME" field is sorted, tab backwards to the "LAST NAME" field by pressing the OPEN-APPLE-TAB keys together. Sort this field next.

. When finished, the table display should look like Figure 3.14.

File: CLASS.PROFILE REVIEW/ADD/CHANGE Escape: Main Menu

Selection: All records

LAST NAME	FIRST NAME	ADDRESS	BORO & ZIP	TEST	SCORE
BROWN	ERIC	432 FIRST AVE.	N.Y.C., N.Y. 10011	MAT	3.5
BROWN	MARY	248 TOMPSON ST.	BKLYN., N.Y. 12023	CAT	7.8
COLETTI	ANTHONY	87 ELM ST.	BKLYN., N.Y. 11211	CAT	9.8
COLLETT	CHARLES	432 ELM ST.	BKLYN., N.Y. 12011	MAT	5.8
COLLETT	CHASTITY	432 ELM ST.	BKLYN., N.Y. 12011	CAT	8.7
EHRENBERG	NEAL	456 HOUSTON ST.	BKLYN., N.Y. 11211	CAT	4.2
GOLDBERG	FREDDIE	123 S. MAIN ST.	BKLYN., N.Y. 10462	MAT	6.7
GREEN	JANE	1243 CHRISTOPHER	BKLYN., N.Y. 12011	MAT	6.3
HERNANDEZ	MIGUEL	400 PENN ST.	BKLYN., N.Y. 11202	CAT	8.3
JACKSON	MICHAEL	1273 CHRISTOPHER	BKLYN., N.Y. 12011	MAT	7.3
JONES	MARY	243 W. 33RD ST.	BKLYN., N.Y. 12011	CAT	4.6
PEREZ	MARIA	2334 MADISON ST.	BKLYN., N.Y. 11206	MAT	7.9
REYNOLDS	PETER	145 44th. ST.	BKLYN., N.Y. 11245	MAT	4.3
RYAN	MICHAEL	1257 E.23 ST.	BKLYN., N.Y. 12011	MAT	12.0
SALERNO	MARILYN	183 E. 23 ST.	BKLYN., N.Y. 11221	CAT	6.6

Type entry or use @ commands @-? for Help

FIGURE 3.14

15. Suppose we want to retrieve a list of all students reading above grade level (grade level = 6.0).

. Note the upper left-hand corner of the monitor, "Selection: all Records." This informs us we are currently working with all records entered into the CLASS.PROFILE database file.

. AppleWorks allows selection and use of certain records having specific characteristics. Press OPEN-APPLE-R (R = record selection rule). You will see the "SELECT RECORDS" screen containing all the fields of the current file.

. Select "Score" by pressing the number 9 and then press RETURN. You now have a choice of 12 selection criteria (Figure 3.15).

File: CLASS.PROFILE SELECT RECORDS Escape: Review/Add/Change

Selection: SCORE

1. equals
2. is greater than
3. is less than
4. is not equal to
5. is blank
6. is not blank
7. contains
8. begins with
9. ends with
10. does not contain
11. does not begin with
12. does not end with

Type number, or use arrows, then press Return 52K Avail.

FIGURE 3.15

- Select "2. is greater than" and press RETURN.

  - You will see "Type comparison information:" below the prompt line at the bottom of the screen.

  - Type 6.0 to indicate those records with reading scores greater than 6.0. Press RETURN.

- You will then be asked to specify the relationship between the first condition and the next condition to be entered.

  - Press ESC to indicate our selection is complete.

  - Only the records of those students with reading scores greater than 6.0 will be displayed on the screen (12 records in all).

- The "Selection" rule in the upper left-hand corner of the screen identifies the characteristics of the records being displayed. The rule continues until cancelled. For now, press OPEN-APPLE-R to cancel.

- "Select all records?" will appear below the prompt line. Highlight the "Yes" option by pressing the RIGHT-ARROW-CURSOR key and then press RETURN.

16. If we want the same list <u>based on MAT scores</u>, we would specify a second condition (parameter) in our selection criteria.

  - The first condition would be students having a reading score greater than 6.0.

  - The second condition would be scores only from the MAT test. This is called multiple selection.

- AppleWorks uses key words to identify the logical links between conditions in multiple selections. The key words, referred to as Boolean operators, are "and," "or" and "through."

  - The "and" operator indicates you want both conditions in your multiple selection to be true for the record to be selected.

  - The "or" operator will select the record if either of the conditions in your multiple selection is true.

  - The "through" operator indicates records are to be selected if they fall within a specified <u>range</u> of values.

- We will have to use multiple selection criteria to identify the student records that satisfy both conditions.

- Press OPEN-APPLE-R to establish a record selection rule.

  - The "SELECT RECORDS" screen will appear on your monitor.

- Select "8. READING TEST" to identify the first field and then press RETURN.

- Now select "1. equals" and press RETURN.

. Notice the prompt, "Type comparison information:" Type MAT and press RETURN. We have created a selection criteria ("READING TEST" = "MAT").

. We are still on the "SELECT RECORDS" screen; the three Boolean operators are listed in the middle.

  - Select "1. and" then press RETURN. This indicates we want both conditions (we will specify our second condition shortly) to be true for record selection.

. To identify the second condition, select "9. SCORE," then press RETURN.

  - Select "2. is greater than" and press RETURN.

  - Once again you will be asked to "Type comparison information" at the bottom of the screen.

  - Type 6 and press RETURN. We have now identified the second condition in our multiple selection rule ("SCORE" is greater than 6).

. The upper left-hand corner of the "SELECT RECORDS" screen displays the selection criteria we have identified. Press the ESC key to indicate our selection criteria is complete.

  - The screen will display the records of the five students who meet the criteria.

17. Continue with the following exercises.

. There are two records of students who live in Brooklyn but whose area codes have been incorrectly entered as 212. Can you find and correct the records?

. How many students live on Elm Street?

. How many students have a first name containing an "m" or an "n?" Create your own selection file.

. There is another file on your data disk entitled "US GEOGRAPHY." If time permits, bring it onto the Desktop and practice different sorting and selecting options.

We hope you have enjoyed this brief introduction to a database file management program. We trust the skills and concepts you have learned will be of value to you in the future. GOOD LUCK!

SPREADSHEET ANALYSIS

OVERVIEW

We use a shreadsheet to quickly and accurately compute numerical expressions and predict results. The capacity to predict results, months or even years into the future, based on present formulas, is what raises the spreadsheet "head and shoulders" above a calculator.

Think of the spreadsheet as being made up of thousands of independent cells - each having the capacity to do certain mathematical calculations and having the ability to know, remember and use the contents of the other cells.

The spreadsheet component of the Appleworks program uses a people-oriented approach. Its help screen and prompts direct you in the use of this part of the program.

OBJECTIVES

By the end of this chapter, you will be able to:

- traverse a spreadsheet horizontally and vertically,
- enter new values into cell locations,
- enter new labels into cell locations,
- enter formulas into cell locations, and
- use a spreadsheet to project costs and grades.

APPLEWORKS TUTORIAL

1. Insert the PROGRAM disk with the STARTUP side face up into disk drive #1.

2. Turn the computer on. After the red in-use light on the disk drive goes off, remove the disk. You will be asked to insert the PROGRAM disk.

3. Flip the disk over so that the PROGRAM side is face up, then insert it into disk drive #1. Press the RETURN key.

4. Type in today's date (Figure 4.1) and then press the RETURN key.

```
File: None                    GETTING STARTED
==================================================================================


                The date must be 1983 or later,
                and in this form:  3/20/84


----------------------------------------------------------------------------------
Type today's date or press Return:  3/20/84                          55K Avail.
```

FIGURE 4.1

5. You will soon see the MAIN MENU on the screen (Figure 4.2). Select option "1. ADD FILES TO DESKTOP." "Press the RETURN key.

```
Disk: Drive 1                    MAIN MENU
__________________________________________________________________________________
 ____________________
|    Main Menu       |_____________________________________________________
|                                                                          |
|                                                                          |
|    1.  Add files to the Desktop                                          |
|                                                                          |
|    2.  Work with one of the files on the Desktop                         |
|                                                                          |
|    3.  Save Desktop files to disk                                        |
|                                                                          |
|    4.  Remove files from the Desktop                                     |
|                                                                          |
|    5.  Other Activities                                                  |
|                                                                          |
|    6.  Quit                                                              |
|                                                                          |
|__________________________________________________________________________|

__________________________________________________________________________________
Type number, or use arrows, then press Return                        @-? for Help
```

FIGURE 4.2

6. The "ADD FILES" screen will now appear on your monitor.

   . Single disk drive users will press RETURN since the highlighted default selection is "The current disk: Drive 1." You will then be asked to insert the data disk into disk drive #1. Insert it, close the disk drive door and press the RETURN key.

   . If you have dual disk drives, insert your data disk into disk drive #2 and press the number 2 key. This will highlight the "2. A different disk;" press RETURN. You will be asked to select the disk drive location of your choice. Select "2. Drive 2" and press RETURN key. You will no longer have to swap disks.

7. After the red in-use light on your disk drive goes off, look for the file displayed on your monitor entitled PURCHASE.ORDER.

   . Use your UP and DOWN ARROW-CURSOR keys to highlight it.

   . Press the RIGHT-ARROW-CURSOR key to indicate the choice.

     - The LEFT-ARROW-CURSOR key is used to deselect a choice.

   . At this point you may be asked to select more than one file; the process is the same.

   . Press the RETURN key to add the files you have selected to go onto DESKTOP. The disk drive in-use light will go on while the files are being loaded.

   . Single disk drive users will have to remove the data disk from the disk drive #1 and once again insert the PROGRAM disk. It is important that the PROGRAM side is used and not the STARTUP side). Press the RETURN key. Follow all instructions at the bottom of the screen.

8. At this point you should see the PURCHASE.ORDER. file on your monitor screen.

   . You will notice the screen is divided into a series of columns (vertical) and rows (horizontal).

     - The columns are identified by letters (A,B,C,....DW), and the rows are identified by numbers (1,2,3.....999).

   . The display on your monitor screen is actually one small section of a much larger spreadsheet, a spreadsheet that contains 127 columns and 999 rows.

   . The intersection of each row and column is called a cell.

     - Since there are 127 columns and 999 rows, a maximum of 126,873 cells are at your disposal.

- The location of each cell in the spreadsheet is defined by its point of intersection, similar to the way latitude and longitude define a point on the globe.

. There are several ways to traverse the spreadsheet. For this introductory session, we will use the cursor keys.

  - There are four ARROW-CURSOR keys located to the right of the CLOSED-APPLE key. The arrow on each key indicates the direction of cursor movement.

. A cell indicator in the lower left-hand corner of the monitor screen indentifies the cursor's present location.

. You should see the following display on your monitor (Figure 4.3):

```
File: PURCHASE.ORDER          REVIEW/ADD/CHANGE          Escape: Main Menu
====D========E========F=========G===============H===============I========
  1|
  2|                 |
  3|    QUANTITY     |      PRICE         TOTAL COST
  4|=================|=================================
  5|               1|              2.98            2.98
  6|               1|             11.00           11.00
  7|             133|              3.50          465.50
  8|               4|              7.99           31.96
  9|              19|              6.43          122.17
 10|              11|              3.99           43.89
 11|               9|              3.49           31.41
 12|              19|              4.78           90.82
 13|               4|            299.95         1199.80
 14|-----------------|---------------------------------
 15|                 |                         1999.53
 16|                 |
 17|                 |
 18|                 |
-------------------------------------------------------------------------
H15: (Value, Layout-F2) @SUM(H5...H13)

Type entry or use @ commands                                  @-? for Help
```

FIGURE 4.3

. Notice the information displayed in the cell indicator, "E7(Value, Layout-A) 133"

  - The "E7" represents the cursor's present location, its column ("E") and row ("7").

  - The word "Value" indicates that the contents of the cell is numerical. If the contents were alphanumeric, the word "Label" would be displayed.

  - The expression "Layout-A" indicates that the AppleWorks program will self-adjust each cell in order to present a neat display.

  - Other "Layout" options are available.

9. You are ready to produce your first spreadsheet document.

- You will notice that the prices are unrealistic in some instances.

  - For example, duplicating paper has recently gone up to $34.95 per box.

- Let's see what effect this new price has on the "bottom line."

  - Begin by locating the cell that has the price per unit of the duplicating paper (cell G-5). Use the cursor keys to locate cell G-5.

  - Remember, use the cell indicator in the screen's bottom lefthand corner to learn your location easily.

  - When you reach cell G-5, you will see "G5: (Value, Layout - F2) 2.98."

- Type the new value for the cell that we agreed upon, namely, 34.95. Press the RETURN key and watch the item and grand totals change to reflect the new prices.

- Try changing the prices and quantities of some of the other items, and the effect will be the same -- instant computation.

10. We now want you to restore all the original values. What! You say you can't remember them all; few people could. Let's see what we can do to get out of this mess.

    - Press the ESC key to bring back the MAIN MENU.

      - Select option #4 and press the RETURN key.

      - Highlight PURCHASE.ORDER using the cursor keys and press RETURN.

      - You will now be given three choices. Select choice "3. Throw out changes to the file." and press RETURN.

    - The menu appears to remain the same, but notice the prompt at the bottom: "Do you really want to do this? NO/YES?" The NO is highlighted and is therefore the default; highlight the Yes by using the RIGHT-ARROW-CURSOR key and press RETURN.

    - Now repeat step #7 for loading PURCHASING.ORDER and you will have the original purchase order back on Desktop.

11. Now for another real life experience:

    - You are given $10,000.00 to spend on these items at the assigned prices.

    - Manipulate the quantities you order to come as close to the allotted amount without creating an overexpenditure.

12. Use the procedure for removing a file from Desktop and loading a new one.

    . Remove the file PURCHASE.ORDER and retrieve HS. GRADES.

13. At this point, the file HS.GRADES should be on Desktop and displayed. Use your skills for traversing the spreadsheet to determine its size.

    . You should discover the columns extend from A to AJ, and the rows from 1 to 38.

    . Loading individual cells can be done quickly.

    . Press the OPEN-APPLE-F keys (F = find).

      - A prompt at the bottom of the screen will ask "Find? Repeat last Coordinates Text." This feature permits quick movement about the spreadsheet.

      - "Repeat last" cannot be used at this point since no previous coordinate or text has been identified.

    . Coordinates are used to locate individual cells. Hightlight "Coordinates," press RETURN and type W38.

    . We are going to use the "Text" option next. Move the cursor to cell A1.

      - This is done because the "Find" option can only identify text which is to the right and below the cursor location.

      - Press OPEN-APPLE-F. Select "Text," press RETURN, and answer the prompt by typing "Zacker," the text you wish to locate.

      - The cursor will move to the first occurrence of the specified text in the spreadsheet.

14. Look at the cell indicator at the bottom of the screen "W38: (Value) @COUNT (U8...U31)."

    . Notice the arithemetic function "@COUNT."

    . This function counts the number of non-blank entries from cell U8 to cell U31.

      - The value of cell W38 tells us 7 students elected to do a third book review.

    . Let's explore other arithmetic functions used on this spreadsheet.

- The cell indicator by itself gives no indication how the cell was derived. However, the OPEN-APPLE-Z (Z = zoom) command allows us to examine the contents of a cell and determine if the value is a result of an arithmetical function.

- Press OPEN-APPLE-Z. Notice the numbers in column W have been replaced by arithmetic function indicated by "@" commands!

15. The "@" commands used in HS. GRADES are representative of arithmethic functions.

. AppleWorks and other spreadsheeet programs differ in the way arithmetic functions are identified and performed.

. Let's discuss what arithmetical function was used in HS.GRADES:

Function	Definition
@AVG	AVERAGE or the arithmetic mean of the values in an identified list.
@COUNT	COUNT the number of cells containing an entry in an identified list.
@MAX	MAXIMUM, or largest, value in an identified list.
@MIN	MINIMUM, or smallest, value in an identified list.
@SUM	SUM, or total, of all values in an identified list.
@IF	@IF logical operator -- used to test IF a condition is True or False. The value of a particular cell is determined by this test.

16. Move the cursor up three cells to W35. Check the cell indicator to make certain you are in the proper cell.

. The cell indicator, "W35: (Value) @Min(W8...W31)," tells us that the cell contains a value. The value, you remember, may include numbers, pointers, formulas or functions.

- In our example, an arithmetic function, @, identifies the minimum value from cell W8 to cell W31. The value 54.5 represents the lowest grade in this range.

- The arithmetic functions @MAX, @AVG and @SUM perform in a similar fashion.

17. The arithmetic function @IF permits the testing of a condition by using Boolean operators.

. Move the cursor to cell 031 (the letter O). The cell indicator reads: "031: (Value, Layout A) @IF(AH31, AJ31, AH31, AJ31)"

- This arithmetic function can be translated as follows:

  - If it is true that the value of cell AH31 is greater than the value of cell AJ31, insert the value of cell AH31 in cell 031.

  - Otherwise, it is false; therefore, insert the value of cell AJ31.

- The arithmetic operators available with Appleworks spreadsheet are:

OPERATOR	DEFINITION
==	equal to or same as
>	greater or larger than
<	less or smaller than
>=	greater than or equal to
=<	less than or equal to
<>	not equal to

18. After you have worked with HS.GRADES for a while, try this project.

- There are several records for the Zacker family. What is the average score for all the Zackers.

  - Try an @IF function for each test, review, and program.

GRAPH GENERATION

OVERVIEW

Presenting numerical data in pictorial, rather than tabular, form can often serve to clarify information. Spreadsheets are an effective vehicle for making projections based on given data. For this reason, spreadsheets are sometimes referred to as "What If" programs. However, spreadsheets were not designed to create graphic representations of data relationships. Conversely, a graph is designed to present information in a form which is visually qualitative and quantitative.

A graph generation program allows the user to enter specific numerical data (whole or part of a spreadsheet) displayed in one of several formats.

These include:

Bar Graph (single, multiple or stacked)

Bar graphs are very effective when used to represent quantitative data; for example, comparing national norm reading scores to school or district reading scores.

Line Graph (single, multiple or cumulative)

Line graphs are most effective when comparing and describing numerical information; for example, the rate of increase or decrease in reading scores over the past ten years.

Pie Chart (circle graph)

Pie charts are generally used to show quantitative data in percents. They are also used to show absolute numbers that are part of a whole.

Graphs can be created and immediately printed by a dot matrix printer or plotter, or can be stored on a disk to be merged with documents created on a word processor.

OBJECTIVES

The purpose of this section of the workshop is to familiarize you with the operations of one such graph generation package - GraphWorks. GraphWorks was selected because, as of this publication date, it was the only commercially available graph generation program compatible with AppleWorks. (Other programs may now be available.)

The effectiveness of a graphic presentation is demonstrated on the following page by two memoranda from the principal of a school to his assistant principal. In the first memorandum (top), the PSEN test data is listed in the normal tabular form. In the second version (bottom), the same data is shown on a double line graph.

M E M O R A N D U M (Version 1)

TO: Frank Burns, A.P. English
FROM: Ben Pierce, Principal
DATE: May 15, 1985
SUBJECT: Comparative PSEN Test Data

.....

The recently received PSEN Test results included the following table summarizing our school's September - May test results in grade 9 for the past 4 years.

1981-82		1982-83		1983-84		1984-85	
Sept	May	Sept	May	Sept	May	Sept	May
8.7	9.3	8.9	9.4	8.6	9.1	8.9	9.2

Please review these data. I would like to meet with you on May 22 at 11:00 to discuss the implications.

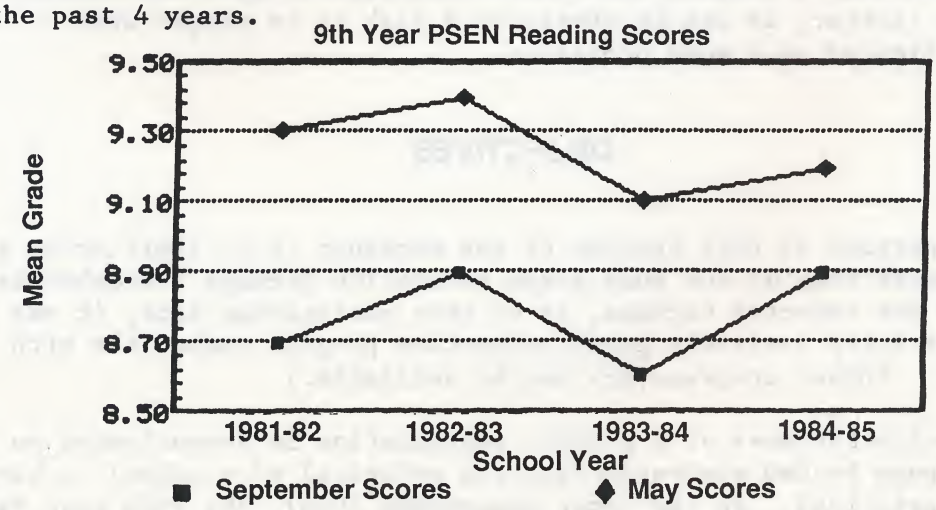
****

M E M O R A N D U M (Version 2)

TO: Frank Burns, A.P. English
FROM: Ben Pierce, Principal
DATE: May 15, 1985
SUBJECT: Comparative PSEN Test Data

.....

The recently received PSEN Test results included the following graph summarizing our school's September - May test results in grades 9 and 10 for the past 4 years.



Please review these data. I would like to meet with you on May 22 at 11:00 to discuss the implications.

GRAPHWORKS TUTORIAL

GraphWorks is similar in appearance to AppleWorks; however, there are some important differences to note.

- The STARTUP and PROGRAM disk are contained on one side. Also, it is necessary to have AppleWorks spreadsheet files as you cannot construct graphs without them.

- In other programs, existing spreadsheet files are not necessary; graphs may be generated by charting the X and Y coordinates.

Using Graphworks

1. Insert the GraphWorks disk into disk drive #1 and turn the computer on.

2. The "TITLE" screen will appear on your monitor (Figure 5.1).

```
GraphWorks™

(C) 1984 by PBI Software Inc.
all rights are reserved

Written by Walter Horat

Press the Space Bar to Continue.                    Version 1.2c
```

FIGURE 5.1

- At the bottom of the screen, you will be prompted to press the SPACE BAR to continue.

  - This procedure differs from AppleWorks where the RETURN key is used to continue.

- Press the SPACE BAR.

3. The MAIN MENU will appear on the screen (Figure 5.2).

```
Data: Drive 1                    GraphWorks 1.2
_____________________________________________________________________
 ____________________
|     Main Menu      |_____________________________________________
|                                                                   |
|   1.    Add Appleworks files to the Desktop                       |
|                                                                   |
|   2.    Work with one of the files on the Desktop                 |
|                                                                   |
|   3.    Remove files from the Desktop                             |
|                                                                   |
|   4.    Other activities                                          |
|                                                                   |
|   5.    Quit                                                      |
|                                                                   |
|                                                                   |
|___________________________________________________________________|

_____________________________________________________________________
Type number, or use arrows, then press Return
```

FIGURE 5.2

- Select "1. Add AppleWorks files to Desktop" and press RETURN. GraphWorks will now display the ADD FILES MENU (Figure 5.3).

```
Data: Drive 1                    GraphWorks 1.2                Escape:Main Menu
_____________________________________________________________________
 ____________________
|     Main Menu      |_____________________________________________
|                                                                   |
|   ____________________                                            |
|  |     Add Files      |_____________________________________|__   |
|  |                                                            |  |
|  |   1.    Get file from current disk drive                   |  |
|  |                                                            |  |
|  |   2.    Change current disk drive or ProDOS prefix         |  |
|  |                                                            |  |
|  |                                                            |  |
|  |                                                            |  |
|  |                                                            |  |
|  |                                                            |  |
|  |                                                            |  |
|__|                                                            |  |
|                                                               |  |
|_______________________________________________________________|  |

_____________________________________________________________________
Type number, or use arrows, then press Return
```

FIGURE 5.3

- If you are using a dual disk drive, adjust GraphWorks to your system's configuration.

- Users of a single disk drive system should be accustomed to disk swapping by now.

  - Insert the data disk and then select option "1. Get file from current disk Drive." Press the RETURN key.

  - If you don't swap disks, the GraphWorks demo file will appear.

- Dual disk drive users should choose option "2. Change current drive or ProDOS prefix" and press RETURN. The CHANGE CURRENT DISK MENU (Figure 5.4) now appears:

```
Data: Drive 1                    GraphWorks 1.2                    Escape:Add Files
_____________________________________________________________________________________
 ___________________
|     Main Menu     |_____________________________________
|  ___________________
|  |    Add Files    |_____________________________________|__
|  |  ___________________
|  |  | Change Current Disk |_____________________________|__
|  |  |
|  |  |   1.    Drive 1                                     |
|  |  |
|  |  |   2.    Drive 2                                     |
|  |  |
|  |  |   3.    ProFile or other ProDOS directory           |
|  |  |
|  |  |                                                     |
|__|  |                                                     |
   |  |                                                     |
   |__|                                                     |
      |                                                     |
      |_____________________________________________________|
_____________________________________________________________________________________
Type number, or use arrows, then press Return
```

FIGURE 5.4

- Select option "2. Drive 2" and strike the RETURN key.

  - This returns you to the ADD FILES MENU with drive 2 as the "DATA: DRIVE" (the indicator is in the upper left-hand corner of the screen).

- Press the RETURN key.

4. The SPREADSHEET FILES MENU appears listing all spreadsheet files on the data disk (Figure 5.5).

```
Data: Drive 2                    GraphWorks 1.2                    Escape:Add Files
_____________________________________________________________________________________
 ___________________
|     Main Menu     |_____________________________________
|  ___________________
|  |    Add Files    |_____________________________________|__
|  |  ___________________
|  |  | Spreadsheet Files |_____________________________|__
|  |  |
|  |  | Name              Type              Size          |
|  |  |
|  |  |   PSEN.SCORES     Spreadsheet        1K           |
|  |  |   PURCHASE.ORDER  Spreadsheet        2K           |
|  |  |   HS.GRADES       Spreadsheet        8K           |
|  |  |
|  |  |                                                   |
|__|  |                                                   |
   |  |                                                   |
   |__|                                                   |
      |                                                   |
      |___________________________________________________|
_____________________________________________________________________________________
Use right arrow to choose files, left arrow to undo
```

FIGURE 5.5

- You are requested to select the desired file(s). Use the RIGHT-ARROW-CURSOR key to highlight the file(s).

  - GraphWorks limits the size of a Desktop spreadsheet file to 12K. In some cases this constraint might require the restructuring of a spreadsheet file. Check the file size on the SPREADSHEET FILES MENU before loading.

- Select the following files: PSEN.SCORES, BUDGET and GRADES. Press the RETURN key.

5. The ADD FILES MENU appears on the screen. Use the ESC key to return to the MAIN MENU and select "2. Work with one of the files on Desktop." Press the RETURN key.

6. The WORK WITH FILES MENU now appears on the screen, listing the three files you have selected.

   - Highlight the file you wish to graph (BUDGET). Strike the RETURN key to move to the "Review/Graph screen."

     - If a single file has been selected in step 4, the program will automatically proceed to the "Review/Graph screen."

   - You are ready to construct a graph. A Help option, accessed by pressing the SHIFT-?/ keys, is available for support (Figure 5.6).

```
                              Help

A-F     Set Data Range                  Arrows     Move Cursor

 L      Legends                         A-Arrows   Move Cursor one page

 S      Set Graph Type                  ESC        Return to main menu

 G      Graph                           P          Print Graph

 T      Edit Graph Titles/Legends       O          Show Options

 X      Cancel Graph Options            R          Review graph


--------------------------------------------------------------------------
A1

Press Return to continue.                                  ? for help
```

FIGURE 5.6

7. The BUDGET file should now be displayed.

   - You cannot edit a spreadsheet with GraphWorks. You must return to AppleWorks for all editing.

- Use the cursor keys to traverse the spreadsheet. The cursor's present position is identified by a cell indicator in the lower left-hand corner of the screen.

8. Press the S key for graph selection. The "Select Graph Type" prompt appears at the bottom of the screen.

   - GraphWorks can display four types of graphs: pie, bar, stacked-bar, and line.

   - Strike the P key to select a pie graph since our data is best displayed in this format. Strike the RETURN key.

9. Move the cursor to the first data item you will graph, cell H5. Press the A key.

   - Highlight the items to be included in the A range of your graph with the DOWN-ARROW-CURSOR key (H5..H13) and press RETURN.

   - Each range may contain a maximum of 24 items. Since the screen display is limited to 16 items, it may be necessary to use two steps to specify the range.

     - Use the OPEN-APPLE and ARROW-CURSOR keys to highlight the entire range.

10. Identify the legends or labels to be used. Move the cursor to cell A5. Press the L key. A prompt asks "select legends: type A B C D E F or L." There must be an equal number of label and range items.

    - Use the DOWN-ARROW-CURSOR key to highlight the range A5...A13 and press RETURN. Striking the O (letter O) key will display a "window" with your previous selections. Press the RETURN key.

11. The graph is ready for display. Pressing the G key displays Figure 5.7.

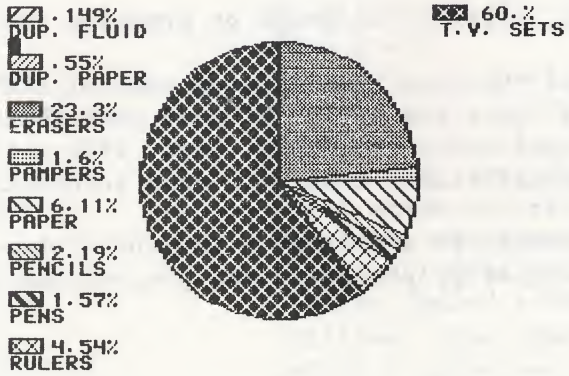


FIGURE 5.7

12. There are other graphs you can use to display this data. The bar, stacked-bar and line formats will be used next.

    . Strike any key to return to the spreadsheet.

    . Press the S key and then select the Stacked-Bar graph (press the S again, and then the RETURN key).

    . Press the G key to display a Stacked-Bar graph.

    . Notice this format doesn't display the data with the same clarity as the pie graph. What is missing?

      - The legends of course! We can correct this by entering text directly onto the graph display.

13. Strike any key to return to the spreadsheet.

    . Press the T key and observe the cursor in the upper left-hand corner of the graph.

      - The ARROW-CURSOR keys can now be used for cursor placement/movement.

    . Move the cursor to the appropriate locations to indicate what each bar section represents.

      - An alternative method would be selecting individual ranges, A through F, and labeling each range.

14. Now try the two remaining formats, bar and line. Press the S key; strike the B key for a bar graph and then press the RETURN key. Depress the G key to display a bar graph.

15. Repeat the procedure for graph selection (press the S key).

    . Choose a line graph with an L keystroke.

    . Once again, display the graph by pressing the G key.

    . Notice that the line format loses some of its impact when more than three lines are used. If more than three lines are to be displayed use multiple graphs, begin with a three line graph and display an additional line with each successive graph.

16. If you have access to a printer with your system, the P key will allow you to print graphs after the program has been properly installed.

GRAPHWORKS SPECIFICATIONS

Requirements:	APPLE IIe or IIc, one floppy disk drive, monitor, Appleworks spreadsheet file, 80 column card, printer (optional).
Limitations:	Graphs can only be generated from AppleWorks spreadsheet files.
	Graph options, i.e. data ranges, cannot be saved to disk, but graphs themselves can. Graphs cannot be printed to clipboard.
	Spreadsheet(s) cannot be larger than 12K. (See page).
Description:	Four types of graphs can be generated (bar, pie, line, and stacked-bar).

Data points allowed:
- Bar - 24
- Pie - 24
- Stacked-bar - 24 points distributed in 6 ranges
- Line - 52 points distributed in 6 ranges

GRAPHWORKS COMMANDS

Keystroke:	Meaning
A thru F	Select data ranges A thru F.
L then A thru F	Select label for data ranges A thru F.
L then L	Select label for pie graph.
S then B,L, P or S	Set type of graph (bar, line, pie, or or stacked-bar).
G	Draw graph.
G then SHIFT-6	Draw line graph without extra symbol clarification on the graph.
O	Display selected options.
T	Insert text into graph.
P then P or D	Print graph to printer or disk.
R	Return to graph screen.
X	Clears all data ranges and labels.
?	Display "Help" screen.
ESC	"Bailout" from present options or return to previous display.
OPEN-APPLE and ARROW-CURSOR Keys	Traverse the spreadsheet a page at a time.

AN INTRODUCTION TO THE APPLE COMPUTER

1. Apple Presents Apple is a tutorial disk designed with the novice in mind. To begin your private lesson just follow these steps:

   . Insert the demonstration disk, Apple Presents Apple, into disk drive #1 and close the door.

   . In this order:

     - Turn the monitor on.

     - Turn the computer on (you will find the computer on/off switch in the rear lower left-hand corner of the unit).

   . The disk drive will make a whirling sound and the red in-use light will go on.

   . If your computer is already on, simultaneously press:

     - the OPEN-APPLE key (found to the left of the SPACE BAR),

     - the CONTROL key (found to the left of the "A" key), and

     - the RESET key (found in the upper right-hand corner of the keyboard).

     - Release the RESET button first, then the others.

2. "Apple will present Apple." So, watch your monitor and follow the directions. Have fun!

3. An illustration of the Apple IIe keyboard (Figure A.1) has been provided for you.

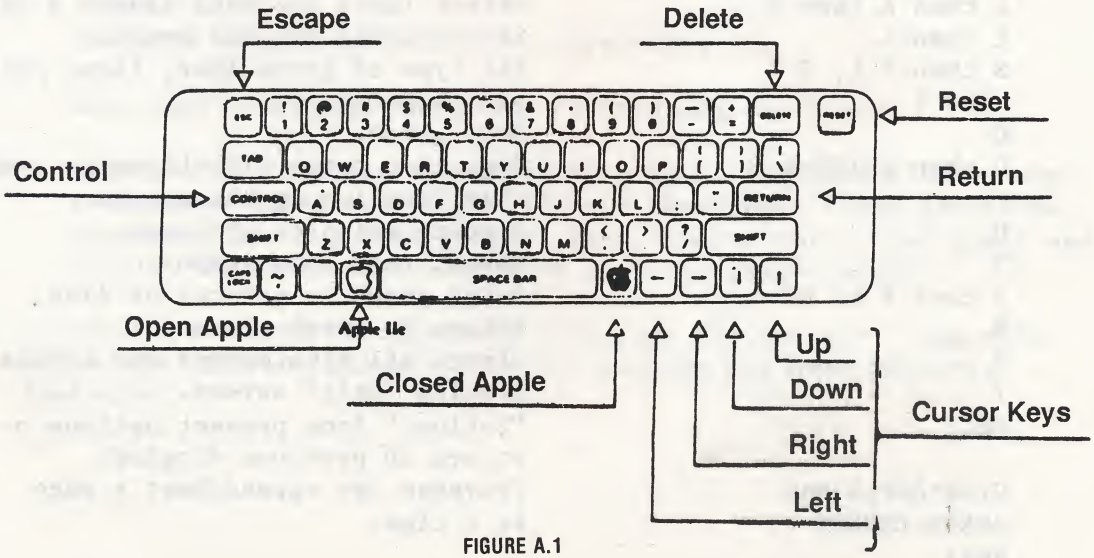


FIGURE A.1

APPLE DISK OPERATING SYSTEM
DOS 3.3

Initializing and Formatting

For single and dual disk drive systems:

1. Insert your System Master disk into disk drive #1.

   . This is the disk you received when you purchased your disk drive. Remember, insert the disk label side up and thumbs up!

2. Turn the monitor and computer on.

   . When the disk drive stops spinning and the red in-use light goes out, the formatting program is loaded.

   . Make sure the CAPS LOCK key is in the down position.

3. Remove the System Master disk and insert a blank disk.

4. Type the following:

   INIT HELLO (press RETURN)

   . When the disk drive stops spinning and the red in-use light goes off, the disk is formatted in Apple DOS 3.3.

Duplicating Disks

For dual disk drive systems:

1. Load the System Master disk (steps #1 and #2 above)

2. Type: RUN COPYA (press RETURN)

   . You will be asked four questions.

   . Select the default value by pressing the RETURN key four times.

   . Your monitor screen should look like this:

```
ORIGINAL SLOT          6
DRIVE                  1

DUPLICATE SLOT         6
DRIVE                  2

-- PRESS 'RETURN' KEY TO BEGIN COPY --
```

3. Remove the System Master disk.

- Insert the disk you want copied (original disk) into disk drive #1.

- Insert the blank disk (it is not necessary to format the duplicate disk first) into disk drive #2.

- Press the RETURN key. The computer will inform you when the copying process is complete.

<u>For single disk drive systems:</u>

1. Follow steps #1 and #2 as in copying with a dual disk drive system. However, you must change the default value of the duplicate drive to 1. Your monitor screen should look like this:

ORIGINAL SLOT	6
DRIVE	1
DUPLICATE SLOT	6
DRIVE	1

- When you press the RETURN key, the computer will prompt you to insert the original disk and press the RETURN key again.

- After a few seconds of reading the original disk, the computer program will ask you to replace the original disk with the duplicate disk and press the RETURN key again.

- You must repeat this process several times to complete the copying process.

Initializing and Formatting

For single and dual disk drive systems

1. Insert your ProDOS User's Disk into disk drive #1. Remember, insert the disk with the label side up.

2. Turn the monitor and computer on.

   . When the disk drive stops spinning and the red in-use light goes out, the MAIN MENU will appear on the screen (Figure B.1).

```
****************************************
*                                      *
*          PRODOS USER'S DISK          *
*                                      *
* COPYRIGHT APPLE COMPUTER, INC. 1983  *
*                                      *
****************************************

YOUR OPTIONS ARE:

     ? - TUTOR: PRODOS EXPLANATION

     F - PRODOS FILER (UTILITIES)

     C - DOS <-> PRODOS CONVERSION

     S - DISPLAY SLOT ASSIGNMENTS

     T - DISPLAY/SET TIME

     B - APPLESOFT BASIC

PLEASE SELECT ONE OF THE ABOVE
```

FIGURE B.1

3. Select option "F - PRODOS FILER (UTILITIES)" by pressing the F key (no need to press RETURN).

4. A menu of filer options will appear on the screen (Figure B.2).

```
****************************************
*                                      *
*   APPLE'S PRODOS SYSTEM UTILITIES    *
*                                      *
*         FILER  VERSION 1.0.1         *
*                                      *
*  COPYRIGHT APPLE COMPUTER,  1983-84  *
*                                      *
****************************************

          ? - TUTOR

          F - FILE COMMANDS

          V - VOLUME COMMANDS

          D - CONFIGURATION DEFAULTS

          Q - QUIT

PLEASE SELECT AN OPTION:
```

FIGURE B.2

. Select option "V - VOLUME COMMANDS" by pressing the "V" key. The "VOLUME COMMANDS" screen will appear on the monitor (Figure B.3).

```
****************************************
*                                      *
*            VOLUME COMMANDS           *
*                                      *
****************************************

          ? - TUTOR

          F - FORMAT A VOLUME

          C - COPY A VOLUME

          L - LIST VOLUMES

          R - RENAME A VOLUME

          D - DETECT BAD BLOCKS

          B - BLOCK ALLOCATION

          K - COMPARE VOLUMES

SELECT AN OPTION OR <ESC>:
```

FIGURE B.3

5. Select option "F - FORMAT A VOLUME" by pressing the F key (Figure B.4).

```
****************************************
*                                      *
*            FORMAT A VOLUME           *
*                                      *
****************************************

--FORMAT--
  THE VOLUME IN SLOT: <6>
                DRIVE:


  NEW VOLUME NAME:


 --PRESS <RET> TO ACCEPT:<ESC> TO EXIT--
```

FIGURE B.4

. Single disk drive users should now remove the ProDOS User's Disk and insert a blank disk into disk drive #1.

- Type 6 for the slot number (press RETURN) and type 1 for the disk drive number (press RETURN).

- Volume names in ProDOS must begin with a slash (/), followed by a letter.

- They may be composed of letters, numbers or periods. They may not contain spaces or punctuation characters other than periods and may not exceed fifteen characters.

- Enter a valid volume name (example: /MYDISK). Your screen should look like the one in Figure B.5.

```
****************************************
*                                      *
*            FORMAT A VOLUME           *
*                                      *
****************************************

--FORMAT--
  THE VOLUME IN SLOT:  6
                DRIVE:  1


  NEW VOLUME NAME: (/MYDISK.        )


--PRESS (RET) TO ACCEPT:(ESC) TO EXIT--
```

FIGURE B.5

- Press RETURN. The disk drive will begin to spin. When the in-use light goes out, the disk will be successfully formatted in ProDOS 1.0.

. Dual disk drive users should insert a blank disk into disk drive #2.

- Follow the procedures for single disk drive users, with one exception. Type 2 for the disk drive number instead of 1.

. Do not remove disks until the formatting process is completed.

Duplicating Disks

To Duplicate A Disk

1. Load the ProDOS volume utilities by following steps 1 through 4 from the "Initializing and Formatting" section, with one exception. Do not select "F - FORMAT A VOLUME."

2. From the "VOLUMES COMMAND" screen select option "C - COPY A VOLUME" by pressing the C key.

Single disk drive users should remove the ProDOS User's Utility disk and insert the source disk (the disk to be copied) into drive #1.

- Type 6 for the slot number of the source disk and then press RETURN.

- Type 1 for the disk drive number of the source disk, then press RETURN.

- Press RETURN once more and the volume name of the source disk will be displayed beside "NEW VOLUME NAME."

- The program is asking if it should use the same volume name for your destination (new) disk. In most instances you will answer yes by pressing RETURN.

- The disk drive will begin to spin as the destination disk is automatically formatted.

- After the formatting has been completed you will be asked to remove the destination disk and insert the source disk. This process of removing and inserting disks will continue until the copying process is completed.

- Be sure to follow all instructions appearing at the bottom of the screen.

Dual disk drive users should follow steps 1 and 2 as described above.

- Type 2 for the location of the new (target) disk drive on the "COPY A VOLUME" screen.

- Insert the target disk into disk drive #2. Press RETURN.

- The formatting and copying process will be performed automatically. There will be no further need to remove or swap disks.

A BRIEF GLOSSARY OF COMPUTERESE

Term	Meaning
Argument	The value in a spreadsheet on which the associated function operates. (e.g. @Avg gives the arithmetic mean of the values in the list.)
Back-up	To make a duplicate copy of a program or data.
BASIC	A high level (English-like) programming language. (Beginner's All-purpose Symbolic Instruction Code.)
Bit	A binary digit. The smallest unit of information understood by a computer. A bit is either 0 (current is not flowing in the circuit) or 1 (current is flowing.)
Boot	To start a computer or program. Literally, to lift the computer by its own bootstraps.
Byte	A group of bits processed as a unit. A byte may be thought of as a single character. Bytes may be 8, 16, or even 32 bits long, depending upon the computer.
Cell	The location where an individual piece of information is displayed in a spreadsheet.
Cell Indicator	The identifier for the coordinates and contents of a cell in a spreadsheet.
Central Processing Unit (CPU)	The brain of the computer system. This part of the computer interprets instructions, carries them out, and directs the flow of information among the various other components of the computer.
Chip	The common name for a small piece of silicon on which an integrated circuit is etched.
Clipboard	The RAM memory used to hold information during a cut and paste operation in the **AppleWorks** program.
Cobol	A high level (English-like) program language designed primarily for business application. (Common Business Oriented Language)

Coordinates	The location of a cell (e.g. B5) in a spreadsheet.
Cursor	A symbol (usually a blinking or steady line or block) displayed on the computer screen which indicates where the next character will be printed.
Cut and Paste	The process by which information in one document is transferred to another in the **AppleWorks** program.
Default	A value automatically assumed unless explicitly overridden by human input.
Desktop	In **AppleWorks**, the RAM memory reserved for the files you are presently working on.
Device	Any piece of equipment that attaches to the computer. Devices provide means of getting information in and out of the computer as well as provide additional storage space.
Diskette	A medium for providing secondary storage. Also called floppies and disks.
Disk Drive	A device that reads (plays) and records information on disks.
DOS	Disk Operating System. A program (set of instructions in machine language) which controls computer activity.
File	A collection of information (data or program) recorded on some storage medium.
Hardware	The physical parts of a computer.
Hard Copy	The printed copy of the machine output.
Input	Information that is given to the computer.
Input/Output Devices (I/O Devices)	Any device that permits the movement of information into or out of the central processing unit. Examples include: keyboard, light pen, touch tablet, digitizer, card reader, joystick, mouse (input) -- video display (CRT), printer, plotter, speech synthesizer (output), cassette recorder, disk drive, telephone modem (input and output).

Kilobyte	1,024 bytes of information. The memory of a computer and the amount of storage space on a disk is often expressed in kilobytes. A 64K machine can hold 65,536 bytes (64 x 1024) of information.
Label	In **AppleWorks** database, a labels-style report which alows you to format and then print several lines of information about each record (mailing labels, for example). In a spreadsheet program, the word that is used to identify alphanumerical information.
Memory	See RAM and ROM.
Menu	A displayed list of choices from which the user may select.
Modem	A modulator/demodulator device. It changes computer signals (digital data) into tones that can be transmitted over telephone lines. When the signal is received by another modem, it is changed back to the digital data which can be understood by the computer.
Output	Information or results generated by a computer during the running of a program.
Program	The instructions given to a computer that tell it what to do.
RAM	Random access memory. That part of computer memory which the user can access. This is usable memory, the contents of which are lost when power is turned off. Usually, the advertised memory size of a computer refers to the amount of RAM.
ROM	Read only memory. Instructions (code) stored permanently on chips at the time of manufacture. You can look but you can't touch.
Software	Computer programs.
Table Display	In **AppleWorks** data base, a way of looking at a list of items in a file containing only some of the data actually stored about the items.

Value	The numerical information of a spreadsheet's cell including formulas, functions, numbers and pointers.
Wraparound	The automatic continuation of a line of text from the end of one line to the beginning of the next.

QUESTIONNAIRE

A Guide to the Use of Tool Software for the Apple Computer

This is an experimental guide for staff development in computer education. It is a pioneering effort to standardize computer instruction on a citywide basis. It is expected that the classroom teacher will take this tool software guide one step beyond by using ingenuity to create tailor made lesson plans. Your suggestions for improvement are most welcome.

1. How many classes in your school use tool software?_____

2. What grade levels do the participants in this course teach?

   _____

3. Is the format of the guide useful?_____

4. Is the guide well organized?_____

5. Are the goals of the guide clearly stated?

   _____

6. Are the activities appropriate for the intended participants?

   _____

7. Is there sufficient emphasis on enduring computer concepts, such as good documentation, modular design, problem-solving skills, and so forth?

   _____

8. Did the learning activities enable participants to achieve the performance objectives?_____

   _____

9. What changes (if any) would you make in the activities presented in the guide?_____

10. What additions would you make to the scope of the course content?

    _____

    _____

11. What topics in the course of study would you delete or change?

    _____

    _____

12. Was the interest level high among the participants?

_____

13. What changes in sequence would you recommend?_____

_____

14. What difficulty (if any) did you encounter in implementing this guide?

_____

_____

15. What do you consider to be the overall strengths of the guide? (If any)

_____

_____

16. What do you consider to be the overall weaknesses of the guide? (If any)

_____

_____

17. What changes would you suggest to improve the quality of the guide? (If any)

_____

_____

18. Please make any additional comments you feel are appropriate._____

_____

_____

_____

Return to: Mr. Marc Licht, Director
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131 Livingston Street - Room 409
Brooklyn, N.Y. 11201