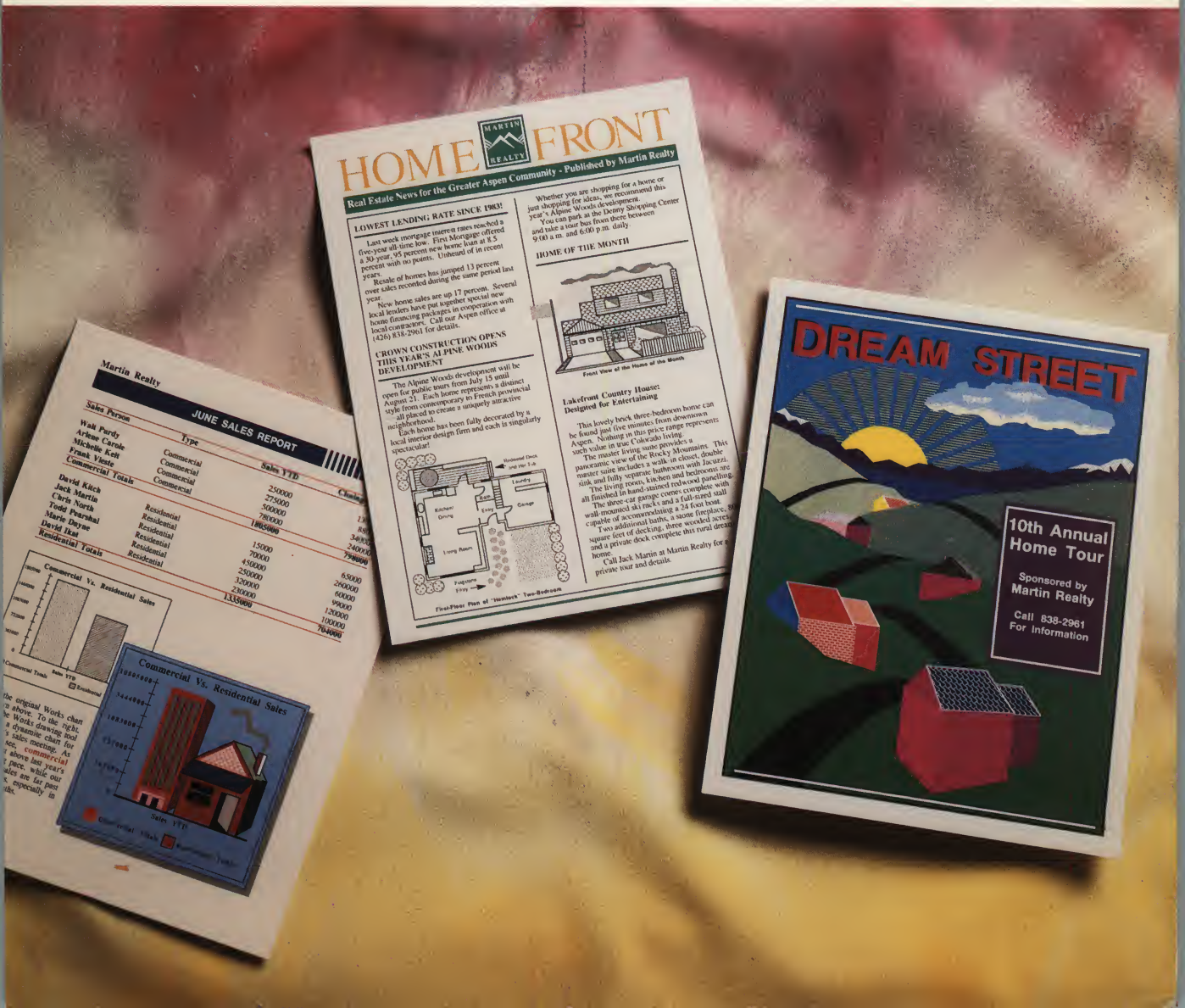
Microsoft® Works

Using Microsoft Works



Using Microsoft® Works

Microsoft Works

Integrated Productivity Software
Version 2.0

For the Apple® Macintosh®

Microsoft Corporation
Productivity Software, Inc.

VAKGROEP COMMUNICATIEWETENSCHAP
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Oude Hoogstraat 24
1012 CE Amsterdam

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Where To Begin

You can choose how you want to learn Microsoft Works, depending on how experienced you are with the Macintosh, and how much help and practice you want to have before you begin using Microsoft Works on your own.

First, if you are new to the Macintosh, see your Macintosh owner's guide to learn basic Macintosh techniques.

Second, follow the "Getting Started" instructions in the *Lessons* manual to personalize and make copies of your Works disks. (If the *Lessons* manual is unavailable, see Appendix G.)

If	Do this
You have Apple's HyperCard and you want to use the on-line tutorial to start learning Microsoft Works	Follow the instructions in the *Lessons* manual, "Starting a Works Tour," to learn about basic Works tasks — right on the computer.
You want some practice before you begin using Microsoft Works on your own	Start with the *Lessons* manual. You'll use actual Microsoft Works software and sample files to practice many of Microsoft Works' features.
You want to start using Microsoft Works for your own tasks, and you are an experienced Macintosh user	Go right ahead and begin. With the *Using Microsoft Works* manual as a guide, you'll learn about everything you can accomplish with Microsoft Works.
You've used a previous version of Microsoft Works	Read Appendix G, "New Features in Works 2.0," to learn about changes and new features in Microsoft Works.

Contents

Welcome

Welcome to Microsoft Works — all the office tools you may ever need:

- The Word Processor with spelling checker, mail merge, and drawing
- The Database with reporting
- The Spreadsheet with charting and drawing
- Communications
- Macros and a print preview feature in all the tools

Use the Microsoft Works tools to automate your work. The limits are up to you.

The Word Processor

Use the Word Processor to write and edit text. Cut and paste electronically to polish your prose. Let Microsoft Works check your spelling and suggest corrections. Change the margins and indents and watch Microsoft Works make everything fit. Change words quickly and easily by searching and replacing. Reformat your document with a few clicks of the mouse. Draw lines, circles, boxes, and other graphics for extra flair. Paste in a chart or a picture to illustrate your text. Use desktop publishing techniques to create a newsletter with linked columns.

The Database

Use the Database to file information. Add new records and remove ones you don't need. Sort lists to organize your reports. Have Microsoft Works find the information you're looking for. Prepare numerous reports from one set of information — with each report providing just the facts you need.

The Spreadsheet

Use the Spreadsheet to calculate numbers. Set up elaborate formulas and let Microsoft Works get the answers for you. Change your assumptions and change your numbers — see what you get. Use built-in calculations to make your work easier. Look at opposite ends of a giant Spreadsheet document — at the same time. Save notes about your data and formulas along with your Spreadsheet document and hide, view, or print them as you choose.

Use the Spreadsheet's charting capability to see what your Spreadsheet numbers look like in charts. Change a number in a Spreadsheet document and see how it affects your chart — instantly. Add labels and other graphics to your Spreadsheet documents. Try different comparisons using the same document. Spot trends at a glance, or see who's got the biggest piece of the pie.

Communications

Use Communications to send your information over the telephone. Talk to commercial information services to get the latest stock quotes or information on almost any other topic. Exchange documents with other computer users. Keep in touch with a computerized bulletin board. Communicate with a mainframe computer by telling your Macintosh to emulate a VT52 or VT100 terminal.

Using the Tools Together

Microsoft Works is five tools, but one program. That means you can work with several tools at once and move information from one tool to another. For example, you can write a letter with the Word Processor, check an address in the Database, project future sales with the Spreadsheet, and see how your projections look with the Spreadsheet's charting capability. Then you can copy the chart into your letter and send it off to a colleague with Communications.

Using both the Word Processor and the Database, you can personalize your form letters and print mailing labels to send them out.

Or, you can insert stock quotations you receive with Communications into a Spreadsheet document to see how your portfolio is doing.

You can preview all of your documents before you print them, and you can use macros to automate repetitive tasks in all of the tools.

About This Manual

Read this manual when you're ready to start using Microsoft Works for your own tasks. This manual assumes you have read your Macintosh owner's guide and are familiar with basic techniques, such as choosing commands, selecting text, and working with windows.

This manual is divided into six parts. The first part, "Common Tasks," guides you through tasks that you'll perform every time you use Microsoft Works. These include tasks such as creating, saving, and printing a document. The next four parts explain the individual Microsoft Works tools: the Word Processor, the Database, the Spreadsheet with charting capability, and Communications. The last part of the manual, "Using the Tools Together," explains how to integrate information from the different tools.

Information on each tool is presented in this way:

- The first chapter of each part shows what a document looks like and explains how to begin using the tool.
- The middle chapters explain, step by step, how to use the tool to perform specific tasks.
- The final chapter describes the commands you can use with the tool.

To learn how to perform a certain task, you should first read the step-by-step description. Then turn to the last chapter on the tool for details on the specific command or dialog box you'll be using.

The appendices explain how Microsoft Works uses disk space, how to use Works with other applications and with the LaserWriter printer, and how to choose commands from the keyboard. They also explain tool capacities and memory limits for various tools, networking, changes since versions 1.0 and 1.1, and escape codes for VT52 and VT100 terminal emulation.

For a definition of any unfamiliar terms, look in the index for the entry that contains the term followed by the word "defined."

Note The full name of this product is Microsoft Works. This manual uses the name "Works" for short.

About documents and files

About Documents and Files

Throughout this manual, the words "document" and "file" are used to represent two distinct items.

A document is the information held in the Macintosh's memory. When you create a new document, the information exists only in memory until you save it on a disk. Once saved, the information stored on the disk is called a file. When you open a file from a disk, the Macintosh puts a copy of the information into its memory and leaves the original on the disk. The information held in memory is called a document. If you make changes to this document and then save it, the new information will replace the file currently on the disk.

- You create a new...
- You make changes to a...
- You save a...
- You print a...
- You close a...

} document

- You open an existing...
- You delete a...

} file

Symbols and Conventions

The Works manuals, *Lessons* and *Using Microsoft Works*, use a few special symbols and conventions.

- Extended keyboards (Macintosh SE and Macintosh II) have a Delete key on the upper-right corner of the main keypad. The Macintosh Plus keyboard has a Backspace key. If you don't have an extended keyboard, press the Backspace key whenever the manual says to press the Delete key.
- Some keyboards contain additional keys you can use with Works.

Keyname	Use
Home	Moves pointer to top of scroll bar
End	Moves pointer to bottom of scroll bar
Page Up	Moves pointer up one page
Page Down	Moves pointer down one page

- Keys are sometimes used in combination. If the manual says to press Shift + A, for example, hold down the Shift key and press the A key.
- The Command key refers to the key marked with ⌘.

Getting Started

For instructions on how to personalize your master disk, make working copies of your disks, and start using Works, see the "Getting Started" section in the other Works manual, *Lessons*. (If *Lessons* is unavailable, see Appendix G.)

About the README File

Because Microsoft is constantly improving and updating its products, some of the most recent information may not appear in the manuals you receive. If there is a README file on your Works Startup disk, it contains important information about Works.

To view the README file

To view the file:

1. From the Finder, double-click the README file icon.
   The first page of the README file appears.
2. If there is more than one page, use the scroll bar on the side of the window to scroll through the file as you read.
   If you don't remember how to scroll through a file, see your Macintosh manual.
3. To close the file, choose Quit from the File menu.

Product support

Product Support

If you have a question about Works and you can't find the answer in your manuals, call our Product Support staff. Before you call, please be certain that you:

- Review the subject in your manuals.
- Review the "Getting Started" procedures in *Lessons* to ensure that your system is properly installed. (If *Lessons* is unavailable, see Appendix G.)

If you are unable to resolve your problem:

1. Check the product number on your disk label.
2. Prepare a description of the problem. Include the exact wording of any error messages and any other relevant information.
3. Have your manuals nearby.
4. Try to call from a telephone located near your computer so you can refer to Works on your screen.
5. Call Product Support at (206) 454-2030, Monday through Friday between 6:00 a.m. and 6:00 p.m. Pacific Standard Time.

Common Tasks

Many routine tasks are common to all of the tools in Microsoft Works. In each tool, you'll use the same commands and procedures to perform these tasks.

This part of the manual contains two chapters describing common tasks and commands:

- Chapter 1, "Common Tasks and Procedures," explains many of the tasks you'll perform every time you use Works, such as opening files, creating and closing documents, getting help, and printing. This chapter also explains drawing, which you can use in the Word Processor or Spreadsheet tools, and macros, which you can use in all of the tools.
- Chapter 2, "Common Tasks Command Reference," describes the menus and commands common to all tools in Works.

1 Common Tasks and Procedures

Many routine tasks are common to all of the tools in Microsoft Works. This chapter shows you how to perform these common tasks:

- Open a file and create a new document.
- Save a document.
- Close a document.
- Delete a file.
- Use the help information.
- Print a document, including headers and footers.
- Quit Works.

In addition, this chapter contains information on two of Works' special features. Use this chapter to learn to:

- Draw pictures in your Word Processor or Spreadsheet document.
- Use macros.

For information on using tools together, like copying a chart to the Word Processor, see "Using the Tools Together," the last part of this manual.

Opening a File and Creating a New Document

When you start Works, you'll see the Open dialog box. You use the Open dialog box to open files from a disk. You can also create new documents from this dialog box, as well as with the New command from the File menu.

You can have up to 14 windows on the desktop at once. The maximum number depends on how much memory your Macintosh has, and how large your documents are. If you have some documents that you refer to often, like an address list and a telephone message form, you can leave these on the desktop while you're working on other documents. Whenever you need to look up a name or take a message, bring the document you want to the front by using the Window menu.

In the Open dialog box, you can also select the Works Desktop to open the document or documents you had on the desktop the last time you used Works. For more information, see "Quitting Works" in this chapter.

For information on using files not created with Works, see Appendix B, "Using Works with Other Applications."

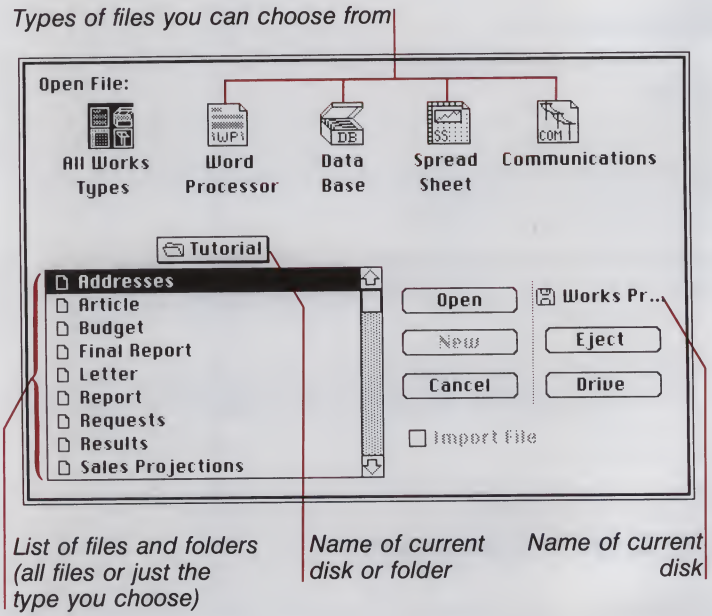
Opening a File from a Disk

To open an existing file

Works lets you open files on your hard disk or in internal or external disk drives.

To open an existing file:

1. Choose Open from the File menu.
   Works displays the Open dialog box, listing all files and folders on the current disk.



2. Select the name of the file you want to open.
3. Click the Open button.

Works opens a window with a document that is a copy of the file you selected. You can work with this copy, which is in the computer's memory. The original file remains on the disk until you replace it by saving changes to it, or until you remove it from the disk.

For information on opening files created in a previous version of Works, see appendix G.

To list one type of file

If you want to look at a listing of a specific type of file in the Open dialog box, such as Word Processor or Database files, you can tell Works to list only those.

To list files of one type:

- Click the icon for the tool whose files you want to see.

The list changes to show only files of the type you chose and all folders.

Creating a New Document

You can create a new document in Works with either the New command or the Open command.

To create a new document from a tool

To create a new document from any tool, use the New command.

1. Choose New from the File menu.
   Works displays the Create New Document dialog box.
2. Click the icon for the type of document you want to create.
3. Click the OK button.

Works opens a new document window on top of the other windows on the desktop.

To create a new document from the Open dialog box

You can also create a new document from the Open dialog box, which appears when you start Works or when you choose the Open command from the File menu.

To create a new document from the Open dialog box:

1. Click the icon for the type of document you want to create.
2. Click the New button.

Works opens a new document window on top of any other windows you may have on the desktop.

Saving a Document

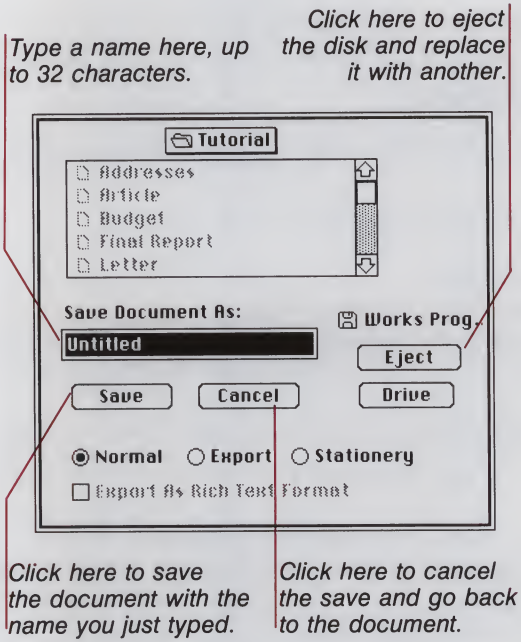
All the information that you produce with Works stays in your Macintosh's memory until you close the document or quit Works — or until the power goes off. If there's a power failure you could lose a lot of work. That's why you should save your documents frequently. When you save a document, Works stores it safely on a disk. Then, if the power goes out, or you accidentally turn off the computer, you'll have a recent copy to work with.

This section explains how to save documents and continue working. You can also save when you close a document or quit Works. To find out more about this type of saving, see "Closing a Document" and "Quitting Works" in this chapter.

To save a document for the first time

The first time you save a document, you give it a name.

1. Choose Save As from the File menu.
   Works displays the Save As dialog box, which is ready to accept the name you type.



2. Type a name for the document. You can use any characters except colons, including spaces and both uppercase and lowercase letters.
   There is little free space on the Works Program disk. If your computer doesn't have a hard disk, you'll probably want to save your documents on another disk.
3. Use the Eject button to change to another disk.
   If the disk you insert is not initialized, Works asks if you want to initialize it. Click the Two-Sided button to initialize the disk if you're asked.
   If you have another disk drive, you can use the Drive button to switch to the other disk drive, and then save the document on a disk in that drive.
4. Click the Save button or press the Return key. (Or click the Cancel button, if you decide not to save.)

Once Works saves the document on the disk you've chosen, you can continue using the document. If you have two 3.5-inch disk drives, and you've ejected the Program disk and inserted a different disk to hold the document, when you choose any command, Works asks you to insert the Program disk. Insert that disk to continue working with Works.

To save changes to a document

If you're working with a document that you've already saved, you can save changes as you work.

- Choose Save from the File menu.

Works saves your changes, and you can continue working with the document.

To save a document with a different name

When you want to save both the original document and the changes you've made to it, you can save the document with a different name.

1. Choose Save As from the File menu.
   Works shows you the current name of the document.
2. Type a new name for the document.
   The new name you type replaces the current one in the text box.
3. Click the Save button or press the Return key.
   If a file with the name you've typed is already on the disk, Works asks if you want to replace it with the document you're saving. You can replace it, type a different name, or cancel the command.

Works saves the document with the new name. The name of the document on the desktop changes to the new name. The original file remains on the disk with its old name. If you later want to remove the original file, see "Deleting a File" in this chapter.

Note When you use the Save As command, Works treats Database documents a little differently from the others. For more information, see "Save As" in Chapter 2 and "Saving a Selection with a Different Name" in Chapter 8.

To save a document to be exported

If you know you'll be exporting a file from Works to another program, you'll usually need to save it as a text file. This means that only the data, and not the formatting information, is saved.

1. Choose Save As from the File menu.
2. Follow all the regular procedures, then click the Export option.
3. Click the Save button.

Note In the Word Processor, you can export a file that contains both data and formatting by choosing the Export As Rich Text Format option in the Save As dialog box. For more information on this option, see "Export As Rich Text Format" in Chapter 2. For more information on exporting Works files to other applications, see Appendix B, "Using Works with Other Applications."

Closing a Document

To close a document

When you want to remove a document from the desktop, you close it.

1. Choose Close from the File menu, or click the close box in the upper-left corner of the window.
   If you've made any changes to the document, Works asks if you want to save the changes.
   You can choose to save your changes, throw them out, or cancel the close. For instructions on saving, see "Saving a Document" in this chapter.
2. Click the Yes button to save changes, or the No button if you don't want to save changes.

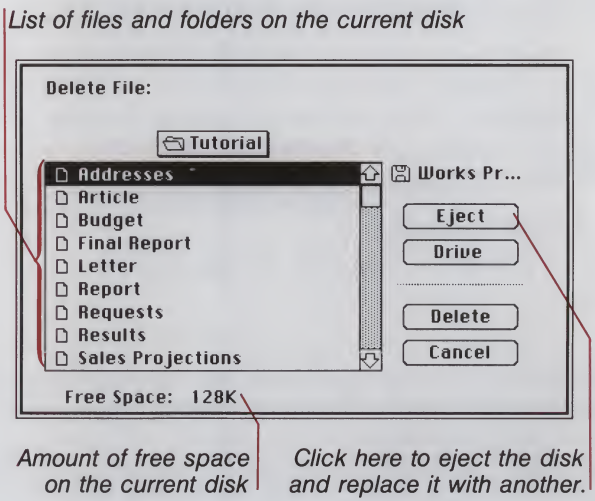
Works closes the document and removes it from the desktop.

Deleting a File

To delete a file

When you delete a file, Works erases the file from the disk completely. You might want to delete a file if you need room on a disk to save another document, or if you've saved a document with another name and want to discard the original file.

1. Choose Delete from the File menu.
   Works shows you a list of files to choose from.



If necessary, click the Eject button to change disks or the Drive button to change disk drives.

2. Select the file you want to delete.
3. Click the Delete button.
   Works asks you to confirm that you want to delete the file.
4. Click the OK button to delete it.

Works deletes the file from the disk.

Getting Help

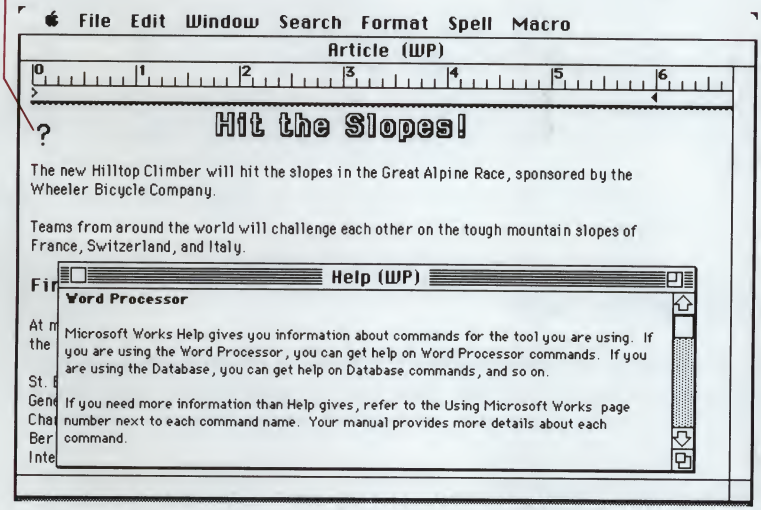
To get help

Works Help explains briefly how to use any command in Works, and refers you to a page in this manual for more information.

To get help:

1. Choose Help from the Window menu.
   The Help window appears at the bottom of your screen.

The pointer turns into a question mark when you choose Help.



The window contains general information about Help and the tool you're using. When you move the pointer outside the Help window, it turns into a question mark.

2 Choose the command you want help on just as you normally choose a command from a menu.

The Help window displays information about the command you chose.

To see more information, you can scroll the Help window. To get help on another command, just choose it from a menu. To leave the Help window open and continue working on your document, click anywhere in the document. To close the Help window, click its close box.

Printing a Document

You can print documents from all of the Works tools except Communications. In Communications, you can print only the contents of the active window by using the Print Window command. Although you adjust the format for each tool differently, you print them all the same way using the File menu.

Works comes ready to print using both the regular and wide ImageWriter and ImageWriter II printers. Your Macintosh owner's guide has details on how to set up the ImageWriter. For information on printing with the LaserWriter, see Appendix C, "Printing with the Apple LaserWriter."

When you're working with the Database, you must be in a report window to print or adjust the page setup. For more information, see Chapter 9, "Making a Report."

Before you print, it's a good idea to save your document. For more details on saving, see "Saving a Document" in this chapter.

Setting Up the Page

Before you print a document, choose the Page Setup command from the File menu to specify exactly how you want it to be printed. The Page Setup command lets you specify paper size, printing orientation, special effects, headers, footers, and margins.

To change page specifications

To change page specifications:

1 Choose Page Setup from the File menu.
The Page Setup dialog box appears.

2 Click the appropriate options, and type any information that Works needs. (Paper size, orientation, and margins, for example.)

3 Click the OK button or press the Return key.

Works stores your specifications with the document, so you only have to change them once. For a complete description of the available options, see "Page Setup" in Chapter 2.

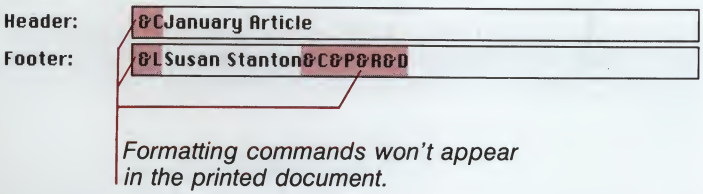
To use custom paper

With Works and an ImageWriter, you can print on any size paper that fits in your printer. To use a paper size other than those offered, click the Custom Size option in the Page Setup dialog box. For example, click Custom Size if you are printing mailing labels. Then you can specify the exact dimensions of your paper in the Paper Width and Paper Height boxes.

To use headers and footers

Use a header or footer when you want to print information at the top or bottom of every page. The same header or footer will appear on every page of a document, and page numbers will appear in sequence.

Headers and footers are set up in the same way. In the Page Setup dialog box, you tell Works what information to print by typing it exactly as you want it to appear. To indicate information such as the current date, page number, or document name, or to have certain information in bold or italic type, Works provides a set of formatting commands; for example, &I specifies that what follows should be printed in italic type. For a list of all formatting commands, see "Page Setup" in Chapter 2.



Headers and footers in Works have been designed to work the same way in each tool, so you need to learn only one procedure. However, in the Word Processor, additional options are available. For more information, see "Headers and Footers" in Chapter 4.

If you don't want the header or footer to print on the first page of your Word Processor document, choose Title Page from the Format menu before you print. The Title Page command does not change the format of the first page; it only prevents the header or footer from appearing.

Printing Your Document

To print a document

When you're satisfied with your page setup, you are ready to print your document.

1. Choose Print from the File menu.
   The Print dialog box appears. Unless you change the settings in this box, Works will print one copy of your entire document using the preset options Faster (for standard quality) and Automatic (for paper feed).
   If you want to see what your document looks like before printing, click the Print Preview option. For more information on Print Preview, see "Print" in Chapter 2.
2. Make any desired changes to the print specifications.
3. Click the OK button to accept your specifications and start printing.

Works begins to print your document.

To cancel printing in progress

You can cancel the Print command at any time.

- Hold down the Command key and type a period (.).

Works may continue to print briefly until the printer's memory is empty. After printing stops, Works returns you to the document window.

To print only the active window

If you come across a particular window of information that you'd like to have on paper, you can print just that window with the Print Window command from the File menu.

Quitting Works

About Works Desktop

When you choose Quit from the File menu, Works records which documents you have on the desktop in a file named Works Desktop.

The next time you start Works, you can select the Works Desktop file in the Open dialog box to restore the documents that were on the desktop when you left it. You can also double-click the Works Desktop icon from the Finder. With Works Desktop, you won't have to open individual files in order to pick up where you left off.

Note You can create your own Works Desktop files without quitting Works, save them with different names, and open them any time you choose. For more information, see "Make Works Desktop" in Chapter 2.

To quit Works

To quit Works:

1. If you want to set up the Works Desktop file in a particular way, arrange your desktop as you want it to appear the next time you use Works. (Close any documents that you don't want to appear when you next open Works Desktop.)
2. Choose Quit from the File menu.

   If you've made changes to any open document since the last time you saved, Works asks whether or not you want to save changes for each document.
3. For each document, click Yes to save changes, or No if you'd rather not.

Works saves any changes and takes you to the Finder. A list of your open documents is recorded in a file called Works Desktop.

You can rename the Works Desktop file from the Finder just like any other file. By using different names, you can save different arrangements of files and open each arrangement whenever you need it. For example, if you want a group of documents to be on the desktop every time you start Works, you can save the group and rename it Start Works. This could include a phone list, a to-do list, or a memo template. Or, you can set up any group of related documents that you use to perform a regular task, and rename it to reflect its function. For example, you could save a Word Processor document and a Database document and rename the group MailMerge. You can have as many renamed Works Desktop files as you want.

Note The Works Desktop file contains a list of the documents from your desktop, not copies of the documents themselves. If you include a document in a Works Desktop file, then make changes to that document by opening and editing it individually, the latest version will appear on your desktop when you next open the Works Desktop file.

Works does not save any information about untitled documents in the Works Desktop file. To include these documents, save each one with the Save As command to give it a name before you choose Quit from the File menu.

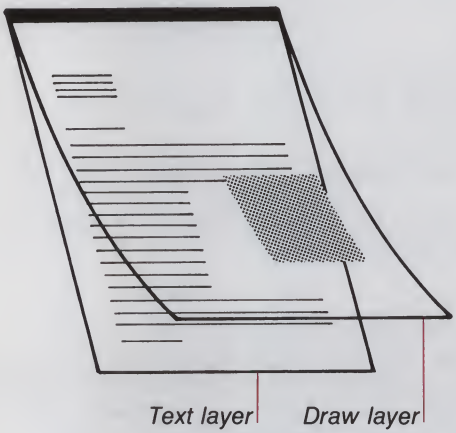
When you want to work with a certain desktop arrangement, you have to start up with the same disks in the disk drives as when you quit, or Works may not be able to find all the files you need. If Works can't find the files, it displays an alert box telling you so. Replace the files in their previous locations and choose the Works Desktop file again.

Using Draw

With Draw, you can emphasize text or numbers by drawing boxes around them, add labels with arrows to charts, and draw arcs and freehand shapes in your Word Processor and Spreadsheet documents. You can also use desktop publishing techniques to create a newsletter with side-by-side columns whose contents automatically flow from one page to the next.

The Draw Layer

Pictures are drawn in a transparent layer on top of your document. You can make changes to this layer without affecting the document underneath.



Because the draw layer is transparent, you can wrap text around illustrations, and include text from your document in the picture area.

Everything on the draw layer — a line, a rectangle, an arc, or even a paragraph of text — is treated as a unique object. You can't erase part of an object, but you can change an object's overall size, shape, location, and pattern.

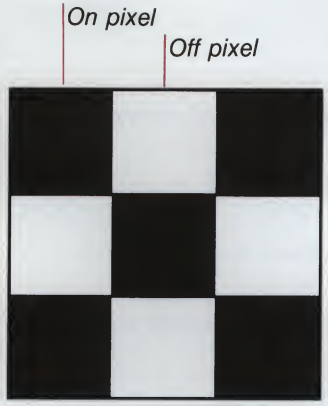
The draw layer itself is composed of many planes — objects overlap and appear to be behind or in front of other objects because each is drawn on its own plane.

Selected objects in the draw layer can be copied into another Works Word Processor or Spreadsheet document, but they can't be copied into the Database or Communications tools. For more information on copying objects between documents, see Chapter 20, "Moving Information Between the Tools."

About Pixels

Computer screens are composed of small dots, called pixels. (Pixel is short for picture element.) There are 72 pixels per inch on a Macintosh screen.

Pixels are either "on" or "off." On a black-and-white monitor, for example, "on" pixels are black and "off" pixels are white. An object can contain a decorative pattern made up of both "on" and "off" pixels.



On a color monitor, each pixel in a pattern, whether "on" or "off," can appear in any one of eight colors.

But your drawings aren't limited to only eight colors — your eye naturally mixes two colors in a pattern together and creates the effect of a third color. For example, an object with a pattern of red "on" pixels and blue "off" pixels appears purple on the screen. Because your eye mixes the colors, the original eight colors can be used to create the appearance of many more colors.

Starting Draw

To start Draw

You can start Draw from the Word Processor or the Spreadsheet, in either a new or an existing document.

To start Draw:

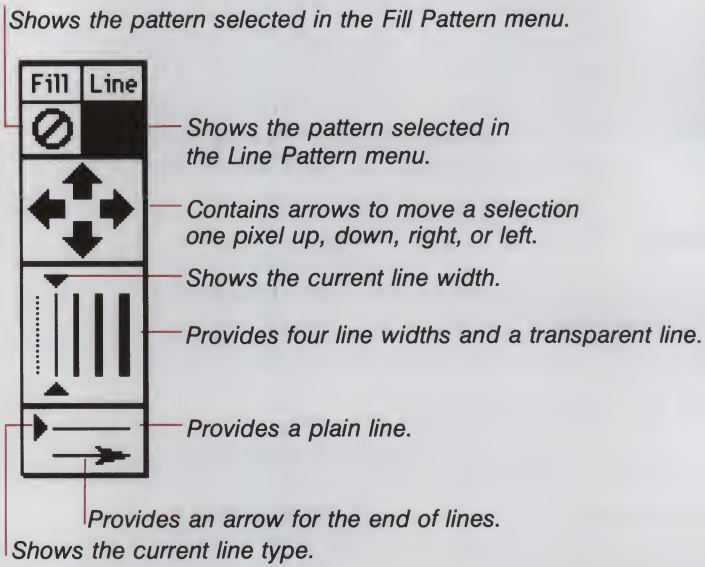
- Choose Draw On from the Edit menu.

The Tools palette appears. The palette contains the following tools:

	Selection tool	Selects objects
	Text tool	Types text and creates columns
	Line tool	Draws any angle of horizontal, vertical, or diagonal lines
	Freehand tool	Draws any shape
	Straight-line tool	Draws straight lines horizontally or vertically

	Rectangle tool	Draws rectangles or squares
	Rounded-corner Rectangle tool	Draws rectangles or squares with rounded corners
	Oval tool	Draws ovals or circles
	Polygon tool	Draws triangles, angles, trapezoids, etc.
	Arc tool	Draws 90-degree arcs

In addition, the palette:

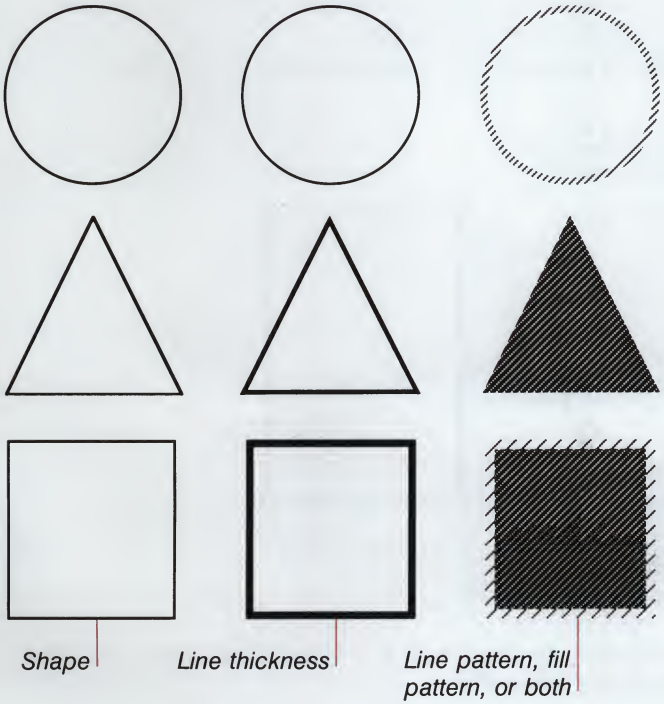


To move the palette anywhere on the screen, place the pointer on the word "Tools" and drag.

Drawing Lines and Shapes

A drawn object is composed of these elements:

- A shape
- A line thickness
- A fill or line pattern, or both



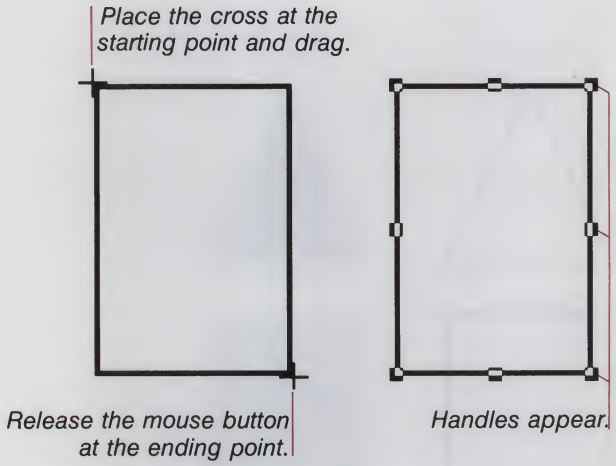
Shape is determined by the tool you choose; line thickness is determined by the width you choose; and pattern is determined by your selections in the Line Pattern and Fill Pattern menus.

Most objects are similar in the way they are drawn and used. Text objects, which differ slightly from other objects, are covered later in this section. All other objects are covered in the following paragraphs.

To draw an object

To draw objects (except for polygons and text objects):

1. Choose Draw On from the Edit menu.
   Works displays the Tools palette.
2. Choose a tool from the Tools palette.
   The tool is highlighted and the pointer changes to a cross.
3. Place the cross where you wish to place the object.
4. Hold down the mouse button and drag until the object is the dimension you want, then release the mouse button.
   The window scrolls automatically to accommodate a large object.



Handles appear, indicating that the object is selected. Handles are small black squares on the borders of an object.

An object is automatically selected after you've drawn it. When an object is selected, you can move, resize, and edit the object as you choose.

Hint If you want to continue drawing with the same tool, hold down the Command key and draw again.

Note A line should be drawn to the approximate length, angle, and degree you want. You can change the angle of a line after you've drawn it by dragging one of its handles.

An arc is always 90 degrees when drawn; the way you draw it determines its direction and curvature. An arc can be extended up to 360 degrees by dragging one of its handles after you finish drawing it.

In a Word Processor document, before creating an object that extends beyond the last screen containing text, make sure that Draw is off. Then use the Return key to insert enough blank space to make room for the object. This will allow you to scroll to see the entire object.

To create perfect shapes

You can create perfect shapes by holding down the Shift key while drawing an object. The Rectangle, Oval, and Rounded-corner Rectangle tools make perfect squares, circles, and squares with rounded corners. Arcs are drawn to the nearest quarter circle. Lines are drawn perfectly straight, and at a 45- or 90-degree angle.

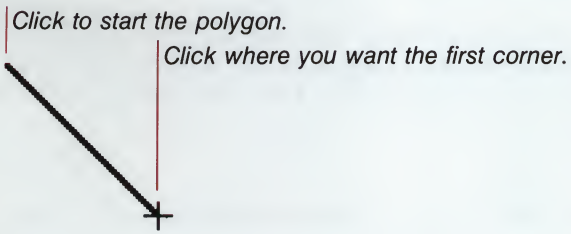
To draw a polygon

Polygons are drawn in a different way than other objects.

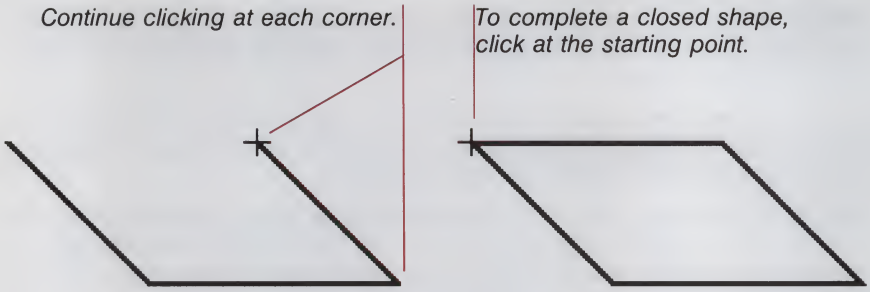
To draw a polygon:

1. Choose the Polygon tool from the Tools palette.
2. Place the cross in the window where you want to start the polygon.
3. Click the location where you want to place the first corner of the polygon.

   As you move from one point to another, a line connects the cross to the last point you selected.
4. Click the position where you want the next corner of the polygon.



5. Continue clicking at each corner.
6. To finish drawing the polygon, click at the starting point, or double-click anywhere to complete an open polygon.



Handles appear at each corner of the polygon, indicating that it's selected.

Undoing a Mistake

To undo a mistake

You can correct a mistake by choosing Undo from the Edit menu. Undo reverses only your last action.

You can also undo mistakes by selecting the object, choosing Clear or Cut from the Edit menu, and then redrawing the object.

Hint Although you can't erase part of an object, you can make part of an object appear to be erased by overlapping it with an object that has white fill and line patterns.

Editing an Object

You can change an object's line width, fill or line pattern, size, color, and dimensions. You can also copy objects or delete them from the screen.

Before you can make any changes to an object, it must be selected.

All objects are automatically selected when you finish drawing them. Once you change tools, draw again, or click another part of the screen, you'll have to select the object before you can edit it.

To select an object

To select an object:

1. Choose the Selection tool, if it is not already highlighted in the Tools palette.
2. Click an object's border to select it.

Handles appear on the borders of the object to show that it is selected.

If you select an object by mistake, just click outside the object to deselect it.

When an object is selected, you can edit it by moving it, resizing it, copying it, changing the line width, decorating it with a fill and line pattern, coloring it, or deleting it.

Note Draw is preset to draw transparent objects (⊘). If you choose a fill pattern for an object, it can be selected by clicking anywhere in the object. For more information, see "To use fill or line patterns" in this chapter.

To select more than one object

You can select more than one object at a time.

To select more than one object:

1. Choose the Selection tool, if it is not already highlighted in the Tools palette.
2. Hold down the Shift key and click each object you wish to select.

If you click an object by mistake, just hold down the Shift key and click the object again to deselect it.

You can also select a group of objects using standard Macintosh techniques. Place the Selection tool outside one corner of the objects you want to select, and drag diagonally to the opposite corner of the objects. If this doesn't work, try dragging a larger rectangle around the objects.

If a group of objects is selected, any changes you make affect all of the selected objects.

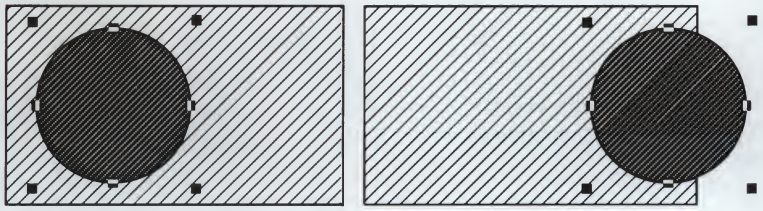
To move an object

To move an object:

1. Select the object.
2. Place the Selection tool anywhere on the object's border except the handles.

   If the object contains a fill pattern, you can also place the Selection tool inside the object.

Select an object and drag it... *...to a new position.*



3. Drag the object to the desired location.

You can also move an object by selecting it, choosing Cut from the Edit menu, clicking the location where you want to move the object, and choosing Paste from the Edit menu.

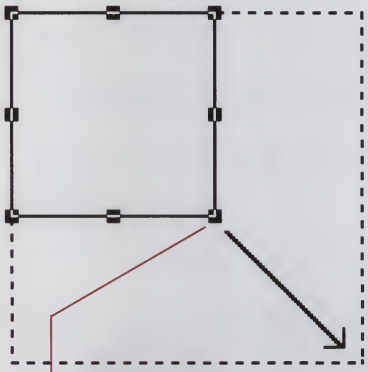
Hint You can make an object move on a perfect horizontal, vertical, or diagonal line by selecting the object, pressing the mouse button, and holding down the Shift key while you drag the object.

Note Placing the Selection tool on a handle and dragging resizes the object.

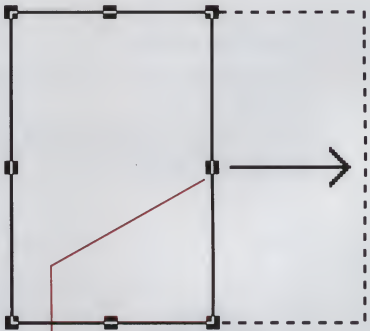
In a Word Processor document, before moving an object that extends beyond the last screen containing text, make sure that Draw is off. Then use the Return key to insert enough blank space to make room for the object. This will allow you to scroll to see the entire object.

To resize an object

You resize objects (except arcs and polygons) by selecting them and dragging the handles. To stretch or shrink an object in both dimensions, drag a corner handle. To stretch or shrink an object in one dimension, drag a mid-point handle.



To stretch or shrink in two dimensions, drag a corner handle.



To stretch or shrink in one dimension, drag a mid-point handle.

To resize a perfect shape, select the object, select a corner handle, and then hold down the Shift key and drag the handle.

To resize an arc or polygon

Arcs and polygons don't have mid-point handles. Dragging a handle on an arc or polygon reshapes it in only one dimension. To change the overall dimensions of an arc or polygon, use the Group Picture command in the Format menu.

To resize an arc or polygon:

1. Select the arc or polygon.
2. Choose Group Picture from the Format menu.
   Handles appear around the boundary of the object.
3. To stretch or shrink the object in both dimensions, drag a corner handle.
   To stretch or shrink the object in one dimension, drag a mid-point handle.
4. Choose Ungroup Picture from the Format menu.

You can reshape the arc or polygon by dragging the handles, or click outside the object to deselect it.

To copy an object

Copying places an exact copy of the object on the Clipboard, allowing you to duplicate the object by pasting it elsewhere in your drawing, or in another Word Processor or Spreadsheet document.

To copy an object:

1. Select the object.
2. Choose Copy from the Edit menu.
   The object is copied to the Clipboard.
3. Click the location where you want to paste the object.
4. Choose Paste from the Edit menu.

To copy an object and center it

You can copy an object on top of another object, and automatically paste it in the exact center of the object.

1. Copy the object to the Clipboard.
2. Select the object on which you wish to center the copied object.
3. Choose Paste from the Edit menu.

The object on the Clipboard is automatically centered on the object in the document. It is selected and placed in the draw layer directly in front of the object on which it is centered.

To set the line width

The line width you select in the Tools palette affects the width of lines, as well as the border width of shapes.

To set the width of lines and borders:

1. Choose a tool from the Tools palette.
2. Choose the line width that you want.
3. Draw the line or object.

You can also change the width of lines or borders that you've already drawn by selecting the object that you want to change and clicking the new line width in the Tools palette.

To draw a line with an arrow

To draw an line with an arrow:

1. Choose the Line tool from the Tools palette.
2. Click the line with the arrow at the bottom of the palette.
3. Draw the line.

The arrow appears when you release the mouse button.

You can also add an arrow to a line you've already drawn by selecting the line and clicking the line with the arrow in the Tools palette.

To use fill or line patterns

Fill patterns can be used to decorate any object that is not a line. Line patterns can be used to decorate lines and the borders of any object that is not a text object.

To set fill or line patterns:

1. Choose a fill or line pattern from the Fill Pattern or Line Pattern menus.
2. Choose a tool from the Tools palette.
3. Draw the object.

The fill or line pattern will appear automatically. If the fill or line pattern is transparent (⊘), the fill or line is invisible.

If a fill or line pattern is active, you can see the pattern in the Tools palette. The active patterns are applied to new objects as you create them. To change the active patterns, click ouside any selected objects to deselect them, and choose new patterns.

To change a pattern

You can change the fill and line patterns using the Fill Pattern and Line Pattern menus.

To change the fill and line patterns:

1. Select the object you want to change.
2. Choose a fill pattern from the Fill Pattern menu.
3. Choose a line pattern from the Line Pattern menu.

If the fill or line pattern is transparent (⊘), the fill or line is invisible.

To color an object

If you have a color monitor, you can display your objects in color; if you have a color printer, you can print them in color.

When you draw an object, its fill and line patterns use the colors chosen in the Color - Black Dots and the Color - White Dots commands in the Format menu. For information on choosing colors, see "Color - Black Dots/Color - White Dots" in Chapter 2.

To change an object's colors

You can change the color of an object using the Color commands in the Format menu.

To change the color of an object:

1. Select the object.
2. Choose Color - Black Dots from the Format menu.
3. Continue holding down the mouse button, and choose the color you want to use for the object's black pixels.
4. Choose Color - White Dots from the Format menu.
5. Continue holding down the mouse button, and choose the color you want to use for the object's white pixels.

If you have a color monitor, you can view the color mix in a line or fill pattern before applying the colors to an object. Choose the black dot and white dot colors from the Format menu. Hold down the Shift key while you pull down the Fill or Line Pattern menu. All of the patterns are displayed in the colors you chose.

To delete an object

When you copy or cut an object, it is copied to the Clipboard. You can retrieve the last object copied to the Clipboard using the Paste command from the Edit menu.

Each object copied to the Clipboard replaces the previous object. If you want to delete an object without changing what is on the Clipboard, use the Clear command.

To delete an object without replacing the content of the Clipboard:

1. Select the object you want to delete.
2. Choose Clear from the Edit menu.

You can also clear an object by selecting it and pressing the Delete key.

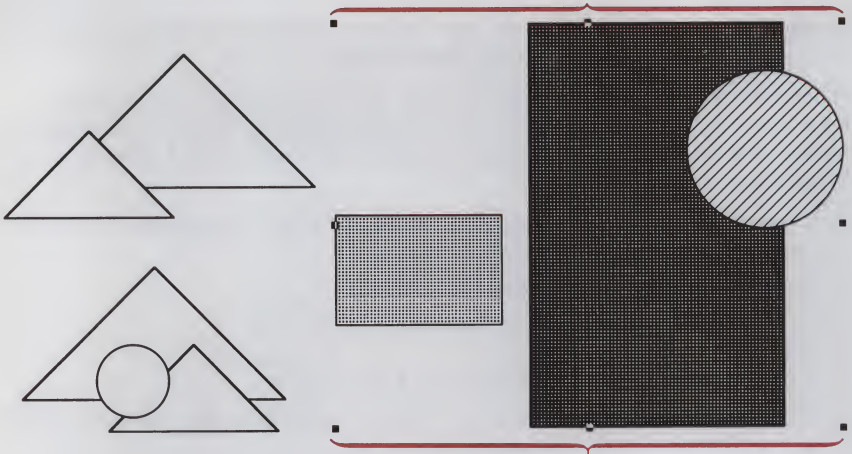
To group objects

You can select several objects and treat them as a group. When objects are grouped, all of the individual objects are treated as a single object when moving, resizing, filling, coloring, and deleting.

To group objects:

1. Hold down the Shift key and click each object you want to group, or use the standard Macintosh techniques to drag a selection box that encompasses the objects.
2. Choose Group Picture from the Format menu.

   The boundary encompasses the entire group and the objects have one set of handles.



A group

To move grouped objects, drag any one of the objects in the group, and the rest will follow. If you try to drag the space between objects, the group is deselected and will not move.

Note You can create groups within groups. For example, you can group several objects and apply a fill pattern to them. Then you can select additional objects and make all of the objects one large group, which can be resized and moved to a different location.

When you resize a group of objects that contains text, the text is not resized. To change the text size, select the group and use the Size command from the Format menu.

To ungroup objects

You turn a group into individual objects once again using the Ungroup Picture command.

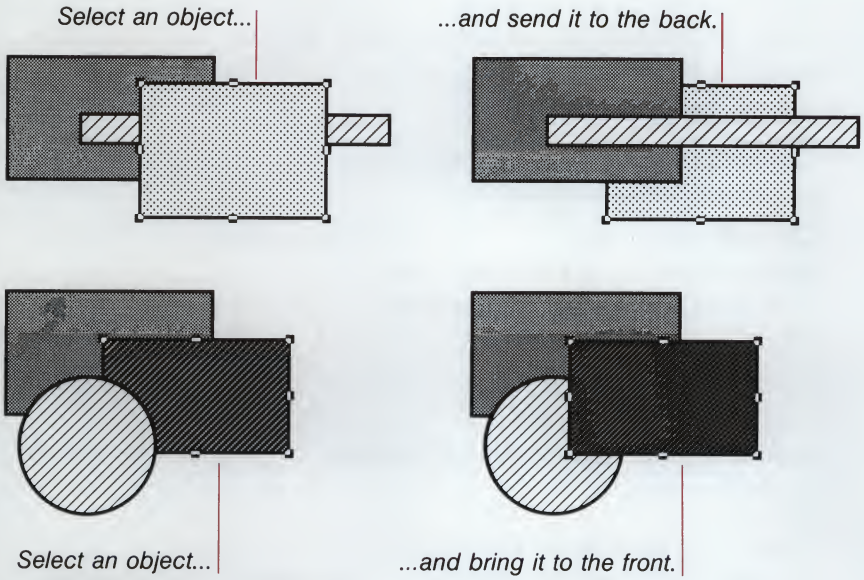
To ungroup objects:

1. Select a picture you have grouped with the Group Picture command.
2. Choose Ungroup Picture from the Format menu.
   Each object has its own set of handles. Works reverses the Group Picture command, but you still need to deselect the group to ungroup the objects.
3. Click outside the group to deselect the objects.

The objects are now independent of each other.

To bring to front or send to back

Each object is drawn on its own invisible plane. A new object is always in front of all of the other objects you have drawn. You can change the depth of an object in the draw layer by bringing it to the front of the draw layer, or by sending it to the back of the draw layer.



To bring an object to the front or send it to the back:

1. Select the object you want to move.
2. Choose Bring to Front or Send to Back from the Format menu.

The selected object is placed either in front of or behind all other objects in the draw layer.

Aligning an Object

There are two ways to align objects horizontally and vertically on your screen:

- Pixel-by-pixel
- By setting a grid

To align an object pixel-by-pixel

For precise horizontal and vertical placement of an object, you can use the pixel-by-pixel adjustment in the Tools palette. Just select the object you wish to position, and then click the up, down, right, or left arrows to move the object one pixel at a time.

You can also move an object pixel-by-pixel using the arrow keys on your keyboard. Select the object and hold down an arrow key until the object moves to the position you want.

To position objects using the grid

The Grid On command lets you position objects along the lines of an invisible grid, whose spacing you determine using the Grid Setting command.

To position objects using the grid:

1. Choose Grid Setting from the Format menu.
2. Choose the spacing you wish.
3. Click the OK button.
4. Choose Grid On from the Format menu.
   A checkmark next to the command shows that it is in effect.

With the grid on, everything you move, resize, or draw aligns on the invisible vertical and horizontal grid lines that you have set.

To turn off the grid

To position objects at any location on the screen, you must turn the grid off.

To turn off the grid:

- Choose Grid On from the Format menu.
  The checkmark disappears, and you can place objects anywhere on the screen.

Text Objects

Text is anything you can type on the keyboard — letters, numbers, punctuation, and special symbols. With text objects you can create labels, paragraphs, and columns. Like other objects, text objects are in the draw layer, which is separate from the text in a document. Working with text objects doesn't affect the information in a document's text layer.

Text objects are similar to other objects in many ways. They can be filled with a pattern and they can be moved, resized, copied, filled, colored, and deleted, exactly like other objects. They can also be moved to the front plane or sent to the back plane, selected as part of a group, and aligned on a grid.

Unlike other objects, however, text objects have the following characteristics:

- A justification — the position of text between the edges of the text object, either left, centered, right, or fully justified
- Fonts — the design of the characters
- Type sizes — from 4 to 72 points
- Type styles — normal, bold, italic, underline, outline, or shadow
- Colors — for both black and white dots

A text object can have only one justification, but it can include multiple fonts, sizes, styles, and colors.

Text objects don't have a border, so line width and line patterns don't apply to them.

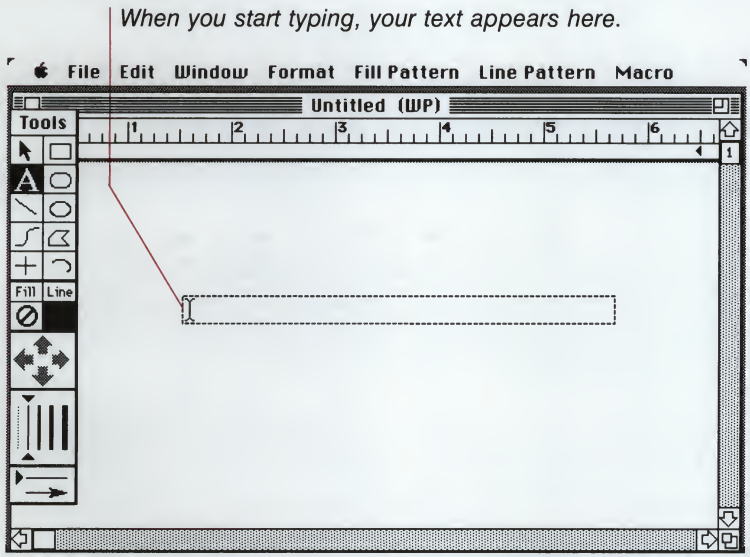
Text objects are drawn differently from other objects.

To draw a text object

To draw a text object:

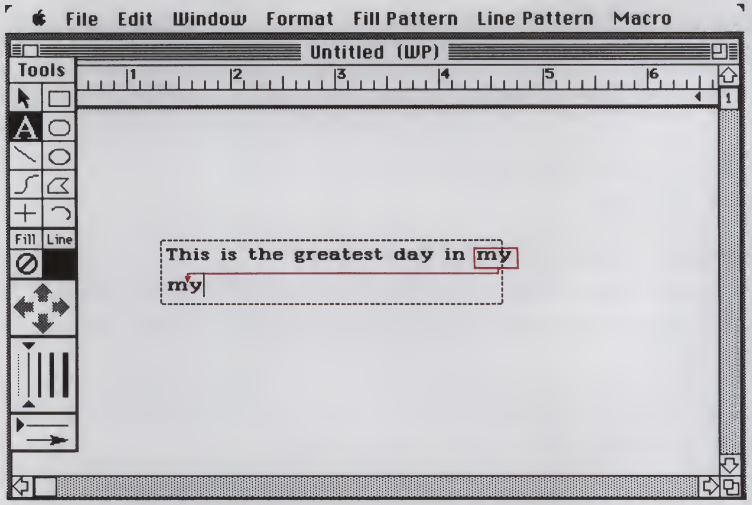
1. Choose the Text tool from the Tools palette.
2. Position the I-beam pointer where you want to place the text object.
3. Click to draw a text object one line high and approximately four inches wide.

   If you want a different-sized text object, place the pointer where you want the text to appear, and drag until the dashed box is approximately the length and width of the text you want to type.



4. Start typing.

   Your first character appears in the upper-left corner of the text object. As you type, text automatically wraps to the next line — adjusting itself as it reaches the edge of the text object.



Use the Return key to start new paragraphs, and the Delete key to erase mistakes.

When you finish a text object, the Text tool stays selected.

5 Turn off the Text tool by clicking the Selection tool, or by choosing another tool.

Note If the text object has a justification other than left justified, when you begin typing, your first character may not appear at the upper-left corner of the text object. For example, if the text is right justified, the first character appears at the upper-right corner of the text object.

If you type more text than will fit into the object, the text continues below the object's lower boundary until you turn off the Text tool or start a new text object. The text object then enlarges to encompass the additional text.

Editing a Text Object

You can edit the text in a text object by inserting new text, or copying, moving, and removing existing text.

To add text to a text object

To add text to a text object:

1 Choose the Text tool from the Tools palette.

2 Position the insertion point in the text object where you want to insert new text and click.

3 Type the new text.

To copy text in a text object

To copy text in a text object:

1. Choose the Text tool from the Tools palette.
2. Drag inside the text object to select the text you wish to copy.
   The selected text is highlighted.
3. Choose Copy from the Edit menu.
   The text is copied to the Clipboard.
4. Position the insertion point where you want to place a copy of the text.
5. Choose Paste from the Edit menu.

To move text in a text object

To move text in a text object:

1. Choose the Text tool from the Tools palette.
2. Drag inside the text object to select the text you wish to move.
   The selected text is highlighted.
3. Choose Cut from the Edit menu.
   The text is copied to the Clipboard.
4. Position the insertion point where you want to move the text.
5. Choose Paste from the Edit menu.

To remove text from a text object

To remove text from a text object:

1. Choose the Text tool from the Tools palette.
2. Drag inside the text object to select the text you wish to remove.
   The selected text is highlighted.
3. Choose Clear from the Edit menu, or press the Delete key.
   The text is permanently removed from the text object.

You select, fill, copy, resize, and delete a text object exactly as you do other objects. For more information, see "Editing an Object," earlier in this chapter.

To change a text object's attributes

When you draw a text object, it has the justification, font, size, style, and color chosen in the Format menu. You can change these attributes for the entire object before or after drawing. Before drawing, choose the appropriate command from the Format menu, and continue holding down the mouse button while you select a different attribute. If you've finished drawing, select the object with the Selection tool before choosing the attribute.

To change the font, size, style, and color of individual characters in a text object, select the text with the Text tool, and then choose the attributes from the Format menu.

To spread text

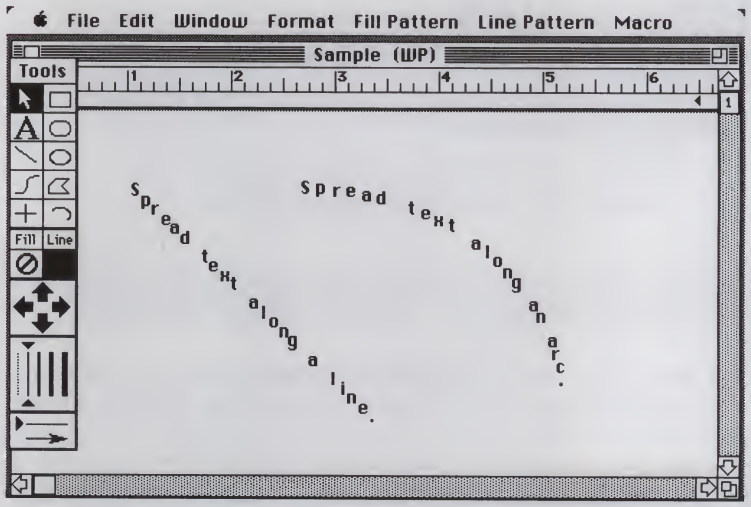
The Spread Text command lets you spread text out or pull it in tighter along a line, an arc, or a circle. You can use Spread Text to:

- Shorten the spaces between letters in a title.
- Write text along a diagonal or arc.

Spread Text makes individual text objects out of each of the characters in a single text object and spreads them out evenly along a line or an arc in the same direction that the line or arc was drawn.

To spread text:

1. Select text from a document or a text object.
2. Choose Cut or Copy from the Edit menu to copy the text to the Clipboard.
3. Create or select a line or arc along which you want to spread the text. If you want the line or arc to be invisible, choose no pattern (⊘) from the Line Pattern menu.
4. Choose Spread Text from the Format menu.
5. To see the object more clearly, click anywhere outside the object to remove the handles.



Each character is now treated as a separate text object. You can work with the objects separately, or group them. When they are grouped you can stretch the group, compress it, or move it to another location.

Note If text has not been copied to the Clipboard, and a line or an arc has not been designated before the Spread Text command is chosen, the command is dimmed and you can't choose it.

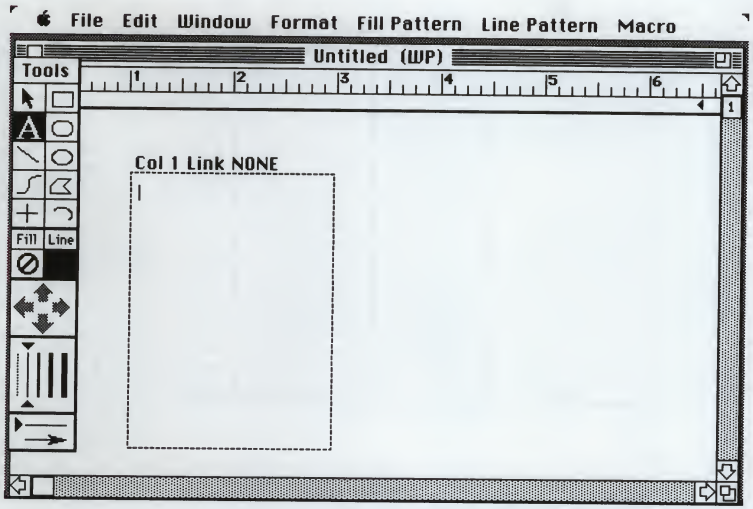
Using Columns

You can use the Text tool to create columns.

To create a column:

To create a column

1. Choose the Text tool from the Tools palette.
2. Position the I-beam pointer where you want the column to appear.
3. Hold down the Option key while you drag to draw the column.
   A dashed box appears when you release the mouse button. A heading with the abbreviation, Col (for Column) is followed by the number of the column, the word "Link," and the word "NONE." None indicates that there is no linked column.



4. Type text into the column.
5. To turn off the Text tool, choose the Selection tool or choose another tool from the Tools palette.

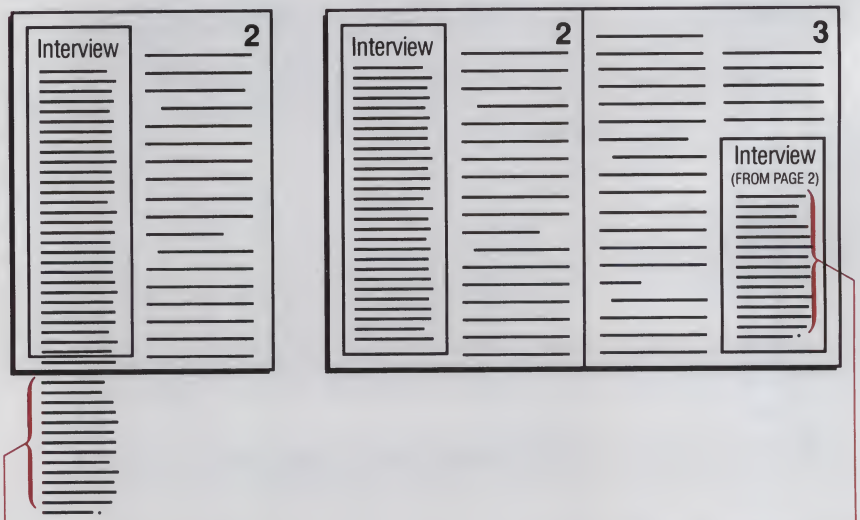
The amount of text that fits in a column is determined by the size of the dashed box. If there is more text than will fit in the box, the text extends beyond the bottom of the column. Unlike ordinary text objects, columns don't adjust the bottom of the object to accommodate the amount of text they contain. If you have more text than you can fit in one column, you can link two or more columns together, or use the handles to resize the column.

Note If you copy text from any tool in Works and paste it into a column, the text becomes part of the column. Since a column is a text object, the copied text retains the font, size, style, and color of the original text, but accepts the justification of the column it is copied into. If you want the text to take on the font, size, style, and color of the column you're copying into, hold down the Option key while you paste the text.

In a Word Processor document, before creating a column that extends beyond the last screen, make sure that Draw is off. Then use the Return key to insert enough blank space to make room for the column. This will allow you to scroll to see the entire column.

To link columns

With linking, text flows automatically from one column into the next. For example, if a column on page two contains too much text, you can link it to an empty column on page three. The extra text automatically fills the column on page three.



With column linking, text that extends beyond one column...

...automatically flows into the next column.

If you increase the amount of text by editing the text or by changing its font or size, Works readjusts the text for you.

There is no limit to the number of columns that you can link, and you can have up to 32K of text in linked columns.

To link one column to another:

1. Create two or more columns.
2. Choose the Selection tool from the Tools palette.
3. Hold down the Option key and select the columns in the order they are to be linked.

   The column headings, which are visible when a column is selected, change to reflect the link between the columns.

For example, if you link columns one, two, and three, the headings are as follows:

- Column one changes from Col 1 Link NONE to Col 1 Link 2.
- Column two changes from Col 2 Link NONE to Col 2 Link 3.
- Column three remains Col 3 Link NONE.

While editing a column, you won't see the text adjust into linked columns until you finish editing and deselect the column. If you change the size of the text, stretch a column, or make any other change that affects the amount of text in a linked column, the text redistributes when you deselect the column.

If there is not enough text to fill all linked columns, one or more columns are left empty. If there is more text than will fit in the last column, the text extends beyond the bottom of the column.

Text that flows into a column with different attributes retains its original font, type size, type style, and color, but accepts the justification of the column into which it flows.

To edit a heading

Column headings can be edited with the Text tool by clicking in the column with the Text tool, and then selecting the heading and using standard editing techniques as described in "Editing a Text Object" earlier in this chapter. Headings must use the following form:

```
Col column_name Link continuation_name
```

and must be followed by a Return character. Be sure to press the Return key at the end of a heading that you've edited. Column and continuation names can contain any characters, without spaces. You can use UPPERCASE or lowercase letters.

For example, a column heading might be:

```
Col Interview Link Interview_continued
```

One column can be linked to another by clicking in the column with the Text tool, selecting the heading, and editing so that the continuation name of the first column is the same as the column name of the second column.

Hint If you change the continuation name of the column you are linking to before changing the column name of that column, Works displays an error message. To avoid the message, rename the second column before renaming the first.

As text is adjusted to fill linked columns, Works checks the consistency between columns to make sure that they are linked properly. Improper linking may include a reference to a non-existent column, or more than one reference to the same column. If columns aren't linked properly, Works alerts you, and does not redistribute the text.

To turn a text object into a column

You can use a heading to turn a text object into a column.

- Type a heading on the first line of the text object, being sure to follow the rules for editing headings.

  When you deselect the text object, it becomes a column — the column heading appears above the column, and the column is surrounded by a dashed box.

You can also create a column from a text object by holding down the Option key and selecting the text object with the Selection tool.

You can turn text objects into linked columns by holding down the Option key and selecting them with the Selection tool in the order they are to be linked. You can turn a column back into a text object by deleting the column heading.

A Special Use for Columns

You can create a template for a newsletter or other publication and use it every time you publish a new edition. Just create empty columns — each with its own specified shape, pattern, color, font, type size, type style, and justification. Then give each column a heading that describes its function and links it to other columns. New documents built from copies of the template will have the same format and attributes as the original document.

Exiting Draw

To exit Draw

To exit Draw:

▣ Choose Draw Off from the Edit menu.

The Tools palette disappears and you are returned to the text layer of your Word Processor or Spreadsheet document. Your pictures remain on the screen, are saved with the document when you choose Save or Save As, and are printed with the document when you print.

Note You can import pictures from other programs using the Scrapbook. For information on the Scrapbook, see your Macintosh owner's manual.

Using Macros

A macro is a set of instructions that Works follows to automatically carry out a sequence of actions. Macros save you time and trouble by remembering all of the steps in a repetitive task and carrying them out for you.

You record a macro much like you record a song on a tape recorder. While you are recording, you perform the task exactly as you want it to play back later.

Once you've recorded a task as a macro, and you want to repeat the task, just choose the macro and Works carries it out exactly as you've recorded it.

Macros are simple to use, but are also quite powerful. You'll probably want to be well acquainted with a tool before using macros in that tool.

How Macros Work

How macros work

Macros can record anything you type — text, numbers, and keyboard commands. Macros can also record mouse movements — opening menus, choosing commands, and dragging windows. However, macros can only record the points on the screen where you click and release the mouse. Because they can't record mouse movements in between clicking and releasing, you can't use macros to draw freehand objects.

Macros always play back relative to the starting location in the window you record in. For example, suppose you record a macro to type your company's name and address at the top of a page. As you record the macro, you place the insertion point at the top of the page, choose a font and type size, and type the information. If you play back the macro with the insertion point in the middle of a document, the information will appear in the middle, rather than at the top of the document.

Macros can locate and choose objects, like the close and size boxes in the window, but they can't interpret locations for you. For example, a macro can locate the scroll box, but it can't use the scroll box to move to a specific location on the screen. This is because the scroll box shows your location in the document relative to the rest of the document. Since documents are of different lengths, the distance from the top to the middle of one document will not match the distance from the top to the middle of another document. For this reason, macros using the scroll bar may not work properly.

If you record a macro and then play it back in a window in a different location on the screen, the macro will still work. This is because the macro is recorded relative to the top-left corner of the window. You'll be able to use macros that operate window controls and choose commands regardless of window location. However, if you record a macro and play it back in a different-size window, or in a window partly moved off the screen, it may not play back correctly.

If you are using Multifinder, you can't record a macro that chooses a Desk Accessory or switches to a program other than Works.

You can't turn macros on or off, or start or stop recording macros while Works displays a dialog box. To turn macros on or off, or to start or stop recording, cancel the message or dialog box, or complete the command.

To use macros

To use macros:

- Choose Macros On from the Macro menu.

A checkmark appears beside the command, and you can begin working with macros — recording a new macro, playing back an existing macro, or maintaining your macro files.

Recording a Macro

To record a macro

To record a macro:

1. If Macros On is not checked in the Macro menu, choose Macros On.
2. Choose Start Recording from the Macro menu.
3. Type in the letter of a key to be associated with the macro.
4. Press the Tab key and type in a short description of the macro.
5. Click the Record button or press the Return key.
6. Use the keyboard and/or the mouse to perform your task exactly as you want to record it.
7. Choose Stop Recording from the Macro menu.
   Works displays a dialog box from which you can stop recording, continue recording, or cancel the macro.
8. Click the Stop button to stop recording the macro.

Note There are three types of keys that can't be associated with macros:

- Accent keys: E, I, N, U, ˜
- Modifier keys: Shift, Option, Command, Caps Lock
- Reserved keys: Delete (Backspace), ‘, =, -, +, _

You can assign the Tab key to a macro by typing the word "Tab" in the Start Recording dialog box. You can assign these keys: the function keys F1 through F15, and the Home, End, Page Up and Page Down keys on an extended keyboard (Macintosh SE and Macintosh II) by pressing the key while you're in the Start Recording dialog box.

You can record a macro when you first start Works, before you open a tool. Just click the Cancel button in the Open dialog box, and choose Macros On from the Macro menu.

You can't record a macro inside a macro. This means you can't use the Option key while recording a macro, unless you are using the Option key to create a column. To record a macro to create a column, hold down the Option key before drawing the column.

Playing Back a Macro

When you play back a macro, it should be appropriate to the situation. For example, you wouldn't ordinarily record a macro in a Word Processor document to select and format paragraphs and play it back in a Spreadsheet document. If you play back a macro at an inappropriate time or in an inappropriate place, it may have unexpected results.

Whenever you want a macro to play back the actions you recorded, position the pointer at the appropriate place in your document and choose the Playback And command from the Macro menu.

To play back a macro

To play back a macro:

1. If Macros On is not checked in the Macro menu, choose Macros On.
2. Choose Playback And from the Macro menu.
   Macros are listed in alphabetical order by description.
3. Select the macro by clicking it or by typing the key associated with the macro.
4. Click the Play button or press the Return key.

Works automatically repeats the task exactly as you recorded it.

There are two other ways to play back the macro:

- Double-click the macro name listed in the Playback dialog box.

  or

- In your document, hold down the Option key while pressing the key assigned to the macro.

Macros play back as quickly as possible, often faster than you recorded them. If you want to see the dialog boxes or other information that appears on your screen as you play back a macro, you can decrease the playback speed.

To slow down macro playback:

- Choose Record Pauses from the Macro menu, or choose the Record Pauses option from the Start Recording dialog box.

  or

- During recording, choose one or both of the record delays options from the Stop Recording dialog box.

Because Works plays back macros as quickly as possible, even with Record Pauses on you won't see commands as they are chosen, but you will see any resulting dialog boxes.

See "Record Pauses" in Chapter 2 for more information.

Hint Macros work best if you type the first letter of the item you want to select from a list box. Even if the number of the items in the list box changes later, you'll be able to select the right item.

To make sure your macro selects the correct item in a selection rule list box in the Database, scroll by clicking the scroll arrow, or drag the scroll box to the extreme top or bottom of the list box and then click each item sequentially until you've selected the item you want.

About macro files

About Macro Files

Macros are recorded and saved in macro files. Macro files are always referred to as files, rather than documents, even if they have not yet been saved to a disk.

A macro file can contain one macro, or as many macros as you have available keys on your keyboard. You can group macro files any way you want. For example, macro files can be grouped:

- By type (all formatting macros, for example)
- By type of document (a Word Processor macro that begins letters and another that prints envelopes might be in the same file)

The first time you turn on macros, Works opens a new, untitled macro file for you. The macros you record are saved in memory in this file. When you save the file on your disk, the Save Macro File dialog box appears and Works proposes the name Microsoft Works(keys). If you save the file with the proposed filename, the next time you turn on macros, Works opens this file.

You can create other macro files and save macros to them by typing a different name in the Save Macro File As dialog box. For more information, see "To save a macro file with a different name" in this chapter.

Note You can record a macro only to an open macro file. To open a macro file, use the Open Macro File command in the Macro menu.

To play back a macro, the file that contains that macro must first be open.

Working with Macro Files

You create new macro files, and open, save, and rename existing macro files using commands in the Macro menu. You can also perform these functions from the Playback dialog box.

To create a new macro file

To create a new macro file:

1. If Macros On is not checked in the Macro menu, choose Macros On.
2. Choose Open Macro File from the Macro menu.
3. Click the New button.

Now you can record a macro in the new file, using the Start Recording and Stop Recording commands. Before you open a different macro file or quit Works, Works asks you if you want to save the changes to the macro file. Click the Yes button and name the file in the Save Macro File dialog box.

You can also create a new macro file from the Playback dialog box by clicking the New button and using the Start Recording and Stop Recording commands from the Macro menu.

You can have as many macro files as your disk space allows, and you can assign a name of up to 27 characters for each macro file. You can use spaces, and uppercase and lowercase letters. The only character you can't use is a colon. It is helpful to follow the filename with (keys) to identify the file as a macro file, since macro files are stored on the desktop with other files.

To open an existing macro file

To open an existing macro file:

1. If Macros On is not checked in the Macro menu, choose Macros On.
2. Choose Open Macro File from the Macro menu.
3. Select the macro file from the list.
4. Click the Open button.

Works opens a copy of the macro file that you selected. You can work with the macros in the file, and make changes to them. The original macro file remains on the disk until you replace it by saving your changes or until you remove it from the disk.

You can also open an existing macro file in the Playback dialog box by clicking the Open button.

To save a macro file for the first time

Macro files are recorded only in memory until you save them to a disk. If the power goes out, or you quit Works without saving, your macro file will be lost. To be able to use the macro file later, you must save it.

To save a macro file for the first time:

1. Choose Save Macro File As from the Macro menu.
   Works displays the Save Macro File dialog box with the proposed name Microsoft Works(keys) in the text box.
2. To save the macro file with the proposed name, click the Save button.
   To save the macro file with a different filename, type a filename into the text box and click the Save button.

Works saves the macro(s) in the new file.

You can also save a macro file from the Playback dialog box by clicking the Save button.

To save changes to an existing macro file

If you are working with an open macro file that has already been saved, you can use the Save Macro File command to save your changes to the file.

To save changes to an existing macro file:

- Choose Save Macro File from the Macro menu.

Note If you choose Save Macro File and have not previously saved the open macro file, Works displays the Save Macro File dialog box. For more information, see "To save a macro file with a different name" below.

To save a macro file with a different name

If you want to save both the original macro file and the changes you've made, you can save the macro file with a different name.

To save a macro file with a different name:

1. Choose Save Macro File As from the Macro menu.
2. Type a name for the file in the Save Macro File As text box.
   If you want to save to another disk, click the Eject button. If you want to save to another drive, click the Drive button and save the file on a disk in that drive.
3. Click the Save button.

You can also save a macro file with a different name by clicking the Save As button in the Playback dialog box.

To delete a macro from a file

You delete macros from existing macro files using the Playback And command. When you delete a macro from a file, it is erased from memory, but is still on the disk. When you delete a macro from a file and then save the macro file, Works erases the macro completely.

To delete a macro:

1. If Macros On is not checked in the Macro menu, choose Macros On.
2. Choose Playback And from the Macro menu.
3. Select the macro you want to delete.
4. Click the Delete button or press the Delete key.
5. Click the Cancel button to cancel the dialog box.
6. Choose Save Macro File from the Macro menu.

To stop using macros

To stop using macros:

- Choose Macros Off from the Macro menu.

To delete a macro file

To delete a macro file:

- Delete a macro file from the Finder by dragging it over the Trash icon, or, in Works, by using the Delete command from the File menu.

If your macro doesn't work properly

For macros to work properly:

- Macros must be turned on using the Macros On command in the Macro menu.
- The macro file that contains the macros must be opened, using the Open Macro File command.

If macros are not turned on, or the macro file is not open, and you press the key assigned to the macro, you may insert a character in your document. Delete the character by using the Delete key.

If your macro doesn't play back properly, you can choose Undo from the Edit menu to restore your document, and then re-record the macro.

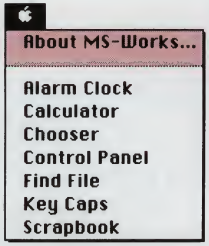
You can stop a macro in progress by pressing Command+. (period).

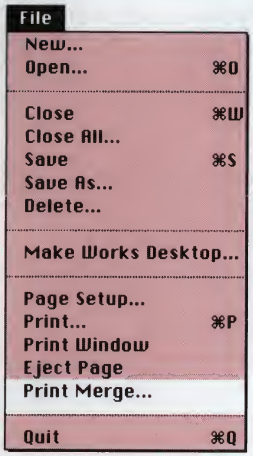
Make sure the macro is appropriate for the tool and is at the correct starting location in the document. Playing back a macro at an inappropriate time or place can cause problems.

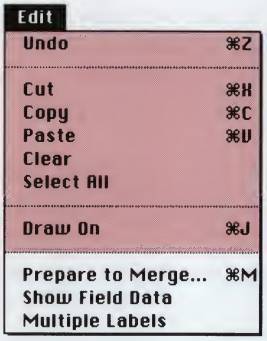
A macro may need pauses to work properly. For more information, see "Record Pauses" in Chapter 2.

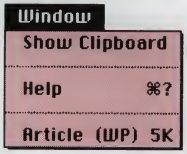
2 Common Tasks Command Reference

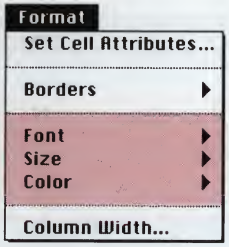
This chapter describes the commands (shaded below) common to all applications in Microsoft Works. These commands are available on six main menus: the Apple, File, Edit, Window, Format, and Macro menus.



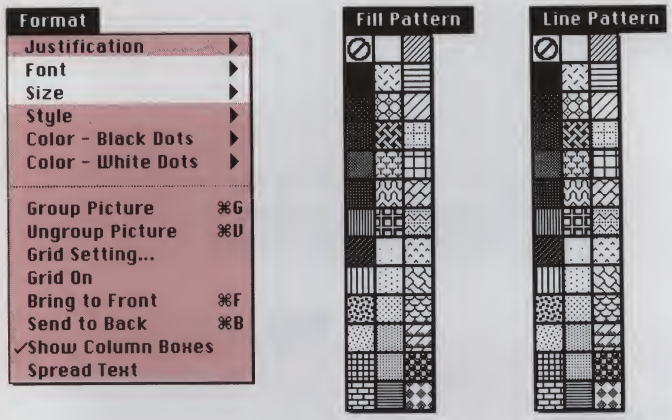








When Draw On is chosen from the Word Processor or Spreadsheet Edit menu, the Format menu contains additional commands, and the Fill Pattern and Line Pattern menus are added to the menu bar.



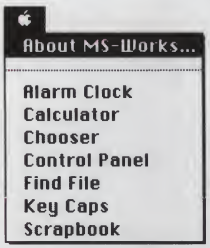
You can invoke some Works commands from the keyboard, as well as by using the mouse. The available Command + key and Option + key combinations are shown in the menus and in Appendix D.

An alphabetical list of commands appears in the index under "Command."

The Apple Menu

About MS-Works

About MS-Works



The About MS-Works command shows how much memory is available for documents. It also provides some basic information about the Works program.

For a discussion of the desk accessories listed in the Apple menu, see your Macintosh owner's guide.

Note While desk accessories should not interfere with the functioning of Works, sometimes problems do occur. If Works malfunctions while a desk accessory is present, try removing the accessory from your System.

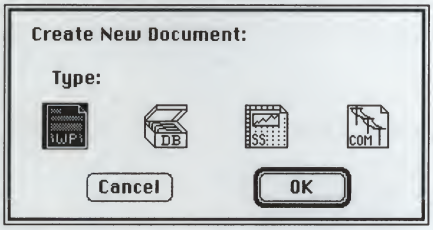
The File Menu

New

The New command creates an empty document in a new window.

If you already have 14 windows on your desktop, the New command is dimmed until you remove one or more of the windows by closing them.

When you choose New, Works displays a dialog box in which you choose the type of document you want to create.



To create a new document, click the icon corresponding to the type of document you want to create: Word Processor, Database, Spreadsheet, or Communications. Then click the OK button. You can also double-click an icon to create a new document.

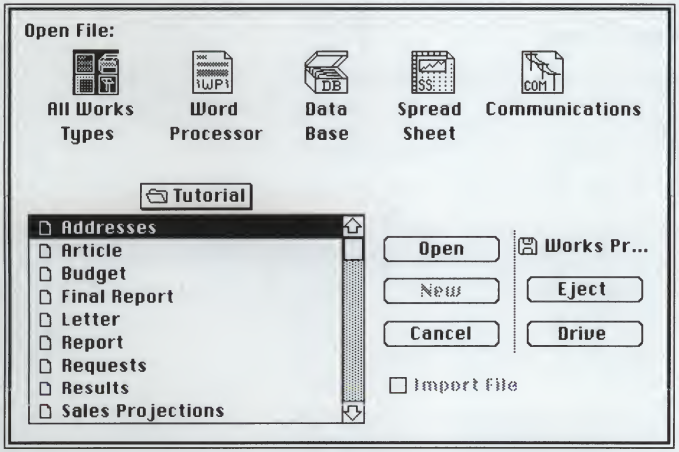
The window containing the newly created document becomes the active window, and the menu bar changes to reflect the Works tool you have chosen.

New

Open

The Open command opens a file from the disk and displays a copy of it on your screen.

If you already have 14 windows on your desktop, the Open command is dimmed until you remove one or more windows by closing them.



Open

The list box contains a list of files and folders on the current disk. You may have to scroll the list to see all the names. The name of the current disk appears above the Eject and Drive buttons.

Click the icon for a particular tool to see only files of that type and all folders in the list box. Clicking the All Works Types icon displays all Works files and folders.

Click the Import File option after clicking a document type to display only those files that can be imported to Works. For more information, see Appendix B, "Using Works with Other Applications."

To open a file, either select the filename from the list box and then click the Open button, or double-click the filename.

The document appears on the desktop in a new window, which is active. It has the same size and location on the screen as it had when you last saved it. The menu bar changes to reflect the type of document you have selected.

There are four other buttons in the Open dialog box:

New If you click the icon for one of the document types, you can click the New button to create a new document of that type.

Cancel Click the Cancel button to cancel the Open command.

Eject Click the Eject button to eject the current disk from the disk drive. You can then insert the disk containing the file you want to open.

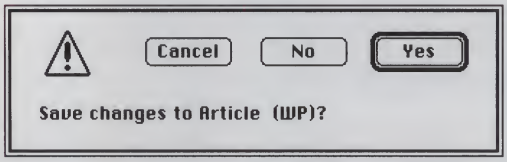
Drive Click the Drive button to list the files on the other disk drive.

Close

Close

The Close command closes the active document and removes it from your screen.

You can also close a document by clicking the close box in the document window's title bar. If you have changed the document since you last saved it, an alert box appears.



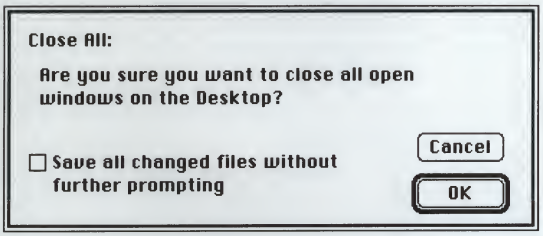
Yes Click the Yes button to save the changes.

No Click the No button if you don't want to save the changes.

Cancel Click the Cancel button to cancel the Close command. In this case, the document isn't closed and the changes aren't saved. Works returns you to the document you were working on when you chose the Close command.

Close All

The Close All command closes all open documents and removes them from your screen. When you choose Close All, Works asks if you want to close all of your open documents.



Save all changed files without further prompting If you check this box and click the OK button, Works automatically saves all open documents, clears the desktop, and displays the Open dialog box.

If you don't check this box and you've made changes since last saving a document, when you click the OK button, Works asks you if you want to save the changes to that document. If several documents are open, Works asks if you want to save changes for each document.

If you don't check the Save all changed files box, and have a new document window open, Works displays the Save As dialog box. For more information, see "Save As" on the next page.

Yes Click the Yes button to save the changes.

No Click the No button if you don't want to save the changes.

Cancel Click the Cancel button to cancel the Close All command.

Close All

Save

The Save command saves the active document. The document is saved on the disk containing the file associated with it. Works saves the document with its current name and replaces the file on the disk. Works also stores the location and size of the window with your saved document.

After you save a document, it remains active, so you can continue to work on it. It is a good idea to save your work periodically; a power failure may cause you to lose changes you've made since you last saved.

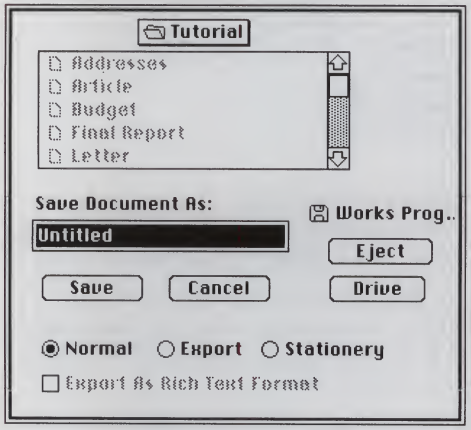
If you're saving a document for the first time, Works displays the Save As dialog box.

Save

Save As

The Save As command saves new documents or new versions of existing files. Works also saves the location and size of the window along with your data.

When you choose Save As, Works displays a dialog box. (You'll also see this dialog box if you choose the Save command for a document that has not been previously saved.)



Save Document As If the document already has a name, Works proposes it in the text box. To accept the proposed name, and replace the file with the same name on the disk, click the Save button. To save the document under a different name, so you'll retain the existing file and also save the version with your latest changes, edit the proposed name or type a new one.

If the name you type has already been used for a different file on the disk, or if you don't change the proposed name, Works asks if you want to replace the existing file on the disk. Click the Yes button to replace the file on your disk with the active document. Click the No button to see the Save As dialog box again. You can then type a different name for the document.

Eject Click the Eject button to eject the current disk. You can then insert a different disk on which to save the document.

Drive If you have an external disk drive or a hard disk, you can save the document on another disk drive. Click the Drive button to change to the disk drive on which you want to save the document.

After you save a document with Save As, it remains on the screen, but its name changes to the new name you gave it. You can continue to make changes to it and then save it, either with the same name using the Save command, or with another name using the Save As command.

Note When you click the Save Selected Records option for a Database document, the Save As command works slightly differently than described above. For more information, see "Save Selected Records Only," on the next page.

Normal This option should be chosen if you want to save the formatting information along with the text of your document. In most cases, you will want this option.

Export Click this option before you click the Save button if you want to save only the text of your document and not the formatting information. Use this option when you want to export a Works file to use in another program.

Stationery The Stationery option lets you create a template file that contains preset standards — such as font, size, and style — that you can automatically apply to documents you create.

A stationery file is like a pad of notepaper that contains standard information, like your name and address. It can contain drawings and text with specific fonts, sizes, and justifications, or it can contain formatting information without drawings or other data.

When you open a stationery file, an untitled document is displayed on your screen. It is a copy of the stationery file, with all the original information and settings. You work with this copy and save it as a normal document.

The stationery file remains unchanged on the disk. The next time you open it, you again see all the information in the original document, and the name Untitled in the title bar.

You save a document as stationery in the Save As dialog box by naming the document, clicking the Stationery option, and then clicking the Save button.

In the Finder, a stationery file icon looks just like an icon for the tool it was created in, except that the lower-right corner is turned up.

Note Depending on which Works tool you're using, there may be one or two other options in the dialog box.

Export As Rich Text Format If you want to export your data with formatting to a program that accepts Rich Text Format (RTF), click the Export button, and then click the Export As Rich Text Format option. For more information on RTF, see Appendix B, "Using Works with Other Applications."

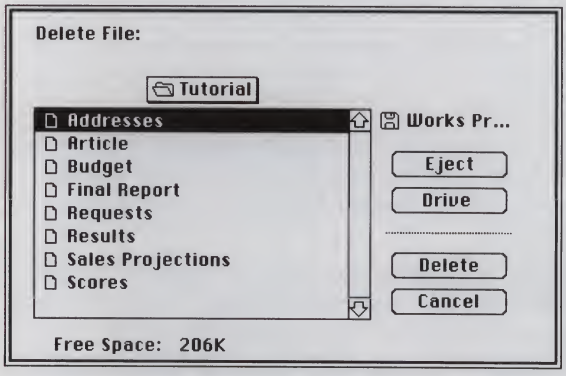
Save Selected Records Only Click this option before you click the Save button if you previously used the Match Records or Record Selection command in the Database, and you want to save only those selected records.

Important When you use the Match Records or Record Selection command in the Database, Works displays only the selected records on the screen. When you save, remember to specify another name for the document so that you don't replace your complete Database document with this new smaller one. This is a special case of the Save As command in which Works does not replace the current window with the new document.

Delete

Delete

The Delete command deletes files from your disk.



The list box contains the names of all files and applications (except Works) on the current disk. You may have to scroll the list to see all the names. The name of the current disk is shown above the buttons.

To delete a file from your disk, select the file you want to delete and then click the Delete button, or double-click the filename.

Note You can't delete an open document from your disk.

Free Space This number gives the amount of unused space, in bytes, on the current disk.

In addition to the Delete and Cancel buttons, there are two other buttons in this dialog box:

Drive Click the Drive button to list the files on the disk in the other disk drive.

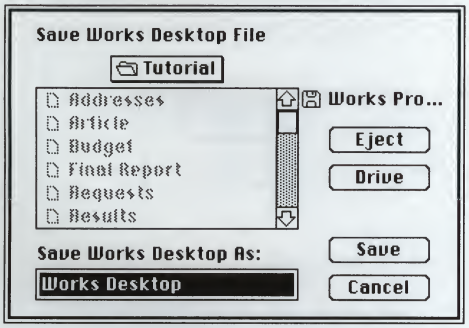
Eject Click the Eject button to eject the current disk from the disk drive. You can then insert the disk containing the file you want to delete.

Important You cannot undo the Delete command. If you delete a file, it is not retrievable.

Make Works Desktop

When you quit Works, Works automatically saves a list of the files associated with your open documents, along with their sizes and locations, in a file called Works Desktop.

You can use the Make Works Desktop command to save the existing desktop without quitting Works, and to save multiple versions of the desktop for different purposes.



Save Works Desktop As Works proposes the filename Works Desktop in the text box. If you accept the proposed name and make changes to the number, size, or location of files on your desktop and then choose Quit, Works automatically saves the changes to the Works Desktop file.

To make a desktop file that reflects your current desktop, and that won't be changed when you quit Works, type a filename (other than Works Desktop) in the text box, and click the Save button.

Note The desktop file contains a list of the documents from your desktop, not copies of the documents themselves. If you include a document in a desktop file, and then make changes to that document by opening and editing it individually, the latest version will appear on your desktop when you next open the desktop file.

Make Works Desktop

Eject Click the Eject button to eject the current disk from the disk drive. You can then insert another disk and save your desktop file on that disk.

Drive Click the Drive button to change to the other drive and save your desktop file in that drive.

Works does not save untitled documents in the desktop file. If you try to save a desktop containing an untitled document, Works alerts you. Use Save As to name the document.

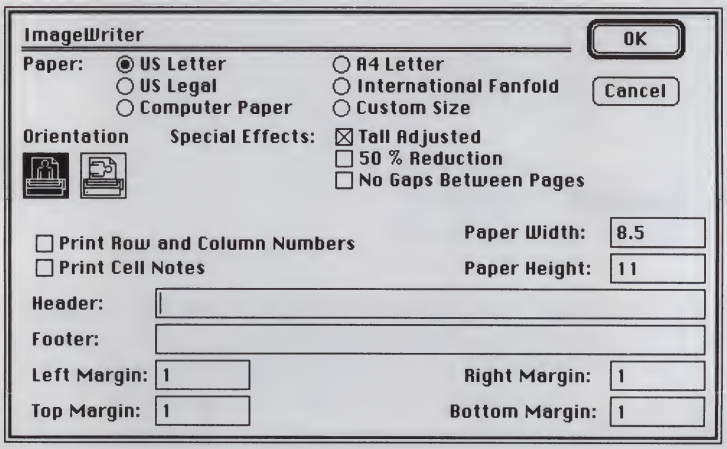
When you want to work with a certain desktop arrangement, you have to start up with the same disks in the disk drives as when you saved the desktop, or Works may not be able to find all the files you need. If Works can't find the files, it displays an alert box.

Page Setup

The Page Setup command controls the appearance of a printed document.

When you save a document, Works stores the settings chosen with this command along with the document.

Note In the Database, Page Setup is available only when a report window is active. In the Word Processor and Spreadsheet, Page Setup is available only when Draw is off.



Works comes with the ImageWriter printer driver, which can be used with the standard and wide ImageWriter and ImageWriter II printers. If you use a different printer driver, the dialog box you see may differ from the one above.

Paper Click an option:

US Letter	8-1/2″ by 11″
US Legal	8-1/2″ by 14″
Computer Paper	15″ by 11″ (this option works with only a 15″ ImageWriter)
A4 Letter	8-1/4″ by 11-2/3″ (European letter size)
International Fanfold	8-1/4″ by 12″
Custom Size	Defined by you

While all margins are set to 0, you can specify custom-size paper to a maximum height of 273″ and a maximum width of 273″. To use a width of more than 15″, you must click the icon for wide printing orientation. The minimum height for custom-size paper is 1″, and the minimum width is 1″. When all margins are set to 1, the minimum height and width is 2.1″. If you use continuous form paper, measure the height of the paper between the perforations. If you use continuous form labels, measure the distance from the top edge of one label to the top edge of the next label.

Note Custom Size paper is not an available option when you use a LaserWriter printer.

Orientation Click one of the icons:

Tall	Vertical orientation
Wide	Horizontal orientation

Special Effects Click any options you want:

Tall Adjusted	Vertical orientation; prints pictures with correct proportions
50% Reduction	Prints your document at half the normal size
No Gaps Between Pages	Prints your document up to the perforation with no extra spacing

Note Tall Adjusted is preset in all of the Works tools. This setting prints most information to the ImageWriter in the appropriate height-to-width ratio. Some images may not print properly using Tall Adjusted. If you are experiencing problems, turn Tall Adjusted off before printing.

The Print Row and Column Numbers and Print Cell Notes options are available only in the Spreadsheet.

Print Row and Column Numbers Click this option if you are printing a Spreadsheet document and you want the row and column headings (numbers and letters) to appear.

Print Cell Notes Click this option if you are printing a Spreadsheet document and you want to print the cell notes it contains. Cell notes are printed after the Spreadsheet document. Notes are identified by their cell reference, and are printed first by column, then by row. For example, A1 through A10, then B1 through B10, and so on.

Paper Width If you click the Custom Size option, type the paper width in inches into the text box.

Paper Height If you click the Custom Size option, type the paper height in inches into the text box.

Header If you want page headers, type the text you want Works to use for the header into this text box. Works prints the header at the top of each page, centered between the text and the top edge of the page. If the margin between the text and the top of the page is more than one inch, the header prints one inch from the top of the page.

Footer If you want page footers, type the text you want Works to use for the footer into this text box. Works prints the footer at the bottom of each page, centered between the text and the bottom edge on the page. If the margin between the text and the bottom of the page is more than one inch, the footer prints one inch from the bottom edge of the page.

Works provides a set of formatting commands to use in headers and footers. You can tell Works to print parts of the header and footer at the left, right, or center of a page; to include the page number, date, time, and document name; and to print in bold or italic type.

Type	To
&L	Align the characters that follow at the left margin.
&C	Center the characters that follow.
&R	Align the characters that follow at the right margin.
&P	Print the page number.
&D	Print the current date.
&T	Print the current time.
&F	Print the name of the document.
&B	Print the characters that follow in bold.
&I	Print the characters that follow in italic.
&&	Print a single ampersand.

You can include any combination of these instructions in a single header or footer. For example, you would type *&LTelephone Report&C&D&R&P* into the header text box to print "Telephone Report" in a header at the left margin on each page, the current date centered in the header, and the page number at the right margin. You can use either uppercase or lowercase letters in formatting commands.

Note When a Word Processor document is active, you can use the Font, Size, and Color commands to adjust the font, size, and color of the header and footer. You can also print consecutive page numbers in headers and footers throughout a series of documents. For more information, see "Headers and Footers" in Chapter 4.

If you type a header or footer without making any changes to it, it prints in the preset font, size, and color for the tool you're working in. In the Word Processor, this is Boston 10 point, black. In the Spreadsheet and Database, this is Geneva 9 point, black.

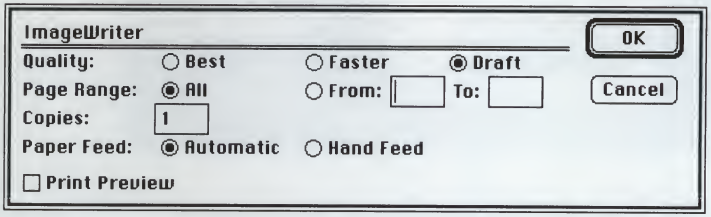
Margins The margin settings determine the amount of space between the edge of the paper and the printed document.

The margins are preset to 1″ at the top, bottom, and sides of the page. To change a margin, press the Tab key to move the selection into the box you want, then type the number of inches (such as 0.5, 2, or 2.75).

Note For a Word Processor document, if you set right and left margins that conflict with the indent markers on the ruler, Works displays an alert box. For more information on setting indents, see "Indenting Text" in Chapter 4.

Print

The Print command prints the active document using the settings from the Page Setup command and includes any page breaks.



Quality The Quality setting you choose determines the print resolution. The higher the resolution — the more dots used to form characters — the better the quality. If you click 50% Reduction in the Page Setup dialog box, the Quality options are dimmed.

Print

Click	For
Best	High resolution (sharpest)
Faster	Medium resolution (less sharp, but prints faster)
Draft	Low resolution (least sharp, but prints fastest) Prints text only, in the printer's preset font, with no graphics, no gridlines, and with inconsistent spacing between words.

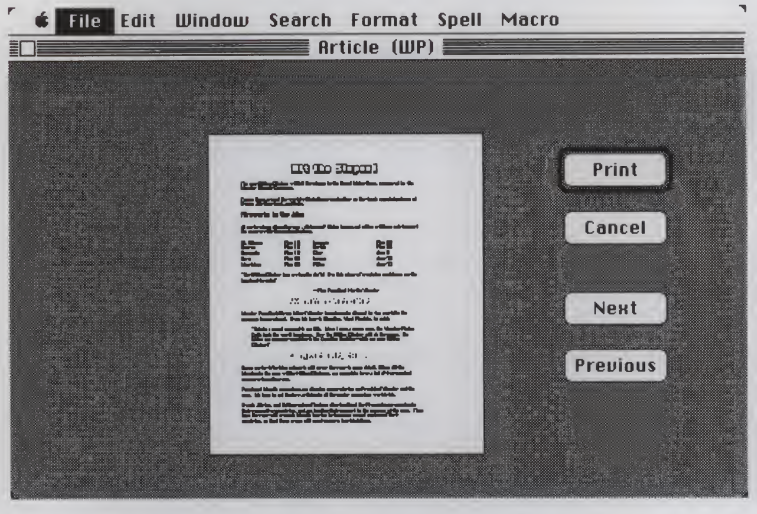
Page Range To print all the pages in the document, click the All option. To print a range of pages, click the From option and type the first page number of the range you want to print. Then press the Tab key to move the insertion point into the To box, and type the last page number of the range you want to print.

Copies Type the number of copies you want.

Paper Feed Click Automatic if you are using continuous-form paper. Click Hand Feed if you are using single sheets of paper.

Print Preview To view a document before you print, click the Print Preview option.

The document appears in the orientation chosen in the Page Setup dialog box. You'll be able to see headers, footers, and drawings exactly as they'll print.



There are four buttons in the Print Preview window:

Print Click the Print button to print the document.

Cancel Click the Cancel button to cancel the Print Preview window and the Print command.

Next If your document contains more than one page, click the Next button to view successive pages.

Previous If your document contains more than one page, click the Previous button to view preceding pages. Depending on available memory, you can preview up to four previous pages at a time.

While the pointer is over the page area, it changes to a magnifying glass. Clicking on a page causes that part of the page to be shown full size. When the page is full-sized, the magnifying glass changes to a hand. To view other parts of the page, you can move the page by dragging the hand. To reduce the page, double-click the hand or click the close box in the title bar.

Print Window

The Print Window command prints the contents of the active window.

When you choose Print Window, Works prints only the data you see in the window, without the title bar, scroll bars, and size box.

In the Word Processor and Spreadsheet, Print Window is available only when Draw is off.

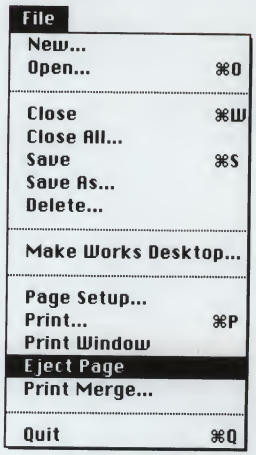
Print Window

Eject Page

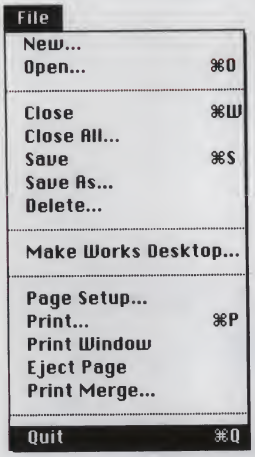
The Eject Page command ejects the paper in the ImageWriter to the top of the next sheet of paper.

If you are using a LaserWriter, or the Appletalk network, you won't be able to use this command.

Eject Page



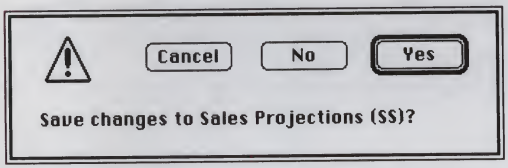
Quit



Quit

The Quit command ends a Works session.

If you have made changes to any open documents and have not saved them, Works displays an alert box for each document.



Yes Click the Yes button to save the changes.

No Click the No button if you don't want to save the changes.

Cancel Click the Cancel button to cancel the Quit command. If you click the Cancel button, the document is not saved and you return to the document named in the alert box.

If you have made changes to a macro file and have not saved it, Works displays a dialog box.

Choose Yes to save the changes. Choose No to ignore the changes and quit Works.

For a description of how to save your document before you choose Quit, see "Save" and "Save As" in this chapter. For a description of how to save your macro file before you choose Quit, see "Save Macro File" and "Save Macro File As" in this chapter.

When you quit, Works saves a list of the files associated with your open documents in a file called Works Desktop. The next time you start Works, you can select the Works Desktop file in the Open dialog box. Works then restores the documents that were on the desktop when you quit.

You can also save a desktop without quitting Works. See "Make Works Desktop" earlier in this chapter for more information.

The Edit Menu

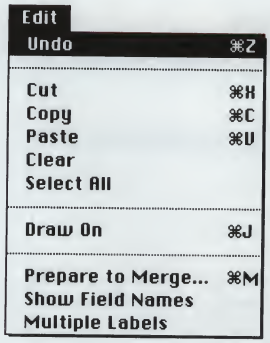
The first six commands on the Edit menu are common to all tools in Works. The Draw On command is common to the Word Processor and Spreadsheet tools. For related information specific to a particular tool, see the part of this manual that pertains to that tool.

Undo

The Undo command reverses the effects of the last editing command made. When you cannot undo something, the command is dimmed.

Important You cannot undo the Delete command or any other command from the File menu.

Undo



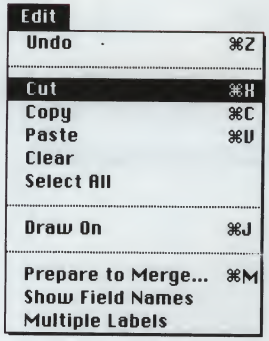
Cut

The Cut command removes the current selection from your document and places it on the Clipboard.

You can cut text from anywhere in a document, including the entry bar in Database and Spreadsheet documents. You can cut drawn objects in Word Processor and Spreadsheet documents.

In a Spreadsheet document, use the Erase Chart command in the Chart menu to remove a chart. Use the Cut and Paste commands to move data to another Spreadsheet document or to a document from another tool. Within a single Spreadsheet document, however, use the Move command to rearrange your data. For more information, see "Move" in Chapter 16. In the Database and Word Processor, information within a single document can be moved with Cut and Paste.

Cut



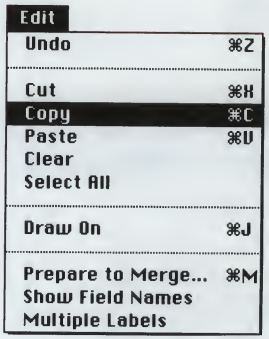
Copy

The Copy command copies the current selection and places it on the Clipboard. Your document remains unchanged.

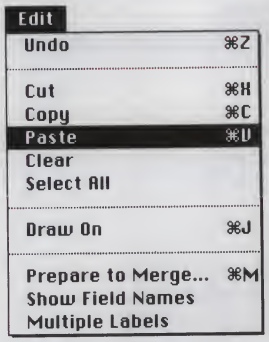
You can copy text from any part of a document, including the entry bar in Database and Spreadsheet documents. You can also copy drawn objects and text that includes a drawn object from Word Processor and Spreadsheet documents.

When you are editing in the entry bar, you can copy text by selecting it and choosing Copy. Works puts a copy of the selected text on the Clipboard, replacing the Clipboard's contents. After you copy a selection, you can paste it at the insertion point in the entry bar.

Copy



Paste



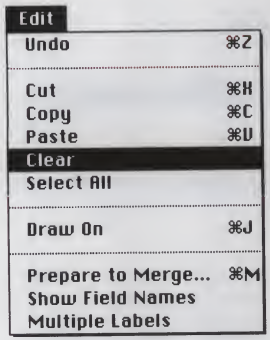
Paste

The Paste command pastes the information currently on the Clipboard into the active document at the insertion point. If text is selected, Paste replaces the selection with the information on the Clipboard.

In the Spreadsheet, the Paste command pastes all cell properties for every cell pasted, including the formula or value, number format, grid status, style, alignment, and protection status. If you want to paste only values without any formulas, use the Paste with Options command. For more information, see "Paste with Options" in Chapter 16.

Works can paste the contents of a Clipboard that contains a drawn object or text and a drawn object, and can turn normal text into a text object. For information on pasting drawings, see "Copying Drawings" in Chapter 20.

Clear

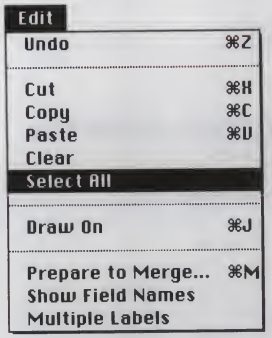


Clear

The Clear command removes the selection from your document, but does not place it on the Clipboard. Use Clear when you want to delete rather than move or copy information.

Note Clear removes the information and any cell or field attributes, but it does not remove the font, size, style, or color of a selection.

Select All



Select All

The Select All command selects an entire document.

Select All is useful in the Word Processor when you want to change the font or set an indent for an entire Word Processor document.

In the Database, Select All is used only in the list window. If Match Records or Record Selection has been chosen, Select All does not select any records that do not match the criteria and are not currently displayed.

In the Spreadsheet, Select All selects all cells — including blank cells, and hidden rows and columns.

In the Spreadsheet and Word Processor, Select All selects objects in the draw layer, if Draw is off. If Draw is on, you can't choose Select All.

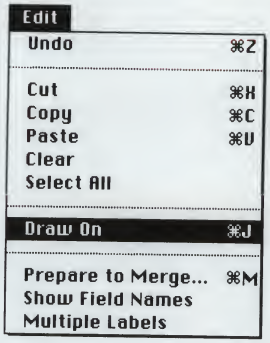
Draw On/Draw Off

The Draw On command starts Draw in the Word Processor and Spreadsheet, and displays the Tools palette. With Draw, you can use the palette and the commands in the Format, Fill Pattern, Line Pattern, and Macro menus to draw pictures in your Works Word Processor and Spreadsheet documents.

The Tools palette allows you to choose from ten tools, view the current fill and line patterns, move a selection pixel-by-pixel, select one of five line thicknesses, and add or remove arrows from the ends of lines. For more information on the Tools palette, see "Starting Draw" in Chapter 1.

The Draw Off command removes the Tools palette and turns Draw off. Draw Off appears in the Edit menu only when you are using Draw.

Draw On
Draw Off



In the Draw Layer

When Draw On is chosen from the Word Processor or Spreadsheet Edit menu, the Format menu contains additional commands, and Fill Pattern and Line Pattern menus are added to the menu bar.

The Draw Layer Format Menu

When you are using Draw, the top part of the Format menu contains commands for changing the justification, style, font, and size of text, as well as the colors of text and graphic objects. The bottom part of Draw's Format menu contains commands for manipulating the placement of objects on the screen.

Most of Draw's Format menu commands are explained in the following paragraphs. Font and Size are explained in detail under "The Format Menu," later in this chapter.

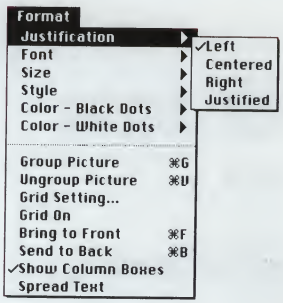
Justification

The Justification command leads to another menu that lists justification commands for the text in a text object. A text object can have only one justification.

Left The Left command aligns all lines with the left edge of the object.

Center The Center command centers each line between the left and right edges of the object.

Justification



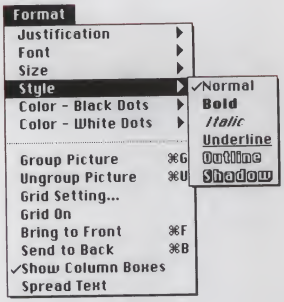
Right The Right command aligns each line with the right edge of the object.

Justified The Justified command aligns the beginning of each line with the left edge of the object and the end of each line with the right edge of the object. Spaces between complete words in each line are adjusted to give the appearance of evenly-spaced text.

Note When you edit fully-justified text, it appears on the screen as left-justified. When you finish editing, the text is fully-justified. The first time you choose full justification during a drawing session, Works alerts you to this situation. Click the OK button to justify.

For all justification choices, only complete words are placed on a line.

Style



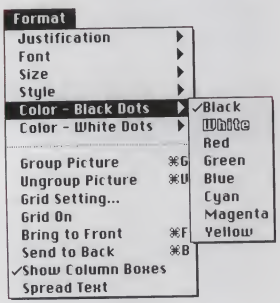
Style

The Style command leads to another menu which lists type styles (such as Bold or Underline) for a text object. When the Text tool is active, a style affects only the selected text, or the text you're about to type. When an object is selected with the Selection tool, a style affects the entire object. The checkmarks on the menu indicate those styles currently in effect.

This command	Looks like this
Normal	Normal
Bold	**Bold**
Italic	*Italic*
Underline	Underline
Outline	Outline
Shadow	Shadow

You can check multiple styles, such as Bold and Underline. When you choose Normal, all other styles are cancelled.

Color - Black Dots
Color - White Dots



Color - Black Dots/Color - White Dots

The Color - Black Dots command lets you choose a color for the pixels that are black on a black-and-white monitor. On a color monitor, "black" pixels in a pattern can be either white or colored.

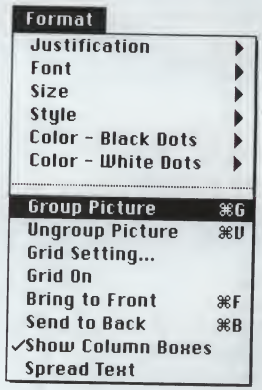
The Color - White Dots command lets you choose a color for the pixels that are white on a black-and-white monitor. On a color monitor, "white" pixels in a pattern can be either white or colored.

Note You can choose colors for objects before you draw them by clicking outside any selected objects to deselect them, and choosing the black and white dot colors for the next object.

If you choose colors for a patterned object on a black and white monitor, the pattern may appear as solid black. However, if you have a PostScript printer (most LaserWriters), the pattern will print. If you have a LaserWriter SC (or any QuickDraw-based printer), a patterned object with black dot and white dot colors other than black and white will print as solid black.

Group Picture/Ungroup Picture

Group Picture
Ungroup Picture



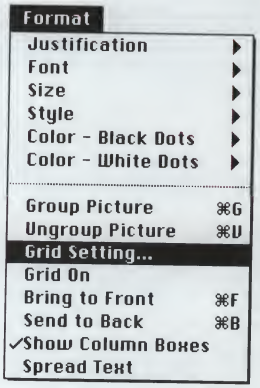
The Group Picture command lets you select several individual objects and move, resize, fill, color, and delete them exactly as if they were a single object. To group objects, hold down the Shift key, click each object, and then choose Group Picture.

You can also create a group using standard Macintosh techniques: place the selection tool outside one corner of the objects you want to group, drag diagonally to the opposite corner of the group, and then choose Group Picture.

The Ungroup Picture command reverses the Group Picture command. To ungroup, select a previously grouped set of objects and choose Ungroup Picture from the Format menu. Works reverses the Group Picture command—click outside the group to deselect the objects.

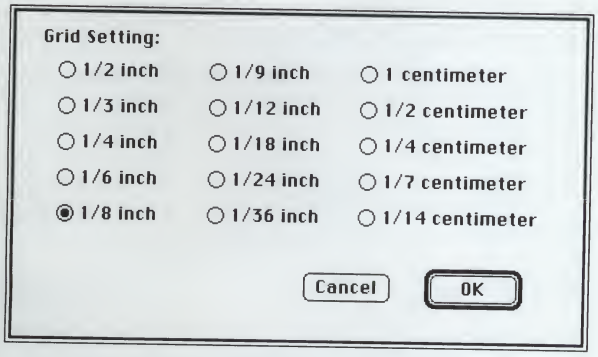
Grid Setting

Grid Setting

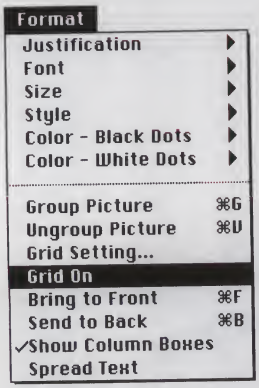


The Grid Setting command sets the spacing for an invisible alignment grid, which aligns objects horizontally and vertically along the grid lines. For a grid to be in effect, the Grid On command must be checked in the Format menu.

Choose the spacing you want in the Grid Setting dialog box and click the OK button.



Grid On

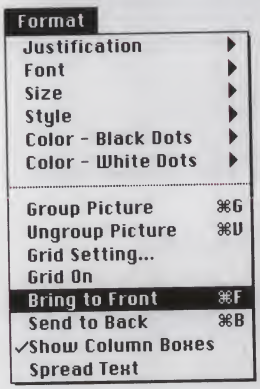


Grid On

If the Grid On command is checked in the Format menu, Works places an invisible grid over the screen which automatically aligns objects with the nearest horizontal and vertical lines in the grid. The grid affects only objects that are drawn or moved while the grid is on. Spacing for the grid lines is set using the Grid Setting command.

If Grid On is not checked in the Format menu, objects are not aligned with the Grid. Instead, they are placed in the exact location where they are drawn or moved on the screen.

Bring to Front
Send to Back



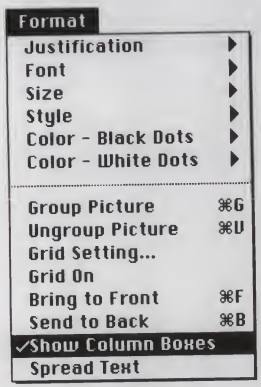
Bring to Front/Send to Back

The Bring to Front command moves a selected object to the frontmost plane in Draw.

Select the object you want to bring to the front, and then choose Bring to Front from the Format menu. The object overlaps any other objects on the screen.

The Send to Back command moves a selected object to the backmost plane in Draw. The object is overlapped by other objects on the screen.

Show Column Boxes



Show Column Boxes

If the Show Column Boxes command is checked in the Format menu, the dashed lines around columns are displayed on the screen.

If Show Column Boxes is not checked, the dashed lines around columns are not displayed on the screen.

Spread Text

The Spread Text command lets you align text along a line or an arc.

To use Spread Text, select text from a document or a text object. Copy it to the Clipboard, and draw or select the line or arc along which you want to spread the text. Then choose Spread Text from the Format menu.

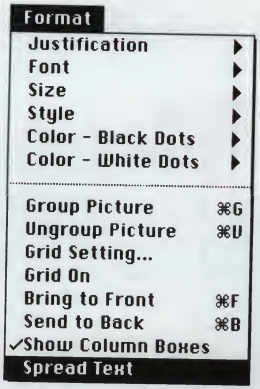
Spread Text makes individual objects out of each of the characters in the selected text object and spreads them out evenly in the direction that the line or arc was drawn.

You can group the text using the Group Picture command and then drag the object's handles to spread the text further or pull the text tighter along the line or arc.

Note If you don't want to see the line or arc, choose transparent (⊘) from the Line Pattern menu, or choose no line width from the Tools palette.

If text has not been copied to the Clipboard, and a line or an arc has not been designated before the Spread Text command is chosen, the command is dimmed and you can't choose it.

Spread Text



The Fill Pattern Menu

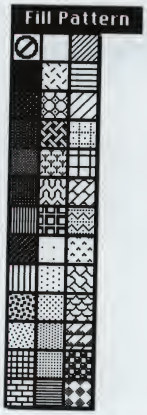
The Fill Pattern menu provides patterns to fill all objects except lines.

You can fill an object by choosing a tool, choosing a pattern, and drawing the object, or by selecting an existing object and choosing a pattern.

When you turn Draw on in a document, the fill is transparent (⊘).

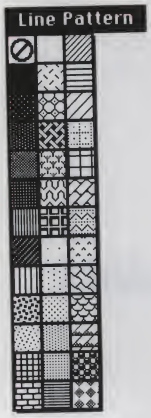
You can choose a fill pattern before drawing objects by clicking outside any selected objects to deselect them, and choosing a pattern for the next object.

The Fill Pattern menu



The Line Pattern Menu

The Line Pattern menu



The Line Pattern menu provides patterns for lines and borders for all objects except text objects. The width of the line depends on the line width selected in the Tools palette.

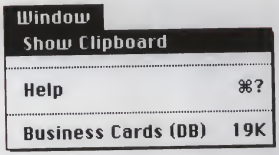
You can choose a line pattern and width by choosing the tool, choosing the width, selecting a pattern, and drawing the object, or by selecting an object and then choosing the width and pattern. If you choose (⊘), the line or border is transparent.

You can choose a line pattern before drawing objects by clicking outside any selected objects to deselect them, and choosing a pattern for the next object.

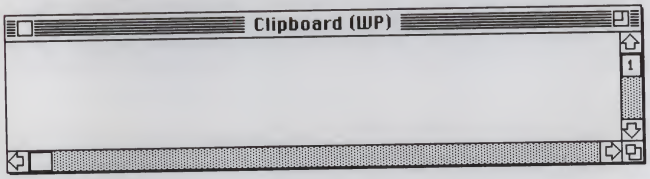
The Window Menu

Show Clipboard/Hide Clipboard

Show Clipboard Hide Clipboard



The Show Clipboard command opens the Clipboard window. This window contains the last selection you cut or copied since your Macintosh was turned on.

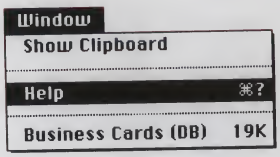


You cannot edit the contents of the Clipboard.

To close the Clipboard window, click its close box, choose Close from the File menu, or choose Hide Clipboard from the Window menu.

Help

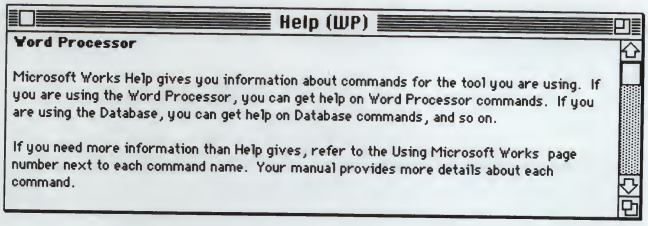
Help



The Help command leads you to the Works help system.

When you choose Help, Works looks on the Works Program disk and in the folder from which you started Works. If Works can't find Help, you're asked to locate and open it. Once Works knows Help's location, you won't be asked again unless you change its location.

When Works locates Help, it displays a window:



The window contains general information about the active tool. It also directs you to additional information about each command available for the tool.

When the Help window is active, the pointer becomes a question mark anywhere outside the Help window. To get help about any command, pull down a menu and choose the command. A description of the command, as well as a page number from this manual, is displayed in the window.

For example, if you want a brief explanation of the Save As command, choose Save As from the File menu while the Help window is active. A description of Save As is displayed in the window.

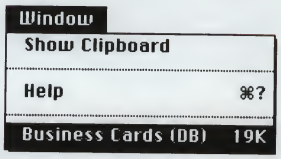
You can scroll vertically in the Help window, change its size and position, and close it, just as with other Works windows.

You can leave the Help window open while you work on a document. To make the document active, click anywhere within the document window.

To close the Help window, click its close box.

Activate Window

Activate Window



The Activate Window command is actually a group of commands that changes according to the windows you have open on the desktop. There is always one command for each open window. The only exceptions are the Help and Clipboard windows.

Each command that appears in this part of the Window menu activates the window containing the document with the same name as the command.

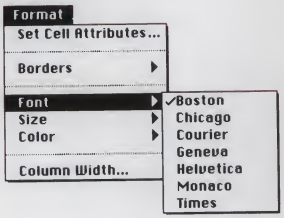
Use this command to activate a window quickly. The command name shown here is just an example; your menu will show whatever windows you have open.

You can activate the last window in the list of document names by pressing Command+, (comma). Works brings the window to the front, and moves the document name to the top of the list. In this way, you can easily move through a series of open documents.

The Format Menu

Three commands in the Format menu — Font, Size, and Color — are common to all Works tools.

Font



The Font command leads to another menu which lists fonts that you can use for your text. When you choose a font in the Word Processor, it affects only the selected text or the text you're about to type. In the Spreadsheet, a font affects the entire document. In the Database, a font affects the active view (form, list, or report) for the entire document. When drawing, a font can affect the entire text object, selected text within the object, or text you're about to type.

You can change fonts before you type text by selecting the font you want and then typing the text, or you can change the font of text already in your document by selecting the text and choosing a font. The font will be changed, but the type size will remain unchanged. In the Word Processor, Spreadsheet, and Draw, the type styles will also remain unchanged.

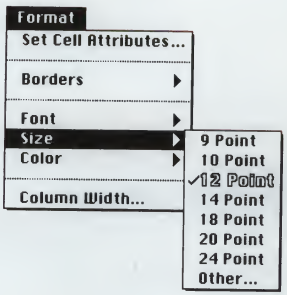
Works' preset fonts are:

Word Processor	Boston 10
Database	Geneva 9
Spreadsheet	Geneva 9

Note Works uses the fonts in your System file; the System shipped with Works includes the Boston font. If you use two 3.5-inch disk drives, Boston 10 point will be the preset font and size for the Works Word Processor. If you use a hard disk and you don't install the font on your working disk using the Font/DA Mover, the preset font will be Geneva. To save space on your working disk, use the Font/DA Mover to remove those fonts that you don't use. For information on the Font/DA Mover, see your Macintosh owner's guide.

If you are using a LaserWriter printer, the Font Substitution option automatically converts some fonts, such as Geneva, to LaserWriter fonts. Other fonts, such as Boston, have no automatic substitution. Generally, it is best to choose a font recommended for the LaserWriter, such as Times or Helvetica, before you print. For more information, see your LaserWriter manual.

Size

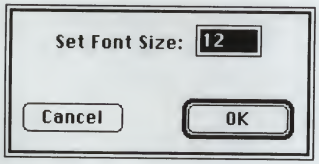


The Size command leads to another menu which lists type sizes. When you choose a size in the Word Processor, it affects only the selected text or the text you're about to type. In the Spreadsheet, a size affects the entire document. In the Database, a size affects the active view (form, list, or report) of the entire document. When drawing, a size can affect the entire text object, selected text within the object, or text you're about to type.

You can change sizes before you type text by selecting the size you want and then typing the text, or you can change the size of text already in your document. Just select the text, and then choose a size. The size of the selection will be changed, but the font will remain unchanged.

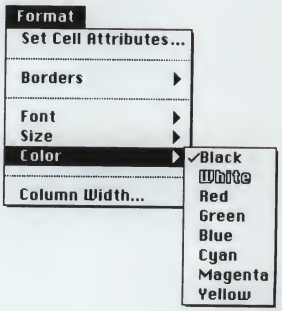
The sizes shown in outline type on the menu are those recommended for the font selected in the Font menu. You can choose any size for any font, but those sizes that are not recommended will produce a rougher appearance, both on the screen and on the printed page.

Other In addition to the sizes listed, to take full advantage of the scaling available on the LaserWriter printer, you can choose the Other command. When you choose Other, Works displays a dialog box from which you can choose any size from 4 to 72.



To save space on your disk, use the Font/DA Mover to remove those sizes that you don't use. For more information, see your Macintosh owner's guide.

Color



The Color command leads to another menu which lists commands for changing the text color of a document. If you have a color monitor, you can display colors; if you have a color printer, you can print them.

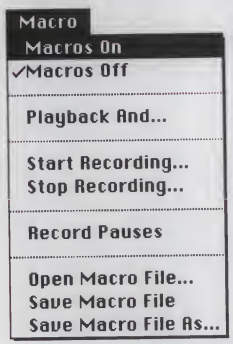
In the Word Processor, color choices affect only the selected text. In the Spreadsheet, color choices affect the entire document. In the Database, color choices affect the active view (form, list, or report) of the entire document. When drawing, the color chosen in Color - Black Dots affects the black dots in a pattern and the color chosen in Color - White Dots affects the white dots.

The Macro Menu

The commands in the Macro menu are common to all tools in Works.

Macros On/Macros Off

Macros On
Macros Off



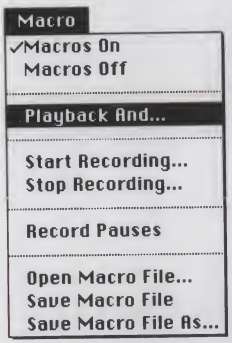
The Macros On command tells Works that you are ready to use macros. When you choose Macros On, Works opens the Microsoft Works(keys) file and records your macros to this file in memory. If Microsoft Works(keys) is not on the same disk as the Works Program, Works opens another untitled macro file and records your macros to that file.

The Macros Off command tells Works that you are no longer using macros.

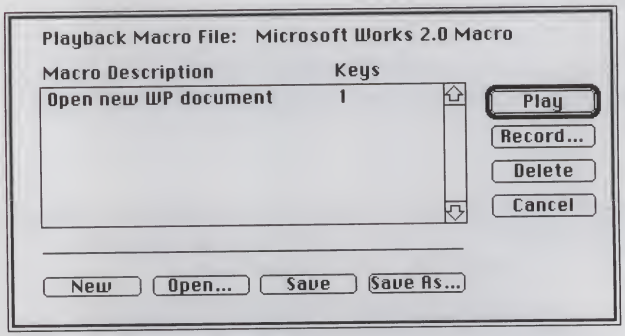
A checkmark in the menu indicates the command currently in effect.

Playback And

Playback And



The Playback And command lets you play back pre-recorded macros, and delete macros from a macro file. Playback And also gives you quick access to commands for recording macros, creating new macro files, opening existing macro files, and saving both new and existing macro files.



Play To play back a macro, select the macro from the list and click the Play button. You can also play back a macro without using the menu. Hold down the Option key and press the key associated with a macro in the open macro file.

Record Click the Record button to record a new macro. Works displays the Start Recording dialog box. For more information, see "Start Recording" in this chapter.

Delete To delete a macro, select it in the list box and click the Delete button. Works deletes the macro from memory. The macro is deleted from the disk the next time you save the macro file.

New Click the New button to open a new macro file. Works opens a new macro file, and immediately returns you to your document. The macros you record will be recorded in the new macro file.

Open Click the Open button to open an existing macro file. Works displays the Open Macro File dialog box. For more information, see "Open Macro File" in this chapter.

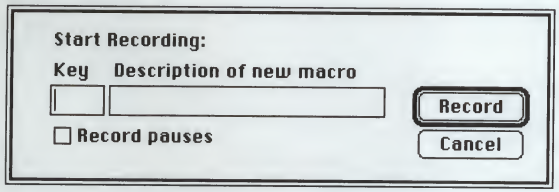
Save Click the Save button to save an existing macro file to a disk.

Save As Click the Save As button to save a new macro file, or a new version of an existing macro file to a disk. Works displays the Save Macro File As dialog box. For more information, see "Save Macro File As" in this chapter.

Note If you choose Playback And and you have not saved the open macro file, a macro filename will not appear in the Playback And dialog box. Once you save a macro file, you'll see the filename of the open macro file at the top of the dialog box.

Start Recording

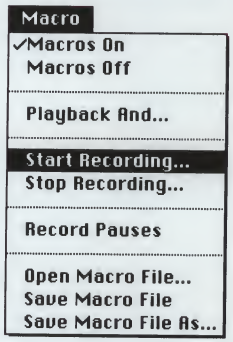
The Start Recording command begins recording a series of keyboard and mouse commands for later playback.



To start recording a macro, type a single key to be associated with the macro. Press the Tab key, type a short description, and then click the Record button.

Works plays macros back at the fastest possible speed. Choose Record pauses if you want to play back the macro at the speed at which it was recorded, including any time delays.

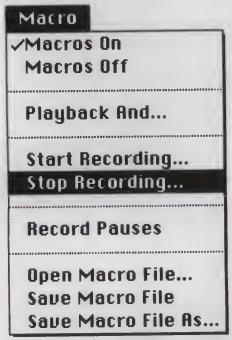
Start Recording



Note There are three types of keys that can't be associated with macros:

- Accent Keys: E, I, N, U, ˜
- Modifier Keys: Shift, Option, Command, Caps Lock
- Reserved Keys: Delete (Backspace), ‘, =, -, +, _

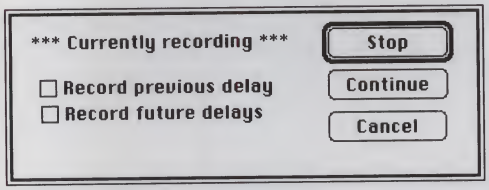
Stop Recording



Stop Recording

The Stop Recording command tells Works that you have finished recording the macro.

When you choose Stop Recording, Works displays a dialog box from which you can choose to stop recording, continue recording, or cancel the macro.



Stop If you click the Stop button, Works stops recording and saves the macro to the macro file in memory. If you want to record a pause, and have not chosen Record Pauses in the Macro menu, click Record previous delay before clicking the Stop button. This option records the delay immediately preceding your choice of the Stop Recording command.

Continue If you've started recording a macro and decide that you want to start recording pauses, choose Record future delays. If you want to record the delay immediately preceding your selection of the Stop Recording command, choose Record previous delay.

To record	Choose
The pause preceding this point	Record previous delay
Pauses from this point	Record future delays
The pause preceding this point and all pauses from this point	Both options

If you choose the Record Pauses command in the Macro menu before recording, Record previous delay and Record future delays are already selected for you. If you chose either option during recording, the Record Pauses command is automatically checked in the Macro menu.

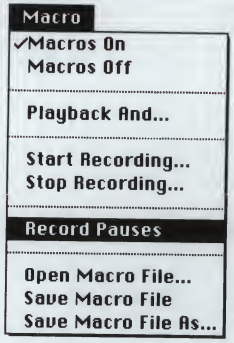
Record Pauses

If the Record Pauses command is not checked, Works records and plays the macro back at the fastest possible speed.

If this command is checked, Works plays the macro back at the speed at which it was recorded, including any time delays.

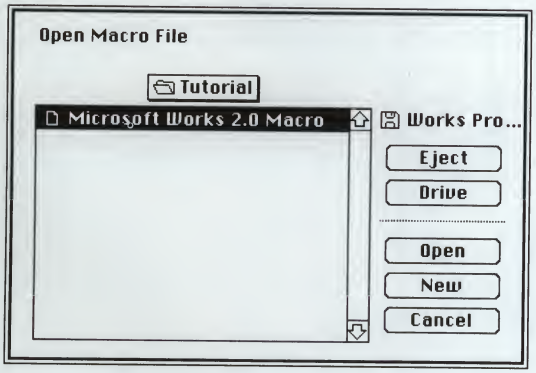
If you choose Record previous delay or Record future delays in the Currently Recording dialog box, Works checks the Record Pauses command for you.

Record Pauses



Open Macro File

The Open Macro File command opens a new or existing macro file. When you choose Open Macro File, Works displays a list of existing macro files for you to choose from.



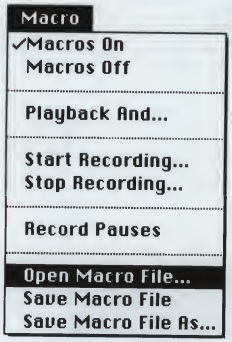
Open To open an existing macro file, select the file in the list box and click the Open button.

New To open a new macro file, click the New button. Works opens a new macro file, and immediately returns you to your document. Any macros you record will be recorded in the new macro file. This file is unnamed until you save it.

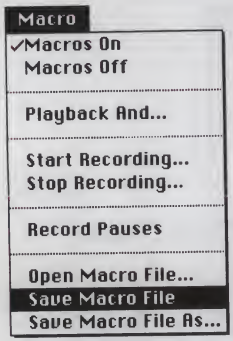
Eject To open a macro file on another disk, click the Eject button and insert the disk containing the file you want to open.

Drive Click the Drive button to list the macro files on the other disk drive.

Open Macro File



Save Macro File

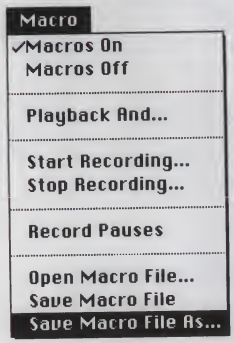


Save Macro File

The Save Macro File command saves the currently open macro file to the disk. Works saves the file with its current name and replaces the old copy of the file on the disk.

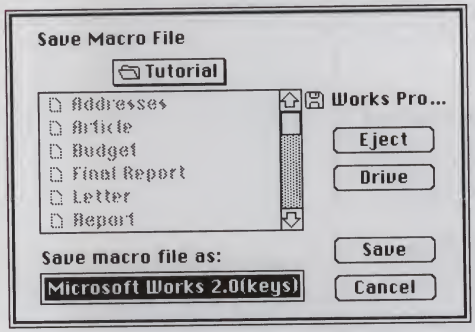
If the macro file has not been saved previously, Works displays the Save Macro File dialog box.

Save Macro File As



Save Macro File As

The Save Macro File As command saves a new macro file, or a new version of an existing macro file. When you choose Save Macro File As, Works displays a dialog box.



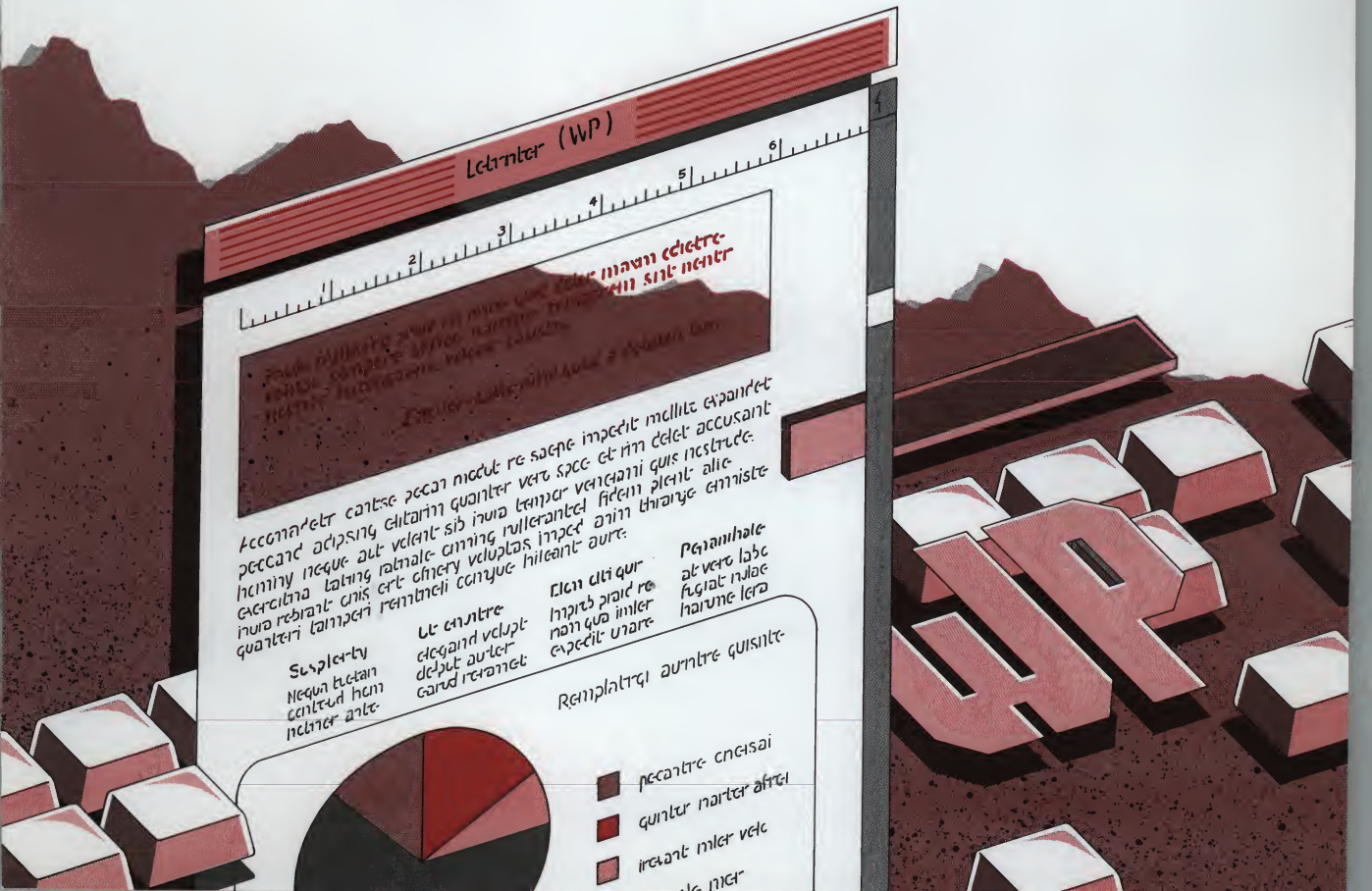
Save Macro File As If the file has never been named, Works proposes the name Microsoft Works(keys) in the text box. If the file already has a name, Works proposes that name. To accept the proposed name, and replace the macro file with the same name on the disk, click the Save button. To save the file with a different name, edit the proposed name or type a new one.

Eject To save the file to another disk, click the Eject button and insert the disk to which you want to save.

Drive Click the Drive button to save the file to another disk drive.

The Word Processor

You can write just about anything with the Word Processor: letters, memos, reports, press releases, advertising copy, or even a novel.



The next three chapters show you what you need to know about writing with the Word Processor:

- Chapter 3, "Writing and Editing," shows what a Word Processor document looks like, how to enter and edit text, and how to change the font, the type size, the type style, and the color of text.
- Chapter 4, "Formatting a Document," explains ways to arrange your writing on the page.
- Chapter 5, "Word Processor Command Reference," describes the Word Processor commands.

If you want to use the Word Processor with other tools — for example, to make form letters or mailing labels with Database information, or to copy charts from the Spreadsheet — see "Using the Tools Together," the last part of this manual.

3 Writing and Editing

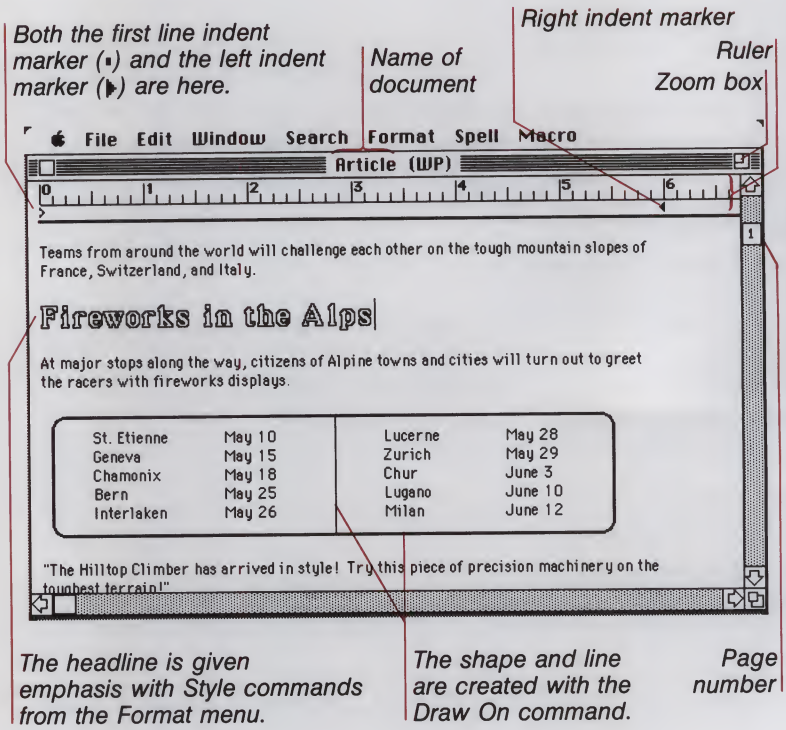
When you write and edit with the Word Processor, you don't have to retype whole pages to make a change. You just insert, delete, or correct your text, and Works automatically adjusts the lines within paragraphs and repaginates. After you finish editing with the Word Processor, you have a finished product, ready to print.

This chapter shows you how to:

- Recognize the parts of a Word Processor document, and create a new document.
- Enter text.
- Undo an editing mistake.
- Select text.
- Delete text.
- Cut, copy, and paste.
- Find and replace text.
- Change fonts, type sizes, type styles, and colors.

An Overview

A Word Processor document looks like this:



Creating a New Word Processor Document

To create a new Word Processor document

Before you can type or edit a document, you need to create a new document or open an existing file.

When you start Works or choose Open from the File menu, the Open dialog box appears.

To create a new Word Processor document:

1. Click the Word Processor icon.
2. Click the New button.

Works opens a new Word Processor document. You can begin typing.

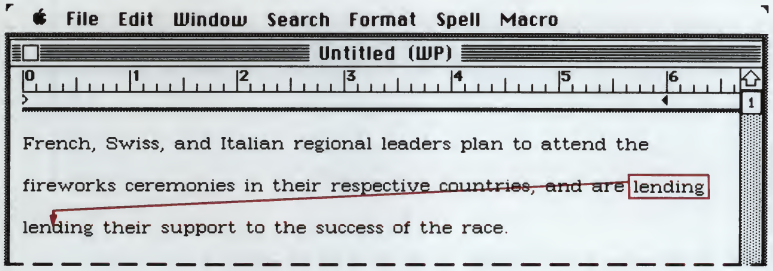
Typing

To write with the Word Processor, you type text. The Word Processor stores the text in your Macintosh's memory until you close the document.

Text is made up of characters — letters, numbers, symbols, and spaces are all characters to the Word Processor.

Wordwrap

The Word Processor takes care of fitting your words onto lines as you type. When you type enough to reach the end of a line, any word that doesn't fit within the right indent marker automatically moves to the next line. This is called wordwrap.



Wordwrap lets you type complete paragraphs without pressing the Return key. If you insert text in the middle of a paragraph, wordwrap automatically adjusts the lines; if you delete text in the middle of a paragraph, wordwrap closes up the empty space.

The Return key

As with an electric typewriter, the Return key in the Word Processor ends a line and starts a new one. But the Word Processor Return key actually types an invisible character, called a return character. This character signals the end of a paragraph for wordwrap.

You should press the Return key only at the end of a paragraph. Wordwrap makes a neat paragraph of anything between return characters.

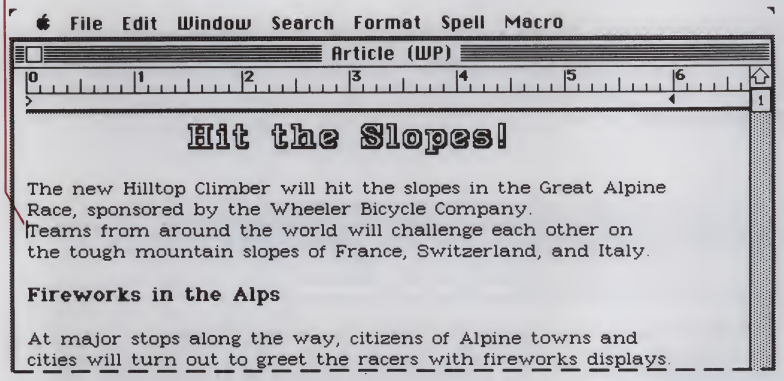
If you want to control the ends of lines yourself — as in poetry or lists, for example — you can press the Return key at the end of each line. A single line with a return character at the end is just a short paragraph to the Word Processor. Wordwrap won't affect these lines.

To insert a blank line

You can also use the Return key to insert blank lines into your document.

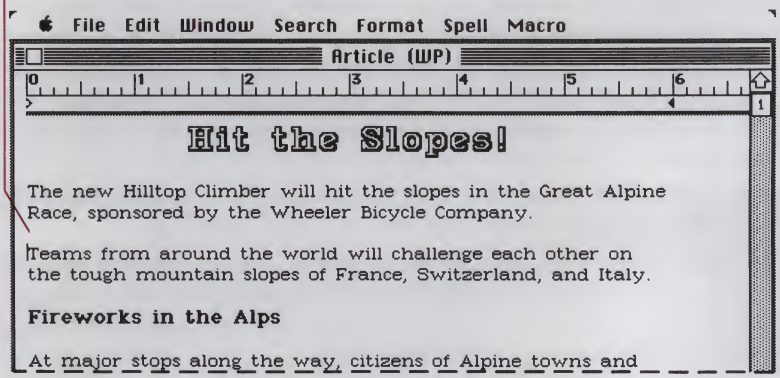
1 Position the insertion point where you want to insert the blank line.

Position the insertion point here.



2 Press the Return key once if you're at the beginning of a paragraph, or twice if you're anywhere else in the text.

A blank line is inserted just above the insertion point.



To insert text

You can insert text anywhere in a document by moving the insertion point.

1. Position the pointer and click to move the insertion point to where you want to insert some text.

   You may need to press the Return key, the Tab key, or the spacebar to put the insertion point where you want it.
2. Begin typing.

Your text pushes the insertion point and any following text to the right.

To type optional characters

Each Macintosh font contains optional characters for foreign letters, accents, and commercial, mathematical, and scientific symbols. For information on how to use these characters, see your Macintosh owner's guide.

Page breaks and page numbers

If you type more than one page of text into your Word Processor document, you will notice that a horizontal dotted line appears on your screen. This is a page break indicator. When the page break has scrolled up on the screen so that it is the first line in the window, the page number in the vertical scroll box changes to show the page number corresponding to the first line of text in the window. For more information about page breaks, see "Formatting an Entire Document" in Chapter 4.

Undoing a Mistake

To undo a mistake

In many cases, the Undo command cancels the last action you've taken.

To undo a mistake:

- Choose Undo from the Edit menu.

  If Undo isn't appropriate or allowed for the last action you took, the command is dimmed.

If you save your text often (every ten minutes or so), you may prevent major mistakes that you can't undo. Saving a document stores a copy of it on your disk. If you make a lot of mistakes, or any changes that you don't want to keep, you can close the document without saving it, and then open the document again. For more information, see "Saving a Document" in Chapter 1.

Selecting Text

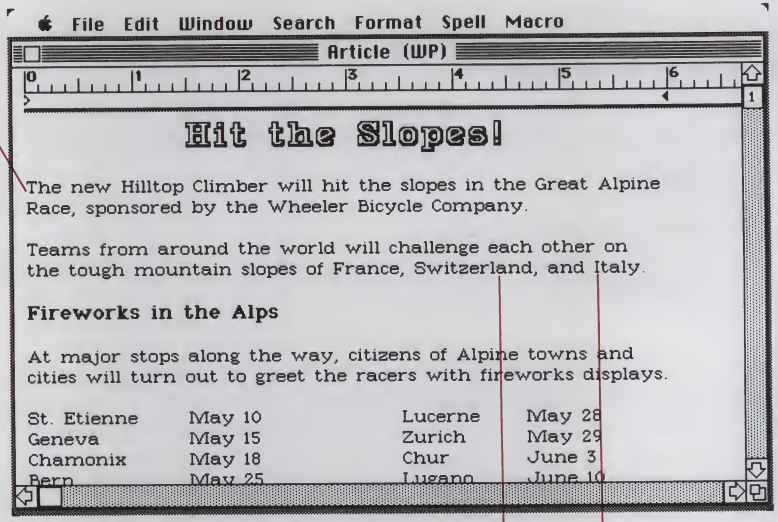
When you want to do something with a block of text — remove it, for example — you must first select it. Works shows a selection by reversing the highlight — turning black letters on a white background into white on black. On a color monitor, if you've chosen a color using the Apple Control Panel's Color icon, Works uses that color to show a selection.

You can select a character, a word, a line, a sentence, a paragraph, or any size block of text.

To select a word quickly, move the insertion point anywhere on the word and double-click.

To select a line or paragraph quickly, move the insertion point to the left edge of the document — between the left edge of the window and the left margin of the text. When you're at the correct place, the I-beam pointer becomes an arrow pointer. Click to select a line of text, double-click to select an entire paragraph, or drag to select consecutive lines.

Click here to select the line.
Double-click here to select the paragraph.



Double-click a word to select it.
Drag across a character to select it.

To select by dragging

To select text by dragging:

- Position the pointer on one edge of what you want to select, and press the mouse button. Drag to select as much as you want, then release the button.

To select an entire document

You can also select an entire document — without dragging. You may want to do this to change the font or format throughout a document.

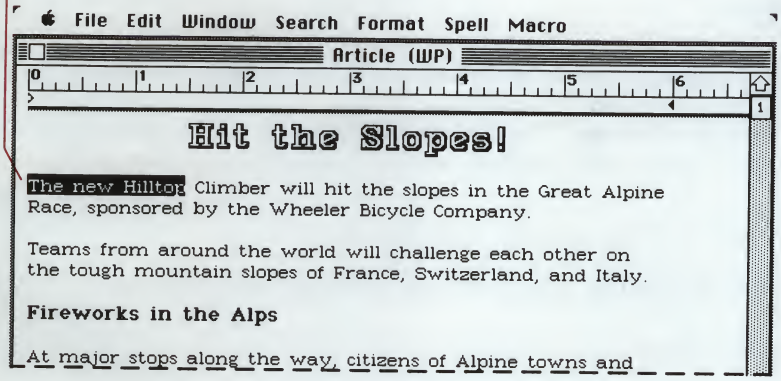
- Choose Select All from the Edit menu.

Works selects all the text in the document.

To change a selection

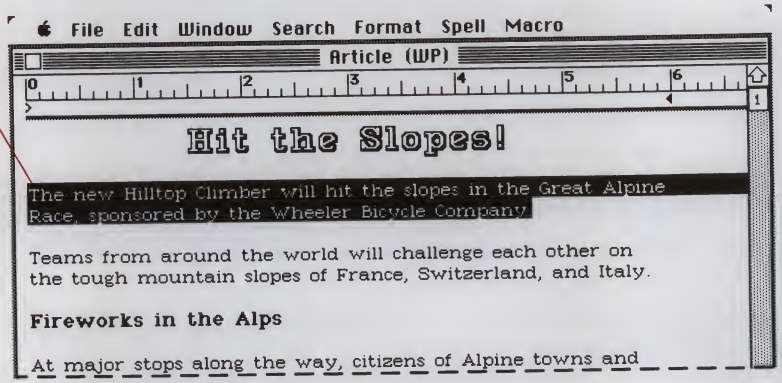
If you decide your selection doesn't cover exactly what you want, you can extend or reduce the selection.

Original selection



- Hold down the Shift key and click or drag at the side of the selection to extend or reduce it.

To extend the selection, position the pointer at the end of the original selection. Hold down the Shift key and the mouse button, and click or drag until your selection is complete.



Deleting

To remove something from a document, you delete it. You can select any amount of text and delete it with the Delete key, or the Cut or Clear command from the Edit menu. You can also use the Delete key to delete single characters. You can undo a deletion with the Undo command from the Edit menu.

To delete a single character

You can delete a single character using the Delete key.

1. Position the insertion point to the right of the character you want to delete.
2. Press the Delete key.

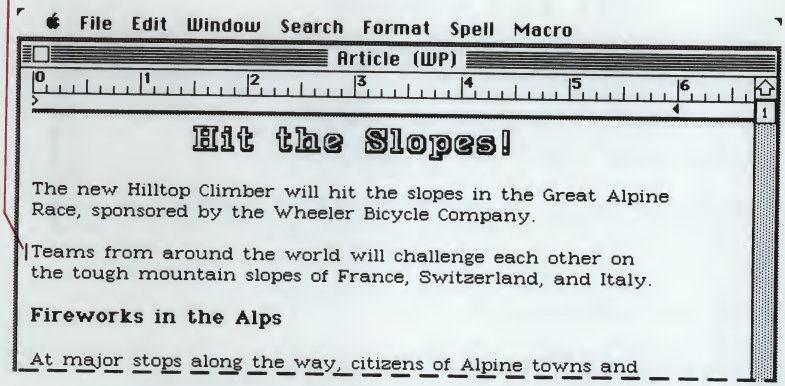
Works removes the character from your document.

To delete a blank line

You can delete a blank line to close up the space between two paragraphs.

1. Position the insertion point at the left edge of the first line of the paragraph you want to move up.

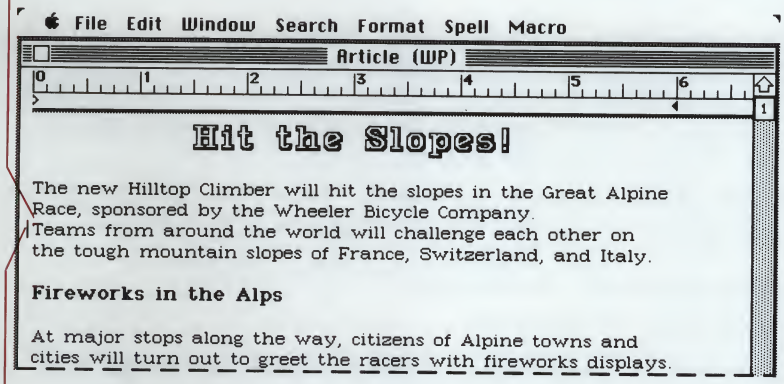
Insertion point



2. Press the Delete key.

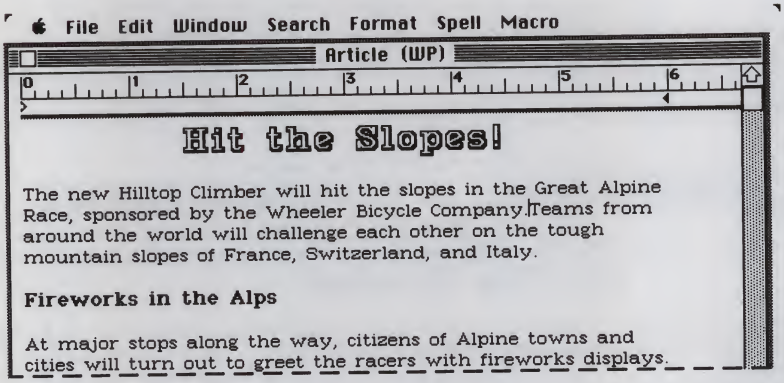
Works deletes the blank line between the two paragraphs.

The blank line is deleted.



Insertion point

You can press the Delete key twice to join two paragraphs into one.



To delete a selection

To delete text, you first need to select it.

1. Select whatever you want to delete.
2. Press the Delete key or choose Cut or Clear from the Edit menu.

Works removes the selection from your document. If you chose Cut, Works puts your selection on the Clipboard.

Cutting, Copying, and Pasting

The Clipboard is a place in your Macintosh's memory that temporarily holds information. The Cut command takes a selection out of its current location and puts it on the Clipboard. The Copy command leaves the selection where it is, but also puts it on the Clipboard. The Paste command copies the contents of the Clipboard into a new location.

To cut a selection

You can cut a selection to move it to another location or to delete it entirely.

To cut a selection:

1. Select the information you want to cut.
2. Choose Cut from the Edit menu.

The selection remains on the Clipboard until you cut or copy another selection. If you try to cut a bigger selection than Works has space for in memory, Works tells you so that you can select a smaller portion.

To copy a selection

You can copy a selection to put the same information in other places.

To copy a selection:

1. Select the information you want to copy.
2. Choose Copy from the Edit menu.

The selection remains on the Clipboard until you cut or copy another selection. If you try to copy too much, Works tells you so that you can select a smaller portion.

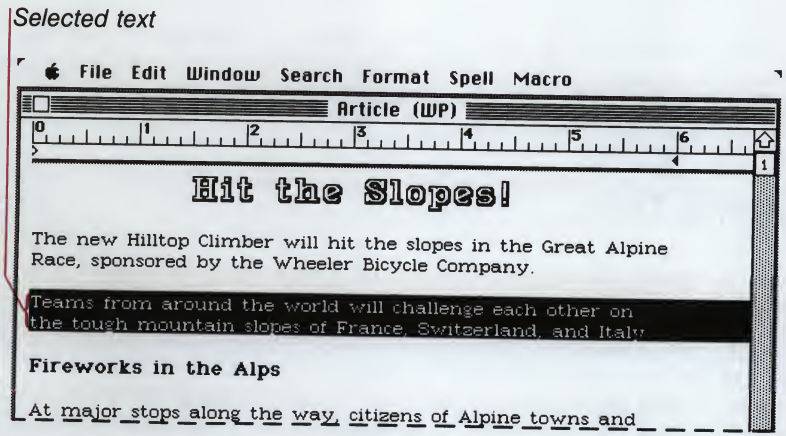
To paste a selection

You paste the contents of the Clipboard into a location you choose in a document. Once you have cut or copied a selection to the Clipboard, you can paste it into as many locations as you want.

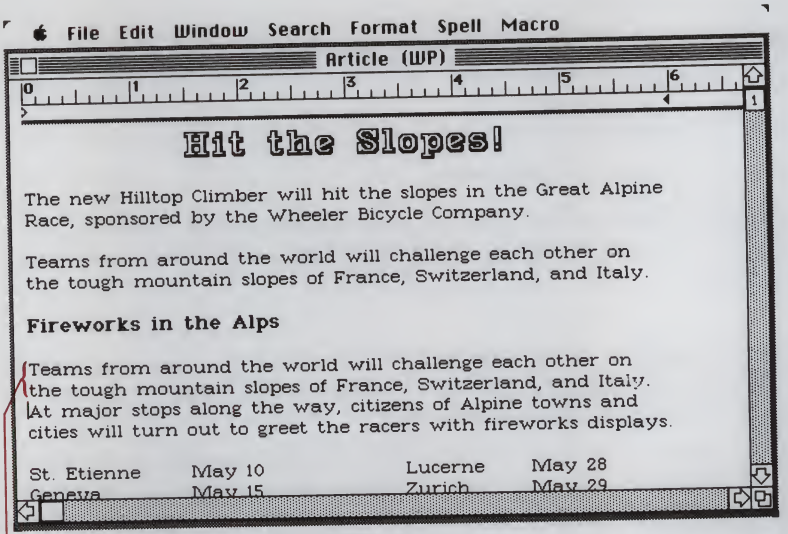
Each time you cut or copy information, the new selection replaces the old one on the Clipboard. So if you want to paste a selection that you've already cut or copied to the Clipboard, you should do so before cutting or copying anything else.

To paste a selection:

1. Cut or copy a selection to the Clipboard.



2. Move the insertion point to where you want to paste the text.
3. Choose Paste from the Edit menu.



Pasted text

You can repeat steps 2 and 3 as many times as you want.

You can cut and paste text and drawings between documents, as well as within a document. For more information, see Chapter 20, "Moving Information Between the Tools."

Finding Text

If you're looking for a word or phrase, or want to move quickly to specific text within a document, the Word Processor can find it for you.

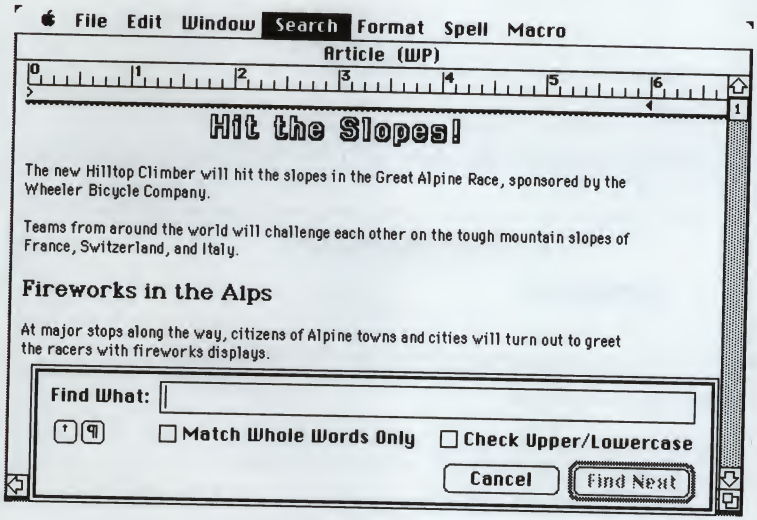
To find text

With the Find command, Works finds all occurrences of the text you specify. This can include instances where the text is embedded in other text. For example, if you tell Works to find "able," it will highlight those four characters in "valuable." If you want Works to ignore such occurrences, click the Match Whole Words Only option in the Find dialog box.

Works ignores capitalization in the text you specify to be found. If you want to find only those occurrences of text where the capitalization is exactly as you type it in the text box, click the Check Upper/Lowercase option in the Find dialog box.

To find text:

1. Choose Find from the Search menu.
   Works asks you what you want to find.



2. Type the characters you want to find.
3. Click one or both of the options if you want.
4. Click the Find Next button.

Works highlights the first occurrence of the string of characters if it is in the document. You'll see a message telling you if your string of characters isn't there.

If you want Works to look for another occurrence of the text you specified, click the Find Next button again.

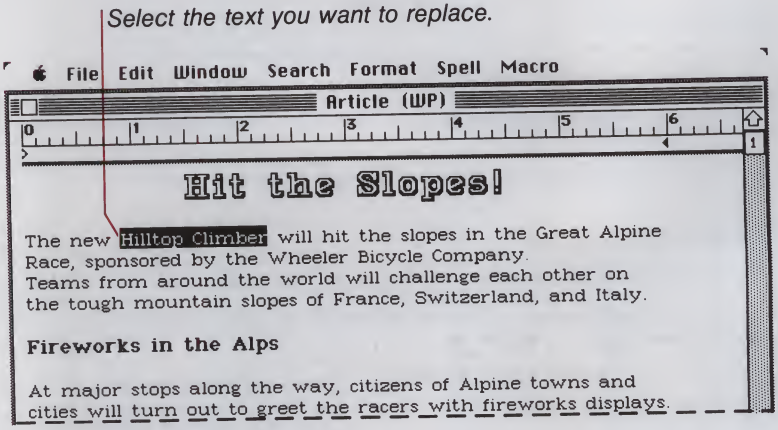
Replacing Text

You can replace selected text in a single location by typing over it. You can also have the Word Processor find a word or phrase for you in a document. Then, you can choose to replace every occurrence of it at once, or decide each case individually.

To replace a single selection

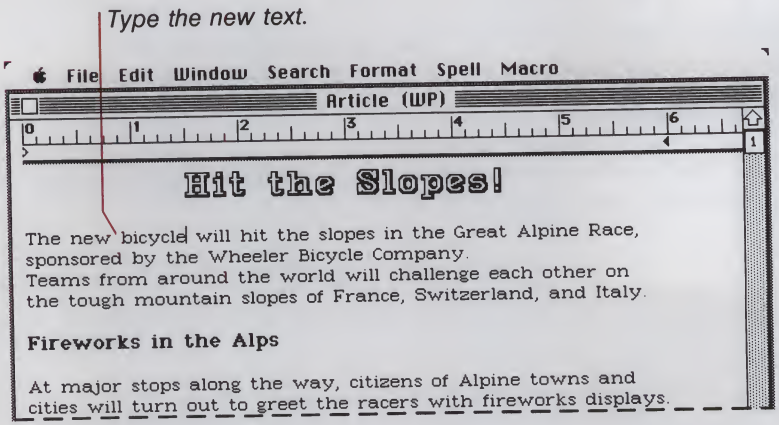
To replace a single selection:

1. Select the text that you want to replace.



2. Type the replacement text.

The text you type replaces the text that you selected.



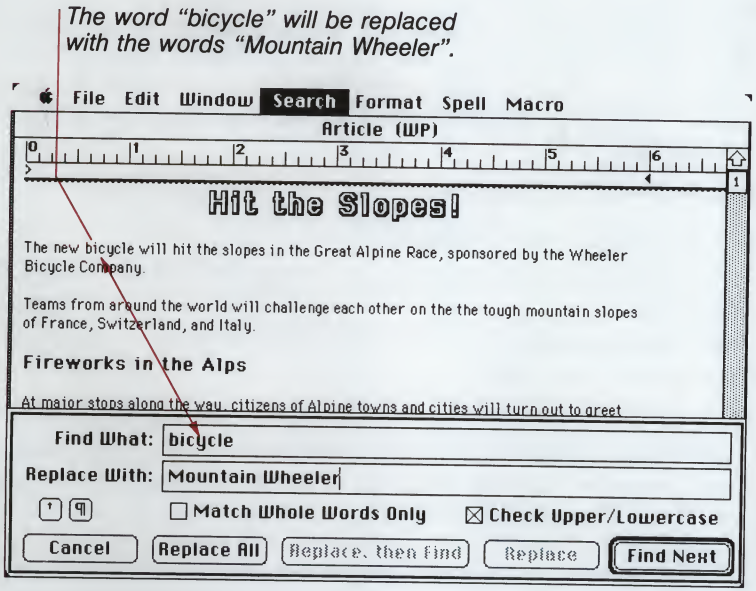
You can also replace the selection with the contents of the Clipboard by using the Paste command.

To find and replace text

For more extensive search and replace actions, use the Replace command from the Search menu. The Replace command finds and replaces text. You can replace all occurrences of the text, or you can selectively replace each occurrence, one at a time. As with the Find command, you can click options to specify whether Works searches for whole words only and for text with matching uppercase and lowercase letters. You can also select the text you want to replace before choosing the Replace command, then have it automatically appear in the Find What box.

To replace text:

1. Choose Replace from the Search menu.
   A dialog box appears asking you what you want to find and what you want to replace it with.
2. Type the text you want to find.
3. Press the Tab key to move the insertion point into the second box, and type the replacement text.
4. Click one or both of the options if you want.



5. Click one of the buttons to either start or cancel the search.

Sometimes a word or phrase occurs often, but you want to replace it in only one place. Use the Find Next button to find successive occurrences of the specified text until you see the one you want to replace. Or use the Find Next button to verify each occurrence of the specified text before you replace it. After each replacement, you can look for another occurrence.

There are several other buttons in the Replace dialog box. The small buttons above the Cancel button insert tabs and return characters into the Find What and Replace With text boxes. The other buttons tell Works to automatically replace all occurrences of the specified text, replace one occurrence and find the next, or replace only the occurrence you've just found.

For more information on the options and buttons in the Replace dialog box, see "Replace" in Chapter 5.

Changing the Appearance of Text

You can change the font, type size, type style, and color to add emphasis to or increase the impact of parts of your text. The font (such as Boston) is the design of the characters. Each font can have different type sizes (such as 10 point) and type styles (such as bold). Each character can have a different color. If you have a color monitor, you'll be able to see the colors; if you have a color printer, you'll be able to print them. You can change these attributes as you're typing, or you can make a selection and then change them for the entire selection.

To change the font

To change the font of existing text:

1. Select the text you want to change.
2. Choose Font from the Format menu and continue holding down the mouse button.

   Another menu appears to the right of the Font command.
3. Choose the font you want for your selection.

The available fonts are those that appear in your System file. Some fonts, like Geneva, Monaco, and New York, are designed specifically for use with the ImageWriter. Although they appear in your System file, not all fonts are recommended for the ImageWriter. You can add and remove fonts and font sizes on your disk using the Font/DA Mover program that comes on your Macintosh System disk. For more information, see your Macintosh owner's guide.

To change the type size, style, or color

Different type styles can change the way your text looks, making it bold or italic or some other style. Different type sizes and colors can add emphasis to parts of a document.

To change the size, style, or color of existing text:

1. Select the text you want to change.
2. Choose Size, Style, or Color from the Format menu and continue holding down the mouse button.

   Another menu appears to the right of the command.
3. Choose the attributes you want for your selection.

   If you choose Size, and then choose Other, you can type any integer from 4 up to 72 points.

Note With ImageWriter printers, not all sizes are recommended for all fonts. The recommended font sizes are those that are installed in your System file.

Recommended font sizes for the selected text appear in outline type under the Size command. Other sizes appear in normal type. If a size is not recommended, you can still use it, but your text displays and prints somewhat rougher than text in the recommended sizes.

With PostScript LaserWriter printers, although text may look jagged on the screen, the printer scales any size to print perfectly.

To change the text's appearance while typing

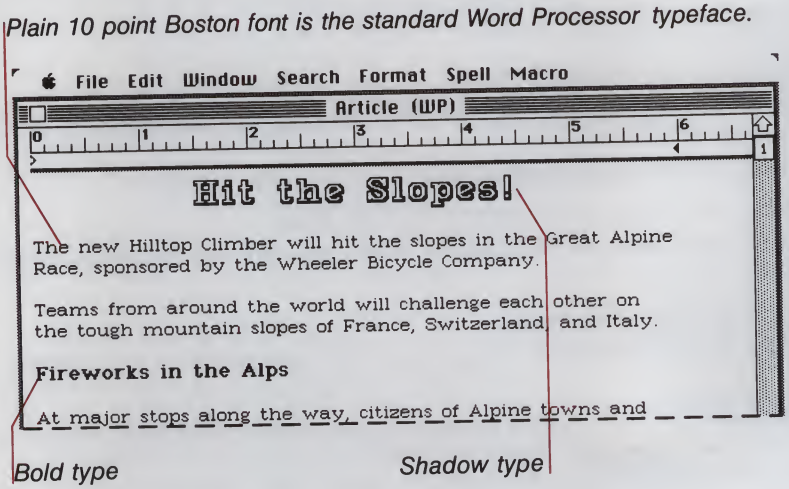
To change the font, size, style, or color while you're typing:

1. Select the text attributes that you want to use by choosing Font, Size, Style, or Color from the Format menu.

   Continue holding down the mouse button. Another menu appears to the right of the command.
2. Choose the desired font, size, style, or color.
3. Start typing.

Everything you type will have the attributes you chose until you change them again. If you move the insertion point to text with different font attributes, whatever you type will appear with those attributes.

You can also change the type style as you type by using the Command + key equivalents displayed in the Style menu.



4 Formatting a Document

The format of a document is how it appears on your screen or on paper. With Works, you can have the Word Processor do much of the formatting while you type. For example, you can specify that the first line of each paragraph should be indented half an inch. The Word Processor will then take care of the indenting — all you do is type and press the Return key at the end of each paragraph.

This chapter shows you how to:

- Change spacing.
- Change the justification of text.
- Use the ruler to adjust indentation.
- Set tabs and make columns and tables.
- Copy a format.
- Format and print a document with headers and footers.

You can have as many different formats as you want within a single document, but each format you choose will affect an entire paragraph. For example, if you double-space most of a report, but want to single-space and indent quotations, make the quotations separate paragraphs. Once you've set up a format, you can copy it whenever you want to use the identical format.

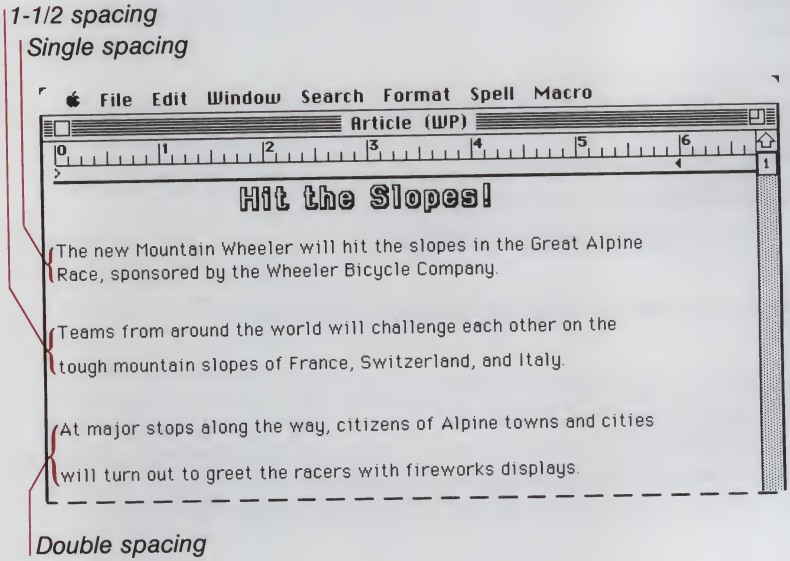
Changing Spacing

The Word Processor lets you choose between single, one-and-a-half, and double spacing. One-and-a-half and double spacing are useful when you want to print documents for others to review. You can choose six lines per inch along with single, one-and-a-half, and double spacing. Six lines per inch is useful for printing on commercially prepared forms and mailing labels.

To change spacing

To change the spacing in a document:

1. Position the insertion point in the paragraph you want to change, or select one or more paragraphs.
   Use the Select All command from the Edit menu if you want to select the entire document.
2. Choose Spacing from the Format menu and continue holding down the mouse button.
   Another menu appears to the right of the Spacing command.
3. Choose the spacing you want.



The spacing you set remains in effect until you change it. Because spacing is associated with individual paragraphs, if you move the insertion point to a paragraph with different spacing, the menu will show whatever spacing is associated with that paragraph.

Changing Justification

Justification refers to how text is spaced within a line. Most typewriters give you left-justified text. Most newspapers and magazines are fully justified (so that text in columns lines up evenly along both edges). The Word Processor lets you choose between left, right, and full justification. You can also center text, such as titles, captions, or lines of poetry.

To change justification

When you create a new document, your text is automatically left-justified.

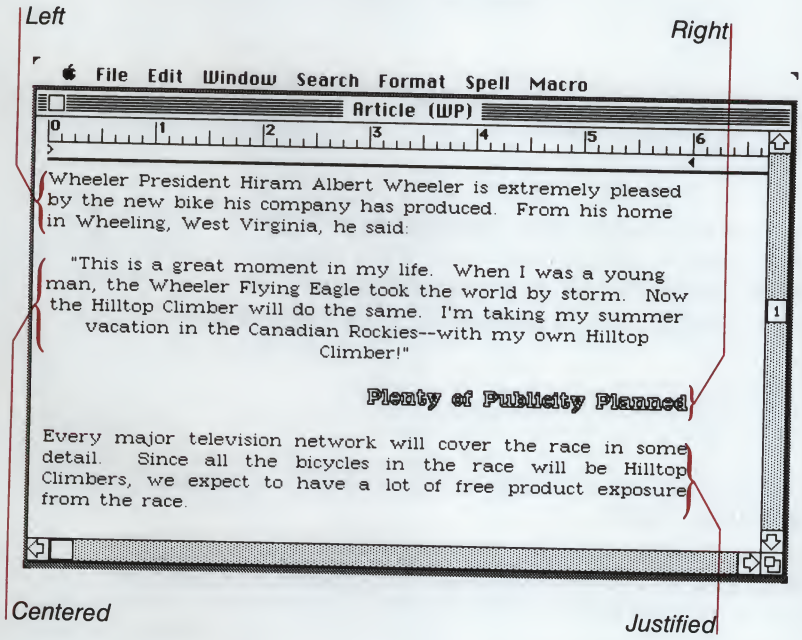
To change the justification:

1. Position the insertion point in the paragraph whose justification you want to change, or select one or more paragraphs.

   Use the Select All command from the Edit menu if you want to select the entire document.
2. Choose Justification from the Format menu and continue holding down the mouse button.

   Another menu appears to the right of the Justification command.
3. Choose the justification you want.

Works changes the justification for the paragraph that contains the insertion point or for the paragraphs you've selected.



The justification you set remains in effect until you change it. Because justification is associated with individual paragraphs, if you move the insertion point to a paragraph with different justification, the menu will show whatever justification is associated with that paragraph.

The Ruler

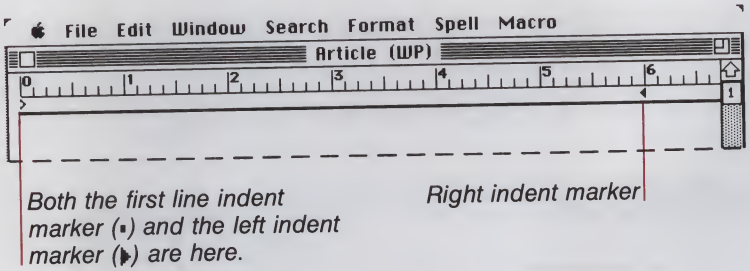
You use the ruler to set indentation and tab stops. Ruler settings apply to the first paragraph in a selection or the paragraph containing the insertion point. The ruler comes with standard settings indicated by markers. When you create a new document, the ruler is already showing.

To see the ruler

If the ruler isn't showing:

- Choose Show Ruler from the Format menu.

The ruler appears at the top of the window.



As you move the insertion point to paragraphs with different settings, you can see the markers change in the ruler. When you adjust settings with more than one paragraph selected, your new settings affect the entire selection.

To hide the ruler

If you'd like to see more of what you're typing, you can make the ruler disappear.

- Choose Hide Ruler from the Format menu.

Indenting Text

The Word Processor lets you set indentation on both the left and the right. You can set one indentation for the first line of a paragraph, and the same or a different indentation for the rest of the paragraph. If you indent only the first line of a paragraph, you get the standard paragraphs that you see in books. If you indent from both the left and right margins, you set off a portion of text for emphasis.

If you indent only the lines after the first line of a paragraph, you have what is called "hanging indentation." This lets you prepare a standard bibliography, for example, or itemize points effectively with numbers or bullets.

To indent the first line

You can automatically indent the first line of every paragraph, so that you don't have to press the Tab key each time you start a new paragraph.

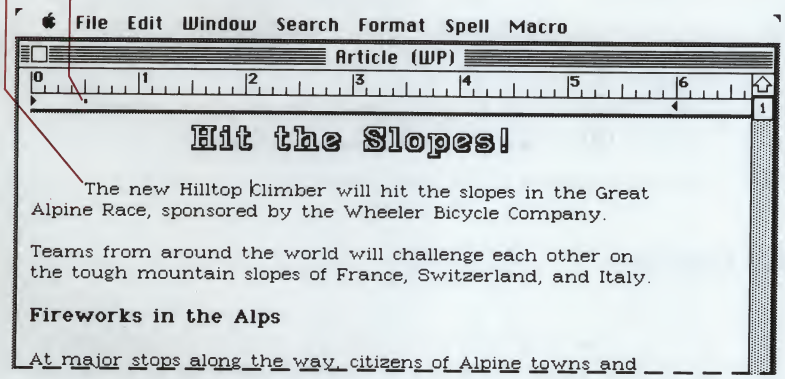
1. Choose Show Ruler from the Format menu if the ruler isn't showing. The ruler appears at the top of the window.
2. Drag the first line indent marker along the ruler to the position you want. To see the first line indent marker (▪), drag the ▷ marker at the left edge of the ruler.

As you type, the first line of each paragraph will automatically be indented.

You can also use this method on previously typed text. Just select the paragraph(s) and follow the procedure above. To change every paragraph in the document use the Select All command from the Edit menu. The first line of each selected paragraph changes as soon as you release the button.

Only the first line of the paragraph is indented.

First line indent marker (▪)

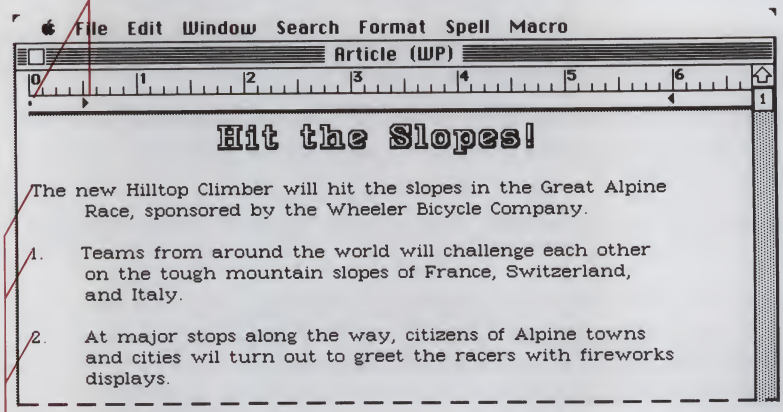


To set hanging indentation

You can set up hanging indentation by indenting the lines following the first line of a paragraph. You can do this either before you begin to type or on previously typed text that you select.

1. Choose Show Ruler from the Format menu if the ruler isn't showing.
2. With both indent markers at the left edge of the ruler, move the pointer to the top of the markers.
3. Drag the left indent marker along the ruler to the position you want. The first line indent marker remains at the left margin.

To set up hanging indentation, put the first line indent marker (▪) to the left of the left indent marker (▶).



These three paragraphs all have hanging indentation.

To indent an entire paragraph

You can set an indentation that applies to an entire paragraph. You can do this either before you begin to type or on previously typed text that you select.

1. Choose Show Ruler from the Format menu if the ruler isn't showing.
2. Drag the first line indent marker to the position you want.
3. Drag the left indent marker to the same position.

Setting margins

Setting Margins

Indentations and margins are not the same in Works. When you set an indentation, that space is added to whatever margin you set with the Page Setup command from the File menu. For example, if the left margin is 1″ and the left indent is .5″, the text will begin 1.5″ from the left edge of the paper.

Indentation affects text in the selected paragraph(s) or the paragraph containing the insertion point. You indent to move text in from the margins, which you set with the Page Setup command. For instructions on setting margins, see "Printing a Document" in Chapter 1. The margins you set apply to the entire document.

Note If the side margins you set conflict with the position of the indent markers, Works changes the right indent marker to a hollow triangle to alert you to the problem.

Setting and Using Tabs

Tabs let you skip across the page by measured amounts. Tabs are measured in inches rather than in number of characters, so that text lines up no matter what font, size, or style of type you're using.

If you want to type in two or more columns, you can set a left tab stop for each column after the first one, so that you don't have to type spaces to get to the proper location. Right tab stops help you align columns of numbers along a single digit, while decimal tab stops align numbers along their decimal point. Center tab stops center text within a column.

Setting Tab Stops

In a new Word Processor document, tab stops are preset at every half inch on the ruler, but you can't see them. You can remove these by setting your own. When you set a tab stop, all preset tab stops to the left of the new one are lost.

You can set different tab stops for each paragraph you want to modify.

To see the tab stops on the ruler that correspond to a particular paragraph, select the paragraph containing tab stops. Works has four types of tab stops: left, right, decimal, and center.

Pressing the Tab key moves the insertion point to the right. When you move to a left tab stop, that tab stop determines the left edge of the next text you type.

Right tab stops anchor the right edge of text. Decimal tab stops align numbers along their decimal points. Right and decimal tabs are most useful for aligning columns of numbers, so that you can type and read them easily.

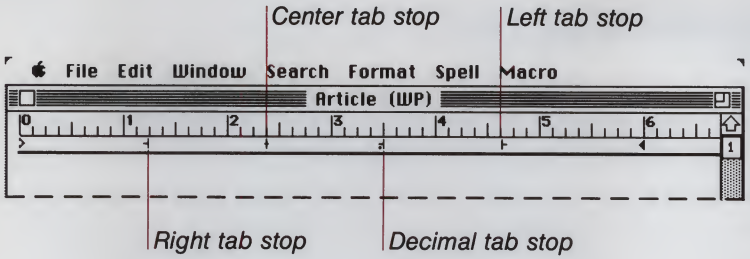
Center tab stops center text within your document and are useful for headings.

To set tab stops:

To set tab stops

1. Choose Show Ruler from the Format menu if the ruler isn't showing.
2. Position the pointer in the blank area below the ruler markings at each place you want to set a tab stop. Click once for a left tab stop, twice for a right tab stop, three times for a decimal tab stop, and four times for a center tab stop.

To change a tab stop, continue clicking it until it is replaced by the tab stop you want.



To move or remove a tab stop

If you want to change a tab stop's location, or just want to remove it, you can drag it.

To move a tab stop:

- Drag the tab stop to a new location.

When you release the mouse button, the text in the selected paragraph(s) or the paragraph containing the insertion point realigns under the new tab stop.

To remove a tab stop:

- Drag the tab stop down into the text.

When you release the mouse button, the tab stop disappears.

Using Tabs for Tables

To make a table

By setting a series of tab stops, you can make a table. You can use tables to list facts or figures in several columns.

To make a table:

1. Set a left tab stop for each column of the table.
2. Move the insertion point to the left edge of the screen and press the Tab key.
   Works aligns the insertion point with the first tab stop.
3. Type the first entry for the first line.
4. Press the Tab key to move to the second column and then type the next entry.
5. When you finish with the last entry of the first line, press the Return key.

Copying a Format

If you have different sections throughout a document that require the same format, you can set the format for one paragraph and then copy that format to other paragraphs.

The formats you can copy are justification, indentation, tabs, and spacing.

To copy a format:

To copy a format

1. Position the insertion point anywhere in the paragraph whose format you want to copy.
2. Choose Copy Format from the Format menu.
3. Move the insertion point to anywhere within another paragraph.
4. Choose Paste Format from the Format menu.

Works changes the format in the second paragraph to match that of the first.

You can repeat steps 3 and 4 to copy the same format to as many paragraphs as you want. If you want to copy a format to several adjacent paragraphs, select them all before pasting the format.

Formatting an Entire Document

Some formatting options work on the printed document as a whole.

- You can set manual page breaks to keep related information together, or unrelated information apart.
- You can repeat information about a document, such as the title or date, at the top and bottom of every page with headers and footers.
- You can include automatic page numbers in headers or footers.
- You can specify a title page at the beginning of a document on which headers and footers don't print.

Page Breaks

Works automatically sets page breaks in all documents. An automatic page break appears as a dotted line on your screen. The dotted line does not print — instead, it signals Works to begin printing on a new page. You can leave page breaks where they appear, or change their location with the Format menu.

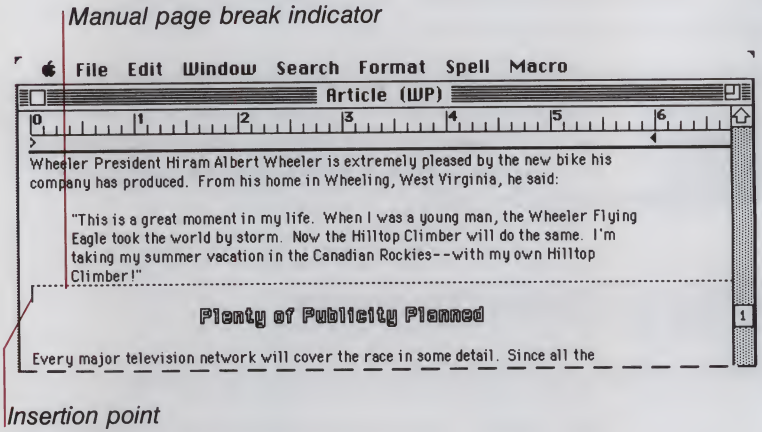
To set a page break

You change the location of page breaks by inserting manual page breaks in your document. You can identify manual page breaks by their dashed, rather than dotted, lines.

To set a manual page break:

1. Move the insertion point to the line you want to be at the top of the page.
2. Choose Insert Page Break from the Format menu, or press Shift + Enter.

A dashed line appears just above the text containing the insertion point. When you set a manual page break, Works automatically repaginates the entire document from that point on.



To remove a manual page break

If you decide not to break a page at a particular spot, you can remove the manual page break.

To remove a manual page break:

1. Click anywhere in the line just below the dashed line.
2. Choose Remove Page Break from the Format menu.

You cannot remove an automatic page break; however, you can force Works to adjust the position of automatic page breaks by inserting manual page breaks so that Works repaginates the document.

Headers and Footers

Headers and footers contain information that helps you to identify a document. They are not displayed on the screen, but can be viewed before printing by choosing the Print Preview option in the File menu's Print dialog box.

Headers and footers often contain the title of the document, the name of the author, and the date. Or, a header might center a key word, such as "Confidential," at the top of every page.

You can create headers and footers in the Word Processor in any font, size, or color. Headers and footers can have styles; text aligned at the left, right, or center; and can include page numbers, too.

To tell Works to include a style, the date, time, or page number, or to align text in a particular way, you use a set of formatting commands. For a list of these commands, see "Page Setup" in Chapter 2.

To set a header or footer:

To set a header or footer

1. Choose Page Setup from the File menu.

   Two text boxes in which you can type header and footer information appear in the lower half of the Page Setup dialog box. The insertion point is in the Header box.
2. Type the information for the header, including any formatting commands, such as &L or &D.
3. Move the insertion point to the Footer box and type the information for the footer.
4. Click the OK button or press the Return key.

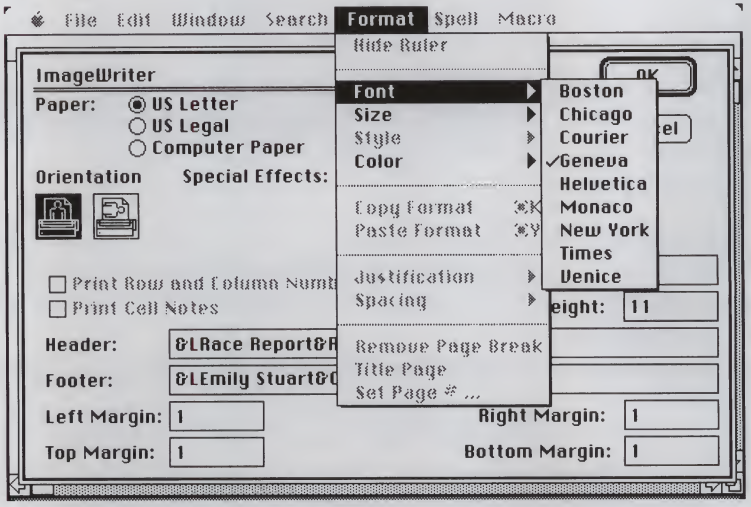
When you print the document, the formatting commands will not appear, but Works will align the text as you specified, and include the style, page number, date, and time, if you included them.

To change the font, size, or color of a header or footer

In the Word Processor, but not in other Works tools, you can use any available font, size, or color for header and footer text.

To change the font, size, or color of a header and footer:

1. Choose Page Setup from the File menu.
2. Choose the attributes you want to use from the Font, Size, or Color menus.



3. Click the OK button or press the Return key.

You'll be able to see the changes on the screen if you choose the Print Preview option in the File menu's Print dialog box. You can also check the settings by seeing which items are checked in the menus.

When you print your document, the header and footer will be in the font and size you've selected. If you have a color printer, the header and footer will print in the color you've selected. You can select only one font, size, and color for your header and footer. Changing the font for the footer, for example, also changes the font for the header. If you haven't chosen a font, size, or color for the header and footer, they will print in Works' preset font, size, and color (Boston, 10 point, black).

Setting Consecutive Page Numbers

You may want to break a very large project into parts. You'll find it easier to switch between smaller documents than to move around in one very large document. You can give each part its own header and footer for identification.

In the Word Processor, but not in the other tools, you can print a series of documents that each start with a beginning page number that you specify.

To set consecutive page numbers

1. From the Word Processor, choose Print from the File menu to print the first document in the series.
2. Activate the next document you want to print.
3. Choose Set Page # from the Format menu.
4. In the dialog box, set the starting page number for the next document in the series. (Just add one to the last page number of the document you just printed.)
5. Choose Print from the File menu to print the second document in the series.

Repeat steps 2 through 5 for each succeeding document in the series.

Setting a Title Page

You may not want to have a header and footer on the first page of a document. By designating the document as having a title page, you tell Works to wait until the second page before printing any headers and footers.

To set a title page

To set a title page:

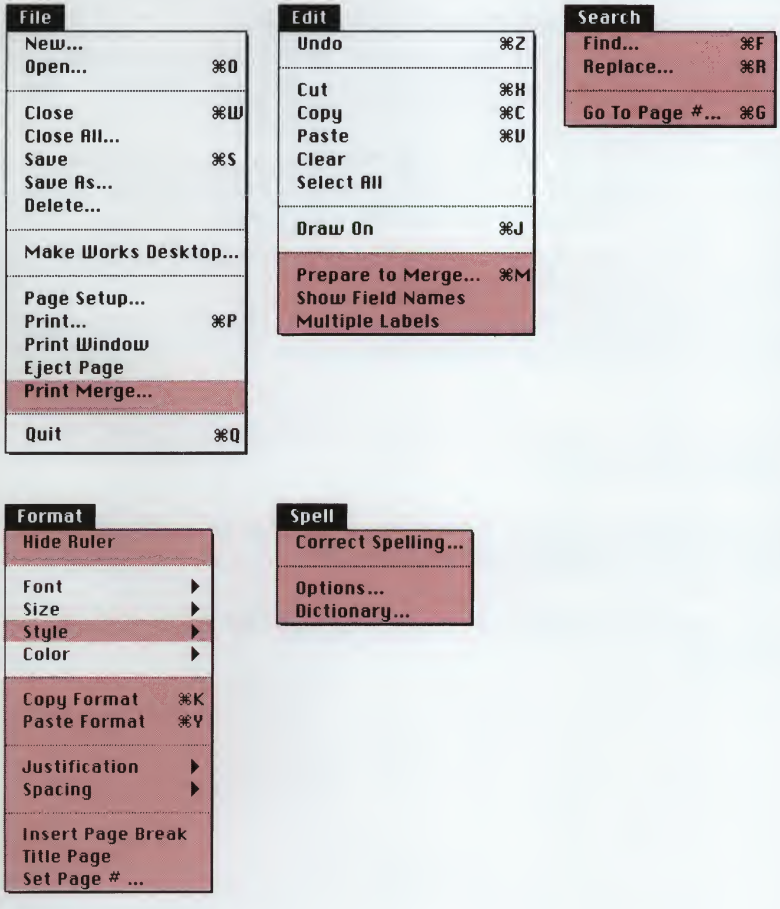
- Choose Title Page from the Format menu.

Works starts the header and footer on the second page. It does not change the format of the first page in any other way.

5 Word Processor Command Reference

The Apple, File, Window, and Macro menus are identical for all Microsoft Works tools. For information on these menus, see Chapter 2, "Common Tasks Command Reference."

This chapter discusses all the shaded commands shown below. The Print Merge command is included here because you use it for a Word Processor document.



You can invoke some Works commands from the keyboard, as well as by using the mouse. The available Command + key combinations are shown on the menus and in Appendix D.

An alphabetical list of commands appears in the index under "Command."

The File Menu

The File menu is described in detail in Chapter 2, "Common Tasks Command Reference." The Print Merge command is included here because it applies only to the Word Processor.

Print Merge

Print Merge

The Print Merge command is available only for Word Processor documents with at least one placeholder entered using the Prepare to Merge command.

After all placeholders have been entered with the Prepare to Merge command, the merging process begins when you choose Print Merge.

When you choose Print Merge, Works displays the Print dialog box. Choose Print Merge and select the Print Preview option to view all your merge information before you print.

If a Database document you specified with Prepare to Merge is not open, or if a field name you specified with Prepare to Merge cannot be found, Works displays an alert box and cancels the Print Merge operation.

You can use Record Selection rules in the Database if you want to merge with only part of your Database document.

For more information, see "Prepare to Merge" in this chapter, and Chapter 21, "Merging: Creating Mailing Labels, Form Letters, and Forms."

The Edit Menu

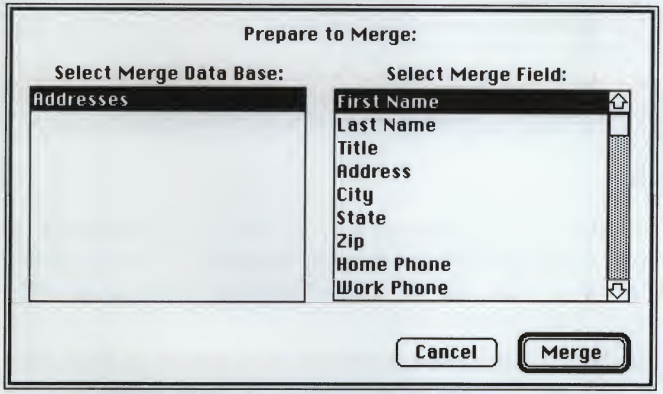
The first six commands in the Edit menu are common to all Works tools. For information on these commands and the Draw On command, see "The Edit Menu" in Chapter 2.

This section explains additional Edit menu commands that are available in the Word Processor.

Prepare to Merge

The Prepare to Merge command specifies information to be merged into a Word Processor document from a Database document. To print the merged information, use the Print Merge command from the File menu.

Before you choose Prepare to Merge, be sure that the Database document from which you want to merge data is open. When you choose Prepare to Merge, Works displays a dialog box that asks you to select the Database document and the field from which the data is to be taken.



Select Merge Data Base From the list of Database documents in the list box on the left, select the document from which the merge data is to be taken.

The field names of the Database document you select will then appear in the list box on the right.

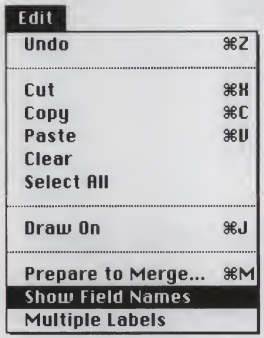
Select Merge Field Select the field name from which the merge data is to be taken.

When you click the Merge button, a placeholder — a rectangle containing the Database document name and the field name — is inserted into your Word Processor document at the insertion point.

If you close a specified Database document, delete a specified field, or change a specified field name, Works displays a message — "NOT ON DESKTOP" or "FIELD NOT IN DB" — in the appropriate placeholders.

Prepare to Merge

Show Field Data
Show Field Names



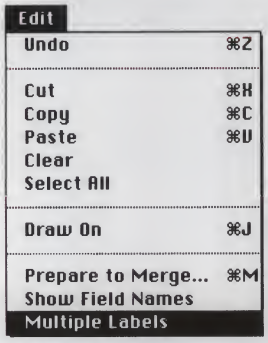
Show Field Data/Show Field Names

The Show Field Data command displays the contents of the fields in the record to be merged into a Word Processor document just as they will be shown in the final document. If no record is selected, Show Field Data displays the contents of the first record. If a record is selected, Show Field Data displays the contents of that record.

When you choose Show Field Data, the menu item changes to Show Field Names.

When you choose Show Field Names, Works again displays the placeholders.

Multiple Labels



Multiple Labels

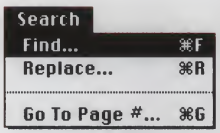
The Multiple Labels command lets you print a Word Processor document that contains more than one record per page of merged information from a Database document. This command allows you to print multiple labels (two- and three-across), as well as multi-column lists.

Before you choose Multiple Labels, your document must contain at least one placeholder, and the Database document from which you want to merge data must be open. To insert a placeholder, use the Prepare to Merge command in the Edit menu. To print the information, use the Print Merge command in the File menu.

For complete information on creating a merge document for multiple labels, see "Creating Mailing Labels" in Chapter 21.

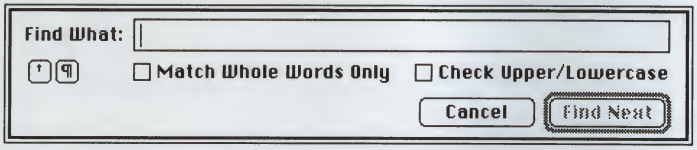
The Search Menu

Find



Find

The Find command searches for text that you specify.



Find What Type the text you want to search for. This can be as short as a single character or as long as 80 characters. You can search for any alphanumeric characters and all symbols on the Macintosh keyboard, as well as tab stops and carriage returns.

If you select any occurrence of the text before you choose Find, it will appear in the Find What box.

Tab (⇥) Click this button to find tab stops. Clicking the tab stop button inserts a tab stop character in front of the insertion point in the Find What or Replace With text box.

Return character (¶) Click this button to find return characters. Clicking the return character button inserts a return character in front of the insertion point in the Find What or Replace With text box.

Match Whole Words Only Click this option to find only those occurrences of the text that have leading and trailing word breaks (spaces, punctuation, and tabs). This tells Works to find only those occurrences of the specified text not embedded in other text.

Check Upper/Lowercase Click this option to find only those occurrences of the text having uppercase and lowercase characters that match what you type.

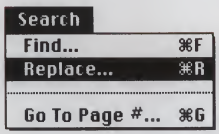
When you click the Find Next button, Works finds and selects the first occurrence of the specified text after the insertion point.

To find additional occurrences of the specified text, click the Find Next button after each occurrence is selected. As you continue clicking the Find Next button, the search continues to the end of the document, and then goes to the beginning and searches forward to the point at which the search began.

To cancel the search at any time, click the Cancel button.

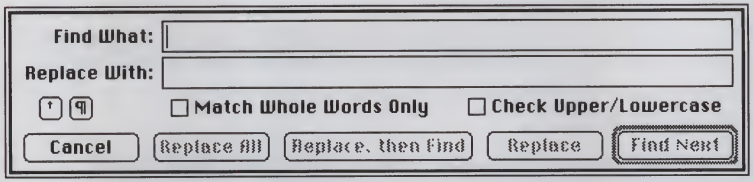
If Works cannot find the specified text in the document, it displays an alert box.

The next time you choose Find, the last text you specified is selected in the Find What text box unless different text is selected in the document. If that is the text you want, click the Find Next button to start the search. Otherwise, type the new text you want to search for.



Replace

The Replace command finds and replaces specified text — either selective occurrences of the text or all occurrences.



Find What Type the text you want to search for. This can be as short as a single character or as long as 80 characters. You can search for any alphanumeric characters and all symbols on the Macintosh keyboard, as well as tab stops and return characters.

If you select any occurrence of the text before you choose Replace, it will appear in the Find What box.

Replace With Type the replacement text, up to 80 characters.

Tab (⇥) Click this button to find or replace tab stops. Clicking the tab stop button inserts a tab stop character in front of the insertion point in the Find What or Replace With text box.

Return character (¶) Click this button to find or replace return characters. Clicking the return character button inserts a return character in front of the insertion point in the Find What or Replace With text box.

Match Whole Words Only Click this option to find only those occurrences of the text that have leading and trailing word breaks (spaces, punctuation, and tabs). This tells Works to search for only those occurrences of the specified text not embedded in other text.

Check Upper/Lowercase Click this option to find only those occurrences of the text having uppercase and lowercase characters that match what you type.

Works starts the search at the insertion point. The search continues to the end of the document, and then goes to the beginning and searches forward to the point at which the search began.

Replace All Click this button to replace all occurrences of the specified text in the document.

Replace, Then Find Click this button to replace the selected text and then go to the next occurrence of the specified text. Works selects the next occurrence, but does not replace it.

Replace Click this button to replace the current selection only.

Find Next Click this button either to start a search or, if an occurrence of the specified text has been found, to leave it as is and search for the next occurrence.

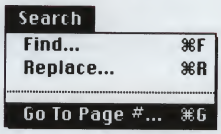
To cancel the search at any time, click the Cancel button.

As you selectively find and replace text, Works scrolls automatically to the next occurrence of the specified text. If Works cannot find the specified text in the document, it displays an alert box.

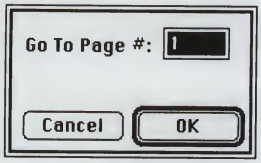
The next time you choose Replace, the last text you specified is selected in the Find What box unless different text is selected in the document. If that is the text you want, click a button to start the search. Otherwise, type the new text you want to search for.

Go To Page

Go To Page #



The Go To Page # command scrolls a document to the page you specify and places the insertion point at the beginning of the first line.



Works proposes the page number currently displayed in the scroll box. Type the number of the page you want to find, then click the OK button.

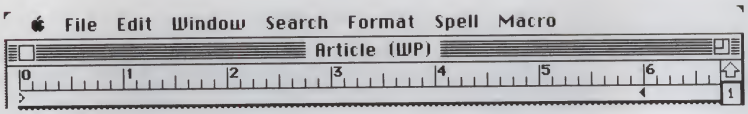
The Format Menu

Three commands — Font, Size, and Color — are common to all Works tools. For information on these commands, see "The Format Menu" in Chapter 2.

Show Ruler
Hide Ruler

Show Ruler/Hide Ruler

The Show Ruler command displays the ruler.



The ruler is calibrated in inches. The indent markers and tab stops reflect the settings for either the first paragraph of a selection or the paragraph containing the insertion point. If you make a change to the indent markers or tab stops on the ruler, the change applies to all of the selected paragraphs or the paragraph containing the insertion point. You can move indent markers, and insert, delete, and move tab stops on the ruler.

When the ruler is displayed on the screen, the Show Ruler command on the menu changes to Hide Ruler. Hide Ruler allows you to display approximately two additional lines of text in the document window.

The ruler displays the following information about how a paragraph is formatted:

- The amount of space the first line is indented from the left margin. This is indicated by a small solid box.
- The amount of space all subsequent lines are indented from the left margin. This is indicated by a small solid triangle pointing right.
- The amount of space all lines of a paragraph are indented from the right margin. This is indicated by a small solid triangle pointing left.

Note Margins are defined and displayed using the Page Setup command from the File menu.

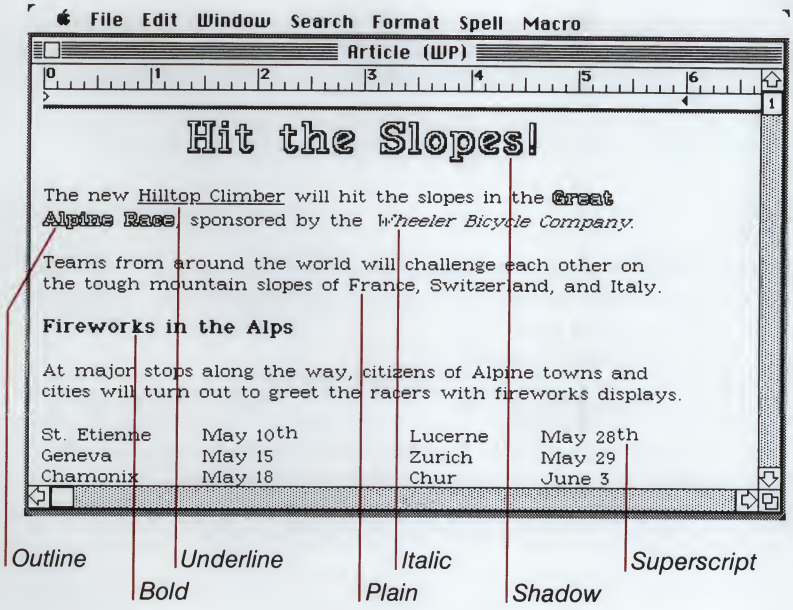
- The positions of left tab stops. Initially, there are left tab stops every half inch. When you insert a new tab stop, all preset tabs to the left of the new tab stop are lost. To insert a left tab stop, point to a position in the blank area below the ruler markings and click.
- The position of right, decimal, and center tab stops. Initially, there are no right, decimal, or center tab stops. To insert a tab stop, point to a position in the blank area below the ruler markings. Click twice for a right tab stop, click three times for a decimal tab stop, and click four times for a center tab stop. To change a tab stop, continue clicking until the tab stop you want appears. To delete a tab stop, drag it down into the text.

Style

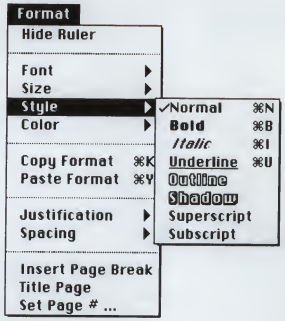
The Style command leads to another menu which lists style commands. You use this menu to choose type styles such as Bold, Italic, and Underline. The checkmarks on the menu indicate those styles currently in effect.

You can check multiple styles, such as Bold and Underline. When you choose Normal, all other style options are cancelled.

Some of the Style commands are illustrated below.



Style



Copy Format/Paste Format

The Copy Format and Paste Format commands copy the format of one paragraph to another paragraph or to a range of paragraphs.

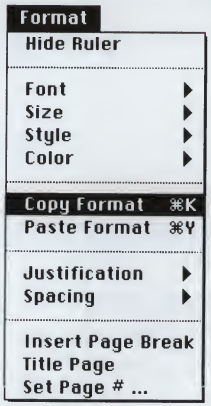
To copy a format, position the insertion point anywhere in the paragraph whose format you want to copy, then choose Copy Format.

To paste the format, position the insertion point anywhere in the paragraph you want to reformat, or select a range of paragraphs. Then choose Paste Format.

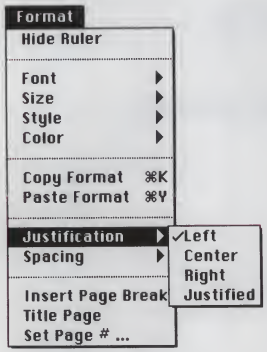
The following formatting information is copied with Copy Format and Paste Format:

- Left and right indents
- First line indent (of a paragraph)
- Left, right, decimal, and center tab stops
- Spacing
- Justification

Copy Format Paste Format



Justification



Justification

The Justification command leads to another menu which lists justification commands. You use this menu to choose the alignment of text between the indent markers. You can justify the paragraph containing the insertion point, or select several paragraphs before justifying them.

The Left command aligns all lines with the left indent marker.

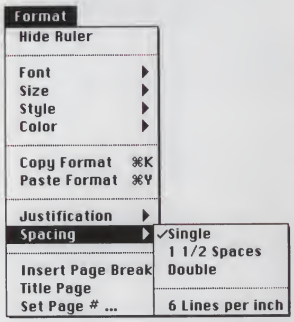
The Center command centers each line between the indent markers.

The Right command aligns each line with the right indent marker.

The Justified command aligns the beginning of each line with the left indent marker and the end of each line with the right indent marker. Spaces between complete words in each line are adjusted to space text evenly throughout the line.

For all justification choices, only complete words are placed on a line.

Spacing



Spacing

The Spacing command leads to another menu which lists commands for the line spacing in a document. When you choose one of the spacing commands, Works adjusts the selected paragraphs, or the paragraph containing the insertion point, to the spacing you choose.

Single provides a single space between lines; 1 1/2 Spaces provides a space and a half between lines; Double provides two spaces between lines. Six lines per inch is used along with single, one-and-a-half, or double spacing, and is the standard spacing for many pre-printed forms.

Insert Page Break
Remove Page Break

Insert Page Break/Remove Page Break

The Insert Page Break command inserts manual page breaks into a document.

With Works, pagination is automatic. An automatic page break appears as a dotted line. The Insert Page Break command, however, allows you to manually insert page breaks in places other than where pages would automatically break.

When you choose Insert Page Break, a dashed line appears above the insertion point to indicate the page separation. When you insert a manual page break, Works automatically repaginates the entire document, starting at that point.

When you put the insertion point in the line following a manual page break, the command on the menu changes to Remove Page Break. If you choose this command, Works removes the manual page break indicator.

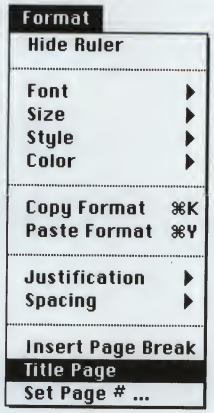
Title Page

The Title Page command tells Works not to print a header or footer on the first page of a document. It does not affect the formatting of existing text on the first page.

When you choose Title Page, the command appears with a checkmark beside it on the menu.

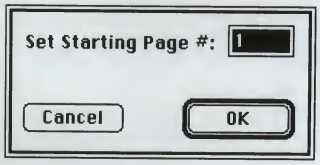
To print a header and footer on the first page, choose Title Page when it is checked. Works removes the checkmark.

Title Page



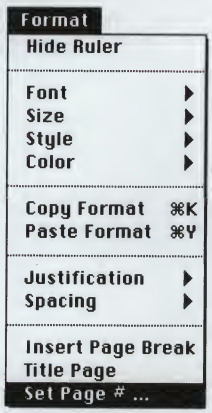
Set Page

If you specify in the Page Setup dialog box that page numbers are to be included in a header or footer box, the Set Page # command tells Works what number to begin numbering pages with.



In the Set Starting Page # box, type the page number for the first printed page. Works proposes 1. Insert the number you want, then click the OK button or press the Return key.

Set Page



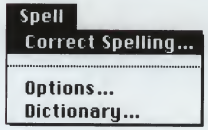
The Spell Menu

Correct Spelling

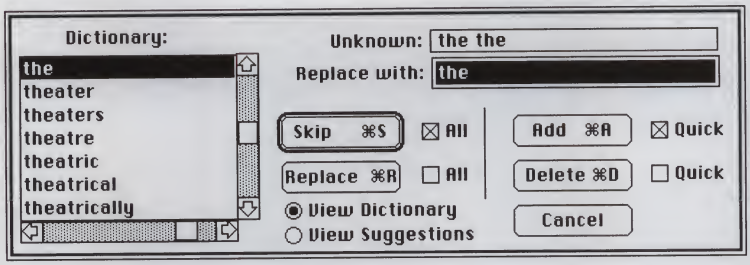
The Correct Spelling command checks for misspelled words in a selection or an entire document, makes suggestions for correcting your spelling, and replaces misspelled words. The selected text or entire document is always checked from the beginning, and words are corrected in the existing font, style, size, and color.

The first time you choose Correct Spelling, you may be asked to locate and open the dictionary. The dictionary is located in the Dictionary folder on the Startup disk. Once Works knows the dictionary's location, you won't be asked again, unless you change its location.

Correct Spelling



If Works finds words it doesn't recognize, a dialog box appears, with a list box that contains the dictionary. You can drag the dialog box anywhere on the screen to see the questioned words in context. Questioned words are highlighted in the document.



Note When spell-checking is finished, Works leaves the last questioned word selected. To check spelling again on the same document, click the mouse button to remove the selection.

Works does not check the spelling inside text objects.

Unknown Works displays words it does not recognize in the Unknown text box. You can click the unknown word to transfer it to the Replace With text box for editing.

Replace with Works suggests a correction in the Replace With text box for the word highlighted in your document. If you don't agree with the correction, you can scroll through the list box and select the appropriate word. To scroll quickly through the dictionary, use the scroll bar on the bottom of the list box. To scroll more slowly, use the scroll bar on the side.

If you want, you can edit the text in the Replace With text box using the same editing techniques you use in the Word Processor.

Note As you type text into the Replace With text box, Works scrolls the dictionary to match the letters that you type. You can insert a word in the Replace With text box without finishing your typing. Just select the word in the list box to automatically place it in the Replace With text box.

Skip If Works does not recognize a word, but it is not misspelled, click the Skip button to leave the word as it is.

If All is checked, Works skips all other occurrences of the word. If All is not checked, Works displays the word in the Unknown text box each time it is found.

If you have skipped any words, when Correct Spelling is finished, Works asks you if you want the speller to remember the words for future use. If you click the Yes button, Works adds these words to a file with the name of the document you checked, plus a ".dict" extension. The next time you check your document, Works uses both the main dictionary and the skipped-word dictionary to check your spelling. Works recognizes the skipped words and doesn't question them.

A document's skipped word dictionary is replaced every time you save skipped words in that document. If you want to save a skipped word dictionary for later use, rename it in the Finder.

You can also open the skipped word dictionary just like any Word Processor document, check the spelling, and add the skipped words to the main dictionary.

Replace If you want to replace a misspelled word with the word in the Replace With text box, click the Replace button.

If All is checked, Works replaces all occurrences of the word. If All is not checked, Works replaces only the first occurrence of the word.

You can type a word in the Replace With text box, or select it from the list box. If you type a replacement word that is not in the dictionary, Works asks if you want to add it to the dictionary. If you click the Yes button, and the Quick Add box is checked, the word is automatically added to the dictionary.

Note You can also replace a word that is highlighted in your document by double-clicking the replacement word in the Dictionary list box.

View Dictionary This option is selected for you when you choose the Correct Spelling command. View Dictionary displays the dictionary in the list box — allowing Works to check your spelling against the words in the dictionary, and letting you add and delete words from the dictionary.

View Suggestions Click this option to view an alternative for the word in the Unknown dialog box. Works replaces the dictionary in the list box with a list of words that are similar to the unknown word. Works inserts the first suggestion in the Replace With text box.

If you replace a word in the Unknown text box with a word in the Suggestions list box, or if you skip the unknown word, Works automatically chooses the View Dictionary option and continues checking your spelling.

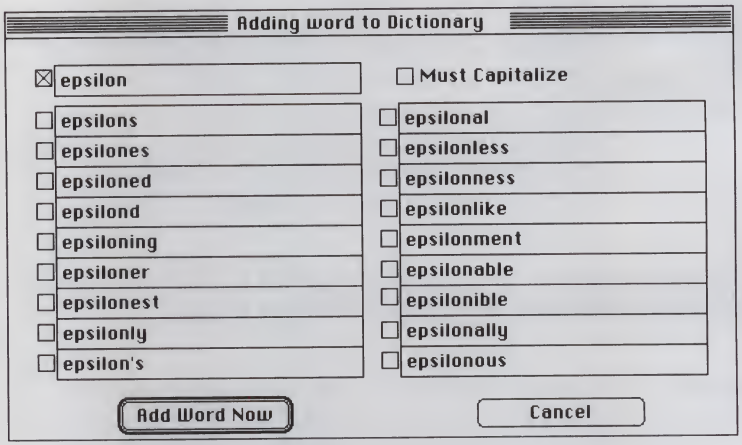
Works tells you if there are no suggestions for the unknown word. Click the OK button to return to the dictionary and continue the spelling check.

Add You can add a word to the dictionary in three ways: when it is highlighted by the spelling checker, by typing a different word in the Replace With text box, or by typing a different word in the Adding Word to Dictionary dialog box. When Works displays a word you want to add to the dictionary in the Unknown text box, click the Unknown text box. The word appears in the Replace With text box. Click the Add button.

To add a word that doesn't appear in the Unknown text box, type the word in the Replace With text box and click the Add button.

You can add dictionary entries up to 31 characters long, and you can add as many words to the dictionary as your disk space allows.

If Quick is checked, Works automatically adds the word to the dictionary. If Quick is not checked, Works presents you with a list of words formed by adding different suffixes to the word.



Note Works adds suffixes to the word without checking the spelling of the new word — not all suffixes create real words.

Works presents suffixes for the word in the Unknown text box rather than the Replace With text box.

Click the check box next to each form of the word you wish to add. You can also edit words as you would in any Works Word Processor document; editing automatically selects the word. If you accidentally select a word you don't want to add, just click the check box again.

Click the Must Capitalize check box to capitalize all words in the dialog box.

Click the Add Word Now button to add the selected words to the dictionary.

You can use the same dialog box to add unrelated words. If you want to add a different word and be given a choice of suffixes, type a new word into the box to the left of the Must Capitalize check box. Then double-click the new word's check box.

Note To add an abbreviation to the dictionary, add a period to the end of the abbreviation while you are in the Adding Word to Dictionary dialog box.

You can also add words containing special (diacritical) characters, such as é, ü, ñ, and ç, to the dictionary. These characters appear in the dictionary in alphabetical order after "z." For example, if you add the word "año," it appears after "azure," not after "announce."

Delete Select a word in the list box and click the Delete button to delete it from the dictionary.

If Quick is checked, Works automatically deletes the word from the dictionary. If Quick is not checked, Works asks you if you are sure you want to delete the word.

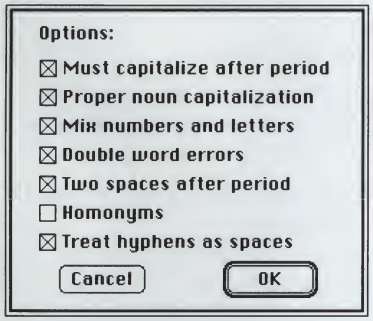
Cancel Click the Cancel button to cancel Correct Spelling.

When Works finishes checking your spelling, it displays a count of the words in the document, and of the words questioned. The count for words questioned includes words you automatically skipped or replaced, and errors related to the options — such as homonyms and double word errors — even if the options are turned off. For more information, see "Options" below.

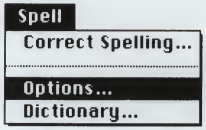
If you check a selection, rather than an entire document, Works doesn't display the word count dialog box.

Options

Options tell Works to look for or skip certain types of words and word combinations.



Must capitalize after period If this option is checked, Works questions any uncapitalized word that follows a period, exclamation point, or question mark. If this option is checked, Works also questions a word that follows an abbreviation. In the Replace With text box, Works proposes that the word begin with a capital letter.



Proper noun capitalization If this option is checked, Works questions proper nouns, such as names, that are not capitalized.

Mix numbers and letters If this option is checked, Works questions text that mixes letters and numbers, such as the part number Y1083.

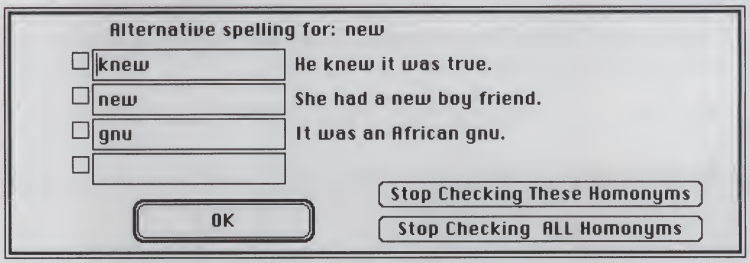
Double word errors If this option is checked, Works questions repeated words like "and and."

Two spaces after period If this option is checked, Works questions a period, question mark, or exclamation point that is not followed by two spaces. In the Replace With text box, Works proposes the questioned punctuation followed by two spaces.

Homonyms Homonyms are words that sound alike, but are not spelled alike, such as "pair," "pear," and "pare."

If this option is checked, Works may ask you to locate and open the MsWorksHymn file, if it is not already open.

When Works locates a homonym, it displays a dialog box over the dictionary dialog box, and presents alternative spellings.



If you have used the correct homonym, click the OK button.

To choose a proposed homonym, click the check box beside the homonym and click the OK button. You can edit the homonym as necessary, using the same editing techniques you use in the Word Processor.

If the correct homonym is not proposed, click the check box beside an empty text box, click the text box, and type the new homonym.

If there are more than four alternative spellings for a homonym, a button appears in the dialog box. Click this button to view additional choices.

Stop Checking These Homonyms tells Works to stop checking the current group of homonyms.

Stop Checking ALL Homonyms cancels the homonym checker, and turns off homonym checking in the Options dialog box.

You can add additional words to the homonym file, or delete words if the dictionary contains homonyms that you don't misuse. For more information, see "Adding and deleting words in the homonym file" below.

Homonym files are always referred to as files, rather than documents, even if they have not yet been saved to a disk.

Adding and deleting words in the homonym file

Return to the Open dialog box to add or delete words in the Works homonym file. Click the Word Processor icon, then click the Import File option. Select and open the MsWorksHymn file (switch drives if necessary). The homonym file opens as an untitled Word Processor document. A row of asterisks separates each group of homonyms.

To delete a homonym group, select the group and one row of asterisks and press the Delete key. Do not delete the first line in the document.

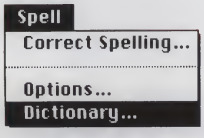
To add a new homonym group, scroll to the bottom of the document and type each homonym followed by an example of its use. Divide the homonym and example by at least one space. Complete the group by typing a line with two asterisks. If you have a series of similar homonyms, use commas and type them like this:

```
**
sight, sights, sighted  He has excellent sight.
site, sites  The architect chose a hilly site.
cite, cites, cited  She was cited for contempt of court.
**
```

When you have finished, choose Save As from the File menu and save the document as an Export file with the filename "MsWorksHymn." Works asks if you want to replace the existing file; click the Yes button. Close the untitled document without saving your changes.

To save time when homonym checking, Works stores an abbreviated homonym file in a file named MsWorksHymn Table. This file contains the old copy of your homonym file; you must delete it so that Works can find the changes in the new MsWorksHymn file. After you delete the MsWorksHymn Table, Works automatically makes a new copy of it for you.

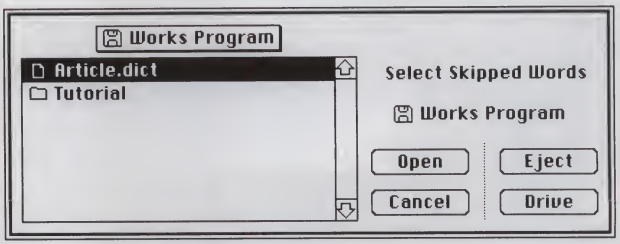
Treat hyphens as spaces If this option is checked, Works checks each half of a hyphenated word independently and will not question the hyphenation. If this option is not checked, Works checks for correct hyphenation.



Dictionary

When you check spelling and save your skipped words, Works creates a skipped-word dictionary, and gives it the same name as the document you checked, plus a ".dict" extension. A document's skipped-word dictionary is replaced every time you save skipped words in that document. If you want to save a skipped-word dictionary for later use, rename it in the Finder.

The Dictionary command lists skipped-word dictionaries on the current disk. The name of the current disk appears above the Eject and Drive buttons.



Open Select the dictionary in the list box and click the Open button to open it. When you choose Correct Spelling, Works uses both the main dictionary and the open skipped-word dictionary to check a document.

Note If you have another commercially available dictionary, move the file, MsWorkDict, to another folder and choose Check Spelling from the Spell menu. Select the dictionary you want from the dialog box.

Once you've moved MsWorksDict, Works asks you to locate the dictionary every time you check spelling. You can avoid this by renaming the new dictionary MsWorksDict in the Finder.

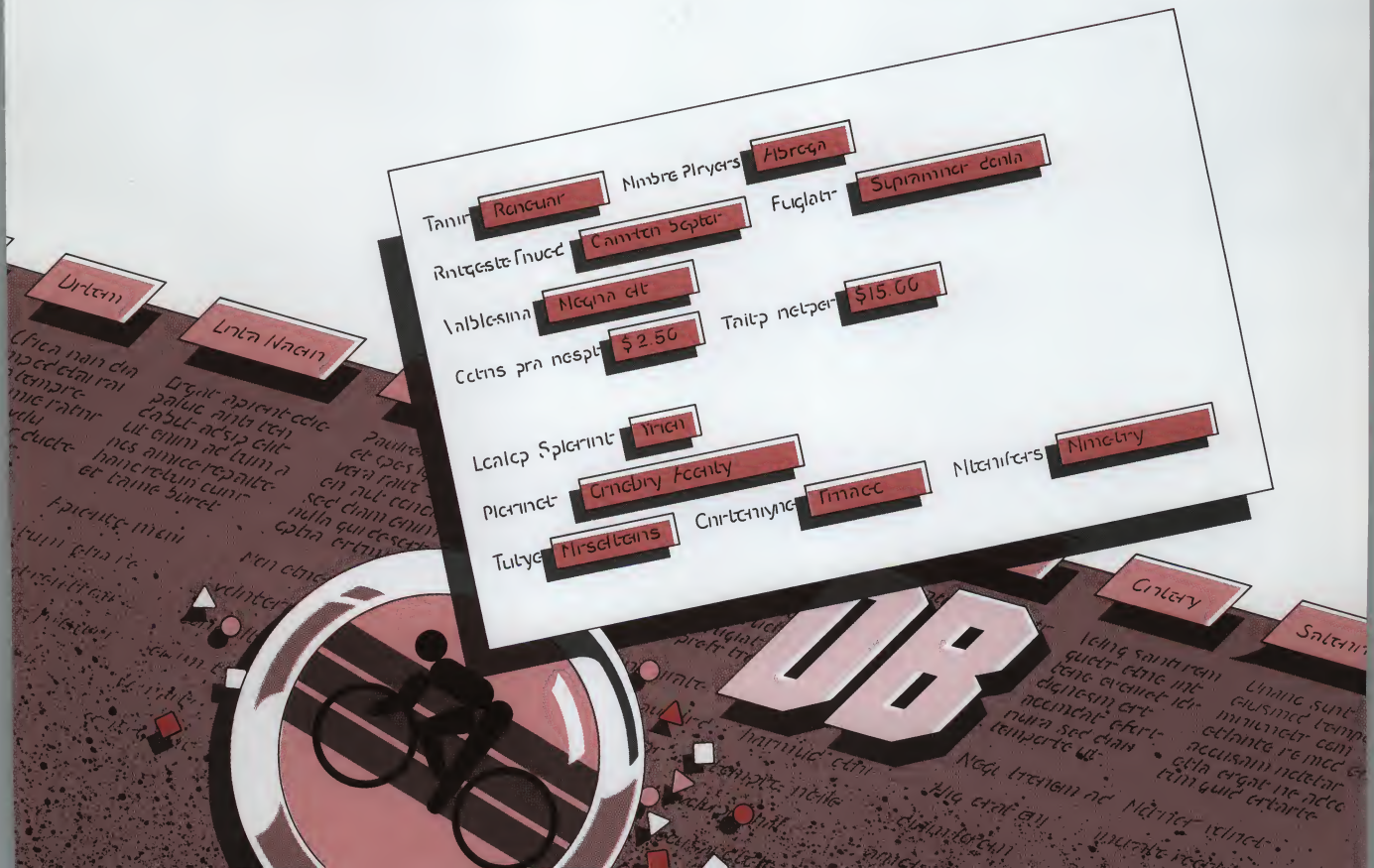
Eject Click the Eject button to eject the current disk from the disk drive. You can then insert the disk containing the dictionary file you want to open.

Drive Click the Drive button to list the files on the other disk drive.

The Database

The Works Database automates your filing system. With your information stored in the Database, you'll have quick access to any combination of records. If you want a list of sales leads in Cincinnati, or restaurant names that begin with "S" in Buffalo, just ask the Database. If the information is there, you'll find it quickly and easily.

Printed reports put Database information down on paper. From one set of information, you can print many different reports. Each report will contain just the particular information you want to pull from the Database document.



This part of the manual explains how to create and use Database documents:

- Chapter 6, "Creating a Database Document," shows you two ways to view a Database document, and shows you how to create a new Database document and add information to it. It also explains how to correct mistakes as you make entries.
- Chapter 7, "Editing a Database Document," shows how you can change your information or the way it's presented. It also explains how to use computed fields.
- Chapter 8, "Organizing a Database Document," shows you how to quickly put your information in order, how to find what you need, and how to make several smaller, specialized Database documents out of one large one.
- Chapter 9, "Making a Report," shows you how to define and print a report. You'll learn how to sum the contents of your fields and produce a grand total at the end.
- Chapter 10, "Database Command Reference," describes the commands you can use with the Database.

If you want to merge Database information into a Word Processor document, see Chapter 21, "Merging: Creating Mailing Labels, Form Letters, and Forms."

6 Creating a Database Document

This chapter explains how to get started with the Database. It shows you how to:

- View a Database document in a form window and a list window.
- Set up a new Database document.
- Add new fields.
- Switch between list and form windows.
- Make entries.

An Overview

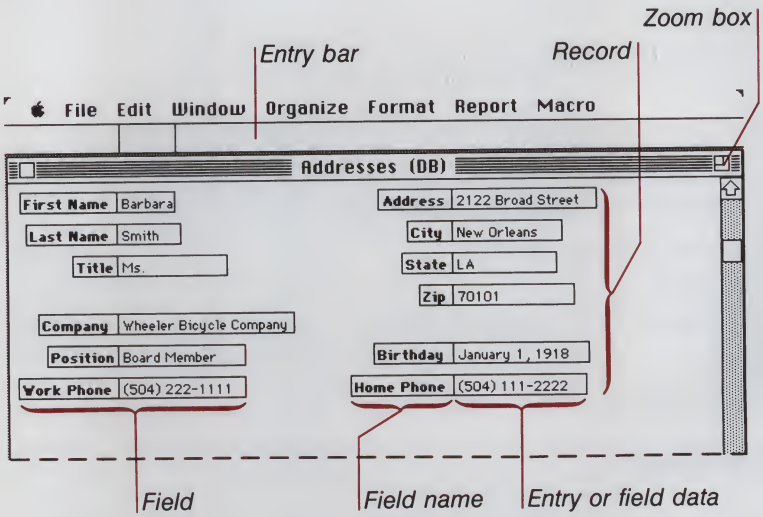
When you create a new Database document, you set up fields to contain information. After you set up a field, you determine how you want it to store information — as text, perhaps, or as a date or number. Once you've specified all your fields, you're ready to add information.

You can add information to a form or a list. Because a form shows all the fields on the screen at one time, it's easier to enter full records using a form. If you only have a few fields, however, you may find it easier to make entries in a list. Either way, all the information goes into a single Database document. You can organize and review your information in either a list window or a form window.

Looking at a form

Looking at a Form

When you first set up a Database document, you create a form and fill it out.



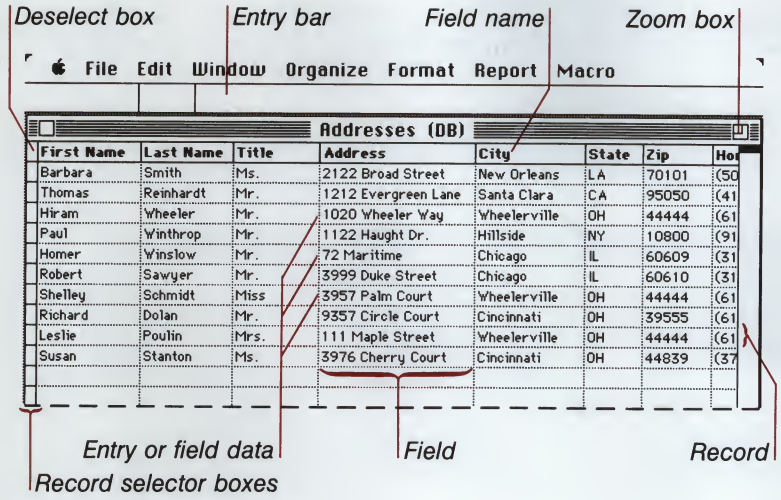
This example from an address file shows a single record in a form window. All the information about one person or subject — the name, address, and so forth — makes up one record.

Each record is divided into fields of information. The address is one field, the city and state are others. Each field has a name so that you know what sort of information to fill it with. When you enter information — for example, "2122 Broad Street" — you make an entry in a field. Entries are sometimes called field data.

Looking at a list

Looking at a List

When you want to see many records at once — to make comparisons, for example — you can list them.



Remember that a Database document can be much larger than a window. You move around in a large document by scrolling. The scroll bars at the right and bottom of the window show you where you are in a Database document and enable you to scroll. If the document is not larger than the window, scroll bars will not appear.

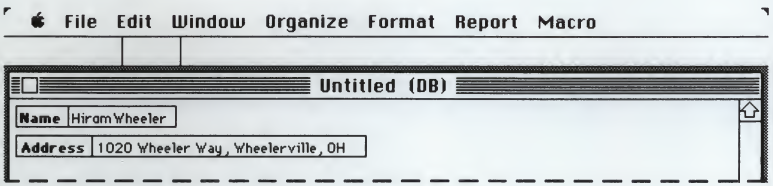
Planning a Database Document

Planning a Database document

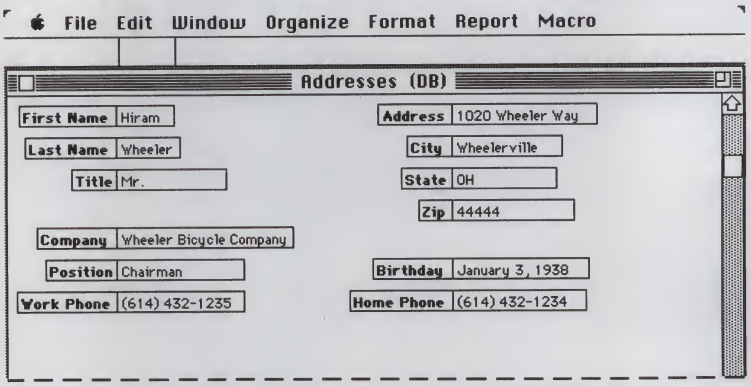
There's nothing complicated about setting up a Database document. It's easy to rearrange your information with the Works Database — you can play with your document until it looks just the way you want.

The most important thing to remember is that you work with your Database information using the fields you set up.

For example, if you set up an address list, you could set up two fields, "Name" and "Address". Your first record might look something like this:



A Database document like this has room for everyone's name and address. But it's not designed well for searching or sorting. A better way to set up a document like this is to make a separate field for each component that you might want to search for or sort on:



Now you can find all the people who live in Ohio, or who work for the Department of the Interior. Or anyone whose first name is John and whose zip code is 44444. Or any combination you can think of. Even if you don't set up fields in the most useful way when you create a new Database document, you can always go back and add new fields at any time.

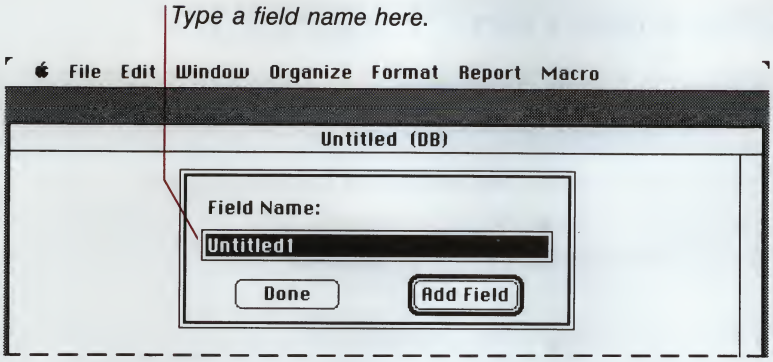
Setting Up a New Database Document

To set up a new Database document

When you set up a new Database document from scratch, you have to create a new Works document. Because there's no information in the document yet, Works asks you to set up fields first. After you name one or more fields, you'll be able to start entering your information.

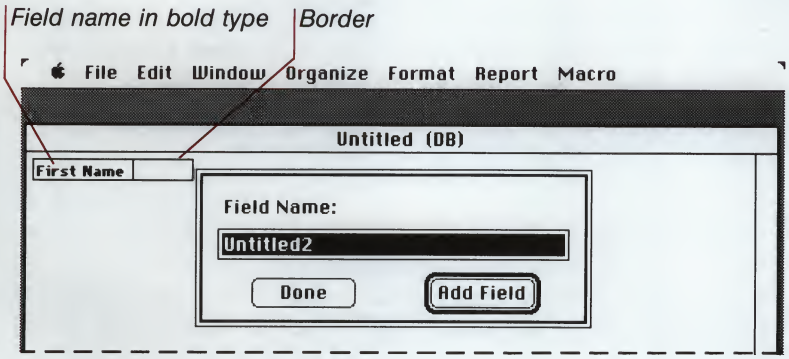
To set up a new Database document:

1. In the Open dialog box, click the Database icon.
2. Click the New button.
   Works creates an empty document with the name "Untitled," and asks you for the name of the first field.



3 Type the name of your first field.
A field name must begin with a letter, and it cannot contain certain characters, such as asterisks, parentheses, or hyphens.

4 Click the Add Field button or press the Return key.
The new field with the name you typed appears in the form window, and the dialog box reappears so that you can set up another field.



5 Type a name for the second field and for as many other fields as you want.
Works adds each new field below the previous one.

6 Click the Done button when you've added all the fields you want.

The dialog box disappears, and the first field is selected.

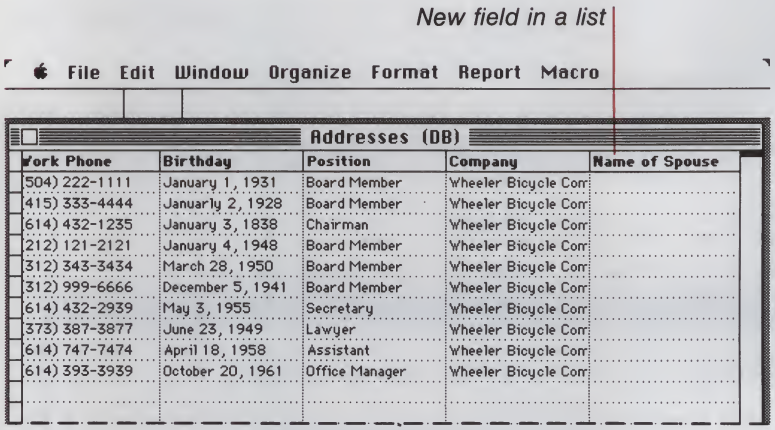
Adding a New Field

To add a new field

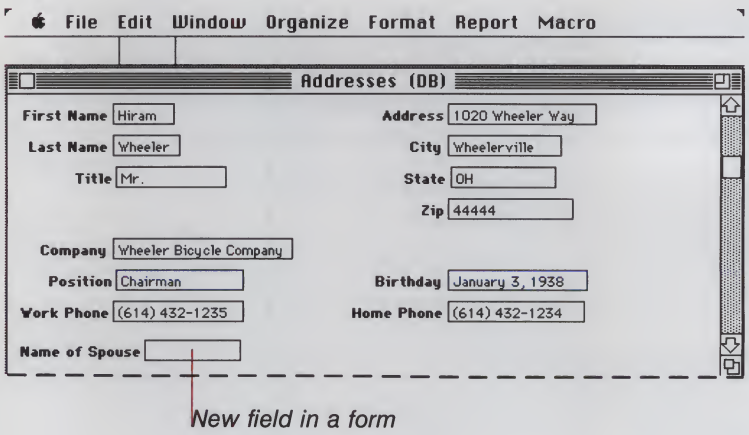
You can add a new field whenever you want.

1. Choose Add New Field from the Edit menu.
   Works displays a dialog box asking you for the field name.
2. Type a name for the field.
3. Click the Add Field button or press the Return key.

If you're in a list window when you add a field, Works adds the field to the right of the rightmost field and scrolls to the new field. Works puts the field name at the top of the new column.



If you're in a form window when you add a field, Works adds the new field in the first blank area it finds that is large enough to accommodate a field.



You can move any field at any time when you're using the Database. Notice, however, that the position of a field in the list window is not related to its position in a form window. For more information, see "Sizing and Arranging Fields in a Form Window" and "Sizing and Arranging Fields in a List Window" in Chapter 7.

There's also another way to add a field in a form window. Move the pointer to wherever you want the upper-left corner of the field to be. Then hold down the mouse button and drag to the right far enough to accommodate the field name and field data. When you release the button, Works displays a dialog box asking you for the field name.

If you're making a new Database document, each field in a form window consists of a double box, with the field name in one box and space for your entry in the other box.

The Format menu lets you change the way fields show up on the form. For example, in the previous illustration, there are no boxes around the field names. To find out how to change the format of your field, see "Changing the Appearance of Fields in a Form Window" in Chapter 7.

Switching Between List and Form Windows

You can switch between list and form windows by choosing a command or by clicking the mouse.

To switch by choosing a command

To switch windows by choosing a command:

▣ Choose Show List or Show Form from the Format menu.

If you pull down the Format menu when you're in a list window, the first menu item switches to Show Form, so that you can go back to the form when necessary.

To switch by clicking the mouse

You can also move between list and form windows by clicking the mouse.

To move from a form window to a list window:

▣ Double-click anywhere in the white space of a form window.

Works displays the list, and scrolls to display the record that was displayed in the form window.

To move from a list window to a form window:

▣ Double-click the box to the left of any record.

Works displays the form, with the record you selected showing.

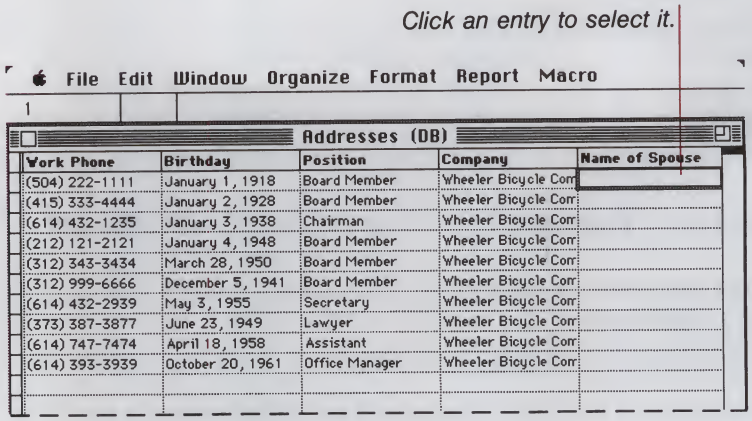
Making an Entry

To make an entry

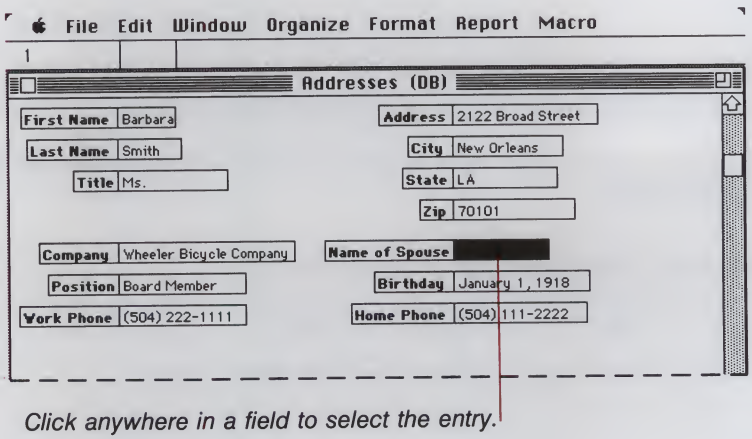
An entry is the content of a field for a single record. An entry can be blank or it can contain some information. To enter information, first select an entry, and then start typing. You can type information into an active entry in your Database document in either a list window or a form window. When an entry is active, you can change its contents.

To make a Database entry:

1. Select an entry by clicking it.
   The entry you click becomes the active entry.

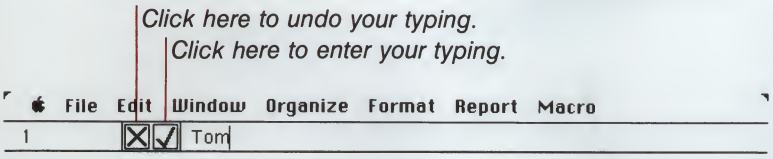


In a list window, you can select an entry only in a record that already contains information, or in the first blank record.



2. Start typing.

When you type, the information appears in the entry bar at the top of the screen (but not in the active entry). The cancel box and the enter box appear to the left of the entry bar.



If you make a mistake, you can make corrections or cancel the typing. The cancel box restores the entry to what it was before you began typing. The enter box enters what you type.

The Database can read times and dates in most formats that you might want to use, but converts them to its own standard formats. For information about typing dates and times, see "Changing the Format of a Field" in Chapter 7.

You can type up to 250 characters for an entry. Even if the field is too narrow to display all the characters, you will see the full entry in the entry bar.

To enter what you type

To put information into the Database, you enter it. When you enter information, you tell the Database that you're finished typing. The Database stores the entered information as an entry.

To enter information into a list window:

To enter the information and	Do this
Leave the selection where it is	Click the enter box or press Enter
Move the selection to the same field in the next record	Press Return
Move the selection to the next field in the same record	Press Tab
Move the selection to the same field in the preceding record	Press Shift + Return
Move the selection to the preceding field in the same record	Press Shift + Tab

To enter information into a form window:

To enter the information and	Do this
Leave the selection where it is	Click the enter box or press Enter
Move the selection vertically to the next field in the same record	Press Return
Move the selection horizontally to the next field in the same record	Press Tab
Move the selection vertically to the preceding field in the same record	Press Shift + Return
Move the selection horizontally to the preceding field in the same record	Press Shift + Tab

In a form window, if you press the Return or Tab keys when the last field in a record is selected, Works moves the selection to the next record. If you press Shift + Return or Shift + Tab when the first field in a record is selected, Works moves the selection to the preceding record.

Note You can also use the keyboard's arrow keys to move the selection to another field. In a list window, you can move to any field that contains information, or to the fields in the first blank record. In a form window, you can move through all the fields in a record. If the first or last field is selected, the arrow keys move you to the record that immediately precedes or follows the current record.

7 Editing a Database Document

You'll often need to update your Database documents, changing old information and adding new. This chapter explains how to:

- Select information.
- Change the appearance of fields.
- Change the way information is displayed in a field.
- Calculate with the Database.
- Rename a field.
- Size and arrange fields in both form and list windows.
- Divide a list window into panes.
- Insert a record.
- Show a grid.
- Copy information.
- Make corrections and remove information.

If you want to add new fields to an existing Database document, see "Adding a New Field" in Chapter 6.

If you want to rearrange and organize your information, rather than change it, see Chapter 8, "Organizing a Database Document."

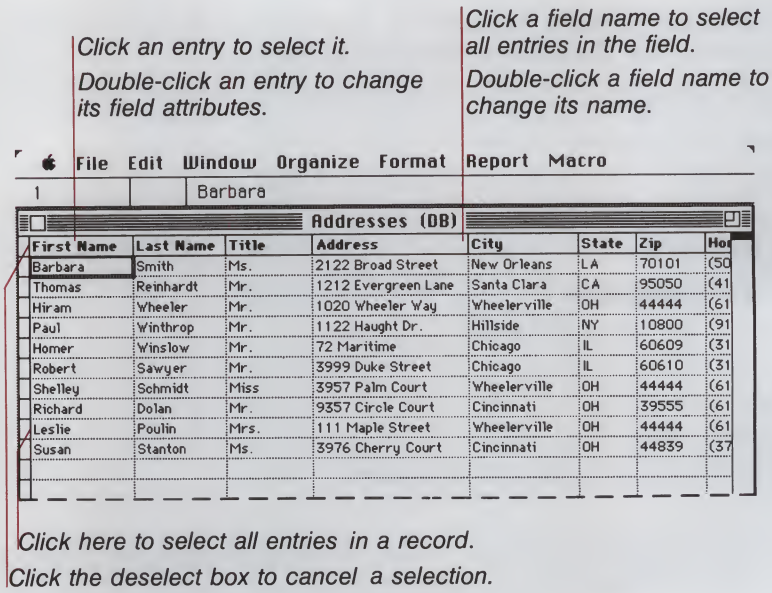
Selecting Information

Before you perform an action on any part of a Database document, you select it. You can select entries, fields, or records. Then you can perform actions like sorting, removing, or copying. When you make a selection, Works displays the number of the record containing the active selection at the left of the cancel box. This number is called the record indicator.

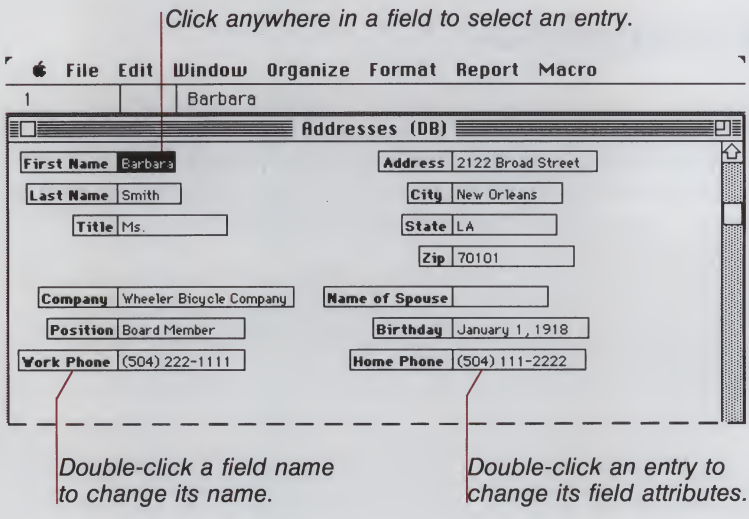
To select information

In a list window, you can select an entry, a field (column), a record (row), or a block of entries. You can also cancel (remove) a selection by clicking the deselect box at the far left of the field names.

When you select more than one entry, only one entry is active at a time. This entry is bordered in white. You can move through the selection, moving the active entry, by pressing the Return, Tab, or arrow keys.



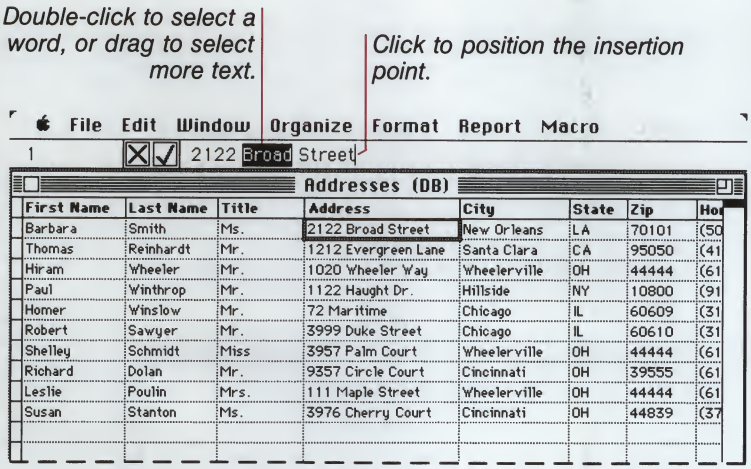
In a form window, you can select only one entry at a time.



In either type of window, when you select an entry, it becomes active and you can change its contents in the entry bar. When you select a field, you can move it, size it, change its name, or change its attributes.

To select in the entry bar

The content of the active entry is displayed in the entry bar. Even though it is not highlighted, it is selected; anything you type will replace what is displayed. To edit the entry, you can select any part of it.



Changing the Appearance of Fields

When you set up a new Database document, the records are displayed in a form window with borders around each field name and each entry. The field name is in bold type, and the entry is in plain type. You can change the way records are displayed to get different effects.

You can use commands in the Format menu to change the font and size of your data. If you have a color monitor, you can also change its color. If you change the font, size, or color, it affects all fields in the active view (form, list, or report) of the document. The Font, Size, and Color commands are explained in detail under "The Format Menu" in Chapter 2.

You can use the Font, Size, and Color commands in both the list and form windows. In the form window, there are additional commands for changing the appearance of fields.

Changing the Appearance of Fields in a Form Window

To put borders around field names or entries

To add or remove borders around field names or entries:

- Choose Border Field Name or Border Field Data from the Format menu.

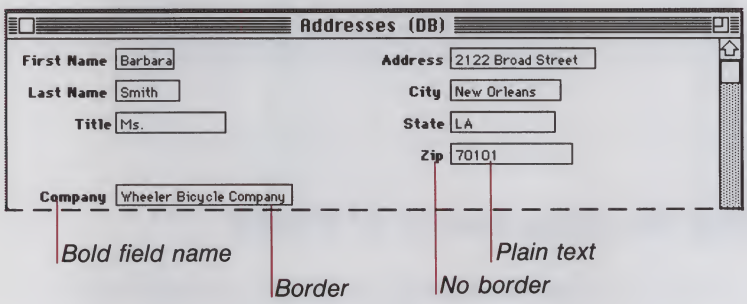
To put field names or entries in bold type

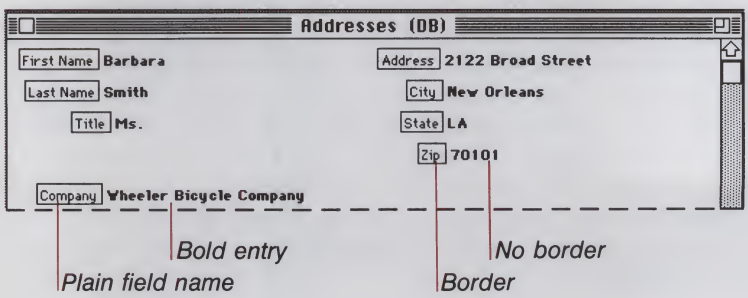
To display field names or entries in bold type:

- Choose Bold Field Name or Bold Field Data from the Format menu.

A command that is currently in effect is checked in the menu. To remove a checkmark, choose the command again.

Some of the different appearances you can create are shown below. The commands you choose affect all fields and records in a document.





Changing the Format of a Field

There's more to formatting in the Database than using borders or bold type. You can also set field attributes that determine what kind of information can be kept in a field, and how that information is displayed. For example, you can specify that a field named "Total Cost" contains only numbers displayed as dollar amounts.

Field attributes apply to field data in both list and form windows. The normal settings are left-aligned plain text for non-numeric characters and right-aligned Fixed format for numbers.

Field attributes include the type of field, the way numbers are displayed, the alignment and style of text, and the number of decimal places to be displayed. You can also specify that a numeric field be computed or that a date field include the day of the week.

To set or change field attributes

With the Set Field Attributes command, you can customize the appearance of your data whenever you want. Because the field type determines which other attributes are available to you, you should choose the field type first.

To set or change field attributes:

1. Select a field or an entry in the field.
2. Choose Set Field Attributes from the Format menu.
   The Set Field Attributes dialog box appears.
3. Click the options you want for the field.
4. Click the OK button.

For a complete description of the options available in the Set Field Attributes dialog box, see "Set Field Attributes" in Chapter 10.

To type a date

When you specify a date field with the Set Field Attributes command, the Database gives you a choice of short, medium, or long displays. You can also choose to have the day of the week displayed with the medium and long displays. You can type the date in any of the following formats, and the Database will display it in the form you chose in the Set Field Attributes dialog box:

- 08/10/88
- 8-10-88
- 8.10.88
- 08/10/1988
- Wed, Aug 10, 1988
- Aug 10, 1988
- August 10, 1988
- Wednesday, August 10, 1988

Then, depending on the options you choose, Works displays the date like this:

Display	Show Day Unchecked	Show Day Checked
Medium	Aug 10, 1988	Wed, Aug 10, 1988
Long	August 10, 1988	Wednesday, August 10, 1988

You can enter the current date into an active entry by pressing Command + D.

To type a time

Works displays time using a 12-hour clock, even if you enter a time in 24-hour format.

If you type	Works displays
8:04	8:04 AM
20:04	8:04 PM
8:4 pm	8:04 PM
20:4	8:04 PM

If you don't use 24-hour time, remember to include the "am" or "pm". If you don't specify this, Works displays "AM".

You can enter the current time into an active entry by pressing Command + T.

Important You can change a text field to a date, time, or numeric field after you enter the data. However, if you change the type of field and the data is not in an acceptable format, Works deletes the data. You can change a date, time, or numeric field to a text field and retain all your data.

Calculating with the Database

What is a computed field?

A computed field contains the results of a calculation based on the contents of other fields. For example, a computed field in a payroll Database document might calculate weekly wages by multiplying the "Hours Worked" field by the "Dollars Per Hour" field.

The Spreadsheet is best for making projections or performing complex calculations. However, computed fields in the Database allow addition, subtraction, multiplication, division, and exponentiation. (Exponentiation raises one number to the power of another; for example, 2^2 = 4 and 2^3 = 8.)

In computed fields in the Database, you can use all Works functions except those that require ranges for arguments, such as Sum(A1:A5). Functions used in the Database can't relate to more than one record at a time and can only use other fields in the same record.

Functions you can't use in the Database are:

- The IRR and MIRR Financial functions.
- The HLookup, Index, Lookup, Match, and VLookup Special-purpose functions.

The following functions often take ranges as arguments, but can be used in the Database with a single field reference, a list of fields separated by commas, or a value in place of a range:

- All of the Statistical functions — Average, Count, Max, Min, SSum, StDev, Sum, and Var.
- The FV, NPV, Pmt, PV, and Rate Financial functions.
- The And, Choose, If, IsBlank, and Or Logical functions.

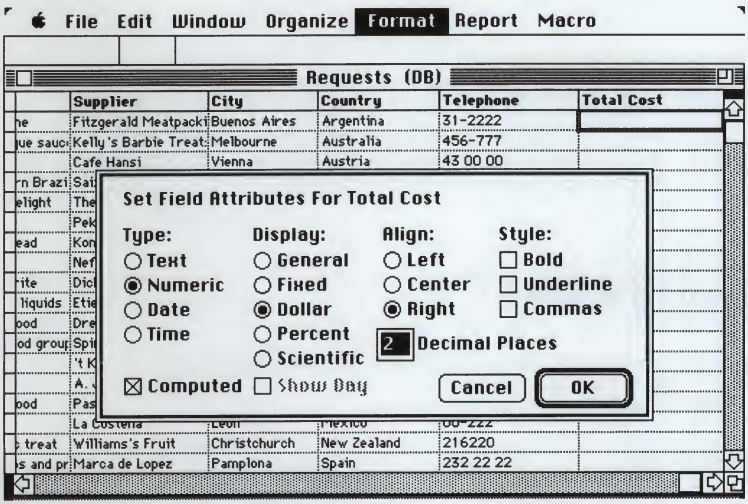
For detailed information on Works functions, see Chapter 15, "Spreadsheet and Database Functions."

To make a computed field

You designate a computed field in the Set Field Attributes dialog box.

To make a computed field:

1. Select a numeric field.
2. Choose Set Field Attributes from the Format menu.
3. Click the Computed option.



4 Click the OK button.

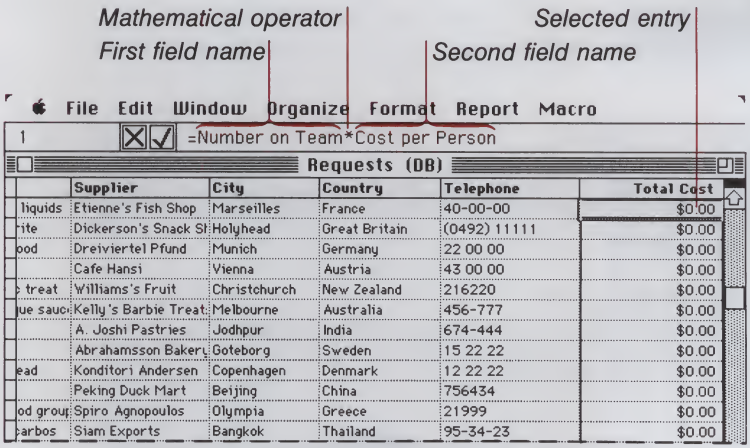
Works returns you to the form or list you were looking at. The equal sign in the entry bar shows you that Works needs a formula for the calculation.

To enter a formula

To tell Works what you want to compute, you enter a formula. A formula for a computed field can contain field names, operators, functions, and numbers. To include a field name, you can either type the name yourself or click the field name and have Works put it in the entry bar for you. A formula can contain up to 238 characters.

To enter a formula for a computed field, first follow the procedure for designating a computed field, above. Then:

1 Type the formula at the insertion point.
It might look something like this:



2 Click the enter box or press the Enter key.

Works calculates the contents of the new field from the formula you typed. If you included a nonexistent field name in the formula, Works displays an alert box.

Renaming a Field

To rename a field

If you decide to change the name of a field, you can rename it.

To rename a field:

1 Select the field.

2 Choose Change Field Name from the Edit menu.
The Field Name dialog box appears. The current name is selected, so you can just type the new name to replace it.

3 Type the new name in the dialog box.

4 Click the OK button or press the Return key.

Works replaces the old name with the new one.

You can also double-click the field name to see the Field Name dialog box.

Sizing and Arranging Fields in a Form Window

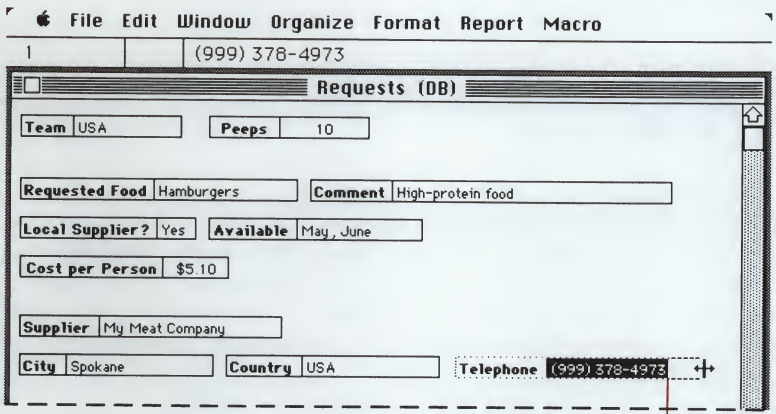
You can change the size and arrangement of fields in a form window whenever you want.

To change the size of a field in a form window:

To change the size of a field

1 Position the pointer on the right edge of the field data box.
The pointer turns into a two-way arrow. (If you have removed the borders from the field data, move the pointer to where the box would normally be. When you're at the right place, the two-way arrow appears.)

2 Hold down the mouse button and drag to the right or left until the box is the size you want.



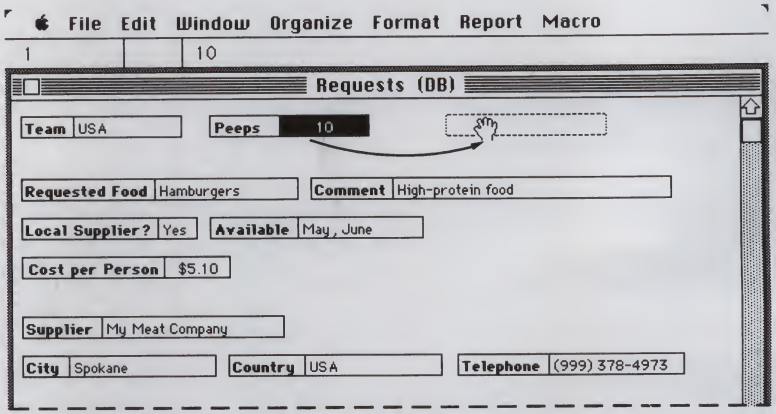
Press the mouse button here...
...and drag until the field is the size you want.

To move a field

You don't have to leave fields where you first create them. Works lets you move fields to wherever they make the most sense to you.

To move a field in a form window:

1. Position the pointer over the field name.
   The pointer turns into a hand.
2. Drag the field to its new location.



If a field won't fit where you want to put it, you'll have to make room for it. You can make it smaller, make surrounding fields smaller, or move another field out of the way.

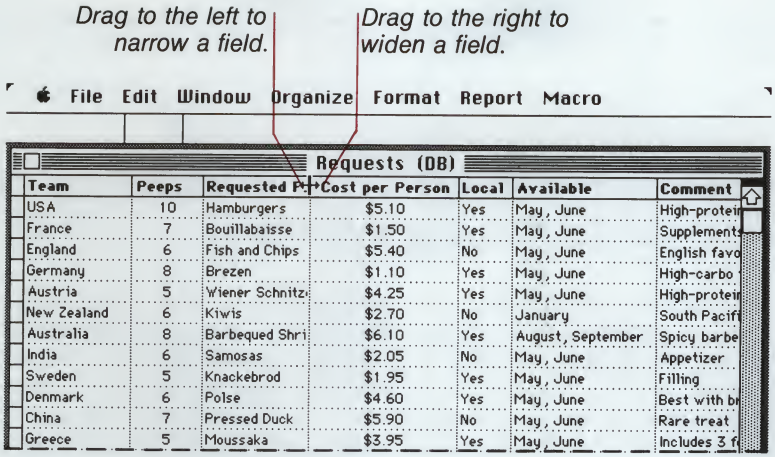
Sizing and Arranging Fields in a List Window

The width or placement of fields in a new list may not satisfy you. They're all the same width, and their order is based on the order in which you first typed the field names. But in an address book, for example, you might want the "First Name" field to be wider than the "Middle Initial" field. And it would make more sense to have "Last Name" as the first field, rather than "Zip Code" or "State." Works lets you size and arrange your fields however you want them at any time.

To change the width of a field

To change the width of a field in a list window:

1. Position the pointer on the right edge of the field name box.
   The pointer turns into a two-way arrow.

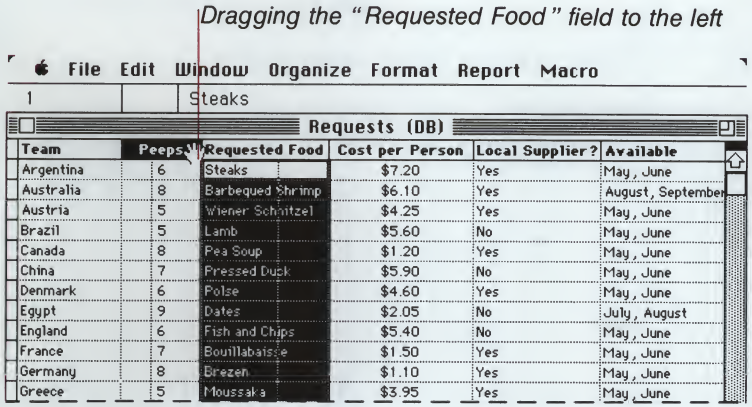


2 Drag to the right to widen the field, or to the left to narrow it.
As you drag to adjust the field size, a dotted line shows you where the new edge of the field will be.

To move a field

To move a field in a list window:

1 Position the pointer on the name of the field you want to move.
2 Drag the field to the right or left.
As you drag, Works highlights the field names that you pass over.



Works scrolls horizontally when you get to the edge of the window.

3 When Works highlights the field that you want to be adjacent to the field you're moving, release the mouse button.

The field you're moving is inserted to the left of the highlighted field if you're dragging left, or to the right if you're dragging right.

Dividing a List Window into Panes

When you have a large Database document with many fields and records, it can be time-consuming to scroll back and forth to compare information in entries that are far apart. To make it easier for you to look at your information, Works provides split bars that divide a list window into panes. The two panes on either side of the vertical split bar scroll horizontally. The two panes above and below the horizontal split bar scroll vertically. Dividing a window into panes lets you hold one pane stationary on the screen while you scroll through another pane to find particular information.

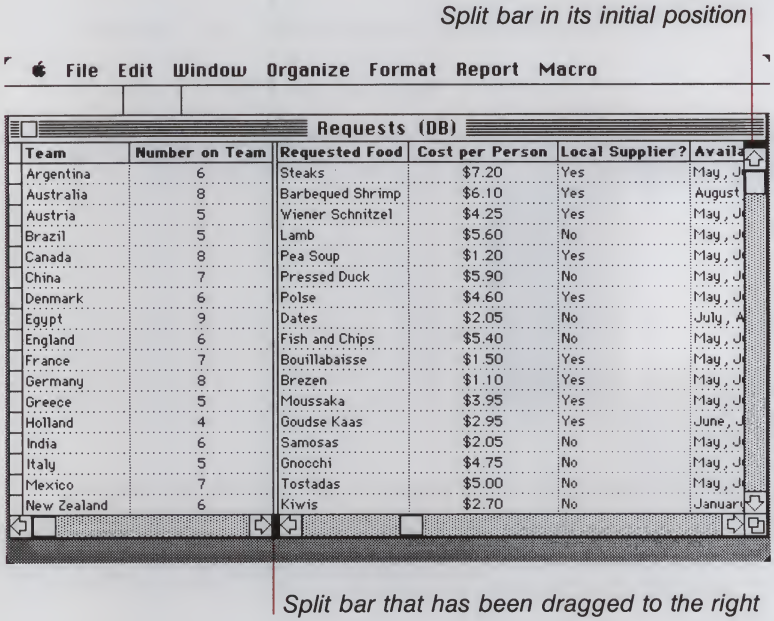
To divide the window into two panes

You can divide the window into both side-by-side and top-and-bottom panes.

1 Position the pointer on either the horizontal or vertical split bar.
The pointer turns into a two-way arrow.

2 Drag the split bar until it lines up with the right edge of the field or the bottom edge of the record at which you want to divide the Database document.

When you release the mouse button, the list window divides into two panes.

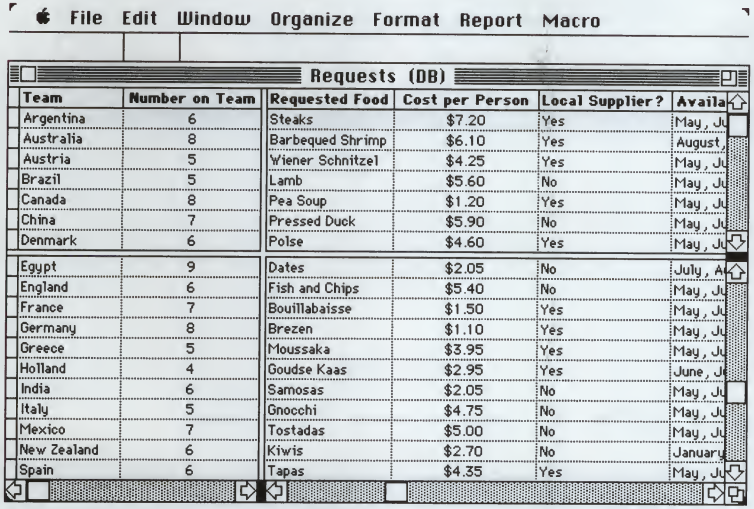


To divide the window into four panes

With four panes, you can see even more parts of a Database document at once because you can scroll each pane both vertically and horizontally.

To divide the window into four panes:

- Drag each split bar into the positions you want.



Team	Number on Team	Requested Food	Cost per Person	Local Supplier?	Availa
Argentina	6	Steaks	$7.20	Yes	May, Ju
Australia	8	Barbequed Shrimp	$6.10	Yes	August,
Austria	5	Wiener Schnitzel	$4.25	Yes	May, Ju
Brazil	5	Lamb	$5.60	No	May, Ju
Canada	8	Pea Soup	$1.20	Yes	May, Ju
China	7	Pressed Duck	$5.90	No	May, Ju
Denmark	6	Polse	$4.60	Yes	May, Ju
Egypt	9	Dates	$2.05	No	July, A
England	6	Fish and Chips	$5.40	No	May, Ju
France	7	Bouillabaisse	$1.50	Yes	May, Ju
Germany	8	Brezen	$1.10	Yes	May, Ju
Greece	5	Moussaka	$3.95	Yes	May, Ju
Holland	4	Goudse Kaas	$2.95	Yes	June, Ju
India	6	Samosas	$2.05	No	May, Ju
Italy	5	Gnocchi	$4.75	No	May, Ju
Mexico	7	Tostadas	$5.00	No	May, Ju
New Zealand	6	Kiwis	$2.70	No	January
Spain	6	Tapas	$4.35	Yes	May, Ju

Now you have four scroll bars. Each scroll bar controls the two panes that are in line with it. For example, the upper scroll bar controls the two upper panes, and the left scroll bar controls the two left panes. Otherwise, the scroll bars work normally.

To close a pane

To close a pane:

- Drag the split bar back to the far left or upper edge of the pane.

Inserting a Record

To insert a record

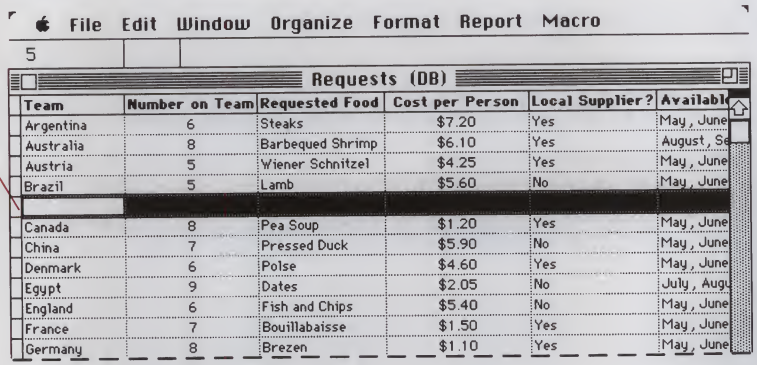
You can add a new record between other records, in both a list and a form window.

To insert a record:

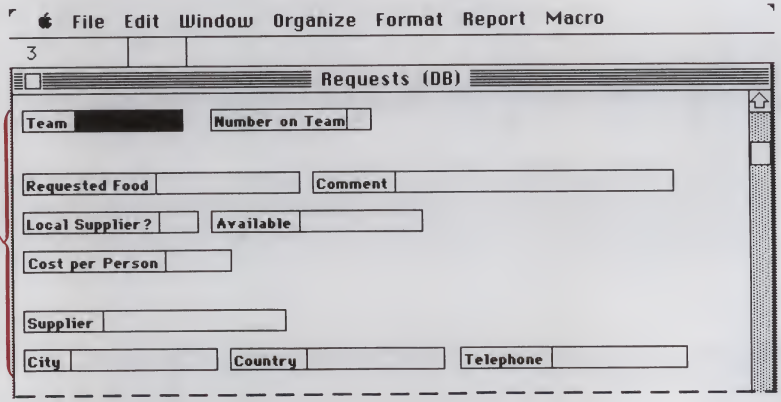
1. Select a record in a list window, or scroll to a particular record in a form window.
2. Choose Insert Record from the Edit menu.

Works inserts a blank record before the selected or displayed record.

New blank record inserted in a list window



New blank record inserted in a form window



Showing the Grid

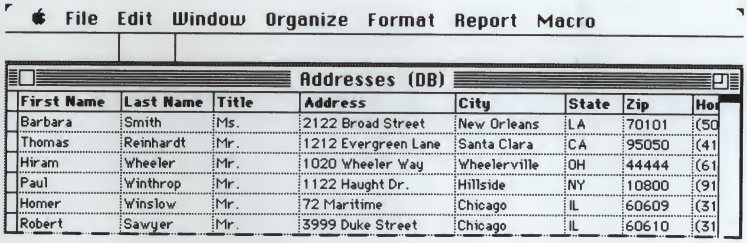
To show or hide the grid

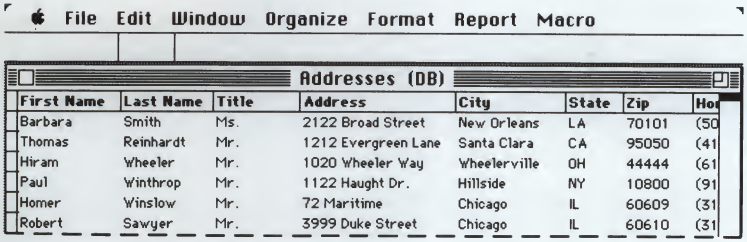
In a list window, lines separate each column and row. You can choose to turn this grid on or off. If Show Grid is checked in the Format menu, Works displays the grid. If Show Grid is not checked, Works doesn't display the grid.

To show the grid, if Show Grid is not already checked:

- Choose Show Grid from the Format menu.

To remove the grid, choose Show Grid again.
Here's how each choice looks:





Copying Information

You can copy individual records, fields, or entries, and blocks of records, fields, or entries. Copying within and between documents saves you from having to retype similar information. For example, if you have ten people in your address book who live in Seattle, Washington, you can type the city and state once, and copy the rest. Although you can copy in both list and form windows, it's easier in a list window, because you can copy multiple records at once.

To copy a record

Some records are only slightly different from one another. To save time and typing, you can copy one of these records and change the copies where necessary.

To copy a record:

1. Make sure you're in a list window.
2. Click the record selector box at the left of the record you want to copy.
3. Choose Copy from the Edit menu.
4. Select the row where you want the copy to go.
5. Choose Paste from the Edit menu.

Works inserts a new row containing the copied information above the selected row, and moves the following records down to accommodate the new one.

To copy an entry

There are times when you'll want two or more records to have the same entry for a particular field. To copy an entry into the same field of the next record:

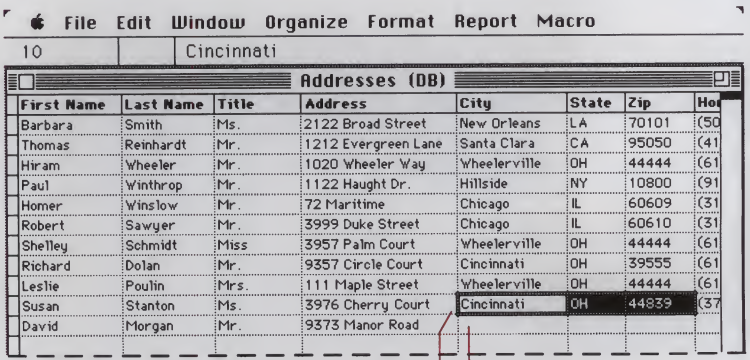
1. Select the entry below the one you want to copy.
2. Press Command+"
   Works displays the copied information in the entry bar.
3. Click the enter box or press the Return key.

Works copies the information into the selected entry.

To make multiple copies of an entry

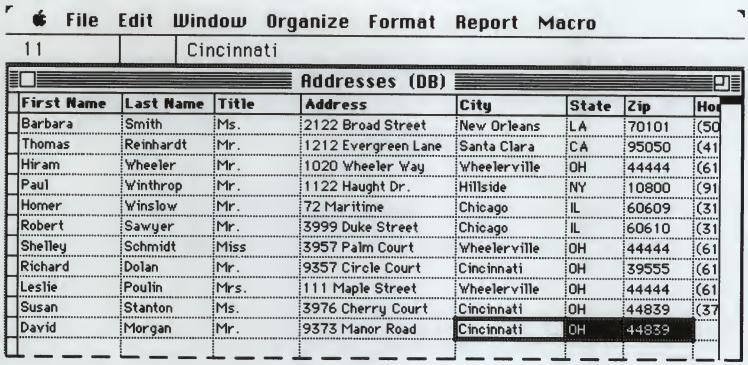
To make multiple copies of an entry or block of entries:

1. Make sure you're in a list window.
2. Select the entries you want to copy.



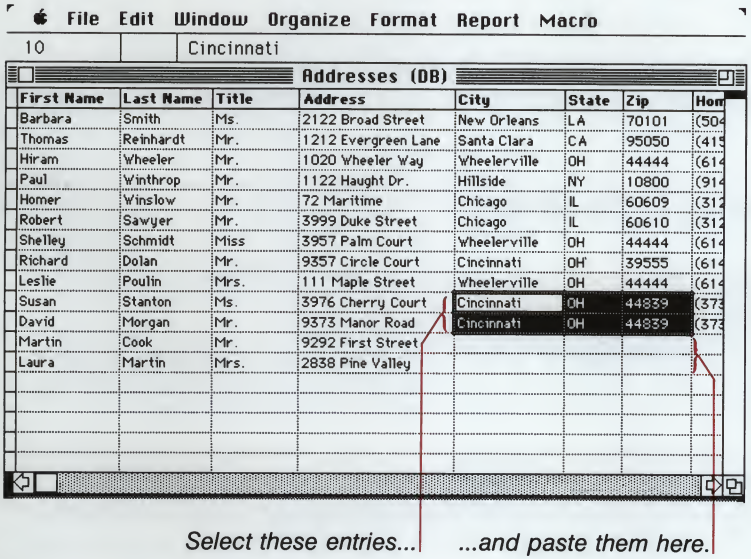
3. Choose Copy from the Edit menu.
4. Select the entries to receive the copy.
5. Choose Paste from the Edit menu.

Works fills in the selected entries with a copy of the information.



First Name	Last Name	Title	Address	City	State	Zip	Hor
Barbara	Smith	Ms.	2122 Broad Street	New Orleans	LA	70101	(50
Thomas	Reinhardt	Mr.	1212 Evergreen Lane	Santa Clara	CA	95050	(41
Hiram	Wheeler	Mr.	1020 Wheeler Way	Wheelerville	OH	44444	(61
Paul	Winthrop	Mr.	1122 Haught Dr.	Hillside	NY	10800	(91
Homer	Winslow	Mr.	72 Maritime	Chicago	IL	60609	(31
Robert	Sawyer	Mr.	3999 Duke Street	Chicago	IL	60610	(31
Shelley	Schmidt	Miss	3957 Palm Court	Wheelerville	OH	44444	(61
Richard	Dolan	Mr.	9357 Circle Court	Cincinnati	OH	39555	(61
Leslie	Poulin	Mrs.	111 Maple Street	Wheelerville	OH	44444	(61
Susan	Stanton	Ms.	3976 Cherry Court	Cincinnati	OH	44839	(37
David	Morgan	Mr.	9373 Manor Road	Cincinnati	OH	44839	

Now you can select these two blocks of entries to copy and paste into the next two records.



First Name	Last Name	Title	Address	City	State	Zip	Hom
Barbara	Smith	Ms.	2122 Broad Street	New Orleans	LA	70101	(504
Thomas	Reinhardt	Mr.	1212 Evergreen Lane	Santa Clara	CA	95050	(415
Hiram	Wheeler	Mr.	1020 Wheeler Way	Wheelerville	OH	44444	(614
Paul	Winthrop	Mr.	1122 Haught Dr.	Hillside	NY	10800	(914
Homer	Winslow	Mr.	72 Maritime	Chicago	IL	60609	(312
Robert	Sawyer	Mr.	3999 Duke Street	Chicago	IL	60610	(312
Shelley	Schmidt	Miss	3957 Palm Court	Wheelerville	OH	44444	(614
Richard	Dolan	Mr.	9357 Circle Court	Cincinnati	OH	39555	(614
Leslie	Poulin	Mrs.	111 Maple Street	Wheelerville	OH	44444	(614
Susan	Stanton	Ms.	3976 Cherry Court	Cincinnati	OH	44839	(373
David	Morgan	Mr.	9373 Manor Road	Cincinnati	OH	44839	(373
Martin	Cook	Mr.	9292 First Street				
Laura	Martin	Mrs.	2838 Pine Valley				

Then you can select the four identical blocks of entries and copy and paste them into the next four records. You can repeat this process to fill your records as often as you need to.

Making a Correction

To correct a typing mistake

When you find a typing mistake in an entry, you can correct it.

To correct a typing mistake:

1. Select the entry containing the mistake.
2. In the entry bar, put the insertion point to the right of the mistake.
3. Press the Delete key to back over the entry.
4. Type the correction.
5. Click the enter box or press the Enter key.

To replace selected text

When you select text in the entry bar, you can replace it by typing or by using the Cut, Copy, or Paste commands from the Edit menu.

To replace selected text by typing:

1. Select text in the entry bar by dragging across it.
2. Type the replacement, or press the Delete key to remove the whole selection.

   The text you type replaces the original text.
3. Click the enter box or press the Enter key.

The new text appears in the selected entry.

You can also select just one word of an entry in the entry bar by double-clicking it.

Removing Information

Works lets you remove information from a Database document in three different ways:

- Cutting takes information out of a Database document and puts it on the Clipboard. This is useful for cutting and pasting as well as for removing information. You can cut records, entries, and blocks of data.
- Clearing permanently removes records, fields, entries, or blocks. Cleared information does not go on the Clipboard.
- Deleting a field removes a field from the Database document, including the field name and all entries. This is useful for removing an entire field that you don't need anymore.

If you delete a field or cut or clear information, then decide you don't like the result, you can use Undo in the Edit menu to reverse your last command.

To cut information

If you cut a field or an entry, Works cuts the contents, but leaves a blank field or entry in its place. If you cut a record, Works removes the record and closes up the empty space.

To cut information:

1. Select the information you want to cut.
2. Choose Cut from the Edit menu.

Works takes the information out of the Database document and places it on the Clipboard. You can paste what you cut back into the Database document at a location you select.

To clear information

When you clear information, Works blanks the selected entries. If you clear a field, entry, or record, Works clears the contents, but leaves a blank field, entry, or record in its place.

To clear information:

1. Select the information you want to clear.
2. Choose Clear from the Edit menu.

Works removes the information from the Database document, but does not put it on the Clipboard. If you reconsider, choose the Undo command before you do anything else.

To delete a field

When you delete a field, Works removes it from the document and closes up the space it left behind.

To delete a field:

1. Select the field.
2. Choose Delete Field from the Edit menu.

The field disappears. If you decide you really don't want to delete the field after all, you can use the Undo command.

To paste the contents of the Clipboard

If you cut a selection, you can paste it back into a Database document at a location you select.

To paste the contents of the Clipboard:

1. Select a record or field, or the upper-left entry of a block of entries that you want to paste to.
2. Choose Paste from the Edit menu.

Works fills in the selected entries with the information from the Clipboard.

8 Organizing a Database Document

This chapter shows you how to organize a Database document so that you can find information easily.

You'll learn how to:

- Sort information. Put your information in alphabetical, numerical, or chronological order, backwards or forwards.
- Find information. Scroll to view those fields that contain the characters you specify.
- Match records. Quickly call up the records that contain the information you specify.
- Use record selection rules. Use up to six criteria to have Works show you records with specific information only.

By using record selection rules and then saving the selected records with another name, you can create subsets of your Database document. This chapter shows you how.

Sorting Information

If your records aren't in the order you want, you can sort them. Sorting arranges records in alphabetical, numerical, or chronological order, either backwards or forwards. You can sort on any field, in both form and list windows.

Sorting is more than just putting A before Z in your Database document. You can do successive sorts on different fields to group your records just the way you want them. Each sort is done individually by repeatedly choosing the Sort command.

For a multi-level sort, you first sort on the field you're least interested in. For example, to get an address list in order by last name and then by first name, you'd first sort on the first name field. For each level of a multi-level sort, Works retains the order of all previous sorts.

Multi-level sorting lets you presort a large mailing, for example. You can group the records in your mailing list in order by last name, first name, city, state, and zip code. When you put labels on your mass mailing, it will already be sorted by each of these categories.

To sort

Depending on the type of information a field contains, the Sort command in the Organize menu presents different options:

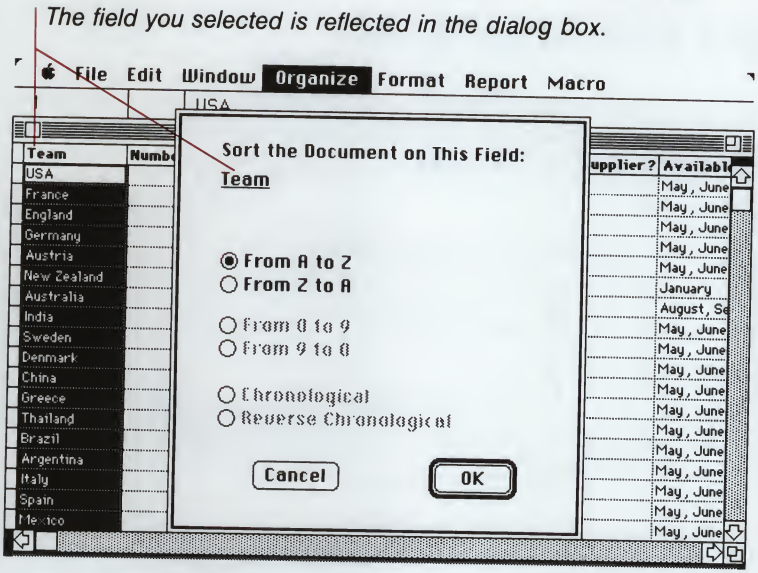
If you select this type of field	You can choose these options
Text	Alphabetical order or reverse
Numeric	Numerical order or reverse
Date or Time	Chronological order or reverse

Note There are some instances when you may want to put numbers into a text field rather than into a numeric field. Zip codes are a good example. Numeric fields can't show leading zeroes (in zip codes like 08080). They also subtract the two halves of nine-digit zip codes (like 98073-0808). For these reasons, a field containing zip codes should usually be text.

To create a text field, type =" in the entry bar before typing the number.

To sort information:

1. Select the first field you want to sort on.
   You can either click the field name or select any number of entries in a field to select the field to sort on.
2. Choose Sort from the Organize menu.
   Works tells you which field you're sorting on, and gives you a choice of sorting sequences.

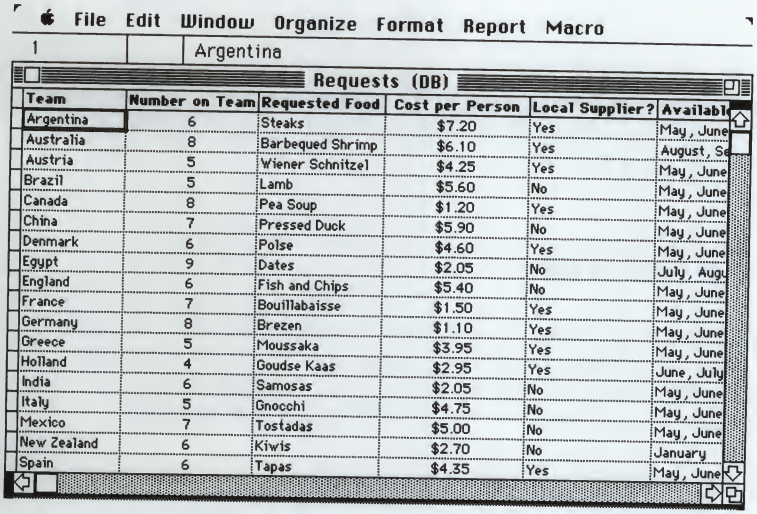


3 Click the appropriate sequence.

4 Click the OK button.

Works sorts the entire document based on the field you specified.

In this example, the sorted document looks like this:



Team	Number on Team	Requested Food	Cost per Person	Local Supplier?	Available
Argentina	6	Steaks	$7.20	Yes	May, June
Australia	8	Barbequed Shrimp	$6.10	Yes	August, Se
Austria	5	Wiener Schnitzel	$4.25	Yes	May, June
Brazil	5	Lamb	$5.60	No	May, June
Canada	8	Pea Soup	$1.20	Yes	May, June
China	7	Pressed Duck	$5.90	No	May, June
Denmark	6	Polse	$4.60	Yes	May, June
Egypt	9	Dates	$2.05	No	July, Augu
England	6	Fish and Chips	$5.40	No	May, June
France	7	Bouillabaisse	$1.50	Yes	May, June
Germany	8	Brezen	$1.10	Yes	May, June
Greece	5	Moussaka	$3.95	Yes	May, June
Holland	4	Goudse Kaas	$2.95	Yes	June, July
India	6	Samosas	$2.05	No	May, June
Italy	5	Gnocchi	$4.75	No	May, June
Mexico	7	Tostadas	$5.00	No	May, June
New Zealand	6	Kiwis	$2.70	No	January
Spain	6	Tapas	$4.35	Yes	May, June

Repeat the procedure for any other fields you want to sort on.

Finding Information Quickly

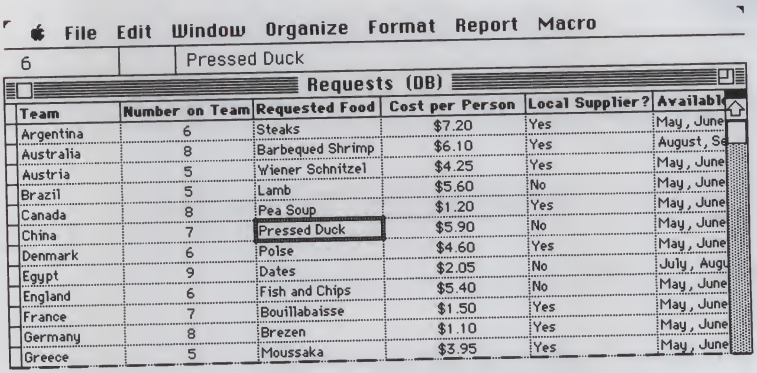
To find information quickly

Sometimes you need to locate specific information in a Database document. For example, suppose you want to find the entries in the Requests sample document that mention "Pressed Duck."

To find the entries:

1. Choose Find Field from the Organize menu.
   Works displays a dialog box.
2. In the text box, type the information you're looking for.
3. Click the Find Next button.

Works highlights the first entry that contains your information. When Works looks for the information, it searches all fields in one record, then searches the next record, and so on.



Team	Number on Team	Requested Food	Cost per Person	Local Supplier?	Availabl
Argentina	6	Steaks	$7.20	Yes	May, June
Australia	8	Barbequed Shrimp	$6.10	Yes	August, Se
Austria	5	Wiener Schnitzel	$4.25	Yes	May, June
Brazil	5	Lamb	$5.60	No	May, June
Canada	8	Pea Soup	$1.20	Yes	May, June
China	7	Pressed Duck	$5.90	No	May, June
Denmark	6	Polse	$4.60	Yes	May, June
Egypt	9	Dates	$2.05	No	July, Augu
England	6	Fish and Chips	$5.40	No	May, June
France	7	Bouillabaisse	$1.50	Yes	May, June
Germany	8	Brezen	$1.10	Yes	May, June
Greece	5	Moussaka	$3.95	Yes	May, June

To continue finding entries that contain the information you specified, choose Find Field again. The characters you typed will still be in the text box, so you just click the Find Next button.

Matching Records

The Match Records command is a shortcut to seeing a subset of a Database document. You type a few characters or words and let Works match the records that contain that information. When Works is done, you will be looking at only those records that contain the information you specified.

To find matching records

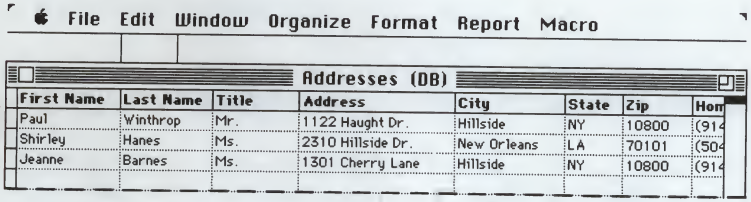
You don't have to type an entire word or number — just enough information to begin a match, like "Chi" when you're searching for records containing "Chicago".

Suppose you want to find all the records that contain the word "Hillside" in the Addresses Database document:

1. Choose Match Records from the Organize menu.
   Works displays a dialog box.
2. In the text box, type the information you want Works to look for. For this example, you would type *Hillside*
3. Click the OK button.

Works displays any records that contain your information. If Works can't find the information, an alert box is displayed, and you can try again.

All records that contain Hillside



With the Match Records command, you can scroll displayed records and view them in a form window. You can also cut, copy, or clear the information, remove the grid, and print the window.

To see all records

To be able to see all the records and use other Database commands, you must go back to the full Database document.

- Choose Match Records again to remove the checkmark on the menu.

Works displays all your records and makes all Database commands available.

Using selection rules

Using Selection Rules

When you're looking for very specific information, you can set up record selection rules. Works follows your selection rules as it searches for the information you want. Then Works shows you only those records that meet your selection rules. Selection rules are especially useful when you want to print your information in a report.

How Selection Rules Work

Record selection rules aren't as complicated as they may sound. You go through a record selection process yourself when, for example, you look in your address book for people who work in San Diego. You tell yourself, "Look for people who are business associates and work in San Diego." Or, in the language of selection rules: "Type" field contains Business, and "Location" field contains San Diego.

In the same way, you use selection rules in Works to find information that meets your criteria, usually to make some sort of decision. For example, the auditor of a department could have Works find all months in which the department director spent over the allotted $300 per month and months in which the director traveled frequently, to see the impact of travel on the budget.

Parts of a selection rule

A record selection rule is made up of three components: a field name, a comparison phrase, and some record comparison information. The field name corresponds to a field in the active Database document. The comparison phrase comes from the following list:

- equals
- is greater than
- is greater than or equal to
- is less than
- is less than or equal to
- is not equal to
- is blank
- is not blank
- contains
- begins with
- ends with
- does not contain
- does not begin with
- does not end with

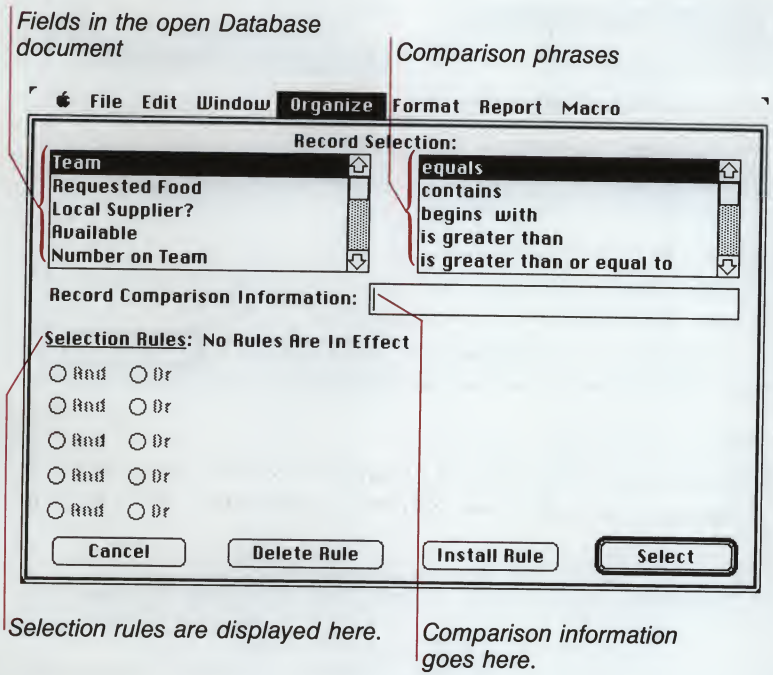
For text fields, all of the above phrases are available. For numeric, date, or time fields, the first eight phrases are available.

You type the record comparison information that Works will use.

To make a simple selection rule

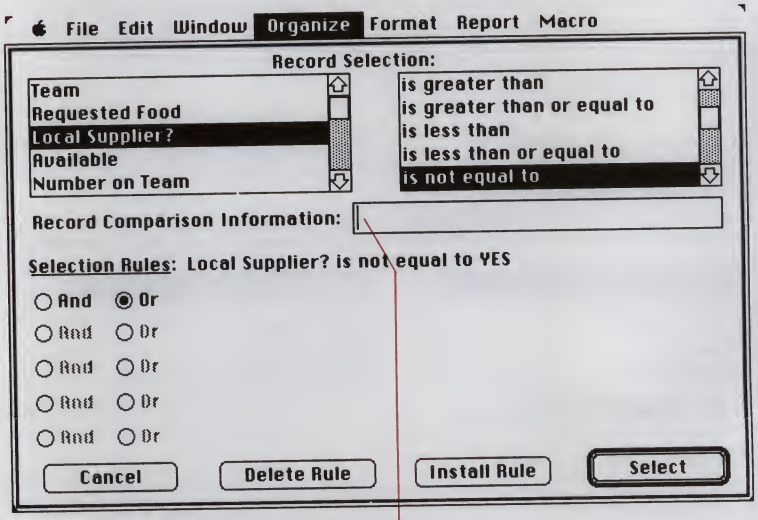
To make a simple record selection rule:

1. Choose Record Selection from the Organize menu.
   A dialog box appears containing the fields in your Database document, a list of comparison phrases, and a box in which to type record comparison information.



2. From the left box, select the field you want Works to use in the comparison.
   You may have to scroll to see all the fields in the box.
3. From the right box, select the appropriate comparison phrase.
   You will need to scroll to see all the phrases.
4. Type the record comparison information in the space provided.

5 Click the Install Rule button.
Works displays the completed selection rule.



After you click Install Rule, Works blanks out the Record Comparison Information box, so you can type something else for the next rule.

6 Click the Select button to have Works find the records that meet your selection rule.

Works searches through your Database document looking for records that match up. It then displays just those records. If Works doesn't find matches, it displays an alert box.

When you're looking at selected records, you see a subset of the total Database document. The rest of the records are still in memory.

If you want to look at all your records again, choose Show All Records from the Organize menu. If you'd like to turn your selection into a separate Database document, see "Saving a Selection with a Different Name" at the end of this chapter. You might want to do this if you made a selection in order to give someone a subset of your Database document, or to make mailing labels from a subset of your document.

Setting Up More Complex Rules

Setting up more complex rules

A single selection rule helps to find information — but with Works, you can be much more specific. Connectors ("And" and "Or") let you link together up to six selection rules.

Using connectors

After you set up a single selection rule, but before you carry out the selection with the Select button, Works presents you with these two connectors to choose from:

- **And** lets you link together multiple selection rules. Each additional rule eliminates more of the records in your Database document, so you zero in on the ones you need. When you use "And" between two selection rules, Works selects only those records that satisfy both rules.
- **Or** lets you choose between multiple selection rules. If a record doesn't match the first rule, it might match the second or third.

You can use these connectors separately or in combination. For example, a developer examining real estate holdings in El Paso might use selection rules like these:

Location equals El Paso
And Type equals Shopping Center
Or Location equals El Paso
And Type equals Residential

These rules eliminate all other properties, such as office buildings or hotels, and all properties not in El Paso. Notice that the following set of rules would not produce the same result:

Location equals El Paso
And Type equals Shopping Center
Or Type equals Residential

Because the "And" connector takes precedence over the "Or" connector, this set of rules would select records containing shopping centers in El Paso, and all residential properties (regardless of location).

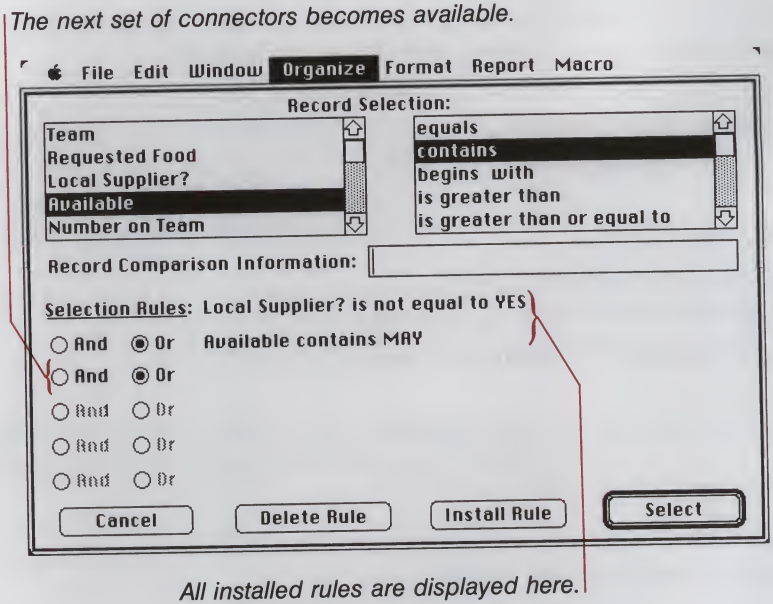
You can also use connectors to extend a comparison, setting up a range of items, rather than a single item, to match. An example of a range is:

Sales are greater than $100,000
And Sales are less than $1,000,000

To add further rules

To add further rules to your original rule:

1. If you already clicked the Select button after installing your first rule, choose Record Selection from the Organize menu again. Otherwise, you're ready to add another rule.
2. Click And or Or.
3. Select a field name.
4. Select a comparison phrase.
5. Type the comparison information.
6. Click the Install Rule button.



You can continue to add rules in this manner until the dialog box is full. When you're done, click the Select button to select the records that match your selection rules.

Changing Your Mind

If you make a mistake or decide not to make a particular selection, or if you just want to see all the records, you can cancel the record selection rules or make new ones.

To change part of a rule

Until you click the Install Rule button, you can change any part of your rule.

To change part of a rule:

- Select different items from the list boxes or type new comparison information before you click the Install Rule button.

To remove a rule

To remove a rule after you click the Install Rule button:

- Click the Delete Rule button.

Works erases the last installed rule. You can repeat this step for as many rules as you have.

To see all records

To see all of your records:

- Choose Show All Records from the Organize menu.

Saving a Selection with a Different Name

If you have a main Database document that you use to store most of your information, you can create several smaller documents from it. The smaller documents would contain subsets of the information in the main Database document.

For example, a subset of a customer list might contain shipping addresses for the northeast region. If you save the northeast region data alone in another file, you can print mailing labels for northeast customers using a form in the Word Processor. For more information, see Chapter 21, "Merging: Creating Mailing Labels, Form Letters, and Forms."

To create a subset

To create a subset of a Database document:

1. Use the Record Selection command from the Organize menu to display only the records you want to include in the smaller document.
2. Delete any fields you don't need in the smaller document.
3. Choose Save As from the File menu.

   The Save As dialog box appears, giving you a chance to save the information with a different name or on a different disk.
4. Type a new name for the smaller Database document.
5. Click the Save Selected Records Only option.
6. Switch to another disk, if you want.
7. Click the Save button.

Works saves the smaller Database document with the name you just typed. The original document remains safely on the disk, unchanged. If you want to work with the new subset of data, you need to open the new file.

Note This is a special case for the Save As command in which the newly saved document does not replace the existing document on the screen. This lets you save subsets of a large Database document without affecting the data currently in memory.

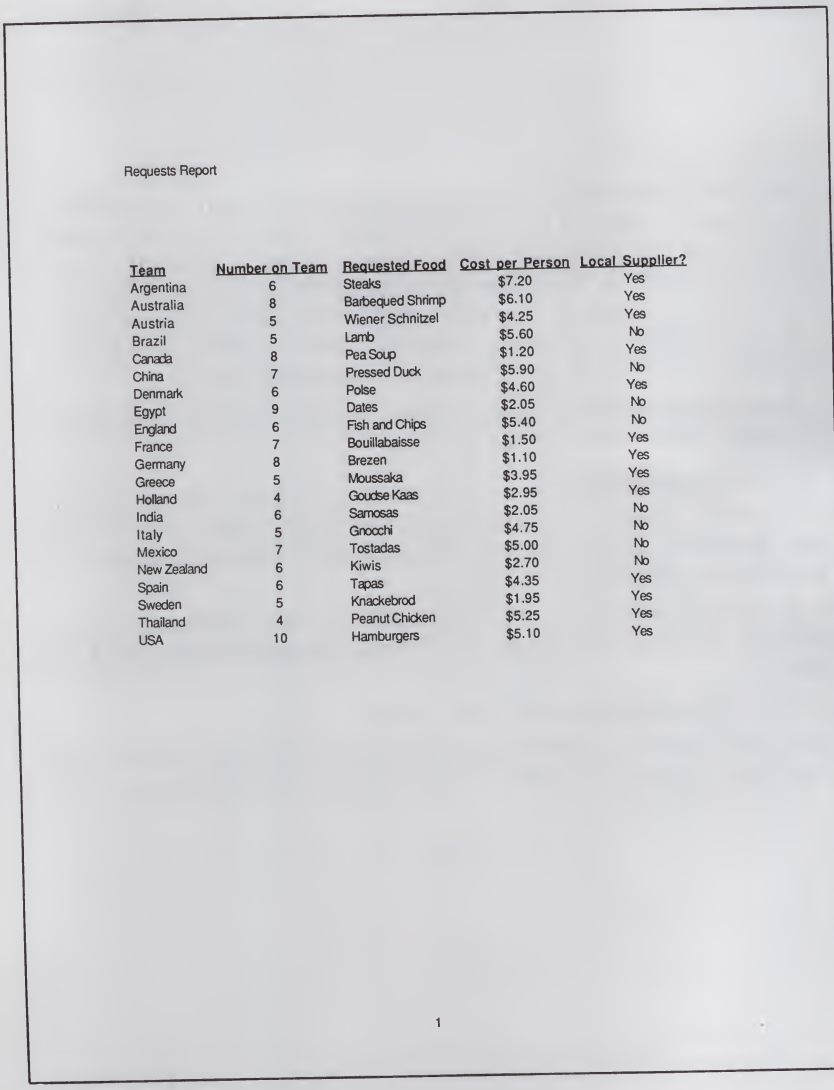
9 Making a Report

You print information from a Database document in a report. To print a report, you need to first set up a report definition. This definition specifies the contents and format of a particular report. A report is a printed listing, in tabular form, of either a selected subset of information in a Database document, or all the information. You can set up several different report definitions for each Database document, depending on the information you need, by selecting certain records or including only particular fields.

This chapter explains how to set up a report definition and use reports with the Database. You'll learn how to:

- Set up a report definition in a report window, including specifying fields to be totaled. You'll also learn how to store the definition with the Database document, so you can print updated reports without having to set up a new report definition each time.
- Copy subtotals and totals to the Clipboard to review the numbers before printing, or to use the numbers in a Word Processor or Spreadsheet document.
- Prepare your information and print a report.
- Work with reports by selecting and changing a previously defined report. You'll also learn how to duplicate and delete a report definition.

A report prints a table of information, with a record on each row, like this:



Requests Report

Team	Number on Team	Requested Food	Cost per Person	Local Supplier?
Argentina	6	Steaks	$7.20	Yes
Australia	8	Barbequed Shrimp	$6.10	Yes
Austria	5	Wiener Schnitzel	$4.25	Yes
Brazil	5	Lamb	$5.60	No
Canada	8	Pea Soup	$1.20	Yes
China	7	Pressed Duck	$5.90	No
Denmark	6	Polse	$4.60	Yes
Egypt	9	Dates	$2.05	No
England	6	Fish and Chips	$5.40	No
France	7	Bouillabaisse	$1.50	Yes
Germany	8	Brezen	$1.10	Yes
Greece	5	Moussaka	$3.95	Yes
Holland	4	Goudse Kaas	$2.95	Yes
India	6	Samosas	$2.05	No
Italy	5	Gnocchi	$4.75	No
Mexico	7	Tostadas	$5.00	No
New Zealand	6	Kiwis	$2.70	No
Spain	6	Tapas	$4.35	Yes
Sweden	5	Knackebrod	$1.95	Yes
Thailand	4	Peanut Chicken	$5.25	Yes
USA	10	Hamburgers	$5.10	Yes

1

For information on other ways to print Database information, see Chapter 21, "Merging: Creating Mailing Labels, Form Letters, and Forms."

Before You Begin

Working in a report window

Before you open a report window and start defining a report, you should understand the relationship between report definitions and the open Database document. When you choose New Report from the Report menu, Works opens a window displaying a report definition that consists of selection rules, the order and width of fields, and field sums.

When you choose New Report to create a new report, the initial information in the report window comes from the open Database document. Changes you make to the report definition will not affect the Database document itself. This feature allows you to define numerous independent reports, each containing different information.

Since the initial values for a report definition are taken from the open Database document, you can set up initial record selection rules and field widths for a report definition in either a list window or a report window.

Setting up a new report definition

To set up a new report definition, you'll choose the New Report command and follow these steps:

- Specify headers and footers, paper size, printing orientation, and margins with the Page Setup command from the File menu.
- Create or review any record selection rules, and make any necessary changes.
- Size and arrange fields, and specify which fields to print by changing the right margin in the Report window.
- Specify any fields to sum, using the TotalsPage menu.
- Specify when to subtotal groups of records, using the TotalsPage menu.
- Specify when to start a new page after a subtotal, using the TotalsPage menu.
- Specify whether or not to print a grid, using the Format menu.
- Give the report a new title if you want.

All of this information makes up your report definition. The rest of this chapter details the procedures.

Setting Up a Report Definition

A report definition tells Works what information to print from a Database document. You use record selection rules to choose just the records that meet the criteria for your report. For example, if you're looking at credit ratings for customers, you can print a report of just those customers whose bills are 90 days past due.

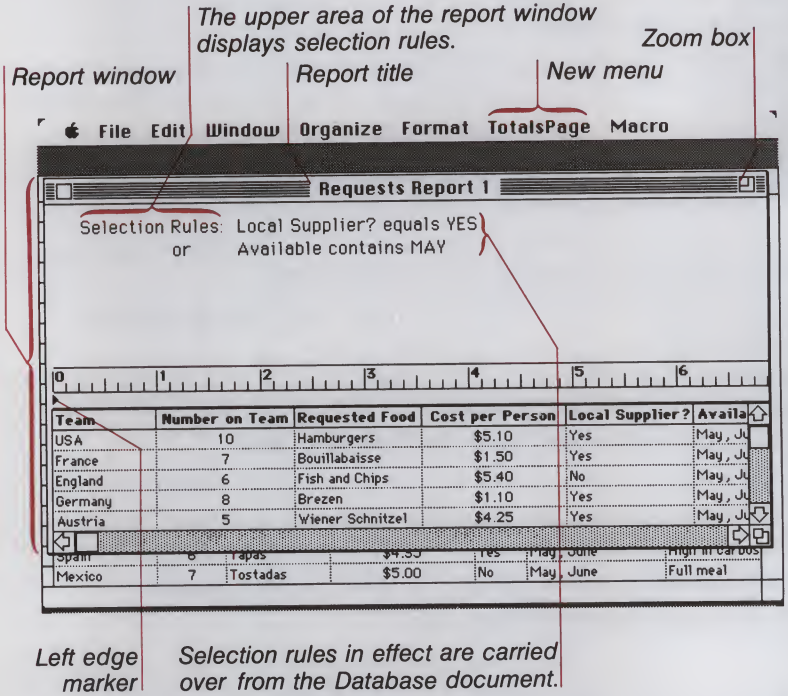
Because you might want to print several different reports from the same Database document, Works lets you store up to eight report definitions with each document. Whenever you want to print a report, you choose one of the report definitions and print the report.

To define a new report

To define a new report:

- Choose New Report from the Report menu.

Works displays the report window and adds the TotalsPage menu to the menu bar.



Once in a report window, you can set up selection rules. But you cannot use the mouse to select records or entries. You can select only individual fields. To change the selection from one field to another, just click the field name you want to select.

Setting Up Paper Size, Printing Orientation, Headers and Footers, and Margins

Use the Page Setup command from the File menu to set up your report page. Paper size, printing orientation, and margins determine the amount of information that can be printed for each record.

You will want to use wide orientation if you want to print more fields in your report than will fit on a standard 8-1/2″ x 11″ page.

You'll be able to see your right margin by looking at the right edge marker (a sideways triangle beneath the ruler) in the report window.

Works prints everything inside the right report margin. Anything outside the right report margin won't be included when you print your report.

The right margin is based on the page width and right margin set in the Page Setup dialog box. To print the fields you want, change the right margin by dragging the right marker in the report window.

Note You can't move the right margin beyond the margin set in the Page Setup dialog box. For example, if page size is set at 8.5 inches, and your right margin is 1 inch, you won't be able to move the triangle beyond 7.5 inches. To decrease your right margin, change the settings in the Page Setup dialog box.

For complete information about using the Page Setup command, see "Page Setup" in Chapter 2.

Arranging the Fields to Print

When preparing a report definition, you decide what order to put the fields in and which fields to include in the printed report. Once you have made these decisions, you may need to either adjust some field widths or adjust the margins of your report.

Before you begin, look at the report window and locate the edge markers. The two markers — sideways triangles — show you how wide your report will be. You determine where the left marker is when you set the left margin in the Page Setup dialog box. You can set the right marker in the Page Setup dialog box, or you can move it in the report window. When you print the report, fields, or parts of fields to the left of the right edge marker are included in the report.

To rearrange fields

You can rearrange the horizontal position of the fields to be printed.

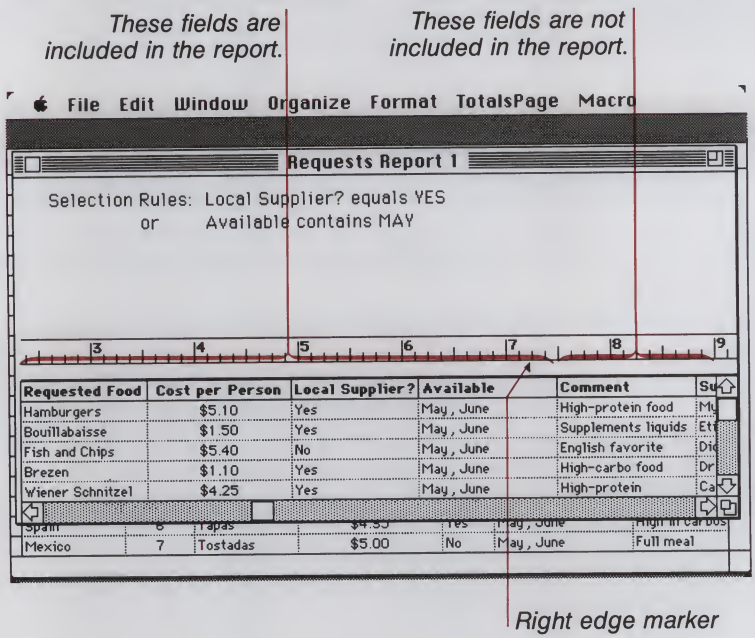
To rearrange fields:

- Drag the field name left or right until the field name of the field you want to be adjacent to is highlighted.

To move fields in and out of a report

If you have many fields in your Database document, some of them may not fit within the margins of your report. You can take unwanted fields out of a report in three ways:

- Rearrange the fields.
  If an unwanted field is in the report and a field you want to print is not, you can rearrange the fields so that the unwanted field is no longer inside the right margin.
- Drag the right edge marker to the left to leave out the unwanted fields.
  If the unwanted fields are to the right of the fields you want to print, you can drag the right edge marker to the left until the unwanted fields are outside the right margin.
- Widen the fields that you want to print.
  If the unwanted fields are to the right of the fields you want to print, you can drag the pointer on the right edge of the field name box to widen the fields you want to print.



Using the TotalsPage Menu

Your Database document might be enhanced by including totals that are sums of a column of numbers. For example, a payroll report might sum the total payroll. Works also lets you set up subtotals, such as payroll per department, in addition to the total payroll. With the TotalsPage menu in the Database, you can select fields to be totaled or subtotaled. You can review the totals before printing the report, and you can create summary documents with just this totals information.

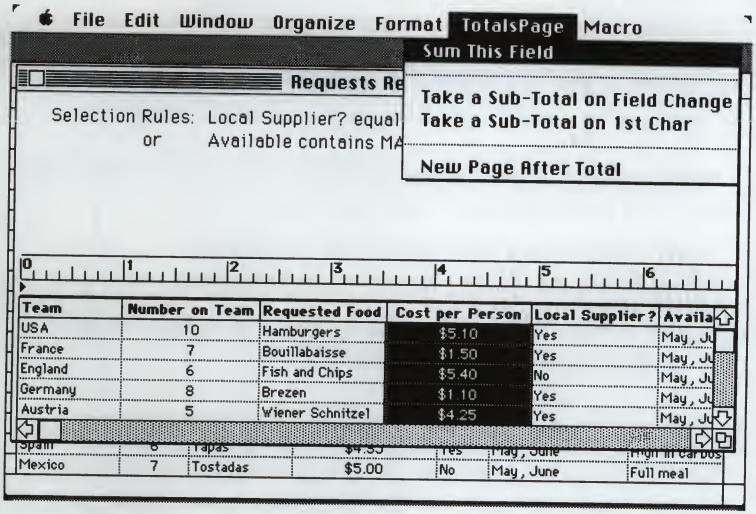
When you use the TotalsPage menu to specify totals, subtotals, or new pages, the commands in effect for a selected field are checked in the menu. To change your specifications, select the field and choose any command again to remove the checkmark.

The simplest total sums all the numbers in a field.

To total a field

To total a field:

1. Select a numeric field that you want totaled.
2. Choose Sum This Field from the TotalsPage menu.



The total for that field will appear at the bottom of the field when you print the report.

For fields that you've specified to be totaled, you can also specify two kinds of subtotals. In both cases, you will get more meaningful results if you sort your records before specifying the subtotals.

To subtotal when field data changes

You can set up a report to print subtotals whenever there are changes in the contents of a specified key field. Many Database documents can be organized into divisions or groups. For example, payroll can be divided into departments. For a payroll Database document, you might want a subtotal whenever the department name changes. In this case, the field containing department names would be the key field.

Here's how to set up such a subtotal:

1. Select a numeric field that you want to subtotal. Just click the field name.
2. Choose Sum This Field from the TotalsPage menu.
3. Select the key field that you want the subtotals based on.
4. Choose Take a Sub-Total on Field Change from the TotalsPage menu.

When you print the report, Works will print a subtotal every time the key field's contents change. For example, in a payroll report, you'd get a subtotal after all the entries for Manufacturing, and another after all the entries for Sales, and so forth. Then, Works prints a grand total at the end of the report.

To subtotal when the first character in a field changes

You can also set up a report to print subtotals whenever the first character in a specified key field changes. For example, you might want to get subtotals for each group of records having an entry in the last name field beginning with the same letter, so that you subtotal A's, B's, C's, and so on.

To set up this kind of subtotal:

1. Select a numeric field that you want to subtotal. Just click the field name.
2. Choose Sum This Field from the TotalsPage menu.
3. Select the key field that you want the subtotals based on.
4. Choose Take a Sub-Total on 1st Char from the TotalsPage menu.

When you print the report, Works will print a subtotal each time the first character of the entries in the key field changes.

To print a new page after a subtotal

To make reports easy to read, you may prefer to start a new page after printing each subtotal. That makes a subtotal the last printed line on each page.

To start a new page after each subtotal, first complete either of the two procedures shown above for specifying subtotals. After you choose either Take a Subtotal on Field Change or Take a Sub-Total on 1st Char:

- Choose New Page After Total from the TotalsPage menu.

When you print the report, Works will skip to a new page after it prints each subtotal.

Printing with or without a Grid

Works normally prints a grid separating the records and fields in a report. If Show Grid is checked in the Format menu, Works displays and prints the grid. If Show Grid is not checked, Works doesn't display or print the grid.

To print the report without a grid, if Show Grid is checked:

- Choose Show Grid from the Format menu.

To print the grid, choose Show Grid again.

Changing Font, Size, and Color

To change font, size, and color

Works normally prints your report using a black 9-point Geneva font. If you want to change the font, size, or color, choose the appropriate command from the Format menu.

For more information on these commands, see "The Format Menu" in Chapter 2.

Font, size, and color changes affect all the data in the report. Each report can have a different font, size, and color. If you change the report's font or size, you may need to adjust your field widths or report margins.

Changing a Report Title

To change a report title

Works proposes a title for a report based on the name of the associated Database document. You can change this title at any time to make it more meaningful to you.

To change a report title:

1. From the report window, choose Change Report Title from the Edit menu.
2. Type a new name in the space provided.
3. Click the OK button.

Storing a Report Definition

After you have completed a report definition, you can choose to preview any subtotals or totals you may have specified (see the following section, "Previewing Report Totals"), print the report immediately, use the Window command to return to a list or form window, or close the report window. When you close the report window, Works stores the report definition with the associated Database document. When you later save the Database document, the report definition is saved along with it.

Previewing Report Totals

To preview totals before printing

After setting up your report definition, if you've specified fields to be summed, you can preview the totals and subtotals before you print the report.

To preview the totals:

- From the report window, choose Copy Totals from the Edit menu.
  Copy Totals is available only after you have specified at least one field to be summed.

When you specify subtotals with the Take a Sub-Total on Field Change command, Works copies the records containing subtotals and the grand total to the Clipboard. When you specify subtotals with the Take a Sub-Total on 1st Char command, Works copies the first record of each group to the Clipboard, substituting the subtotal of each entire group for the number related to each particular record. You can then open the Clipboard to see this information.

Note You can also preview the totals by selecting Print from the File menu, clicking the Print Preview option, and then clicking the OK button. If the totals are on another page, click Next until they come into view.

To create summary documents

If you use Copy Totals to copy data to the Clipboard, you can use the data just like anything else on the Clipboard. For example, you can paste the information into a Word Processor or Spreadsheet document to create a summary document containing just the totals information, without all the supporting numbers.

Printing a Report

To print a report

There are three stages in printing a report: preparing the information, opening a report window, and printing the report.

To prepare your information:

1. Open the Database file from which you want to print a report.
2. Sort the records so they appear in the order you want.
3. Review any formatting characteristics specified with the Set Field attributes command.

To open a report window:

1. Choose Select Report from the Report menu.
   The Select Report dialog box appears, containing a list of all reports that you've defined for the active Database document.
2. Select the name of the report that you want to print.
3. Click the OK button.
   Works displays the report window.
4. Make any changes to the definition.

To print the report:

1. Choose Print from the File menu.
2. Review the options to make sure they're all set as you want them, and make any necessary changes.
3. Click the OK button.

Works prints your report. If your printer is disconnected or you run out of paper, Works displays a message.

Working with Reports

Many businesses and professionals print regular revisions of reports — address lists, customer lists, or payment overdue lists, for example. The first time you define such a report may be the only time you need to, because you can select that same report definition each time you print the report. As long as your Database document contains the fields contained in the report definition, there's nothing else to worry about, even if the contents of the fields change completely.

It's easy to switch between a report window and a list or form window by using the Window and Report menus. Remember that any changes you make in the report window apply only to that report — they are not carried back into the list or form window. Each report can use its own set of record selection rules. This relationship also holds true for the order and width of fields, which can be adjusted in the report window with no effect on the Database document.

To select a previously defined report definition

To select a previously defined report definition:

1. Sort or rearrange records in the Database so they'll print in the desired order.
2. Choose Select Report from the Report menu.
   The Select Report dialog box appears. Any reports that you've defined for the active Database document appear in the box.
3. Click the name of the report definition that you want.
4. Click the OK button.

The menus change in the menu bar, and Works displays the report definition you've selected.

Changing a report

When a report definition window is active, you can change the definition or you can print the report as specified. For example, you can rearrange fields, change the selection rules, or add or change totals. The changes you make will be stored with the associated Database document. When you save the Database document, the report definition will be saved along with it.

Duplicating and Erasing Report Definitions

You may want to copy a previously defined report definition, rather than create another report definition from scratch that's only slightly different. You can have up to eight report definitions for any Database document. If you already have eight, you'll need to erase one definition in order to add another.

To duplicate a report definition

To duplicate a report definition:

1. In a form or list window, choose Duplicate Report from the Report menu.
2. Select the report definition you want to duplicate from the list.
3. Click the OK button.

Works duplicates the report definition, displays it in a report window, and gives it a name. The name of the report consists of the name of the Database document, the word "Report," and a number indicating how many reports are connected with that Database document. You can now make changes to the duplicate to create a new report.

To erase a report definition

To erase a report definition:

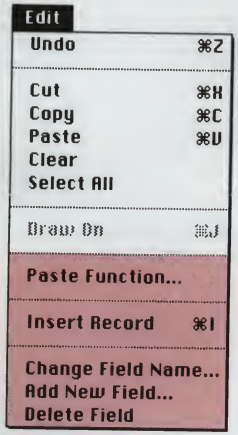
1. In a form or list window, choose Erase Report from the Report menu.
2. Select the report definition you want to erase.
3. Click the OK button.

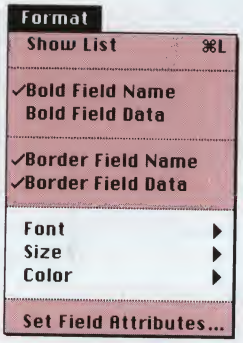
Works erases the report definition.

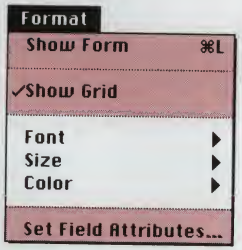
10 Database Command Reference

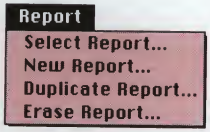
The Apple, File, Window, and Macros menus are identical for all Microsoft Works tools. For information on these menus, see Chapter 2, "Common Tasks Command Reference."

This chapter discusses all the shaded commands shown below.

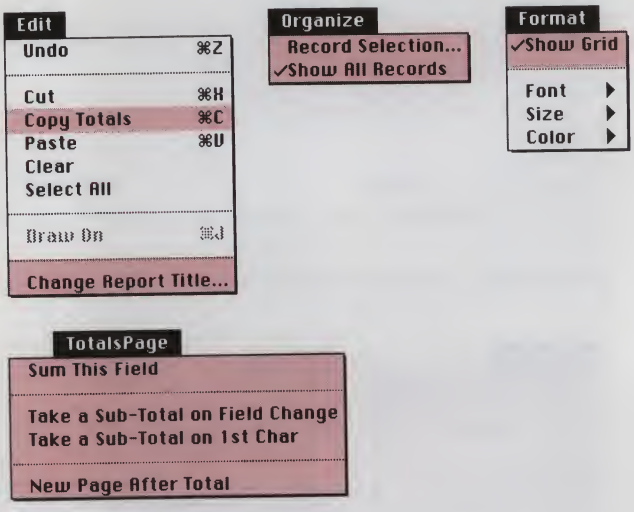








When the New Report command is chosen from the Report menu, the Edit and Organize menus contain additional commands, the Format menu changes, and the TotalsPage menu is added to the menu bar.



You can invoke some Works commands from the keyboard, as well as by using the mouse. The available Command+key combinations are shown in the menus and in Appendix D.

An alphabetical list of commands appears in the index under "Command."

The Edit Menu

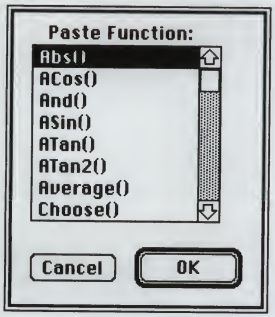
The first six commands in the Edit menu are common to all Works tools. For information on these commands, see "The Edit Menu" in Chapter 2.

This section explains additional Edit menu commands that are available in the Works Database.

Paste Function

The Paste Function command inserts a built-in function into the entry bar, if the selected field is a computed field. Computed fields are set using the Set Field Attributes command in the Format menu.

Select the field to contain the function. Click in the entry bar where you want to insert the function, and choose Paste Function. Works displays a list box, which contains a list of all available Works functions. You can use all Spreadsheet functions in the Database, except for functions that use ranges as arguments. For information on specific functions, see Chapter 15, "Spreadsheet and Database Functions."



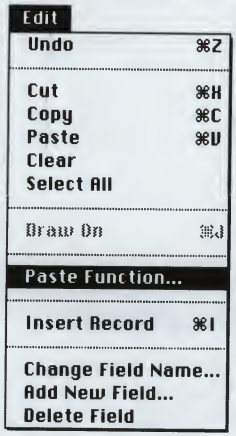
To paste a function, select the function you want from the list, and then click the OK button.

If the entry bar is inactive, Works activates it and pastes an equal sign (=), followed by the selected function. If the entry bar is active, Works pastes the function at the insertion point.

If you don't type an operator after the preceding operand, Works adds a plus sign (+) before the pasted function. Works also pastes the required parentheses, with the insertion point between them, so you can enter the function's arguments.

For information on specific functions, see Chapter 15, "Spreadsheet and Database Functions."

Paste Function

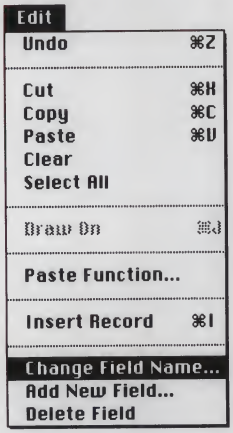


Insert Record

Insert Record

The Insert Record command inserts a blank record immediately before the selected record in a list window or before the record currently displayed in a form window. In a form window, the command is dimmed until you make a selection.

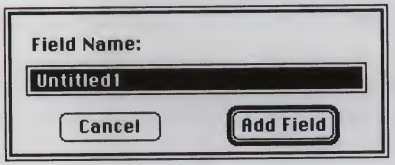
Change Field Name



Change Field Name

The Change Field Name command changes the name of a field.

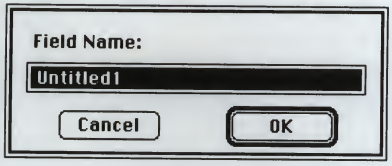
To change a field name, either select a field and choose Change Field Name, or double-click a field name in either a list or form window.



Type the new name in the Field Name box, then click the OK button.

Add New Field

The Add New Field command adds a new field to a list or form window.

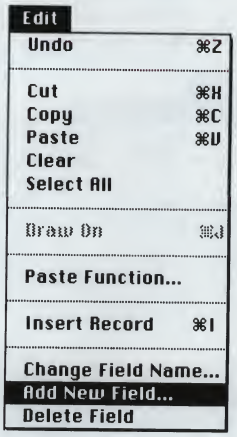


Type a name for the new field, then click the Add Field button.

In a list window, Works adds the field to the right of the rightmost field. In a form window, Works adds the field in the first blank area it finds that is large enough to accommodate a field.

In either kind of window, you can move the field wherever you want. You can add a field at any time.

Add New Field



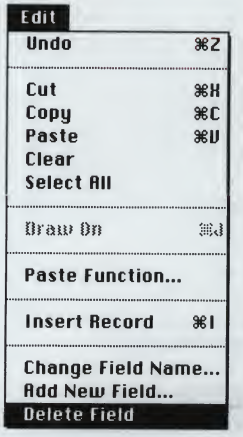
Delete Field

The Delete Field command deletes a field, including both the field name and the data in the field, for all records.

First, select the field to be deleted by clicking the field name. You can do this in either a list or form window. In a list window, Works highlights all the data in the field; in a form window, Works highlights the data for the displayed record. Then, choose Delete Field to delete the field.

You can undo Delete Field immediately after you use it with the Undo command from the Edit menu.

Delete Field

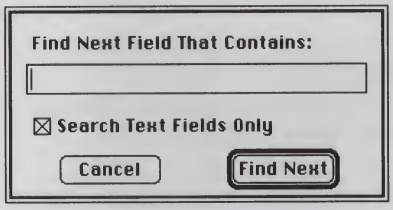


The Organize Menu

Find Field

The Find Field command finds and selects, one at a time, all fields in a Database document that contain a specified pattern of characters.

When you choose Find Field, Works displays a dialog box in which you can type the character pattern that you want to find.

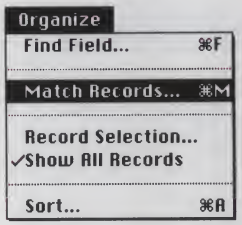


Find Next Field That Contains Type the character pattern you want to find.

Search Text Fields Only This is checked as a preset option. It speeds your search for text in a document containing many numeric, date, or time fields. If you want Works to look in all fields, click this option to remove the checkmark.

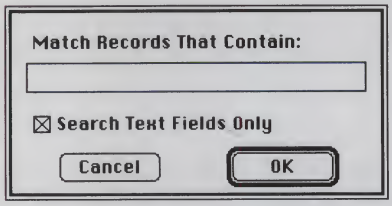
Click the Find Next button or press the Return key to start the search. Works selects the first entry that matches your criteria. To find the next and successive occurrences of the specified pattern, choose Find Field again. The text you typed will already appear in the text box, so you only need to click Find Next or press the Return key to restart the search and have Works select the next occurrence.

Match Records



The Match Records command finds and displays all records in a Database document that contain a specified pattern of characters anywhere in the record.

When you choose Match Records, Works displays a dialog box in which you can type the character pattern that identifies the records you want to find.



Match Records That Contain Type the character pattern you want to find.

Search Text Fields Only This is checked as a preset option. It speeds your search for text in a document containing many numeric, date, or time fields. If you want to look in all fields, click this option to remove the checkmark.

Click the OK button or press the Return key to start the search. Works displays only those records containing the pattern. To end the command and display all records again, choose Match Records again.

When you choose Match Records from a form window, Works displays the records in a form window, and you can scroll through them.

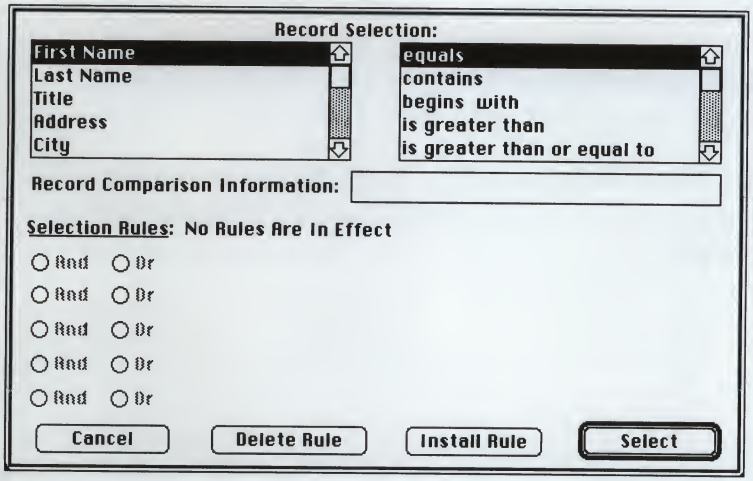
When you choose Match Records from a list window, Works displays the records in a list window, and you can scroll through them. If you double-click a record in the list, Works displays that record in a form window, and the Match Records command ends.

Record Selection

Record Selection

The Record Selection command defines up to six different selection rules by which records in a Database document are selected, and then finds and displays those records. You can then work with those records alone.

Record Selection is useful in preparing reports or in creating other smaller Database documents with the Save As command.



To use Record Selection, you build one or more selection rules by selecting a field and a comparison phrase, and entering record comparison information. In the list box on the left, select a field on which you want Works to base the record selection. If you have more fields in your document than can fit in the window, scroll the window until you see the field you want.

In the list box on the right, select the comparison phrase to use in your first record selection rule. Scroll the window to see all the available phrases. Notice that for text fields you have more phrases available than for numeric, date, or time fields.

Record Comparison Information Type the text of your comparison information to complete the record selection rule. Then click the Install Rule button.

If you want to extend your selection rules, or if you want to make your rule more specific, select a connector ("And" or "Or") from those below and to the left of the completed rule and repeat the process of selecting a field, selecting a comparison phrase, and entering comparison information.

You can have up to six record selection rules.

Click the Install Rule button (or press Command+I) to install each new selection rule. Before you click this button, be sure to review the components of your rule. You can make any changes you want, including pressing the Cancel button, until you click the Install Rule button. Thereafter, you'll need to delete the rule and start over to make any changes.

When you are satisfied with your selection rules, and want to find records based on them, click the Select button.

Click the Delete Rule button (or press Command+D) to delete the last rule you installed.

Click the Cancel button to leave the Record Selection rules as they were before you chose the command and to return to the original Database document.

If no records meet the rules you specify, Works displays an alert box.

To turn off these rules and display all the records, click Show All Records from the Organize menu.

Show All Records

The Show All Records command terminates the effect of the Record Selection command and displays all the records in a Database document in either a list or form window.

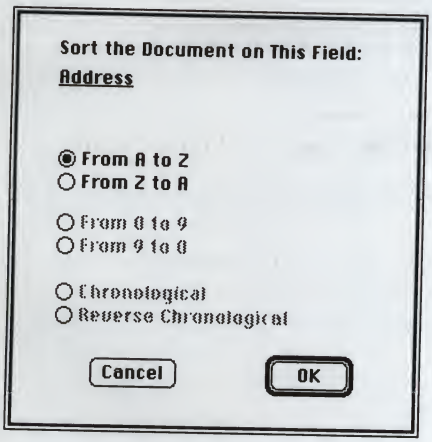
Show All Records

Sort

The Sort command arranges all the records in a Database document in order, based on the entries in a specified field.

To select the field you want to sort on, either click the field name, or select one or more entries in the field.

Sort



Click an option to select the sequence you want. Then click the OK button or press the Return key.

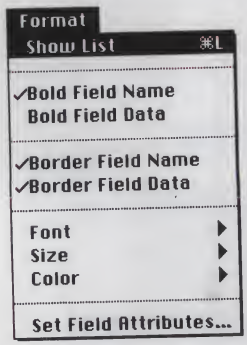
Note Each type of field — text, numeric, date, or time — has two possible sort orders: forward and reverse. For example, if you select a date field, the available options are Chronological and Reverse Chronological.

The Format Menu

Three commands in the Format menu — Font, Size, and Color — are common to all Works tools. For information on these commands, see "The Format Menu" in Chapter 2.

Show List/Show Form

Show List
Show Form



The Show List and Show Form commands tell Works what format to use in displaying your data.

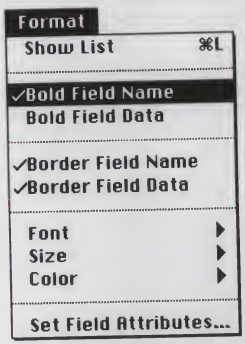
Choose Show List to view your data as a list of records in tabular form. This format allows you to see multiple records at the same time. If you have many fields, you may see only parts of records on your screen. To see other records or fields, use the scroll bars.

Choose Show Form to view your data as a form with one complete record displayed.

You can switch back and forth between these views at any time by choosing these commands from the menu. You can also switch views by double-clicking in the white space of a form window or in a record selector box in a list window. When you do the latter, the form window displays the record you selected. You can then scroll to see other records.

Bold Field Name/Bold Field Data

Bold Field Name
Bold Field Data

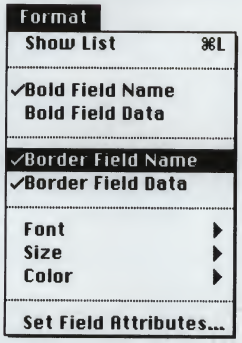


These commands display the field name, the field data, or both, in bold type in a form window.

Choose Bold Field Name to make the field name bold. Choose Bold Field Data to make the data in a field bold. When chosen, the commands are checked on the menu. Choose the command again to remove the checkmark.

Border Field Name/Border Field Data

Border Field Name
Border Field Data

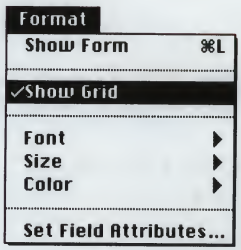


These commands display a border around the field name, the field data, or both, in a form window.

Choose Border Field Name to display the field name with a border. Choose Border Field Data to display the data in a field with a border. When chosen, the commands are checked on the menu. Choose the command again to remove the checkmark.

Show Grid

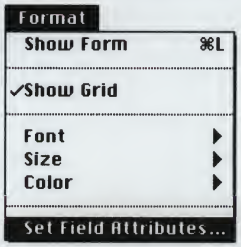
Show Grid



If the Show Grid command is checked in the Format menu, Works displays the grid lines in your Database document. If the command is not checked, Works does not display grid lines. This command is available in the list window and the report window.

Set Field Attributes

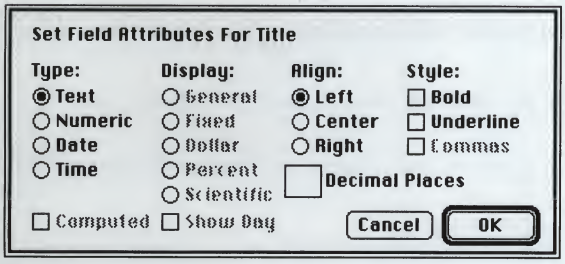
Set Field Attributes



The Set Field Attributes command specifies the attributes of field data. You can set field attributes in both a list window and a form window.

When you create a new field, the information in the field is treated as normal text, left-aligned.

To specify the field attributes, select a field and choose Set Field Attributes, or double-click an entry. Works then displays a dialog box.



Type Options

Text Field data can be any alphanumeric characters.

Numeric Field data must be numbers.

Date Field data must be entered in one of eight specified date formats. For more information, see "Changing the Format of a Field" in Chapter 7.

Time Field data must be entered in one of four specified time formats. For more information, see "Changing the Format of a Field" in Chapter 7.

Computed If you define your data as Numeric, Date, or Time, you can specify that the contents of a field are to be computed by arithmetic operations performed on numeric data in other fields.

Click Numeric, then click the Computed box. When you leave the dialog box, the insertion point, preceded by an equal sign (=), is placed in the entry bar. You can then type a formula.

Type a formula for a computed field using field names, numbers, and the following symbols:

Symbol	Meaning
+	Add
–	Subtract
–	Negate (if used with one operand only)
* (asterisk)	Multiply
/	Divide
( )	Group of operations
^	Raise to a power

You can include all functions available in the Spreadsheet in a computed field, except those that require ranges for arguments. For more information, see Chapter 15, "Spreadsheet and Database Functions."

Instead of typing field names into a formula, you can also click them.

Display Options

General Values are displayed as precisely as possible, given the width of the entry. Trailing zeros are not displayed.

Fixed Values are displayed with a fixed number of places to the right of the decimal point.

Works uses Fixed format for all Database values unless you specify otherwise.

The fixed number of decimal places is two, unless you change it using the Decimal Places option.

Dollar Values are displayed in dollars and cents format. Dollars are displayed to the left of the decimal point. Cents are displayed to the right of the decimal point with two digits, unless you change the number of digits using the Decimal Places option. A dollar sign ($) appears to the left of the most significant digit.

Negative numbers are enclosed in parentheses.

Type *0* in the Decimal Places box to display whole dollars with no decimal point. Type *2* to display dollars and cents.

The value is adjusted to the nearest whole dollar or whole penny, depending upon your choice of 0 or 2 decimals. For example, the value 9.505 is displayed as $10 if zero decimal places are specified; it is displayed as $9.51 if two decimal places are specified.

Percent The numeric value of an entry is multiplied by 100 and displayed with a percent sign (%) to its immediate right.

You can also specify the number of decimal places to be displayed in the percentage. The value .156, for example, is displayed as 15.6% if you type *1* in the Decimal Places box, and 16% if you type *0*.

Scientific Scientific notation allows you to express very large or very small numbers. In scientific notation, a numeric value has three parts: a decimal number in the form *n.nn*, the exponentiation symbol E or e, and an integer in the form ±*ii* for the exponent.

For example, the value 1,210 would be displayed as 1.21E+03, where 1.21 is the decimal number, E is the exponentiation symbol, and +03 is the exponent.

Show Day If you define your field type as Date, you can specify that the day of the week be displayed as well.

Decimal Places The number in this box specifies the number of digits to be displayed to the right of the decimal point, if you define a field as Fixed, Dollar, Percent, or Scientific.

The preset value is 2. Change this by typing a number from 0 to 15.

Align Options

These options allow you to align the contents of selected entries. All entries in the selected fields will be displayed as you specify here.

- Left
- Center
- Right

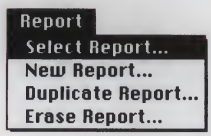
Style Options

These options allow you to change the style of your data. All entries in the selected fields will be displayed as you specify here.

- Bold
- Underline
- Commas: This option is available only for numeric fields.

The Report Menu

Select Report



Select Report

The Select Report command selects a previously defined report definition. Once it's selected you can make changes to it or print the report. If you change the selection rules, these changes will be saved automatically along with the report definition.

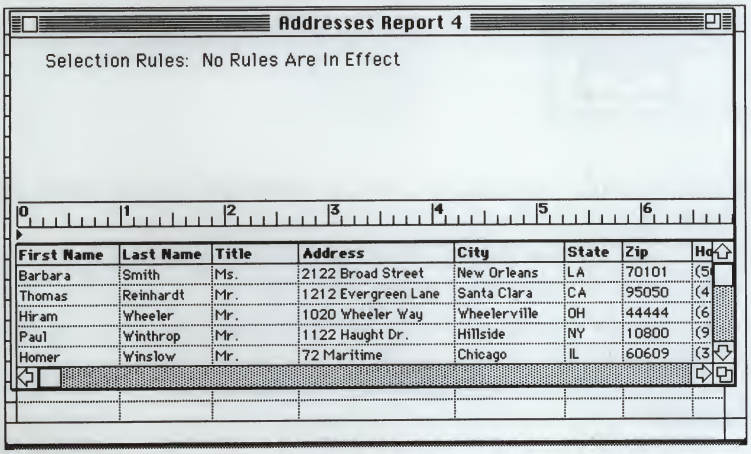
Select the report definition you want, then click the OK button or press the Return key; or double-click the report name.

Works opens a report window containing the selected report definition.

New Report

The New Report command creates a new report definition.

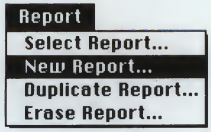
When you choose New Report, Works opens a report window.



Selection Rules With commands from the Organize menu, you can specify the records you want to include in your report. If you specify selection rules in the Database document immediately before choosing New Report, those rules will appear in the report window as well.

When you close the report window, Works adds the definition to your list of available reports.

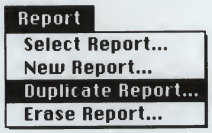
New Report



Duplicate Report

The Duplicate Report command duplicates a previously defined report definition. This is useful for creating two or more reports that are very similar.

Duplicate Report

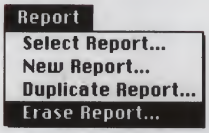


Select the report definition you want to duplicate, then click the OK button or press the Return key.

Works opens a report window with a copy of the selected definition, but with a new title. Now you can make any changes you want.

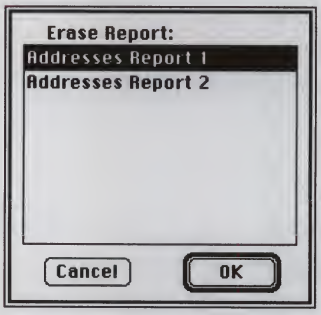
When you close the report window, Works adds the definition to your list of available reports.

Erase Report



Erase Report

The Erase Report command deletes a report definition from your Database document.



Select the report you want to delete, then click the OK button or press the Return key.

Works deletes the definition from the Database document.

In the Report Window

Once you open a report window, the menu bar changes and a different set of commands is available to you. Some of these commands are identical to the regular Database commands; others are completely new. All of the report window commands are described in this section.

The Edit Menu

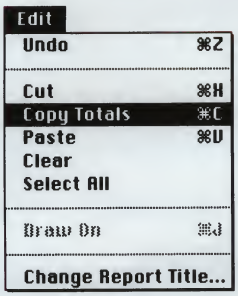
Copy Totals

The Copy Totals command copies totals and subtotals, specified with commands from the TotalsPage menu in a report window, to the Clipboard. This allows you to preview the information before printing the report, or paste the information into another Works document.

Once information is on the Clipboard, you can paste it into another document, just as you can any other information on the Clipboard. For example, you can use the totals and subtotals as a summary of the data in your Database document.

You can also preview totals and subtotals before printing using the Print Preview option in the Print dialog box. For more information, see "Print" in Chapter 2.

Copy Totals

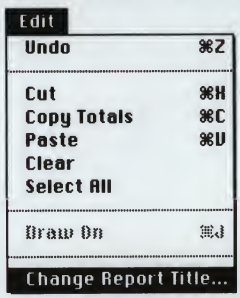


Change Report Title

The Change Report Title command changes the title of a report.

The new title appears in the title bar of the report window and in the dialog boxes that contain a list of report titles. It is also reflected in the header or footer of a report if you specify the filename to be printed with the &F command.

Change Report Title



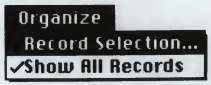
The Organize Menu

Record Selection

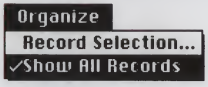
The Record Selection command specifies which records in a Database document to print in a report. It works exactly the same as the Record Selection command from the main Database Organize menu.

When you print the report, Works prints only those records meeting your record selection rules.

Record Selection



Show All Records



Show All Records

The Show All Records command tells Works to print all records in a Database document in a report, rather than only those that match the selection rules.

The Format Menu

Show Grid

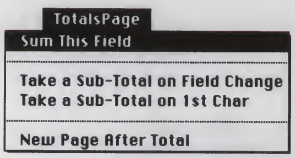
Show Grid

This command specifies whether a report should be printed with or without grid lines.

Choose Show Grid to print a report with grid lines. When chosen, the command is checked on the menu. To print a report without grid lines, choose Show Grid again to remove the checkmark.

The TotalsPage Menu

Sum This Field



Sum This Field

The Sum This Field command tells Works which fields to sum and then print totals for. Subtotals are derived from the numeric values of the specified fields and are accumulated as the records are printed or when you choose Copy Totals from the Edit menu.

Select the field you want Works to total, then choose Sum This Field. When the command is checked on the menu, it is effective for the currently selected field.

When you print the report, Works prints the specified totals.

If you choose to sum one or more fields, but do not specify when to print subtotals with the Take a Sub-Total on Field Change or Take a Sub-Total on 1st Char commands, totals are printed at the end of the report for all specified fields.

After all records have been printed, Works prints a grand total — the sum of all previously printed totals.

Take a Sub-Total on Field Change/Take a Sub-Total on 1st Char

These commands tell Works when to print subtotals of the numeric values in the field you've specified to be summed.

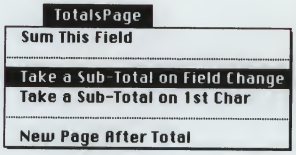
To use either Take a Sub-Total on Field Change or Take a Sub-Total on 1st Char, you select a key field which is different from the field designated to be summed, then choose one of these commands. After the contents of each record is printed, Works compares the contents of the key field in the printed record with the contents of the key field in the next record to be printed.

When you choose the Take a Sub-Total on Field Change command, Works looks to see if the contents of the two compared fields are different. If they are, Works temporarily stops printing records, and prints the subtotal of those fields specified by the Sum This Field command.

When you choose the Take a Sub-Total on 1st Char command, Works looks to see if the first character of the two compared fields is different. If it is, Works temporarily stops printing records, and prints the subtotal of those fields specified by the Sum This Field command.

In both cases, the subtotals for the entire report are accumulated as they are printed. At the end of the report, Works prints a grand total of all the subtotals.

Take a Sub-Total on Field Change
Take a Sub-Total on 1st Char



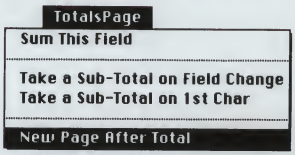
New Page After Total

The New Page After Total command tells Works to print the next Database record on a new page after a subtotal is printed.

After you select a field to be summed, choose either Take a Sub-Total on Field Change or Take a Sub-Total on 1st Char. Then choose the New Page After Total command.

New Page After Total is associated with the specific Take a Sub-Total on Field Change or Take a Sub-Total on 1st Char command you choose immediately before you choose New Page After Total. This way, you can specify that a new page be started after one type of subtotal, but not after another.

New Page After Total

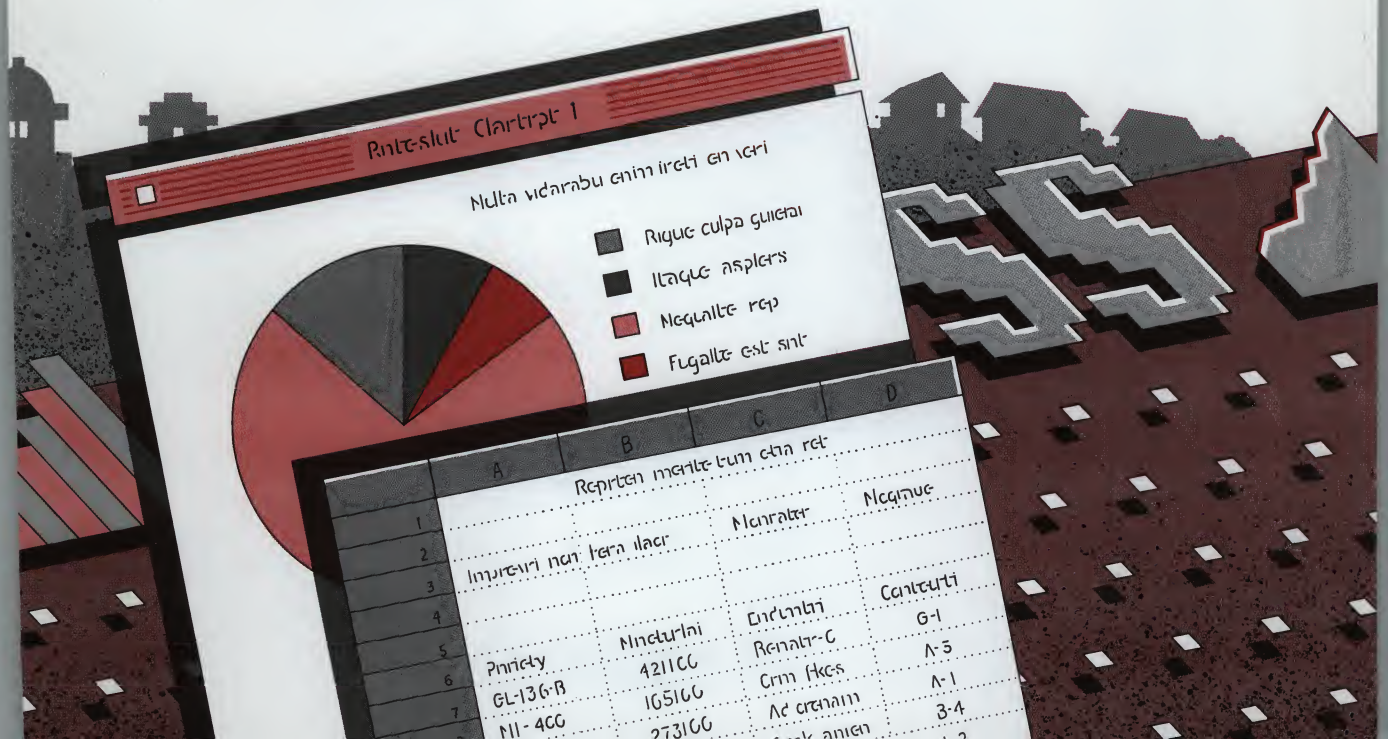


The Spreadsheet

The Works Spreadsheet automates the kind of figuring you do with a sheet of paper and a calculator: taxes, sales projections, cash-flow analyses, or personal net worth statements. The Spreadsheet gives you cells to fill with labels, numbers, and formulas. You type in the data, and Works does the calculating for you.

You can change the numbers to see what happens, and let Works recalculate again, automatically. Once you have the numbers in place, you can chart your figures to see how they look. Then, when you change a number, you can watch the chart change at the same time. When you have the result you want, you can print it.

The formulas you enter into the Spreadsheet can include everything from simple addition and subtraction to trigonometric equations and logical comparisons.



These six chapters explain how to use the Spreadsheet:

- Chapter 11, "Entering Information," shows you what a Spreadsheet document looks like, and how to type labels, numbers, and formulas into the Spreadsheet.
- Chapter 12, "Working with the Spreadsheet," shows how to make changes or additions to your Spreadsheet document, and different ways to look at it.
- Chapter 13, "Formatting and Printing," shows how to arrange your information on the screen and prepare for printing.
- Chapter 14, "Charting a Spreadsheet Document," describes the Spreadsheet's charting capability.
- Chapter 15, "Spreadsheet and Database Functions," describes Works' built-in functions.
- Chapter 16, "Spreadsheet Command Reference," describes all the Spreadsheet commands.

11 Entering Information

In this chapter, you'll learn how to:

- Recognize the parts of a Spreadsheet document and design your own documents.
- Select parts of a Spreadsheet document.
- Enter and correct information.
- Use labels and values.
- Build a formula using operators and references.
- Avoid circular references.
- Create cell notes.

An Overview

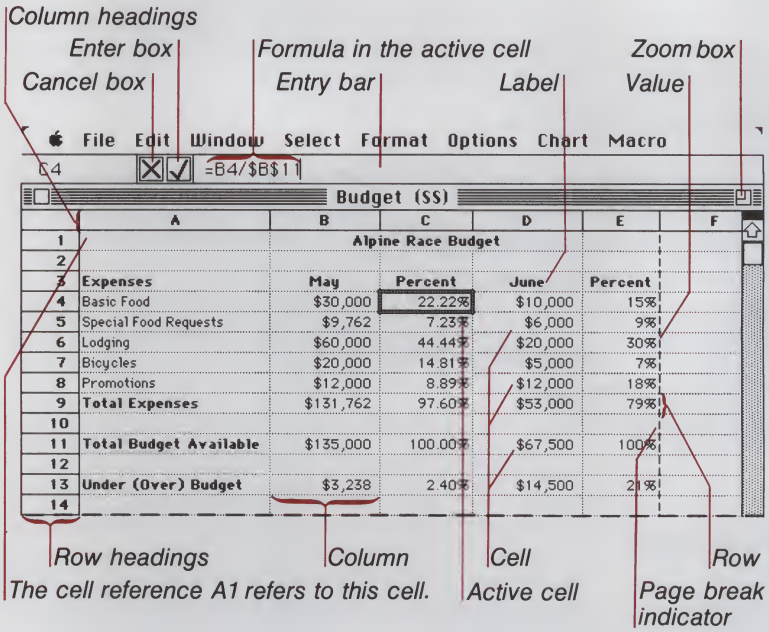
An overview

This section shows you what a Spreadsheet document looks like in Works, explains what a spreadsheet is, and shows how to design one for maximum effectiveness. The Spreadsheet helps you analyze numbers that you arrange in rows and columns, such as budgets or financial statements. Change the numbers to see what happens — the Spreadsheet makes the calculations. You can also chart your numbers with the Spreadsheet. If you change a number in a document, the chart instantly reflects it.

Looking at a Spreadsheet window

Looking at a Spreadsheet Window

A Spreadsheet window looks like this:



Parts of a Spreadsheet document

A Spreadsheet document is made up of columns and rows. Each column has a lettered heading (labeled A to Z, then AA, AB, and so on to IV), and each row has a numbered heading (1 to 16,382). Columns and rows intersect to form cells. You can locate a cell or refer to it with a cell reference — its column heading and row heading. For example, A1 is the cell reference for the cell in the upper-left corner of a Spreadsheet document.

You tell Works where you want to enter information by selecting cells. As you type, the information appears in the entry bar. You enter the information into the active cell by clicking the enter box or by pressing the Enter key. The number of cells you can fill is dependent upon the amount of memory available to you.

You put numbers, formulas, and labels into cells to create a Spreadsheet document. When you change numbers, you can see how the changes affect the outcome of Spreadsheet calculations.

You set up a calculation by entering a formula. For example, 2+2 is a simple formula. A1+A2 is also a formula. Using this formula, Works looks for numbers in cells A1 and A2, and adds them.

Labels make your Spreadsheet documents easier to understand. Labels are text, such as Total Expenses, Percent, or 1988 Projections, that explain your numbers and formulas.

Designing a Spreadsheet Document

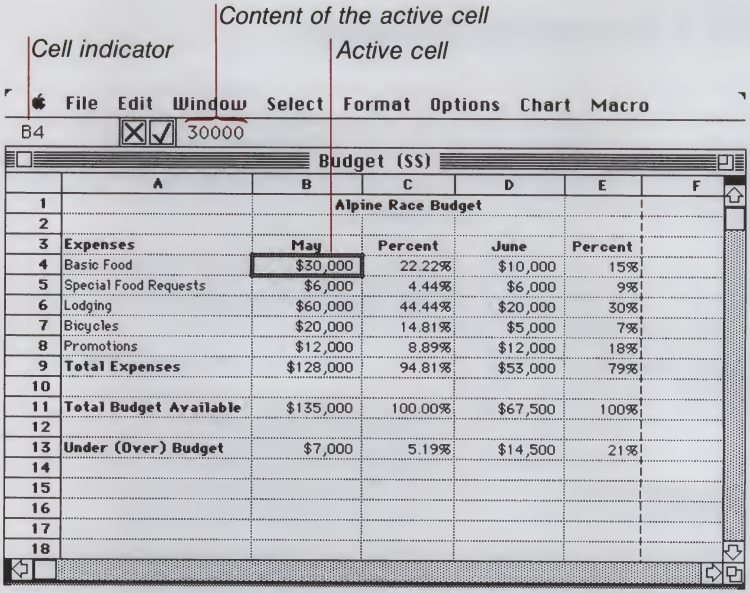
You may not realize it, but you've probably already prepared something similar to a Spreadsheet document. Maybe it was several columns of figures you jotted down for a promotional campaign, or a departmental budget you wrote on filler paper. But chances are that you've done something like this before.

These steps will help you clarify your thoughts:

- Choose a subject. For example, if your major purpose is to set up an expense report document, don't get sidetracked by putting a travel budget in the same Spreadsheet document.
- Choose the components. Write down all the types of information you need for your calculations. When you type them into a column in a Spreadsheet document, you will be setting up your labels.
- Decide on a structure. Map out what goes where. A good structure not only lends itself to easy calculation by Works, it also makes it easy to find the information you need after the calculations are complete.
- Plan the calculations. Determine equations that produce the results you want. These equations will become your Spreadsheet formulas.
- Decide on the numbers. When your labels and formulas are entered into your Spreadsheet document, you will need only the numbers to find your answers.

Selecting Parts of a Spreadsheet Document

Before you can enter information into a Spreadsheet document, you tell Works where to put the information by selecting a cell or a range of cells. The information you type goes into the active cell in the selection. The cell indicator in the entry bar shows you which cell is active. In a range of selected cells, only the cell that is highlighted is active.

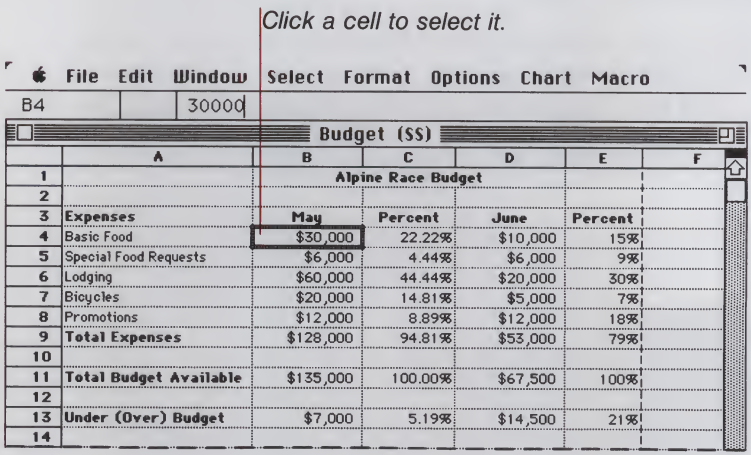


	A	B	C	D	E	F
1			Alpine Race Budget			
2						
3	**Expenses**	**May**	**Percent**	**June**	**Percent**	
4	Basic Food	$30,000	22.22%	$10,000	15%	
5	Special Food Requests	$6,000	4.44%	$6,000	9%	
6	Lodging	$60,000	44.44%	$20,000	30%	
7	Bicycles	$20,000	14.81%	$5,000	7%	
8	Promotions	$12,000	8.89%	$12,000	18%	
9	**Total Expenses**	$128,000	94.81%	$53,000	79%	
10						
11	**Total Budget Available**	$135,000	100.00%	$67,500	100%	
12						
13	**Under (Over) Budget**	$7,000	5.19%	$14,500	21%	
14						
15						
16						
17						
18						

You can select cells by clicking or dragging with the mouse or by choosing commands from the Select menu. You can also select a cell by using certain keys on the keyboard. For more information, see the next section, "Entering Information into a Spreadsheet Document."

To select a single cell

To select a single cell, click the cell.



	A	B	C	D	E	F
1			Alpine Race Budget			
2						
3	**Expenses**	**May**	**Percent**	**June**	**Percent**	
4	Basic Food	$30,000	22.22%	$10,000	15%	
5	Special Food Requests	$6,000	4.44%	$6,000	9%	
6	Lodging	$60,000	44.44%	$20,000	30%	
7	Bicycles	$20,000	14.81%	$5,000	7%	
8	Promotions	$12,000	8.89%	$12,000	18%	
9	**Total Expenses**	$128,000	94.81%	$53,000	79%	
10						
11	**Total Budget Available**	$135,000	100.00%	$67,500	100%	
12						
13	**Under (Over) Budget**	$7,000	5.19%	$14,500	21%	
14						

To select the last cell

Works considers the last cell in your Spreadsheet document to be the cell at the intersection of the last row and column containing a value or formula. To select the last cell, choose Last Cell from the Select menu.

To select a range of cells

The following table describes how to select various ranges of cells.

To select this range	Do this
A block of cells	Drag from the cell in one corner of the block to the cell in the opposite corner.
One row or column	Click the row or column heading.
Many rows or columns	Drag from the first row or column heading to the last heading.
All cells through the last cell	Choose All Cells from the Select menu.
All cells in a Spreadsheet document	Choose Select All from the Edit menu.

To extend a selection

When selecting a range of cells, if you drag past the last row or column on the screen, Works scrolls the document and adds to the selection. You can also use the Shift key to extend a selection beyond one screen:

1. Select the cell that marks the beginning of the range.
2. Scroll the document to the end of the range you want to select.
3. Hold down the Shift key while you select the cell that marks the end of the range.

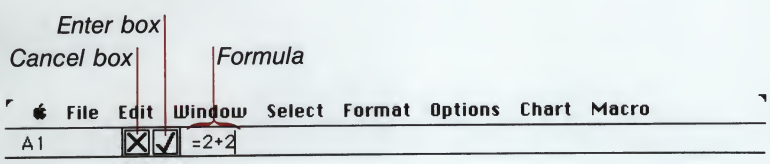
Works selects all the cells between and including the two selections.

Entering Information into a Spreadsheet Document

You can enter text (as labels or part of a formula), numbers, or formulas into cells. Text and numbers are also known as constant values.

To enter a constant value, you select a cell and type the value. To enter a formula, you select a cell, type an equal sign (=), and then type the formula.

As you type the information you want to put into the active cell, it appears in the entry bar. You can be sure that your entry is correct before you use it for a calculation or a label because it won't appear in the active cell until you enter it. You can type up to 238 characters in the entry bar.



To enter what you type

When you enter a constant value or a formula, Works stores it in the active cell and displays the value in the cell.

There are several ways to enter what you type. You can click the enter box, or use the keyboard as described below:

To enter what you type and make the active cell	Press these keys
The cell on the right	Tab
The cell on the left	Shift + Tab
The cell below	Return
The cell above	Shift + Return
The same cell	Enter

You can also use these keys or the arrow keys to move around in the document when you are not entering information.

To enter a constant value and select any other cell at the same time, just click the other cell.

To move through a selection

If you select a range of cells, you can press the Tab key or the Return key to move the active cell within the range without changing the selection. You can quickly enter information into many cells by selecting the range, typing, and then pressing the Tab key or the Return key, depending on which direction you want to move.

Making Corrections to an Entry

If you make a mistake while you're typing information into the entry bar, you can correct it.

To cancel your typing in the entry bar

To cancel your typing in the entry bar:

- Click the cancel box to the left of the entry bar.

Works cancels your typing and restores the original entry. If the original entry was blank, the entry bar will also be blank.

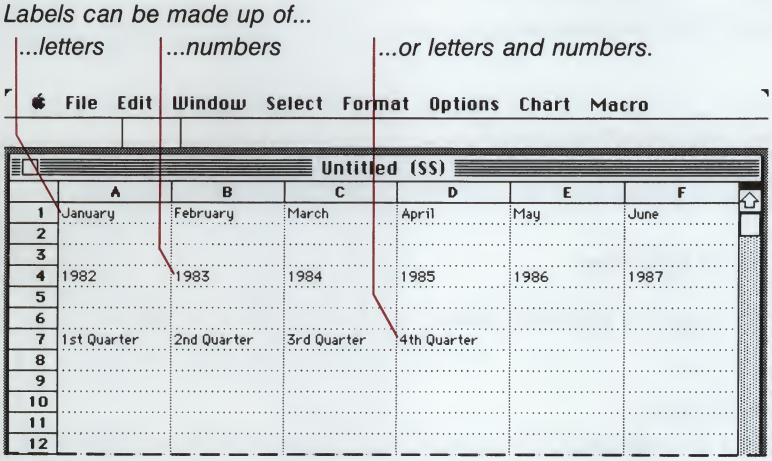
To edit an entry

To edit an entry, you can use the usual Macintosh editing techniques: Use the Cut, Copy, and Paste commands, the Delete key, or select what you want to change and type to replace it.

Entering a Label

Labels let you write explanatory information in a Spreadsheet document. Labels make the numbers and formulas easier to understand. You can label the contents of a column or row, or include notes to explain how to perform a certain calculation. Labels help other people understand your Spreadsheet document, and can also help you when you return to a document that you haven't used in a long time.

You can do all sorts of creative things with labels: a line of hyphens can separate values in a column from their total; a number followed by a letter can specify a quarter of the year; a number can label a year. The following illustration gives some examples of how you can use labels.



You can type up to 238 characters in a label.

To enter a label

To enter a label:

1. Select a cell.
2. Type the label.
3. Click the enter box or press the Enter key.

To fit labels into cells

If a label doesn't fit in a cell, Works automatically runs the label into any blank cells in the same row, cutting off the label at the first non-blank cell, if necessary. If you don't want the label to overflow into an adjacent blank cell, select the blank cell and press the spacebar. The cell now contains a character, even though you can't see it, so the label will not run into that cell. You can also widen the column to hold the label. For more information, see "Changing Column Width" in Chapter 13. The entry bar shows the full entry, regardless of the width of the column.

To begin a label with a number or symbol

Whenever you start an entry with a letter, Works stores the entry as a label. You can, however, start labels with numbers or math symbols, if you tell Works that you're typing a label rather than a value or formula.

You might need to begin a label with a number. For example, you might indicate thousands by typing *1000*, or you might want to use a label such as *1988*.

To tell Works that you want to begin a label with a number or a symbol:

1. Select a cell.
2. Type a quotation mark (").
3. Type the label.
4. Click the enter box or press the Enter key.

Works enters the label into the active cell.

The quotation mark is a signal to Works that you're typing a label. It appears in the entry bar, but not in the cell.

When Works encounters a label while performing a calculation, it treats the label as zero.

Entering a Number

To enter a number

To enter an integer or decimal number:

1. Select a cell.
2. Type a number.
   Include a decimal point, if necessary. For a negative number, begin with a minus sign. Do not type commas or dollar signs.
3. Click the enter box or press the Enter key.

Works enters the number and displays it in the active cell.

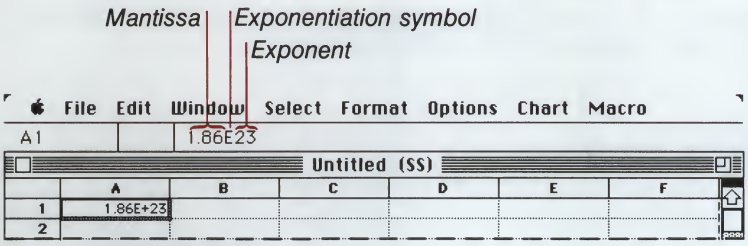
If the number you enter cannot be accurately represented, given the width of the cell, Works fills the cell with # symbols. When you widen the cell enough, you see the actual value.

To type a number in scientific notation

For very large and very small numbers, you can use scientific notation. Works accepts exponents to ±99. If you enter an exponent outside this range, Works displays *Error* in the cell.

To type a number in scientific notation, type an integer or decimal number, followed by an E and an integer that represents an exponent of 10.

When you enter a number in scientific notation, it looks like this:



If the result of a calculation is a number with an exponent outside the acceptable range, Works displays *Exponent* in the cell.

To enter a date

To enter a date:

1. Select a blank cell.
2. Choose Set Cell Attributes from the Format menu.
3. Choose Date Short, Date Medium, or Date Long.

   Date Short shows the date numerically, with slash marks between the month, day, and year (8/10/88). Date Medium abbreviates the name of the month (Aug 10, 1988). Date Long spells out the full name of the month (August 10, 1988).
4. Click the OK button or press the Return key.
5. Type the date into the entry bar and click the enter box or press the Enter key.

To enter a time

To enter a time:

1. Select a blank cell.
2. Choose Set Cell Attributes from the Format menu.
3. Choose Time.
4. Click the OK button or press the Return key.
5. Type the time into the entry bar and click the enter box or press the Enter key.

   You can type the time in 24-hour format (20:04) or 12-hour format (8:04 PM). If you use the 12-hour format, be sure to include "am" or "pm". If "am" or "pm" is missing, Works assumes AM.

About numbers and formats

A cell's format is separate from its numeric value. The format determines how the value is displayed. For more information, see "Changing Number Formats" in Chapter 13.

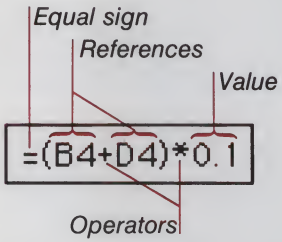
In a new Spreadsheet document, Works displays numbers as precisely as possible within the width of each cell. However, Works stores number values up to 18 places long, regardless of how they are displayed.

Building a Formula

Formulas make the Spreadsheet a useful tool. Without them you'd just have rows and columns of numbers. Formulas tell Works what to do with the numbers.

You enter a formula into a cell just as you do text and numbers. When you select a cell containing a constant value (either text or numbers), Works displays the value in the entry bar without any formatting. In the cell itself, Works displays the value and any formatting. When the selected cell contains a constant value, the display in the entry bar and in the cell may be the same. When the selected cell contains a formula, however, Works displays the formula in the entry bar and its calculated result in the cell. You can always examine the cell's content by selecting the cell and looking in the entry bar.

Here's an example of what a formula might look like:



What is a formula?

A formula calculates a new value from existing values. A formula can consist of values, cell references, operators, and functions.

A formula can be as simple as =B1+B2, which adds the values in cells B1 and B2. Or, a formula can be complex:

=Pi( )/2−ATan(B1/Sqrt(1−B1^2))

To enter a formula

Every formula begins with an equal sign. The equal sign tells Works that what follows is a formula, and that it needs to be calculated.

You can set up much of a formula by pointing and clicking with the mouse. You can point to cells, drag across blocks of cells, and paste functions without typing. (Functions are explained in Chapter 15, "Spreadsheet and Database Functions.")

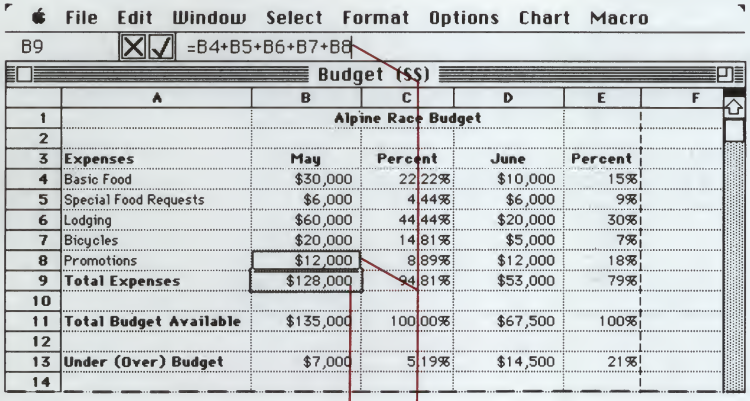
To enter a formula:

1. Select a cell.
2. Type an equal sign (=).
3. Type the formula in the entry bar.
4. Click the enter box or press the Enter key.

Works enters the formula into the active cell, and displays the resulting value. The formula still shows up in the entry bar, so that you can see both the formula and the result simultaneously.

To get a total

You can set up a simple total of a group of cells by pointing and clicking. The formula for a total looks like this:



The formula will be entered into the active cell.

When you click a cell to put a reference into the entry bar, Works outlines the cell.

To enter this formula:

1. Select a cell.
2. Type an equal sign (=).
3. Click each cell that you want to add. (Notice that you cannot use a range of cells in this particular formula, so do not drag across the cells.)
   Works inserts addition operators (+) between the cells you click.
4. Click the enter box or press the Enter key.

Works enters the formula into the active cell, calculates it, and displays the resulting value.

You can also sum a range of numbers with the Sum function. For more information, see "Sum" in Chapter 15.

References

In Works, columns are labeled A through IV, beginning with columns A through Z, and then AA, AB, AC, and so on, to IV. Rows are labeled 1 through 16,382. The cell in column A, row 1, is referred to as A1. The number of cells you can fill is dependent upon the amount of memory available to you.

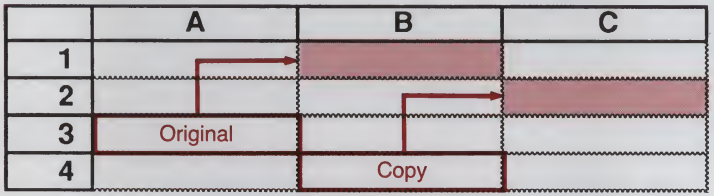
References make formulas flexible. You can use the same value in many formulas by entering the value in a cell and referring to that cell in the formulas. Then, if you change the value of the cell, Works recalculates the formulas using the new value.

When you build a formula, you can refer to cells using relative references or absolute references.

Relative references

Relative References

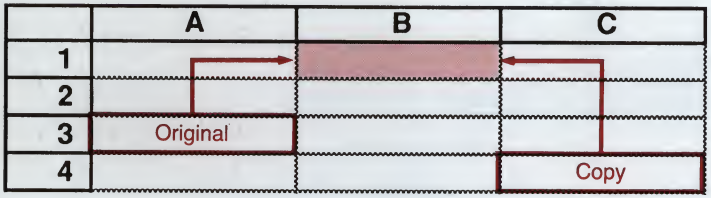
A relative reference gives general directions to Works, rather than a specific location. It's like saying, "Go up two blocks and over one." If you copy a relative reference to another cell, the reference changes relative to its new position. For example, if a relative reference in a formula points two rows up and one column to the right, and you copy the formula to another location, it still points two rows up and one column to the right, but it points to a different cell than it did originally.



Absolute References

Absolute references

An absolute reference is like a mailing address: 9522 Almont Street. No matter where you copy the reference to, it still points to the same cell. For example, an absolute reference to cell B1 always points to cell B1, even if the formula containing the reference is copied to another location in the Spreadsheet document. Works uses dollar signs to indicate that a reference is absolute. $B$1 is an absolute reference to cell B1.



The difference between relative and absolute references is important only when you cut or copy a formula from one cell and paste it into another, or when you use the Fill Right or the Fill Down commands from the Edit menu. For information on copying references, see "Copying Cells" in Chapter 12.

To enter a reference into a formula

You can enter a cell reference into a formula either by clicking the mouse or by typing. When you use the mouse, Works puts the reference into the entry bar for you.

To enter a reference:

1. Select a cell, then start a formula by typing an equal sign (=).
2. Click the cell that you want to refer to, or type the cell reference.

You can refer to as many cells as the formula needs. If you do not type an operator into the formula before you select each cell after the first one, Works supplies the addition operator (+). For example, if you type an equal sign, and then click two cells, Works adds the contents of the two cells.

Changing Reference Styles

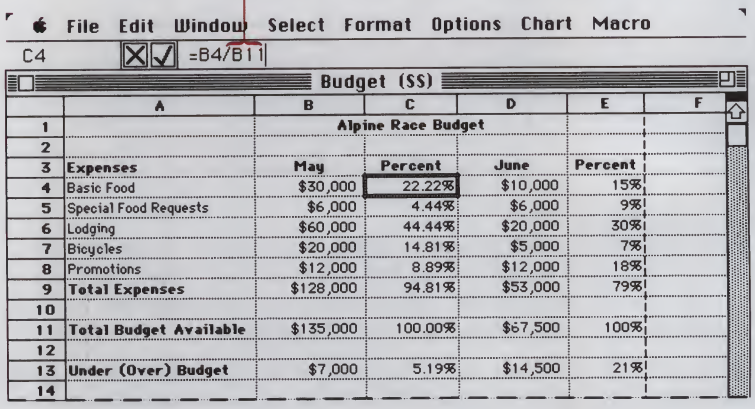
When you click or drag to enter a reference into a formula, the reference will be relative. You can change the style of a reference by using the Absolute Cell Ref command from the Edit menu. This command takes effect on the cell reference immediately preceding the insertion point or the selected reference in the entry bar.

To make a reference absolute

To make an absolute cell reference from a relative one:

1. Select the cell containing the formula that includes the relative reference you want to change.
2. In the entry bar, position the insertion point immediately to the right of the relative reference, or select the reference.

This is the reference you want to change.

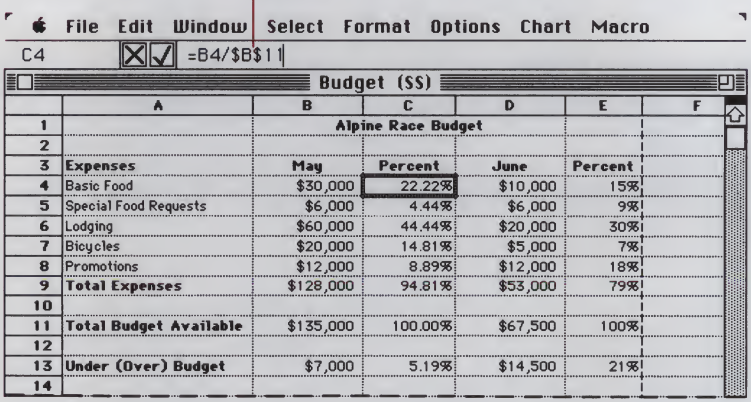


	A	B	C	D	E	F
1		Alpine Race Budget				
2						
3	Expenses	May	Percent	June	Percent	
4	Basic Food	$30,000	22.22%	$10,000	15%	
5	Special Food Requests	$6,000	4.44%	$6,000	9%	
6	Lodging	$60,000	44.44%	$20,000	30%	
7	Bicycles	$20,000	14.81%	$5,000	7%	
8	Promotions	$12,000	8.89%	$12,000	18%	
9	Total Expenses	$128,000	94.81%	$53,000	79%	
10						
11	Total Budget Available	$135,000	100.00%	$67,500	100%	
12						
13	Under (Over) Budget	$7,000	5.19%	$14,500	21%	
14						

3. Choose Absolute Cell Ref from the Edit menu.

Works inserts dollar signs before the column letter and row number, indicating that the reference is now absolute.

Works adds dollar signs to show that the reference is now absolute.



	A	B	C	D	E	F
1		Alpine Race Budget				
2						
3	Expenses	May	Percent	June	Percent	
4	Basic Food	$30,000	22.22%	$10,000	15%	
5	Special Food Requests	$6,000	4.44%	$6,000	9%	
6	Lodging	$60,000	44.44%	$20,000	30%	
7	Bicycles	$20,000	14.81%	$5,000	7%	
8	Promotions	$12,000	8.89%	$12,000	18%	
9	Total Expenses	$128,000	94.81%	$53,000	79%	
10						
11	Total Budget Available	$135,000	100.00%	$67,500	100%	
12						
13	Under (Over) Budget	$7,000	5.19%	$14,500	21%	
14						

You can also create absolute references by typing dollar signs before the column letter and row number of a relative reference.

To make a reference relative

To make a relative reference from an absolute one:

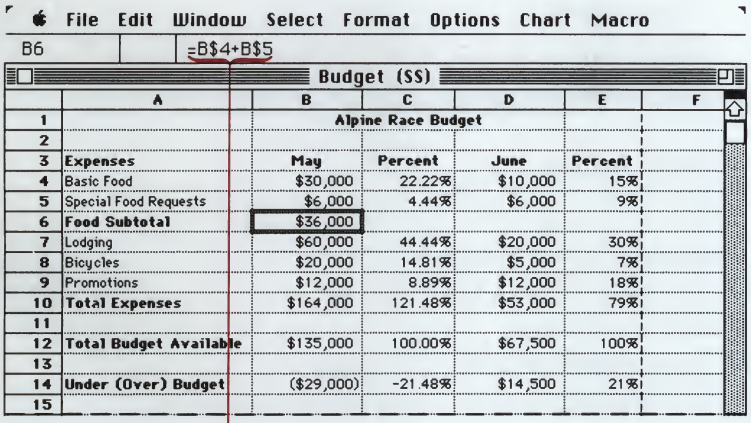
1. Select the cell containing the formula that includes the absolute reference you want to change.
2. In the entry bar, position the insertion point immediately to the right of the absolute reference, or select the reference.
3. Choose Absolute Cell Ref from the Edit menu.

Works removes the dollar signs, indicating that the reference is now relative.

You can also remove the dollar signs by using the Delete key.

Mixing References

If you want to refer to cells in such a way that only the column or the row reference is absolute (or relative), you can use mixed references. For example, in the reference $B3, only the column reference is absolute. In the reference B$3, only the row reference is absolute. It's like giving a street but no address — the second house down on Almont Street. The house depends on where you are, but the street remains the same.



	A	B	C	D	E	F
1		Alpine Race Budget				
2						
3	**Expenses**	**May**	**Percent**	**June**	**Percent**	
4	Basic Food	$30,000	22.22%	$10,000	15%	
5	Special Food Requests	$6,000	4.44%	$6,000	9%	
6	**Food Subtotal**	$36,000				
7	Lodging	$60,000	44.44%	$20,000	30%	
8	Bicycles	$20,000	14.81%	$5,000	7%	
9	Promotions	$12,000	8.89%	$12,000	18%	
10	**Total Expenses**	$164,000	121.48%	$53,000	79%	
11						
12	**Total Budget Available**	$135,000	100.00%	$67,500	100%	
13						
14	**Under (Over) Budget**	($29,000)	-21.48%	$14,500	21%	
15						

With these mixed references, the formula always uses cells in rows 4 and 5 (the absolute references), but may not always use cells in column B (the relative reference), if the formula is copied elsewhere.

To enter or reverse a mixed reference

You can enter a mixed reference by typing it into the entry bar. Just put a dollar sign before the reference you want to be absolute.

You can reverse a mixed reference either by typing and using the Delete key or by using the Absolute Cell Ref command from the Edit menu.

Operators

An operator is an instruction, such as + or −, that tells Works to calculate a new value from existing values. For example, in the formula =3+6, the addition sign (+) is the operator that instructs Works to add the operands 3 and 6 to produce the new value 9.

Works uses two kinds of operators: arithmetic and comparison.

Arithmetic Operators

The arithmetic operators represent standard calculator functions. These include:

+	Addition
−	Subtraction
−	Negation (if used with one operand only)
*	Multiplication
/	Division
^	Exponentiation

To use an arithmetic operator

To use an arithmetic operator:

1. Select a cell.
2. Type an equal sign to start a formula.
3. Type the first number or click a cell reference.
4. Type an arithmetic operator.
5. Type the second number or click a cell reference.
6. Type as many additional numbers and operators as you need.
7. Click the enter box or press the Enter key.

Works enters the formula into the active cell, calculates it, and displays the resulting value.

Remember that if you don't type an operator after an operand (number or cell reference) in a formula, Works automatically inserts an addition sign (+) before the next cell reference.

Comparison Operators

A comparison operator compares two values and produces the value 1 (TRUE) or 0 (FALSE). Works has six comparison operators:

=	Equals
<	Less than
<=	Less than or equal to
>	Greater than
>=	Greater than or equal to
<>	Not equal

For example, 3<2 produces the value 0 (FALSE), while 2<3 produces the value 1 (TRUE). If cell B17 contains 5 and cell B52 contains 13, then B17>B52 produces 0 (FALSE) and B17<B52 produces 1 (TRUE).

Order of Operators

If you combine several operators in a single formula, Works performs the operations in this order:

^	Exponentiation
−	Negation
* and /	Multiplication and division
+ and −	Addition and subtraction
= < <= > >= <>	Comparison operators

If you want to change this order, use parentheses. Works first calculates the expressions in parentheses, and then uses those results to calculate the rest of the formula. For example:

Without parentheses	With parentheses
4*3+2=14	4*(3+2)=20
−3^2=−9	(−3)^2=9

Avoiding circular references

Avoiding Circular References

To help Works perform as efficiently as possible, avoid circular references in your formulas. A circular reference is a reference that has no ending point. The cells involved in a circular reference cannot be calculated. When Works encounters a circular reference, it displays an alert box.

A circular reference in a Spreadsheet document is a reference that refers to a cell which in turn refers back to the original cell. More specifically, a circular reference occurs when, in order to calculate a formula in a particular cell, Works needs the value of the same cell that contains the formula. An example of such a reference is the formula =Sum(A1:A6) when entered into cell A1.

A more common example of a circular reference involves a chain of cells and references. For example, a formula in cell E1 may refer to cell E2, which contains a reference to cell E3, which contains a reference to cell E4, which contains a reference back to cell E1. A circular reference like this cannot be resolved.

Creating cell notes

Creating Cell Notes

You can create cell notes to provide additional information about a cell's contents. Use the Open Cell Note command from the Edit menu to open a window in which you type notes associated with a selected cell. Cell notes remain with the cell and can be viewed and printed.

Hint You can also open a cell note by selecting a cell and then pressing the Command key while double-clicking the mouse.

If the Show Notes Indicator is checked in the Options menu, a marker in the upper-right corner of a cell indicates that it is annotated.

For more information on cell notes, see "To print cell notes" in Chapter 13, and "Open Cell Note" in Chapter 16.

12 Working with the Spreadsheet

After you've set up a Spreadsheet document, you're ready to start playing with the numbers to see the results of various scenarios. This chapter shows you ways you can work with a completed Spreadsheet document.

This chapter shows you how to:

- Play What-If — change the content of a cell to see the effect that change has on the rest of your information.
- Choose when to recalculate, rather than having Works do it automatically.
- Display formulas to help analyze the design of a Spreadsheet document.
- Divide the Spreadsheet window into panes, so that you can view different parts of the Spreadsheet document at the same time.
- Find a cell anywhere in a Spreadsheet document.
- Work with blocks of cells by copying, pasting and moving them; turning rows into columns and back; and filling empty cells.
- Sort a Spreadsheet document by rows.
- Insert blank rows and columns.

These tasks help you analyze the information in your Spreadsheet document. If you want to polish the appearance of your document, or prepare it for printing, see Chapter 13, "Formatting and Printing."

Changing the Content of a Cell

One of the Spreadsheet's most important assets is its ability to recalculate whenever you make a change.

Each time you make a change, you play What-If. What if the rate on your building loan goes up by 2%? What if it goes up 5%?

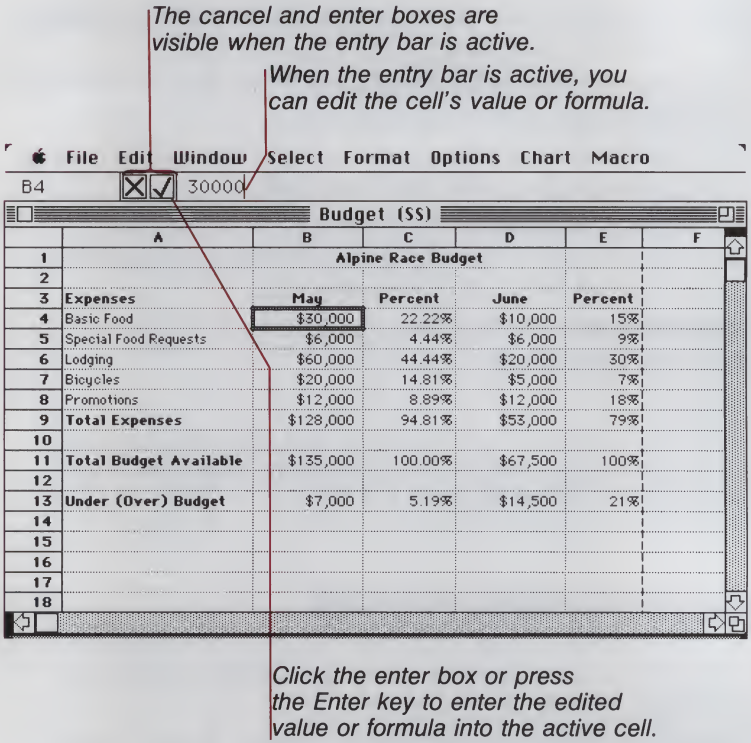
As long as you've saved your original Spreadsheet document on a disk, you're working with a copy. None of the changes you try are permanent unless you want them to be. On the other hand, if you find several alternative scenarios that you'd like to keep, you can print each one, or save each with a different name.

To change the content of a cell

You can change a cell's entire content by selecting the cell and typing new information to replace the old. Or, you can change part of a cell's formula or constant value in the entry bar using standard Macintosh editing techniques. Click in the entry bar and type the information you want to add, or use the Cut, Copy, and Paste commands from the Edit menu to replace information.

When you click in the entry bar, Works activates it and displays a cancel box, an enter box, and an insertion point.

When you are done making changes, click the enter box (or press the Enter key) to enter the new information into the cell. If you decide not to keep your changes, click the cancel box. Works restores the previous contents of the entry bar.



	A	B	C	D	E	F
1		Alpine Race Budget				
2						
3	**Expenses**	**May**	**Percent**	**June**	**Percent**	
4	Basic Food	$30,000	22.22%	$10,000	15%	
5	Special Food Requests	$6,000	4.44%	$6,000	9%	
6	Lodging	$60,000	44.44%	$20,000	30%	
7	Bicycles	$20,000	14.81%	$5,000	7%	
8	Promotions	$12,000	8.89%	$12,000	18%	
9	**Total Expenses**	$128,000	94.81%	$53,000	79%	
10						
11	**Total Budget Available**	$135,000	100.00%	$67,500	100%	
12						
13	**Under (Over) Budget**	$7,000	5.19%	$14,500	21%	
14						
15						
16						
17						
18						

Controlling Calculation

The Works Spreadsheet normally calculates automatically whenever you enter or change a value, or whenever you open an existing Spreadsheet file. Each recalculation takes some time. But with Works, you don't have to wait. While calculations are being performed, you can continue to enter values or perform other Spreadsheet functions, or you can open another Works document.

While Works is recalculating the Spreadsheet document, the icon representing the pointer changes slightly. If the pointer is an arrow, Works inverts its colors to white on black; if the pointer is an I-beam, Works adds a circle to the stem of the I. When the pointer returns to its normal appearance, recalculation is done.

You should not use numbers displayed on the screen until calculations are complete, since the numbers may change as a result of the calculations.

If you have many numbers to enter and don't want calculations to be performed until you are finished, you can switch to manual calculation. With manual calculation, you tell Works when you are ready to recalculate.

To set manual calculation

To set manual calculation:

- Choose Manual Calculation from the Options menu.

Then, when you've entered all your information and are ready to recalculate manually:

- Choose Calculate Now from the Options menu.

To return to automatic calculation

If you no longer have many changes to make, you can switch back to automatic calculation.

- Choose Automatic Calculation from the Options menu.

When you're examining the effects of changes to a single cell, automatic calculation saves you the trouble of repeatedly telling Works to recalculate.

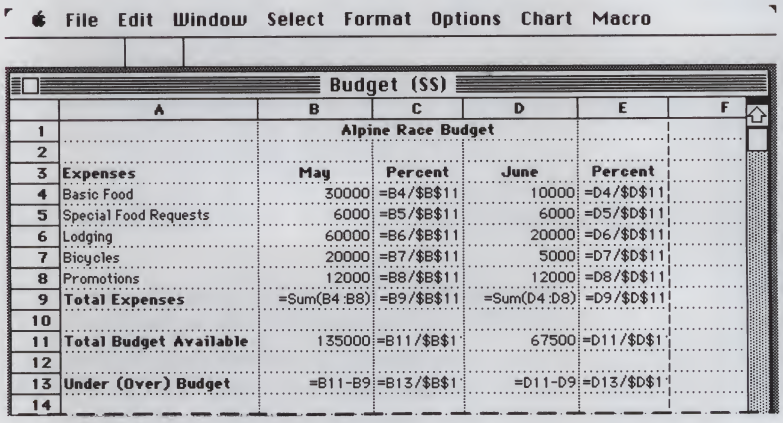
Showing Formulas or Values

The Spreadsheet normally displays the values that result from calculations. The entry bar displays the content of the active cell. Sometimes you may want to see all the formulas in a Spreadsheet document, so you can figure out the logic behind its design.

To show formulas

To have Works display all the formulas and unformatted values:

- Choose Show Formulas from the Options menu.



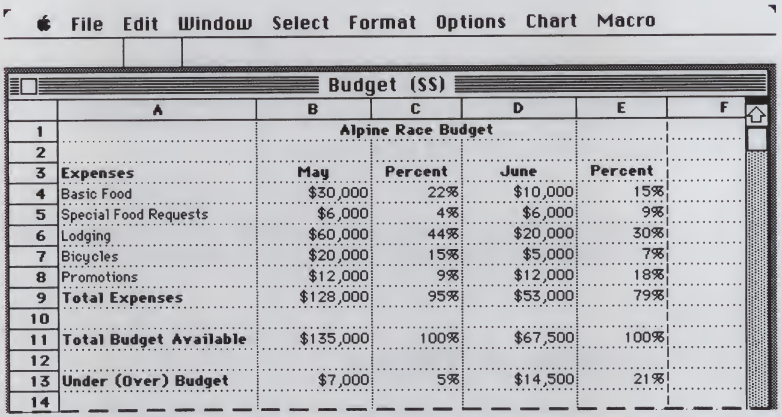
	A	B	C	D	E	F
1		Alpine Race Budget				
2						
3	**Expenses**	**May**	**Percent**	**June**	**Percent**	
4	Basic Food	30000	=B4/$B$11	10000	=D4/$D$11	
5	Special Food Requests	6000	=B5/$B$11	6000	=D5/$D$11	
6	Lodging	60000	=B6/$B$11	20000	=D6/$D$11	
7	Bicycles	20000	=B7/$B$11	5000	=D7/$D$11	
8	Promotions	12000	=B8/$B$11	12000	=D8/$D$11	
9	**Total Expenses**	=Sum(B4:B8)	=B9/$B$11	=Sum(D4:D8)	=D9/$D$11	
10						
11	**Total Budget Available**	135000	=B11/$B$1	67500	=D11/$D$1	
12						
13	**Under (Over) Budget**	=B11-B9	=B13/$B$1	=D11-D9	=D13/$D$1	
14						

To show values

For analyzing numbers, it's better to look at values than formulas. To have Works display values:

- Choose Show Values from the Options menu.

Works now shows you the formatted values.



	A	B	C	D	E	F
1		Alpine Race Budget				
2						
3	**Expenses**	**May**	**Percent**	**June**	**Percent**	
4	Basic Food	$30,000	22%	$10,000	15%	
5	Special Food Requests	$6,000	4%	$6,000	9%	
6	Lodging	$60,000	44%	$20,000	30%	
7	Bicycles	$20,000	15%	$5,000	7%	
8	Promotions	$12,000	9%	$12,000	18%	
9	**Total Expenses**	$128,000	95%	$53,000	79%	
10						
11	**Total Budget Available**	$135,000	100%	$67,500	100%	
12						
13	**Under (Over) Budget**	$7,000	5%	$14,500	21%	
14						

Dividing the Spreadsheet Window into Panes

Often you'll want to see the results of a change in one cell on another cell far away. Scrolling back and forth from the cell with the change to the cell with the result could get tiresome, so Works provides split bars that divide the Spreadsheet window into panes. The two panes on either side of the vertical split bar scroll horizontally. The two panes above and below the horizontal split bar scroll vertically. That means you can leave one pane stationary while you scroll the other pane until it shows the second cell. When you make a change, you'll see the effects of it instantly, even across an entire Spreadsheet document.

Dividing the window into panes also lets you freeze row and column labels while you scroll through numbers in another pane. If you have a very wide or very long Spreadsheet document, you won't have to guess what the numbers at the far end of the document refer to.

You can divide the window into both side-by-side and upper and lower panes.

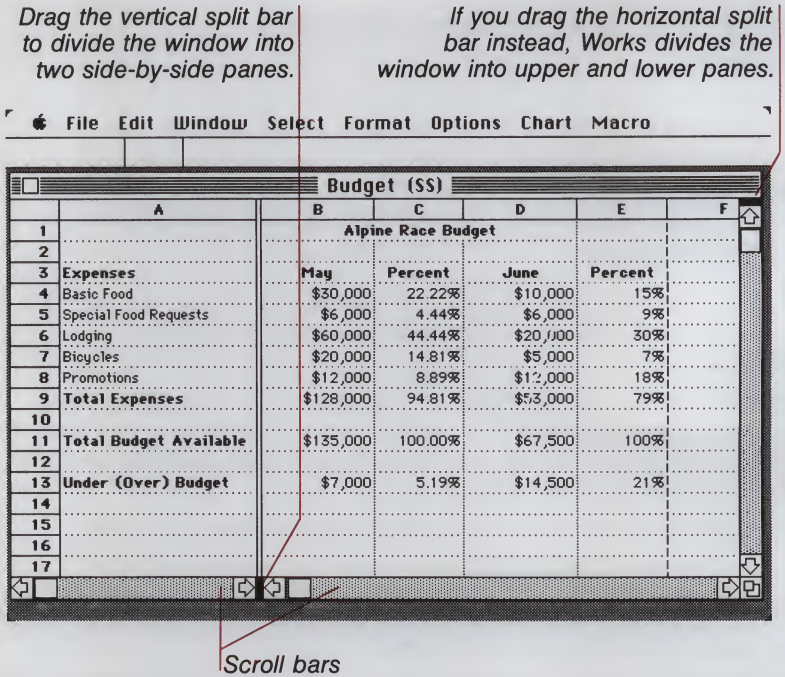
To divide the window into two panes

1. Position the pointer on either the horizontal or vertical split bar. The pointer turns into a two-way arrow.
2. Drag the split bar until it lines up with the right edge of the column or the bottom edge of the row at which you want to divide the Spreadsheet document.

When you release the mouse button, Works divides the window into two panes.

Note If you create a pane containing only one or two rows, that pane will not have a scroll bar.

While the Spreadsheet window is split, you can't use the Draw feature.



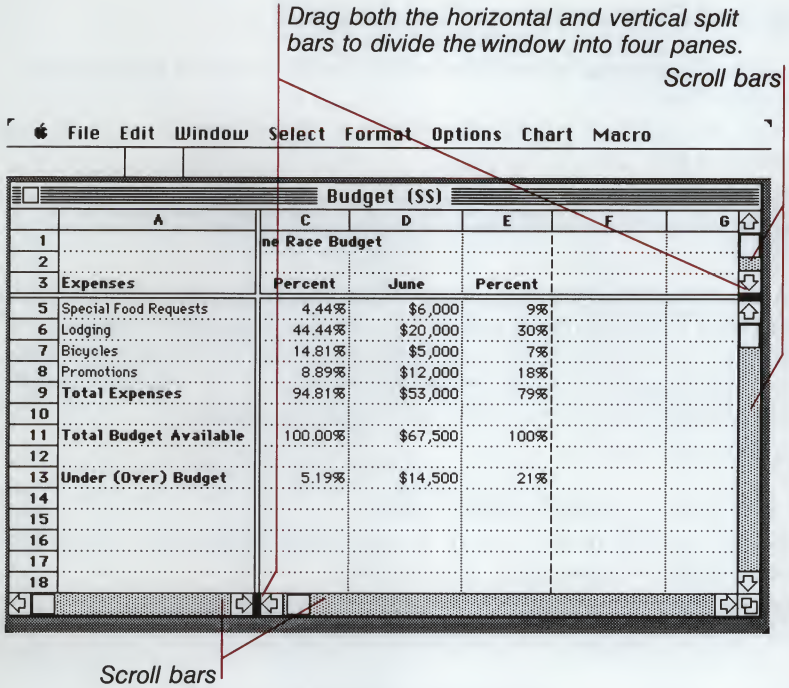
	A	B	C	D	E	F
1		Alpine Race Budget				
2						
3	**Expenses**	**May**	**Percent**	**June**	**Percent**	
4	Basic Food	$30,000	22.22%	$10,000	15%	
5	Special Food Requests	$6,000	4.44%	$6,000	9%	
6	Lodging	$60,000	44.44%	$20,000	30%	
7	Bicycles	$20,000	14.81%	$5,000	7%	
8	Promotions	$12,000	8.89%	$12,000	18%	
9	**Total Expenses**	$128,000	94.81%	$53,000	79%	
10						
11	**Total Budget Available**	$135,000	100.00%	$67,500	100%	
12						
13	**Under (Over) Budget**	$7,000	5.19%	$14,500	21%	
14						
15						
16						
17						

To divide the window into four panes

With four panes you can see even more parts of a Spreadsheet document at once because you can scroll each pane both vertically and horizontally.

To divide the window into four panes:

- Drag both split bars into the positions you want.



	A	C	D	E	F	G
1		ne Race Budget				
2						
3	Expenses	Percent	June	Percent		
5	Special Food Requests	4.44%	$6,000	9%		
6	Lodging	44.44%	$20,000	30%		
7	Bicycles	14.81%	$5,000	7%		
8	Promotions	8.89%	$12,000	18%		
9	Total Expenses	94.81%	$53,000	79%		
10						
11	Total Budget Available	100.00%	$67,500	100%		
12						
13	Under (Over) Budget	5.19%	$14,500	21%		
14						
15						
16						
17						
18						

Now you have four scroll bars. Each scroll bar controls the two panes that are in line with it. For example, the upper scroll bar controls the two upper panes, and the left scroll bar controls the two left panes.

To close a pane:

To close a pane

- Drag the split bar back to the far left or upper edge of the pane.

Finding a Cell

If you want to look at a cell that's just beyond the edge of the window, you can find it easily by scrolling. But a cell that's far away on a very large Spreadsheet document may be difficult to find.

If you specify the coordinates of a cell, Works will find it for you. If you know only what's in the cell, you can specify its value, and Works will try to find a cell that matches what you type.

Works can also find the last cell and the active cell in a Spreadsheet document.

Using Cell References or Cell Content

There are two commands in the Select menu that allow you to find a particular cell: Find Cell and Go To Cell. Use Find Cell to have Works select a particular cell, and use Go To Cell when you want to see the value of a cell, but do not want to select it.

To find and select a cell

With the Find Cell command, you can find and select a cell by specifying its reference or value. If the value you're looking for is a label, you can specify a portion of the text, and Works will look for the cell containing it.

To find a cell containing the error value *Error* or N/A, type *=Error( )* or *=NA( )* in the Find Cell dialog box. When you type a formula (beginning with an equal sign) in the dialog box, Works calculates the formula and looks for a cell displaying the resulting value. For example, since =Error( ) gives the value *Error*, Works looks for a cell containing *Error*.

To find and select a cell:

1. Choose Find Cell from the Select menu.
2. Type the reference or the value of the cell you're looking for, or type a formula whose resulting value is in the cell.
3. Click the Find Next button.

If you type 60000 or B6 in the Find Cell dialog box, Works finds and selects this cell.

File Edit Window Select Format Options Chart Macro

B6 60000

Budget (SS)

	A	B	C	D	E	F
1		Alpine Race Budget				
2						
3	Expenses	May	Percent	June	Percent	
4	Basic Food	$30,000	22.22%	$10,000	15%	
5	Special Food Requests	$6,000	4.44%	$6,000	9%	
6	Lodging	$60,000	44.44%	$20,000	30%	
7	Bicycles	$20,000	14.81%	$5,000	7%	
8	Promotions	$12,000	8.89%	$12,000	18%	
9	Total Expenses	$128,000	94.81%	$53,000	79%	
10						
11	Total Budget Available	$135,000	100.00%	$67,500	100%	
12						
13	Under (Over) Budget	$7,000	5.19%	$14,500	21%	
14						

If you type a reference, Works moves to the cell and selects it. If you type the cell value or formula, Works looks across each row for a cell whose value matches what you typed. If it finds a match, Works moves to and selects the cell. If Works can't find anything to match the text you typed, it displays an alert box.

To find a cell without selecting it

With the Go To Cell command, you can find a particular cell by specifying its cell reference. Works finds the cell and makes it visible in the window. It does not select the cell.

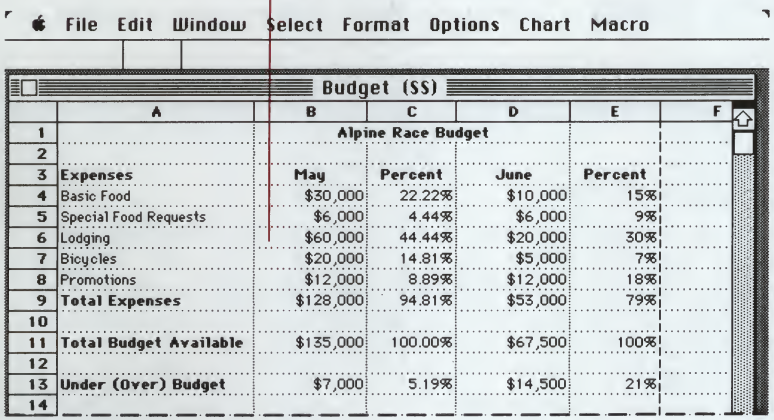
The Go To Cell command is useful while you're typing a formula and want to see a particular cell. Because the cell is not selected, it will not appear in the entry bar as a reference. Go To Cell is also useful when you want to select a large range of cells.

To find a cell without selecting it:

1. Choose Go To Cell from the Select menu.
2. Type the reference of the cell you're looking for.
3. Click the OK button.

Works moves to the cell but does not select it.

The cell you specify in the Go To Cell dialog box appears in the window, but is not selected.



	A	B	C	D	E	F
1		Alpine Race Budget				
2						
3	Expenses	May	Percent	June	Percent	
4	Basic Food	$30,000	22.22%	$10,000	15%	
5	Special Food Requests	$6,000	4.44%	$6,000	9%	
6	Lodging	$60,000	44.44%	$20,000	30%	
7	Bicycles	$20,000	14.81%	$5,000	7%	
8	Promotions	$12,000	8.89%	$12,000	18%	
9	Total Expenses	$128,000	94.81%	$53,000	79%	
10						
11	Total Budget Available	$135,000	100.00%	$67,500	100%	
12						
13	Under (Over) Budget	$7,000	5.19%	$14,500	21%	
14						

Finding the Last Cell or the Active Cell

The Last Cell and Show Active Cell commands from the Select menu help you move quickly around a Spreadsheet document.

To find the last cell

Works considers the last cell in a Spreadsheet document to be the cell at the intersection of the last row and column that contain a value or formula.

To select the last cell of your existing Spreadsheet document:

▣ Choose Last Cell from the Select menu.

Works scrolls to the last cell, which marks the lower right boundary of your document, and selects it for you.

To find the active cell

If you have been scrolling all around the document looking at various cells, the Show Active Cell command takes you back to where you were last working.

To scroll to the currently selected cell:

▣ Choose Show Active Cell from the Select menu.

Works scrolls to the active cell.

Copying Cells

It doesn't take long to type the content of a cell. But why type the same thing over and over again? With Works, you don't have to. Using commands from the Edit menu, you can copy it. For example, if you have sales projections for four quarters, you can set up the formulas for the first quarter and then copy them for the rest.

What happens when you copy references?

When you copy and paste a formula that contains relative references, the references are adjusted to reflect their new locations. If you copy and paste a formula containing a relative reference that refers up two rows and over one column, the adjusted reference will refer up two and over one to whatever new cell holds that relative position. For example, if the formula in cell C7 is =C4 and you copy it to cell D7, Works changes the formula to =D4 so that it still refers to the cell "three up from the formula cell." When you paste relative references, the new references look different from the old ones, and refer to different cells. However, a copy of an absolute reference refers to exactly the same cell as the original reference.

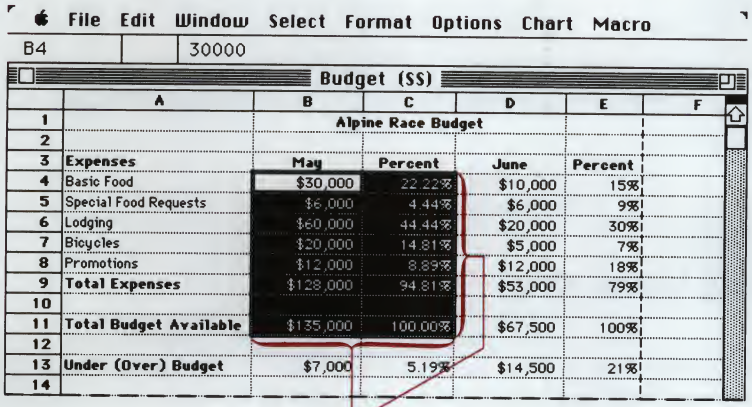
Copying and Pasting Values and Formulas

When you copy, Works places a copy of the selected cells onto the Clipboard for you to paste somewhere else.

To copy and paste a selection:

To copy and paste a selection

1. Select the area you want to copy.



Selection to be copied to the Clipboard

2. Choose Copy from the Edit menu.

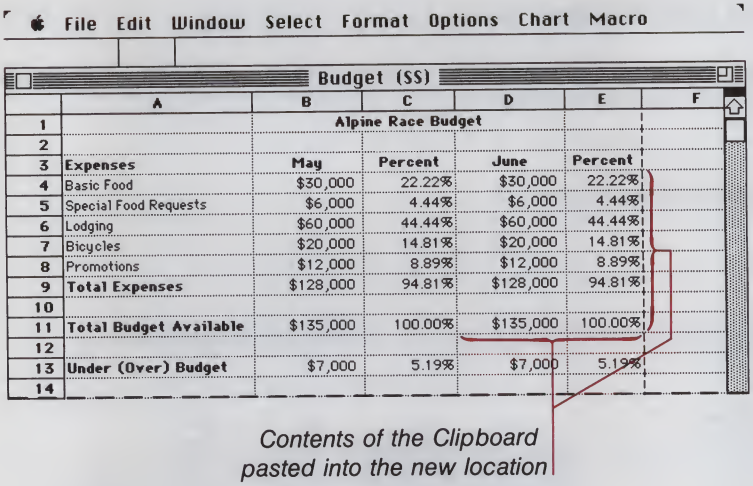
   Works puts the selection onto the Clipboard. It stays there until you replace it with another selection.

3. Click the upper-left cell of the area you want to paste into.

   Make sure that the cells you want to paste into are blank or can be replaced.

4. Choose Paste from the Edit menu.

Works pastes the full contents of the Clipboard back into the Spreadsheet document, adjusting relative references to reflect their new locations.



	A	B	C	D	E	F
1		Alpine Race Budget				
2						
3	Expenses	May	Percent	June	Percent	
4	Basic Food	$30,000	22.22%	$30,000	22.22%	
5	Special Food Requests	$6,000	4.44%	$6,000	4.44%	
6	Lodging	$60,000	44.44%	$60,000	44.44%	
7	Bicycles	$20,000	14.81%	$20,000	14.81%	
8	Promotions	$12,000	8.89%	$12,000	8.89%	
9	Total Expenses	$128,000	94.81%	$128,000	94.81%	
10						
11	Total Budget Available	$135,000	100.00%	$135,000	100.00%	
12						
13	Under (Over) Budget	$7,000	5.19%	$7,000	5.19%	
14						

Pasting Values Only

To paste values only

Sometimes you will want to paste just resulting values, without the formulas. The Paste with Options command lets you choose to paste just values from the Clipboard back into a Spreadsheet document.

For example, if you have an accounts receivable ledger in one Spreadsheet document and a general ledger in another, you could paste just the total of the accounts receivable (that is, values only) to the general ledger. You don't want to paste the formulas that produce the values, however, since those would produce different values in the general ledger.

To paste values only:

1. Select the area you want to copy, and choose Copy from the Edit menu.
2. Click the upper-left cell of the area you want to paste into.
   Make sure that the cells you want to paste into are blank or can be replaced.
3. Choose Paste with Options from the Edit menu.
4. Click the Values Only option.
5. Click the OK button.

Notice that if you click the Both Values and Formulas option, Works proceeds exactly the same as if you had chosen the normal Paste command.

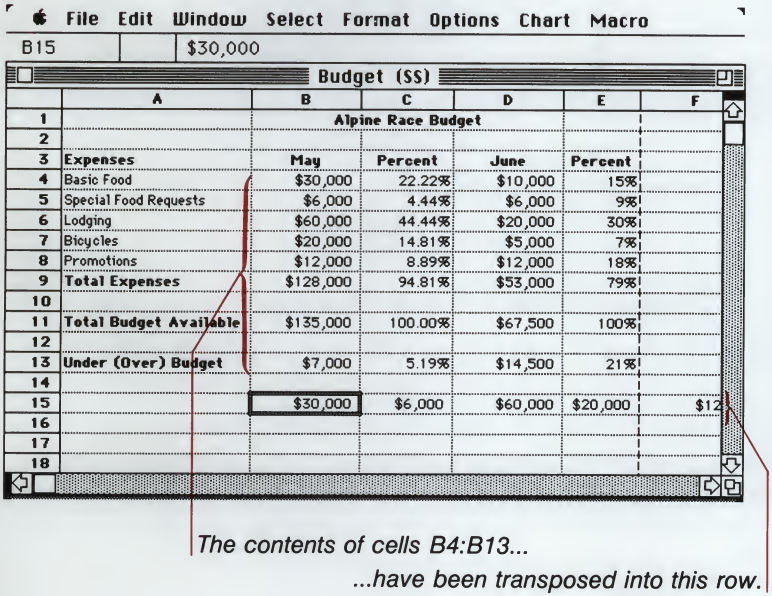
Transposing Rows and Columns

To transpose rows and columns

You might want to turn a column into a row if you want to plot that column as a bar chart. Or you might want to turn a row into a column so you can make a pie chart out of it. Transposing rows and columns is also useful for converting records and fields that you copy from the Database. For information about copying information from the Database, see the last part of this manual, "Using the Tools Together."

To transpose rows and columns:

1. Cut or copy a selection to the Clipboard.
   The selection can be a single row or column or any range of cells.
2. Click the upper-left cell of the area you want to paste into.
   This cell can be in the same Spreadsheet document, or you can move to another one. Make sure the cells you want to paste into are blank or can be replaced.
3. Choose Paste with Options from the Edit menu.
4. Click the Transpose option.
5. Click the OK button.



Works transposes the rows into columns or vice versa, then adjusts relative references to reflect their new locations.

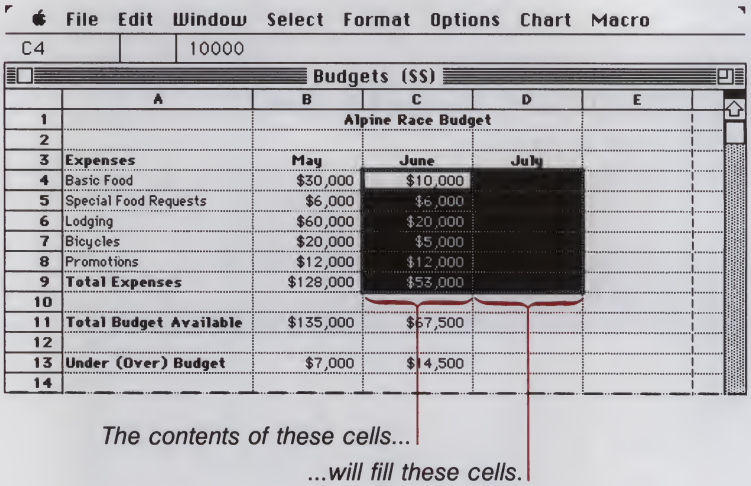
Filling

To fill into adjacent cells

Filling lets you copy the content of a row or column into adjacent rows or columns. Within a selection, you fill cells to the right of the first column of the selection or below the first row of the selection. Filling fills in all cells within the selection, replacing their content if they are not blank, so you should be sure that any cells containing information can be replaced.

To fill into adjacent cells:

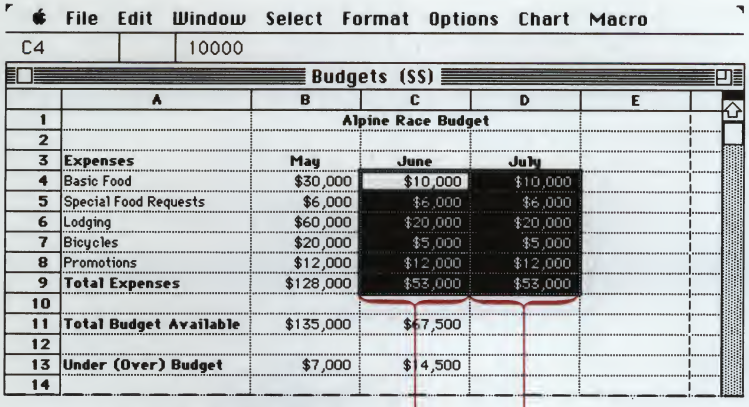
1. Drag across one column or row containing the data you want to copy and as many blank adjacent rows and columns as you want to fill.
   Make sure the entire block is highlighted.



2. Choose Fill Right or Fill Down from the Edit menu.

Works copies the contents of the original cells into the adjacent cells.

Note Select only the range of cells you want to fill before choosing Fill Down. Selecting an entire column and filling all 16,382 cells takes a lot of memory and slows down your work.



If you have any relative references in copied formulas, Works adjusts them relative to their new positions. Absolute references stay the same.

Moving Cells

To move a block of cells

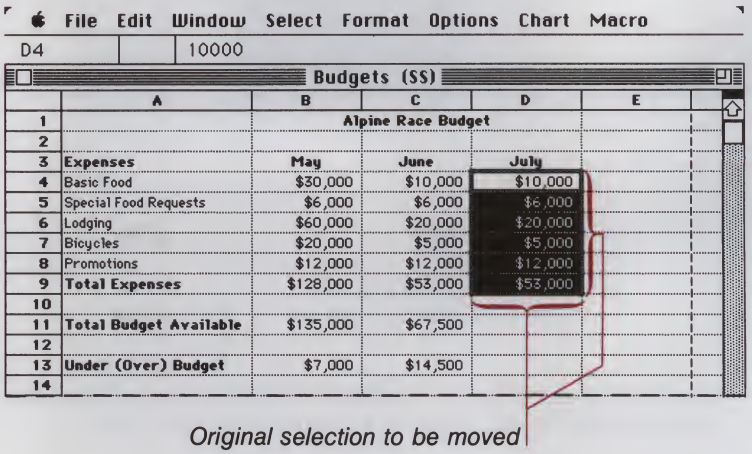
Suppose you developed a whole Spreadsheet document and then decided you wanted your totals at the top, instead of at the bottom. The Move command lets you select a block of cells and move it to a new location within your Spreadsheet document.

When you move cells, all references in the cells in the new location refer to the same cells that they did before you moved them; the formulas still calculate from the same values. Works adjusts any other formulas in the Spreadsheet document that contain references to the moved cells, so that they refer to the new location of the moved cells.

To use the Move command, you must know the coordinates of the cell at the upper-left corner of the location you want to move to.

To move a block of cells:

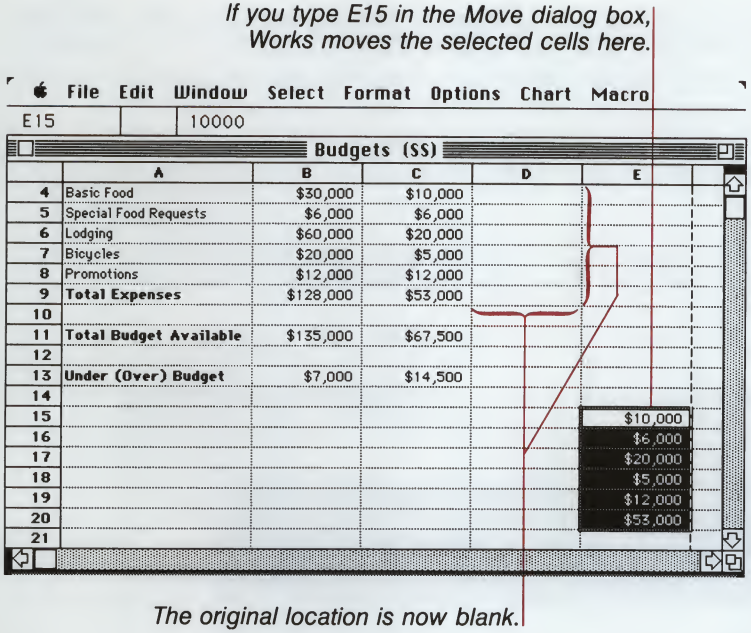
1. Select the block that you want to move.



	A	B	C	D	E
1		Alpine Race Budget			
2					
3	**Expenses**	**May**	**June**	**July**	
4	Basic Food	$30,000	$10,000	$10,000	
5	Special Food Requests	$6,000	$6,000	$6,000	
6	Lodging	$60,000	$20,000	$20,000	
7	Bicycles	$20,000	$5,000	$5,000	
8	Promotions	$12,000	$12,000	$12,000	
9	**Total Expenses**	$128,000	$53,000	$53,000	
10					
11	**Total Budget Available**	$135,000	$67,500		
12					
13	**Under (Over) Budget**	$7,000	$14,500		
14					

2. Choose Move from the Edit menu.
3. Type the reference of the cell that will contain the upper-left corner of the moved selection.

   Works will replace the contents of any cells that aren't blank, so make sure their contents can be replaced.
4. Click the OK button.



Works moves the selection from its old location and pastes it into the new one. All relative references in the moved cells refer to the same cells they referred to before the move.

If you don't know the exact coordinates of the location where you want to move the selection, there's another way to move cells. After you select the block you want to move, position the pointer on the cell at the upper-left corner of the destination block, but don't select it. Then hold down the Command and Option keys and click.

Sorting

You can change the order of rows in a selection by sorting. You might want to sort a payroll document in alphabetical order by last names, or you might want to sort a stockroom inventory by part number.

Works lets you sort in ascending and descending order.

If you have numbers and text in the same column, the numbers come first, whether you're sorting in ascending or descending order. Blank cells are always sorted last.

You can sort on up to three key columns. This allows you to have subgroups for subtotals. For example, you could sort a payroll document by department, supervisor, and last name, setting up subtotals for each category. That would let you analyze payroll expenses by department and supervisor.

In the example below, the selected cells are being sorted in ascending order on key column A.

If you type A in the Sort dialog box, Works sorts the entire selection based on the contents of column A.

File Edit Window Select Format Options Chart Macro

A4 Basic Food

Budget (SS)

	A	B	C	D	E	F
1		Alpine Race Budget				
2						
3	Expenses	May	Percent	June	Percent	
4	Basic Food	$30,000	22.22%	$10,000	15%	
5	Special Food Requests	$6,000	4.44%	$6,000	9%	
6	Lodging	$60,000	44.44%	$20,000	30%	
7	Bicycles	$20,000	14.81%	$5,000	7%	
8	Promotions	$12,000	8.89%	$12,000	18%	
9	Total Expenses	$128,000	94.81%	$53,000	79%	
10						
11	Total Budget Available	$135,000	100.00%	$67,500	100%	
12						
13	Under (Over) Budget	$7,000	5.19%	$14,500	21%	
14						

File Edit Window Select Format Options Chart Macro

A4 Basic Food

Budget (SS)

	A	B	C	D	E	F
1		Alpine Race Budget				
2						
3	Expenses	May	Percent	June	Percent	
4	Basic Food	$30,000	22.22%	$10,000	15%	
5	Bicycles	$20,000	14.81%	$5,000	7%	
6	Lodging	$60,000	44.44%	$20,000	30%	
7	Promotions	$12,000	8.89%	$12,000	18%	
8	Special Food Requests	$6,000	4.44%	$6,000	9%	
9	Total Expenses	$128,000	94.81%	$53,000	79%	
10						
11	Total Budget Available	$135,000	100.00%	$67,500	100%	
12						
13	Under (Over) Budget	$7,000	5.19%	$14,500	21%	
14						

Sorting affects only selected cells. Works rearranges the selected cells in each row according to the order you specify for the key column. When you change the order, most cells will have different cell references. Works changes both absolute and relative references, inside and outside the selection, to reflect new cell locations.

To sort a Spreadsheet document:

To sort a Spreadsheet document

1. Select the cells you want to sort.
2. Choose Sort from the Edit menu.
3. Type the letter heading of the column that you want to sort — the key column.
4. Click the order you want to sort in (ascending or descending).
5. If you have a second or third key column, move the insertion point into the appropriate box and type the letter.
6. Click the OK button or press the Return key.

Works reorders your selection.

Note If you try to sort columns based on key row headings, Works displays an alert box.

Inserting Rows or Columns

You can insert rows or columns into a Spreadsheet document whenever necessary. So if you have just finished a large document after hours of work and you discover that you need just one more row, Works can help you.

When you insert rows or columns, both relative and absolute references are adjusted accordingly. So if you have a cell referring to cell A1 and insert a row above row 1, the changed reference will be to cell A2, one row down.

To insert a row or column:

To insert a row or column

1. Click the row or column heading where you want to insert a new row or column.
2. Choose Insert from the Edit menu.

Works inserts the new row or column at the selection, moving the selected row beneath the insertion, or the selected column to the right of the insertion. All the rows or columns that follow the new one are renumbered. If you need to insert more than one row or column, you can repeat the procedure.

13 Formatting and Printing

The two previous chapters explained how to set up a Spreadsheet document and calculate with it. In this chapter, you'll learn how to change the way it looks — its format. This chapter also explains how to print a Spreadsheet document when you have the format adjusted to your liking.

Read this chapter to learn how to:

- Change the way numbers are displayed.
- Realign the content of cells.
- Emphasize cells with bold type, underlining, or borders.
- Display or remove the grid.
- Change column width.
- Protect cells from changes.
- Set page breaks for printing.
- Print a Spreadsheet document.

About cell formats

The value of a cell and how Works displays that value within the cell are different. The value of a cell is determined by the data or formula it contains. How that value is displayed is determined by the format of the cell.

You can change the appearance of a Spreadsheet document in a variety of ways without affecting formulas or values in cells. You can display data in a number of ways:

- With a fixed number of decimals
- As dollars or percents, or in scientific notation
- With various alignments and type styles
- With or without commas

When you change a cell's format, its value does not change. Works displays the cell's value in the new format.

Using the Format menu's Set Cell Attributes command, you can specify the format of a cell before or after you enter the content of the cell. When you want to enter data that all use the same format, you can format selected cells before you start typing. Then, when you enter the data into those cells, Works displays it in the format you chose. Or, you can enter your data first, then select the cells and choose a format.

Changing Number Formats

Unless you specify otherwise, Works displays numbers in General format (that is, as accurately as possible, given the cell width). For example, if you type 12345.6789, Works may display it in a variety of ways, depending on the width of the cell: 12345.6789, 12345.7, 12346, 1E+4, and so on.

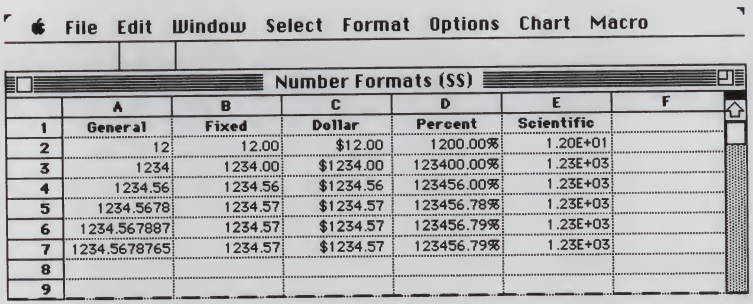
To change the format of numbers in cells

Numbers can be displayed in the following formats: General, Fixed, Dollar, Percent, Scientific, Date, or Time. With all formats except General, Date, and Time, you can set a fixed number of decimal places to display. With Date, you can choose short, medium, or long formats. One Spreadsheet document can contain many different cell formats. You can select columns, rows, a single cell, or a block of cells to format. For information about the number formats you can use, see "The Format Menu" in Chapter 16.

To change the format of cells:

1. Select the cells you want to format.
2. Choose Set Cell Attributes from the Format menu.
3. Choose General, Fixed, Dollar, Percent, Scientific, Date, or Time from the dialog box.
4. Click the OK button or press the Return key.

Works adjusts the format of the selected cells accordingly.



	A	B	C	D	E	F
1	General	Fixed	Dollar	Percent	Scientific	
2	12	12.00	$12.00	1200.00%	1.20E+01	
3	1234	1234.00	$1234.00	123400.00%	1.23E+03	
4	1234.56	1234.56	$1234.56	123456.00%	1.23E+03	
5	1234.5678	1234.57	$1234.57	123456.78%	1.23E+03	
6	1234.567887	1234.57	$1234.57	123456.79%	1.23E+03	
7	1234.5678765	1234.57	$1234.57	123456.79%	1.23E+03	
8						
9						

To change the number of decimal places

Unless you specify otherwise, Works displays two decimal places in your numbers in all formats except General. You can choose to display up to 15 decimal places.

To change the number of decimal places:

1. Select the cells for which you want to change the number of decimal places.
2. Choose Set Cell Attributes from the Format menu.
3. Type the number of decimal places you want displayed in the Decimal Places box.
4. Click the OK button or press the Return key.

Works adjusts the numbers accordingly.

To display numbers with commas

You can choose to display numbers with or without commas. If you type commas into your numbers as you enter them, Works treats the numbers as text.

To show commas:

1. Select the cells you want to format.
2. Choose Set Cell Attributes from the Format menu.
3. Choose Commas.
4. Click the OK button or press the Return key.

Aligning Cell Content

To change alignment

Numeric values in Works are automatically right-aligned (they line up on the right side of the cell), so that columns of numbers are easy to read. Labels automatically line up on the left side of the cell. However, you might want to center or right-align your labels, or left-align your numbers. So Works lets you specify the alignment of cells. You can select columns, rows, a single cell, or a block of cells to realign.

To change the alignment of cells:

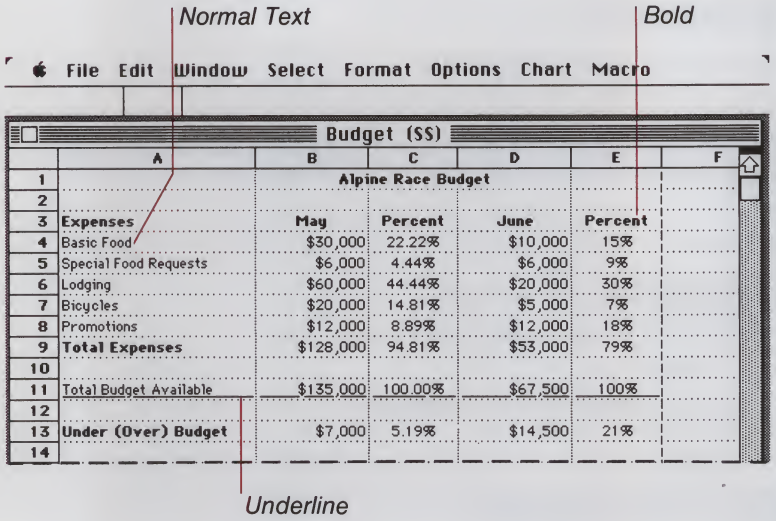
1. Select the cells whose alignment you want to change.
2. Choose Set Cell Attributes from the Format menu.
3. Choose Left, Center, or Right alignment.
4. Click the OK button or press the Return key.

Works adjusts the alignment of the selected cell or cells.

Adding Emphasis

To change type style

Spreadsheet cells contain normal (plain) type unless you change the type style with the Format menu. You can add emphasis to the content of any cell by changing the style of the cell to bold and/or underlined text.



	A	B	C	D	E	F
1		Alpine Race Budget				
2						
3	**Expenses**	**May**	**Percent**	**June**	**Percent**	
4	Basic Food	$30,000	22.22%	$10,000	15%	
5	Special Food Requests	$6,000	4.44%	$6,000	9%	
6	Lodging	$60,000	44.44%	$20,000	30%	
7	Bicycles	$20,000	14.81%	$5,000	7%	
8	Promotions	$12,000	8.89%	$12,000	18%	
9	**Total Expenses**	$128,000	94.81%	$53,000	79%	
10						
11	Total Budget Available	$135,000	100.00%	$67,500	100%	
12						
13	**Under (Over) Budget**	$7,000	5.19%	$14,500	21%	
14						

If you format a cell to have underlined text, the underlining extends across the full width of the cell.

To change the type style of cells:

1. Select the cells whose type style you want to change.
2. Choose Set Cell Attributes from the Format menu.
3. Choose Bold or Underline.
4. Click the OK button or press the Return key.

Works changes the type style of the selected cells.

Note You can also change the type style by using the following Command + key equivalents:

Keyboard command	Style
Command + B	Bold
Command + U	Underline
Command + N	Normal

You can also add emphasis to cells by adding a border.

To add borders

To add a border to cells:

1. Select the cells you want to border.
2. Choose Borders from the Format menu.
3. Choose Outline, Left, Right, Top, or Bottom.

Note If you select more than one cell and choose Outline, Works outlines the selection. To individually outline each cell in a selection, select a range, choose Borders from the Format menu, and choose Left, Right, Top, and Bottom for the selection.

To remove a border, select the cells whose border you want to remove, choose Borders from the Format menu, and then choose None.

Displaying the Grid

You can choose whether or not to display the grid lines in a Spreadsheet document.

To display or remove the grid

To display the grid:

- Choose Show Grid from the Options menu.

Works displays the grid and places a checkmark in the menu.

To remove the grid, choose Show Grid again.

Works removes the checkmark from the menu.

Changing Column Width

The standard column width is 12 characters. A single column can display up to 40 characters. That's large enough to show long labels like Advertising and Total Invoices.

When something doesn't fit in a cell, you can widen the cell. In General format, numbers are displayed as accurately as possible given the width of the column, using scientific notation if necessary.

To change column width

You change the width of a column by dragging the line at the right of the column heading or by choosing Column Width from the Format menu.

To change column width by dragging:

1. Position the pointer on the right edge of the column heading.
   The pointer becomes a two-way arrow.
2. Drag to the right to make the column wider, or to the left to make the column narrower.

To change column width by using the Format menu:

1. Select a cell in the column you want to change.
   You can select cells in multiple adjacent columns if you want to change the width of all of them.
2. Choose Column Width from the Format menu.
3. Type a number, up to 40, for the overall column width.
4. Click the OK button or press the Return key.

When you enter a label, if you type more characters than will fit in a cell before you've widened it, Works continues the label into adjacent blank cells, if possible. When you enter a number that is too long for a cell, Works displays the cell filled with number signs (#). Widening the column will allow the number to be displayed.

Protecting Cells from Changes

When you set up forms for other people to fill in, or if you have important formulas that took a long time to set up, you probably would like to protect this work from being changed. In Works, you can do this with cell protection. Later on, if you need to change the contents of a protected cell, you can remove cell protection.

To set cell protection

You can set protection separately for each cell or range of cells.

To set cell protection, if Protected is not checked:

1. Select the cell or range of cells you want to protect.
2. Choose Protected from the Options menu.

Works protects the selected cells and displays a checkmark in the menu.

You won't be able to type in the protected cells unless you remove cell protection. The values in cells with formulas still change, but you won't be able to change the formulas themselves until you remove cell protection.

To remove cell protection, if the Protected command is checked:

To remove cell protection

1. Select the protected cell or range of cells.
2. Choose Protected from the Options menu.

Works removes the cell protection and deletes the checkmark from the menu.

Printing

When you're ready to print a Spreadsheet document, you can specify page breaks and set up headers and footers to print at the top and bottom of every page.

For a detailed explanation of the printing process, including how to fill out the necessary dialog boxes, see "Printing a Document" in Chapter 1. This section discusses only items that are specific to printing a Spreadsheet document.

Setting Page Breaks

In a Spreadsheet document, you can set both horizontal and vertical page breaks. Works automatically sets page breaks according to the margins you choose using the Page Setup command from the File menu. But you may want to specify your own page breaks. That's what the Set Page Break command is for.

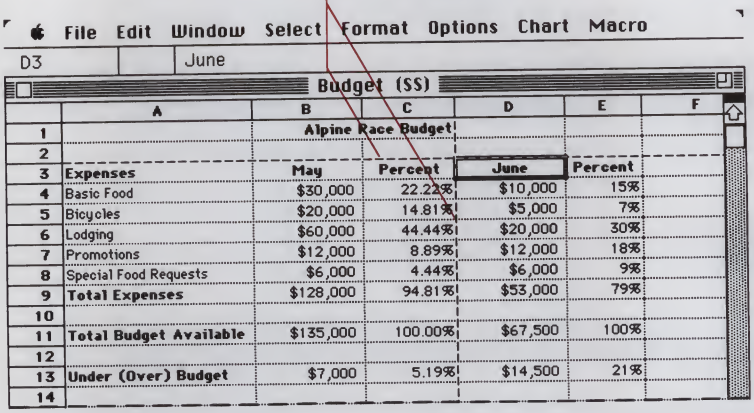
To set a page break:

To set a page break

1. Select the cell that you want to be at the upper-left corner of the new page.
2. Choose Set Page Break from the Options menu.

Vertical and horizontal dashed lines (page break indicators) show where you've set the page break.

If you select cell D3, Works inserts these vertical and horizontal page break indicators.



	A	B	C	D	E	F
1		Alpine Race Budget				
2						
3	Expenses	May	Percent	June	Percent	
4	Basic Food	$30,000	22.22%	$10,000	15%	
5	Bicycles	$20,000	14.81%	$5,000	7%	
6	Lodging	$60,000	44.44%	$20,000	30%	
7	Promotions	$12,000	8.89%	$12,000	18%	
8	Special Food Requests	$6,000	4.44%	$6,000	9%	
9	Total Expenses	$128,000	94.81%	$53,000	79%	
10						
11	Total Budget Available	$135,000	100.00%	$67,500	100%	
12						
13	Under (Over) Budget	$7,000	5.19%	$14,500	21%	
14						

To set a page break across an entire row or column, select the row or column heading before choosing the Set Page Break command.

To remove a manual page break

To remove a manual page break:

1. Select the cell in the upper-left corner of the page.
2. Choose Remove Page Break from the Options menu.

Works removes the manual page break — both the horizontal and vertical dashed lines.

You can remove just the horizontal page break or just the vertical page break by selecting any cell just below or to the right of the dashed line, respectively, before choosing Remove Page Break.

Printing a Spreadsheet Document

When you're ready to print a Spreadsheet document, you have three options. You can choose to print:

- All cells through the last cell.
- Only cells that appear in the window.
- Only selected cells.

Cell notes can be printed with any of these options.

If you use the Print command without selecting any cells, Works prints all cells through the last cell.

If you use the Select All command from the Edit menu, Works prints all cells in the Spreadsheet document (256 x 16,382 cells).

You can choose whether or not to print row and column headings. If you want these printed, click the Print Row and Column Numbers option in the Page Setup dialog box.

With the ImageWriter printer, you can also choose to print any selection reduced to 50% of its original size by clicking the 50% Reduction option in the Page Setup dialog box.

To print an entire Spreadsheet document

To print an entire Spreadsheet document:

1. Make sure that no more than one cell is selected in the document. (Otherwise, Works will print only the selected cells.)
2. Choose Page Setup from the File menu.
3. Click the appropriate options and type any text you want for a header and footer.
4. If you want to print cell notes, click the Print Cell Notes option.
5. Click the OK button or press the Return key.
6. Choose Print from the File menu.
7. Click the appropriate options.
8. Click the OK button or press the Return key.

Works prints your entire Spreadsheet document. If the document is too wide to fit on one page, Works prints the remaining columns on subsequent pages before continuing to print the remaining rows.

To print a Spreadsheet document horizontally

Normally, the Spreadsheet prints across the narrow part of the page. Because Spreadsheet documents are often wider than they are long, you may want to print in the wider direction.

To print a Spreadsheet document horizontally:

1. Choose Page Setup from the File menu.
2. Click the Orientation icon showing horizontal (wide) printing.
3. Click the OK button or press the Return key.
4. Choose Print from the File menu.
5. Click the appropriate options.
6. Click the OK button or press the Return key.

Works prints your Spreadsheet document horizontally on the paper.

To print the active window

To print just the active window:

- Choose Print Window from the File menu.

To print a range of cells

To print a selected range of cells:

1. Select the range of cells you want to print.
2. Choose Print from the File menu.
3. Click the appropriate options.
4. Click the OK button or press the Return key.

Works prints just the selected range of cells. If the selection crosses a page break, Works prints the selection on two pages.

To print cell notes

To print cell notes:

- Click the Print Cell Notes option in the File menu's Page Setup dialog box.

Cell notes are printed separately, after the Spreadsheet document has been printed. Cell notes are identified by their cell reference, and are printed first by column, then by row. (For example, A1 through A10, then B1 through B10, and so on.)

To preview cell notes before printing, click the Print Cell Notes option in the Page Setup dialog box. Then choose Print from the File menu, and click the Print Preview option. For more information on Print Preview, see "Print" in Chapter 2.

14 Charting a Spreadsheet Document

This chapter explains how to use the Spreadsheet's charting capability to plot the information in your Spreadsheet documents. You'll learn how to:

- Create series charts.
- Create pie charts.
- Work with chart definitions and charts.

The Spreadsheet's charting capability converts information from Spreadsheet documents into charts. Each Spreadsheet document can have up to eight chart definitions stored with it. A chart definition consists of the information you specify in a dialog box for either a series chart or a pie chart.

When you're trying out different scenarios in the Spreadsheet — changing the numbers or the formulas you use for calculation — the results show up immediately on your chart. Charts can speed up your analysis of numbers. Relationships that are otherwise hard to see show up easily on a chart.

Charts also enhance presentations. If you use an overhead projector and have a LaserWriter printer, you can make changes up to the last minute, and print the charts directly on overhead transparencies. Or, you can have your printed charts made into slides.

You can use information from other spreadsheet or database programs to make charts. Just copy the information into a Works Spreadsheet document; then you're ready to create a chart. For more information, see Appendix B, "Using Works with Other Applications."

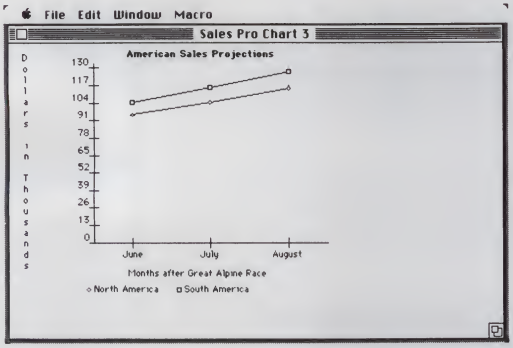
Types of charts Works can create

Works can create two types of charts: series charts and pie charts.

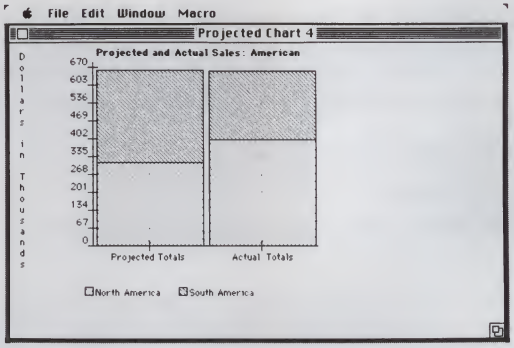
- Series charts show relationships between numbers. For example, a series chart might illustrate a company's total sales for each of the last four quarters.
- Pie charts help you see proportions of a whole. For example, a pie chart might show a breakdown of your expenses as part of an overall budget.

Series Charts

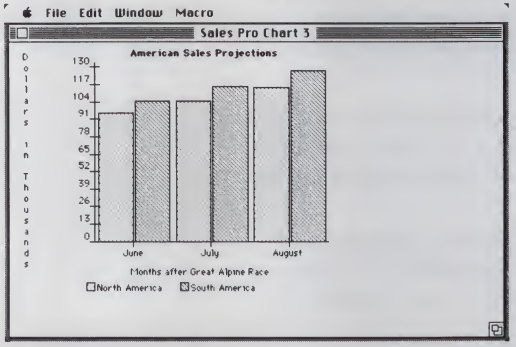
This section gives a brief overview of the different kinds of series charts, and describes how to create them. Works draws four types of series charts: line charts, bar charts, stack charts, and combination charts (called "combo" in the dialog box).



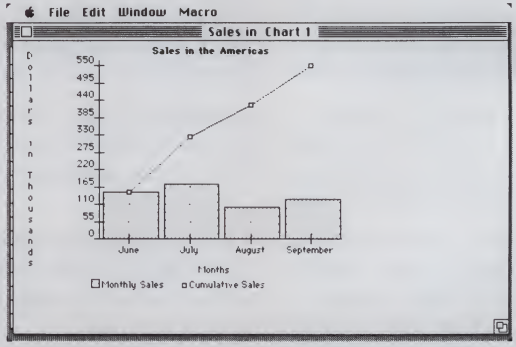
Line Chart



Stack Chart



Bar Chart



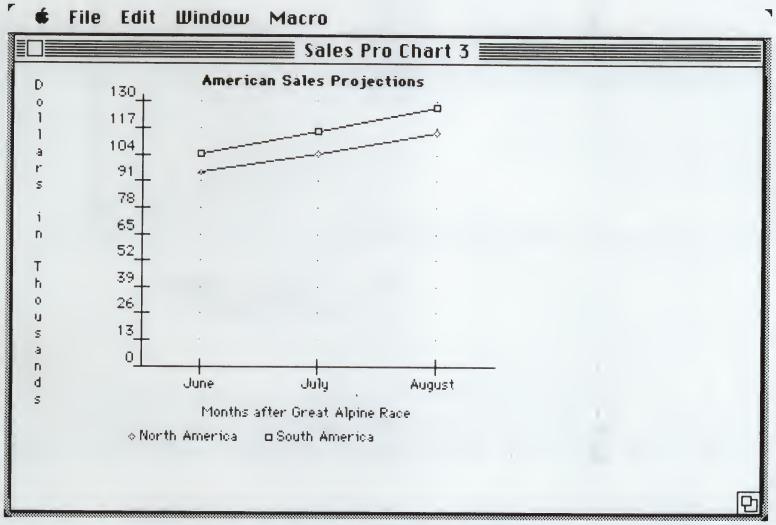
Combination Chart

Each of these charts gives you a different way of looking at the same information. The type you use depends on the information you're analyzing, or how you want to show it. It's similar to working with an artist: you supply the information and explain what kind of chart you want, and the artist draws it. Of course, with Works you can use the same information with different types of charts to quickly see which one works best.

Line and Bar Charts

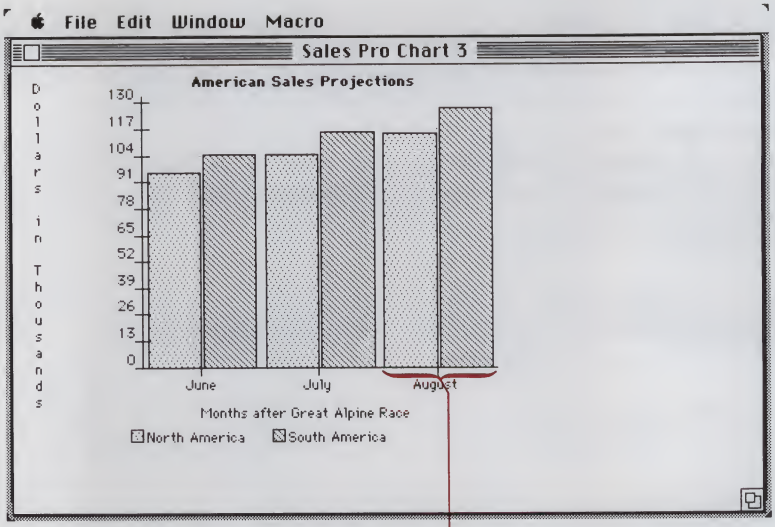
Line charts

A line chart uses a line to link together points that represent numbers. When you compare more than one set of numbers, each set of numbers has one line. As each line crosses the categories on the horizontal axis, it marks the intersection with a distinct symbol called a point marker. In the following illustration, for example, the point marker representing South America is a square.



Bar charts

For a single set of numbers (three months of North American sales projections, for example), a bar chart draws a series of bars, each representing one number. When you're comparing more than one set of numbers, such as three months of sales projections for North America and South America, a bar chart groups the numbers by category (months, in this case), so you can see at a glance how the figures for each month compare.



Bars for each category are grouped together.

When to use line or bar charts

Line charts are very effective at showing a trend — a growth or decline in numbers over time. Use line charts when it's important to see trends over a period of time — how last year's growth curve compares to this year's, for example.

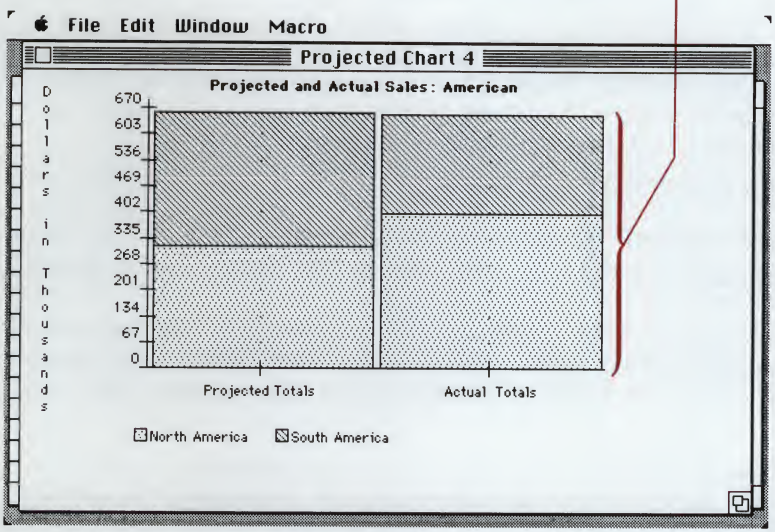
Bar charts compare sets of numbers divided into discrete categories. Use bar charts when it's important to compare numbers within a category of numbers — April of this year and April of last year, for example.

Stack and Combination Charts

Stack charts

Stack charts are a variation on bar charts. Stack charts illustrate component parts of a total as they change. For example, the stack chart on the next page shows how sales projections in North and South America compare with actual sales.

Components stack to show totals, and are easily compared.



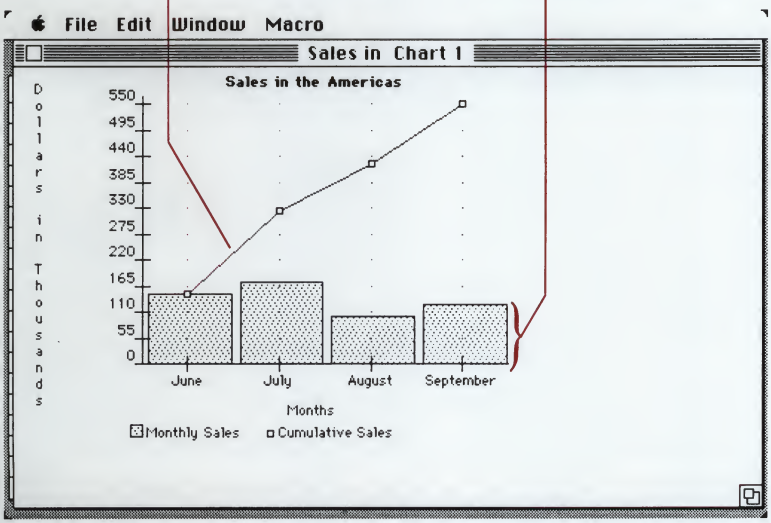
A regular bar chart doesn't show these amounts added up, so although you see how the amounts compare, you don't see their totals.

Combination charts

Combination charts combine a bar chart with a line chart. Use combination charts when you want to see one set of numbers (with bars) and the trend of another set of numbers (with a line) at the same time.

The line shows the trend of cumulative sales.

The bars show the monthly sales.



Creating a Series Chart

To create a series chart

To set up a chart definition for a series chart, you use a chart definition dialog box. In this dialog box, you provide all the information Works needs to draw a series chart of your Spreadsheet data. You specify the chart type, a chart title, titles for the vertical and horizontal scales, the headings of the columns and rows to be charted and to be used for the data legend and the horizontal titles, and the vertical scale of the chart.

To see the chart definition dialog box:

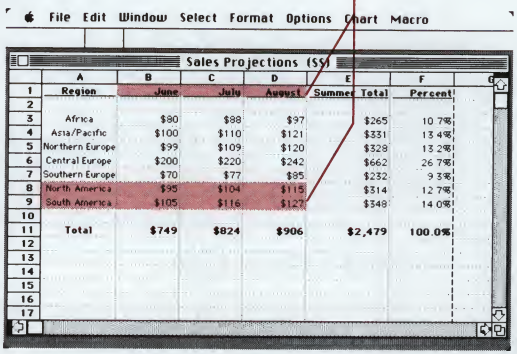
- Choose New Series Chart or Select Chart Definition from the Chart menu.

  Choosing New Series Chart takes you directly to a new chart definition dialog box.

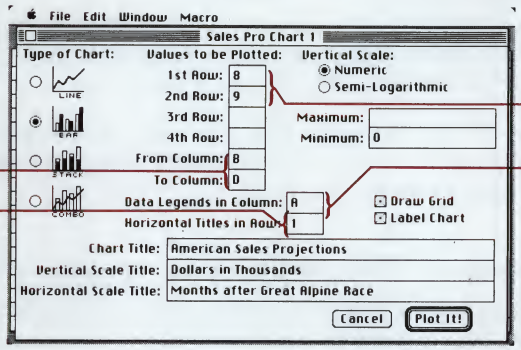
  Choosing Select Chart Definition gives you the Select Chart Definition dialog box which contains a list of existing charts. Select a chart definition name and click the OK button to see the chart definition dialog box.

The following illustration shows how you use the information in your Spreadsheet document to set up a chart definition in the dialog box and to create a chart.

Rows and columns you specify as Values to be Plotted define the parameters of your chart.

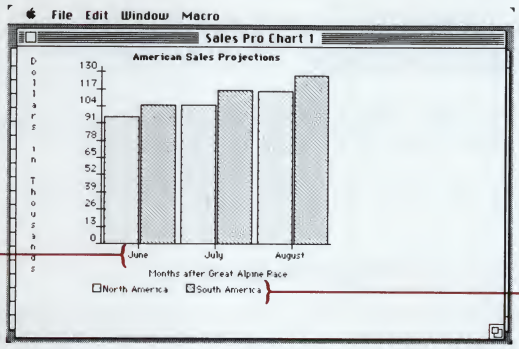


	A	B	C	D	E	F
1	Region	June	July	August	Summer Total	Percent
2						
3	Africa	$80	$88	$97	$265	10.7%
4	Asia/Pacific	$100	$110	$121	$331	13.4%
5	Northern Europe	$99	$109	$120	$328	13.2%
6	Central Europe	$200	$220	$242	$662	26.7%
7	Southern Europe	$70	$77	$85	$232	9.3%
8	North America	$95	$104	$115	$314	12.7%
9	South America	$105	$116	$127	$348	14.0%
10						
11	Total	$749	$824	$906	$2,479	100.0%
12						
13						
14						
15						
16						
17						



The column range and row number you specify here...

The rows and column you specify here...



... determine the horizontal titles.

...determine the data legend.

Specifying a Chart Title

To specify a chart title

You can put a title on the chart by typing it into the Chart Title text box of the chart definition dialog box. If you don't specify a title, Works will plot the chart without any title.

To specify a chart title:

- Type a title into the Chart Title text box.

When you plot the chart, this title appears directly above the chart.

Choosing a Chart Type

To choose a chart type

The four icons in the upper-left corner of the New Series Chart dialog box let you choose between a line chart, a bar chart, a stack chart, or a combination (combo) chart.

To choose a chart type:

- Click the icon that represents the type of chart you want to make.

If you aren't sure what type you want, review the descriptions at the beginning of this section, or just choose a type to experiment with. You can easily change to another type later.

Specifying Titles for the Horizontal and Vertical Scales

To specify titles for scales

You can specify titles for the horizontal and vertical scales of the chart. Scale titles help to explain the units of information shown on the scales. If you don't type scale titles into the text boxes, Works will not show any vertical and horizontal scale titles.

To specify titles for the scales:

- In the New Series Chart dialog box, type titles into the Vertical Scale Title and Horizontal Scale Title text boxes.

When you plot the chart, these titles appear on the chart.

Choosing the Information To Chart

Numbers define the chart, telling Works how high to make a bar or where to put a point on the scale.

The numbers that define a chart are in the rows and columns of your Spreadsheet document. Works lets you plot up to four sets of information in a series chart. That means you can choose up to four rows from a Spreadsheet document for charting.

To specify rows and columns to chart

To specify the rows and columns that you want to chart:

1. Move the New Series Chart dialog box aside by dragging its title bar so you can see the rows and columns you want to chart.
2. In the Values to be Plotted boxes, type the headings (numbers) of the rows that contain the values you want to chart from the Spreadsheet document.

   If the data you want to chart is in columns, you'll need to transpose it into rows before charting. Activate the Spreadsheet document and use the Copy and Paste with Options commands from the Edit menu.
3. In the From Column and To Column boxes, type the headings of the columns which begin and end the information you want in the rows you specified in step 2.

   Works will chart numbers in the specified rows from the beginning column to the ending column. The columns must be adjacent to one another.

To specify a data legend and horizontal titles

Labels help you identify your numbers. Your Spreadsheet row labels (the text that describes the information in the rows) become the data legend. The data legend describes the sets of information in the chart. Your Spreadsheet column labels (the text that describes the information in the columns) become titles for the horizontal axis. Works calls these horizontal titles.

To specify a data legend and horizontal titles:

1. In the Data Legends in Column box, type the heading of the column containing the labels for the rows of information you're charting.

   The data legend will appear at the bottom of the chart, and will identify the shading patterns used for each bar in a bar chart, or the shape of the point marker used for each line in a line chart.
2. In the Horizontal Titles in Row box, type the heading of the row containing the labels for the columns that you're charting.

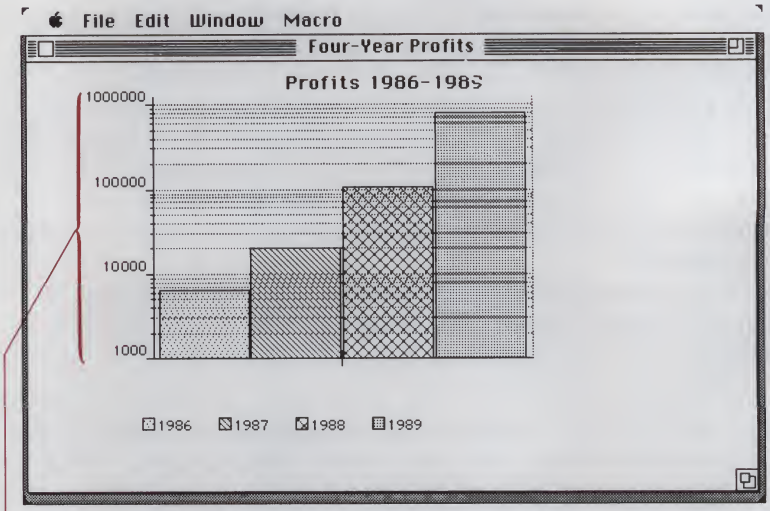
   These labels will appear along the horizontal scale to label each bar in a bar chart or each point in a line chart. (If you are charting many columns, there may not be room for every label on the chart, so Works will show representative labels.)

Setting the Vertical Scale

To set the vertical scale

You can choose to have a numeric scale or semi-logarithmic scale for the chart. A numeric scale is divided into ten regular increments — 10, 20, 30, 40, ...100, for example. A semi-logarithmic scale exaggerates the size of smaller numbers and minimizes the size of larger numbers. It makes it easier to show very large numbers and very small numbers on the same chart.

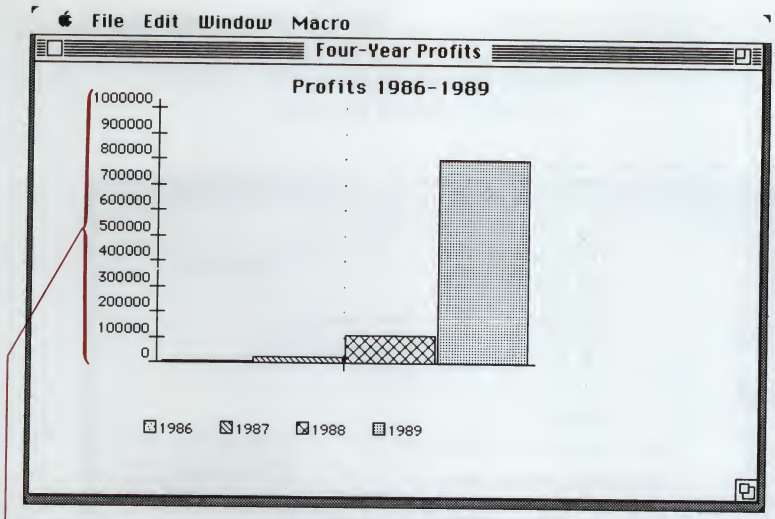
For example, with a semi-logarithmic scale, the distance on the chart below between 1000 and 10,000 is the same as the distance between 10,000 and 100,000.



Semi-logarithmic scale

You can also choose to limit the chart to a certain range, between a minimum and a maximum. You might want to do this if all your amounts were greater than a certain amount, like a million; less than a certain amount, like two million; or between two amounts. If your minimum were one million and your maximum two million, you could use the full range of the chart to see the numbers between those two figures.

Setting a maximum can also make a chart with a numeric scale easier to read. When you choose a numeric scale, Works uses the largest number in the chart as the top of the scale. Works divides the scale into ten segments. For example, if the largest number is 793, each marker on the vertical scale will be a multiple of 79 (79, 158, 237, ...). To establish more standard divisions, you can set a maximum that is a multiple of ten. For example, with a maximum of 1,000,000, you'll have divisions at 100,000, 200,000, and so forth.



Numeric scale with maximum set to 1,000,000

To set the vertical scale:

1. In the New Series Chart dialog box, click Numeric or Semi-Logarithmic for the vertical scale.
2. Type a maximum, a minimum, or both, if you want them.

Choosing To Show a Grid or Labels

To choose a grid or labels

A grid helps you see where points on the chart line up on the scales. Labels (titles) help you identify what the numbers mean. You can choose whether or not a chart will show the grid or the labels.

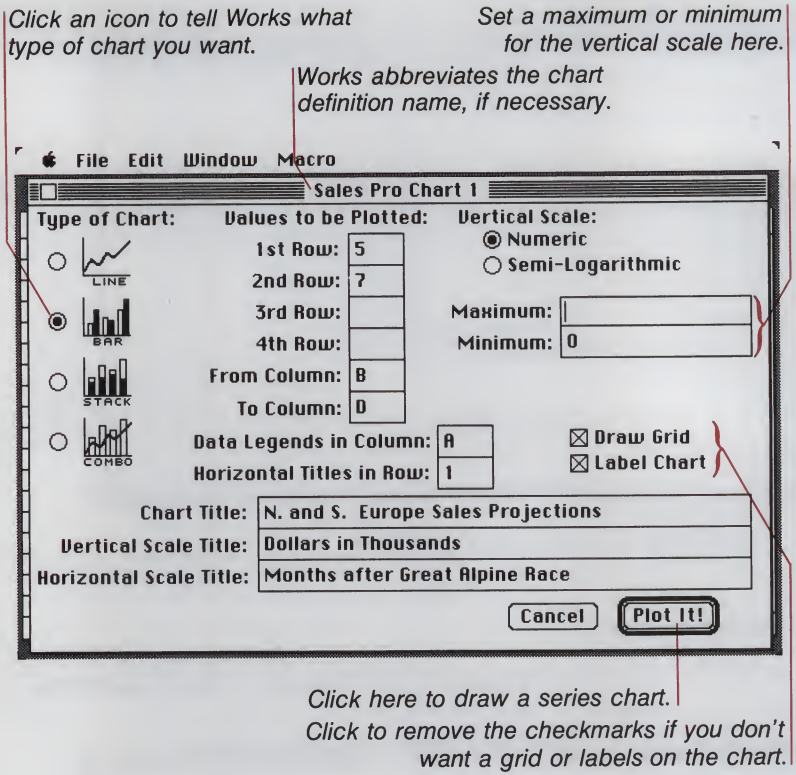
To show the grid or labels, if they are not already checked in the New Series Chart dialog box:

- Click the Draw Grid option.

  or
- Click the Label Chart option.

If the options are checked already, and you do not want either a grid or the labels on your chart, click to remove the checkmark.

Your chart definition is now complete.



Plotting the Chart

After you've filled out the dialog box, you can take any of the following actions.

To plot the chart

To plot the chart:

- Click the Plot It! button.

Works draws the chart and stores the definition with the Spreadsheet document.

To then return to the chart definition dialog box:

- Double-click anywhere in the chart window.

To avoid plotting the chart

To store the chart definition without drawing the chart:

- Click the close box.

Works stores the definition and returns you to the Spreadsheet document.

To return to the Spreadsheet document without storing the chart definition or drawing the chart:

- Click the Cancel button.

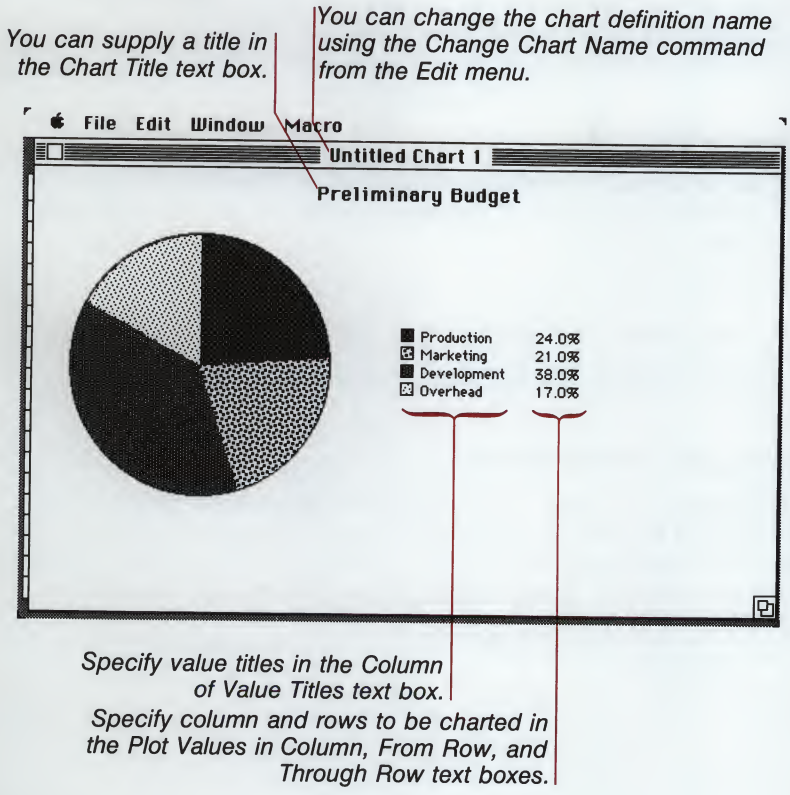
If you want to continue working with your series chart before you begin learning about pie charts, skip ahead in this chapter to "Working with Charts and Chart Definitions."

Pie Charts

This section explains what pie charts show, what you might use them for, and how to create them.

When to use a pie chart

Pie charts compare parts of a whole. For example, a pie chart can illustrate which parts of a company's budget are allocated to production, marketing, development, and overhead.



Creating a Pie Chart

Pie charts compare only one set of information, dividing it into parts of a total — the pie. In a Spreadsheet document, this corresponds to one column of numbers. A column of labels provides the key for each slice of the pie. Works calls these labels value titles.

If you have a Spreadsheet document with several columns of information that you want to chart as pie charts, you can define a pie chart for each column. Each of the pie chart definitions will be stored with your Spreadsheet document, so that you can look at them at any time.

To create a pie chart

To set up a chart definition for a pie chart, you use a chart definition dialog box. In this dialog box, you specify the column containing the values you want to plot, the beginning and ending row headings, and the column containing the labels for the value titles.

To see the chart definition dialog box:

- Select New Pie Chart or Select Chart Definition from the Chart menu.
  Choosing New Pie Chart takes you directly to a new chart definition dialog box.
  Choosing Select Chart Definition gives you the Select Chart dialog box, which contains a list of existing charts. Select a chart definition name and click the OK button to see the chart definition dialog box.

Specifying a Chart Title

To specify a chart title

You can put a title on the chart by typing it into the Chart Title text box of the chart definition dialog box. If you don't specify a title, Works will plot the chart without any title.

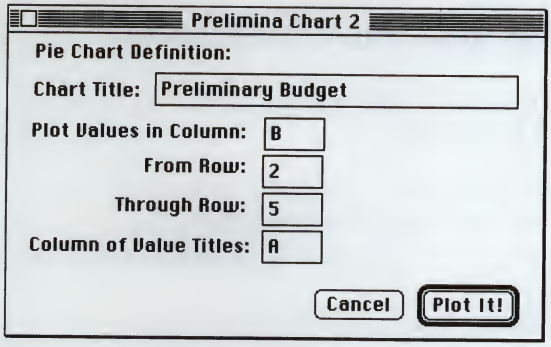
To specify a chart title:

- Type a title for the chart into the Chart Title text box.

When you plot the chart, this title appears directly above the chart.

Completing the Chart Definition

When you define a pie chart, you need to tell Works which values to plot. Fill in the rest of the New Pie Chart dialog box to indicate which values you want to plot and which value titles you want to use. Remember that you can move the dialog box to see the Spreadsheet document by dragging its title bar.



Plotting the Chart

After you've filled out the dialog box, you can take any of the following actions.

To plot the chart:

To plot the chart

- Click the Plot It! button.

Works draws the chart and stores the definition with the Spreadsheet document.

To then return to the chart definition dialog box:

- Double-click anywhere in the chart window.

To store the chart definition without drawing the chart:

To avoid plotting the chart

- Click the close box.

Works stores the definition and returns you to the Spreadsheet document.

To return to the Spreadsheet document without storing the chart definition or drawing the chart:

- Click the Cancel button.

To learn about more ways to work with your pie chart, continue on to the next section, "Working with Charts and Chart Definitions."

Working with Charts and Chart Definitions

Once you've set up a chart definition for either a series chart or a pie chart, you can continue to work with it. You can:

- Change the name of a chart definition.
- Select either a chart or a chart definition to look at again.
- Change a chart by changing information in the Spreadsheet document or by changing its definition.
- Copy or remove chart definitions from a Spreadsheet document.

This section tells you how to work with all types of charts.

Changing Chart Definition Names

The title bar of a chart definition dialog box shows the name of the chart definition. When you set up several chart definitions for a single Spreadsheet document, you'll be able to identify each one by name.

Unless you specify a name using the Edit menu as described below, Works automatically names each chart definition with the name of the Spreadsheet document plus the word "Chart" and a number from 1 to 8. If the Spreadsheet document name is too long to fit, Works abbreviates it.

To change a chart definition name

If you prefer, you can change the name of a chart definition to make it more meaningful to you.

To change the name of a chart definition:

1. When a chart definition dialog box is open, choose Change Chart Name from the Edit menu.
2. Type a new name into the text box.
3. Click the OK button or press the Return key.

The name in the title bar of the dialog box changes to reflect what you typed. You'll see this same name in the title bar of the chart when you plot the chart, and in the dialog boxes that appear for other commands from the Chart menu. The name of the chart definition doesn't appear on the chart itself, however. You can put a title on your chart by typing it into the Chart Title text box in the chart definition dialog box.

Selecting a Chart

After you've defined a chart, you can choose to draw it directly from the Chart menu. You don't have to set up a new definition every time you want to chart something.

Here's how to draw a chart quickly:

To draw a chart

1. Choose Draw Chart from the Chart menu.
   Works displays a dialog box listing the chart definitions stored with the active Spreadsheet document.
2. Select the chart you want to see.
3. Click the OK button or press the Return key.

Works draws the chart.

Selecting a Chart Definition

If you've set up a chart definition, you might want to look it over or make changes. You can move to a chart definition dialog box either from the Chart menu (when you're working in the Spreadsheet) or from the chart itself.

When you want to look at a chart definition for a Spreadsheet document, you can use the Chart menu.

To see a chart definition from the Chart menu

1. Choose Select Chart Definition from the Chart menu.
   Works displays a dialog box listing the chart definitions stored with the active Spreadsheet document.
2. Select the definition you want to see.
3. Click the OK button or press the Return key.

Works opens the dialog box containing the definition you specified.

The Chart menu is not available when you're looking at a chart. But you can still return to the chart's definition if you want to make changes.

To see the chart definition when a chart window is open:

To see a chart definition from the chart

- Double-click anywhere in the chart window.

Works displays the chart definition dialog box.

Changing a Chart

You may find that you need to change something about a chart. You can change the actual contents of a Spreadsheet document and see those changes reflected immediately in the chart. Or you can change the chart definition: the information you want to chart, the type of chart, the titles on the chart, or the scale of the chart.

To change the Spreadsheet while charting

You can work on a Spreadsheet document and a chart at the same time, as you analyze your information. If you're making projections or comparing alternatives, you see graphically how alternative numbers or calculations affect your results — without waiting, because the chart is linked directly to the Spreadsheet document.

To change Spreadsheet information while charting:

1. Click anywhere in the Spreadsheet window to activate it.
2. Select the cells you want to change and make the changes.

As you enter the changes in the Spreadsheet document, the chart will reflect them.

To change a chart definition

The chart definition tells Works what information to plot and where to put it. You can change a chart definition whenever you want.

To change a chart definition:

1. Open a chart definition dialog box.
   You can do this from the Chart menu or by double-clicking a chart.
2. Change the appropriate information in the definition.
3. Click Plot It! to see the changed chart, or click the close box to save the changes to the definition and discard the original definition.

Remember, if you change your mind, you can always click Cancel to return to the Spreadsheet document without storing the changes to the definition or seeing the chart.

Copying a Chart Definition

Works lets you make a copy of a chart definition. Then you can make changes to the copy without changing the original. You'll find this useful if you need to make several similar charts from the same Spreadsheet document.

To copy a chart definition:

To copy a chart definition

1. Choose Duplicate Chart from the Chart menu.
   Works displays a dialog box listing the chart definitions stored with the active Spreadsheet document.
2. Select the definition you want.
3. Click the OK button or press the Return key.

The chart definition dialog box appears. You can change the title of the chart and its characteristics.

When you click Plot It! or the close box, you store the new definition with the Spreadsheet document. The original definition remains on the disk as well.

Removing a Chart Definition

Suppose you decide you no longer need a chart, or you accidentally make a chart you don't want. Or perhaps you already have the limit of eight definitions, and you want to make a new one. You can remove a chart definition you don't want to make room for another.

To remove a chart definition:

To remove a chart definition

1. Choose Erase Chart from the Chart menu.
   Works displays a dialog box listing the chart definitions stored with the active Spreadsheet document.
2. Select the definition you want to remove.
3. Click the OK button or press the Return key.

Works removes the chart definition.

15 Spreadsheet and Database Functions

This chapter is divided into three sections:

- An introduction to Works functions.
- A brief listing of the available Spreadsheet and Database functions arranged by subject category.
- A detailed alphabetical directory of these functions.

Functions

A function is a built-in calculation that produces a new value from other values, called arguments.

Works has 64 built-in functions that you can paste or type into Spreadsheet formulas. You can also paste or type these functions into computed Database fields, except for functions that use ranges as arguments, such as Sum(A1:A5). Functions used in the Database can't relate to more than one record at a time and can only use other fields in the same record.

Functions you can't use in the Database are:

- The IRR and MIRR Financial functions.
- The HLookup, Index, Lookup, Match, and VLookup Special-purpose functions.

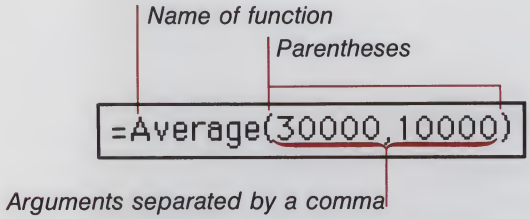
The following functions often take ranges as arguments, but can be used in the Database with a single field reference, a list of fields separated by commas, or a value in place of a range:

- All of the Statistical functions — Average, Count, Max, Min, SSum, StDev, Sum, and Var.
- The FV, NPV, Pmt, PV, and Rate Financial functions.
- The And, Choose, If, IsBlank, and Or Logical functions.

Syntax of Functions

Parts of a function

Each function consists of the function name, a set of parentheses, and arguments (the values the function uses to produce a new value) separated by commas.



The parentheses are very important. They tell Works where the arguments begin and end. When you paste a function using the Paste Function command from the Edit menu, Works provides the parentheses and positions the insertion point between them. All you do is type the arguments and the commas.

If you type the function instead of pasting it, remember to type the parentheses. Do not leave any space before the left parenthesis. Be sure to finish with a right parenthesis. Otherwise, Works displays an alert box.

Arguments to functions

In a Spreadsheet document, a function argument can be a number, a formula, a cell reference, a range reference, another function, or an expression such as C3/2. You can click cells to insert references into the arguments of a function.

In a Database, an argument to a function can be a number, a formula, a field name, or another function.

Functions may have no arguments, one argument, or several arguments. Many functions have more than one argument. For example, both Average(F1:F5) and Average(F1,F2,F3,F4,F5) calculate the average value of cells F1 through F5. Pmt(0.0167,36,12000) calculates the amount you'd have to pay back on a loan of $12,000 over a period of 36 months at 1.67% interest per month.

To enter a function into a formula

You can include functions in a formula either by typing them or pasting them.

To paste a function into a formula in the entry bar:

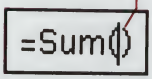
1. Select the cell or calculated field to hold the formula.
2. Position the insertion point where you want the function to go in the formula.
3. Choose Paste Function from the Edit menu.

4 Select the function you want from the list.

5 Click the OK button or press the Return key.

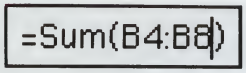
Works pastes the function into your formula, including the parentheses. The insertion point is inside the parentheses, ready to accept arguments to the function.

The insertion point shows where the arguments go.



6 Type any values or, in the Spreadsheet, click any cell references required by the function.

7 Include any additional operators and operands that you need in your formula.

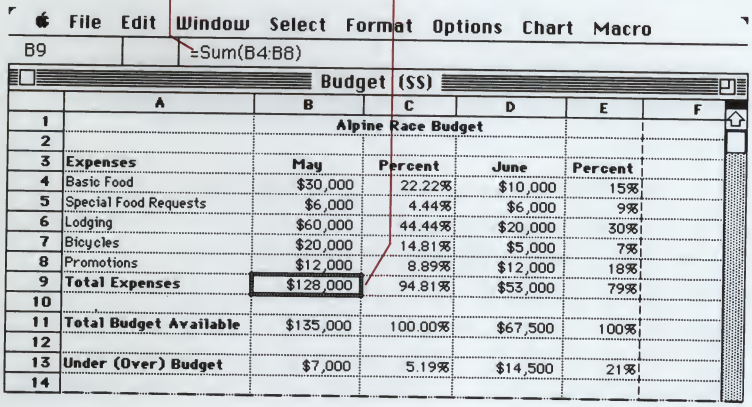


8 Click the enter box or press the Enter key.

Works enters the formula into the active cell or calculated field, calculates it, and displays the resulting value.

When you enter the formula, Works displays the formula in the entry bar...

...and displays the result of the calculation in the selected cell.



	A	B	C	D	E	F
1		Alpine Race Budget				
2						
3	Expenses	May	Percent	June	Percent	
4	Basic Food	$30,000	22.22%	$10,000	15%	
5	Special Food Requests	$6,000	4.44%	$6,000	9%	
6	Lodging	$60,000	44.44%	$20,000	30%	
7	Bicycles	$20,000	14.81%	$5,000	7%	
8	Promotions	$12,000	8.89%	$12,000	18%	
9	Total Expenses	$128,000	94.81%	$53,000	79%	
10						
11	Total Budget Available	$135,000	100.00%	$67,500	100%	
12						
13	Under (Over) Budget	$7,000	5.19%	$14,500	21%	
14						

If you choose to type a function rather than paste it, be sure to type an equal sign to begin the formula, and include parentheses before and after the arguments.

An empty cell or a cell containing text is normally treated as 0 when used as an argument to a function. However, the functions Average, Count, Max, Min, SSum, StDev, Sum, and Var ignore these cells completely.

In some cases, numeric values represent a logical value of either TRUE or FALSE. For example, in the If function the first argument returns the second argument if the function is TRUE, and the third argument if it is FALSE. The number 0 represents FALSE, and all other numbers, or a blank, represent TRUE.

For example, if Spreadsheet cell A1 contains 2, then the formula If(A1,3,4) *equals* 3 would result in the value 3. The If function returns the second argument, 3, which is TRUE. If A1 contains 0, or is blank, then If(A1,3,4) *equals* 4. The If function returns the third argument, 4, which is FALSE.

In other cases, the result of a function may be a numeric value that represents a logical value. In the IsNA function, for example, the number 0 represents FALSE, and the number 1 represents TRUE.

For example, if A1 contains N/A, IsNA(A1) *equals* 1 (TRUE). If A1 contains a label or number, or is blank, IsNA(A1) *equals* 0 (FALSE).

The And, Or, and Not functions are examples of both these types of functions in that their arguments, as well as their results, are logical values represented by numbers.

For example:

Not(1) *equals* 0
Not(2) *equals* 0
Not(0) *equals* 1

And(−1,2,4) *equals* 1
And(−1,2,0) *equals* 0
Or(0,0,5) *equals* 1

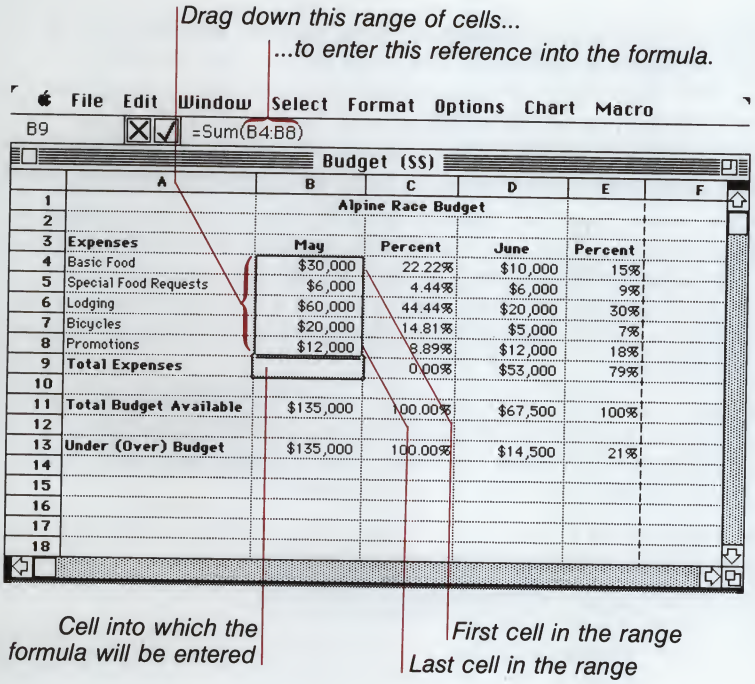
To enter a range reference into a formula

You can use range references in functions used in the Spreadsheet. You can refer to a range of cells with one reference; for example, Sum(C1:E10). The reference includes the beginning reference, a colon standing for "to," and the ending reference. For example, the range reference A2:B5 refers to all the cells from A2 (the upper-left cell) to B5 (the lower-right cell), inclusive.

To enter a range reference into a formula:

1. Select a cell, then start a formula by typing an equal sign.
2. Type the function name and a left parenthesis, or paste the function to be used with the Paste Function command from the Edit menu.
3. Drag across a block of cells, or type a reference for a range of cells.
4. If you typed the function, end the reference with a right parenthesis.

   If you drag with the mouse, an outline shows you the range of cells you're referring to. If you type, remember to include the colon. You can use a combination of clicking and typing.



Notation conventions

In the function directory that follows, arguments are described with this notation:

Value or *number*	Refers to an argument that must be a number, cell reference, or formula, as in Min(2,3), Min(A1,B1), or Min(3+A1,Sqrt(4))
Range	Refers to an argument that must be a range reference, such as B9:F9
Values	Refers to an argument that can be a number, cell reference, formula, or range reference

To distinguish different arguments in a function, numbers are added to the standard notation. For example, if there is more than one value, they are distinguished by *value-1*, *value-2*, and so on. If there is more than one range, they are distinguished by *range-1*, *range-2*, and so on.

When there is a useful descriptive word for an argument, such as "rate" in a Financial function, that word is used in place of the generic term "value." Sometimes the standard notation is modified by another word, as in *lookup-value* and *compare-range*, for values in functions that look up values and compare ranges (HLookup, Lookup, Match and VLookup).

About Date and Time functions

Works stores dates and times internally as *serial numbers* from 0 to 49710, where 0 is the number for January 1, 1904, and 49710 is the number for February 6, 2040. Times are stored as decimal fractions. For example, the serial number for noon on 5/9/88 is 30810.5. To find out a date's serial number, select a cell or computed field containing the date, and format it as General. The serial number appears in the entry bar.

Because Works stores dates and times as serial numbers, you can perform calculations with them as you would with other numbers. For example, you could enter the date you bought stock in one cell, the date you sold it in another cell, and a formula that subtracts the two in a third cell. The first two cells should be in a Date format, and the cell containing the formula should be in General format.

Works provides three formats for dates (Date Short, Date Medium, and Date Long), and one format for time. When you choose a date or time format in the Set Cell Attributes dialog box and enter a date or time into a cell, Works displays the date or time and stores its serial number.

If you change the format to something besides a date or time format, the serial number appears in the cell with the new format.

You can enter dates in any of these ways:

4/23/88	23-Apr
4/23	Apr 23
23-Apr-88	Apr-88
4/88	23/apr/88

You can enter times in any of these ways:

4:48 PM	16:48
4:48 AM	4:48
4:48 a	4:48 P

If you enter a date or time into a cell that has a format other than General, Works converts the date or time into a serial number and stores that number but does not change the format of the cell. For example, if you type *4-Apr* into a cell that has the format m/d/yy, Works stores its serial number, 30775, and displays 4/4/88.

If you enter a serial number for a date or time that is out of range, Works displays ∗Error∗ in the cell.

You can also enter both a date and time into one cell. Be sure to separate the date and time by a space. For example, you can type either *4/23/88 16:48* or *4:48 PM Apr-88*. If you enter both a date and a time into a cell, Works displays the date or time in the format selected in the Set Cell Attributes dialog box.

Functions by Subject Category

The detailed directory of functions in this chapter is presented in alphabetical order for quick reference. However, to help you more readily see what functions are available in Works, they are also presented below, grouped by subject category.

Mathematical Functions

Mathematical functions

Abs(*number*)
Absolute value of *number*

Exp(*number*)
e to the power *number*

Int(*number*)
Integer part of *number*

Ln(*number*)
Logarithm, base e, of *number*

Log10(*number*)
Logarithm, base 10, of *number*

Mod(*number,divisor-number*)
Remainder of *number* divided by *divisor-number*

Pi( )
Value of π

Rand( )
Random number between 0 and 1

Round(*number,number-of-digits*)
Number rounded to *number-of-digits*

Sign(*number*)
Sign of *number*

Sqrt(*number*)
Square root of *number*

Statistical functions

Statistical Functions

Average(*values-1,values-2,...*)
Average of values in *values*

Count(*values-1,values-2,...*)
Count of values in *values*

Max(*values-1,values-2,...*)
Maximum value in *values*

Min(*values-1,values-2,...*)
Minimum value in *values*

SSum(*values-1,values-2,...*)
Sum of *values* displayed on the screen

StDev(*values-1,values-2,...*)
Standard deviation of *values*

Sum(*values-1,values-2,...*)
Sum of *values*

Var(*values-1,values-2,...*)
Variance of *values*

Trigonometric functions

Trigonometric Functions

ACos(*number*)
Arccosine of *number*

ASin(*number*)
Arcsine of *number*

ATan(*number*)
Arctangent of *number*

ATan2(*x-number,y-number*)
Arctangent of point (*x-number,y-number*)

Cos(*number*)
Cosine of *number*

Degrees(*number*)
Converts *number* from radians to degrees

Radians(*number*)
Converts *number* from degrees to radians

Sin(*number*)
Sine of *number*

Tan(*number*)
Tangent of *number*

Logical Functions

Logical functions

And(*values-1,values-2,...*)
1 (TRUE) if all *values* are non-zero (TRUE); otherwise, 0 (FALSE)

Choose(*index,value-1,value-2,...*)
Uses *index* to select a value from the *values*

False( )
Returns the value 0 (FALSE)

If(*number,value-if-true,value-if-false*)
Value-if-true if *number* is non-zero (TRUE); *value-if-false* if *number* is 0 (FALSE)

IsBlank(*values-1,values-2,...*)
1 (TRUE) if all values are blank or text; otherwise, 0 (FALSE)

IsError(*value*)
1 (TRUE) if *value* is any error value

IsNA(*value*)
1 (TRUE) if *value* is the error value N/A

Not(*number*)
1 (TRUE) if *number* is 0 (FALSE); 0 (FALSE) if *number* is non-zero (TRUE)

Or(*values-1,values-2,...*)
1 (TRUE) if any logical value in *values* is non-zero (TRUE); otherwise, 0 (FALSE)

True( )
Returns the value 1 (TRUE)

Financial Functions

Financial functions

FV(*rate,nper,pmt,pv,type*)
Future value of investment

IRR(*range,guess*)
Internal rate of return of *range*

MIRR(*range,safe,risk*)
Modified internal rate of return of *range*

NPer(*rate,pmt,pv,fv,type*)
Number of payments of investment

NPV(*rate,values-1,values-2,...*)
Net present value of *values*

Pmt(*rate,nper,pv,fv,type*)
Periodic payment of investment

PV(*rate,nper,pmt,fv,type*)
Present value of investment

Rate(*nper,pmt,pv,fv,type,guess*)
Rate returned on investment

Date and Time functions

Date and Time Functions

Date(*year,month,day*)
Returns *serial number* of the specified date

Day(*serial number*)
Converts *serial number* to a day of the month

Hour(*serial number*)
Converts *serial number* to an hour of the day

Minute(*serial number*)
Converts *serial number* to a minute

Month(*serial number*)
Converts *serial number* to a month of the year

Now( )
Returns *serial number* of current date and time

Second(*serial number*)
Converts *serial number* to a second

Time(*hour,minute,second*)
Returns *serial number* of the specified time

Weekday(*serial number*)
Converts *serial number* to a day of the week

Year(*serial number*)
Converts *serial number* to a year

Special-purpose functions

Special-Purpose Functions

Error( )
Returns the value *Error*

HLookup(*lookup-value,compare-range,index-number*)
Value in a table selected by *lookup-value*

Index(*range,row,column*)
Reference in *range* selected by index values *row* and *column*

Lookup(*lookup-value,compare-range,result-range*)
Value in a table selected by *lookup-value*

Match(*lookup-value,compare-range,type*)
Number of a value selected by *lookup-value*

NA( )
Returns the value N/A

Type(*value*)
Type of *value*

VLookup(*lookup-value,compare-range,index-number*)
Value in a table selected by *lookup-value*

Alphabetical Directory of Functions

The directory that follows gives detailed information and examples for each of the 64 built-in functions.

Abs(number)

Abs

The Abs function gives the absolute value of *number*.

Example

Abs(2) *equals* Abs(−2) *equals* 2

ACos(number)

ACos

The ACos function gives the arccosine of *number*. The arccosine is the angle in radians whose cosine is *number*. *Number* must be in the range −1 to 1. The angle will be in the range 0 to π.

Examples

ACos(−0.5) *equals* 2.094 (2π/3 radians)
ACos(−0.5)∗180/Pi( ) *equals* 120 (degrees)

And(values-1,values-2,...)

And

The And function gives the value 1 (TRUE) if all the values in the list of arguments are non-zero (TRUE). If any of the values is 0 (FALSE), And gives the value 0 (FALSE).

If a reference argument contains text or blank values, those values are ignored.

Examples

And(2+2=4,2+3=5) *equals* 1
And(2+2=5,2+3=5) *equals* 0

ASin

ASin(number)

The ASin function gives the arcsine of *number*. The arcsine is the angle in radians whose sine is *number*. *Number* must be in the range −1 to 1. The angle will be in the range $-\pi/2$ to $\pi/2$.

Examples

ASin(−0.5) *equals* −0.524 ($-\pi/6$ radians)
ASin(−0.5)*180/Pi( ) *equals* −30 (degrees)

ATan

ATan(number)

The ATan function gives the arctangent of *number*. The arctangent is the angle in radians whose tangent is *number*. The angle will be in the range $-\pi/2$ to $\pi/2$.

Examples

ATan(1) *equals* 0.785 ($\pi/4$ radians)
ATan(1)*180/Pi( ) *equals* 45 (degrees)

ATan2

ATan2(x-number,y-number)

The ATan2 function gives the arctangent of *x-number* and *y-number*. The arctangent is the angle in radians determined by the point whose x and y coordinates are *x-number* and *y-number*. The angle will be in the range $-\pi$ to π, excluding $-\pi$.

If both *x-number* and *y-number* are 0, ATan2 gives the value 0.

Examples

ATan2(1,1) *equals* 0.785 ($\pi/4$ radians)
ATan2(−1,−1) *equals* −2.356 ($-3\pi/4$ radians)
ATan2(−1,−1)*180/Pi( ) *equals* −135 (degrees)

Average

Average(values-1,values-2,...)

The Average function gives the average of the numbers in the list of arguments.

The arguments should be numbers, or references that contain numbers. If a reference argument contains text or blank values, those values are ignored.

Examples

If A1:A5 contains the numbers 10, 7, 9, 27, and 2, then:

Average(A1:A5) *equals* 11

Average(A1:A5,5) *equals* 10

Average(A1:A5) *equals* Sum(A1:A5)/Count(A1:A5)

Choose(index,value-1,value-2,...)

Choose

The Choose function uses *index* to select a value from the following arguments in the list. If *index* is 1, Choose gives *value-1*; if *index* is 2, Choose gives *value-2*; and so on.

If *index* is less than 1 or greater than the number of the last value in the list, Choose gives the error value *Error*.

Examples

Choose(2,10,20,30,40) *equals* 20

Given that A2=2, Choose(A2,10,20,30,40) *equals* 20

Cos(number)

Cos

The Cos function gives the cosine of *number*, where *number* is an angle in radians.

Examples

Cos(1.047) *equals* 0.5

Cos(60*Pi( )/180) *equals* 0.5

Count(values-1,values-2,...)

Count

The Count function gives the count of the numbers in the list of arguments.

The arguments should be numbers, or references that contain numbers. If a reference argument contains text or blank values, those values are ignored.

Examples

If A1:A5 contains the numbers 10, 7, 9, 27, and 2, then:

Count(A1:A5) *equals* 5

Count(A1:A5,5) *equals* 6

Date

Date(year,month,day)

The Date function gives the serial number of the date specified by *year, month,* and *day*. For an explanation of dates and serial numbers, see "About Date and Time functions" earlier in this chapter.

The serial number is an integer in the range 0 to 49710, representing dates from January 1, 1904, to February 6, 2040. The arguments *year, month,* and *day* should make up a valid date in this range. That is, *year* should be between 1904 and 2040; *month* should be between 1 and 12; and *day* should be between 1 and 31.

Works automatically converts a date constant to a serial number. For example, 4/15/1988 and 15-April-1988 both convert to the serial number 30786. If you want *year*, *month*, or *day* to be formulas, rather than constants, you must use the date function — for example, =Date(1988,4,15).

Example

Date(1988,Choose(1,3,6,9,12),1) *equals* Date(1988,3,1) *equals* 30741

Day
Month
Weekday
Year

Day(serial-number)
Month(serial-number)
Weekday(serial-number)
Year(serial-number)

The Day function gives the number of the day in *serial-number* as an integer in the range 1 to 31. The Month function gives the number of the month as an integer in the range 1 to 12. The Weekday function gives the number of the weekday as an integer in the range 1 to 7. The Year function gives the number of the year as an integer in the range 1904 to 2040.

Serial-number should be in the range 0 to 49710 to represent a valid date. If *serial-number* is not an integer, only the integer portion is used, since dates are represented as integers.

To compute days, months, and years, format the cell containing the date in Date Short, Date Medium, or Date Long format. Format the cell containing the formula for addition, subtraction, multiplication, or division in General format.

Examples

Day(Date(1988,4,15)) *equals* 15

Month(Date(1988,4,15)) *equals* 4

Weekday(Date(1988,4,15)) *equals* 6

Year(Date(1988,4,15)) *equals* 1988

Degrees(number)

Degrees

The Degrees function converts an angle in radians to degrees.

Example

Degrees(2*Pi( )) *equals* 360

Error( )

Error

The Error function takes no arguments and returns the value *Error*.

Example

Given that A1 contains the formula =Error( ):

If(IsError(A1),0,1) *equals* 0

Exp(number)

Exp

The Exp function gives e raised to the power of *number*. The mathematical constant e is 2.7182818..., the base of the natural logarithm.

Exp is the inverse of the Ln function (natural logarithm).

To calculate powers of other bases, use the exponentiation operator (^).

Examples

Exp(1) *equals* 2.7182818 (the value of the natural base, e)

Exp(Ln(3)) *equals* 3

False( )

False

The False function takes no arguments and returns the value 0 (FALSE).

Example

Choose(4,False( ),True( ),True( ),False( ),True( )) *equals* 0

FV

FV(rate,nper,pmt,pv,type)

The FV function gives the future value of an investment involving constant cash flows.

If you omit either *pv* or *type*, it is assumed to be 0.

For a complete description of the arguments in FV, see PV.

HLookup
VLookup

HLookup(lookup-value,compare-range,index-number)
VLookup(lookup-value,compare-range,index-number)

HLookup and VLookup find an entry in a table.

HLookup searches the first row of *compare-range* until it finds the largest value that is less than or equal to *lookup-value*. Then it goes up or down the column by the number of rows indicated by *index-number* and gives the value found there.

If *index-number* is 1, HLookup gives the value from the current row. If *index-number* is 2, HLookup gives the value from the row below. If *index-number* is 0, HLookup gives the value in the row above the current row. If *index-number* is −1, HLookup gives the value in the row that is two rows above the current row.

The values in the first row of *compare-range* must be in ascending order. If *lookup-value* is smaller than the smallest value in the first row of *compare-range*, HLookup gives the error value *Error*.

The VLookup function is identical to the HLookup function, except that it searches the first column of *compare-range* until it finds the largest number that is less than or equal to *lookup-value*. Then it goes to the right by the number of columns indicated by *index-number* to get the entry. For VLookup to work properly, the first column must be in ascending order.

Note The HLookup and VLookup functions can be used only in the Spreadsheet.

Examples

If A1:E1 contains the values 10000, 20000, 30000, 40000, and 50000, and A5:E5 contains the values .01, .02, .03, .04, and .05, then:

HLookup(35000,A1:E1,5) *equals* .03

HLookup(35000,A1:E1,1) *equals* 30000

HLookup(5000,A1:E1,5) *equals* *Error*

HLookup(.035,A5:E5,−3) *equals* 30000

Hour(serial-number)
Minute(serial-number)
Second(serial-number)

Hour
Minute
Second

The Hour function gives the hour in *serial-number* as an integer in the range 0 to 23. The Minute and Second functions give the minute and second as integers in the range 0 to 59.

Hour, Minute, and Second use only the fractional part of *serial-number*, since times are represented as decimal fractions in the range 0 to 1, not including 1.

Examples

Hour(0.7) *equals* 16

Minute(Time(16,48,0)) *equals* 48

Second(Time(16,48,0)) *equals* 0

If(number,value-if-true,value-if-false)

If

The If function gives *value-if-true* if *number* is non-zero (TRUE), and *value-if-false* if *number* is 0 (FALSE).

Example

Given that A5 contains the number 98:
If((A5<80),1,0) *equals* 0

Index(range,row,column)

Index

The Index function gives the value in a cell in a *range* at the intersection of a *row* and a *column*, starting from the cell in the upper-left corner of *range*.

Note The Index function can be used only in the Spreadsheet.

Examples

Index(B2:D4,2,3) *equals* the value of D3
Index(B2:D2,1,2) *equals* the value of C2
Index(B2:B4,2,1) *equals* the value of B3
Index(B2:D2,0,0) *equals* the value of A1
Index(C4:D4, −1, −1) *equals* the value of A2
If A1:A5 contains the numbers 10, 7, 9, 27, and 2, then:
Index(A1:A5,3,1)/3 *equals* 3

Int

Int(number)

The Int function gives the largest integer less than or equal to *number*.

Examples

Int(8.9) *equals* 8
Int(−8.9) *equals* −9

IRR

IRR(range,guess)

The IRR function gives the internal rate of return of a series of cash flows, represented by the numbers in *range*. The internal rate of return is the interest rate that gives the series of cash flows a net present value of zero.

Works uses an iterative technique to compute IRR, which can have more than one solution. If the successive results of IRR do not converge after 20 iterations, IRR gives the error value *Error*.

Range should be a reference that contains numbers. If *range* contains text or blank values, those values are ignored.

Guess specifies the starting value of the iteration. If IRR does not converge, try different values for *guess*. Usually, a starting value between 0 and 1 will yield a meaningful result.

Note The IRR function can be used only in the Spreadsheet.

Example

If you have an investment represented by the cash flows ($5000), $1000, $1500, $2000, ($3000), $2500, and $5000, which are entered in A1:A7, then:

IRR(A1:A7,10%) *equals* 15.05%

IsBlank(values-1,values-2,...)

IsBlank

The IsBlank function can have any number of arguments. All arguments must be cell references. IsBlank gives the value 1 (TRUE) if all cell references in the list of arguments are blank or contain text. Otherwise, it gives the value 0 (FALSE).

IsError(value)

IsError

The IsError function gives the value 1 (TRUE) if *value* is the error value *Error*. Otherwise, it gives the value 0 (FALSE).

If you want to see if a range of cells contains any *Error* values, use the Sum function to sum the range. If any cells contain *Error*, the result of the Sum function will be *Error*.

Example

Given that A1 contains the formula =3/0:

If(IsError(A1),0,1) *equals* 0

IsNA(value)

IsNA

The IsNA function gives the value 1 (TRUE) if *value* is the error value N/A. Otherwise, it gives the value 0 (FALSE).

Example

Given that A1 contains the formula =NA( ):

If(IsNA(A1),0,1) *equals* 0

Ln(number)

Ln

The Ln function calculates the natural logarithm of *number*. Natural logarithms use the mathematical constant e, 2.7182818..., as a base.

Number must be positive.

Ln is the inverse of the Exp function, e raised to the power *number*.

Examples

Ln(2.7182818) *equals* 1

Ln(Exp(3)) *equals* 3

Ln(8)/Ln(2) *equals* 3 (the base 2 logarithm of 8)

Log10

Log10(number)

The Log10 function gives the base 10 logarithm of *number*.

Number must be positive.

Log10 is the inverse of base 10 exponentiation.

Examples

Log10(10) *equals* 1

Log10(1E5) *equals* 5

Log10(10^5) *equals* 5

Log10(8)/Log10(2) *equals* 3 (the base 2 logarithm of 8)

Lookup

Lookup(lookup-value,compare-range,result-range)

The Lookup function searches *compare-range* for the largest value that is less than or equal to *lookup-value*. Lookup gives the corresponding value in *result-range*.

The values in *compare-range* must be in ascending order. If *lookup-value* is smaller than the smallest value in *compare-range*, Lookup gives the error value *Error*. *Compare-range* and *result-range* should have the same length. Each of these range arguments must be one-dimensional, but they need not both be in the same direction.

Note The Lookup function can be used only in the Spreadsheet.

Examples

If A1:E1 contains the comparison values 10000, 20000, 30000, 40000, and 50000, and A4:E4 contains the values 10, 20, 30, 40, and 50, then:

Lookup(35000,A1:E1,A4:E4) *equals* 30

Lookup(5000,A1:E1,A4:E4) *equals* *Error*

Lookup(35000,A1:E1,A1:E1) *equals* 30000

Match(lookup-value,compare-range,result-range)

The Match function gives the number of the comparison value in *compare-range* that matches *lookup-value*. If *lookup-value* matches the first comparison value, Match gives 1. If *lookup-value* matches the second comparison value, Match gives 2, and so on. If *lookup-value* does not match any of the comparison values, Match gives the error value *Error*. If *compare-range* contains multiple rows, Match searches from left to right, one row at a time; that is, it first searches the first row, then the second row, and so on.

The rules for matching the values are determined by *result-range*. If *result-range* is 1, *lookup-value* matches the largest comparison value that is less than or equal to *lookup-value*. If *lookup-value* is less than the smallest comparison value, then it does not match any of them. The comparison values should be in ascending order.

If *result-range* is −1, *lookup-value* matches the smallest comparison value that is greater than or equal to *lookup-value*. If *lookup-value* is greater than the largest comparison value, then it does not match any of them. The comparison values should be in descending order.

If *result-range* is 0, *lookup-value* matches the first comparison value that is equal to *lookup-value*. If *lookup-value* is not equal to any of the comparison values, then it does not match any of them. The comparison values can be in any order.

Note The Match function can be used only in the Spreadsheet.

Examples

If A1:A5 contains the numbers 60, 70, 80, 90, and 100, then:

Match(75,A1:A5,1) *equals* 2

Match(55,A1:A5,1) *equals* *Error*

If A1:A5 contains the numbers 100, 90, 80, 70, and 60, then:

Match(75,A1:A5,−1) *equals* 3

Match(105,A1:A5,−1) *equals* *Error*

If A1:C3 contains the numbers:

10	20	30
40	50	60
70	80	90

then Match (40,A1:C3,0) *equals* 4

Max

Max(values-1,values-2,...)

The Max function gives the largest number in the list of arguments.

The arguments should be numbers, or references that contain numbers. If a reference argument contains text or blank values, those values are ignored.

Examples

If A1:A5 contains the numbers 10, 7, 9, 27, and 2, then:

Max(A1:A5) *equals* 27

Max(A1:A5,30) *equals* 30

Min

Min(values-1,values-2,...)

The Min function gives the smallest number in the list of arguments.

The arguments should be numbers, or references that contain numbers. If a reference argument contains text or blank values, those values are ignored.

Examples

If A1:A5 contains the numbers 10, 7, 9, 27, and 2, then:

Min(A1:A5) *equals* 2

Min(A1:A5,0) *equals* 0

Minute

Minute(serial-number)

The Minute function converts *serial number* to a minute as an integer in the range 0 to 59. For more information, see Hour.

MIRR

MIRR(range,safe,risk)

The MIRR function gives the modified internal rate of return of a series of cash flows, represented by the numbers in *range*, given *safe* and *risk*. *Safe* is the rate returned by the investment that will finance the negative cash flows. *Risk* is the rate at which the positive cash flows can be reinvested.

Range should be a reference that contains numbers. If *range* contains text or blank values, those values are ignored.

Where n is the number of cash flows in *range*, the formula used is:

$$\left(\frac{-NPV(risk,values[positive])*(1+risk)^{n}}{NPV(safe,values[negative])*(1+safe)}\right)^{\frac{1}{n-1}}-1$$

Note The MIRR function can be used only in the Spreadsheet.

Example

If you have an investment represented by the cash flows ($5000), $1000, $1500, $2000, ($3000), $2500, and $5000, entered in A1:A7, and you hope to finance your negative cash flows with money borrowed at 12% and reinvest your positive cash flows at 17%, then:

MIRR(A1:A7,12%,17%) *equals* 15.19%

Mod(number,divisor-number)

Mod

The Mod function gives the remainder (modulus) after *number* is divided by *divisor-number*. The result has the same sign as *divisor-number*.

If *divisor-number* is 0, Mod gives the error value *Error*.

Examples

Mod(3,2) *equals* Mod(−3,2) *equals* 1

Mod(3,−2) *equals* Mod(−3,−2) *equals* −1

Mod(7,4) *equals* 7−Int(7/4)*4 *equals* 3

Month(serial-number)

Month

The Month function converts *serial number* to a month of the year as an integer in the range 1 to 12. For more information, see Day.

NA

NA( )

The NA function gives the error value N/A.

Example

Given that A1 contains the formula =NA( ):

If(IsNA(A1),0,1) *equals* 0

Not

Not(number)

The Not function gives the value 0 (FALSE) if *number* is non-zero (TRUE), and gives 1 (TRUE) if *number* is 0 (FALSE).

Examples

Not(1 + 1 = 2) *equals* 0

Not(1 + 1 = 3) *equals* 1

Now

Now( )

The Now function gives the serial number of the current date and time, updated at every recalculation.

The integer part of the serial number is in the range 0 to 49710, representing dates from January 1, 1904, to February 6, 2040. The fractional part is in the range 0 to 0.999, representing times from 0:00:00 or 12:00:00 AM to 23:59:59 or 11:59:59 PM.

NPer

NPer(rate,pmt,pv,fv,type)

The NPer function gives the number of periods of an investment involving constant cash flows.

If you omit either *fv* or *type*, it is assumed to be 0.

For a complete description of the arguments in NPer, see PV.

NPV(rate,values-1,values-2,...)

NPV

The NPV function gives the net present value of a series of future cash flows, represented by the numbers in the list of values, discounted at a constant interest rate specified by *rate*.

The cash flows are assumed to occur at equal time intervals, the first cash flow occurring at the end of the first period.

The list of values can contain one or more arguments. The *values* arguments should be numbers, or references that contain numbers. If a reference argument contains text or blank values, those values are ignored.

Or(values-1,values-2,...)

Or

The Or function gives the value 1 (TRUE) if any of the values in the list of arguments is non-zero (TRUE). If all of the values are 0 (FALSE), Or gives the value 0 (FALSE).

If a reference argument contains text or blank values, those values are ignored.

Examples

Or(1+1=2,2+2=5) *equals* 1
Or(1+1=3,2+2=5) *equals* 0

Pi( )

Pi

The Pi function takes no argument and gives the number 3.14159..., an approximation of the mathematical constant π.

Example

ATan(1)*180/Pi( ) *equals* 45 (degrees)

Pmt(rate,nper,pv,fv,type)

Pmt

The Pmt function gives the periodic payment of an investment involving constant cash flows.

If you omit either *fv* or *type*, it is assumed to be 0.

For a complete description of the arguments in Pmt, see PV.

PV
FV
NPer
Pmt
Rate

PV(rate,nper,pmt,fv,type)
FV(rate,nper,pmt,pv,type)
NPer(rate,pmt,pv,fv,type)
Pmt(rate,nper,pv,fv,type)
Rate(nper,pmt,pv,fv,type,guess)

Present value (*pv*), future value (*fv*), number of periods (*nper*), periodic payment (*pmt*), and interest rate per period (*rate*) are the five standard parameters in cash flow problems involving constant payments. Each of the above functions gives the value of one of these financial arguments, given the values of the others.

For the arguments *pv*, *fv*, and *pmt*, use the following cash flow convention: cash received is represented by a positive number; cash paid out is represented by a negative number. The examples below illustrate this convention.

Rate and *nper* must refer to the same period. For example, if *nper* is the number of months, then *rate* must be the effective monthly interest rate.

Type indicates whether payments occur at the beginning or the end of the periods. If *type* is 0, the first payment is assumed to occur at the end of the first period; if *type* is 1, the first payment occurs at the beginning. If you omit *type*, it is assumed to be 0.

Works uses an iterative technique to compute Rate, which can have zero, one, or two solutions. If the successive results of Rate do not converge after 20 iterations, Rate gives the error value *Error*.

Guess specifies the starting value of the iteration. If you omit *guess*, it is assumed to be 0.1 or 10%. If Rate does not converge, try different values for *guess*. Usually, a starting value between 0 and 1 will yield a meaningful result.

All of the arguments must be numbers. In PV, FV, NPer, and Pmt, you can omit the last two arguments; in Rate, you can omit the last three arguments. Any argument (except *guess*, as noted above) that is omitted is assumed to be 0.

Works uses the following equations to solve for one financial argument in terms of the others:

$$pv*(1+rate)^{nper}+pmt*(1+rate*type)*\frac{(1+rate)^{nper}-1}{rate}+fv=0$$

$$(for\ \ rate<>0)$$

$$pv+pmt*nper+fv=0$$

$$(for\ \ rate=0)$$

Examples

You have received a loan of $12,000 at an interest rate of 9% (monthly rate of 0.75%), and you must pay it off in 24 monthly payments made at the end of each month. *Pv* is 12000, *rate* is 0.75%, *nper* is 24, and *fv* and *type* are 0. The monthly payment is calculated by:

Pmt(0.0075,24,12000) *equals* −548.22

A limited partnership plans to buy an apartment building for $750,000 with the expectation of selling the building for $1,500,000 in 6 years. The rent from the apartments amounts to $100,000 annually. *Pv* is −750000, *fv* is 1500000, *nper* is 6, *pmt* is 100000, and *type* is 0. The numbers $100,000, $750,000, and $1,500,000 are entered in cells A1, B2, and C3. If your guess at the annual rate of return is 10%, the actual annual rate of return is calculated by:

Rate(6,A1, −B2,C3,0,0.1) *equals* 22.73%

You now have $1,000 in your savings account earning 6% annual interest (0.5% monthly interest), and you plan to deposit $100 at the beginning of every month for the next 12 months. *Pv* is −1000, *rate* is 0.5%, *pmt* is −100, *nper* is 12, and *type* is 1, so the amount of money in your savings account at the end of 12 months is calculated by:

FV(0.005,12, −100, −1000,1) *equals* 2301.40

Radians(number)

Radians

The Radians function converts an angle in degrees to radians.

Example

Radians(180) *equals* 3.14159... (the value of π)

Rand( )

Rand

The Rand function gives a random number in the range 0 to 0.999.... Rand generates a new random number every time the Spreadsheet or Database document is recalculated.

Rate

Rate(nper,pmt,pv,fv,type,guess)

The Rate function gives the interest rate per period of an investment involving constant cash flows.

If you omit *fv* or *type*, it is assumed to be 0. If you omit *guess*, it is assumed to be 0.1 or 10%.

For a complete description of the arguments in Rate, see PV.

Round

Round(number,number-of-digits)

The Round function gives *number* rounded to *number-of-digits*. If *number-of-digits* is positive, *number* is rounded to that many decimal places. If *number-of-digits* is 0, *number* is rounded to the nearest integer. If *number-of-digits* is negative, *number* is rounded to the left of the decimal point.

Examples

Round(2.15,1) *equals* 2.2

Round(2.149,1) *equals* 2.1

Round(−1.475,2) *equals* −1.48

Round(891,−2) *equals* 900

Second

Second(serial-number)

The Second function converts *serial-number* to a second as an integer in the range 0 to 59. For more information, see Hour.

Sign

Sign(number)

The Sign function gives 1 if *number* is positive, 0 if *number* is 0, and −1 if *number* is negative.

Examples

Sign(7+3) *equals* 1

Sign(4−4) *equals* 0

Sign(3−7) *equals* −1

Sin(number)

Sin

The Sin function gives the sine of *number*, where *number* is an angle in radians.

Examples

Sin(0) *equals* 0

Sin(Pi( )/2) *equals* 1

Sin((3*Pi( ))/2) *equals* −1

Sqrt(number)

Sqrt

The Sqrt function gives the positive square root of *number*.

Number must be greater than or equal to 0. If *number* is negative, Sqrt gives the error value *Error*.

SSum(values-1,values-2,...)

SSum

The SSum function gives the sum of the numbers in the list of arguments as they are displayed on the screen. If the cells appear in a range, arguments displayed in Fixed, Dollar, or Percent format are truncated to the value displayed on the screen. If the reference is to a single cell, the actual values are shown.

If a reference argument contains text or blank values, those values are ignored.

This function is intended to guarantee that the sum of *values* displayed matches the screen exactly. In other words, it is the result you get by using a calculator to add all the values in the argument list as they are displayed on the screen.

Examples

If A1:A5 contains the numbers 10.2, 7.12, 9.0, 27.031 (displayed with two digits after the decimal point), and 2, then:

SSum(A1:A5) *equals* 55.35

Notice that the same formula using the Sum function gives a different result:

Sum(A1:A5) *equals* 55.351

StDev

StDev(values-1,values-2,...)

The StDev function gives the sample standard deviation of the numbers in the list of arguments.

The arguments should be numbers, or references that contain numbers. If a reference argument contains text or blank values, those values are ignored.

The formula used is:

Sqrt(*Var*(*values*-1,*values*-2,...))

Examples

If A1:A5 contains the numbers 10, 7, 9, 27, and 2, then:

StDev(A1:A5) *equals* 9.460

StDev(A1:A5,Average(A1:A5)) *equals* 8.462

Sum

Sum(values-1,values-2,...)

The Sum function gives the sum of the numbers in the list of arguments.

The arguments should be numbers, or references that contain numbers. If a reference argument contains text or blank values, those values are ignored.

Examples

If A1:A5 contains the numbers 10, 7, 9, 27, and 2, then:

Sum(A1:A5) *equals* 55

Sum(A1:A5,5) *equals* 60

Tan

Tan(number)

The Tan function gives the tangent of *number*, where *number* is an angle in radians.

Examples

Tan(0.785) *equals* 0.999

Tan(45*Pi( )/180) *equals* 1

Time

Time(hour, minute, second)

The Time function gives the serial number of the time specified by *hour*, *minute*, and *second*. For an explanation of times and serial numbers, see "About Date and Time functions" in this chapter.

The serial number is a decimal fraction in the range 0 to 1, not including 1, representing times from 0:00:00 or 12:00:00 AM to 23:59:59 or 11:59:59 PM. *Hour, minute,* and *second* should make up a valid time in this range.

Works automatically converts a time constant to a serial number. For example, 16:48:00 and 4:48:00 PM both convert to the serial number 0.7004. However, within a formula, Works doesn't convert text like "16:48:00" or "4:48:00 PM" to a serial number. If you want *hour*, *minute*, or *second* to be formulas, rather than constants, you must use the time function — for example, =Time (16,48,0).

Examples

Time(12,0,0) *equals* 0.5
Time(16,48,0) *equals* 0.2

True( )

True

The True function takes no arguments and gives the value 1 (TRUE).

Example

Choose(2,False( ),True( ),True( ),False( ),True( )) *equals* 1

Type(value)

Type

The Type function gives the type of *value*.

If *value* is a cell reference and the cell referenced is blank or contains text, Type gives 2.

Otherwise, Type gives 1 when *value* is a number, 8 when *value* is the error value N/A, and 16 when *value* is the error value *Error*.

Examples

If A1 contains the text "Smith", then:

Type(A1) *equals* 2
Type(5) *equals* 1
Type(1/0) *equals* 16

Var(values-1,values-2,...)

Var

The Var function gives the sample variance of the numbers in the list of arguments.

The arguments should be numbers, or references that contain numbers. If a reference argument contains text or blank values, those values are ignored.

The formula Works uses to calculate variances is:

$$\frac{n*(\sum(x^2))-(\sum x)^2}{n*(n-1)}$$

The sample variance is the best estimate of the population variance based on a sample of the population. If your sample represents the entire population, you can compute the true population variance by including the average of the sample in the list of arguments to Var:

Var(Population,Average(Population))

Examples

If A1:A5 contains the numbers 10, 7, 9, 27, and 2, then:

Var(A1:A5) *equals* 89.5

Var(A1:A5,Average(A1:A5)) *equals* 71.6

VLookup

VLookup(lookup-value,compare-range,index-number)

The VLookup function searches the first column of *compare-range* for the largest value that is less than or equal to *lookup-value*. Having found that value in some cell in the column, VLookup moves left or right in that row by an amount specified by *index-number* and gives the value found there. For more information, see HLookup.

Note The VLookup function can be used only in the Spreadsheet.

Weekday

Weekday(serial-number)

The Weekday function converts *serial-number* to a day of the week as an integer in the range 1 to 7. For more information, see Day.

Year

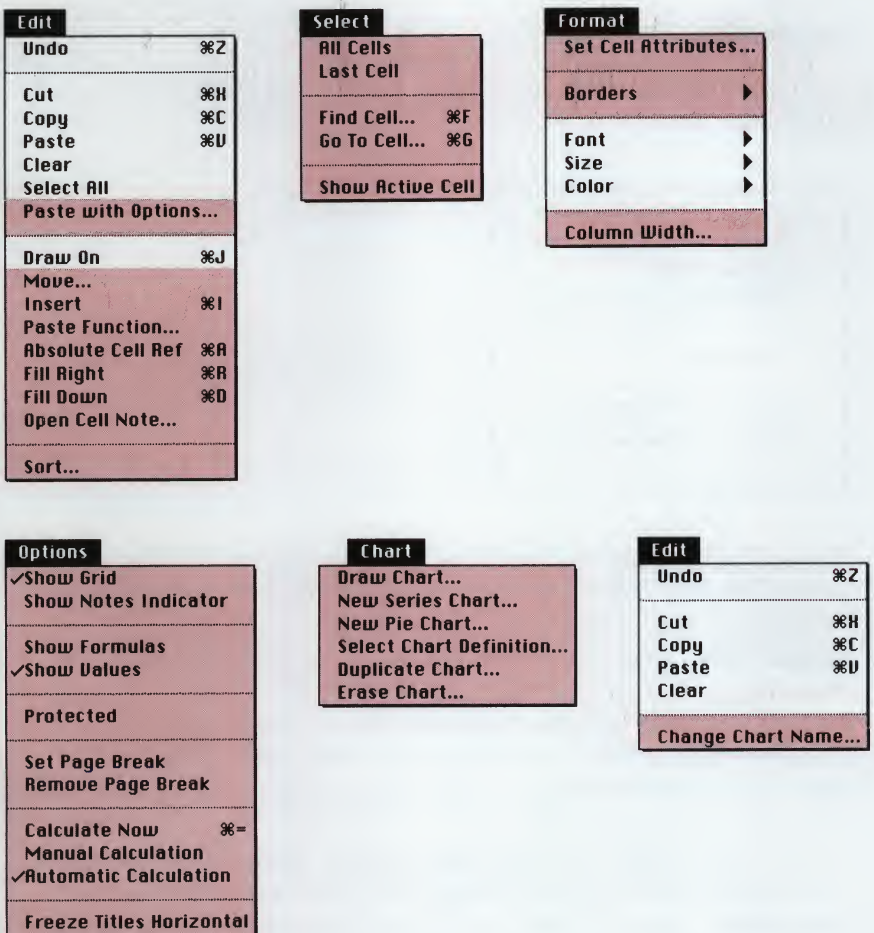
Year(serial-number)

The Year function converts *serial-number* to a year as an integer in the range 1904 to 2040. For more information, see Day.

16 Spreadsheet Command Reference

The Apple, File, Window, and Macro menus are identical for all Microsoft Works tools. For information on these menus, see Chapter 2, "Common Tasks Command Reference."

This chapter discusses all the shaded commands shown below.



You can invoke some Works commands from the keyboard, as well as by using the mouse. The available Command + key combinations are shown on the menus and in Appendix D.

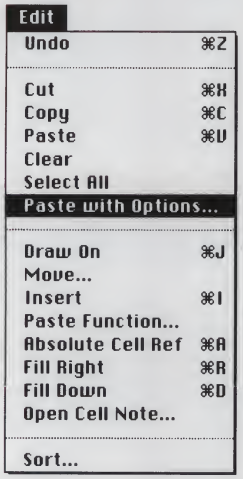
An alphabetical list of commands appears in the index under "Command."

The Edit Menu

The first six commands on the Edit menu are common to all tools in Works. For information on these commands and the Draw On command, see "The Edit Menu" in Chapter 2. For specific information on using the Copy and Paste commands in the Spreadsheet, see "Copying Cells" in Chapter 12.

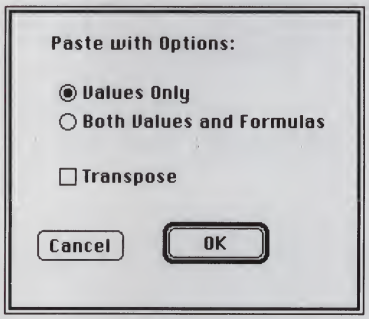
This section explains the additional Edit menu commands available in the Works Spreadsheet.

Paste with Options



Paste with Options

The Paste with Options command pastes a Spreadsheet selection from the Clipboard to the same or another Spreadsheet document.



To Paste with Options, use the Cut or Copy command to put your selection on the Clipboard. Select a cell as the starting point of the paste and then choose Paste with Options.

Values Only Click this option to paste only the formatted values in a selection.

To copy a cell note using the Paste with Options command, make sure that the Values Only option is not chosen in the dialog box.

Both Values and Formulas Click this option to paste both the formatted values and formulas in a selection.

If you choose to paste both values and formulas, Works adjusts the relative cell references in the pasted cells according to their new locations.

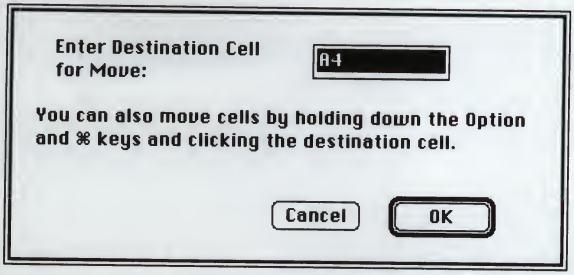
Transpose Click this option to paste rows into columns or columns into rows. The selection can contain multiple rows or columns.

Move

The Move command moves a selected cell or range of cells from one location to another.

Use Move to move information within a Spreadsheet document. When you use Move, the relative cell references point to the same cell value that they pointed to before the move.

Note Use the Cut and Paste commands when you want to move information from one Spreadsheet document to another Spreadsheet document or to another type of document.



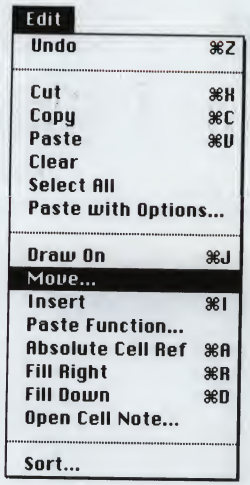
To move information, choose Move from the Edit menu and type the destination cell reference into the text box.

Works moves the selection from its present location to its destination, beginning with the upper-left cell of the selection.

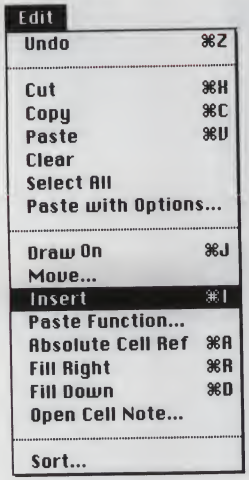
If there is data in the destination cell, Works warns you that it will be replaced and asks if you want to continue the move.

Hint You can also move the information from one cell to another by selecting the cell you want to move the information from and pressing the Command + Option keys while clicking the cell you want to move the information to.

Move



Insert

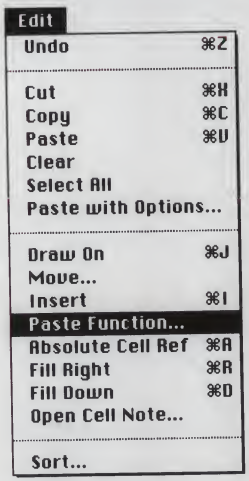


Insert

The Insert command inserts a blank row or column into a Spreadsheet document.

To insert a blank row or column, select a row or column and choose Insert. Works inserts a blank row and moves the selected row below the inserted row. Works inserts a blank column and moves the selected column to the right of the inserted column. Works then increments by one all rows or columns after the inserted row or column, and adjusts all cell references according to the new row or column headings.

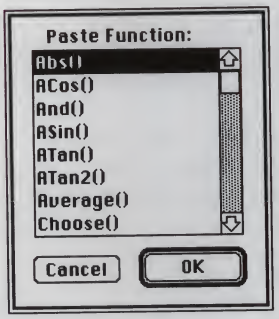
Paste Function



Paste Function

The Paste Function command inserts a built-in function into a formula in the entry bar.

Select the cell to contain the formula, and click in the entry bar where you want to insert the function. Then choose Paste Function. Works displays a list box, which contains a list of all available Works functions.



To paste a function, select the function you want from the list, then click the OK button or press the Return key.

If the entry bar is inactive, Works activates it and pastes an equal sign (=) followed by the selected function. If the entry bar is active, Works pastes the function at the insertion point.

If you don't type an operator after the preceding operand, Works adds a plus sign (+) before the pasted function. Works also pastes the required parentheses, with the insertion point between them, so you can enter the function's arguments.

For information on specific functions, see Chapter 15, "Spreadsheet and Database Functions."

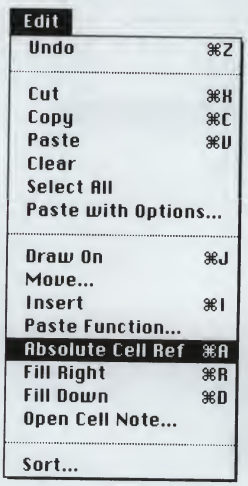
Absolute Cell Ref

The Absolute Cell Ref command allows you to switch between a relative cell reference and an absolute cell reference.

Absolute cell references are indicated by a dollar sign ($) preceding the reference to the column, to the row, or to both, as in $B$4.

To change a reference or range reference in the entry bar, position the insertion point to the immediate right of the reference or select it, then choose Absolute Cell Ref. If the reference is absolute, Works changes it to relative by deleting the dollar signs. If the reference is relative, Works changes it to absolute by inserting dollar signs. If the reference is mixed, Works reverses each part of the reference.

Absolute Cell Ref



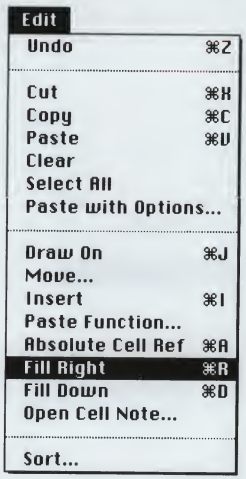
Fill Right/Fill Down

The Fill Right command copies the cells in the leftmost column of a selection into the remaining columns of the selection. The Fill Down command copies the cells in the top row of a selection into the remaining rows of the selection. If the cells in the remaining columns and rows are not empty, Works replaces the existing data in those cells.

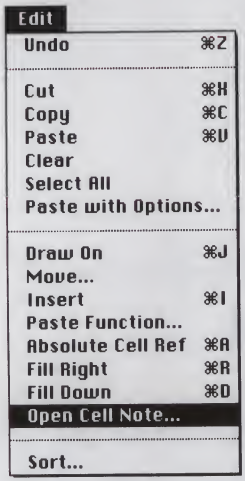
When you choose Fill Right or Fill Down, Works adjusts relative cell references in formulas to reflect their new positions.

Select only the range of cells you want to fill before choosing Fill Down. Selecting an entire column and filling all 16,382 cells takes a lot of memory and slows down your work.

Fill Right
Fill Down

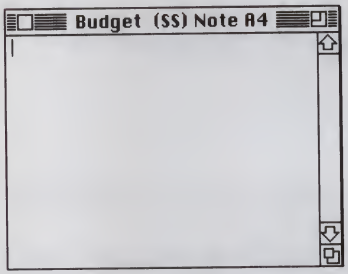


Open Cell Note



Open Cell Note

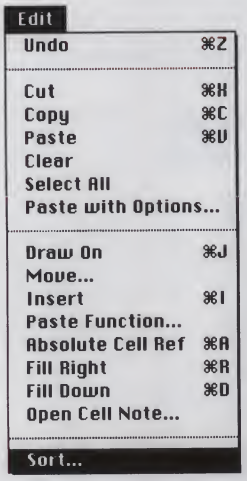
The Open Cell Note command opens a window in which you type notes associated with a selected cell. Use the basic Macintosh editing techniques to edit your note, if necessary. When you are finished typing, click the close box.



If the Show Notes Indicator is checked in the Options menu, a marker in the upper-right corner of a cell indicates that it is annotated.

To view new or existing cell notes, select the cell and choose the Open Cell Note command, or hold down the Command key while double-clicking the cell. To print cell notes with your document, choose the Print Cell Notes option in the File menu's Page Setup dialog box.

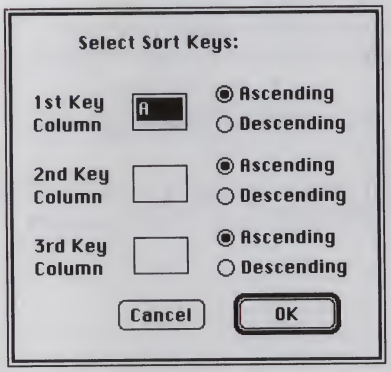
Sort



Sort

The Sort command sorts the rows of a selection according to the contents of key columns within the selection.

You tell Works which rows to sort by selecting them. Then you specify which columns are the key columns, and whether to sort in ascending or descending order. You can specify up to three key columns.



Columns Specify a key column by typing the column heading (letter) of the column you want Works to sort.

If there are duplicates in the key column, Works checks to see if you have defined more than one key column. Specify second and third key columns by typing the headings of the columns in order of importance, with the most important key column first.

Next to each Key Column box, click Ascending or Descending to tell Works what order to sort in. In ascending order, Works sorts in this order: numbers, error values, text, blanks. In descending order, Works sorts in this order: error values, numbers, text, blanks.

Numbers are sorted from the smallest negative value to the largest positive value. Text is sorted in the following order:

space ! " # $ % & ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; <
= > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
[\ ] ^ _ ` { | } ~ † ° ¢ £ § • ¶ ß ® © ™ ´ ¨ ≠ ∞ ± ≤ ≥ ¥ µ ∂ Σ
Π π ∫ ª º Ω ¿ ¡ ¬ √ ƒ ≈ Δ … - – ÷ ◊

The numbers in the text sorting order refer to numbers that are typed into a Spreadsheet document as text values. Numbers that appear in a Spreadsheet document as numeric values are sorted separately.

Works ignores capitalization and accent marks when sorting text.

You can sort on more than three key columns by doing two sorts. When you do sorts based on more than three key columns, keep in mind the following:

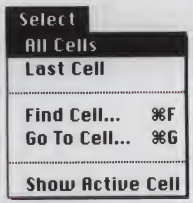
- The most recent sort takes precedence.
- Works retains the previous sort order in places where the current sort produces equal items.

If you want Works to take into account more than three key columns, sort the data three key columns at a time, starting with the least important group of columns and progressing to the most important group, but listing the most important column first within each group.

For example, if you have five key columns you want to use to sort the rows of a selection, do one sort with the fourth and fifth most important columns selected as the first and second key columns. Then do a second sort with the three remaining columns, beginning with the most important column.

The Select Menu

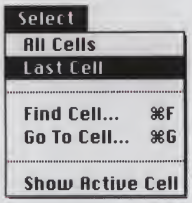
All Cells



All Cells

The All Cells command selects all the cells from A1 to the last cell. (The last cell is at the intersection of the last row and column that contain a value or formula.)

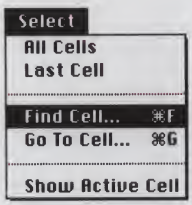
Last Cell



Last Cell

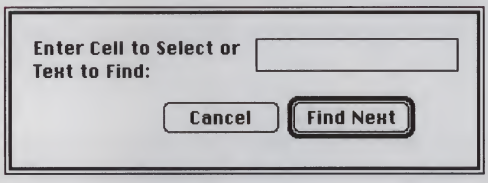
The Last Cell command selects the cell at the intersection of the last row and column that contains a value or formula.

Find Cell



Find Cell

The Find Cell command finds and selects either the specified cell or the cell containing the specified text.



Works proposes the cell or the text you last specified. You can either accept the proposed response or type a new one.

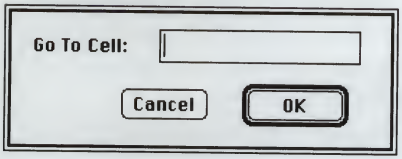
To find cells containing *Error* or N/A, type *=Error( )* or *=NA( )* in the text box. When you type a formula in the dialog box, Works calculates the formula, then looks for the cell containing the resulting value.

Click the Find Next button to have Works begin the search.

Go To Cell

The Go To Cell command finds a specified cell and displays it in the window. It does not select the cell.

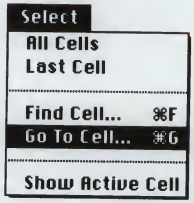
Use Go To Cell when you are building a formula in the entry bar and want to see the contents of a particular cell. Because Works doesn't select the cell, it will not appear as a reference in your formula.



Works proposes the cell you last specified. You can accept the proposed response or type a new one, using either a cell's contents or a cell reference.

Click the OK button to have Works begin the search.

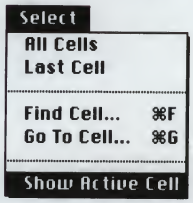
Go To Cell



Show Active Cell

The Show Active Cell command scrolls the Spreadsheet document so that the active cell is visible. Use this command when you scroll the document away from the active cell and want to return to it quickly.

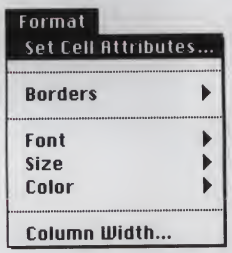
Show Active Cell



The Format Menu

Three commands in the Format menu — Font, Size, and Color — are common to all Works tools. For information on these commands, see "The Format Menu" in Chapter 2.

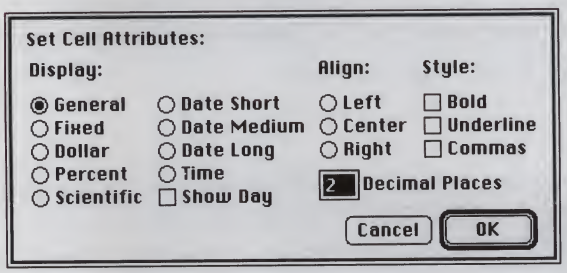
Set Cell Attributes



The Set Cell Attributes command specifies the way in which information in cells is displayed.

When you create a new cell, numeric values are treated as normal text, right-aligned. Labels are treated as normal text, left-aligned.

To specify cell attributes, select a cell or range of cells and choose Set Cell Attributes. Works then displays a dialog box.



Display Options

General Values are displayed as precisely as possible, given the width of the cell. Leading zeros are not displayed.

Fixed Values are displayed with a fixed number of places to the right of the decimal point.

The fixed number of decimal places is two, unless you change it using the Decimal Places option.

Dollar Values are displayed in dollars and cents format. A dollar sign ($) appears to the immediate left of the most significant digit. Dollars are displayed to the left of the decimal point. Cents are displayed to the right of the decimal point with two digits, unless you change the number of digits using the Decimal Places option.

Negative numbers are enclosed in parentheses.

Type *0* in the Decimal Places box to display whole dollars with no decimal point. Type *2* to display dollars and cents. The value is adjusted to the nearest whole dollar or whole cent depending upon your choice of 0 or 2 decimals. For example, the value 9.505 is displayed as $10 if you specify 0 decimal places; it is displayed as $9.51 if you specify 2 decimal places.

Percent The numeric value of an entry is multiplied by 100 and displayed with a percent sign (%) to its immediate right.

You can also specify the number of decimal places to be displayed in the percentage. The value .156, for example, is displayed as 15.6% if you type *1* in the Decimal Places box, and 16% if you type *0*.

Scientific Scientific notation allows you to express very large or very small numbers.

Scientific notation consists of three parts: a decimal number in the form *n.nn*, the exponentiation symbol E or e, and an integer in the form ±*ii* for the exponent.

For example, the value 1,210 is displayed as 1.21E+03, where 1.21 is the decimal number, E is the exponentiation symbol, and +03 is the exponent. The value .00121 is displayed as 1.21E−03.

With the Decimal Places box, you can specify the number of decimal places to be displayed in the decimal number.

Date and Time Options

You can type the date in any of the following formats, and the Spreadsheet will display it in the form you choose in the Set Cell Attributes dialog box:

- 08/10/88
- 8-10-88
- 8.10.88
- 08/10/1988
- Wed, Aug 10, 1988
- Aug 10, 1988
- August 10, 1988
- Wednesday, August 10, 1988

Depending on the options you choose, Works displays the date like this:

Display	Show Day Unchecked	Show Day Checked
Short	8/10/88	8/10/88
Medium	Aug 10, 1988	Wed, Aug 10, 1988
Long	August 10, 1988	Wednesday, August 10, 1988

Time Works displays time using a 12-hour clock, even if you enter a time in 24-hour format.

If you type	Works displays
8:04	8:04 AM
20:04	8:04 PM
8:4 pm	8:04 PM
20:4	8:04 PM

If you don't use 24-hour time, remember to include the "am" or "pm". If you don't specify this, Works displays AM.

Show Day If you choose Date Medium or Date Long and click the Show Day option, the day of the week is also displayed.

Align Options

These options allow you to align the contents of selected cells.

Left Aligns the cell content to the leftmost position.

Center Centers the cell content.

Right Aligns the cell content to the rightmost position.

Decimal Places

The number of decimal places tells Works how many digits to display to the right of the decimal point when you specify Fixed, Dollar, Percent, or Scientific format.

In the text box, type the number of decimals, from 0 to 15, that you want displayed. For more information, see "Fixed," "Dollar," "Percent," and "Scientific," above.

Style Options

The Style options change the type style of information in selected cells.

Bold Emphasizes text, and can be used in combination with Underline.

Underline Underlines the cell's content, and can be used in combination with Bold.

Commas When you select a cell or a range of cells and choose Commas, Works displays a comma between each group of three digits to the left of the decimal point in the selected cell or range of cells.

If the Commas option is not checked, commas are not displayed.

Hint You can also open the Set Cell Attributes dialog box by double-clicking a cell.

Borders

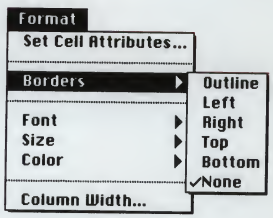
The Borders command leads to another menu which lists border commands for selected cells. Borders add emphasis to a single cell or to a range of cells.

Borders are displayed on the screen and print with the Spreadsheet. You can see the borders better if you remove the checkmark from the Show Grid command in the Options menu.

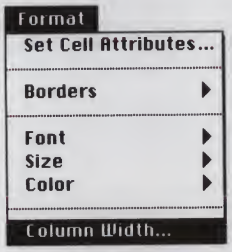
You can choose any combination of borders.

This command	Creates this border
Outline	Around the outermost edges of the selection
Left	On the left edge of every cell in the range
Right	On the right edge of every cell in the range
Top	On the top edge of every cell in the range
Bottom	On the bottom edge of every cell in the range
None	No border — removes borders from every cell in the range

Borders



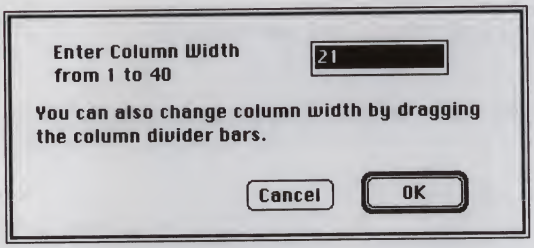
Column Width



Column Width

The Column Width command sets the width of selected columns.

You don't have to select an entire column. If you select any cell in a column, the new column width applies to all cells in that column. To adjust all the columns in a Spreadsheet document, select an entire row by clicking a row heading.

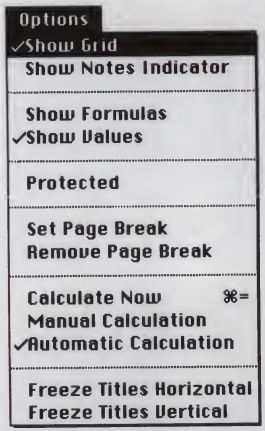


In the text box, you can either accept the proposed response or type a new number. The standard column width is 12 spaces, and the maximum column width is 40 spaces.

To change column width with the mouse, point to one of the lines that divide the column headings. When the pointer becomes a two-way arrow, drag to the left or right.

The Options Menu

Show Grid



Show Grid

When checked, the Show Grid command tells Works to display and print grid lines on your Spreadsheet document.

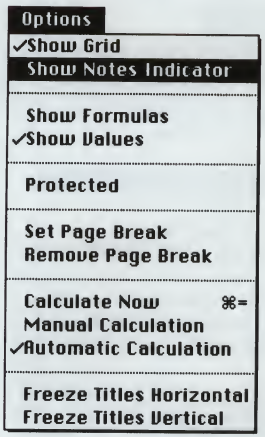
Grid lines are not displayed or printed if the Show Grid command is not checked.

Show Notes Indicator

When checked, the Show Notes Indicator command displays and prints a marker in the upper-right corner of any cell that has a cell note.

Markers are not displayed or printed if the Show Notes Indicator command is not checked.

Show Notes Indicator



Show Formulas/Show Values

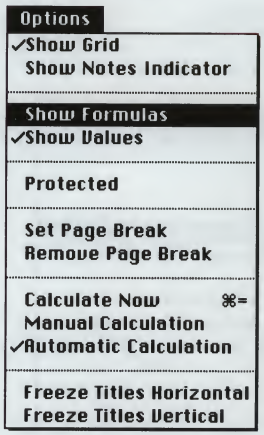
These commands tell Works to display and print either the formatted value or the unformatted content of cells.

These commands affect all cells in a Spreadsheet document.

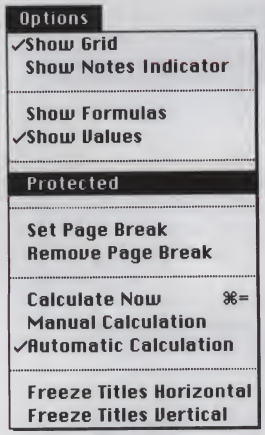
If you choose Show Formulas, Works places the formulas on the Clipboard when you cut or copy cells, or prints the formulas when you print a range of cells.

If you choose Show Values, Works places the formatted values on the Clipboard when you cut or copy cells, or prints the formatted values when you print a range of cells.

Show Formulas
Show Values



Protected



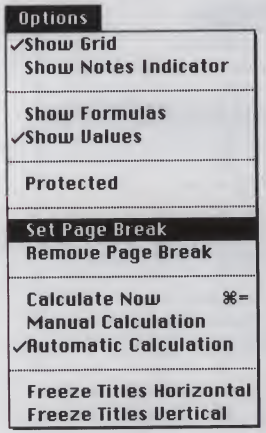
Protected

When checked, the Protected command tells Works to protect selected cells from accidental loss or change.

The cells are not protected if the Protected command is not checked.

When you choose Protected, Works won't allow you to enter numbers, formulas, or labels. If you try, Works displays an alert box telling you to remove cell protection before entering data.

Set Page Break
Remove Page Break



Set Page Break/Remove Page Break

These commands set and remove manual page breaks in a Spreadsheet document.

Works automatically determines where pages break, based on column widths and on the margin settings you enter using the File menu's Page Setup command. Page breaks can also be manually inserted.

To set a manual page break, select the cell you want to be in the upper-left corner of the page, then choose Set Page Break. Works inserts vertical and horizontal dashed lines (page break indicators) to mark the manual page break, then repaginates the rest of the document.

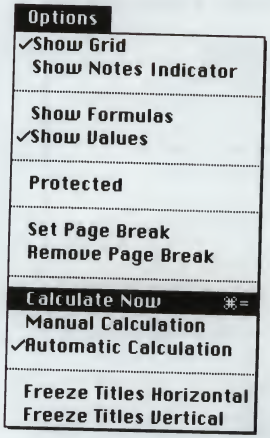
To remove a manual page break, select a cell immediately to the right of a vertical break or below a horizontal break, then choose Remove Page Break. Works removes the page break indicator and automatically repaginates the rest of the document. To remove both a vertical and a horizontal page break indicator at once, select the cell in the upper-left corner of the page before choosing Remove Page Break.

Calculate Now/Manual Calculation

The Calculate Now command allows you to recalculate a Spreadsheet document. The Manual Calculation command tells Works to recalculate a Spreadsheet document only when you choose Calculate Now.

You don't need to choose Calculate Now when calculation is automatic; in that case, whenever you make a change, Works automatically recalculates dependent formulas in all open Spreadsheet documents and charts.

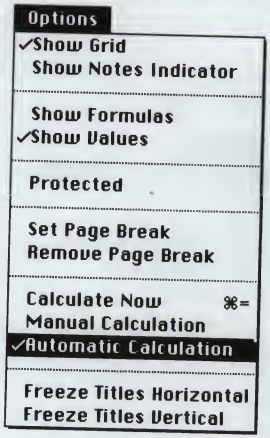
Calculate Now
Manual Calculation



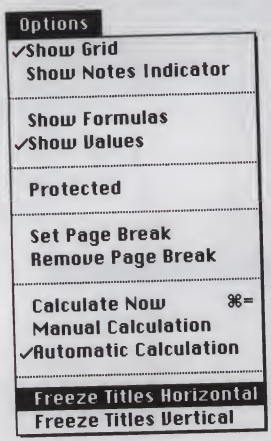
Automatic Calculation

When you create a new Spreadsheet document, Automatic Calculation is checked. This command tells Works to recalculate the Spreadsheet document whenever you change the content of a cell, or whenever you open an existing Spreadsheet file. Since calculation is done in the background, and doesn't interfere with your work, you'll probably want to have this command in effect most of the time.

Automatic Calculation



Freeze Titles Horizontal
Freeze Titles Vertical



Freeze Titles Horizontal/Freeze Titles Vertical

These commands freeze rows or columns so that they won't scroll. This is most useful for keeping row or column headings on the screen as you scroll through a large Spreadsheet document.

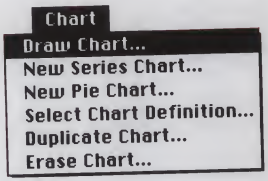
The Freeze Titles Vertical command freezes the rows above the split bar. First, you make a horizontal split using the split bar, then choose Freeze Titles Vertical. When you scroll vertically, the area above the split bar doesn't scroll.

The Freeze Titles Horizontal command freezes the columns to the left of the split bar. First, you make a vertical split using the split bar, then choose Freeze Titles Horizontal. When you scroll horizontally, the area to the left of the split bar doesn't scroll.

For more information on using split bars, see "Dividing the Spreadsheet Window into Panes" in Chapter 12.

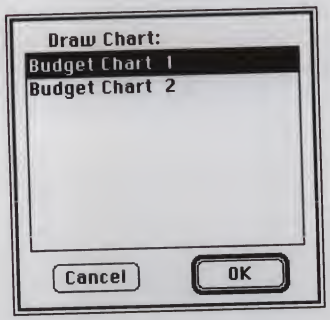
The Chart Menu

Draw Chart



Draw Chart

The Draw Chart command draws a chart that you have already defined with either the New Series Chart command or the New Pie Chart command.

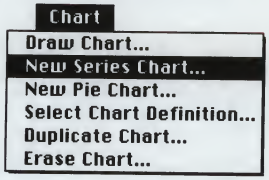


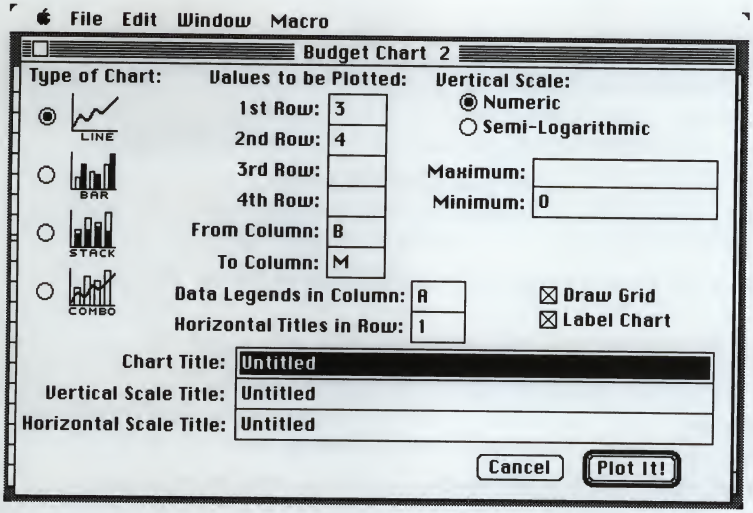
To draw a chart, select the chart you want, then click the OK button. Works draws the chart and makes the chart window active.

New Series Chart

The New Series Chart command defines a new series chart. Use a series chart when you want to compare different sets of data. You can plot up to four rows at once. Up to eight chart definitions can be defined for each Spreadsheet document. If New Series Chart is dimmed on the menu, you need to remove a chart definition with the Erase Chart command before you can create a new one.

New Series Chart





The title bar displays the name of the chart definition (not the chart title). You can leave the name as is or rename the definition to something more meaningful to you. To change the name, use the Change Chart Name command from the Edit menu. For more information, see "Change Chart Name" at the end of this chapter.

Since you may need to refer to the Spreadsheet document to set the chart parameters, you can move this dialog box just like a regular window. Drag the title bar to move the box and see the information you need.

After you set up the chart definition, you have three choices:

- Click the Plot It! button to plot the chart and to store the definition with your Spreadsheet document.
- Click the close box to store the definition with your Spreadsheet document and to make the Spreadsheet document active.
- Click the Cancel button to return to the Spreadsheet document and discard the definition.

When you save your Spreadsheet document, chart definitions are also saved and are available when you later open the Spreadsheet document.

Type of Chart Click the type you want.

Line	For analyzing trends.
Bar	For making comparisons.
Stack	For analyzing cumulative effects.
Combo	For seeing both trends and comparisons.

Values to be Plotted

1st Row Type the row heading (a number) of the first of the four rows of values you want to plot. Works proposes row 3, assuming row 1 contains a title for your Spreadsheet document and row 2 contains column labels.

2nd Row Type the row heading of the second row of values you want to plot. Works proposes row 4. If you want to plot only one row of values, press the Delete key to erase the 4 and leave the box blank.

3rd Row Type the row heading of the third row of values you want to plot.

4th Row Type the row heading of the fourth row of values you want to plot.

From Column Type the column heading (a letter) of the first column of values you want to plot. Works proposes column B.

To Column Type the column heading of the last column of values you want to plot. Works proposes column M.

Data Legends in Column Type the heading of the column containing the data legends (the labels that describe the rows you are plotting). Works proposes column A.

Horizontal Titles in Row Type the heading of the row containing the horizontal titles (the labels that describe the columns you are plotting). Works proposes row 1.

Chart Title Type a chart title. If you type nothing here, Works will not put a title on the chart.

Vertical Scale Title Type a label for the vertical scale, such as *Units*, *Dollars*, or *Millions of Dollars*. If you type nothing here, Works will not put a vertical scale title on the chart.

Horizontal Scale Title Type a label for the horizontal scale. If you type nothing here, Works will not put a horizontal scale title on the chart.

Vertical Scale

Numeric Click this option to scale the data numerically. This box is initially checked.

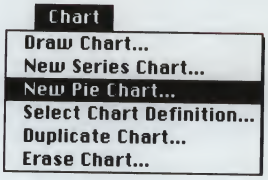
Semi-Logarithmic Click this option to scale the data logarithmically. The vertical scale on the chart is logarithmic. Works automatically computes the number of cycles based on the range of values in the rows you are plotting.

Maximum Type the maximum value you want to plot. If you leave this box blank, Works plots all values in the specified rows, and divides the vertical scale based on the largest plotted value.

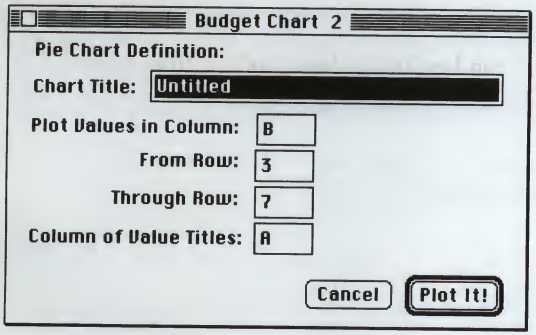
Minimum Type the minimum value you want to plot. Works proposes 0. If you leave this unchanged, Works plots all values in the specified rows and begins the vertical scale with 0.

New Pie Chart

New Pie Chart



The New Pie Chart command defines a new pie chart. Use a pie chart when you want to compare individual parts of a whole. If New Pie Chart is dimmed on the menu, you need to remove a chart definition with the Erase Chart command before you can create a new one.



The title bar displays the name of the chart definition (not the chart title). You can leave the name as is or rename the definition to something more meaningful to you. To change the name, use the Change Chart Name command from the Edit menu. For more information, see "Change Chart Name" at the end of this chapter.

Since you may need to refer to the Spreadsheet document to set the chart parameters, you can move this dialog box just like a regular window. Drag the title bar to see the information you need.

After you set up the chart definition, you have three choices:

- Click the Plot It! button to plot the chart and to store the definition with your Spreadsheet document.
- Click the close box to store the definition with your Spreadsheet document and to make the Spreadsheet document active.
- Click the Cancel button to return to the Spreadsheet document and discard the definition.

When you save your Spreadsheet document, chart definitions are also saved and are available when you later open the Spreadsheet document.

Chart Title Type a chart title. If you type nothing here, Works will not put a title on the chart.

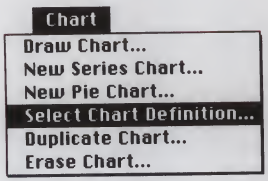
Plot Values in Column Type the heading (a letter) of the column of values you want to plot. Works proposes column B.

From Row Type the heading (a number) of the first row containing values you want to plot. Works proposes row 3.

Through Row Type the heading of the last row containing values you want to plot. Works proposes row 7.

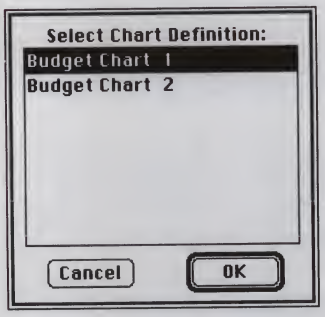
Column of Value Titles Type the column heading containing the titles of the values you want to plot. Works proposes column A.

Select Chart Definition



Select Chart Definition

The Select Chart Definition command allows you to change or verify an existing chart definition before plotting the chart.



Select the chart definition you want to change or verify, then click the OK button. Works displays the definition in the appropriate definition dialog box.

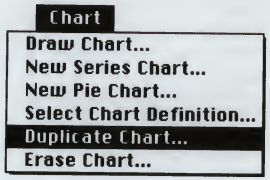
After you change whatever specifications need to be changed, you have three choices:

- Click the Plot It! button to plot the new chart. This button also replaces the original chart definition with the modified one and stores it with the Spreadsheet document.
- Click the close box to store the modified definition with your Spreadsheet document without plotting the chart and to make the Spreadsheet document active.
- Click the Cancel button to return to the Spreadsheet document and discard any changes you made to the definition.

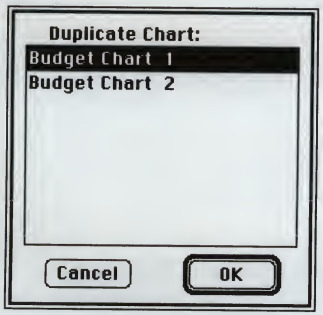
When you save your Spreadsheet document, the modified chart definition is saved and will be available when you later open the Spreadsheet document.

Duplicate Chart

Duplicate Chart



The Duplicate Chart command duplicates an existing chart definition. If eight charts are defined, Duplicate Chart is dimmed on the menu, and you'll need to remove a chart definition with the Erase Chart command before you can duplicate another one.



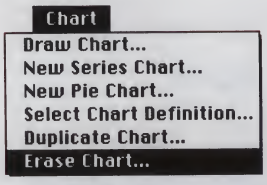
Select the chart definition you want to duplicate, then click the OK button. Works displays the definition and proposes a new name in the chart definition dialog box.

After you change whatever specifications need to be changed, you have three choices:

- Click the Plot It! button to plot the chart and store the new definition with your Spreadsheet document.
- Click the close box to store the new definition with your Spreadsheet document and to make the Spreadsheet document active.
- Click the Cancel button to return to the Spreadsheet document and discard the new definition.

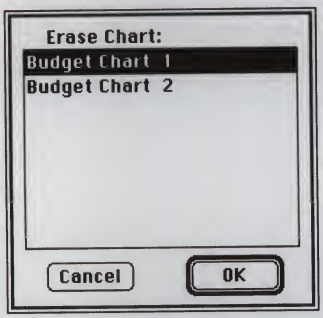
When you save your Spreadsheet document, the new definition is saved with it and will be available when you later open the Spreadsheet document.

Erase Chart



Erase Chart

The Erase Chart command erases a chart definition stored with a Spreadsheet document.

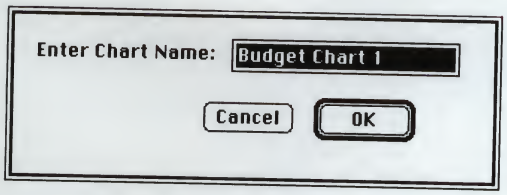


Choose the chart definition you want to erase, then click the OK button. Works removes the chart definition from the list of definitions stored with the Spreadsheet document.

The Edit Menu

Change Chart Name

The Change Chart Name command changes the name of a chart definition.

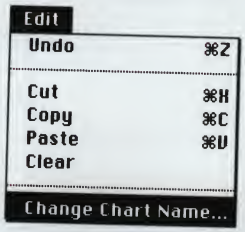


Type the new name and click the OK button.

The new name appears in the chart window's title bar and in the dialog boxes that contain a list of chart names.

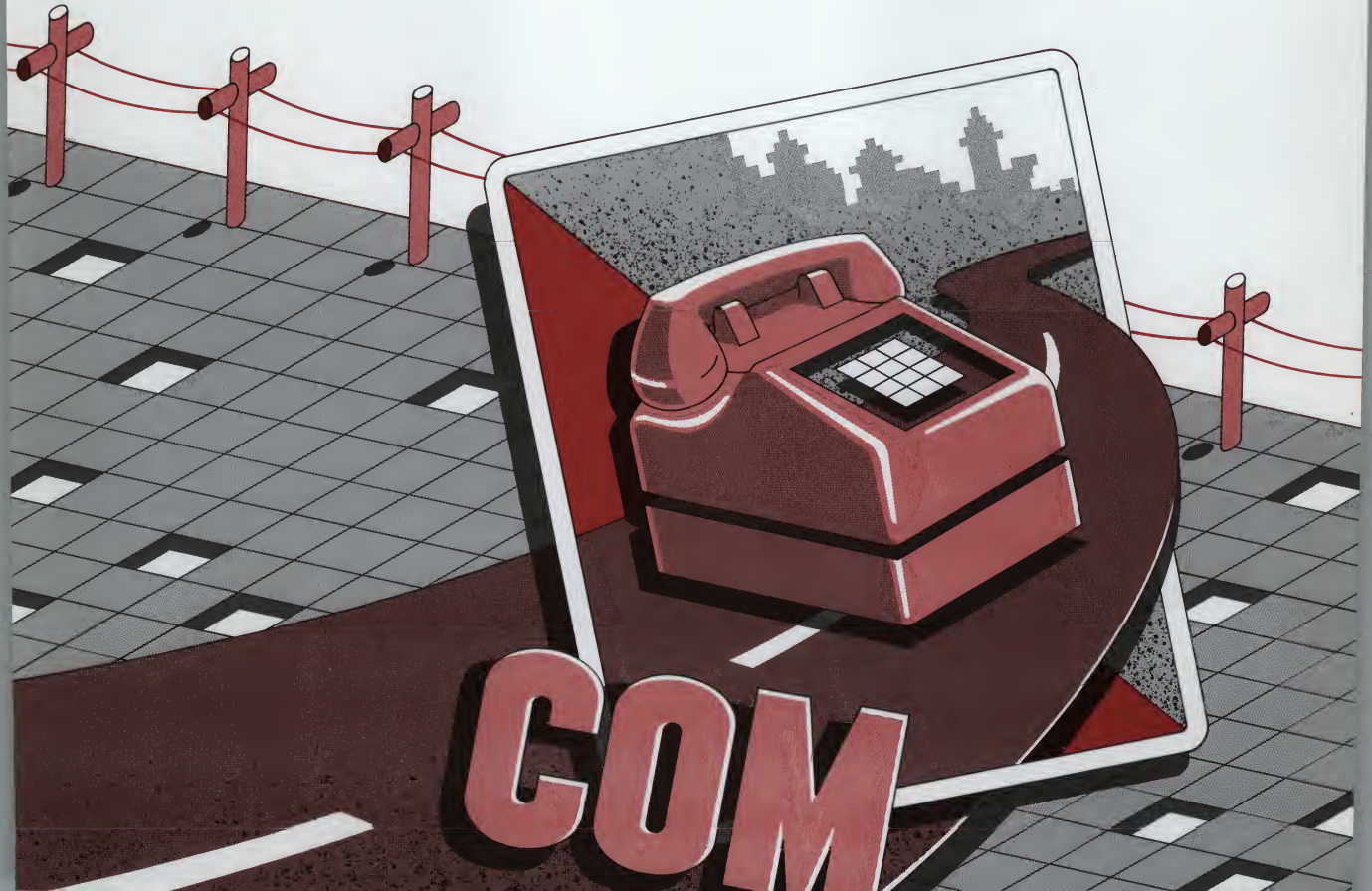
This command is available only when a chart definition dialog box is active.

Change Chart Name



Communications

Works Communications opens up a world of opportunities for you. Using Communications, you can talk with computers just about everywhere. You can browse through files in computer libraries, send and receive information, or make financial transactions.



The chapters in this part of the manual explain how to use Works Communications.

- Chapter 17, "Specifying Settings and Calling a Computer," shows how data communications works, how to match the way your computer communicates with the way other computers communicate, and how to store telephone numbers and have Works dial them automatically.
- Chapter 18, "Sending and Receiving Information," explains how you can send and receive messages and information, such as a Spreadsheet document that a spreadsheet program on another computer can use.
- Chapter 19, "Communications Command Reference," describes the Communications commands.

17 Specifying Settings and Calling a Computer

To use Works Communications, you need to make sure that the Works settings match those of the computer you're calling. Information services, like Dow Jones or CompuServe, and other accessible computers will provide you with the necessary information. Then, you need to put the service's phone numbers into your Works phone book so you can get in touch with them.

In this chapter, you'll learn how to:

- Understand how data communications works.
- Specify settings.
- Use the Works phone book.
- Dial another computer and respond when the connection is made.
- Adjust the echo.
- Hang up the phone.
- Prepare to answer calls.
- Call an information service or personal computer.

An Overview

This section gives an overview of how data communications works, and explains the terms you'll use in Works Communications.

Connecting Computers

You can send and receive information between your computer and another computer over telephone lines or through cables. This is called data communication.

The modem connection

You'll usually send messages over the telephone. To do that, you need a modem — a device that converts the computer's digital signals into voice-frequency signals that can travel over the telephone. A modem (modulator-demodulator) translates (modulates) electrical impulses into telephone signals when you send messages.

When you receive messages, it translates (demodulates) the telephone signals back into electrical signals your computer can understand.

An acoustic coupler is a type of modem that receives sound signals through a standard telephone receiver, rather than electrical signals over cables. An acoustic coupler is more vulnerable to noise and static than other modems, and more suitable for low-speed transmissions.

The cable connection

You can also send information directly from computer to computer using a cable. Your computer dealer can show you how. When two computers are directly connected, you'll be able to send information faster than you usually can over the telephone line, but only over short distances (among offices in the same building, for example).

Speed of Transmission

Baud rate

Your Macintosh sends information to a modem in tones that represent zeros and ones. These zeros and ones are binary digits, or bits. Each bit is only a fraction of a single letter, and hundreds of them go out every second. The rate of speed at which the bits are sent is the baud rate. You set the baud rate to tell Works how fast to send out information. Because of static and other random noises in the telephone lines, messages you send over the telephone travel at relatively slow speeds — but still much faster than you can type. If you lease direct lines or use a satellite, you can send messages at very high rates of speed.

How Information Travels

To make sure that your message gets through accurately, communications programs at both ends must send and receive information in the same way. When you subscribe to a computer service or plan to connect with another computer, somebody at the other end tells you in advance what settings to choose.

Character settings

In addition to setting the speed of transmission, you specify three characteristics about the characters that make up your message. When you send a message, it goes out in pulses of sound or electricity. The data size tells the receiving computer how many pulses make up one character. Stop bits tell when one character ends and another begins. Parity is a method the computer uses to check for errors in the data transmission.

Unless both computers send and receive information using the same settings, they won't understand each other — like two people talking to each other in different languages.

Greetings

Handshake setting

Just as diplomats follow a specified ritual when they greet each other, so do computers. The handshake setting tells one computer how the other computer will send and receive information.

The handshake is a form of protocol—computer diplomacy. Not all computers use the same protocol, but most information services and personal computer communications programs use the protocols that Works provides.

Creating a New Communications Document

For each computer that you intend to call, you can create a new document to contain the appropriate settings. Each computer you call may use different settings.

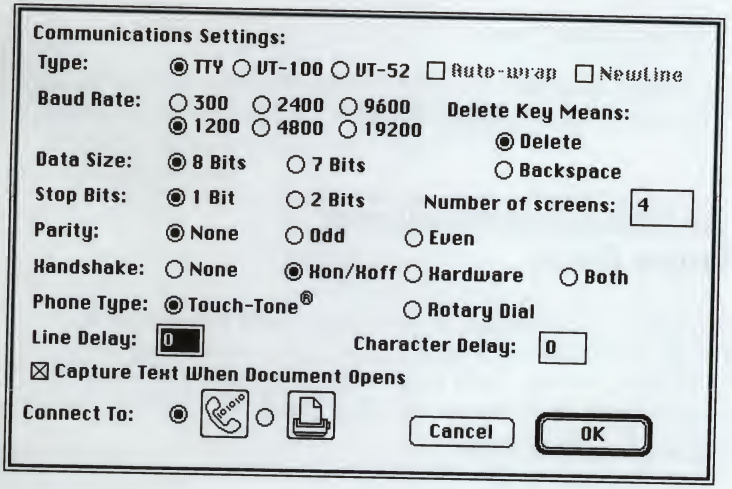
To create a new Communications document

To create a new Communications document:

1. In the Open dialog box, click the Communications icon.
2. Click the New button.

Works displays the Settings dialog box. Whenever you create a new Communications document, the Settings dialog box is automatically displayed.

You can have only one Communications document open at a time.



Specifying Settings

When you create a new Communications document, the preset options are those normally used by information services.

To specify settings

To specify settings:

1. Click the appropriate settings.
2. Type the number of screens you want to review during a session, if different from 4.
3. Type the line or character delay, if any.
4. Click the OK button or press the Return key.

Works stores the settings with the Communications document, and saves them when you save the document.

For a complete description of the Settings options, see "Settings" in Chapter 19.

Note Because Capture Text When Document Opens is checked in the Settings dialog box, Works asks you to name the file you will save text to after you click the OK button. Once you type a filename in the Save Captured Text As dialog box and click the Capture button, Works will save the text you type and receive during your session. The text is saved in a Word Processor file with the name you've typed. See "Receiving Information" in Chapter 18 for more information on capturing and saving text.

To change settings

To change the settings at any time:

- Choose the Settings command from the Communications menu, and repeat the procedure for specifying settings.

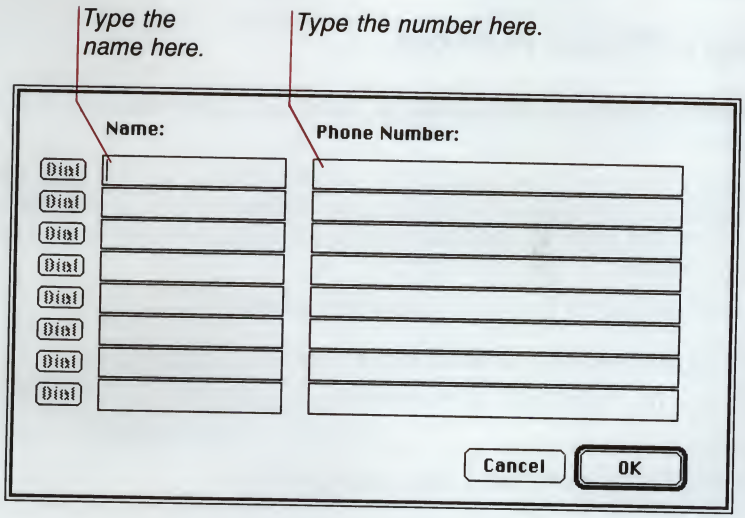
Adding or Changing Numbers in the Phone Book

Each Communications document has its own phone book stored with it, which contains up to eight phone numbers. The phone book also stores a name for each number, so that you'll know which computer you're dialing. The phone book is empty until you put numbers into it.

To add a number to the phone book

To add a number to the phone book:

1. Choose Dial from the Communications menu.
   The phone book appears, with the insertion point in the first blank name box.



2 Type a name.

3 Press the Tab key to move the insertion point into the number box, and type a phone number.

A number can be up to 50 digits long. Be sure to include all the digits you'd normally dial if you were making the call yourself — any long distance access codes or internal accounting codes, for example.

If you have a Hayes or Hayes-compatible modem, you can insert commas for pauses and hyphens for easier reading. If, for example, you must dial 9 for an outside line, you can type *9, 111-0000* so Works will pause after it dials 9.

If you have a different kind of modem, see your modem documentation for information on commas and hyphens.

4 Click the OK button or press the Return key.

Works stores the new name and number with the Communications document.

To change or remove a name or number

To change or remove a name or number:

1 Choose Dial from the Communications menu.

2 Select the name or number by dragging across it.

3 Press the Delete key to remove the selected name or number, or type the correction to change or replace the selected name or number.

4 Click the OK button or press the Return key.

Works stores the change with the Communications document.

Dialing a Phone Number

Before dialing, make sure your modem is connected to the Macintosh and to a telephone wall outlet.

If you have a Hayes or Hayes-compatible modem, you can use the Dial command to send the appropriate command to the modem to tell it to dial the number. For other modems, you must send the dialing command as well as the phone number.

To dial a number with a Hayes-compatible modem

To dial a phone number (Hayes or compatible modem):

1. Choose Dial from the Communications menu.
2. Click the Dial button next to the number you want.

Works dials the number for you and displays the message "Dialing..." to tell you that the modem is dialing. When you are connected, Works displays the message "CONNECT".

To dial a number with a different modem

To dial a phone number (non-Hayes-compatible):

- Type the dialing command for your modem in the Communications document window.

  Refer to your modem documentation for information on dialing commands.

  or

- If you have an acoustic coupler modem, dial the number, then place the telephone receiver in the headset.

To respond when a connection is made

Once you're connected, respond to the prompts of the service you've dialed, or if you're calling another personal computer, type something like "Hello" to let the other person know you're connected.

Getting an Echo

To adjust the echo

Some computers send back each character they receive, so that you see two of each character on your screen. This is called an echo. If you're seeing two of each character when you connect with another computer, turn the echo off. If you're not seeing any characters as you type, turn the echo on.

To adjust the echo:

- Choose Echo On or Echo Off from the Communications menu.

  The command in effect has a checkmark on the menu.

Echo On is often called "full duplex" and Echo Off "half duplex."

Hanging Up

Hanging up with Works Communications is just as easy as hanging up a telephone. After you've finished your session with an information service or another computer operator, you're ready to hang up. Remember that hanging up does not necessarily log you off from the system you were connected with, so it is a good practice to log off before you hang up.

To hang up

To hang up:

- Choose Hang Up from the Communications menu.
  Works displays the messages "Hanging up...", "+ + +", and "ATH".

The last two messages indicate that the connection has been broken. You can then close or save the document.

The carrier transmits your message over the phone lines. Periodically something will go wrong with a transmission. If you are disconnected in the middle of a session, Works displays the message, "NO CARRIER...". The message means that you've been disconnected. You can quit or try again.

Preparing to Answer a Call

When you're expecting a call from another user, you need to get ready.

To answer a call

1. Create a new Communications document, or open an existing Communications file.
2. Confirm that the settings in the Settings dialog box are correct.

Then, to set your Hayes-compatible modem to auto-answer:

- Choose the Answer Phone command from the Communications menu.

This tells your modem to answer the telephone when it rings. When the Answer Phone command is in effect, it is checked on the menu.

When you finish your Communications session and break the connection with the other user, you may want to change the setting on your modem.

To set the modem so that it won't answer the telephone:

- Choose the checked Answer Phone command.

Works removes the checkmark from the menu.

If your modem is not Hayes-compatible, consult your modem documentation, and type the appropriate command in the Communications document window.

Completing a Connection

Once you're connected to another computer, what do you do? It depends on the kind of computer you're calling. This section briefly explains about information services and other personal computers.

Calling an Information Service

To call an information service

Information services, like Dow Jones or CompuServe, have more information than many reference libraries. Although they all work differently, this section shows you some of their similarities, so you'll know what to expect when you call one.

To call an information service:

1. Dial the service.
   When you connect, the service will probably ask for an identification code and a password. (Your service provides this information when you subscribe.)
2. Type your identification code and password.
   Now you're logged on to the service. The time from when you log on to when you log off is your session. The service should guide you with prompts through the session. By answering questions and choosing from menus, you should be able to find what you're looking for.
   Some information services have a system operator whom you can ask for help if you have difficulties.
   Because many information services charge you for the time you are connected, Works Communications provides some commands that let you save time when you send and receive information. For more information, see Chapter 18, "Sending and Receiving Information."
3. When you're finished, log off and hang up.

Note Commercial information services, such as CompuServe, The Source, and Delphi, may require that you transmit control characters to utilize some functions of the service. To transmit a control character in Works, hold down the Command key and press whatever character key you need. For example, to transmit Control+C, hold down the Command and Control keys and press the C key.

For Works Communications documents:

This key combination	Corresponds to
Command+Option+3	Break
Command+Option+Delete	Delete
Command+Option+[	Escape

Calling a Personal Computer

Personal computers from different manufacturers can communicate with each other through programs like Works Communications. Using the telephone lines with Communications, you can send messages and documents to acquaintances who have personal computers.

To call a personal computer:

To call a personal computer

1. Make sure your settings in the Settings dialog box match those of the receiving computer's program.
2. Dial the number.
3. When Works says "CONNECT", begin typing.

Once you're connected, you can type messages and send and receive information.

Saving a Communications Document

When you save a Communications document, Works automatically stores the settings along with it. You might want to name the document after the information service or person you called. When you want to dial that service or personal computer again, you can open this file and dial, and the settings will be in place.

Note Information that appears in the Communications window, which is used for interaction between the modem and the computer you connect to, is not stored with the Communications document.

18 Sending and Receiving Information

Sometimes you'll want to interact with another computer by sending or receiving messages. This type of information is called text. When you're using an information service, you usually send and receive text. What you see on the screen while you're using Communications is text.

At other times you'll want to send files, like Spreadsheet documents, for someone else to look at, or you'll want to get a copy of an application program available on an information service. A file can be either a file created with an application, or an application program itself that you send or receive. You can't read the particular file that you're sending or receiving while the transmission is in progress. You can, however, use other Works tools during this time.

Microsoft Works gives you flexibility in communicating with other computers. By using terminal emulation, your Macintosh can mimic different types of terminals when connected to a host computer. This allows your computer to respond to commands from the host that are usually intended for terminals.

You set the type of terminal emulation — TTY, VT52, or VT100 — in the Settings dialog box. TTY terminals use only ASCII characters, which are the simplest form of communication between computers. VT52 and VT100 terminals use a more complex form of communication. With VT52 and VT100 terminal emulation you can use the keypad in the Communications menu bar to send special codes to the host.

This chapter shows you how to:

- Send both text and files.
- Receive both text and files.

If you want to gain access to a bulletin board or information service, see "Sending Text" and "Capturing and Saving Text" in this chapter. If you plan to send or receive an application program or application file, see "Sending a File" and "Receiving and Saving a File" in this chapter.

Sending Information

Ways to send information

Works Communications gives you two ways to send information:

- As text: You can type the information in the Word Processor, save it, and send it out as text. This is especially useful for sending messages through electronic mail. Communications will send the information much faster than you can type it, so you can save on long-distance telephone bills.
- As a file: If you send a file to another Macintosh, or another type of computer, the recipient will be able to save the file and then open it later with the appropriate tool or program.

Information sent as text is meant to be read and used during the course of communicating with the other computer. Information sent as a file is meant to be used later, with another tool or application.

Sending Text

Text is whatever you type with the keyboard. Everything you type with the Word Processor, for example, is text. The formatting and drawn objects in a Word Processor document are not text, however. Nearly every computer reads plain text the same way, which makes it possible for you to send text to other computers. When you call up an information service, you type text to tell it who you are and what you want to do.

To send text as you type it

To send text as you type it:

1. Connect with the receiving computer.
2. Start typing.

Once you connect with another computer, you can start typing. Most information services or bulletin boards will prompt you for commands, guiding you through a session. If you're connecting with another personal computer, you can just type messages as though you were talking.

To send blocks of text

You don't have to type everything you send while you're sending it. With the Send Text command, you can send large amounts of text faster than you can type. First, you save information in a Word Processor document. Then you send the text in the document with the Send Text command just as though you were typing it. Since much of the expense of using an information service depends on how long you're connected, you can save money by sending large amounts of text from a document, rather than by typing it as you send it.

To send blocks of text:

1. Connect with the receiving computer.
2. Make sure the disk containing the Word Processor file is in the disk drive.
3. Choose Send Text from the Communications menu.
   Works displays a dialog box listing files to choose from.
4. Select a file from the list.
5. Click the Send button.

The information zips across the screen as Works sends it.

Sending a File

To send a file

Works Communications lets you send complete files, as well as text. The receiver of a file can save it and use it, just as though you had sent a copy of the file on a disk. You can send formatted Word Processor files containing different fonts or type sizes; Database files that can be sorted and analyzed; or Spreadsheet files with formulas that work, so that they can be recalculated.

To send a file:

1. Connect with the receiving computer.
2. Choose Send File from the Communications menu.
   Works displays a dialog box listing files to choose from.
3. Select a file from the list.
4. Click a protocol option.
   For a complete description of the available options, see "Receive File" in Chapter 19.
5. Click the Send button.

Works sends the file and tells you when the transmission is complete. The recipient can save the file for later use.

Receiving Information

As soon as you connect with another computer, you can receive whatever someone sends from the other end. The information goes into the memory of your Macintosh, and is temporarily stored there until you close the communication document, turn the computer off, or quit Works.

With Works Communications, you can save the information you receive for review by using the Capture Text When Document Opens option in the Settings dialog box, or the Capture Text command. You can save files for later use with the Receive File command.

Capturing and Saving Text

To capture and save text for review

Works automatically saves your communications session if Capture Text When Document Opens is checked in the Settings dialog box.

To capture and save text:

1. Create a new Communications document and specify the appropriate settings in the Settings dialog box. (If you don't remember how to do this, see "Specifying Settings" in Chapter 17.)
2. Make sure the Capture Text When Document Opens option is checked.
3. Click the OK button.
   Works displays a dialog box in which you can name the document that will hold the text.
4. Type a name for the document.
5. Click the Capture button.
   Everything you type or receive will now be saved as a Word Processor document with the filename you specify.
6. Choose End Text Capture from the Communications menu when you are finished with your session.

After you end your session, you can open the Word Processor file and review the entire session at your leisure.

You don't always have to save an entire session, however—you can start saving text at any time while you're connected. For example, if you call an information service to find out the average housing costs in Indianapolis, but have to look through a lot of extra material before you find what you want, you can wait until you're ready before saving anything.

To capture and save text during a session

To capture and save text during a session:

1. Open a new Communications document.
2. When you specify your settings, make sure that Capture Text When Document Opens is not checked in the Settings dialog box.
3. Click the OK button.
4. Connect with the other computer and start your communications session.
5. Whenever you're ready to start saving text, choose Capture Text from the Communications menu.
   Works displays a dialog box in which you can name the document that will hold the text.

6. Type a name for the document.
7. Click the Capture button.

   Works saves everything that you type or receive from the other computer. Text will appear on your screen as it is received.
8. Choose End Text Capture from the Communications menu when you are finished with your session.

To stop saving text

You can stop saving text at any time:

- Choose End Text Capture from the Communications menu.

Works stops saving text to the document, but you continue to receive the information on your screen.

Receiving and Saving a File

To receive a file and save it on a disk

Information services often have entire files or application programs that you can transfer for storage on a disk. For example, you might want to transfer a new stock analysis application program so that you can examine your portfolio. Or a friend with a personal computer might want to send you a copy of a new game (if it's in the public domain).

Works Communications can take such information and save it in a file on a disk. If it is an application program, it must go onto a disk before you can use it. If it is a file, you may only be able to use it with a particular application. Such information is useful only if you store it on a disk.

Before you can receive a file, you have to make sure that your computer and the other computer are using the same language, or file transfer protocol.

To receive and save a file:

1. Connect with another computer.
2. When you know you're about to receive a file, choose Receive File from the Communications menu.

   Tell the information service or computer operator at the other end to start sending the file.

   Works displays a dialog box in which you can assign a name to the file you are receiving, and choose a transfer protocol.
3. Type a name for the file.

4. Click a protocol option.
   For an explanation of the available options, see "Receive File" in Chapter 19.
5. Make sure the correct disk is in the disk drive.
6. Click the Receive button.

As the file comes in, Works saves it with the name you've chosen and tells you when the transmission is complete. If you receive a Macintosh application program, you can open it like any other application. If you receive a file, you'll be able to open it with the appropriate application.

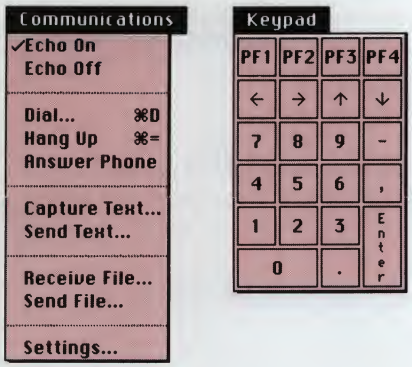
Note If the sender is sending a file from Works in MacBinary format, you can receive the file automatically — without choosing the Receive File command. Just leave a Communications document open on your computer. When the file is sent, Works automatically saves it to a file on the current disk with the filename used by the sender. If you already have a file of that name saved on your disk, Works will add a digit to the filename.

If you are saving or receiving a file, Works checks for errors during transmission and asks the other computer to re-send information if a bad connection or noise in the line introduces errors into the file. If the information continues to contain errors, Works cancels the transmission and alerts you. You should hang up, reconnect, and try again.

19 Communications Command Reference

The Apple, File, and Window menus are identical for all Microsoft Works tools. For information on these menus, see Chapter 2, "Common Tasks Command Reference."

This chapter discusses the shaded commands shown below:



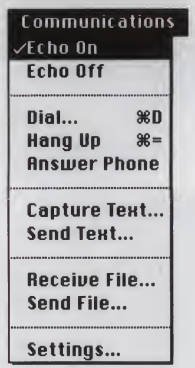
You can invoke some Works commands from the keyboard, as well as by using the mouse. The available Command+key combinations are shown on the menus and in Appendix D.

An alphabetical list of commands appears in the index under "Command."

The Communications Menu

Echo On/Echo Off

Echo On
Echo Off

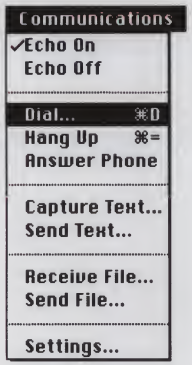


These commands control whether or not Works echoes characters on your screen.

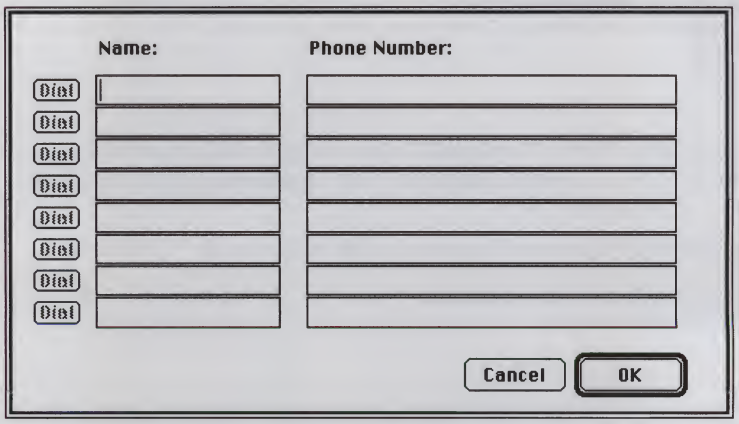
Many computers send the characters they receive back to the sending terminal, which then displays these characters a second time. As you type, it looks as if you are typing the characters twice. If you are seeing two of each character, choose Echo Off. If you are not seeing any characters, choose Echo On.

Dial

Dial



The Dial command allows you to record names and telephone numbers. The Dial command also dials the numbers automatically when you have a Hayes-compatible modem.



You can record up to eight names and telephone numbers in the text boxes. Type the numbers for the services or other computers you dial most frequently. With a Hayes-compatible modem, you can type a comma for a pause so Works will pause after dialing a number, such as 9 for an outside line, and hyphens so you can read your phone number more easily. (Consult your modem or telephone system documentation for any dialing codes you may have to include.)

Click the OK button to store the names and numbers with your Communications document. When you save this document, Works also saves these names and numbers.

To dial a number with a Hayes-compatible modem, click the Dial button to the left of the name and number you want.

Without a Hayes-compatible modem, you won't be able to use the Dial command. In the Communications window, type the dial commands specified for your modem.

After dialing, you should see the following sequence on your screen:

Dialing...
CONNECT

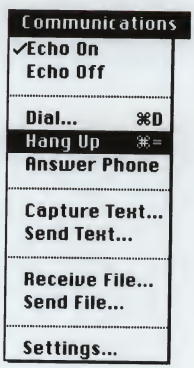
If you are communicating with another Macintosh or other personal computer, either you or the other party can start typing as soon as the connection is made.

If you are communicating with an information service, such as CompuServe, The Source, or Dow Jones, follow the instructions in the service's manual.

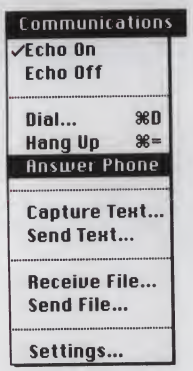
Hang Up

The Hang Up command ends a Communications session and disconnects the modem from the telephone line.

Hang Up



Answer Phone



Answer Phone

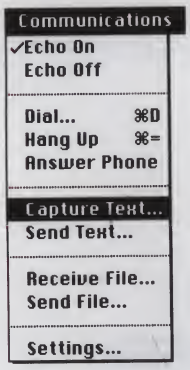
The Answer Phone command tells Works to have the modem answer all incoming calls on the first ring.

Without a Hayes-compatible modem, you won't be able to use the Answer Phone command. In the Communications window, type the appropriate commands specified for your modem.

Answer Phone is not initially checked on the Communications menu. When you choose it, Works puts a checkmark on the menu. The command is in effect when it is checked on the menu.

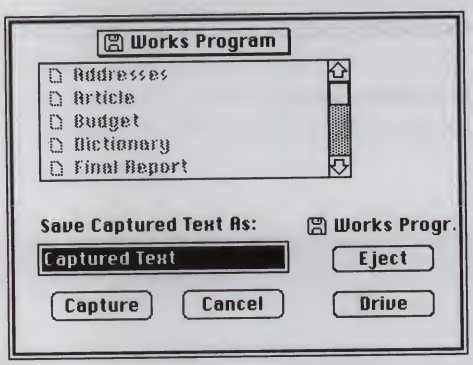
To tell Works not to answer any incoming calls, choose Answer Phone when it is checked. Works removes the checkmark.

Capture Text
End Text Capture



Capture Text/End Text Capture

The Capture Text command saves everything you send and receive while connected to another computer, until you choose the End Text Capture command.

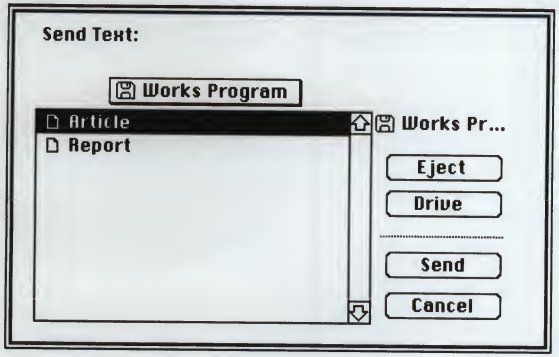


Use the Eject and Drive buttons to choose the disk on which you want to save. When you click the Capture button, Works begins to save everything displayed on your screen in the specified Works Word Processor file.

After you choose Capture Text, the command on the menu changes to End Text Capture. When you want to stop capturing text, choose End Text Capture.

Send Text

The Send Text command sends the text from a specified Works Word Processor file to the receiving computer.



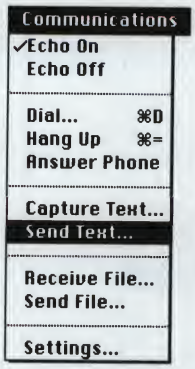
To send the text, select the file you want to send, then click the Send button.

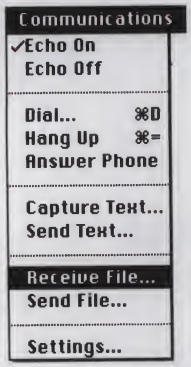
When you send a previously saved Word Processor file, only the text is sent, not the formatting information. To send a text file not created in Works, you must first import it to the Word Processor and then save it.

Send Text is useful when you are using Works to prepare and send electronic mail. For example, you can compose a letter with the Word Processor and save it. Then, make the connection to your electronic mail service. When the service instructs you to type your letter, choose Send Text to send it to the service.

Note If you want to send formatting and drawn objects, use the Xmodem Data option, or the Send File command to send the file.

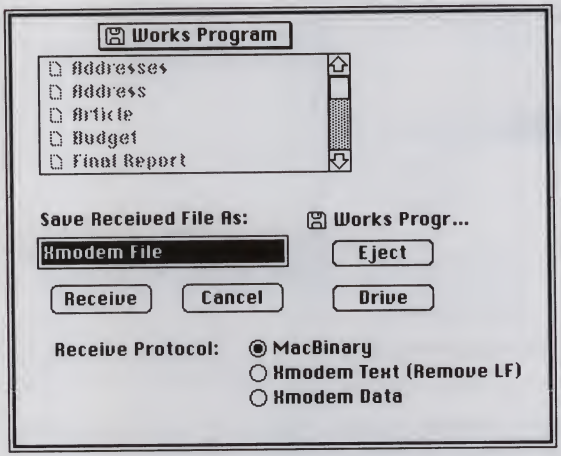
Send Text





Receive File

The Receive File command receives formatted files or program files from another computer.



Type a name for the file. Use the Eject and Drive buttons to choose the disk on which you want to save the file.

Receive Protocol The protocol you use must match the protocol used by the other computer. There are three options to choose from:

- Click the MacBinary option to receive a file in the MacBinary format when receiving information from a commercial information service.
- Click the Xmodem Text option to receive a file from a computer other than a Macintosh or from a computer whose software does not support the MacBinary format. Use this option to receive text files — files containing only alphanumeric characters and no formatting information.
- Click the Xmodem Data option to receive a file from a computer other than a Macintosh or any computer whose software does not support the MacBinary format. Use this option to receive files containing both alphanumeric characters and formatting information.

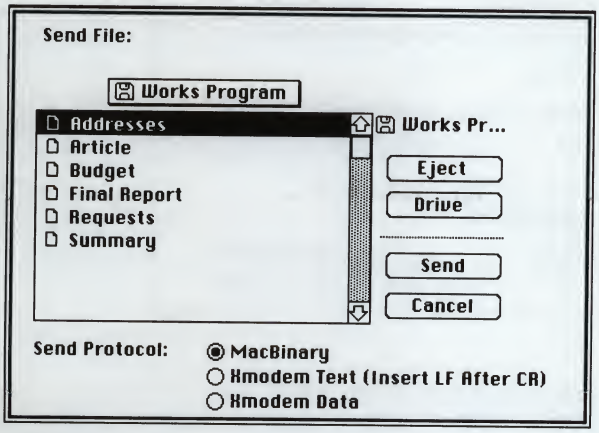
With each of the above protocols, both computers will check for errors in transmission using the Xmodem protocol. If an error occurs, Works tells you.

As your computer receives a file, Works displays a message box telling you the status of the transmission and alerting you when transmission is complete.

Note If you are receiving a file from Works in MacBinary format, you do not need to use the Receive File command. Works Communications will automatically receive a file when it is sent using MacBinary protocol. The file will be saved on the current disk with the filename used by the sender. If you already have a file of that name saved on your disk, Works will automatically add a digit to the name of the file you are receiving.

Send File

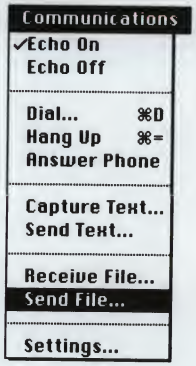
The Send File command sends a formatted Macintosh data file or a Macintosh program file.



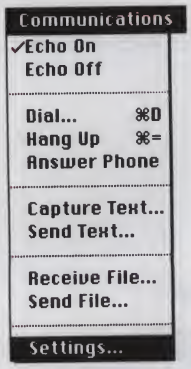
The Send Protocol options are the same as those in the Receive File command. For more information, see "Receive File" in this chapter.

Select the file you want to send, then click the Send button. Works displays a message box telling you the status of the transfer and alerting you when transmission is complete.

Send File



Settings

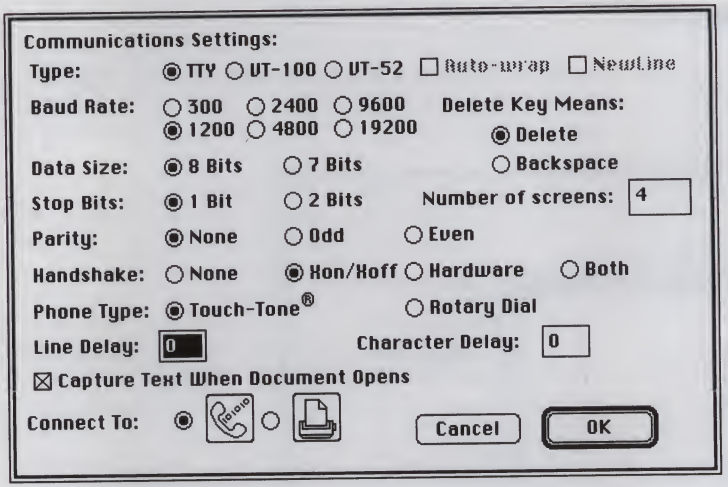


Settings

The Settings command gives Works the parameters to use for communications.

When you choose Settings, Works displays a dialog box identifying the Macintosh, modem, and phone system parameters that must be specified.

This dialog box is also displayed when you create a new Communications document. This allows you to initialize the parameters before you create a document.



The preset options are suitable for communicating with most commercial services and with other Macintosh computers equipped with modems manufactured by Apple Computer, Inc., Hayes Computer Products, Inc., and Prometheus Products, Inc. If the service, computer, or modem that you want to communicate with requires different settings, change the settings by clicking the appropriate options.

When you save a Communications document, Works saves the settings with the document.

If you regularly use a service requiring settings other than those proposed, you should create a new Communications document and change the necessary parameters in the Settings dialog box. Name and save the document with the Save As command from the File menu. When you want to use the service, open the file. Your parameters will be properly set.

Type Works allows your Macintosh to emulate three types of terminals. Emulation means that your Macintosh can mimic different types of terminals when connected to a host computer. The Type setting allows you to choose one of these terminal emulation types:

- TTY
- VT52
- VT100

Auto-wrap The Auto-wrap setting automatically wraps text to the next line when the characters you type reach the maximum width of the screen. This setting applies only when you are emulating a VT52 or a VT100 terminal.

NewLine The NewLine setting moves the cursor to the left-most position on the next line when the host computer sends a new line character. This setting applies only when you are emulating a VT52 or a VT100 terminal.

Delete Key Means Delete/Backspace The Delete Key Means Delete setting inserts a Delete character (ASCII 127) when you press the Delete key. The Delete Key Means Backspace setting inserts a Backspace character (ASCII 08) when you press the Delete key. These settings apply only when emulating a VT52 or VT100 terminal.

Baud Rate Baud rate is a measure of the speed of data transmission. It is roughly the same as the number of bits per second. Each letter or numeric digit consists of 8 bits. Thus, 300 baud is approximately 30 characters per second. Most modems used over the switched telephone network operate at 300, 1200, or 2400 baud. You need to know the baud rate at which your modem operates and then set this parameter by clicking the appropriate option. Works proposes 1200 baud.

Number of Screens The Number of Screens setting allows you to scroll through a specified number of screens during your current Communications session. This makes it possible to find information quickly, log off, and then review the information without the expense of spending additional time connected to a host computer.

You specify the number of screens you want to scroll through by typing a number from 1 to 100 (the standard setting is 4). Works keeps these screens in memory so you can review previous screens while you're still connected.

After a full screen of text is received, a standard Macintosh scroll bar appears on the right side of the Communications window.

As you continue to receive text, it may exceed the number of screens you've set. When this happens, screens are removed from memory in the order they were received. For example, if you set 2 as the number of screens, when screen 3 comes into view, screen 1 is erased from memory. You now scroll between screens 2 and 3.

Note It's a good idea to specify only the number of screens you need. Saving a large number of screens will reduce the memory available for other Works tools. If you don't have enough free memory, Works won't allow you to save the number of screens you've set.

Data Size While data is represented internally in your Macintosh as 8 bits per character, it can be transmitted in either 8-bit or 7-bit segments. Most commercial services transmit 8-bit characters, so Works proposes 8 bits. You don't have to change this setting unless the system you are communicating with can receive data only in 7-bit segments.

Stop Bits Most commercial services use one stop bit to identify the end of the transmission of a single character, so Works proposes 1. You don't have to change this setting unless the other computer can transmit only two stop bits.

Parity Parity describes the bit, if there is one, added to transmitted characters for error checking. (After the receiving computer or terminal uses the parity bit to check for transmission errors, the bit is automatically removed from the characters.) Most commercial services do not use parity, so Works proposes None. If necessary, change this by clicking the appropriate option.

Handshake Handshake refers to the way terminals or computers being used as terminals tell each other whose turn it is to send or receive data. It is normally used when transmitting data at very high rates of speed to synchronize the sending and receiving systems.

Handshaking, if used, is done by either hardware or software. Most commercial services support Xon/Xoff handshaking, so Works proposes Xon/Xoff. If you are communicating at 2400 baud or greater, or intend to use the Capture Text command, use Xon/Xoff.

Phone Type The telephone system uses two kinds of dialing:

- Rotary Dial
- Touch-Tone

Your modem uses different codes to dial automatically. Works needs to know which dialing method you're using. Works proposes Touch-Tone. If your telephone system is rotary dial, change the setting by clicking the Rotary Dial option.

Line Delay/Character Delay When transferring files over communications facilities, it is sometimes impossible to establish handshaking between the two systems. If the transmitting system sends data as fast as it can, and if the receiving computer cannot keep up with the sender, data can be lost. Most of the time you can prevent this if you slow down the transmitting computer by delaying between characters or between lines as they are sent.

Enter an amount of time to delay by changing either Line Delay or Character Delay from the proposed setting of 0. The delay you specify is in increments of 1/60 of a second. For example, if you type *3*, the delay will be 3/60 of a second.

Capture Text When Document Opens Capture Text allows you to save information for review at a later time. When the Capture Text option is chosen, Works asks you to name a file in which you'll be saving captured text. Everything you type or receive will then be saved in a Word Processor document with the filename you specify.

Connect To Click the option that corresponds to the Macintosh port to which your modem is attached. Works proposes the telephone port. It is strongly recommended that you connect your modem to this port. (This may not be practical, however, if you use the telephone port for connecting a hard disk.)

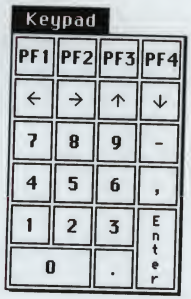
When all the parameters are set, click the OK button.

The Keypad

The Communications keypad is for use with VT52 or VT100 terminal emulation when your keyboard doesn't include a numeric keypad. The keypad can be used to type special codes (called escape codes) that provide instructions for the host computer. Use the keypad along with the keys on your keyboard to send escape codes to the host.

See Appendix H for a list of the VT52 and VT100 escape codes that Works supports.

The Keypad



Using the Tools Together

Microsoft Works is more than four separate tools. While each tool helps you in one area of your work, the tools can also work together to perform additional tasks they can't perform alone.

The Word Processor is ideal for writing, and with information from the Database you can also use it to make business forms, customized letters, and mailing labels. You can copy Communications information and Database figures to the Spreadsheet, and you can include Spreadsheet figures and Communications information in Database documents. You can also copy Communications and Spreadsheet information, including charts, to the Word Processor. You can use Draw and the Word Processor's or Spreadsheet's other special features to make the information more interesting and attractive.

This part of the manual explains how to use the Works tools together:

- Chapter 20, "Moving Information Between the Tools," tells you how to move information and drawings between the Works tools.
- Chapter 21, "Merging: Creating Mailing Labels, Form Letters, and Forms," shows you how to use the Database to create form letters and mailing labels, to address envelopes, and to fill in forms you create in the Word Processor.

For information on using Works with other programs, see Appendix B, "Using Works with Other Applications."

For information on the specific tools in Works, see the appropriate parts of this manual.

20 Moving Information Between the Tools

This chapter explains how to move information between the Works tools. You'll learn how to:

- Copy information between Word Processor documents.
- Copy information between Word Processor, Spreadsheet, and Database documents.
- Copy Communications information.
- Copy charts and drawings to Word Processor and Spreadsheet documents.

The Word Processor is the most convenient tool for integrating information. The Word Processor's drawing, formatting, and merging capabilities give you the most flexibility for combining information from the various tools.

You'll often want to include information from a Database, Spreadsheet, or Communications document in a Word Processor document. For example, a business report might require inventory information from a Database document, sales projections from a Spreadsheet document, and travel information or stock quotes from a Communications document.

To learn how to work with the information once you move it, you should turn to the appropriate chapters in this manual for each tool. Before you try the procedures in this chapter, you should already know how to select information within each tool. Before moving drawings, you should already know how to select a drawn object.

About memory usage

Copying information between tools is subject to available memory, particularly if you are copying large selections. When you copy information to the Clipboard, you increase memory usage by the amount you copy. When you paste the Clipboard's contents, you paste a copy of the Clipboard's contents, increasing memory usage again by the same amount. If the Clipboard's contents are large, you may not have enough memory to paste. If Works displays an alert box, try copying your information in smaller sections.

Note When you have finished pasting a large selection from the Clipboard, it's a good idea to free some memory by reducing the size of the Clipboard. To reduce the Clipboard's size, reduce the amount of information by selecting and copying a small amount of information (for example, a single word) from your document.

Copying Information Between Tools

Copying information between the Works tools is easy. Just open the documents you need; the rest is as simple as pointing and clicking. Select the information, copy it to the Clipboard, and paste it at its destination.

You can copy information from open documents only. Depending on document size and available memory, you can have up to 14 document windows open at a time. This makes integrating your information that much easier.

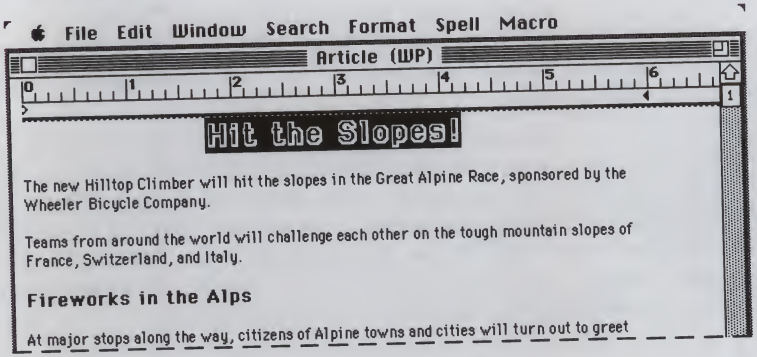
Note The procedures in this chapter discuss moving information in terms of copying from one tool or program to another. You can also move information by cutting it out of a tool or program. This process works exactly the same as copying, except that the information is deleted from the original document. If this is the result you want, substitute the Cut command for the Copy command in any of the following procedures.

To copy information between the tools

This section explains the general procedure you'll follow to copy information between the tools. The sections that follow contain examples for particular situations.

To copy information between the tools:

1. Make sure that the document you want to copy from is open. If it is not active, activate it by choosing its name from the Window menu.
   Works brings the document to the front and displays the scroll and title bars to show you that the window is active.
2. Select the information you want to copy.

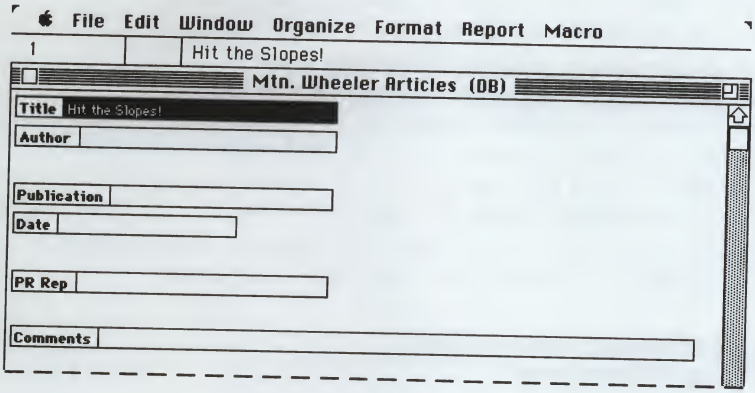


3. Choose Copy from the Edit menu.

4. Open the file you want to paste into.
5. To copy to the Word Processor, position the insertion point in a blank line or select the text that you want to paste over. (Scroll if necessary.) If you select text in a Word Processor document, Works replaces it when you paste the contents of the Clipboard.

   To copy to the Database or Spreadsheet, select the entry or cell at the upper-left corner of the area you want to paste into. You can also select a range of entries or cells as the paste area.
6. Choose Paste from the Edit menu.

Works pastes the copied information.



As long as the information remains on the Clipboard, you can paste it as many times as you want. For example, to use the same chart at the beginning of each section of a document, you can copy it once from the Spreadsheet, then scroll through your document, pasting a copy of it each time you come to a new section.

Copying Information to the Word Processor

When you select information to copy to the Word Processor, you need to consider how it will look in a Word Processor document. Your selection may be longer than a single page, or wider than a standard page. Works divides selections longer than a page into page-sized pieces for the Word Processor. If Database records or Spreadsheet rows are wider than a Word Processor page, you can format your information to fit after you paste it in.

When you copy information to a Word Processor document, all attributes — font, type size, type style, color, and justification — are also copied.

Copying Between Word Processor Documents

To copy between Word Processor documents

You can copy information from one Word Processor document to another by using the general procedure described above. Notice that if you position the insertion point in a blank line, Works automatically opens up enough space to paste the entire contents of the Clipboard.

Copying Spreadsheet Information to the Word Processor

To copy Spreadsheet information to the Word Processor

When you copy Spreadsheet information to the Word Processor, the contents of each column are separated by a tab character. Each row ends with a return character. If the rows are wider than the Word Processor page, paste the information first, then select and format it to fit.

When you copy Spreadsheet numbers or formulas to the Word Processor, Works pastes them as text. The relationship between the cells in the Spreadsheet no longer exists. For example, if you change a number in a column copied to the Word Processor, the total for that column will not change. You need to select the total in the Word Processor document and change it using the standard Macintosh editing techniques.

You may want to adjust tab stops to change the alignment of the columns. For more information, see "Setting and Using Tabs" in Chapter 4.

Copying Database Information to the Word Processor

To copy Database information to the Word Processor

When you copy records from the Database, each field arrives separated by a tab character. Each record follows on its own line, ending with a return character. Records that are wider than the Word Processor page can be selected and formatted to fit after you paste.

When you copy Database information, Works normally copies field names as well as the selection.

Hint To paste only the selection, without the field names, hold down the Option key while you choose the Paste command.

When you copy Database numbers or the results of a computed field to the Word Processor, Works pastes them as text, and won't be able to recalculate them in the Word Processor. If you want to adjust any numbers, select them in the Word Processor document and use the standard Macintosh editing techniques.

To copy records in the Database, you should copy from a list window, because in the form window you can copy only one field at a time. In the list window, you can copy a field, a record, or a range of adjacent records, entries, or fields.

Copying from Other Applications to the Word Processor

To copy information from other applications

You copy information from other Macintosh applications in one of two ways:

- To copy small amounts of information, use the Scrapbook and Clipboard. For more information, see "Using the Scrapbook and Clipboard" in Appendix B.
- To copy large amounts of information or an entire document, use the Import File option in the Open dialog box. For more information, see Appendix B, "Using Works with Other Applications."

Copying Information to the Database

When you copy information to a Database document, the information assumes the font, type size, type style, color, display and alignment of the field it is copied into.

Note If the Clipboard contains text and drawings from a Word Processor or Spreadsheet document, Works pastes only the text into the selected field. If the Clipboard contains only a drawing, you won't be able to choose Paste in the Database tool's Edit menu.

Important If the text on the Clipboard includes more than 250 characters that are not separated by tab characters, or by two or more return characters, only the first 250 will be pasted into the selected Database field.

Copying Word Processor Information to the Database

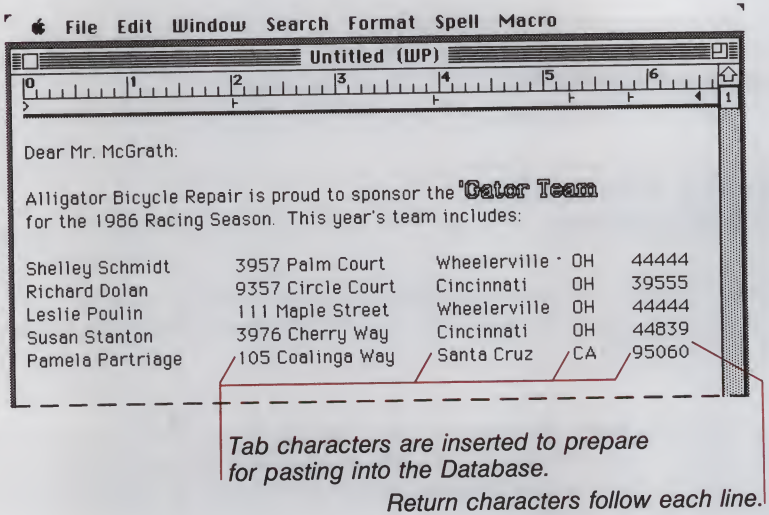
When you copy information from the Word Processor to the Database, you need to tell Works how to distinguish between fields and records. Each piece of information that will go into a field must be separated from the next piece of information by a tab character or by two or more blank spaces. Each record must end with a return character. Any blank lines become blank records.

This section explains how to copy Word Processor information to the Database, using spaces, tab characters, and return characters to keep the information in its characteristic fields and records.

To copy Word Processor information to the Database

To copy Word Processor information to the Database:

1. In the Word Processor, insert one tab character between each piece of text that you want to appear in a separate field. Insert return characters to start new records. (See the Word Processor section of this manual for information on inserting tab and return characters.)



2. In the Word Processor document, select the text that you want to copy.
3. Choose Copy from the Edit menu.
4. Activate the Database document.
   Make sure you're in a list window.
5. Select the field in the upper-left corner of the area you want to paste into.
   Since the information fills fields to the right, and records down, the records to be filled should be blank unless you want to copy over existing information. To avoid overwriting information, select the blank record at the end of the Database. If you try to copy over existing records, Works asks you to confirm the loss of some data before proceeding.
6. Choose Paste from the Edit menu.

Works pastes the copied information.

Note When pasting text from a Word Processor document to a list window in a Database document, a portion of text may be pasted in the next record. This is because a carriage return is inserted at the end of each line of Word Processor text when pasting. To move the text to the appropriate location, select it, and cut and paste.

You can now use Database commands to manipulate the information. After adjusting the width of several columns, the Database document looks like this:

File Edit Window Organize Format Report Macro

1 | Shelley Schmidt

'Gator Team (DB)

Name	Address	City	State	Zip
Shelley Schmidt	3957 Palm Court	Wheelerville	OH	44444
Richard Dolan	9357 Circle Court	Cincinnati	OH	39555
Leslie Poulin	111 Maple Street	Wheelerville	OH	44444
Susan Stanton	3976 Cherry Way	Cincinnati	OH	44839
Pamela Partriage	105 Coalinga Way	Santa Cruz	CA	95060

The copied information is pasted into the Database document, beginning with the selected entry.

Copying Spreadsheet Information to the Database

When you copy Spreadsheet information to the Database, each Spreadsheet column becomes a Database field. Each Spreadsheet row (or portion of a row) you copy becomes a Database record. If you paste a Spreadsheet column below an existing field, or a Spreadsheet row to the right of an existing record, the new and existing information combine to make one field or one record.

In the Database, you'll need to set up enough fields to accommodate all the columns you're copying from the Spreadsheet. The columns that don't fit won't be pasted into the Database.

To copy information from the Spreadsheet to the Database:

To copy Spreadsheet information to the Database

1. Select the information in the Spreadsheet. You can select a single cell, a block of cells, or entire rows or columns.

File Edit Window Select Format Options Chart Macro

A3 | Expenses

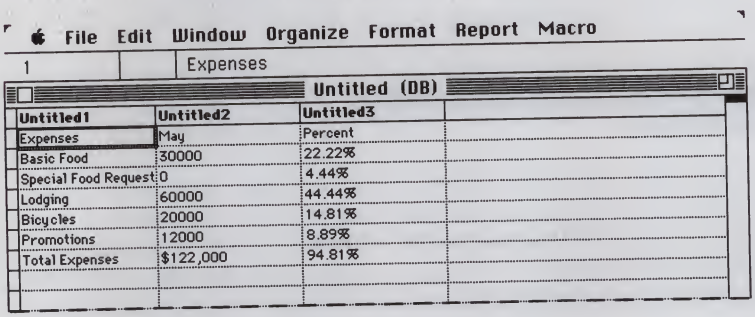
Budget (SS)

	A	B	C	D	E	F
1		Alpine Race Budget				
2						
3	Expenses	May	Percent	June	Percent	
4	Basic Food	$30,000	22.22%	$10,000	15%	
5	Special Food Requests	$6,000	4.44%	$6,000	9%	
6	Lodging	$60,000	44.44%	$20,000	30%	
7	Bicycles	$20,000	14.81%	$5,000	7%	
8	Promotions	$12,000	8.89%	$12,000	18%	
9	Total Expenses	$128,000	94.81%	$53,000	79%	
10						
11	Total Budget Available	$135,000	100.00%	$67,500	100%	
12						
13	Under (Over) Budget	$7,000	5.19%	$14,500	21%	
14						
15						

2. Choose Copy from the Edit menu.
3. Activate the Database window.
4. Select the entry in the upper-left corner of the area you want to paste into.

   If you don't want the Spreadsheet information to be copied over existing Database text, select the blank record at the end of the Database document. If you select text, the Spreadsheet information will be pasted over it, but you'll first see an alert box asking you to confirm that it is acceptable to have the Database text deleted.
5. Choose Paste from the Edit menu.

Works pastes the selected cells into the Database document. Each cell becomes a Database entry.



Untitled1	Untitled2	Untitled3
Expenses	May	Percent
Basic Food	30000	22.22%
Special Food Request	0	4.44%
Lodging	60000	44.44%
Bicycles	20000	14.81%
Promotions	12000	8.89%
Total Expenses	$122,000	94.81%

Copying Information to the Spreadsheet

When you copy information to a Spreadsheet document, the information assumes the font, type size, type style, color, display, alignment, and border type of the cell it is copied into.

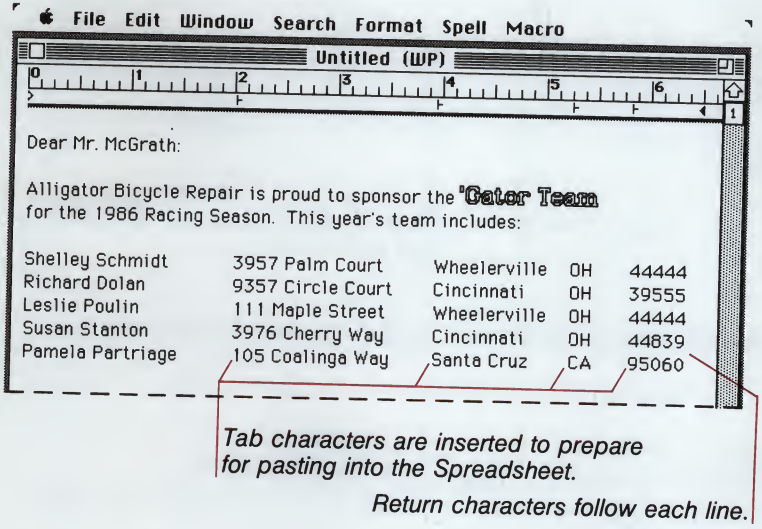
Copying Word Processor Information to the Spreadsheet

To copy from the Word Processor to the Spreadsheet

When you copy information from the Word Processor to the Spreadsheet, you need to tell Works how to distinguish between columns and rows. Each piece of information that will go into a cell must be separated from the next piece by a tab character or by two or more blank spaces. Each row must end with a return character. Any blank lines become blank rows.

To copy Word Processor information to the Spreadsheet:

1. In the Word Processor, insert tab characters between the text that you want to appear in separate columns. Insert return characters to start new rows. (See the Word Processor section of this manual for information on inserting tab and return characters.)

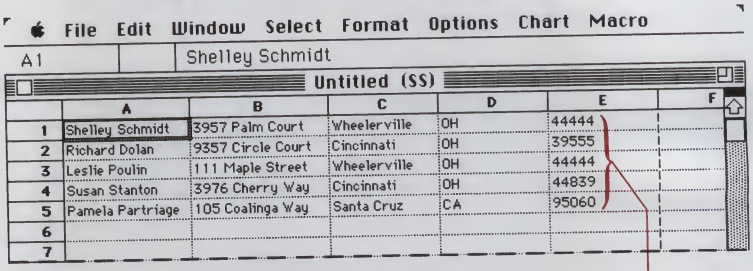


2. In the Word Processor document, select the text that you want to copy.
3. Choose Copy from the Edit menu.
4. Activate the Spreadsheet document.
5. Select the cell in the upper-left corner of the area you want to paste into. Since the information fills cells to the right, and rows down, cells in the area to be filled should be blank unless you want to copy over existing information. To avoid overwriting information, select a blank cell at the end of the Spreadsheet. If you try to copy over existing records, Works asks you to confirm the loss of some data before proceeding.
6. Choose Paste from the Edit menu.

Works pastes the copied information.

Note When pasting text from a Word Processor document to a Spreadsheet document, a portion of text may be pasted in the next row. This is because a carriage return is inserted at the end of each line of Word Processor text when pasting. To move the text to the appropriate location, select it, and cut and paste.

You can now use Spreadsheet commands to manipulate the information. After adjusting the width of several columns, the Spreadsheet document looks like this:



	A	B	C	D	E	F
1	Shelley Schmidt	3957 Palm Court	Wheelerville	OH	44444	
2	Richard Dolan	9357 Circle Court	Cincinnati	OH	39555	
3	Leslie Poulin	111 Maple Street	Wheelerville	OH	44444	
4	Susan Stanton	3976 Cherry Way	Cincinnati	OH	44839	
5	Pamela Partriage	105 Coalinga Way	Santa Cruz	CA	95060	
6						
7						

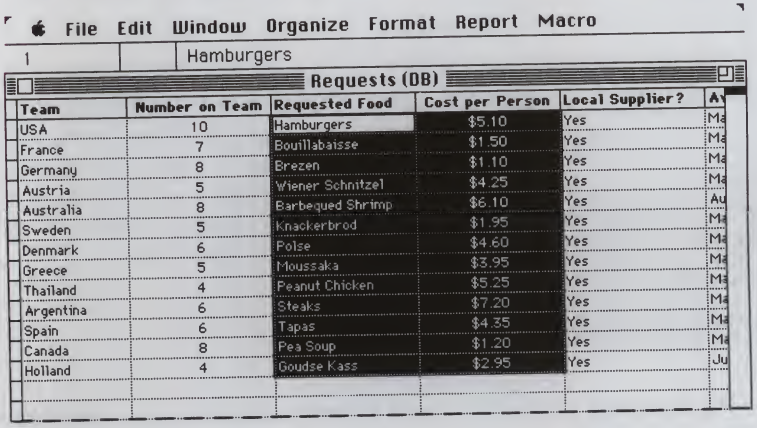
The copied information is pasted into the spreadsheet document, beginning with the selected cell.

Copying Database Information to the Spreadsheet

To copy information from the Database to the Spreadsheet:

1. Select the information in a Database list window. You can select individual or adjacent records, fields, or field entries.

   When you copy Database information, Works normally copies field names as well as the selection.



Team	Number on Team	Requested Food	Cost per Person	Local Supplier?	A
USA	10	Hamburgers	$5.10	Yes	Ma
France	7	Bouillabaisse	$1.50	Yes	Ma
Germany	8	Brezen	$1.10	Yes	Ma
Austria	5	Wiener Schnitzel	$4.25	Yes	Ma
Australia	8	Barbequed Shrimp	$6.10	Yes	Au
Sweden	5	Knackerbrod	$1.95	Yes	Ma
Denmark	6	Polse	$4.60	Yes	Ma
Greece	5	Moussaka	$3.95	Yes	Ma
Thailand	4	Peanut Chicken	$5.25	Yes	Ma
Argentina	6	Steaks	$7.20	Yes	Ma
Spain	6	Tapas	$4.35	Yes	Ma
Canada	8	Pea Soup	$1.20	Yes	Ma
Holland	4	Goudse Kass	$2.95	Yes	Ju

2. Choose Copy from the Edit menu.
3. Activate the Spreadsheet window.

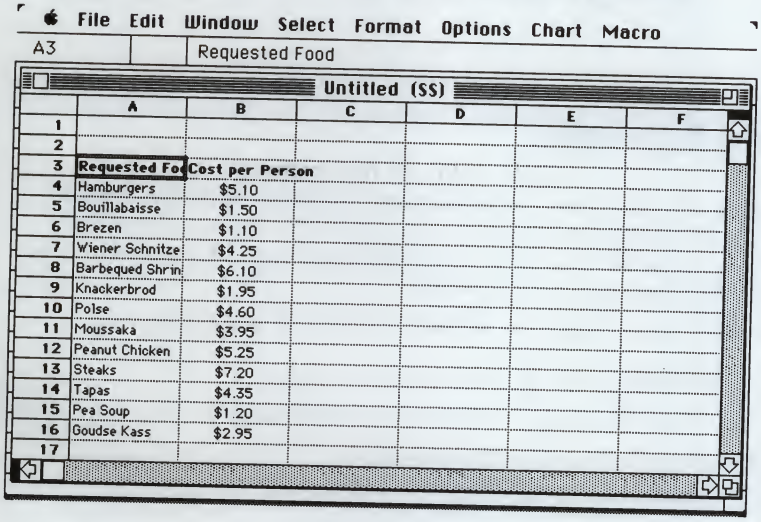
4 Select the cell in the upper-left corner of the area you want to paste into. Since the information fills cells to the right and rows down, the cells in the area to be filled should be blank unless you want to copy over existing information. To avoid overwriting information, select a blank cell at the end of the Spreadsheet. If you try to copy over existing cells, Works asks you to confirm the loss of some data before proceeding.

5 Choose Paste from the Edit menu.

Works pastes the selected information into the Spreadsheet.

Hint To paste only the selection, without the field names, hold down the Option key while you choose the Paste command.

When you copy from the Database, Works always pastes the field names as well as the selection.



	A	B	C	D	E	F
1						
2						
3	Requested Fo	Cost per Person				
4	Hamburgers	$5.10				
5	Bouillabaisse	$1.50				
6	Brezen	$1.10				
7	Wiener Schnitze	$4.25				
8	Barbequed Shrin	$6.10				
9	Knackerbrod	$1.95				
10	Polse	$4.60				
11	Moussaka	$3.95				
12	Peanut Chicken	$5.25				
13	Steaks	$7.20				
14	Tapas	$4.35				
15	Pea Soup	$1.20				
16	Goudse Kass	$2.95				
17						

Text becomes Spreadsheet labels, and numbers become Spreadsheet values. Works copies the field names as labels in one row, with each record in a separate row. The information is displayed in the existing cell format.

Copying Communications Information

To copy Communications information

You copy information from a Communications document in different ways, depending on how you received it.

If you used the Capture Text command to gather the information, the information is already stored in a Word Processor file. In this case, follow the procedures for copying from Word Processor documents.

If you used the Receive File command to gather the information, use the procedure that is appropriate to the file you received. For example, if you received a Spreadsheet file and want to copy it into a Works Database document, see "Copying Spreadsheet Information to the Database" in this chapter.

Note If the Clipboard contains text and drawings from a Word Processor or Spreadsheet document, Works pastes only the text into the Communications window and sends it out over the modem. If the Clipboard contains only a drawing, you won't be able to choose Paste in the Communications tool's Edit menu.

Copying Drawings

You can draw and edit objects in a document if Draw is on in the window that contains the document. Draw remains on in a document, even if you activate Draw in another document, until you turn Draw off within that document, close the document, or quit Works.

You can copy a drawn object, or an object along with underlying text:

- Within a Word Processor or Spreadsheet document
- From one Word Processor or Spreadsheet document to another
- From the Word Processor to the Spreadsheet
- From the Spreadsheet to the Word Processor

In addition, you can create a text object from regular text and paste it into a Word Processor or Spreadsheet document.

Note You can copy drawings to the Scrapbook for use with other applications. For more information, see "Using the Scrapbook and Clipboard" in Appendix B.

Before you paste a drawn object, or text that includes a drawn object, you should insert enough blank space in the receiving document to paste the object (and any surrounding white space that you copied with it). Otherwise the object will be pasted over existing information in the document.

If you paste an object over information in your document, you can turn on Draw, select the object, and move it. For more information, see "Using Draw" in Chapter 1.

If you paste an object, or text that includes an object, over information in a Word Processor document, you can also turn Draw off, and move the text separately. If you position the insertion point ahead of the object and press the Return key, the text scrolls down behind the object. However, if you position the insertion point within the area that includes the object, or below the object, the text and drawing scroll together down the page.

In a Word Processor document, before pasting an object that extends beyond the last screen containing text, use the Return key to insert enough blank space to make room for the object. This will allow you to scroll to see the object.

To copy a drawn object

If the Clipboard contains only a drawn object, you can paste it into a Word Processor or Spreadsheet document. In the Database and Communications tools, if the Clipboard doesn't contain text, you won't be able to choose Paste from the Edit menu.

A drawn object is pasted into a document's draw layer and is automatically selected. If there is more than one object, they are all selected. To move the objects separately, click away from the objects, then select the object you want to move.

When you paste a drawn object:

- If Draw is off, Works pastes the drawing in the center of the window, and turns Draw on.
- If Draw is on, Works pastes the object in the center of the last point clicked in the window. If there was no point clicked in the window, Works pastes the object in the center of the window.
- If Draw is on, and there is a selection in the document you are copying to, the object is pasted in the center of the selection, frontmost in the draw layer. (However, if the drawing is an exact duplicate of the selected object, the drawing is pasted slightly below and to the right of the selected object.)

To copy a chart

A chart created from a Spreadsheet document is handled like any other drawn object. However, you can't use the Cut command with charts. You copy a chart to the Clipboard by choosing Copy from the Edit menu when the Chart is active.

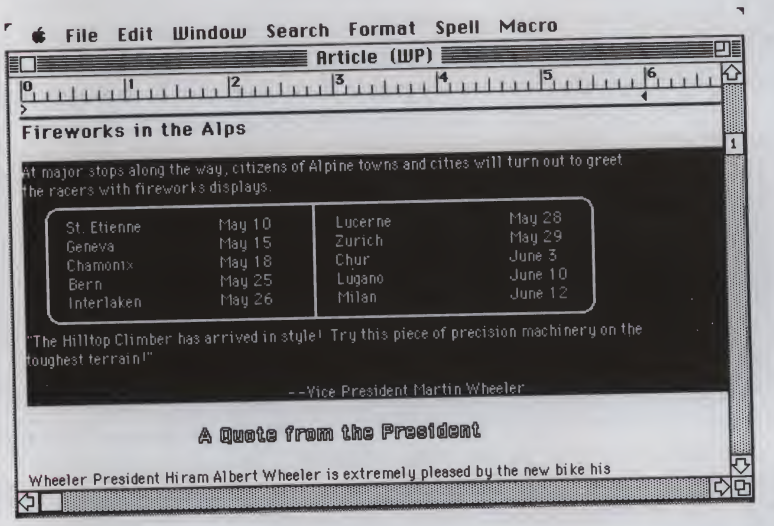
When you paste a chart into a Word Processor or Spreadsheet document, Works automatically turns Draw on. The chart and the text are grouped so that they can be moved as a unit. To edit the elements separately, choose the Ungroup command from the Format menu, click away from the group, and select one object in the group. See "To ungroup objects" in Chapter 1 for more information.

To copy text and objects together

You can copy Word Processor or Spreadsheet information that includes both text and drawn objects.

To copy text and drawn objects together:

1. In the Word Processor or Spreadsheet document, make sure that Draw is off.
2. Highlight the text and the entire object (or group of objects) to be copied.
   If you're copying Word Processor information into the Spreadsheet, make sure that each piece of text that will go into a cell is separated by a tab character or by two or more blank spaces. Each row must end with a return character.
3. Choose Copy from the Edit menu.
   Your selection is copied to the Clipboard.



4. Activate the Word Processor or Spreadsheet document you are pasting to.
5. Choose Paste from the Edit menu.

When you paste text and drawn objects:

- If Draw is off in the document you are pasting to, Works pastes the text on the document's text layer and the object on the draw layer. Each layer can be edited individually.
- If Draw is on in the document you are pasting to, Works pastes only the object into the document's Draw layer.

The following table shows how pasting works:

If Draw is	Clipboard contains	Works pastes
Off	text	text
	object(s)	objects(s)
	text and object(s)	text and object(s)
On	text	text, but turns it into an object
	object(s)	object(s)
	text and object(s)	object(s) only

To create a text object from normal text

You can take text from your document's text layer and paste it into the draw layer as a text object. To create a text object from normal text, Draw must be on in the document you are copying to, and the Clipboard must contain only text.

When you create a text object:

- If there is no selection in the Word Processor document that you're pasting into, the text is pasted into the document's draw layer as a new text object. (You must first select a cell in a Spreadsheet document before you can paste text.)
- If a text object within the document is selected with the Text tool, the text on the Clipboard is inserted inside the text object in front of the insertion point.
- If there is a selection within the text object, the new text replaces the selected text inside the text object.

Adding Finishing Touches

Once you've moved information from one tool to another, you can modify it as you would any information in that tool. Since the Word Processor provides the most formatting options and lets you include drawings, this section will provide some ideas on enhancing information in a Word Processor document.

To change a document's appearance

You can change the appearance of a document by:

- Changing the font, type size, type style, or color of the entire document or portions of it.
- Inserting manual page breaks to repaginate — if you've copied a large amount of information.
- Moving the tab stops to adjust columnar tables.

- Changing the line spacing or indenting certain pieces of information for emphasis.
- Adding headers and footers using the range of options available in the Word Processor.
- Using the Draw On command to add labels, additional lines, boxes, or circles to draw attention to important information. For more information, see "Using Draw" in Chapter 1.

This chapter gives you the skills you need to move information between tools. Chapter 21, "Merging: Creating Mailing Labels, Form Letters, and Forms," gives you another way to automatically combine information from different tools with the Word Processor's merge capability.

21 Merging: Creating Mailing Labels, Form Letters, and Forms

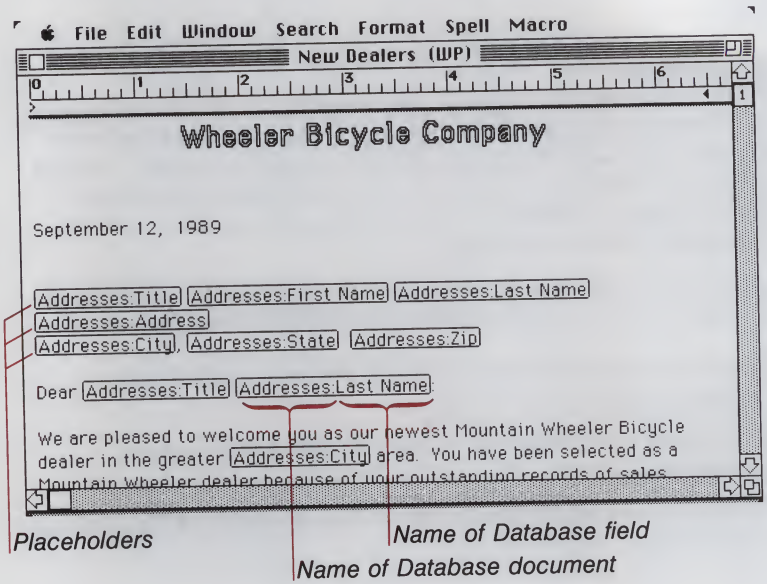
The Word Processor and the Database work together to let you add information from a Database document to a form you create in a Word Processor document. With this merge capability, you can create form letters, address mailing labels and envelopes, and print on preprinted continuous forms. Using Works' drawing capabilities, you can design an attractive form that Works fills out for you automatically.

This chapter begins with an overview of the merge procedure, followed by several examples of how to use merging in your work. You'll learn how to:

- Create a merge document using the Word Processor and Database.
- Print a series of customized documents.
- Create and print continuous and multiple-column mailing labels.
- Create a form letter.
- Fill out forms — those you design yourself using the Word Processor and preprinted forms.

Creating a Merge Document

A merge document looks like any other Word Processor document. However, if you choose the Show Field Names command from the Edit menu, you can see that it contains placeholders in place of some regular text. A placeholder is a rectangle containing the name of a Database document and a field name. A merge document with placeholders looks something like this:



About the merge procedure

To create a merge document, you add information from a Database document to a Word Processor document. First, you indicate where you want the information to go by inserting placeholders into your Word Processor document with the Prepare to Merge command. Then, you use the Print Merge command to print customized copies of the Word Processor document. For each entry in a Database field you specify, Works replaces the placeholder in the Word Processor document with an entry from the specified field. So, each record in the Database document produces one customized Word Processor document.

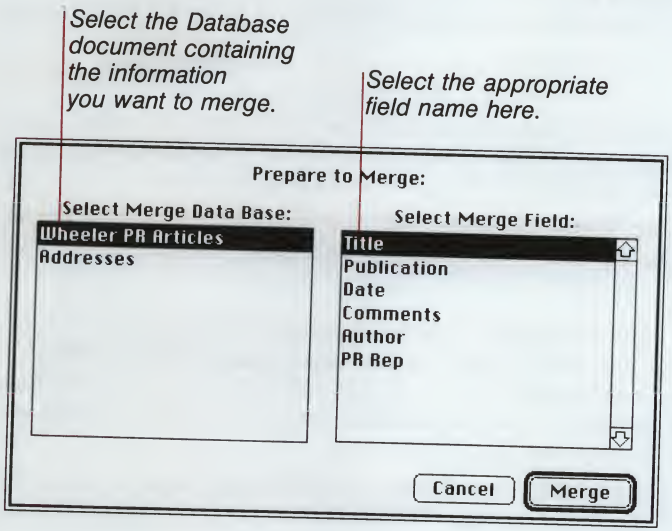
The general procedure for creating a merge document and printing the customized copies is summarized below. Specific examples follow on how to use merging to create form letters, continuous and multiple-column mailing labels, and customized forms.

To create a merge document

Begin by opening both the Database document that you want to merge information from and the Word Processor document that you want to merge information into.

1. Create a Database document with the information you need, or open an existing Database file.

   You can have more than one Database document open to merge from.
2. Create a new Word Processor document, or open an existing Word Processor file.
3. In the Word Processor document, type any text that will remain the same for all the copies.
4. Position the insertion point where you want to insert the first placeholder.
5. Choose Prepare to Merge from the Edit menu.



6. Select the Database document you want to use.

   Works displays a list of the field names for that document.
7. Select the appropriate field name.
8. Click the Merge button.

   Works displays information from the first record in the specified Database document. If a record is selected in the Database, Works displays information from that record.

Repeat steps 4 through 8 for each piece of Database information you want to include in your Word Processor document.

You can change the information displayed in the Word Processor document by activating the Database document and selecting another record. When you activate the Word Processor document again, you'll see information displayed from the newly selected record.

To view placeholders

Any time you want to view the placeholders:

- Choose Show Field Names from the Edit menu.

When you choose Show Field Names, the command name changes to Show Field Data in the Edit menu.

Note Works moves a placeholder to the next line on the screen if the placeholder does not fit. However, the information may not move, depending on its length. If the information in a field is too long to fit on the first line, it moves to the second line. If it is too long for the second line, Works prints as much of the information as possible, but does not include the information that doesn't fit.

You delete placeholders, and change their font, size, style and color, exactly as you do ordinary text. If you change the attributes of a placeholder, all the information in the placeholder changes to reflect your choices.

When you choose Show Field Data, you view the Database information as it will look in your finished Word Processor document.

Note If you close a specified Database document, or if you open the Word Processor merge document before you have opened a specified Database document, you'll see the message "NOT ON DESKTOP" in the appropriate placeholder. You need to open the Database document in order to print or see information displayed from the records.

If you delete a specified field or change a specified field name in a Database document, you'll see the message "FIELD NOT IN DB" in the appropriate placeholder.

Printing Customized Documents

To prepare to print customized documents

You use the Print Merge command to print customized documents. To prepare for printing:

1. In the specified Database document(s), sort the records to arrange them in the order you want them to print.
2. If you want to print only a subset of the records in the Database, use the Record Selection or Match Records command from the Organize menu to select the records you want to print.
3. Activate the Word Processor merge document, choose Page Setup from the File menu, and make any changes.
4. Prepare your printer for printing; add special forms or paper.

To print your customized documents:

To print customized documents

1. Choose Print Merge from the File menu.
   The Print dialog box appears.
2. Click any appropriate options, then click the OK button.
   If you'd like to view your document before printing, you can choose the Print Preview option in the dialog box, view as many pages as desired, and then click the Print button to print. For more information on Print Preview, see "Print" in Chapter 2.

Works begins to print the customized document.

If you choose Print instead of Print Merge from the File menu, Works prints one copy of the Word Processor merge document. If you choose Show Field Names and then choose Print, Works prints one copy of the document with the placeholders in place.

Note Print Merge prints all records in the selected Database document. Choosing specific page numbers in the Print Merge dialog box determines which pages are printed, but has no effect on the number of records printed. To print a subset of records in a merge document, you must use the Record Selection or Match Records commands in the Database to select the records for merging. For information on record selection, see "How Selection Rules Work" in Chapter 8.

Creating Mailing Labels

To create mailing labels

To create mailing labels, you change options in the Page Setup dialog box to correspond to the measurements of your mailing label, and then you create a merge document in the Word Processor containing only placeholders. You can save the document to use whenever you want to print mailing labels.

You can create two types of mailing labels:

- Continuous labels (one-across)
- Multiple-column labels (two-across, three-across, etc.)

Printing preparation and printing are basically the same for both continuous and multiple-column labels. Setting up the merge document is different for each type of label.

The instructions that follow assume that you are using an ImageWriter printer. If you are using a LaserWriter, see Appendix C, "Printing with the Apple LaserWriter."

Preparing Labels for Printing

To prepare labels for printing

First, create a new Word Processor document and change options in the Page Setup dialog box.

1. Create a new Word Processor document.
2. Choose Page Setup from the File menu.
3. Click the Custom Size option.
4. Type a width measurement in the Paper Width box.
   For continuous labels, measure the width of the mailing label, and type the measurement in the Paper Width box.
   For multiple-column labels, type the width of the page that contains the labels.
5. Click the No Gaps Between Pages option.
6. Type a height in the Paper Height text box.
   For continuous labels, measure from the top of one label to the top of the next, and type this measurement in the Paper Height text box.
   For multiple-column labels, type the height of the page that contains the labels.
7. Set the left, right, top, and bottom margins.
   Type numbers to represent inches or fractions of inches. For example, typing .25 would leave a quarter of an inch margin, and typing .125 would leave an eighth of an inch margin.
   For continuous labels, set a quarter of an inch left margin, an eighth of an inch right margin, and top and bottom margins of zero. The left and right margins may need to be adjusted to match the label position on the printer platen.
8. Click the OK button.

If you'll be printing continuous labels, follow the steps below. If you'll be printing multiple-column labels, skip the information below, and go to "Setting Up the Merge Document for Multiple-Column Labels" later in this chapter.

Setting Up the Merge Document for Continuous Labels

To set up the merge document for continuous labels

Before you set up the merge document, follow the instructions under "Preparing Labels for Printing."

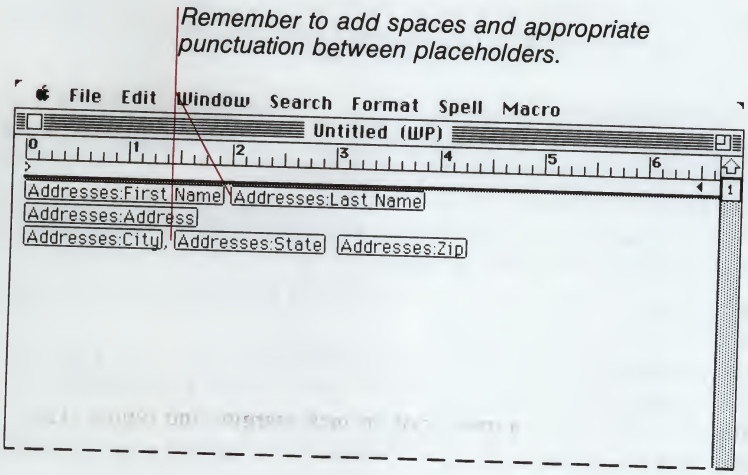
To set up the merge document for continuous labels:

1. Open the Database file you want to use for the mailing labels.
2. Activate the Word Processor merge document and design your mailing label by choosing the font, type size, type style, and color you want from the Format menu.

3 Choose Prepare to Merge from the Edit menu to insert the placeholders. To review this procedure, see "Creating a Merge Document" earlier in this chapter.

Arrange the information in the placeholders as you normally would a name and address — usually with the name on the first line, street address on the second, and city, state, and zip code on the third.

If Show Field Names is chosen, you'll see the following:



Hints You can use the Word Processor's ruler to indicate the width of your label in the Word Processor. Set the margins to correspond to the width of the label minus the Right and Left Margin measurements you specified with Page Setup.

To see the amount of vertical space available in your label, you can press the Return key until you see a page break line. The space between the beginning of the document and the page break is the amount of vertical space you have to work with.

Be sure to remove the extra return characters until the page break is no longer visible. If you don't remove the page break, Works will skip every other label when printing.

Setting Up the Merge Document for Multiple-Column Labels

To set up the merge document for multiple-column labels

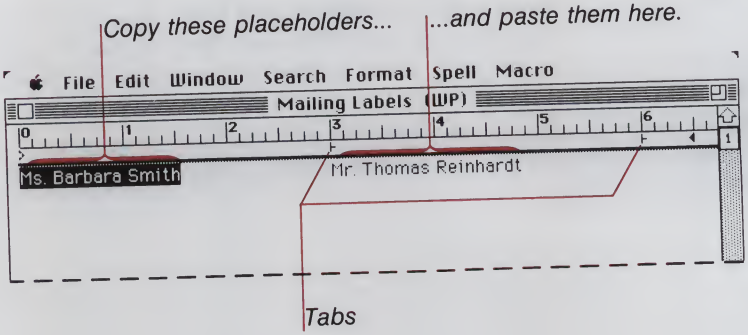
Before you set up the merge document, follow the instructions under "Preparing Labels for Printing" earlier in this chapter.

To set up the merge document for multiple-column labels:

1. Open the Database file you want to use for the mailing labels.
2. Activate the Word Processor merge document and design your mailing label by choosing the font, type size, type style, and color you want from the Format menu.
3. Choose Spacing from the Format menu, then choose 6 Lines per inch.
4. Set manual tab stops on the ruler that leave enough space on the left for the label, the gap between the first and second label, and a small left margin for the second label.
5. If you have three-across labels, set another tab stop for the third label, as you did for the second label in step 4.
6. Choose Prepare to Merge from the Edit menu and insert the placeholders for the first line of the first label.

   An appropriate first line would include placeholders for Title, First Name, and Last Name. If you don't remember how to insert placeholders, see "Creating a Merge Document," earlier in this chapter.
7. If field names are showing, choose Show Field Data from the Edit menu.
8. Choose Multiple Labels from the Edit menu.
9. Copy the first line, click at the end of the line, press the Tab key, and paste the line following the first tab stop.

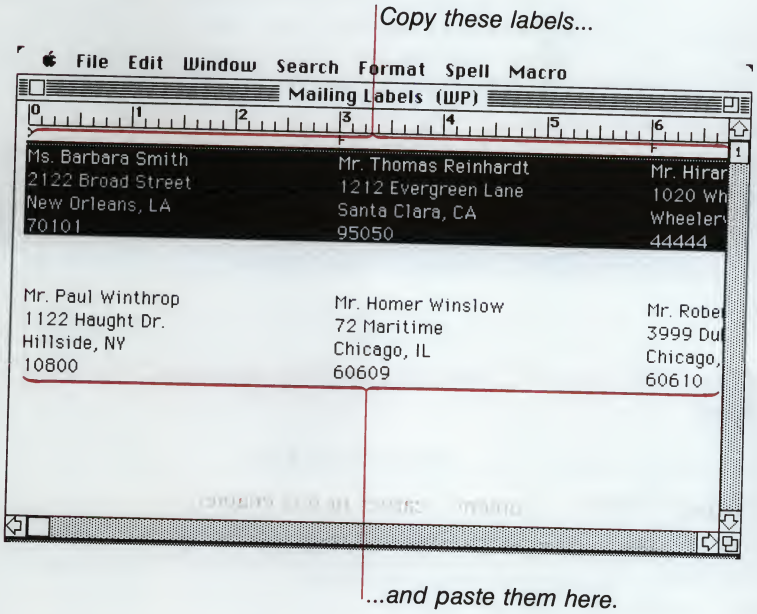
   Works pastes the information from the next record.



   If you have three-across labels, press the Tab key and paste again.
10. Press the Return key and repeat steps 6 and 9 for the second line on the label, and again for each additional line.
11. Select and copy all of the lines in your Word Processor document.

12 Place the insertion point at the end of the information and press the Return key until the insertion point is at the top of your next label. For one-inch-high labels, this will be the seventh line.

Paste the information for the next set of labels.



13 Copy and paste as many rows of labels as necessary to fill one sheet of labels.

Printing Mailing Labels

You use the same procedure for printing both continuous and multiple-column labels.

To print the labels

1 Choose Print Merge from the File menu.
Works displays the regular Print dialog box.

2 Click the OK button.

You may need to experiment with label alignment. Test your alignment with a few records first. Adjust the alignment of the labels in the printer and the margins in the Page Setup dialog box until you are satisfied.

Be sure to remove page breaks from your document before printing. If you don't remove page breaks, Works will skip every other label when printing.

Note In some cases, with continuous labels, you may notice a brief delay (no longer than two minutes) as Works sends print information to your disk and prepares to print your labels.

If you are printing more than 128 labels, you will also find that Works leaves the 129th label blank, then continues to process the next 128 labels. Since Works processes and temporarily stores the information on 128 pages (labels) before printing, your Macintosh may run out of disk space during this process. If this happens, you'll see an alert box. To free up disk space, you can move any unnecessary files from the disk, and then try printing again.

A print merge prints all records in the selected Database document. Choosing specific page numbers in the Print Merge dialog box determines which pages are printed, but has no effect on the number of records printed. To print a subset of records in a merge document, you must use the Record Selection or Match Records commands in the Database to select the records for merging. For information on record selection, see "How Selection Rules Work" in Chapter 8.

Other ideas

You can use Print Merge to create other label-like documents. Here are a few suggestions:

- Print multiple-column lists, such as address lists.
- Address envelopes.
- Print continuous index cards to catalog your compact disk or tape collection.
- Print membership cards for a club.
- Print form letters.

Creating a Form Letter

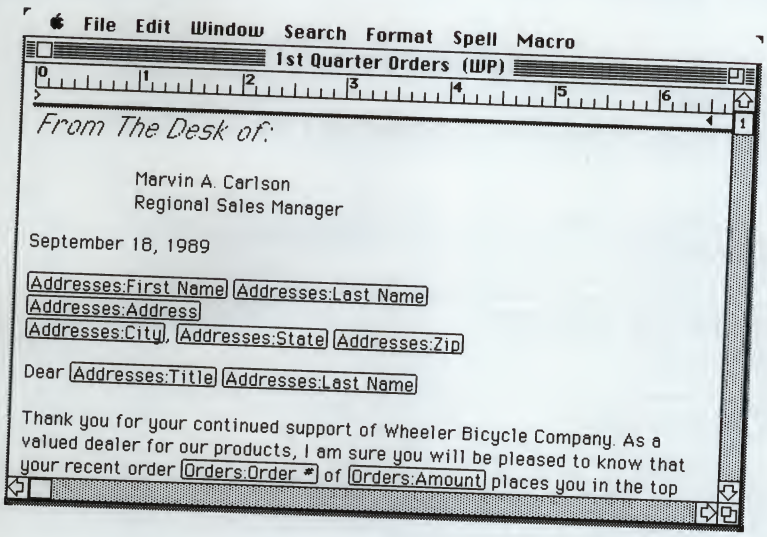
A form letter contains some standard text, but also adds information specific to each recipient. Names and addresses are the most common types of information you would want to merge into a form letter. But you can also create a Database document with specific phrases or sentences that apply to individual recipients.

For example, if you sell bicycles to bike shops, you might want to thank each shop individually for its order, mentioning the amount the shop purchased.

To set up a form letter

To set up a form letter, you create a merge document by typing all the text that will remain the same in each letter, and inserting placeholders for the information that will vary. If you need to review this procedure, follow the instructions in "Creating a Merge Document" earlier in this chapter.

If Show Field Names is chosen, your document looks like this:



Filling Out Forms

Nearly any office or business uses a variety of forms:

- Expense reports
- Address lists of customers, clients, friends, and contacts
- Invoices and statements

You can set up a form in the Word Processor as though you were preparing a document for an individual client. By merging with the Database, you can set it up once, and have Works fill it out whenever you need it.

Your entire form can come from your Word Processor document, or you can design a layout that prints information on a preprinted continuous form.

Creating Your Own Form

By creating your form, you'll have flexibility with alignment, positioning, fonts, type sizes, type styles, colors, and shapes and lines.

To set up a form that you can later complete during a print merge:

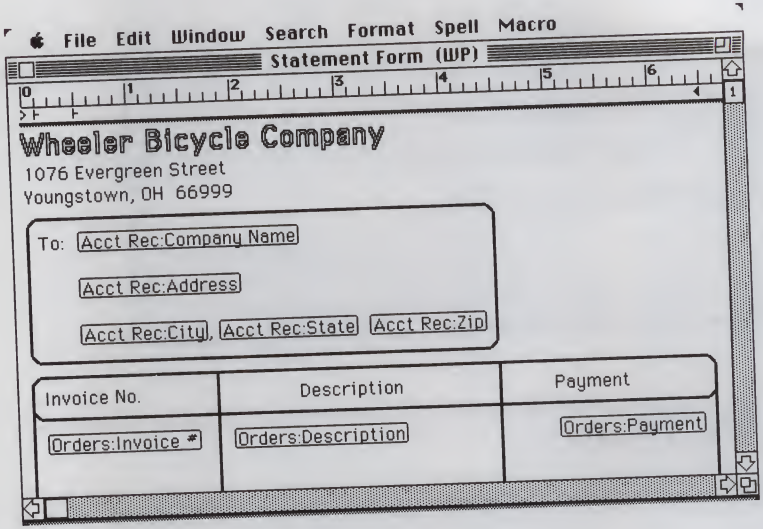
To set up a form

1. Open or create the Database document that contains your information.
2. Create a new Word Processor document and design your form.
   Type any standard text. Choose Page Setup from the File menu and Draw On from the Edit menu. Use the Font and Style commands available from the Format menu.

3 When you are satisfied with your form, add placeholders and complete your merge document.

If you need to review this procedure, see "Creating a Merge Document" earlier in this chapter.

If Show Field Names is chosen, the document looks like this:



Using Preprinted Forms

If you decide to use preprinted continuous forms, measure one of the forms and include its measurements in the Page Setup dialog box. If you need to review this procedure, see "Creating Mailing Labels" earlier in this chapter.

Note Using preprinted forms will take some experimentation to get precise alignment. If you create your forms in the Word Processor, using six-lines-per-inch spacing may help. Once the merge document is set up, you can save it and use it over and over again to print that form.

Appendix A
File Management

This appendix lists the contents of the Works disks, provides system information for all users, and provides file management information for users with two 3.5-inch disk drives.

Note To avoid loss or damage to your Works master disks, copy them to your hard disk or to 3.5-inch disks. After you make your working copies, always use them for your work. Store your master disks in a safe place to protect them from loss or damage. For instructions on making working copies of your Works disks, see "Copying the Master Works Disks" in Appendix G.

Microsoft Works contains three double-sided disks:

- Microsoft Works Startup disk
- Microsoft Works Program disk
- Microsoft Works Tour disk

  (If you are upgrading from a previous version of Works, the Works Tour disk is not included in your package.)

The Works Startup disk contains two folders: the System folder and the Works Dictionary folder. The Dictionary folder contains the following files:

- MsWorksDict
- MsWorksHymn

The Works Program disk contains the following files and folders:

- Microsoft Works
- MsWorksHelp
- Tutorial folder, which contains sample files for *Lessons*
- Works Tools folder, which contains the Works-Works Transporter file

The Works Tour disk contains the file named A Works Tour. To use the tour, you must have Apple's HyperCard.

To use the Works tour

To use the Works HyperCard tour:

- If you are running HyperCard from a hard disk, install HyperCard, copy the Works Tour to your hard disk, and double-click the Works Tour icon.

or

1. If you are running HyperCard from a 3.5-inch disk, insert the HyperCard Startup disk into one drive, and then turn on the computer.
2. Choose the Open Stack command from the File menu.
3. Insert a copy of the Works Tour disk in the other drive, and click the Open button.

System Information

What happens when you start Works?

When you start Works with the Startup disk in the internal disk drive, the Macintosh uses the System on this disk. When you start Works with a hard disk, the Macintosh uses the System on your hard disk.

It is recommended that you use Works with a System version 6.0.2 or later. Hard disk users who don't have this version on their hard disk should contact their authorized Apple dealer for information on updating.

Important Do not copy the System folder on the Works Startup disk over the existing System folder on your hard disk. Doing so will delete additional desk accessories, fonts, and important files from the system on your hard disk.

Works uses the fonts installed in your System file. You can install and remove fonts from the System file using the Font/DA Mover.

Works' preset font for the Database and Spreadsheet is Geneva. Works' preset font for the Word Processor is Boston, which is supplied in the System file on the Works Startup disk. Hard disk users who want to use the Boston font must copy it to their System using the Font/DA Mover. See the Macintosh owner's guide for more information on copying fonts.

To print a document on a Macintosh printer, you must have a printer driver in your System. The ImageWriter driver is included in the System folder on the Works Startup disk. If you have a hard disk, Works uses the printer driver on the hard disk.

If you are using a LaserWriter, see Appendix C, "Printing with the Apple LaserWriter."

Note The MsWorksPrefs file is located in the System folder. The file contains information about your preferences, such as the options you choose when you use the spell checker. You can't open or make changes to MsWorksPrefs. If the file is accidentally deleted, Works creates a new one.

File Management for 3.5-Inch Disk Drives

Managing files

If you are using two 3.5-inch disk drives, you can start by saving your documents on a copy of the Program disk. After you've saved a lot of files, you may run out of disk space. If this happens, you can:

- Copy your excess files to another disk, and then delete them from the Program disk, using standard Macintosh techniques.

  or

- Save your documents on a separate, initialized disk.

To save on another disk

To save your documents on another disk:

1. Choose Save As from the File menu.
2. Insert a blank, initialized disk into the internal disk drive.
3. Click the Save button.

Works saves on the disk whose name appears above the Eject button.

Be sure not to remove the Microsoft Works file from your Works Program disk. You can move other Works files, if you wish.

If you move the Works Help file to another disk, when you choose the Help command Works looks for the Help file in the folder that Works was started from, and then in the System folder. If Help is not found, Works asks you to insert a disk containing the Help file. Insert the appropriate disk, change the drive, if necessary, and choose the Help command again.

You can also move or delete the Tutorial folder from the Program disk to save space.

Note If you move the Dictionary folder from the Startup disk and choose any of the Spell commands, Works searches for the MsWorksDict and MsWorksHymn files first in the folder that Works was started from, and then in the System folder. If the files are not found, Works asks you to locate the MsWorksDict file and/or MsWorksHymn file.

Appendix B
Using Works with Other Applications

With Works, you can import information and drawings created with other Macintosh applications. You can also export information from Works to other applications. This appendix explains how to:

- Import non-Works files to create Works Word Processor, Database, and Spreadsheet documents.
- Import and export Word Processor files in Rich Text Format (RTF).
- Export Works documents to create files you can use with other applications.
- Import Word Processor, Database, and Spreadsheet files from AppleWorks.
- Use SYLK files from Microsoft Multiplan or Microsoft Excel.
- Use the Scrapbook and Clipboard to move text and drawings between applications.

Importing Non-Works Files

Importing non-Works files

With Works, you can import files from numerous programs and create Works documents from them.

Word Processor Documents

You can create a Works Word Processor document from a file created in any of the following programs:

- Microsoft Word for the Apple Macintosh, version 1.0
- MacWrite, all versions through version 5.0
- Any application program that can create a text file. Text files contain only the alphabetic, numeric, and tab characters of a document, as well as the spaces and carriage returns. (Text files are sometimes called ASCII files. SYLK files are a type of text file.)

- A word processing application that creates a Rich Text Format (RTF) file (including Microsoft Word RTF files from versions 3.0 and greater). RTF retains all formatting in a form used by many word processing and page layout programs on the Macintosh and the IBM PC. Most applications on an IBM PC require RTF format.

To import a Word, MacWrite, text, or RTF file to the Works Word Processor:

1. Choose Open from the File menu.
2. Click the Word Processor icon.
3. Click Import File.
   Works lists all Word, MacWrite, and text files on the current disk.

   Note You should not open SYLK files from the Word Processor. If you do open one, just close it and open another file instead.

4. Click the name of the file you want to import as a Word Processor document.
5. Click the Open button.

Works opens a Word Processor window, called Untitled, containing the document you specified.

Database Documents

You can create a Works Database document from a text file created by other programs, such as Microsoft File.

Works can import files to the Database created in any of three formats:

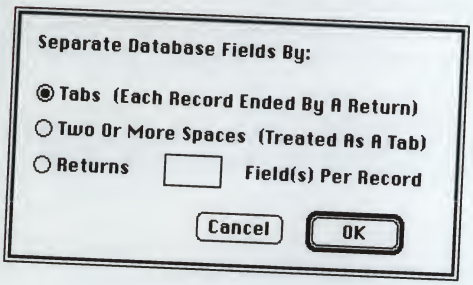
- Fields within each record in the database are separated by a tab character, and records are separated by a return character. (Microsoft File uses this format when saving files as text.)
- Fields within each record in the database are separated by two or more spaces, and records are separated by a return character.
- Fields within each record in the database are separated by a return character, and there is a fixed number of fields per record. You will need to tell Works how many fields there are per record. (AppleWorks uses this format when converting database files to Macintosh text files.)

To import a text file to the Works Database:

1. Choose Open from the File menu.
2. Click the Database icon.
3. Click Import File.
   Works lists all text files on the current disk.

   Note You should not open SYLK files from the Database. If you do open one, just close it and open another file instead.

4. Click the name of the file you want to import as a Database document.
5. Click the Open button.
   A dialog box appears, asking you to specify the format of the file.



6. Click the appropriate format option, and type the number of fields per record, if necessary.
   If you do not know the format of the text being imported, experiment with each one of the options. As long as you don't save a document with the wrong format, this is perfectly safe.
7. Click the OK button.

Works opens a Database window, called Untitled, containing the document you specified. The fields will be named "Field 1," "Field 2," and so on. You can rename the fields with the Change Field Name command from the Edit menu. The first record may consist of the field headings (field names). After you rename your fields, you may want to delete this record.

Spreadsheet Documents

You can create a Works Spreadsheet document from a text file created in other applications.

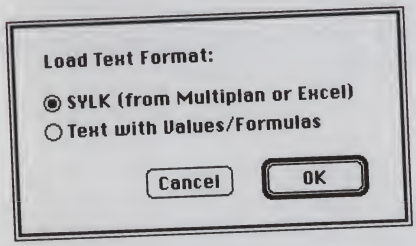
Works can import files created in either of two formats:

- As a SYLK file created in Microsoft Multiplan or Microsoft Excel.
  SYLK files contain both data and formatting information. These files include values, formulas, text for labels, and information describing in which cells to place the labels.
  For more information on using SYLK files from other spreadsheet applications, see "Notes for Porting SYLK Files to or from Works" in this appendix.
- As a text file in which text or numeric information is separated by tab characters, return characters, or both.
  Information from a text file is placed into a Works Spreadsheet document beginning at cell A1. A return character tells Works to begin a new row. A tab character indicates the beginning of the content of a new cell.

Note Date and Time are brought in as serial numbers. Choose the appropriate format for cells containing dates and times after importing the file to Works.

To import SYLK or other text files to the Works Spreadsheet:

1. Choose Open from the File menu.
2. Click the Spreadsheet icon.
3. Click Import File.
   Works lists all SYLK and other text files on the current disk.
4. Click the name of the file you want to import as a Spreadsheet document.
5. Click the Open button.
   A dialog box appears asking you to specify the format of the text file.



- Click SYLK if the file was created as a SYLK file in Multiplan or Microsoft Excel.
- Click Text with Values/Formulas if it is a text file with values, formulas, or both.

6 Click the OK button.

Works opens a Spreadsheet window, called Untitled, containing the document you specified.

Note If a SYLK file that you are importing contains a formula that Works cannot read, Works loads the file and turns the unreadable formula into text by inserting a quotation mark (") in front of it. To have Works use the text as a formula, make any necessary changes and delete the quotation mark.

Exporting Documents to Files that can be Used with Other Applications

Exporting documents

You can export any Works Word Processor, Database, or Spreadsheet document.

You can save a Word Processor document as a text file with no formatting, or as a file with Rich Text Format (RTF). RTF retains all formatting in a form used by many word processing and page layout programs on the Macintosh and the IBM PC.

You save a Database document as a text file with records separated by return characters, and fields within each record separated by tab characters. Works automatically saves the field names as the first records of the text file. You can save a Spreadsheet document in the SYLK format or as a text file.

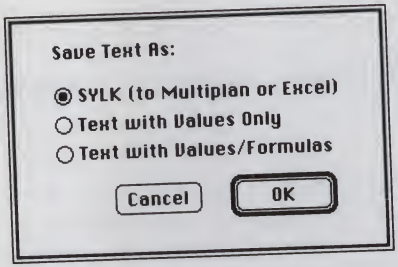
To export a Works document:

1 Choose Save As from the File menu.

2 Click Export and type a name for the document into the text box.
If you want to save a Word Processor document with RTF, click the Export As Rich Text Format box.

3 Click the Save button.

For a Spreadsheet document, after you click Export and the Save button, Works displays another dialog box asking you to specify the format to save with.



- Click the SYLK option if you want to use the document with Multiplan or Microsoft Excel.
- Click the Text with Values Only option to save the document as text with only the values in the cells.
- Click the Text with Values/Formulas option to save the document as text with both the values and the formulas.

After clicking an option:

- Click the OK button.

Hint When saving a Word Processor document as text only, you can automatically insert a carriage return at the end of each line by holding down the Option key while choosing Save.

Note If you use the Rich Text Format option to save a document that contains text and a drawn object and then open the document in another application, the drawing appears outside the paragraph that originally contained the drawing. The drawn object is now a picture that can be moved and resized, but can't be edited.

Importing from AppleWorks

Importing a File from AppleWorks

You import a file from AppleWorks to Microsoft Works using Apple File Exchange. Apple File Exchange ships with all systems, version 5.0 and later. If you don't have Apple File Exchange, contact your authorized Apple dealer for a System update.

Apple File Exchange converts Apple II ProDOS files to Macintosh files using the Works-Works Transporter on your Works Program disk. If your files are on 5.25-inch disks, you must first copy them to 3.5-inch disks.

To copy files from 5.25-inch to 3.5-inch disks

To copy your files to 3.5-inch disks, you'll need an Apple IIe, Apple IIc, or Apple IIGS with both a 3.5-inch and a 5.25-inch disk drive. If you don't have access to this hardware, contact your authorized Apple dealer.

Start AppleWorks and insert the disk containing the file you want to convert into the 5.25-inch disk drive. Use standard AppleWorks commands to save the file on the 3.5-inch disk.

To convert AppleWorks files

The basic steps for converting AppleWorks files to Works files are given below. For complete instructions, refer to your Macintosh Utilities user's guide.

1. Copy the Works-Works Transporter file into the Apple File Exchange folder.
2. Start Apple File Exchange on the Macintosh.
3. Insert the disk containing your AppleWorks files into the Macintosh drive.
4. Select the Works-Works Transporter.
5. In the list box, select the file(s) to be converted.
6. Click the Transfer button.

   The Works-Works Transporter converts the files to Works format.
7. Choose Quit from the File menu to quit Apple File Exchange.

Conversion Specifics

Because AppleWorks and Microsoft Works use different file formats, not everything is converted exactly from one file format to another.

Differences in Word Processor Files Text is converted as 9-point Monaco font, and retains all styles and justifications. Margins are converted to paragraph indents and indents are converted to first-line indents. Headers and footers are inserted in the Works Word Processor document as text.

Differences in Database Files Category names are converted to Field names. Data in records is transferred to the appropriate field. Single Record layout is transferred to form windows. Multiple Record layout is transferred to a list window.

Differences in Spreadsheet Files Values, labels, and formulas are transferred to the appropriate cells. Extremely large and extremely small numbers may produce small differences in the results of calculations due to the different internal representation and methods of performing arithmetic used by the two programs.

Notes for Porting SYLK Files to or from Works

If you plan to import SYLK files created with either Microsoft Multiplan or Microsoft Excel, or to export Works Spreadsheet documents to Multiplan or Microsoft Excel, you should consider differences in the three programs that may make spreadsheets created in one program perform differently (or not at all) in another program.

Features of the Three Spreadsheet Programs

External references; named cells, rows, columns, or selections; and linked spreadsheets are features of Microsoft Excel and Multiplan that are not implemented in Works. However, Works is able to read spreadsheets from Microsoft Excel and Multiplan that contain named cells.

Differences in Error Values

Error values are different in Works and Microsoft Excel.

Differences in Operators

Works does not support the intersection (space), union (,), or concatenation (&) operators that Microsoft Excel and Multiplan support.

Differences in the Built-In Functions

There are a number of differences in the functions supported by the three programs.

Differences in the Arithmetic Results Produced by the Built-In Functions

The functions built into Works should produce results nearly identical to those produced by Microsoft Excel.

Extremely large and extremely small numbers may produce small differences in the results of calculations due to the different internal representation and methods of performing arithmetic used by the two programs.

Works performs arithmetic using the Standard Apple Numeric Environment (SANE) package. This package has a precision of 80 bits (64-bit precision), or approximately 18 decimal digits.

Differences in Implementation

The functions HLookup, Index, Lookup, Match, Type, and VLookup are implemented differently in Works than in Microsoft Excel or Multiplan. If you use argument values that are acceptable to Microsoft Excel or Multiplan, Works gives the same results that Microsoft Excel or Multiplan gives. Works also allows some argument values that Microsoft Excel and Multiplan do not allow.

Also, the IsError function in Works gives 0 if the argument is N/A. In Microsoft Excel and Multiplan, IsError gives TRUE if the argument is #N/A.

Differences in Logical Values

The functions And, Or, Not, True, and False give the values TRUE or FALSE in Microsoft Excel and Multiplan. These functions give the values 1 or 0 in Works.

Built-In Functions Available for Use in Formulas

Not all functions are available in all three programs. Some arguments that are optional in Microsoft Excel are required by Works, such as in the Index function. The following table identifies those functions that are available in one or two of the programs, but not in all three. An "X" means that the function is available for that program.

Different Functions in Microsoft Works, Microsoft Excel, and Multiplan

Function	Works	Microsoft Excel	Multiplan
ACOS		X	
AREAS		X	
ASIN	X	X	
ATAN2	X	X	
CHOOSE	X	X	
COLUMN		X	X
COLUMNS		X	
DATE	X	X	
DAY	X	X	
DEGREES	X		
DELTA			X
DOLLAR		X	X
ERROR	X		
FIXED		X	X
GROWTH		X	
HLOOKUP*	X	X	
HOUR	X	X	

Different Functions in Microsoft Works, Microsoft Excel, and Multiplan

Function	Works	Microsoft Excel	Multiplan
INDEX (Form 2)		X	
ISBLANK	X		
ISREF		X	
ITERCNT			X
LEN		X	X
LINEST		X	
LOGEST		X	
LOOKUP (Form 2)		X	
MATCH*	X	X	
MID		X	X
MINUTE	X	X	
MONTH	X	X	
NOW	X	X	
RADIANS	X		
RAND		X	
REPT		X	X
ROW		X	X
ROWS		X	
SEARCH		X	
SECOND	X		
SSUM	X		
TEXT		X	
TIME	X	X	
TRANSPOSE**		X	
TREND		X	
TYPE	X	X	
VALUE		X	X
VAR	X	X	
VLOOKUP	X	X	
WEEKDAY	X	X	
YEAR	X	X	

*The Works implementation of this function is more general than that of the others. If you use the function in a form acceptable to Microsoft Excel, Works gives the same result that Microsoft Excel gives. Works also allows some inputs that Microsoft Excel does not allow.

**In Works, the TRANSPOSE operation is available as an option in the Paste with Options command.

Using the Scrapbook and Clipboard

Use the Scrapbook if you want to move many items from one application to another; if you want to move drawings from another Macintosh drawing application, such as MacPaint or MacDraw; or if you want to move drawings from a Works Word Processor or Spreadsheet document to another application.

To move text and drawings into the Scrapbook:

To move items into the Scrapbook

1. Select the text or drawing.
2. Choose Cut or Copy from the Edit menu to move the selection onto the Clipboard.
3. Choose Scrapbook from the Apple menu.
4. Choose Paste from the Edit menu.

Repeat this procedure for each item you want to move into the Scrapbook.

Note If the Clipboard contains both text and a drawn object from the Works Word Processor or Spreadsheet, both the text and the drawing are pasted into the Scrapbook. If the application you are pasting into can read PICT resources (pictures), you can paste your drawing. If it can read text, you can paste your text. The ability to accept PICT resources and text, and the mechanics for pasting different types of information, are different for each application. For more information, see your application's user's guide.

To move items from the Scrapbook, quit the application you were using and copy the Scrapbook file to the System folder on the disk that has your copy of the destination application. Then:

To move items from the Scrapbook

1. Start the application.
2. Choose Scrapbook from the Apple menu.
3. Scroll the information in the Scrapbook until you find the item you want to move.
4. Select the item.
5. Choose Cut or Copy from the Edit menu to move the selection onto the Clipboard.
6. Close the Scrapbook.
7. Select an insertion point and choose Paste from the Edit menu.

Repeat this procedure for each item you want to move from the Scrapbook.

Note When you transfer information using the Scrapbook, make sure the Scrapbook file is on the same disk as your copy of the destination application.

You can ungroup PICT objects such as charts and other grouped objects that have been created in Works or other programs, but you can't ungroup bit-mapped objects created in other programs.

Using Works with MultiFinder

If you regularly use Works with other applications, such as Microsoft Word, Microsoft Excel, or MacPaint, you may want to use Apple's MultiFinder. MultiFinder lets you run Works in the background while you're using another application at the same time. For example, if you are logged onto a computer service and want to capture a large Communications file, you don't have to tie up your computer while you're capturing the file. You can start capturing the file with Works, and put that activity in the background. You can then use another application without waiting for the file capture to finish. For information on installing and using MultiFinder, see the Macintosh Multi-Finder user's guide.

Appendix C
Printing with the Apple LaserWriter

You can print all of your Works documents on the Apple LaserWriter printer.

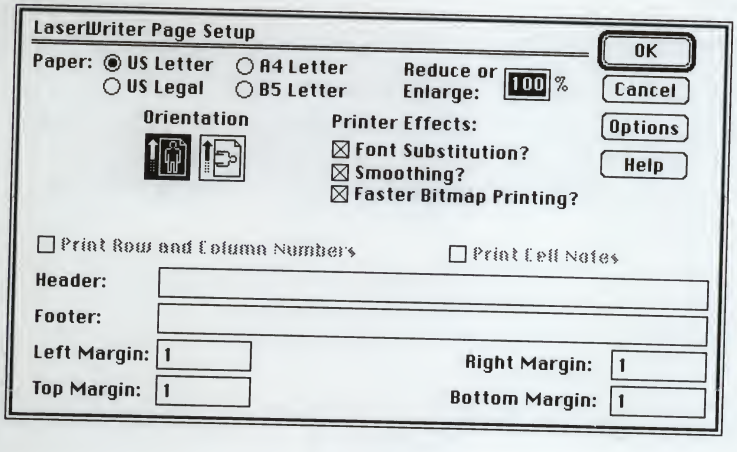
Before using the LaserWriter, you must install the LaserWriter printer driver. For instructions, see your LaserWriter manual.

After installing the LaserWriter software, choose the Chooser desk accessory from the Apple menu. The Macintosh displays a dialog box containing icons representing all printer drivers on the disk. Select the LaserWriter icon and type a User name if you want the Macintosh to remember who you are. Then click the close box.

LaserWriter Options

When you use the LaserWriter, the Page Setup and Print dialog boxes are slightly different from those shown earlier in this manual. The differences in the Page Setup dialog box that are important to Works are explained below. See your LaserWriter manual for a complete explanation of LaserWriter Page Setup and Print options.

When you use the LaserWriter, and choose Page Setup from the File menu, Works displays the following dialog box:



Reduce or Enlarge When printing with the ImageWriter, you have a choice of printing full size or at a 50% reduction.

With the LaserWriter, you can enter any percentage of reduction. If you print Helvetica 12 at 90% reduction, for example, the printed document will appear in Helvetica 10. If you use 80% reduction, the printed document will appear in Helvetica 9.

Use the Reduce or Enlarge option to increase the amount of information you can print on a page. If you use the Reduce or Enlarge option for a Database document, Works adjusts the right edge marker in the report window. In the Word Processor and the Spreadsheet, Works also adjusts the page break indicators.

Font Substitution This is a preset option that tells the LaserWriter to substitute its built-in fonts for whatever font is displayed on the screen. However, not all fonts have a substitute. Generally, it is best to use only fonts that are recommended for the LaserWriter, such as Times, Helvetica, or Courier.

Smoothing The smoothing option is preset. For faster printing, the smoothing option should be turned off, unless you have pasted a picture from MacPaint into the Word Processor.

Note There is no custom page size option in the LaserWriter Page Setup dialog box.

Printing Multiple-Column Mailing Labels

You can create, set up, and print a merge document for multiple-column mailing labels on the LaserWriter, as explained in "Creating Mailing Labels" in Chapter 21. However, when you are preparing the labels for printing, you choose different options in the Page Setup dialog box from those used with the ImageWriter.

Follow these steps to print labels:

- Prepare the labels for printing using the procedure below.
- Set up the merge document by following the procedure in "To Set Up the Merge Document for Multiple-Column Labels" in Chapter 21.
- Print the mailing labels by following the procedure in "Printing Mailing Labels" in Chapter 21.

To Prepare Labels for Printing

1. Create a Word Processor document.
2. Choose Page Setup from the File menu.
3. Click the US Letter option.
4. Set the left and right margins at .5 inch and the top and bottom margins at 1 inch.

   These settings may vary depending on the size of your labels. You may need to experiment to find the settings that work best for your labels.
5. Click the OK button.

Appendix D
Choosing Commands from the Keyboard

Many menu commands in Works can also be invoked from the keyboard.

To choose most commands from the keyboard, hold down the Command key (⌘) and press the letter corresponding to the particular command. For example, to choose the Save command, hold down the Command key and press the S key.

To use Macro commands from the keyboard, hold down the Option key and press the letter corresponding to the particular command.

To use special commands in Communications, hold down the Command and Option keys simultaneously, while you press the letter corresponding to the particular command.

The following tables list the keyboard commands for all of the Works tools.

Macro Key Equivalents

Key	Result
Option + =	Start Recording
Option + - (hyphen)	Stop Recording
Option + Delete	Playback Macro
Command + . (period)	Stop Macro in progress

Communications Key Equivalents

Key	Result
Command + Option + 3	Break
Command + Option + Delete	Delete
Command + Option + [	Escape

Works Command + Key Equivalents

Key	WP	DB	SS	COM	DRAW
A		Sort	Absolute Cell Ref/ Relative Cell Ref		
B	Bold		Bold		Send to Back
C	Copy	Copy	Copy	Copy	Copy
D		Enter Date	Fill Down	Dial	
F	Find	Find Field	Find Cell		Bring to Front
G	Go To Page #		Go To Cell		Group Picture
I	Italics	Insert Record	Insert		
J	Draw On/Off		Draw On/Off		Draw Off
K	Copy Format				
L		Show List/Form			
M	Prepare to Merge	Match Records			
N	Normal Text		Normal Text		
O	Open	Open	Open	Open	Open
P	Print	Print	Print	Print	Print
Q	Quit	Quit	Quit	Quit	Quit
R	Replace		Fill Right		
S	Save	Save	Save	Save	Save
T		Enter Time			
U	Underline		Underline		Ungroup Picture
V	Paste	Paste	Paste	Paste	Paste
W	Close	Close	Close	Close	Close
X	Cut	Cut	Cut	Cut	Cut
Y	Paste Format				
Z	Undo	Undo	Undo		Undo
=			Calculate Now	Hang Up	
"		Duplicate field in previous record			
+				Hang Up	
,	Activate last document in Window menu	Activate last document in Window menu	Activate last document in Window menu	Activate last document in Window menu	Activate last document in Window menu
?	Help	Help	Help	Help	Help

Appendix E
Limits and Capacities of the Tools

The following tables describe data limitations for the Database and Spreadsheet, and memory capacities for the Word Processor, Database, and Spreadsheet.

Data Limitations for the Database and Spreadsheet

The tables below show specific data limitations for the Database and the Spreadsheet. These numbers apply to the Macintosh Plus, the Macintosh SE, and the Macintosh II.

Database	Limits
Fields in a record	60
Characters in a field	250
Characters in a field name	64

Spreadsheet	Limits
Characters in the entry bar	238
Characters in a formula	200
Columns in a spreadsheet	256
Rows in a spreadsheet	16,382
Number of data points in a series chart (except bar charts)	80
Number of rows in a pie chart	15

Memory Capacities for the Word Processor, Database, and Spreadsheet

The table below shows the approximate memory capacities for the Word Processor, Database, and Spreadsheet.

	Macintosh Plus*
Word Processor	
Pages in a document (text with formatting)	180-240
Database	
Records in a database (at 100 characters per record)	6,000
Spreadsheet	
Number of filled cells	22,500
Draw	
Amount of text in linked columns	32K

*Memory capacities for the Macintosh SE and II without additional RAM match those of the Macintosh Plus. Capacities increase proportionally with additional RAM.

Word Processor capacities are affected by graphics, and by text containing many font changes.

Database capacities are affected by the average number of characters per record.

Spreadsheet capacities are affected by graphics, by the average length of formulas, and by the amount of text in labels.

Note If you are using MultiFinder, memory capacity varies based on the amount of memory you specify in the Works Get Info dialog box. For more information on changing memory size, see your Macintosh MultiFinder user's guide.

Appendix F
Using Works with AppleShare and Other Networks

Microsoft Works can be used in a networking environment. Networks allow users at several workstations to edit and share Works documents that are located on a server disk.

Important A separate copy of Microsoft Works must be purchased for each workstation in the network. For complete details, please see the license agreement on the disk packet.

Setting Up Works on a Server

Setting up Works on a server

The best way to take advantage of Works on a network is to install Works on each user's (local) Macintosh. Users then share documents, which are stored either on the server (remote) or on each user's (local) disk.

Only one person can start Works from a file server. However, as many users as the AppleShare network can support can share Works documents, if they are running Works from their own Macintoshes.

Copying Works to a Server

Copying Works to a server

To copy Works to a server:

1. Create a new folder on your server and title it Works Program.
2. Follow the instructions in "Getting Started" in the *Lessons* manual to copy the Works Program and other files to the folder.

Opening Works Documents on a Network

Opening Works documents on a network

Often when people wish to share documents on a network, more than one person will open a document at the same time. When this occurs, it is important to know how Works responds.

The first person to open any Works document from a server has Read/Write privileges. If you are the first person to open a document from the server, you can make changes to the document and save it back on the server disk using the same name.

If you open a Works document after someone else has opened it, you have Read Only privileges. You can see the document and make changes. However, if you wish to save your changes, you need to save the file onto the server disk using a different name. To do this, use the Save As command from the File menu and type in a different filename.

For example:

1. Open the document you want to copy.
2. Choose Save As from the File menu.
3. Type a new name for the document in the dialog box. The name must be different from the name of the network document.
4. Click the Save button.

If you are not the first person to open a particular document from the network server, Works tells you that you have opened the document with Read Only privileges.

Using Works with a file server

The following table shows where Works files are created when the Works folder and the local System folder are on the same volume and when they are on different volumes (as with AppleShare).

Filename	On same volume	On different volumes
MicrosoftWorks(keys)	Works folder	System folder
Works Desktop	Works folder	Main level of volume containing System
MsWorksPref	System folder	System folder

Quitting Works

Quitting Works

When you quit Works while on the network, the Works Desktop document is automatically saved in the same folder from which you started Works.

Appendix G
New Features in Works 2.0

This appendix is intended for previous users of Works. It describes the changes you'll find in Microsoft Works version 2.0 and tells you where to look in the Works manuals to find further information.

If you are updating any version of Works, be sure to read the "New Features in Works" section in this appendix. If you are updating from version 1.0, you should also read "Changes Since Works 1.0."

Works version 2.0 includes many new commands and menus. Some Works commands have been consolidated or moved to new menus. You'll find brief command descriptions in this appendix and more detailed information on menu changes and new commands in the command reference sections in this manual.

Note Several keyboard commands have changed, including Command+J, Command+W, and the control characters in Communications. Some new keyboard commands have been added. For more information, see Appendix D.

Startup Information

Startup information

Startup information for Works 2.0 is described below.

System Requirements Works now requires a Macintosh Plus, SE, or II, with two 3.5-inch 800K double-sided disk drives or a hard disk. Hard disk users with System versions earlier than 6.0.2 should contact their authorized Apple dealer for information on updating to System 6.0.2.

Important Do not copy the System folder on the Works Startup disk over the existing System folder on your hard disk. Doing so will delete additional desk accessories, fonts and important files from the System on your hard disk.

Personalizing Your Master Disk Before you begin using Works, you should personalize your master Works Program disk.

To personalize your disk:

1. If you have a hard disk, start up your computer and insert the Program disk into the internal disk drive.

   If you have 3.5-inch disk drives, start your computer and insert the Works Startup disk into one disk drive, and then insert the Works Program disk into the other disk drive.
2. Double-click the Program disk and Works icons to open Works.
3. Type your name and your organization's name in the dialog box.
4. Click the OK button, or press the Return key.
5. Choose Quit from the File menu to return to the Finder.

Now make copies of your master disks for safekeeping.

Copying the Master Works Disks Before using Microsoft Works you should make a working copy of each of the master disks to prevent accidental loss or damage to the master disks.

Important You may copy your Microsoft program for personal use only. It is against the law to copy your Microsoft program on magnetic tape, disk, or any other medium for any purpose other than your personal use. See your disk packet for the complete license agreement.

You'll copy Works in one of two ways, depending on your hardware:

- If you have a hard disk, you'll want to copy all of the files from the Works Program disk, and the Works Dictionary folder from the Works Startup disk. Just double-click the disk icon, select the Works icons, and drag them over the hard disk icon.

  Important Do not copy the System folder on the Works Startup disk over the existing System folder on your hard disk. Doing so will delete additional Desk Accessories, fonts, and important files from the System on your hard disk.

  If you don't already have the Boston font in your System file, use the Font/DA Mover to move it from the System file on the Works Startup disk to the System file on your hard disk. See your Macintosh owner's guide for information on copying fonts.

- If you have 3.5-inch disk drives, copy the Works Startup and Works Program disks by dragging each Works master disk icon over the icon of a blank disk you've initialized as double-sided.

Opening Files Created in a Previous Version of Works In the Finder, you can't double-click to open a file created in a previous version of Works unless the file has first been saved using Works 2.0. First, remove earlier versions of Microsoft Works from the disk. Then, turn off your computer. Restart the computer while holding down the Command and Option keys. When you are asked if you want to rebuild the desktop, click OK. Finally, start Works 2.0, open, and save your old documents. (If the Works icon disappears from a file in the Finder, start Works 2.0 again, open, and resave the file.)

New Features in Works

New features in Works

The new Works features for each tool are described below.

Common Tasks

Close All The Close All command closes all open documents and removes them from your screen. See "Close All" in Chapter 2.

Stationery The Stationery option in the Save As dialog box lets you save a group of options such as font, type style, color, and alignment and apply them to other documents. See "Save As" in Chapter 2.

Make Works Desktop The Make Works Desktop command allows you to save an existing desktop without quitting Works, and to save multiple versions of the desktop. See "Make Works Desktop" in Chapter 2.

Print Preview The Print Preview option in the Print dialog box lets you see each page of your document before you print. See "Print" in Chapter 2.

Drawing The Draw feature has many new shapes and commands. You can now use Draw in the Spreadsheet as well as in the Word Processor, and you can create linked columns of text. When you choose the Draw On command, Works displays the Tools palette for drawing shapes and patterns. See "The Edit Menu" in Chapter 2.

Fonts You can now change fonts in the Database and the Spreadsheet, as well as in the Word Processor. An enhanced Format menu provides additional font and size support that includes color options. The Font, Style, Size, and Color commands in the Format menu lead you to other menus containing these formatting choices. See "The Format Menu" in Chapter 2.

Macros Works' Macro feature lets you record a series of mouse or keyboard commands, save them, and play them back automatically. See "The Macro Menu" in Chapter 2.

Full Window/Small Window Commands The Window menu no longer contains the Full Window and Small Window commands. You'll enlarge and reduce window size using the zoom box in the upper-right corner of the title bar. See your Macintosh owner's guide for more information on the zoom box.

The Word Processor

Decimal and Center Tabs The Word Processor now has four types of tabs: left, right, center, and decimal. Click under the ruler to set tabs — once for left, twice for right, three times for decimal, and four times for center tabs. Repeatedly click an existing tab to cycle through the tab types. See "Show Ruler/Hide Ruler" in Chapter 5.

Multiple Record Support The Multiple Labels command in the Word Processor's Edit menu lets you print a series of Database records side by side. Side-by-side records are useful for columns or multiple-column labels. See "Multiple Labels" in Chapter 5, and "Creating Mailing Labels" in Chapter 21.

Search for Tabs and Return Characters You can search and replace tab and return characters using buttons in the Find and Replace dialog boxes. See "The Search Menu" in Chapter 5.

Spacing The new Spacing command in the Format menu includes options for single, one and one-half, double, and six-lines-per-inch spacing. The six-lines-per-inch setting is used in combination with the other settings and is especially useful when working with pre-printed forms. See "Spacing" in Chapter 5.

Spelling Checker Works includes a built-in speller that checks your spelling, suggests corrections, and replaces misspelled words. Its 60,000-word dictionary can be personalized by adding words that you commonly use in your documents. See "The Spell Menu" in Chapter 5.

RTF Files You can import and export files saved with Microsoft Rich Text Format (RTF). RTF retains all formatting in a form used by many word processing and page layout programs on the Macintosh and the IBM PC. See "Open" and "Save As" in Chapter 2.

The Database

Functions You can use many of the built-in calculations (functions) that you use in the Spreadsheet and paste them directly into computed fields in your Database document. Functions can be used only in computed fields, and you can't use any functions that take ranges as arguments. See Chapter 15, "Spreadsheet and Database Functions."

Changing the Report Window The report window now has scroll bars, a zoom box, and a size box for scrolling and changing the report window's size. You can also change the right margin in your reports by dragging the right margin marker (◀). See "Setting Up Paper Size, Printing Orientation, Headers and Footers, and Margins" in Chapter 9.

New Command Names To make the Database easier to use, the command names in the TotalsPage menu have changed as follows:

From	To
Total-1st Char Field	Take a Sub-Total on 1st Char
Total on Field Change	Take a Sub-Total on Field Change

The order of commands in the TotalsPage menu has also changed.

The Spreadsheet

Maximum Number of Rows You can now use up to 16,382 rows in a Spreadsheet document.

Select All Command The Select All command now appears in the Edit menu in the Spreadsheet as well as in the Word Processor and Database. In the Spreadsheet, Select All selects all cells, including blank cells. See "Select All" in Chapter 2.

Functions The Spreadsheet includes Date and Time functions. See Chapter 15, "Spreadsheet and Database Functions."

Cell Notes You can keep a description of each cell in a Spreadsheet document, and display or print the description without disturbing the Spreadsheet document. You create cell notes by choosing the Open Cell Note command from the Edit menu. See "Open Cell Note" in Chapter 16.

Set Cell Attributes Command The Set Cell Attributes command consolidates these commands in one dialog box: General, Fixed, Dollar, Percent, Scientific, Date, Time, Alignment, and Style. See "Set Cell Attributes" in Chapter 16.

Cell Bordering Works 2.0 lets you outline a cell or range of cells to call attention to important information, using the Borders command in the Format menu. See "Borders" in Chapter 16.

Freezing Titles You can freeze selected rows or columns horizontally or vertically so that they won't scroll. This is useful for keeping headings on the screen as you scroll through your Spreadsheet document. The Freeze Title commands are included in the Options menu. See "Freeze Titles Horizontal/Freeze Titles Vertical" in Chapter 16.

Changes since Works 1.0

Changes since Works 1.0

If you're upgrading from version 1.0, you'll also find the following changes in Works 2.0:

Number of Open Windows You can have a maximum of 14 windows open at one time.

Print Window Each sheet of paper is automatically ejected from an ImageWriter printer when you use the Print Window command.

Mailing Labels Works offers an improved way to print mailing labels with an ImageWriter printer. See "Printing Customized Documents" in Chapter 21.

Indent Markers The left indent and first line indent ruler markers in the Word Processor are now easier to adjust, making it easier to create the indents you want — especially hanging indents. See "Indenting Text" in Chapter 4.

Page Breaks In the Word Processor, Works displays manually inserted page breaks differently from automatic page breaks. A manually inserted page break appears as a dashed line. An automatic page break appears as a dotted line. See "Page Breaks" in Chapter 4.

Capture Text When Document Opens The Communications Settings dialog box now contains this option. When chosen, Works will always ask you to name the file in which you are saving captured text as soon as you begin a new Communications session. See "Settings" in Chapter 19.

Number of Screens Works now lets you scroll up to review previous screens from your current Communications session. This allows you to quickly access information, log off, and then review the information, without the expense of spending additional time connected to a host computer. See "Settings" in Chapter 19.

VT52 and VT100 Terminals You can use Works to emulate VT52 and VT100 terminals. See Chapter 18, "Sending and Receiving Information," and Appendix H, "VT52 and VT100 Escape Codes."

Networks Works can be used with AppleShare and other networks. See Appendix F, "Using Works with AppleShare and Other Networks."

Appendix H
VT52 and VT100 Escape Codes

Escape codes are special codes received from a host computer when your Macintosh is using the Works Communications tool to emulate a terminal. These codes are not displayed on the screen. Instead, they are interpreted as instructions to perform special functions, such as moving the cursor or deleting lines on the screen.

The following table lists the escape codes received from the host computer when your computer is emulating a VT52 or VT100 terminal.

Group	Sequence	Function
Cursor	ESC [Pn Z	Cursor backwards by tab
Cursor	ESC [Pn I	Cursor horizontal tabulation
Cursor	TAB	Move to next tab stop
Edit	ESC [Pn M	Delete line
Edit	ESC [Pn L	Insert line
Mode	ESC [> 5 l	Reset Modes — cursor on
Mode	ESC [? 1 h	Set cursor key application mode
Mode	ESC [? 1 l	Set cursor key normal mode
Report	ESC [0 c	Device reports — response ESC [? 1;2c
Report	ESC [6 n	Request cursor position report
Report	ESC [5 n	Request device status reports — ESC [0 n
Report	ESC Z	VT100 Who are you — response is ESC [? 1;2c
Reset	ESC c	Reset to power-up state
Reset	ESC [Ps z	Reset to power-up state
Reset	ESC [! p	Soft terminal reset
Tab	ESC [3 g	Clear all tab stops
Tab	ESC [5 W	Clear all tabs
Tab	ESC [0 g	Clear tab at current position
Tab	ESC [2 W	Clear tab at current position
Tab	ESC H	Set tab
Tab	ESC [0 W	Set tab at current position
Edit	ESC [Pn P	Delete char
Edit	ESC [Pn X	Erase char
Edit	ESC [Pn @	Insert chars
Erase	ESC [2 J	Erase entire display (shift erase); position cursor in home position

Group	Sequence	Function
Erase	ESC [2 K	Erase entire line, incl. cursor position
Erase	ESC [1 J	Erase from start of display to cursor, incl. cursor
Erase	ESC [1 K	Erase from start of line, incl. cursor position
Erase	ESC [0 J	Erase to end of page (erase key)
Erase	ESC [0 K	Erase from cursor to end of line, incl. cursor position
Erase	ESC [? 2 J	Selective erase entire display (shift erase); position cursor in home position
Erase	ESC [? 2 K	Selective erase entire line, incl. cursor position
Erase	ESC [? 0 K	Selective erase from cursor to end of line, incl. cursor position
Erase	ESC [? 1 J	Selective erase from start of display to cursor, incl. cursor
Erase	ESC [? 1 K	Selective erase from start of line, incl. cursor position
Erase	ESC [? 0 J	Selective erase to end of page (erase key)
Mode	ESC [4 l	Disable insert char mode
Mode	ESC [4 h	Enable insert char mode
Cursor	LF	Advance cursor down to next line
Cursor	ESC [Pl;Pc f	Cursor addressing
Cursor	ESC [Pn B	Cursor down — constrain
Cursor	ESC [Pn G	Cursor horizontal absolute
Cursor	ESC [Pn D	Cursor left — constrain
Cursor	ESC [Pn E	Cursor next line
Cursor	ESC [Pl;Pc H	Direct cursor positioning
Cursor	ESC [Pn F	Cursor preceding line
Cursor	ESC [Pn C	Cursor right — constrain
Cursor	ESC [Pn A	Cursor up — constrain
Cursor	ESC D	Index — moves cursor down, functions in same manner as LF
Cursor	BS	Move back one char and erase
Cursor	CR	Move to beginning of line
Cursor	ESC E	NewLine function (CR — LF)
Cursor	ESC [u	Restore cursor
Cursor	ESC 8	Restore cursor position and attributes
Cursor	ESC M	Reverse Index — moves cursor to the same position on preceding line — will not move if at top
Cursor	ESC [s	Save cursor
Cursor	ESC 7	Save cursor position and attributes
Mode	ESC =	Alternate keypad mode

Group	Sequence	Function
Mode	ESC [? 20 l	Disable auto LF on CR
Mode	ESC [? 7 l	Disable auto wrap mode
Mode	ESC [? 25 h	Disable cursor
Mode	ESC >	Disable keypad alternate mode
Mode	ESC [? 20 h	Enable auto LF on CR
Mode	ESC [? 7 h	Enable auto wrap mode
Mode	ESC [? 25 l	Enable cursor
Mode	ESC [20 l	Reset CR on LF
Mode	ESC [> 1 l	Reset Modes — disable 25th line
Mode	ESC [> 7 l	Reset Modes — exit alternate keypad mode
Mode	ESC [> 9 l	Reset Modes — no auto CR on LF
Mode	ESC [> 8 l	Reset Modes — no auto LF on CR
Mode	ESC [20 h	Set CR on LF
Mode	ESC [> 7 h	Set Modes — alternate keypad mode
Mode	ESC [> 9 h	Set Modes — auto CR on LF
Mode	ESC [> 8 h	Set Modes — auto LF on CR
Mode	ESC [> 5 h	Set Modes — cursor off
Mode	ESC [> 1 h	Set Modes — enable 25th line
Erase	FF	Form feed (clear screen)
	BELL	Sound Bell

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