

For more information on print density, see "Controlling Print Density."

Horizontal spacing is also controlled by print density.

Use the following formula to figure out the width of your text:

	Platen Width	For example:	8.0 inches
-	Left Margin	-	1.5 inches
-	Right Margin	-	1.0 inches
	<hr/>		<hr/>
=	Text Width	=	5.5 inches

Controlling Print Density

You can control print density by choosing to print from 4 through 24 characters per inch depending on the capability of your printer. Then you print nonproportionally. That is, all letters take up the same amount of space, whether they are narrow, like *l*'s, or wide, like *m*'s.

You can also choose to print proportionally, again depending on the capability of your printer. Then narrow and wide letters take up narrow and wide spaces. *l*'s take up narrow spaces and *m*'s take up wide spaces. Table 8-2 shows the number of proportional spacing types on various printers.

If you are unsure of how your printer will treat a specific print density, try it!

Table 8-2. *Printers and Proportional Spacing Types*

Printer	Number of Proportional Spacing Types
Apple Dot Matrix, Imagewriter	2
Apple Daisy Wheel	1
Other Daisy Wheel	Varies
Other Dot Matrix	Varies
Silentype	0

Table 8-3 shows comparable examples of text printed in different type densities using a Dot Matrix Printer and a Daisy Wheel Printer.

Table 8-3a. *Printing Examples: Dot Matrix Printer*

10 Characters per Inch

Humpty Dumpty experienced a rather substantial diminution in the magnitude of the coordinates of his vertical elevation as measured skywise from an origin coincident with the surface component of the terra firma in this planetary body.

12 Characters per Inch

Humpty Dumpty experienced a rather substantial diminution in the magnitude of the coordinates of his vertical elevation as measured skywise from an origin coincident with the surface component of the terra firma in this planetary body.

17 Characters per Inch

Humpty Dumpty experienced a rather substantial diminution in the magnitude of the coordinates of his vertical elevation as measured skywise from an origin coincident with the surface component of the terra firma in this planetary body.

Proportional 1

Humpty Dumpty experienced a rather substantial diminution in the magnitude of the coordinates of his vertical elevation as measured skywise from an origin coincident with the surface component of the terra firma in this planetary body.

Table 8-3b. Printing Examples: Daisy Wheel Printer

10 Characters per Inch

Humpty Dumpty experienced a rather substantial diminution in the magnitude of the coordinates of his vertical elevation as measured skywise from an origin coincident with the surface component of the terra firma in this planetary body.

12 Characters per Inch

Humpty Dumpty experienced a rather substantial diminution in the magnitude of the coordinates of his vertical elevation as measured skywise from an origin coincident with the surface component of the terra firma in this planetary body.

Proportional 1

Humpty Dumpty experienced a rather substantial diminution in the magnitude of the coordinates of his vertical elevation as measured skywise from an origin coincident with the surface component of the terra firma in this planetary body.

To change the print density:

1. Put the cursor where you want the new print density to start. Put the cursor at the beginning of the document if you are changing from AppleWorks' default value, 10 characters per inch, to a new one for the whole document.
2. Press **(⌘)-(O)**.
3. Type P 1 or P 2 and **(RETURN)** if you are choosing a proportional printing style, or type C I and **(RETURN)** if you want to change the characters per inch value. Then type the new value, from 4 through 24, and press **(RETURN)**.
4. Press **(ESC)**.

See "Viewing Your Document" in Chapter 7 for information about how various print densities are displayed.

If you choose a print density your printer doesn't have, you will continue to print using whatever print density was just in effect. When in doubt, try it out!

AppleWorks Tip

Each of these different print densities affects the display of your document.

The print density you select remains in effect until you change it within your document. For example, you may print a letterhead at 10 characters per inch and then change the print density for the text to 12 characters per inch.

P1 and P2 don't work well with tabular information.

Controlling Vertical Spacing

The eight printer options that control vertical spacing are listed in Table 8-4.

Table 8-4. *Printer Options for Vertical Spacing*

The Printer Option

Controls

Paper length (PL)

The vertical measurement of the paper you are using, in inches

Default = 11 inches

The maximum you can use is 25.4 inches.

The Printer Option

Controls

Top margin (TM)

The length in inches from the top of the paper to the first line of printing

Default = 0.0 inches. This value accommodates AppleWorks users who have sheet-feed printers (printers with no tractor). If you have one of these printers, you should leave the default value at 0 and position the paper exactly where you want the first line to be.

AppleWorks users with tractor-feed printers will probably want to change this value.

The maximum you can use is 9.0 inches.

Bottom margin (BM)

The length in inches from the last line of printing to the bottom of the paper

Default = 2.0 inches

The maximum you can use is 9.0 inches.

Single, double, or triple spacing (SS, DS, or TS)

Whether the information is single, double, or triple spaced. Only one of these, the last one specified, can be in effect.

You can change the spacing whenever you want within a document.

Default setting is single spacing.

Displayed lines are single spaced. Double and triple spacing takes effect when you print.

The Printer Option

Controls

Lines per inch (LI)

How many lines will be printed per vertical inch on the page

Default = 6

You can use 6 or 8.

Skipping lines (SK)

The number of lines the printer should leave blank at this point. Use this option to leave space for illustrations.

The most lines you can skip is the number it takes to make a page.

Use the following formula to figure out the length of your text:

Paper Length	For example:	11.0 inches
- Top Margin	-	1.5 inches
- Bottom Margin	-	1.5 inches
<hr/>		<hr/>
= Text Width	=	8.0 inches

Controlling Layout

AppleWorks offers you a number of ways to control layout:

- Hanging paragraphs and bullets
- Justification
- Page headers and footers

This section tells you how to use them.

Making Hanging Paragraphs and Bullets (Indenting)

Hanging paragraphs and bulleted items may sound violent, but they're used frequently in business documents. The first line of a hanging paragraph begins at the left margin and succeeding lines are indented. The numbered steps in this manual are hanging paragraphs. And here are other examples of hanging paragraphs (and not necessarily of good English!):

Reserve the apostrophe for it's proper use
and omit it when its not needed.

Place pronouns as close as possible,
especially in long sentences,
as of 10 or more words, to
their antecedents.

If you reread your work, you will find on
rereading that a great deal of
repetition can be avoided by
rereading and editing.

The first line of a bulleted item has an o or asterisk or another character in the left margin, and succeeding lines are indented. Here are some examples of bulleted items (and again, not necessarily of good English):

o Hyphenate only between two sy-llables,
and avoid un-necessary hyphens.

o A writer must not shift your point of
view.

o Last but not least, avoid cliches like
the plague; seek viable alternatives.

To create hanging paragraphs and bulleted items with
AppleWorks:

1. Put the cursor at the beginning of the line where you want the hanging paragraphs or bulleted items to begin.
2. Press (⌘)-(O).

3. The first line of the hanging paragraph or bulleted item is the left margin of the document. Change the left margin temporarily if you want the paragraphs or items to start further to the right than the rest of the document.

You may want to change the right margin, too, to make the bulleted items narrower than the rest of the document.

4. Type IN (for indent after the first line) and press **RETURN**.
5. Type a number to specify the number of spaces you want succeeding lines to be indented. Then press **RETURN**.
6. Press **ESC**.

Now begin typing the hanging paragraphs and bulleted items. When you type the bulleted items, type the o (or * or - or number) at the left margin. Then space over (or tab) to where you want to start typing. Beginning with the second line, lines are indented the number of spaces you request in step 4. Figure 8-5 shows a display with indenting commands and text.

Figure 8-5. Indented Text

```

File: Qualifications          REVIEW/ADD/CHANGE          Escape: Main Menu
-----|-----
-----Group Begin
TBCI is uniquely qualified to supply consulting services for these types of
computer-based systems projects for the following reasons:

-----Left Margin:  1.0 inches
-----Right Margin: 1.5 inches
-----Indent: 5 chars
  o   Key personnel have successfully completed projects that
      [ embrace every discipline and technological area required of
        computer-based process control systems and information
        management systems.
  o   TBCI staff also have experience in research and development
      [ projects that use computer-based systems to assist in
        analysis of research efforts including:
          [ - Intelligent information retrieval
            [ - Computer system architecture
          ]
        ]
      ]
-----
Type entry or use A commands          Line 41  Column  1  A-? for Help

```

Indented text as a result of new left margin.

Indented text as a result of new right margin.

Indented text as a result of Indent command.

To stop the hanging paragraphs or bulleted items, follow these steps:

1. Press (⌘)-(O) again.
2. Type IN and press (RETURN).
3. Type 0 and press (RETURN).
4. Reset margins you changed previously.
5. Press (ESC).

AppleWorks Tip

When you indent while using proportional printing or justification, each indented space is the width of a 0. You can indent up to 64 spaces (which equals 64 0's).

You have to use the Indent command to indent anything other than a line following a carriage return. If you try to use spaces to indent, the program will remove them.

Justifying, Unjustifying, and Centering

Text is either justified, unjustified, or centered. Figure 8-6 illustrates all three.

Figure 8-6. Justified, Unjustified, and Centered Text

Humpty Dumpty experienced a rather substantial diminution in the magnitude of the coordinates of his vertical elevation as measured skywise from an origin coincident with the surface component of the terra firma in this planetary body.

Humpty Dumpty experienced a rather substantial diminution in the magnitude of the coordinates of his vertical elevation as measured skywise from an origin coincident with the surface component of the terra firma in this planetary body.

Humpty Dumpty experienced a rather substantial diminution in the magnitude of the coordinates of his vertical elevation as measured skywise from an origin coincident with the surface component of the terra firma in this planetary body.

Centered

Justified (even right edge)

Unjustified (uneven right edge)

Whichever option of these three is in effect remains until you select another one. For example, if you choose *centered* for headers, you will probably want to change to *justified* or *unjustified* for the text.

To change these options:

1. Put the cursor on the line where you want the change to take effect.
2. Press **Ctrl-O**.
3. Type the option you want: UJ for unjustified, JU for justified, or CN for centered. Then press **RETURN**.
4. Press **ESC**.

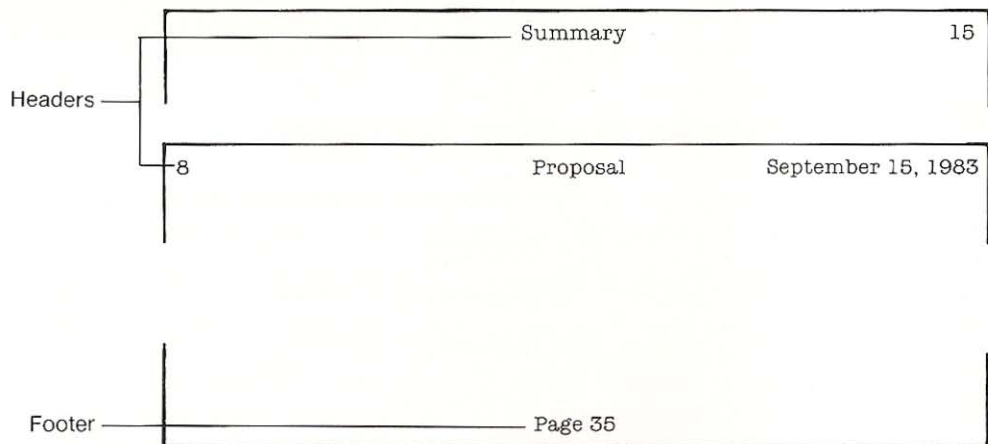
Using Page Headers and Footers

You can put a one-line page header at the top of each page. AppleWorks prints the page header on the first printing line after the top margin. Then it skips two lines and begins to print the text.

And you can put a one-line page footer at the bottom of each page. AppleWorks prints the page footer on the last printing line before the bottom margin. It skips two or more lines between the last line of the text and the page footer.

Figure 8-7 shows several examples of page headers and footers.

Figure 8-7. Headers and Footers



Here's how to specify page headers and footers:

1. Position the cursor correctly for the header or footer. The page header printer option must be on the top line of the page where you want the headers to start. The page footer printer option can be anywhere on the page where you want the footers to start.
2. Press **⌘-O**.
3. Type HE for a header or FO for a footer and press **RETURN**.

4. Press **(ESC)**.
5. Type the header or footer as if you were typing a line of text. The line that follows the -----Page Header or -----Page Footer notation becomes the header or footer.

Any page header or footer you specify prints at the top or bottom of each page until you change it.

To cause page headers and footers to stop, follow the page header or footer printer option with a blank line.

Page header and footer printer options display, but they don't print.

See "Printing Page Numbers" for information on how to get page numbers into headers and footers.

AppleWorks Tip

Use the **Print Page No. (PP)** printer option to get page numbers on headers or footers.

Using Special Printing Techniques

Special printing techniques let you use

- Boldface
- Underlining
- Subscripts
- Superscripts
- Sticky spaces.

Using Boldface and Underlining

To specify boldface or underlining:

1. Put the cursor on the first character to be boldfaced or underlined.
2. Press **(⌘)-(O)**.
3. Type **BB** for boldface begin or **UB** for underline begin. Then press **(RETURN)**.
4. Press **(ESC)**.

AppleWorks inserts a caret (^) right before the first boldfaced or underlined character. All succeeding characters are boldfaced or underlined when they print until you either stop the boldfacing or underlining or the paragraph ends.

To stop boldfacing or underlining:

1. Put the cursor on the character or space just past those to be boldfaced or underlined.
2. Press (⌘)-(O).
3. Type BE for boldface end or UE for underline end. Then press (RETURN).
4. Press (ESC).

AppleWorks inserts a caret (^) right after the last boldfaced or underlined character.

When you want to find out what the carets mean, move the cursor to each one. Depending on the meaning of the caret, **Boldface Begin**, **Boldface End**, **Underline Begin**, or **Underline End** appears at the bottom of the screen.

To shortcut the printer options when you want to underline or boldface text, use these special commands:

- Press (CONTROL)-(B) to begin and end boldface.
- Press (CONTROL)-(L) to begin and end underlining.

(CONTROL)-(B) and (CONTROL)-(L) either start or stop boldface and underlining, depending on what's in effect when you use each. They also display the carets.

Using Superscripts and Subscripts

To specify text for superscripts and subscripts:

1. Put the cursor on the first character to be superscripted or subscripted.
2. Press (⌘)-(O).
3. Type +B for superscript begin or -B for subscript begin. Then press (RETURN).
4. Press (ESC).

AppleWorks inserts a caret (^) right before the first superscripted or subscripted character. All succeeding characters are superscripted or subscripted until you either stop the superscripting or subscripting or the current line ends.

To stop superscripting or subscripting:

1. Put the cursor on the character or space just past those to be superscripted or subscripted.
2. Press **(⌘)-(O)**.
3. Type +E for superscript end or -E for subscript end. Then press **(RETURN)**.
4. Press **(ESC)**.

AppleWorks inserts a caret (^) right after the last superscripted or subscripted character. When you want to find out what the carets mean, move the cursor to each one. Depending on the meaning of the caret, **Superscript Begin**, **Superscript End**, **Subscript Begin**, or **Subscript End** appears at the bottom of the screen.

Using Sticky Spaces

Sticky spaces are spaces between words or groups of characters. But unlike regular spaces, which come between words or groups of characters that can be separated at the end of a line, sticky spaces come between words or group of characters that cannot be broken at the end of a line.

For example, suppose the name **Gerhard P. T. Hakelfinger** occurs in your text and you don't want the name split. Just use a sticky space between the parts of the name instead of a regular space. (Of course, word wraparound could cause the name to start on a line following a very short line!)

To insert a sticky space, press **(⌘)-(SPACE)**. AppleWorks inserts a caret, which signifies the sticky space. When you put the cursor on the caret, **Sticky Space** displays at the bottom of the screen.

Controlling Paging and Page Numbers

This section provides information on controlling paging and page numbers. It tells you how to

- calculate page numbers
- specify a new page
- specify groups of information
- number pages
- print page numbers.

Calculating Page Numbers

When AppleWorks calculates page numbers, it breaks pages appropriately and assigns page numbers to the pages. AppleWorks follows several rules when it calculates page numbers:

- AppleWorks won't break paragraphs so that one line of the paragraph is split from the rest of the paragraph. The beginning of a paragraph on one page must have at least two lines, or that text goes to the top of the next page. Similarly, at least two lines of a paragraph must be at the top of the following page.
- AppleWorks won't overrule page breaks you specify.
- If you specify that a group of information shouldn't be broken, AppleWorks won't break it.

If you don't care what happens to the page breaks, go ahead and print the document. AppleWorks will calculate page numbers and page your document according to its rules. It will also mark the file with page breaks. The next time you display your document, you see page breaks as dashed lines across the display.

If you do care what happens to page breaks, follow these steps:

- 1.** After you type the document and before you print it, press **⌘-K** (for calculate).
- 2.** Choose the printer where you want to ultimately print.

Now you can look at page breaks by moving the cursor through the document.

If you make any changes to text after calculating page numbers, page breaks go away. Then you should calculate new ones.

Specifying a New Page

You may want to control page breaks yourself. If you do, use the new page feature:

1. Put the cursor on the line that should be at the top of a new page.
2. Press **(⌘)-(O)**.
3. Type NP and press **(RETURN)**.
4. Press **(ESC)**.

AppleWorks Tip

The primary use of the new page feature is to allow you to make sure titles go at the top of a new page.

AppleWorks won't overrule your page breaks but it will break pages between your page breaks if the text between them is longer than one page.

If you specify a new page in the middle of a paragraph, AppleWorks puts the page break before the paragraph. To get a new page in the middle of a paragraph, you have to break the paragraph yourself by inserting a carriage return where you want the paragraph to break *before* you use the new page option.

Specifying Groups of Information

When you particularly want to keep a chunk of information together, so that AppleWorks won't break it up between pages, you can *group* it. Here are some examples of information you may want to group:

- The introductory sentence and the bulleted items that follow.
- The title and the first paragraph of information in a subsection of text.
- Items in a list.

Here's how to group information.

1. Put the cursor on the first line of the group.
2. Press **(⌘)-(O)**.
3. Type GB and press **(RETURN)**.
4. Put the cursor on the line following the last line of the group.
5. Press **(⌘)-(O)**.
6. Type GE and press **(RETURN)**.

Numbering Pages

You can control page numbering yourself by overriding AppleWorks' page numbers. When you want to control page numbers, you assign a page number to a specific page. That page and all pages that follow are numbered accordingly.

To assign a page number:

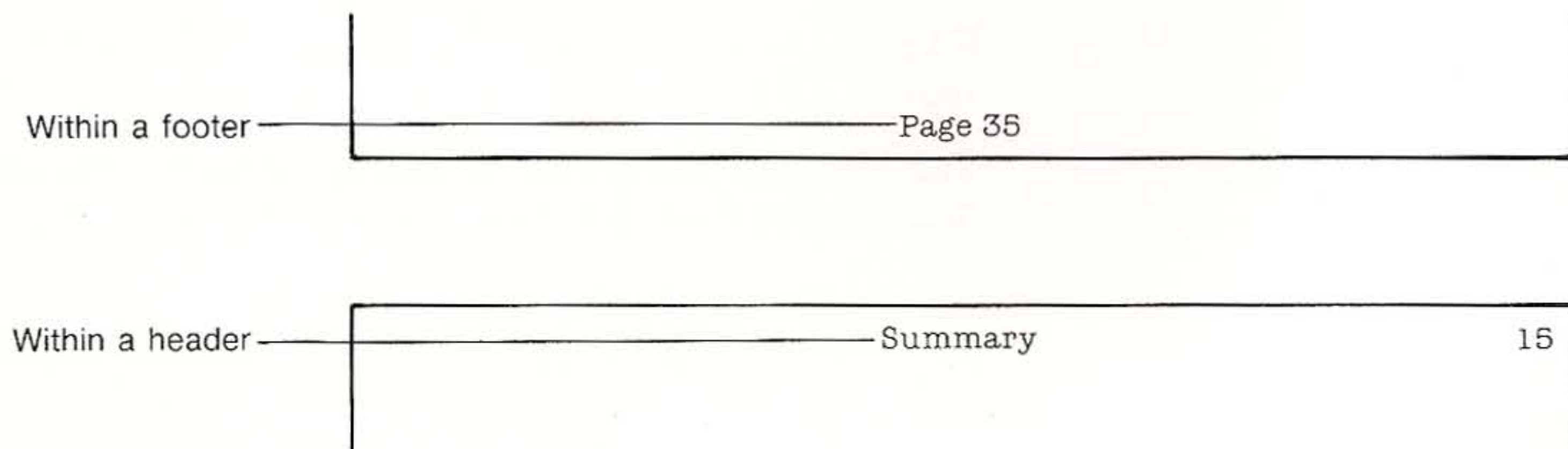
1. Put the cursor somewhere on the page you want to assign a number to.
2. Press **(⌘)-(O)**.
3. Type PN and press **(RETURN)**.
4. Type the number of the page up to 511. Then press **(RETURN)**.

Printing Page Numbers

You can cause page numbers to print on a page, either the numbers AppleWorks calculates or those you assign. Page numbers can be printed in the header, the footer, and the text.

For example, you might want the page number to print within a footer or within a header, as Figure 8-8 illustrates.

Figure 8-8. Page Numbers Within Headers and Footers



To cause page numbers to print:

1. Put the cursor wherever you want the page number to print. Most likely it will be in the line following
-----Page Header or
-----Page Footer.
2. Type **Page** if you want that word to precede the page number. Then press **(SPACE)** once.
3. Press **(⌘)-(O)**.
4. Type **PP** and press **(RETURN)**. AppleWorks inserts a caret in that space. When you put the cursor on the caret, **Print Page No.** displays at the bottom of the screen.

Typing Information From the Keyboard

You can ask the printer to stop during printing so that you can type information directly from the keyboard into the document. This feature is very useful when you want to personalize letters, for example, by putting the recipient's name in occasionally.

To enter information from the keyboard:

1. Put the cursor in the place in the document where the typed information will go.
2. Press **(⌘)-(O)**.
3. Type **EK** and press **(RETURN)**.

AppleWorks inserts a caret into the text where the value will go. When you put the cursor on the caret, **Enter Keyboard** displays at the bottom of the screen.

When you print the document, the printer stops at the specified spot and waits for you to type information. The printer starts printing again when you press **(RETURN)**. For example, the printer will stop twice while it prints this line:

Please remember, ^, that this offer is
good only until ^.

The first time the printer stops, you type the person's name. The second time, you type the final day of your latest offer.



Understanding the Spreadsheet

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Understanding the Spreadsheet

AppleWorks' Spreadsheet allows you to work with numbers in rows and columns. The Spreadsheet's calculation techniques let you speculate and forecast, changing numbers and immediately seeing the effect of the changes.

This chapter discusses the Spreadsheet's two main functions, illustrates its flow of activities, and discusses its file guidelines.

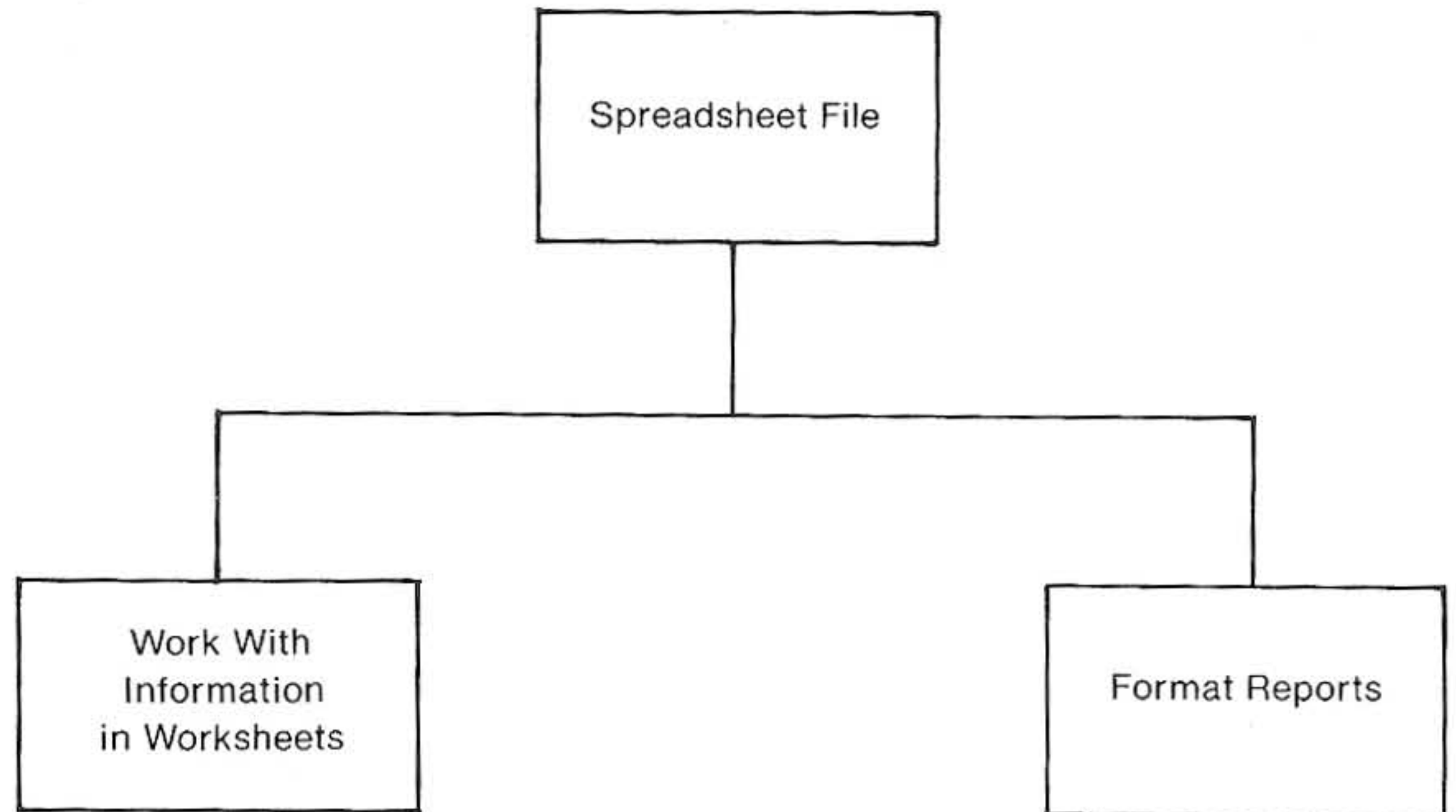
The Spreadsheet's Two Main Functions

The Spreadsheet's activities have two main functions, as Figure 9-1 illustrates. The first function, working with information in spreadsheets, allows you to create spreadsheets with numbers or formulas so you can stay on top of current situations and project the effect of future changes. The second function, reporting, lets you create hard copies of your information, formatted to your specifications.

When you create a spreadsheet, you can type several basic formulas and then use the Spreadsheet's copy feature to put the same or similar formulas in other areas of the spreadsheet. You can control the way numbers in separate areas of the spreadsheet are displayed and look at the spreadsheet from different viewpoints, for complete flexibility in number manipulation. It's easy, too, to make changes to spreadsheets at any time, for even more flexibility.

When you create reports with the Spreadsheet, you can specify exactly what information you want to print and format the information on the page exactly the way you want it. Then you can print it on a printer or on the clipboard for inclusion in a Word Processor document.

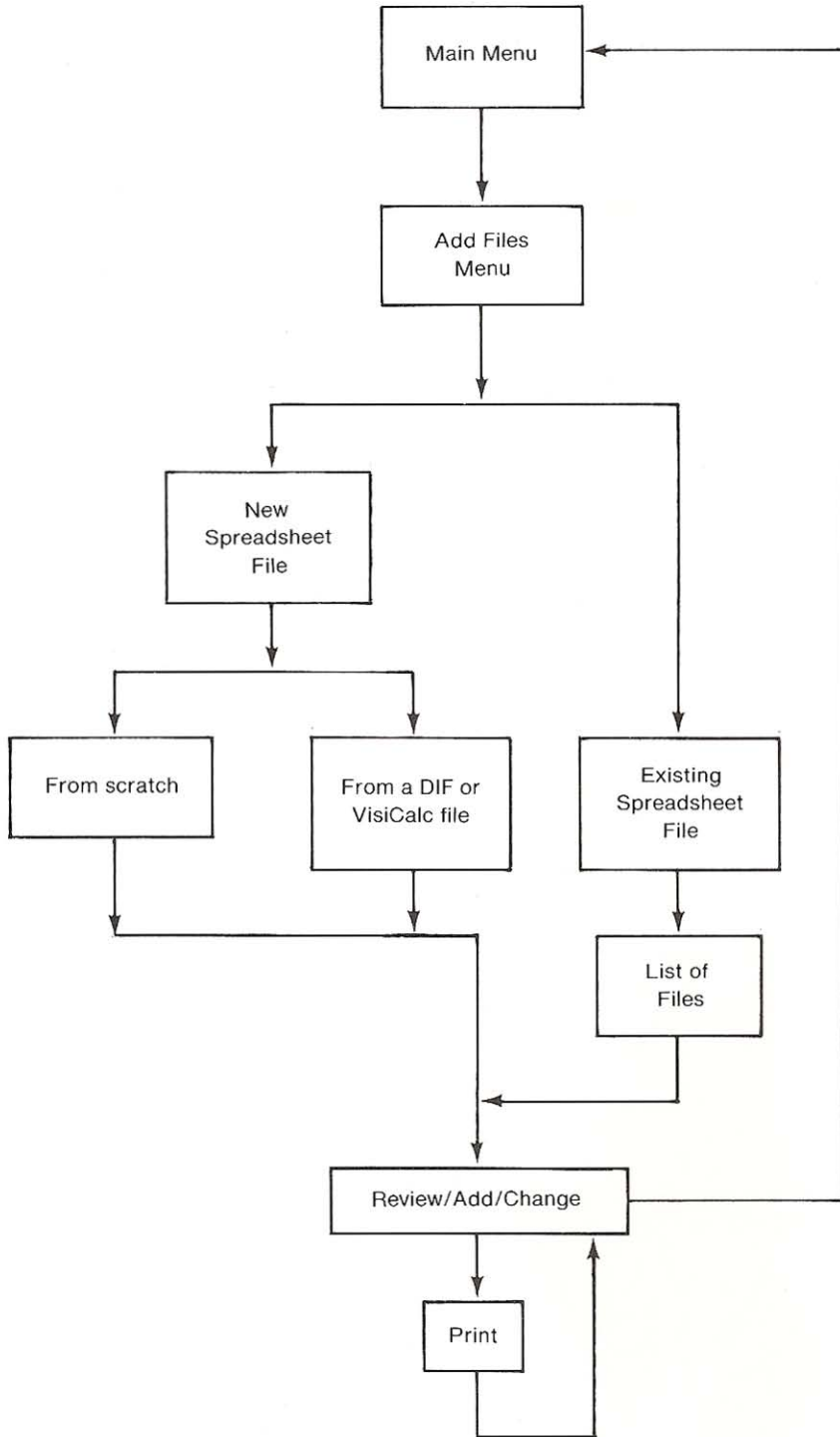
Figure 9-1. Spreadsheet's Two Main Functions



Activity Flow

Figure 9-2 shows the flowchart of activities when you are using Spreadsheet files. All the activities fall into Review/Add/Change.

Figure 9-2. Spreadsheet Flowchart



File Guidelines

Spreadsheet files can contain 127 columns and 999 rows, for a maximum total of 126,873 empty **cells**.

For filled cells, the following guidelines apply:

When You Have

The Maximum Is

An Apple computer with
64K RAM

About 1000 filled cells

An Apple computer with
128K RAM

About 6000 filled cells

Rows are numbered from 1 through 999. Columns are denoted as follows:

A through Z
AA through AZ
BA through BZ
CA through CZ
DA through DW



Working With Information in Spreadsheets

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