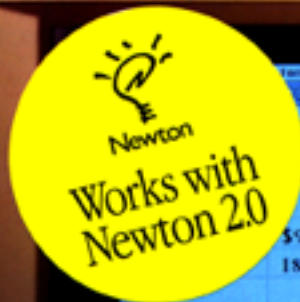




Move Excel® Spreadsheets  
Between Your Desktop  
and Your Newton®  
MessagePad™ System

# EQUATE™

Desktop Compatible Personal Spreadsheet



	B	C
1	2,000	2,300
2	\$90.21	\$91.21
3	180,420	209,783
4		
5		
6	COGS	121,000 132,000
7	GM%	33% 37%
8		
9	Expenses	28,000 30,000
10	Net	31,420 47,783
11		

	A	B	C
1		January	February
2	Units	2,000	2,300
3	Price	\$90.21	\$91.21
4	TOTAL	180,420	209,783
5			
6	COGS	121,000	132,000
7	GM%	33%	37%
8			
9	Expenses	28,000	30,000
10	Net	31,420	47,783

## EQUATE™ Version 2.0 User's Guide

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1	Getting Started .....	5
1	1. Overview.....	5
1	1.1. What's New .....	5
1	2. Installing Equate .....	5
1	2.1. Macintosh.....	5
1	2.2. Windows .....	5
1	2.3. Transferring Equate data from an Earlier Model Newton to Newton 2.0.....	6
1	3. Starting Equate for the First Time.....	6
1	3.1. Getting Help.....	6
1	4. Removing Equate.....	7
2	2 User Interface Controls.....	8
2	1. Scrolling.....	8
2	2. Zooming.....	8
2	3. Rotating .....	8
2	4. Resizing Columns .....	9
2	5. Opening the Entry Line .....	9
2	6. Action Menu .....	9
2	6.1. Print and Fax.....	9
2	6.2. Duplicate.....	9
2	6.3. Move to/from card.....	9
2	6.4. New.....	9
2	6.5. Open.....	10
2	6.6. Rename.....	10
2	6.7. Remove All & Quit.....	10
2	6.8. Cleanup Storage.....	10
2	7. Context Sensitive Do Menu.....	10
3	Editing Features.....	11
3	1. Entering Data .....	11
3	1.1. Auto Justification .....	11
3	1.2. Using the Entry Line to Enter Text and Numbers.....	11
3	1.3. Working with the caret .....	11
3	1.4. Controlling Recognition.....	11
3	2. Selecting a Cell.....	11
3	3. Selecting Text in a Cell .....	11
3	3.1. Copying or moving selected text to the clipboard.....	12
3	3.2. Drag and drop selected text .....	12
3	4. Selecting a Range.....	12
3	5. Scrubbing a Cell .....	12
3	6. The Equate Clipboard .....	12
3	7. Cut.....	12
3	8. Copy.....	12
3	9. Paste.....	13
3	10. Clear.....	13
3	11. Fill Right and Fill Down.....	13
3	12. Insert and Delete.....	13
3	12.1. Inserting a Row or Column.....	13
3	12.2. Deleting a Row or Column .....	14
3	12.3. Updating Formula References .....	14
4	Using Keyboards .....	15
4	1. Using the Function Keyboard .....	15
4	2. Working with Graffiti .....	15
4	3. Using Keyboards with the Entry Line.....	15
5	Creating Formulas.....	16
5	1. Auto Sum .....	16
5	2. Working with references.....	16
5	2.1. Auto Ref.....	16
5	2.2. Absolute Vs Relative .....	16

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6	Formatting Cells.....	18
6.1.	Default formats.....	18
6.2.	Formatting Blank Cells.....	19
6.3.	Setting the alignment.....	19
6.4.	Setting date and time formats.....	19
6.5.	Working with Percents.....	19
7	Worksheet Management.....	20
7.1.	Workbooks Vs Worksheets.....	20
7.2.	Switching between sheets in a workbook.....	20
7.3.	Creating a new workbook or worksheet.....	20
7.4.	Opening a workbook or worksheet.....	20
7.5.	Renaming.....	21
7.6.	Deleting Workbooks/Worksheets.....	21
7.7.	Moving To/From Card.....	22
8	Finding Information.....	23
9	Calculation Control.....	24
9.1.	Equate's Minimal Recalc.....	24
9.2.	Controlling Autocalc.....	24
9.3.	Recalc Now.....	24
9.4.	Circular References.....	24
10	Equate Preferences.....	25
10.1.	Insert new words at caret.....	25
10.2.	Skip Equate during global finds.....	25
10.3.	Rows to scroll vertically.....	25
10.4.	Maximum visible columns.....	25
11	Other Equate Features.....	26
11.1.	Freezing Labels.....	26
11.2.	Making Equate the Backdrop Application.....	26
12	Importing/Exporting Worksheets.....	27
13	Operators and Precedence.....	28
13.1.	Comparison Operators.....	28
13.2.	Text Joining Operator.....	28
14	Function Descriptions.....	29
14.1.	Statistical Functions.....	29
14.2.	Financial functions.....	30
14.3.	Math and Trig functions.....	31
14.4.	Logical functions.....	33
14.5.	Date and Time functions.....	34
14.6.	Lookup and miscellaneous functions.....	34
15	Printing and Faxing.....	36
15.1.	Setting Print/Fax Pref's.....	36
15.2.	Printing.....	36
15.3.	Faxing.....	36
16	Equate Error Codes.....	37
17	Trouble Shooting.....	38
17.1.	Controlling Performance.....	38
17.2.	Other types of errors.....	38
17.3.	Technical Support and Sales.....	38
18	SOFTWARE LICENSE.....	39

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# 1. Getting Started

## 1.1 Overview

Congratulations on your purchase of Equate for Newton. Equate is a powerful spreadsheet application designed to bring desktop spreadsheet power to the Newton. This power is more fully realized when used in conjunction with the optional “Equate Connect” software. Equate Connect is the import/export utility that allows direct transfer of files between Excel and Equate.

This manual explains how to install and take advantage of the many features of Equate 2.0 for Newton.

### 1.1.1 What’s New

Equate includes the following new and/or improved features:

- Improved cell formatting including Bold, and Italics.
- Several new functions including “IF”, “VLOOKUP”, “HLOOKUP” and others.
- All new support for conditional expressions
- Screen rotation on Newton 2.0
- Single tap cell selection
- Function paste “hot” button.
- Improved keyboard management
- Improved printing
- Insert row/column
- Fill right and down
- Direct connection to Excel using optional Equate Connect software

## 1.2 Installing Equate

If you are upgrading to Equate 2.0, you will need to remove the existing Equate package from your Newton before installing the new version. Any existing spreadsheet information will transfer automatically to version 2.0 of Equate. Refer to your Newton Users Guide for instructions on removing packages.

There are two versions of Equate located on the floppy diskette. One of the versions is designed specifically to run on Newton 2.0 and the other is designed to run under earlier Newton operating systems. Refer to the following table to determine which package you should use.

Newton OS Version	Package Name	
	Macintosh	Windows
2.0	Equate for 2.0	Equate20.pkg
1.3 or earlier	Equate for 1.3	Equate13.pkg

### 1.2.1 Macintosh

You will need either the Newton Backup Utility or the Newton Package Installer programs to install the Equate package. Follow the instructions provided with these applications for step by step instructions on installing a Newton application (package).

### 1.2.2 Windows

You will need either the Newton Backup Utility or the Newton Package Installer programs to install the Equate package. Follow the instructions provided with these applications for step by step instructions on installing a Newton application (package). Newton 2.0 users must use the Newton Backup Utility or an updated version of the Newton Package Installer to install a package.

### 1.2.3 Transferring Equate data from an Earlier Model Newton to Newton 2.0

These instructions are specific to transferring Equate data from an earlier model Newton to Newton 2.0 using the Newton Backup Utility. Refer to the documentation that came with Newton Backup Utility software for additional detailed information concerning transferring data from an earlier model Newton.

The following two steps must be accomplished to transfer the data:

1. Connect and backup the earlier model Newton using Newton Backup Utility.
2. Connect and restore the Equate data to newer Newton using Newton Backup Utility.

#### Connecting to the earlier model Newton

First verify the Newton Backup Utility communication options have been set to match your configuration. Next open the standard Connection application located in the extras drawer and select the type of connection to match the desktop configuration.

Note: Windows users must select either the “Macintosh Serial” or “DOS or Windows 9600 serial” option. Selecting the “DOS or Windows PC” option will not work.

Tap the “Connect” button to start the backup process. Newton Backup Utility will create separate files for the data that is stored internally on the Newton and the data that is stored on the card. Make a note of the files it creates as these will be used in the restore process.

#### Restoring Equate data to the newer Newton

Use the standard “Connection” application on the Newton to connect to the Newton Backup Utility application. Once connected perform the following steps:

1. Select the “Restore” button located in the Newton Backup Utility on the desktop machine. A standard open file dialog box will appear.
2. Select the backup file containing Equate data that was created when the earlier model Newton was backed up which is usually located in the “Backups” folder within the Newton Backup Utility directory or folder.
3. Once the file is opened, a split dialog box will appear with a list of all of the “Information” and “Packages” that can be restored. Select the “Other Information” option and deselect all others.
4. Begin the Restore by clicking on the “Restore” button.
5. If Equate data is stored on the card and on the internal storage, this process will need to be repeated for the other file.

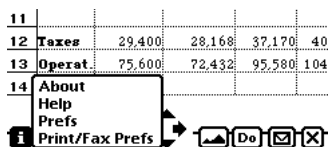
All of the Equate spreadsheets should now be installed on the newer model Newton. Verify the files have been transferred by starting Equate and selecting “Open” from the routing menu.

### 1.3 Starting Equate for the First Time

Equate will create a worksheet called “Untitled” the first time that it is started. As soon as this sheet is opened, you can begin entering data. The data in equate is being saved as you go so there is no need to perform a separate “save” operation as you would in a desktop application. You will want to familiarize yourself with the features of Equate using this manual and the online help to take advantage of all of the features Equate has to offer.

#### 1.3.1 Getting Help

You can access help to many basic questions from within Equate by selecting “Help” from the information menu. This is also a good way to get a quick overview of some of the basic features of Equate. This manual is the best source of detailed information to questions you may have. Refer to the section on Technical support if you are unable to get your question answered from these two sources.



## 1.4 Removing Equate

Removing Equate is a two step process. First you must remove all of the data that was created by Equate and then you must remove the package itself.

Equate provides a convenient way to remove all of its data from the Newton with the "Remove All and Quit" menu option located on the Action menu.

Note: Selecting this option permanently removes any Equate spreadsheet data that you have entered, so use it with caution. Equate provides a second chance to confirm your selection to prevent accidental loss.

## 2. User Interface Controls

Equate 2.0 includes many improvements to the user interface. The following figure highlights the main user interface controls.

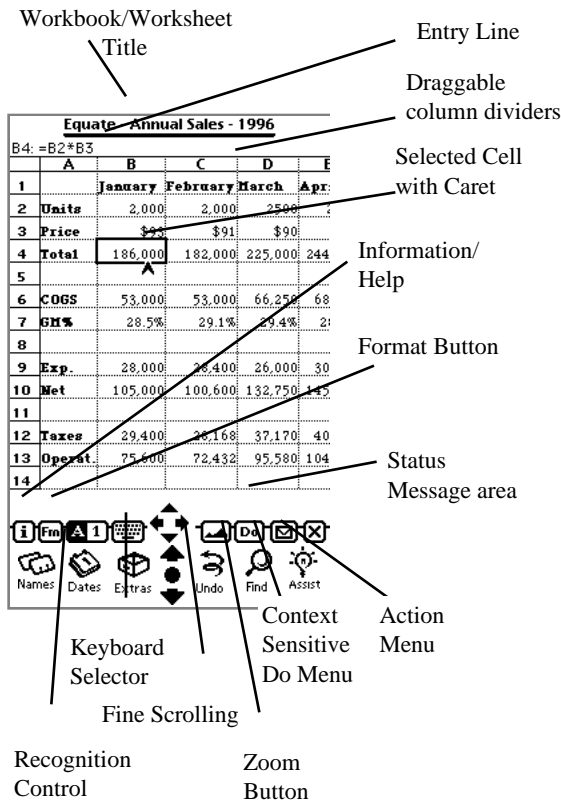


Figure 1 - User Interface Controls

### 2.1 Scrolling

Tapping on one of Equate's four scroll arrows scrolls the spreadsheet by one row or one column.

The large built in Newton arrows perform page-up and page-down operations and will scroll the number of rows that are specified in the preferences. The default setting is to scroll the maximum number of lines which is equal to the number of visible lines.

### 2.2 Zooming

Tapping on the zoom button toggles between a zoomed in and a zoomed out view. Equate defaults to a zoomed in view which provides larger cells for writing. Equate allows data to be written directly into the cells in either zoom mode.

### 2.3 Rotating

Equate allows the screen to be rotated on Newton 2.0 platforms. To rotate the screen tap on "Extras" and then "Rotate". There is no need to quit Equate before rotating. The following figure shows the rotate control in the "Extras" drawer.

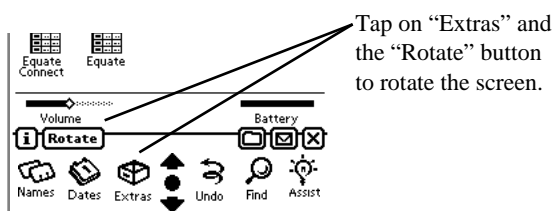




Figure 2 - Rotate Button

## 2.4 Resizing Columns

To resize a column in Equate, simply tap on the divider that is to be moved, wait until it turns black, and then drag it in the desired direction. Lift the pen when the divider is in the desired location and all cells will be resized.

Equate enforces a minimum column width. This minimum varies depending “Max number of columns” preference setting. Setting this to a larger number will allow smaller column widths. Refer to the section entitled “Maximum visible columnsMaximum visible columns” for more information on setting this preference item.

## 2.5 Opening the Entry Line

The entry line located above the column labels displays the contents of a selected cell but cannot be written upon unless it is “opened”. To open the entry line for editing the contents of a cell, simply tap anywhere along the entry line when a cell is selected.

The modifications that are made to the data in the opened entry line do not take affect until the entry line is closed.

If the “Insert words at Caret” preference option is not checked, the entry line will be opened whenever a cell is tapped at the same time the keyboard is open. This provides a convenient way to entering data from a keyboard since fewer taps of the pen are required to move from cell to cell.

## 2.6 Action Menu

The Action menu is where most non-editing operations are located such as printing, duplicating and deleting. The following figure shows the contents of the Action menu. The menu will appear slightly different from the diagram if you are running on an version prior to Newton 2.0.

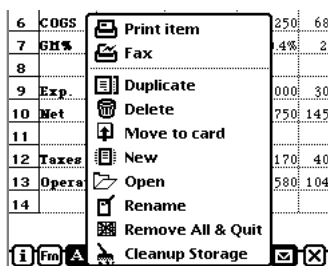


Figure 3 - "Action" Menu

### 2.6.1 Print and Fax

Select the “Print” or “Fax” items to print or fax the current spreadsheet. Refer to the chapter entitled “Printing and Faxing” for detailed instructions.

### 2.6.2 Duplicate

Select the “Duplicate” options to duplicate the current spreadsheet and all of it’s contents. If you are working with a standalone spreadsheet, another standalone spreadsheet is created. If you are working within a workbook, the duplicated sheet will be added to the workbook.

### 2.6.3 Move to/from card

This option provides control over the storage location of a worksheet or workbook. If the current spreadsheet is part of a workbook, all sheets in the workbook will be moved. Read the chapter entitled “Worksheet Management” for a more detailed explanation.

### 2.6.4 New

Select the “New” option when you want to create a new spreadsheet or workbook. Read the chapter entitled “Worksheet Management” for a detailed explanation.

### 2.6.5 Open

Selecting “Open” will bring up an overview of all of the sheets and workbooks loaded on the Newton. Tapping on the built in overview button (the large dot located between the two large arrows) is a shortcut for displaying this list. Read the chapter entitled “Worksheet Management” for more details.

### 2.6.6 Rename

The “Rename” command provides a way to rename both worksheets and workbooks. Read the chapter entitled “Worksheet Management” for more details.

### 2.6.7 Remove All & Quit

This operation provides a way to remove all data Equate has created or that has been imported. All data is permanently removed so you should perform this operation only if you are certain you do not need any of the spreadsheet data that is on the Newton.

### 2.6.8 Cleanup Storage

This command will search and remove any “Orphan” Equate data that may exist on the Newton including any storage cards that are installed. Orphan data may exist if an import operation is abnormally terminated. This operation is safe and can be run periodically to ensure that no storage is being wasted by unused data.

## 2.7 Context Sensitive Do Menu

Many of the commands available on the “Do” menu are context sensitive based on what is currently selected. The following figure shows the commands that are always available regardless of the context.:



Figure 4 - Basic "Do" menu contents

In addition to the menu commands shown in the previous figure, the following context sensitive commands are also available on the “Do” menu:

Menu Command	Available When...
Format	Cell, Range, Row, or Column Selected
Clear	Cell, Range, Row, or Column Selected
Cut	Cell or Range Selected
Copy	Cell or Range Selected
Paste	Cell Selected - after Cut or Copy
Insert	Row or Column Selected
Delete	Row or Column Selected
Fill	Range Selected

The context sensitive menu commands are discussed in the next chapter.

## 3. Editing Features

### 3.1 Entering Data

You may enter numbers or text into Equate cells just as you would in the notepad - by writing on the cell. Almost all of the correction and editing features of the Newton notepad work in Equate. You may also select text and move it to the edge of the Newton screen to hold for later pasting into another Equate cell, or any other Newton application.

#### 3.1.1 Auto Justification

Equate provides a default justification and format to unformatted cells based upon the type of data that was entered. Text is left justified and numbers are right justified unless the cell format was previously set using the format slip.

Dates are automatically converted to a date serial number and are right justified.

To change the justification of a cell, use the "Format Cells" menu choice in the "Do" menu. The operation of the "Format Cells" slip is described in a later section.

#### 3.1.2 Using the Entry Line to Enter Text and Numbers

Equate also allows you to enter data in the entry line. The entry line can be opened for editing by selecting a cell and tapping on it. Use the recognition toggle to control recognition while editing in the entry line.

#### 3.1.3 Working with the caret

A caret will be visible in a selected cell when the "Insert words at caret" preference item is checked. To insert recognized data at the caret, the text must be written in a blank area of the selected cell. Writing on top of the text will replace the existing text with the recognized text.

With "Insert words at caret" preference checked, a keyboard can be used to type the data into the cell directly without the need to open the entry line. Each character typed will be inserted at the caret location.

To move the caret, simply tap the pen at the text location where it is to be moved. Tap on the caret to access a pop-out of hard to recognize characters.

#### 3.1.4 Controlling Recognition

Equate provides a recognition toggle located on the button bar to improve the recognition of numbers. When the number "1" is blackened it is in numbers recognition mode and all entries will be interpreted as a number. When the "A" is blackened, both text and numbers can be recognized.

### 3.2 Selecting a Cell

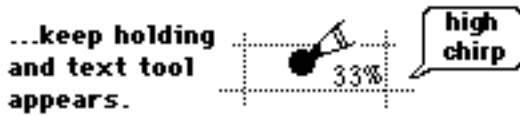
A cell that is selected is highlighted with a solid black border. A single tap on any visible cell will select it. The cell contents for the selected cell is displayed on the entry line.

### 3.3 Selecting Text in a Cell

Many operations in Equate require you to select a cell. In other cases you may want to select text. Equate supports selection of both cells and text.

If you tap the pen and hold it in a cell you will first get the "range select" tool and the cell will become black. You will also hear a special "low chirp" sound. At this point you may drag the pen and select multiple cells.

If you CONTINUE to hold the pen, the familiar Newton text selection tool will appear and you will hear the Newton "high chirp" sound:



Once the text select tool appears you may select text in the cell just as you would in the Newton notepad. Equate allows an entire cell to be selected as described earlier, and also allows the selection of just the text contained in the cell for copying and pasting to other cells or applications. Selecting the text is accomplished by dragging the text tool across the text to be highlighted.

### 3.3.1 Copying or moving selected text to the clipboard

Once the text has been selected, tap the pen on top of the text and move it to the edge of the Newton screen to move the text to the clipboard. To copy the text to the clipboard, tap twice on top of the text holding the pen on the second tap, and move the pen to the edge of the screen until the text appears to change. At this time the text has been copied into the clipboard.

### 3.3.2 Drag and drop selected text

To use drag and drop of text, follow the previous procedure for copying or moving text, only instead of copying to the clipboard, move the pen to the cell the you want the text to be dropped. Let go of the pen when the destination cell contains an insertion point.

Note that the source and destination cells must both be visible to use drag and drop. If the destination cell is not visible at the same time the source is, then copy the text to the clipboard before scrolling to the destination. Once the destination is visible, drag the text from the clipboard and drop it in the destination cell.

### 3.4 Selecting a Range

To select a range, tap the pen on the upper left corner cell of the range and hold it in place until the cell is highlighted. As soon as the cell turns black as shown in the following figure, drag the pen to the lower right corner of the desired range.



Release the pen when all cells in the range are highlighted.

### 3.5 Scrubbing a Cell

The Scrub gesture is an easy way to delete the data or formula in the current cell and is the equivalent of a "cut" operation. While the data is deleted, the underlying format is not. If you want the format to also be deleted, you must use the clear menu option.

### 3.6 The Equate Clipboard

Equate contains a custom clipboard that is independent from the standard Newton clipboard. Whenever data is cut or copied, the data is placed in this clipboard. The "Do" menu will contain a "Paste" menu option when the clipboard contains data, and a cell is selected.

### 3.7 Cut

This operation will cut all of the data and cell format information in the current selection and place it in the clipboard for pasting. The data is deleted from the selection but the underlying cell formats are preserved.

### 3.8 Copy

The copy operation will copy all of the cell data and formats in the selection to the clipboard, preserving the data within the selection.

### 3.9 Paste

To paste the contents of the clipboard, the clipboard must contain data from a cut or copy operation, and a destination cell or range must be selected. When the destination cell has been selected, tap the “Do” button and select the Paste option.

If the clipboard includes formulas with cell references, those references will be adjusted according to the relative location of the paste region. For example, if cell A1 containing the formula “B2\*5” was copied to the clipboard then pasted into cell A2, the new formula in cell A2 would be “B3\*5”. Notice that the row reference was updated by the relative distance between the copy and paste regions.

Note: The paste menu option will only appear if there is data in the clipboard, and a cell or range is selected. Also note the source of the clipboard contents are displayed to the right of the Paste command e.g. “Paste B4:C3” would be displayed if the range B4:C3 had previously been copied or cut.

### 3.10 Clear

The clear operation deletes all underlying data including the cell format information. The deleted data is not placed in the clipboard.

### 3.11 Fill Right and Fill Down

The fill right and down commands are used to replicate the data in one cell across an entire range. If the cell that is being replicated contains a formula, the formula is copied and the relative references are updated accordingly.

Refer to the next figure as it relates to the following example. Cell A4 contains the formula “SUM(A1:A3)”. When the range A4:C4 is selected as shown in the above picture and the Fill right command is selected from the “Do” menu, the formula will

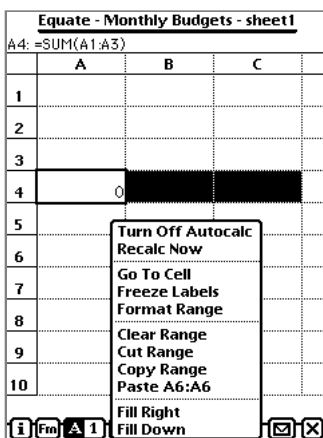


Figure 5 - Fill Right and Down menu options

be replicated into cells B4 and C4. The formula in cell B4 would read SUM(B1:B4) and the formula in cell C4 would read “SUM(C1:C4)”.

Note: While the fill is in progress, the “Do” menu will be highlighted indicating it is busy, and will return to normal when the operation is completed. This operation may take several seconds to complete depending on the size of the range and the complexity of the formulas.

### 3.12 Insert and Delete

#### 3.12.1 Inserting a Row or Column

To insert a row or column, select the row or column where the insertion should take place. Tapping on the row or column label will select the entire row or column. After making the selection, select the Insert or Delete option from the “Do” menu. This operation can take a long time depending on the amount of data that is below or to the right of the insertion point.

### **3.12.2 Deleting a Row or Column**

To delete a row or column, select the row or column to be deleted. After making the selection, select the Insert or Delete option from the “Do” menu. This operation can take a long time depending on the amount of data that is below or to the right of the insertion point.

### **3.12.3 Updating Formula References**

It may be necessary to update the references in a formula after an insert or delete operation. Any reference to a cell that is to the right or below the insertion point will need to be updated. To calculate the new reference, add the number of columns or rows that were inserted to the current reference. For example, if a row was inserted at Row 2, a reference in a formula of “A2” would need to be changed to “A3”. If two columns were inserted at column B, a reference of “B7” would need to be changed to “D7”. In this same example, a reference of “A1” would not need to be changed since it is to the left and above the insertion points.

## 4. Using Keyboards

Equate provides single tap access to a keyboard by tapping on the keyboard icon on the button bar. A keyboard can be used to enter data directly into a cell (Newton 2.0 only) or into the entry line providing maximum flexibility.

The first time the keyboard icon is tapped, the last keyboard that was used is opened. If the icon is tapped when a keyboard is already open, a menu is opened presenting the choices of keyboards.

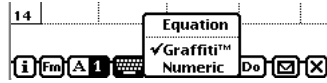


Figure 6 - Keyboard Menu with Graffiti

Equate is compatible with Graffiti and will automatically add a Graffiti option to the menu, replacing the “Standard” keyboard option if it detects that it is installed (see the above figure).

### 4.1 Using the Function Keyboard

The function keyboard provides a convenient way to enter formulas by providing single tap access to the most common characters needed. In addition, it provides a function pop-up menu for access to the built in functions.



Figure 7 - Equate's Function Keyboard

Tap on the diamond next to the “Functions” label to reveal a pop out menu containing some of the most popular functions. Selecting “More” from this menu opens up a past function dialog that contains all of the functions that are available in Equate.

### 4.2 Working with Graffiti

Equate users can use Graffiti as a keyboard as they would any other keyboard. When Graffiti is installed under Newton 2.0, the “Standard” menu option on the keyboard menu is replaced with a “Graffiti” option as shown in the following figure.

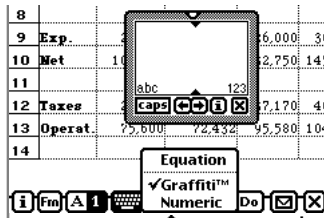


Figure 8 - Graffiti 2.0 selected from the menu

### 4.3 Using Keyboards with the Entry Line

Equate provides a mode of operation that allows the entry line to be opened whenever a cell is tapped and a keyboard is visible. This mode of operation is automatically enabled when the “Insert new words at caret” preference is unchecked.

## 5. Creating Formulas

Formulas can only be entered in the entry line located above the column labels. To enter a formula, first open the entry line by selecting a cell, and then tapping in the area between the column labels and the title bar at the top.

Equate interprets any expression beginning with an “=” sign to be a formula and therefore it is a required when entering a formula. Equate will automatically add the “=” sign such as when entering a cell reference, or pasting a function.

	A	B	C	D
1	January	February	March	Apr
2	Units	2,000	2,000	2500
3	Price	\$98	\$91	\$90
4	Total	186,000	182,000	225,000 244
5				
6	COGS	53,000	53,000	66,250 68
7				

Figure 9 - Opened Entry Line

The figure above shows a simple formula that has been entered into the entry line.

### 5.1 Auto Sum

Equate provides a convenient way to enter a SUM formula by using the auto-sum feature. To perform an auto-sum, simply open the entry line, and drag the pen across the range to be summed. Release the pen when the range is highlighted and Equate will paste a SUM function with the selected range. An “=” is also automatically added to the beginning of the expression.

Tip: If the entire range is not visible, simply perform the above steps starting the selection with the top left part of the range. After Equate has pasted the sum function, simply modify the last part of the range specification using a keyboard.

### 5.2 Working with references

#### 5.2.1 Auto Ref

To enter a reference into a formula, Equate provides a single tap “Auto Ref” feature. With the entry line opened, simply tap on the cell reference to be entered when the insertion caret is in the desired location. To add two cells together, Equate allows fast entry by simply tapping on the two cells, one after another. The “+” operator is automatically inserted by Equate.

#### 5.2.2 Absolute Vs Relative

Equate provides the flexibility to specify absolute and relative references within a formula. The differences between absolute and relative becomes important when performing a copy-paste or a fill operation as is described next. Basically, relative references are updated in a paste operation whereas absolute references are not.

Relative references in a formula are changed to reflect the relative distance from the copy location to the paste location. For example, if cell A1 contained the formula “=A2” and was copied to cell B1, the reference would be modified by the relative change in position. Since the formula was copied by one column and zero rows, the column is updated by +1 and the row remains the same (see Figure 10 - Copying formula in cell A1 to B1 and B2).

	A	B
1	=A2	=B2
2		=B3

Figure 10 - Copying formula in cell A1 to B1 and B2

The formula in cell B1 would be “=B2”. If the same formula were copied to cell B2, the formula in B2 would read “=B3”. Notice that both the column and row were changed by +1 since that reflects the relative change in position.



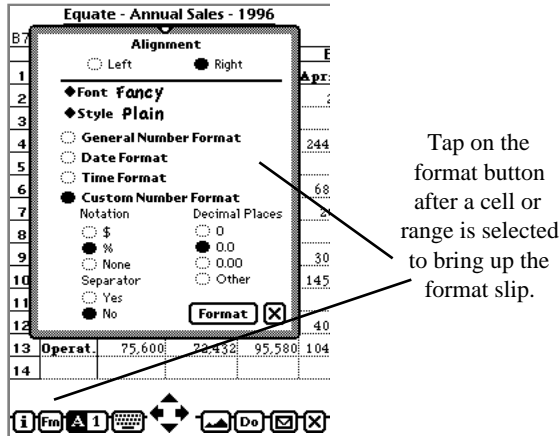
### 5.2.2.1 Absolute references

Unlike relative references, absolute references do not change for a paste operation. An absolute reference is specified by placing a "\$" sign in front of the row or column part of the reference. The following table shows the different mixes of relative and absolute references.

<b>Reference</b>	<b>Description</b>
A1	column relative, row relative,
\$A1	column absolute, row relative
A\$1	column relative, row absolute
\$A\$1	column absolute, row absolute

## 6. Formatting Cells

Equate provides text and number format control using the “format slip”. In order to format, the cell or range of cells must first be selected. When the desired region has been selected, tap on the “Fm” button located in the button bar. This will bring up the format slip as shown in the following figure.



**Figure 11 - Format Cell Slip**

The format cells slip allows you to control alignment, font and style, as well as the overall format mode of a cell. Equate supports three major formatting modes as listed below:

- "General Format": this is a "smart" format that will try to format a number based on how many decimal places it has. It is very close to the Excel "General" format. This format will also use a single character based upon the locale to separate thousands.
- "Date Format" will show date format in the form MM/DD/YY e.g. "2/29/96".
- "Custom Format" allows you to specify the following:
  - Thousands separator - Yes/No
  - A money symbol based upon the locale.
  - The number of decimal places to be shown

If a single cell is being formatted, the current format of that cell will be reflected by the settings of the format Slip. Because the format slip is already filled in, only the format item that is changing needs to be modified by the user.

When formatting a range, Equate provides “selective formatting”. The selective formatting feature allows only the desired format item to change even when other formats in the range may be different. For example, if a range of cells contained a mix of number formats, the Font, Style, and Alignment could all be applied to the range and each of the cells would retain their respective number formats.

### 6.1 Default formats

Every cell containing data has a format even when it hasn't been specifically set using the format slip. Equate sets the format of a cell automatically when data is entered into an unformatted cell, based upon the type of data that is being entered. Equate automatically recognizes numbers, text, times, dates and percentages. If a cell containing a default format is changed from one type of data to another, Equate applies the appropriate default format for that new type of data. For instance, Equate automatically left justifies text and right justifies numbers. If a cell containing a number was changed to text, the data would automatically be left justified.

A cell that has been previously formatted using the format cell slip is considered to have a “sticky” format. Equate does not automatically override cells that contain a sticky format.

## 6.2 Formatting Blank Cells

Equate does not automatically format blank cells in order to preserve storage space. Equate uses “sparse storage” to reduce the memory requirements of a spreadsheet. What this means is only the cells that contain data use up storage space on the Newton. For this reason it is necessary to enter any data before applying the format.

There is an exception to this rule. When a value is “scrubbed” or cut from a cell, the cell is blank but a format record still exists for the cell. This type of cell can be formatted even though it is blank.

## 6.3 Setting the alignment

Equate provides left and right alignment controls. To set the alignment, tap on the desired alignment option then on the “Format” button to apply the format.

## 6.4 Setting date and time formats

Equate automatically detects date and time strings and converts them to a date serial number. Applying a date format to a cell containing a number will display it in a “MM/DD/YY” format.

## 6.5 Working with Percents

Equate automatically converts a number ending in a percent “%” symbol to a percentage by dividing the number by 100. For example, if 90% was entered into a cell, equate would automatically convert it to 0.9 as the underlying number, but it would still be displayed as a percentage, i.e. 90%.

## 7. Worksheet Management

Equate provides the capability of working with regular standalone worksheets, as well as workbooks. Workbooks can contain any number of worksheets and is a powerful organizational tool. It is a particularly useful feature when importing Excel workbooks using the optional Equate Connect import/export utility.

### 7.1 Workbooks Vs Worksheets

Choosing whether or not you want to create a worksheet or a workbook may depend if you want to export it using the optional Equate Connect software. Equate Connect maintains the organization of the workbook when it is exported to the desktop. Likewise when importing an Excel workbook, Equate Connect creates a workbook for Equate to work with.

Worksheets that are exported can be opened using Excel 4.0 or higher. Workbooks on the other hand require Excel version 5.0 or higher.

### 7.2 Switching between sheets in a workbook

The following figure shows a drop down menu containing all of the sheets that are part of the workbook. Tap on the title bar to make the menu of worksheets to appear.

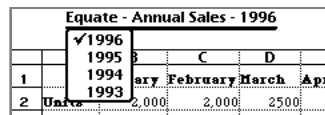


Figure 12 - Worksheet list in workbook

In this example, the workbook is named “Annual Sales” and the worksheets are named “1996”, “1995”, “1994”, and “1993”. The worksheet named 1996 is currently active. Tap on any of the other worksheets listed in the menu to switch sheets.

### 7.3 Creating a new workbook or worksheet

Equate allows workbooks and worksheets to be created from a single menu option. Selecting the “New” menu option on the action menu brings up the floater shown in the following figure.

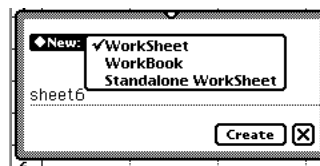


Figure 13 - New Worksheet/Workbook floater

The “New” floater contains a pop out menu that controls what type of sheet to be created. Here are descriptions of the possible menu options.

**WorkSheet** - Select this option to create a new worksheet that is part of a workbook. This option is only available when a workbook is currently open.

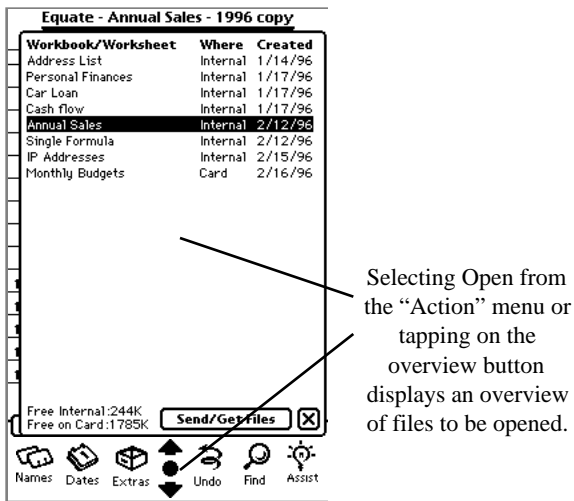
**WorkBook** - Select this option to create a new workbook that starts with a single worksheet.

**Standalone WorkSheet** - Select this option to create a worksheet that is not part of a workbook.

Equate suggests a unique name based upon the type of document to be created. You can keep the suggested name or change it to one of your own preference.

### 7.4 Opening a workbook or worksheet

Selecting “Open” from the “Action” menu will bring up an overview of all of the sheets and workbooks loaded on the Newton.



**Figure 14 - Equate's overview of worksheets**

A single tap on any of the listed worksheets will close the current worksheet and open the worksheet that was selected. If the item selected is a workbook then the last worksheet that was being edited in the workbook will be opened.

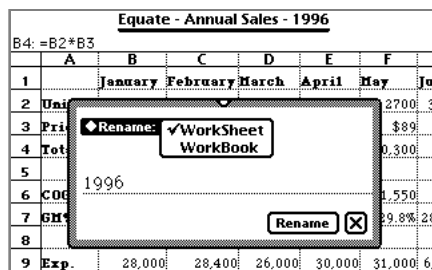
To return to the current sheet simply tap on the close box.

The worksheets and workbooks are ordered by the date they were created with the most recent being on bottom. Use the large arrows to scroll if there are more sheets than can be displayed.

The "Overview" window can also be accessed by tapping the overview button. The Overview button is the round dot between the two large arrows.

### 7.5 Renaming

The same "Rename" menu command located on the Action menu, provides a way to rename both a workbook and a worksheet. Notice in the following picture that the workbook name is "Annual Sales" and the worksheet name is "1996". When the "Rename" dialog first appears, it assumes you want to rename the worksheet and not the



**Figure 15 - Rename floater**

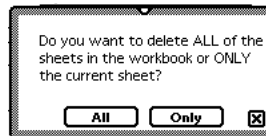
workbook.. If you want to rename the workbook instead, select "Workbook" from the pop out menu of as shown in Figure 15 - Rename floater.

Once you have changed the name, tap on the "Rename" button to apply the changes. To abort any changes, simply select the close box instead of the "Rename" button.

### 7.6 Deleting Workbooks/Worksheets

The same "Delete" menu command located on the Action menu, is used to delete workbooks or worksheets. This operation cannot be undone, however Equate provides will ask you if you are sure to avoid accidentally deleting the worksheet.

Selecting the delete command when in a workbook, will present you with the choices shown in the following figure.



**Figure 16 - Workbook delete options**

Selecting “Only” will delete only the currently active worksheet. Selecting “All” will delete the workbook including all of the sheets it contains

### **7.7 Moving To/From Card**

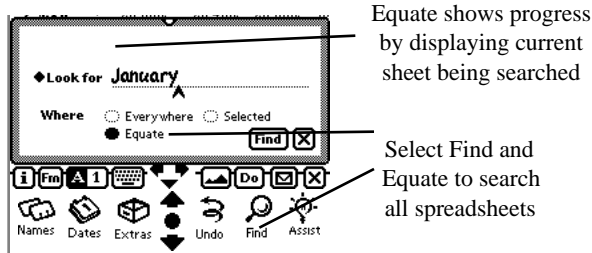
Sometimes it becomes necessary to move a worksheet or workbook to a storage card or from a storage card. Equate initially creates worksheets or workbooks on the internal store unless the “Save new info and packages” option is selected using the “Card” utility.

There are two ways to find out where a worksheet is stored. The first way is by referring to the “Move” menu item found on the Action menu. If it says “Move to card” then the worksheet is currently located on the internal store. If it says “Move from card” then the worksheet or workbook is located on the storage card.

The second way to tell where it is located is from the list of files view or “Overview”. Refer to the topic titled “Opening a workbook or worksheet” discussed previously in this chapter for a picture of the overview.

## 8. Finding Information

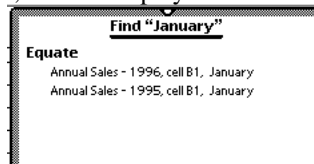
One of Equate's most powerful features is the ability to search the contents of all spreadsheets, then with a single tap jump to any of the cell locations where a match is found. This provides an alternative to scrolling on very large spreadsheets where scrolling may not be practical.



**Figure 17 - Find Dialog**

Spreadsheet information can be searched while Equate is opened by selecting the Equate option in the find dialog as shown in Figure 17 - Find Dialog. Equate spreadsheet data can also be searched even when Equate is not opened as long as the "Skip Equate during global finds" option is not checked in the Equate preferences.

If only one match is found, the spreadsheet will automatically be opened with the matched cell located in the upper left corner of the spreadsheet. If multiple matches are found, a list is displayed as shown in the following Figure.



**Figure 18 - Results from search using Find**

To switch to the desired sheet, simply tap on any of the found items.

## 9. Calculation Control

Equate's calculation mode defaults to "autocalc". This means that Equate updates calculations as soon as you make a change.

### 9.1 Equate's Minimal Recalc

Equate is "smart" about which cells it recalculates. When you change a value in a cell, Equate recalculates only those cells that need to be recomputed due to the change you made. This capability, which is known as "minimal recalc" is commonly found in desktop spreadsheets.

### 9.2 Controlling Autocalc

If you do not want Equate to try to keep the spreadsheet recalculated as you make changes, you may turn off autocalc mode. To turn off autocalc mode select the "Turn Off Autocalc" menu choice in Equate's "Do" menu.

### 9.3 Recalc Now

If you have autocalc off, have made some changes, and would like to see the results of these changes, you can force Equate to perform a total recalculation of the spreadsheet by selecting the "Recalc Now" menu option from the "Do" menu. Note that a total recalc takes much longer than a regular "minimal" recalc.

### 9.4 Circular References

A circular reference occurs when a cell or group of cells reference each other in such a way that they form a "loop". The simplest example of this is to make a cell reference itself. If you placed the equation "=A1" into cell A1, this would form a simple circular reference. More complex circular references can involve multiple cells.

Equate will detect circular reference of all types. If a circular reference is encountered during calculation, Equate will stop the calculation after each cell in the circular reference has been calculated once. This is similar to what would happen if you set Excel's iteration count to 1.



## 10. Equate Preferences

To access the preference settings, tap on the “i” button and select the “Prefs” menu option. Refer to the chapter entitled “Printing and Faxing” for details on setting print and fax preferences.

### 10.1 Insert new words at caret

Checking this option turns on the caret providing added flexibility in entering data in cells including direct entry of data using a keyboard..

When this option is not checked, equate does not allow direct entry of data into a cell with a keyboard. Instead, Equate will open the entry line whenever a cell is selected at the same time a keyboard is open.

Refer to the chapter entitled “The context sensitive menu commands are discussed in the next chapter. Editing Features” for details on working with the caret control

This option is only available on the Newton 2.0 operating system.

### 10.2 Skip Equate during global finds

If this option is checked, Equate spreadsheet data will not be searched by the find function unless Equate is open and Equate is specifically selected in the find slip. On the other hand, when this option is not checked, spreadsheet data will always be searched unless the Equate is specifically removed from the list of applications to search.

### 10.3 Rows to scroll vertically

This option controls how many rows to scroll when the large built in arrows are tapped. The default is “Max” which tells Equate to scroll the number of visible rows. Set the option to 5 or 10 to scroll less than the number of visible rows.

### 10.4 Maximum visible columns

This option tells Equate how many visible columns that it should work with. The smaller this number is, the less memory Equate requires and the faster it will operate for all operations. In general it should be set to the fewest number of columns that still allows spreadsheet data to fill the Newton screen. Equate automatically adds 2 more columns than this setting when rotating to Landscape mode.

## 11. Other Equate Features

### 11.1 Freezing Labels

Equate allows row 1 and column 1 to be “frozen” so that they are always visible when scrolling. To freeze the labels, select the “Freeze Labels” item from the “Do” menu.

### 11.2 Making Equate the Backdrop Application

To make Equate the backdrop application you must first select the Equate Icon in the Extras drawer. To select an the icon, tap on or around the icon until heavy ink appears. Then draw around the icon and release the pen. While the icon is highlighted, tap on the routing button (shaped like an envelope) and select the “Make Backdrop” menu option. While Equate is the backdrop application, the Notepad icon will appear in the Extras drawer and can be opened like any other application.

## 12. Importing/Exporting Worksheets

*Equate Connect* is a powerful utility that provides direct import/export between Equate and Excel on the desktop. Equate Connect is an optional component that can be purchased directly from WalletWare or from most dealers of Newton software.

When Equate Connect is installed on the Newton, it can be launched from the “Extras” drawer or from the Equate file list overview. Refer to the documentation that came with Equate Connect for full details on performing import/export to Excel or Excel compatible spreadsheets.



## 13. Operators and Precedence

Operators are used in formulas to specify an operation, such as addition, subtraction, or division. Operators operate on the elements of a formula which can include numbers, percentages, cell references, and functions.

When Equate evaluates a formula, it performs the operations in the order shown in the following table while scanning from left to right. All references in a formula are evaluated before any of the following operators (e.g. A1).

Operator	Description
-	Negation
%	Percent
^	Exponentiation
* and /	Multiplication and division
+ and -	Addition and subtraction
&	Text and number joining
= < > <= >= <>	Comparison

If two operators in a formula have the same priority, Equate evaluates them from left to right. The order of evaluation can be controlled through the use of parenthesis. Expressions contained within parenthesis are evaluated before other operations as can be seen in the following example:

Formula	Result
6*5+4	34
6*(5+4)	54

### 13.1 Comparison Operators

The comparison operators produce a numerical result of 1 if the expression is true and 0 if the expression is false. These operators are typically used in functions such as “IF” but are not limited to this use. Refer to the description of the “IF” function for an example of this use.

Formula	Result
1<2	1
2>2	0
(2>=2)*21	21

### 13.2 Text Joining Operator

The text joining operator “&” allows two values to be combined into a text or number value. If the result is a number, the result can be operated upon like any other number. Consider the following spreadsheet example:

	A	B
1	There	Hello
2		2

The following table illustrates what the results of various formulas contained in cell A2 would be that contain the “&” operator.

Formula in cell A2	Result
B1&A1	HelloThere
(B2&1)*2	42

## 14. Function Descriptions

Equate provides excellent compatibility with desktop spreadsheets like Excel by implementing the most commonly used functions found in desktop spreadsheets. Users experienced with desktop spreadsheets should find almost no difference in the function definitions. The documentation that comes with a desktop spreadsheet application can serve as an excellent reference.

### Variable length Lists

Many of Equate functions allow a variable number of arguments up to a maximum of 30, providing greater flexibility in crafting a formula. Functions that support variable length lists generally specify range as an argument. The arguments to such functions are not limited to a range but can be a list of numbers, cell references, and ranges unless otherwise noted. For instance if you wanted to add up two separate ranges and a single cell, you could enter a formula such as the following:

```
SUM(A1:A9)+SUM(C1:C9)+D1
```

An alternative way to enter the same formula with one sum function is as follows:

```
SUM(A1:A9,C1:C9,D1)
```

Equate also allows a function or expression to be one of the arguments, allowing for greater flexibility. The following is a valid expression:

```
PRODUCT(SUM(A1:A4),SUM(C1:C4),B5,1.2,SIN(C3))
```

### Optional Arguments

Some of the functions in Equate have arguments that are optional. For instance, most of the financial functions including PV and FV have 5 arguments with the last two being optional. Refer to the function descriptions for details on the use of these optional arguments.

### 14.1 Statistical Functions

#### AVERAGE(range)

Returns the average of a range of numbers. Blank cells are not included in the calculation.

Examples:

```
AVERAGE(1,2) equals 1.5
```

If A1 contains 3 and A2 contains 4 and A3 contains a blank cell and C1 contains 5 then

```
AVERAGE(A1:A3, C1) equals 4
```

#### COUNT(range)

Counts all of the cells containing a numerical value in specified range. Any cells that contain text or that are blank are not counted.

#### COUNTA(range)

Counts cells containing a value within range including text or numbers. Blank cells are not counted.

#### MAX(num, num)

Calculates the maximum of all the numbers passed in. The number of arguments is variable and can include references, ranges or numbers. A minimum of 2 numbers or cell references are required..

#### MEDIAN(range)

Calculates the median of the range or ranges. A variable number of arguments is accepted.

#### MIN(num, num)

Returns the smallest number from the list of numbers specified. The number of arguments is variable and can include references, ranges or numbers. A minimum of 2 numbers or cell references are required.

Example:

IF A1 contains 1, A2 contains 2 and A3 is blank THEN MIN(A1:A3) equals 1.

### **STDEV(range)**

Calculates an estimate for the standard deviation based on a sample of numbers.

### **STDEVP(range)**

Calculates the standard deviation given the entire population as arguments.

### **VAR(range)**

This function returns the estimated variance of a population given a sample as arguments.

### **VARP(range)**

This function returns the variance of a population given the entire population as its arguments.

## **14.2 Financial functions**

The following definitions are common to several of the financial functions. Function arguments that are optional are non-bold and italicized.

### **Standard Argument Definitions**

Rate is the interest rate per period.

pmt is the amount of the payment for each period.

nper is the number of periods.

pv is the present value that the investment starts with. If this argument is optional and omitted, it is assumed to be 0.

fv is the desired value of the investment at the end of the investment period. If this argument is optional and omitted, it is assumed to be 0

type is either 1 or 0 specifying when payments are due. Specify 0 if payments are due at the end of the period. Specify 1 if payments are due at the beginning of the period. If this argument is optional, and when omitted, it is assumed to be 0.

### **FV(rate, nper, pmt, *pv*, *type*)**

Calculates the future value of an investment based upon periodic payments at a constant interest rate.

Examples:

FV(.8%, 12, -100) equals \$1,254.23

FV(.5%, 18, -120,,1) equals \$2,265.57 Note: to omit pv argument simply leave it blank.

### **PV(rate, nper, pmt, *fv*, *type*)**

Calculates the present value of an investment given a fixed series of payments and interest rate.

### **PMT(rate, nper, *pv*, *fv*, *type*)**

Calculates the payment required to attain a future value of an annuity with a constant interest rate.

### **NPER(rate, pmt, *pv*, *fv*, *type*)**

Calculates the number of periods for an investment to reach a specified value given a fixed payment schedule and interest rate.

Rate is the interest rate per period.

pmt is the amount of the payment for each period.

pv is the present value that the investment starts with. If this argument is omitted, it is assumed to be 0

fv is the desired value of the investment at the end of the investment period.

type is either 1 or 0 specifying when payments are due. Specify 0 if payments are due at the end of the period. Specify 1 if payments are due at the beginning of the period. If this argument is omitted, it is assumed to be 0.

### **NPV(rate, range)**

Calculates the net present value of a series of cash flows and a discount rate.

rate is the discount rate for one period.

range is a list of cash flows in the order that they occur. Blank cells and cells containing numbers are included in the calculation but cells containing text are not.

### **IRR(values, guess)**

Calculates the internal rate of return for a series of periodic cash flows.

values must be specified as a range of cells and must contain at least one positive and one negative value.

guess is an optional argument that you guess is close to the result of IRR.

IRR uses an iterative technique to calculate the result within .00001 percent. If it is unable to get within this accuracy after many attempts it will return ?NUM! error. When this happens, modify guess until an answer can be calculated.

## **14.3 Math and Trig functions**

Many of the trig functions operate on values that represent an angle such as SIN, COS, and TAN. All angles must be specified in radians. To convert degrees to radians, multiply by  $PI()/180$ .

### **ABS(num)**

Returns the absolute value of a number.

num is any valid real number.

### **ACOS(num)**

Returns the arc cosine of num which is the angle whose cosine is number. The angle is given in radians within the range of 0 to  $\pi$ .

num is any valid real number.

### **ACOSH(num)**

Returns the inverse hyperbolic cosine of num. The inverse hyperbolic cosine is the value whose hyperbolic cosine is num, therefore  $ACOSH(COSH(num))$  equals num.

num is a real number and must be greater than or equal to 1.

### **ASIN(num)**

Returns the arcsine of a num. The result is the angle in radians whose sine is num.

num is a real number and must be in the range of -1 to 1. To convert the result from radians into degrees, multiply by  $180/PI()$ .

### **ASINH(num)**

Returns the inverse hyperbolic sine of num.

num is any valid real number.

Examples:

$ASINH(-2)$  equals -1.44363548

$ASINH(5)$  equals 2.31243834

### **ATAN(num)**

Returns the arctangent of num. The result is the angle in radians whose tangent is num.

num is any valid real number.

### **ATAN2(x, y)**

Returns the arctangent with x and y coordinates as inputs. The arctangent is the angle of a line drawn from coordinates 0,0 and the x, y input coordinates. The angle is with respect to the x axis.

Inputs are the x and y coordinates of the point to calculate the arctangent from.

### **ATANH(num)**

Returns the inverse hyperbolic tangent of num.

num can be a number between -1 and 1 but not including -1 and 1.

### **CEILING(num, signif)**

Returns num rounded up to the nearest multiple of signif.

num is the number to be rounded.

signif is the number of significant digits.

Example:

CEILING(1.32,0.5) equals 1.5

### **COS(num)**

Returns the cosine of the angle num. The angle must be specified in radians. To convert degrees to radians, multiply by  $PI()/180$ .

### **COSH(num)**

Returns the hyperbolic cosine of num.

### **EXP(number)**

Returns e raised to the power of num where e is the base constant of the natural logarithm which is 2.7182818284590452353602874.

### **FLOOR(num, signif)**

Returns number (num) rounded down to the nearest multiple of significance (signif).

Example:

FLOOR(1.99, .05) equals 1.95.

### **INT(num)**

Rounds num down to the nearest integer.

Examples:

INT(-2.2) equals -3

INT (2.2) equals 2

### **LN(num)**

Calculates the natural logarithm of num.

### **LOG(num, base)**

Calculates the log of num to any base specified.

num is the number used to calculate the logarithm.

base is the base to use in the calculation. If this argument is omitted, it is assumed to be base 10.

Examples:

LOG(10) equals 1

LOG(9,16) equals 0.79248125

### **LOG10(num)**

Calculates the base 10 log of num.



**MOD(num, divisor)**

Returns the remainder of num divided by divisor. The sign of the result is the same as the sign of divisor.

**PI()**

Returns the constant  $\pi$  (3.14159265358979) accurate to within 15 decimal places

**PRODUCT(range)**

Calculates the product of all values in the range or ranges and/or cell references. Blank cells and cells containing text are not included in the calculation.

**RAND()**

Returns a random number between 0 and 1 not including 1.

**ROUND(num, digits)**

Returns the value of num rounded to the specified number of digits.

Examples:

ROUND(1.34, 1) equals 1.3

ROUND(-1.345,2) equals -1.35

**SIGN(num)**

Returns the sign of a number. A negative number returns -1 as the result and a positive number returns 1. A value of 0 returns 0.

**SIN(num)**

Calculates the sin of num where number is an angle in radians. To convert degrees to radians, multiply by  $\text{PI}()/180$ .

**SINH(num)**

Calculates the hyperbolic sin of num.

**SQRT(num)**

Calculates the square root of num.

**SUM(range)**

Returns the sum of a range of numbers. Blank cells and text are not included in the calculation

**TAN(num)**

Calculates the tangent of the angle num where the angle is specified in radians. To convert degrees to radians, multiply by  $\text{PI}()/180$ .

**TANH(num)**

Calculates the hyperbolic tangent of num.

**TRUNC(num, digits)**

Returns num truncated to the specified number of digits.

num is the number to be truncated.

digits is the number of decimal places to truncate to. This argument is optional and defaults to 0.

Examples:

TRUNC(1.234) equals 1.23

## 14.4 Logical functions

**IF(logical\_test, val\_true, val\_false)**

This function returns one value if the test is true and another if the test is false. Equate supports the ability to nest IF statements as a val\_true or val\_false argument for more complicated tests.

Given the following spreadsheet:

	<b>A</b>	<b>B</b>	<b>C</b>
<b>1</b>	Monday	45	
<b>2</b>	Tuesday	45	
<b>3</b>	Wednesday	40	

The following formula would return the value of 5 since the logical test is true.  
IF(B1>40,B1-40,40-B1).

Nested IF example:

IF(B1>40, IF(B2>40, IF(B3>40, 1, 0), 0), 0) returns 1 if all of the values in cells B1, B2 and B3 are greater than 40. If any of these values are equal to or less than 40, this function will return 0.

Note: IF functions, unlike other functions cannot have any expressions that precede or come after it. The following examples show invalid use of an IF statement with the invalid part of the expression in bold:

Example 1: **A1**+IF(1>2,3,4)

Example 2: IF(1>2,3,4)+**A1**

**NOT(expression)**

This function will invert the logical result of expression returning a 1 for true and a 0 for false. If expression evaluates to a non zero number, this function will return 0. If expression evaluates to zero, then this function returns a 1.

Examples:

NOT(2+2=4) returns 0

NOT(2+2=5) returns 1

NOT(10) returns 0

NOT(0) returns 1

**14.5 Date and Time functions**

**NOW()**

Returns the current date serial number. The whole portion of the serial number is the number of days since January 1, 1904 and the fractional part of the serial number represents the current time. Refer to the DATE function for more information on date serial numbers.

**DATE(year, month, day)**

Returns a date serial number which is the number of days between January 1, 1904 and the specified date. If the sheet was imported from Excel and the Excel's 1904 date system checkbox is clear, the calculation is with reference to January 1, 1900.

The year can be in the range 1904 to 2078. Years that are specified less than 178 are assumed to be with respect to 1900. To specify a year greater than 1999, use the full year.

The month and day inputs can have any value as long as the serial number that is calculated does not exceed the greatest date that is supported.

Example: If you wanted to calculate the date that was 45 months and 540 days from 1985 you could enter the function as DATE(85, 45, 450). The result is 2/22/90.

**14.6 Lookup and miscellaneous functions**

**HLOOKUP(value, range, row\_index)**

This function will search the top row of a range for a value that is less than or equal to a specified value. The search is completed when a number greater than the input value is found or the end of the range is reached. This function will return the value located in the last column that met the search criteria at the specified row. This function expects the table to be in sorted ascending order.

Given the following spreadsheet:

	A	B	C	D
1	1	3	5	7
2	One	Three	Five	Seven
3	Two	Four	Six	Eight

HLOOKUP(5, A1:D3, 2) would return the text value "Five".

HLOOKUP(6, A1:D3, 3) would return the text value "Six".

#### Error Return Values

#REF! Error if index is out of range

#N/A! If value is not found

#### **VLOOKUP(value, range, col\_index)**

This function will search the left column of a range for a value that is less than or equal to a specified value. The search is completed when a number greater than the input value is found or the end of the range is reached. This function will return the value located in the last row that met the search criteria at the specified column. This function expects the table to be in sorted ascending order. Given the following spreadsheet:

	A	B	C
1	1	One	Two
2	3	Three	Four
4	5	Five	Six
5	7	Seven	Eight

VLOOKUP(3, A1:C3, 2) would return the text value "Three".

VLOOKUP(4, A1:C3, 3) would return the text value "Four".

#### Error Return Values

#REF! Error if index is out of range

#N/A! If value is not found

#### **LEN(text)**

Calculates the length of the formatted value that is displayed by the text argument.

Examples:

LEN(1.24) equals 4

If A1 contains the date 1/20/94 then LEN(A1) equals 7.

## 15. Printing and Faxing

Printing and Faxing under Equate 2.0 is performed in much the same way as other Newton applications. Equate supports printing on any printer the Newton has a driver for.

### 15.1 Setting Print/Fax Pref's

Before printing a document, make sure the preferences have been set for the worksheet being printed. Selecting the "Print/Fax Prefs" menu option located on the "i" menu will bring up the following dialog:

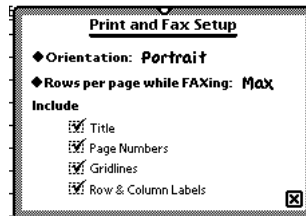


Figure 19 - Print preferences slip

This dialog provides control over portrait or landscape mode, and provides individual control over printing a title, page numbers, row and column labels, and gridlines. These settings are saved independently for each individual worksheet.

### Rows per page while Faxing

If the Newton is having trouble faxing an Equate spreadsheet, it may be necessary to reduce the number of rows per page. Reducing the number of rows reduces the amount of processing time for each page and can eliminate the time-outs sometimes associated with faxing.

### 15.2 Printing

Selecting "Print" from the Action menu will bring up the following standard dialog:

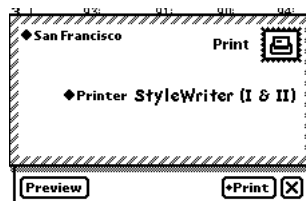


Figure 20 - Print/Fax Dialog

Select the type of printer by tapping on the diamond next to the "Printer" label. The document can be previewed by tapping the "Preview" button. To print now, attach the Newton to the printer, tap on the "Print" button and select "Now" from the menu. To send the document to the outbox, select "Later" from the "Print" button's menu

### 15.3 Faxing

To fax a worksheet in Equate, select "Fax" from the action menu. Faxing works in a standard way as documented in the Newton manual.

## 16. Equate Error Codes

Like desktop spreadsheets, Equate will generate an error code in a spreadsheet cell if the value of the cell is not valid. The following error codes are defined by Equate:

### **?VAL!**

When the "?VAL!" error appears in a cell, it means that one or more of the cells referenced by the cell's equation contain a inappropriate values. For example, if cell A3 contained the equation " $=A1+A2$ " and cell A2 contained the string "Hello", the cell A3 would display the "?VAL!" error.

### **?NUM!**

When the "?NUM!" error appears in a cell, it means that the result of the cell's computation is not valid or out of range. A good example of this would be an overflow case.

### **?DIV0!**

The "?DIV0!" error is actually a special case of the "?NUM!" error but it is handled separately because it is a commonly occurring error. It occurs when a cell's equation has attempted to perform a divide by zero operation.

### **?REF!**

When the "?REF!" error appears in a cell, it means that an invalid reference is contained in the cell's equation. A common cause of this is if you paste an equation into a new location in such a way that its references would fall of the range of the spreadsheet. In this case, the paste operation will update the reference in the equation and determine that it is now out of range. When the equation is recalculated, the "?REF!" error will appear in the cell.

### **?N/A!**

When the "?N/A!" error appears in a cell, it means that the cell contains an equation imported from Excel which uses a function that is not supported in Equate. When Equate's import translator encounters an unsupported function it marks it in the cell. When the cell is recalculated, the "?N/A!" error is displayed. See the "Equate Import/Export Guide" for more detail on import and export operations.

### **Number too large**

This message appears if the calculated number is larger than the largest Number understood by the Newton.

## 17. Trouble Shooting

### 17.1 Controlling Performance

The performance of an application on the Newton is often a function of the amount of memory (frames heap) that is available, and Equate is no exception. The amount of frames heap used by Equate can be reduced, thereby increasing performance, by operating in “zoomed in” mode, and/or by reducing the “Max number of columns” preference setting.

### 17.2 Other types of errors

The Newton includes very good error reporting and recovery features. Usually these errors are reported as a large negative number such as -48012. Equate has been tested to eliminate such errors, however should you encounter an error such as this, please make a note of what the conditions were when the error occurred, and contact WalletWare’s technical support. In most cases such errors are not an indication of a serious problem but we strive to make Equate as reliable as possible.

### 17.3 Technical Support and Sales

If you are unable to resolve a problem that you are having, feel free to contact WalletWare’s technical support in the most convenient method.

**WalletWare, Inc.**

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WalletWare@aol.com  
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<http://www.walletware.com>

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