

**Color Display**—If you want to print your graphs in color with an ImageWriter II, you must select this option. The Legend patterns will change to solid colors. Composite color monitors or color TV sets may not clearly display text. Refer to Chapter 4 for complete instructions.

**Show Values**—To toggle the display of numbers along the Y-Axis ON or OFF, select this.

**Show Category Names**—Toggles the drawing of Category names along the category axis ON or OFF.

**Normalize Scale**—Select this to plot the smallest data value as a zero value and subtract that amount from all other data values. Normalize will not work if any negative numbered data has been selected. The “offset” to be added to the value numbers is displayed at the top of the chart.

**Auto Scaling**—Choose this to force the numbers along the value axis into even whole multiple units of 1, 2 or 5.

**Erase Defaults**  **E**—Toggles OFF all currently selected options.

**Restore Defaults**  **R**—To clear any existing selections and then re-install the standard options in place when you first run GRAPH IT!, select this option. The default options are:

## 5: Features and Functions

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### Type Menu:

Column Show Grid

### Axis Menu:

Show Axis

Category Lines

Show Major Marks

Major Marks Style = Dotted lines across screen

Show Minor Marks

Minor per Major Divisions = 4

Pixels per Minor Divisions = 5

### Format Menu:

Chart Border

Screen Border = Thin Line

Group Spacing = 2

Bar/Column Spacing = None

Column Depth = None

Data Point Size = 3 pixels

### Labels Menu:

Display Title = Top, Centered

Display X-Axis

Display Y-Axis

Display Legend

Legend Border

Legend Position = Right















### Graph Menu:

Show Values

Show Category Names

Auto Scaling

## The Quick Keys

Menu	Option	Quick Key Equivalent
File	Close File	 <b>C</b>
	New...	 <b>N</b>
	Open...	 <b>O</b>
	Print	 <b>P</b>
	Quit	 <b>Q</b>
	Save Data	 <b>S</b>
	Save Data As...	 <b>A</b>
Graph	Erase Defaults	 <b>E</b>
	Graph	 <b>G</b>
	Restore Defaults	 <b>R</b>
	View Current Graph	 <b>V</b>
Move one screen in Data Display Window	  	

## 6 GETTING THE MOST FROM GRAPH IT!

Even though GRAPH IT! makes charting your data easy, there are some “tricks of the trade” when it comes to graphing that can make the task easier. In this chapter you will find tips and hints to help save you time and effort.

### Handling Large Amounts of Data

GRAPH IT! has the ability to handle a great deal of data. But there is a practical limit on the amount of data that can be graphed—the size of the charting area used on the Apple screen. The larger the graphing area, the more items of data that will fit and still be usefully visible. If you have so much data that your chart is too packed together, here are a couple of ways to improve the situation:

- **Resize the Graph**—GRAPH IT! automatically resizes the area of the screen used for the graph depending upon the options you have selected.

Carefully review your graph and eliminate any elements that aren't really needed to make your graph clear. Eliminating the screen border, for example, will give you additional vertical and horizontal space. In a similar fashion, turning off the Title and Category Names will give some additional vertical head room for a bar chart.

There are some other changes you can make to gain graphing space. For example, when making Column charts with a large number of columns, try positioning the Legend at the top or bottom. This gains horizontal space for the graph. You can also turn off the Y-Axis label to gain horizontal plotting area.

- **Reformat the Spacing**—Another handy technique to pack in more bars in a graph is to reduce the Bar and Group Spacing to a minimum. You can make the bars and groups actually touch each other. Then you can display Category Lines, which take up no graphing space, to make the separation between Category groups clear. Remember, though, Category Lines will only display if the Column Depth is set to None.

## Using Very Small or Very Large Numbers

GRAPH IT! displays numbers larger than 999 or smaller than 1 in exponential notation. This is an arithmetic shorthand used to handle very big and very small numbers with as few digits as possible.

For example:

When you enter...	GRAPH IT! displays...
1230	1.23e3
1234567	1.235e6
-456789	-456.7e3
.0001234	123.4e-6
.999	999.e-3

The exponent (the number after the “e”) is the number of places to shift the decimal point left or right. For example, 1.23e3 means “Move the decimal to the right three places” so the number really is 1230. A positive exponent means shifting the decimal point to the right.

A negative exponent denotes a fraction so you need to shift the decimal point left to get back to the original number. For example, 1.23e-3 represents .00123. Another way to look at this is that a positive exponent acts as a multiplier and a negative exponent acts as a divider.

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NOTE: GRAPH IT! will display .9999 as 1.

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As you can see, exponential notation really saves handling a lot of zeros! When graphing data that is in exponential notation, the number the Y-Axis scale needs to be multiplied by is displayed in the upper left hand corner of the graph.

For another way of handling very large numbers, see the section below on pre-scaling data that all falls in the same range.

### Pre-Scaling Data

Charting pros use a technique called “pre-scaling” for data that falls within the same specific range. If, for example, your data is all in the millions, enter it as multiples of a million rounded off to the second decimal place. So 32,750,000 would become 32.75. Then you can use the Y-Axis title to indicate the true value of the numbers; for example, Thousands of Dollars or Dollars 000. Just remember:

- Pre-scaling must be consistently applied to all the data within a group.
- Pre-scaling is only practical when your data falls within the same general range; thousands, ten thousands, millions.

If your data falls over too large of a range to make pre-scaling practical, you don't need to enter more than four significant digits of a number unless you plan to normalize the data. See Chapter 4 for instructions on normalizing. Round off to the third digit and enter trailing zeroes. Therefore, 101,746 becomes 102,000 and 345,768,377 becomes 346,000,000. In each case, GRAPH IT! converts the number to exponential notation and uses only the first three digits for charting purposes.

### Creating High-Low Graphs

High-Low graphs are a variation of a line graph where the minimum and maximum values of a group of data are plotted as high and low plot points. A typical use for a high-low graph is to display the daily high and low values of a given stock traded on one of the exchanges.

High-low charts are also useful in many statistical quality control applications where the "spread" of data over time can be readily displayed. You can make a very nice looking high-low chart by arranging your data in the data display properly.

For example, you could track the daily range of a number of stocks. Often, a stock graph includes the daily closing price of the stock as well so we'll do that with this graph.



## 6: Getting the Most From GRAPH IT!

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1. Edit the Category names at the top of each column to show each day you have data for.
2. Pick out the high, low and close values for each day for each stock. Stock values are actually published this way so this is no problem.
3. Enter the high values for the first stock in the first row of the data display, the closing values in the second row and the low values in the third row.
4. Enter the high, close and low values for the second stock in the third, fourth and fifth rows. Keep entering data for each stock in this manner.
5. Edit each trio of Legend names at the left of each row to reflect the stock names. If, for example, you are tracking the stock of Apple Computer, the Legend names might read APPLE HI, APPLE CLS and APPLE LOW, respectively.
6. From the LABELS menu, turn Display Legend OFF and select Line from the TYPE menu. Alternatively, you could try putting the Legend display at the bottom of your graph.
7. Select the data to be charted in row trios (by stock). To see the Apple values, select Rows 1, 2 and 3 to plot. Rows 4, 5 and 6 would chart the next stock, and so on.
8. Select Graph from the GRAPH menu to see your chart.

You can also try plotting the high-low ranges using the Stacked Column, Line and Column or Area type charts. You may find that one of these types of charts presents a clearer presentation of the data.

### Working with the Sample Files

A few sample files are included on your GRAPH IT! disk. A good way to get a better feel for GRAPH IT!'s full potential is to play around with these sample files.

View these files using the Open option from the FILE menu, select some data and select a graph from the TYPE menu. Then select Graph from the GRAPH menu to see the results. Here's a list of the files:

GRAPH IT! data files:

TEMPS.DATA

SAMPLE.DATA

AppleWorks text file:

PRODUCT.11X5