



Grapher™

The ultimate technical graphing package.

Quick Start Guide

Grapher™ Registration Information

Your **Grapher** product key is located in the email download instructions and in your account at MyAccount.GoldenSoftware.com.

Register your **Grapher** product key online at www.GoldenSoftware.com. This information will not be redistributed.

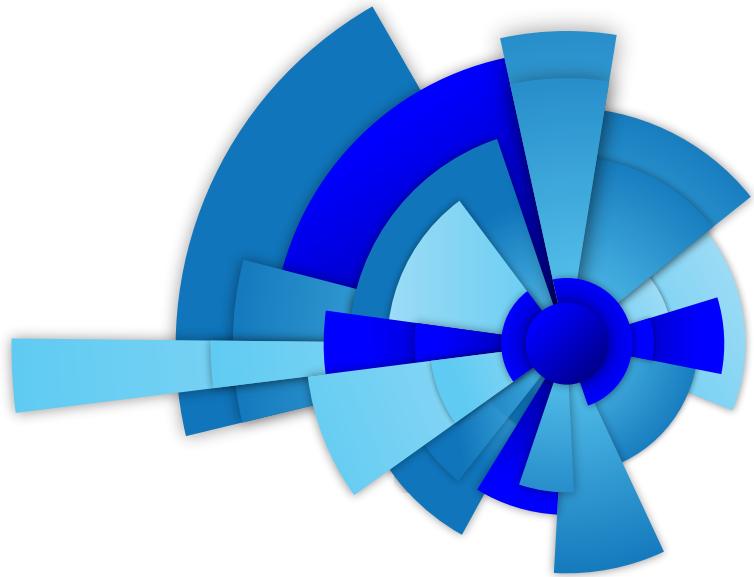
Registration entitles you to free technical support, download access in your account, and updates from Golden Software.

For future reference, write your product key on the line below.

Grapher™

Quick Start Guide

The Ultimate Technical Graphing Package



Golden Software, LLC
809 14th Street, Golden, Colorado 80401-1866, U.S.A.
Phone: 303-279-1021 Fax: 303-279-0909
www.GoldenSoftware.com

COPYRIGHT NOTICE

Copyright Golden Software, LLC 2019

The **Grapher**[™] program is furnished under a license agreement. The **Grapher** software, user's guide, and quick start guide may be used or copied only in accordance with the terms of the agreement. It is against the law to copy the software, user's guide, or quick start guide on any medium except as specifically allowed in the license agreement. Contents are subject to change without notice.

Grapher is a registered trademark of Golden Software, LLC. All other trademarks are the property of their respective owners.

Introduction to Grapher	1
System Requirements.....	2
Installing Grapher	2
Uninstalling Grapher.....	2
Grapher Trial Functionality	3
Scripter	3
Three-Minute Tour	4
Grapher User Interface	6
Plot Window	8
Object Manager	8
Property Manager	10
Worksheet Manager	12
Script Manager	12
Worksheet Window	13
Status Bar.....	14
Customizing the Quick Access Toolbar	14
Customizing the Ribbon	14
Customizing the Keyboard Shortcuts	14
Changing the Window Layout	15
File Types.....	16
Grapher .GRF Files	17
Grapher .GPJ Project Files	17
Grapher .GRT Template Files	17
Data Files.....	18
Database Files	19
Grid Files	19
Plot Types	19
Basic Plots	20
Bar Plots.....	20
Polar Plots.....	20
Ternary Plots.....	21
Specialty Plots	21
Statistical Plots.....	22
Contour Surface Maps	22
Creating Graphs	22
Creating Graphs with the Graph Wizard	23
Creating Graphs in the Plot Window	23

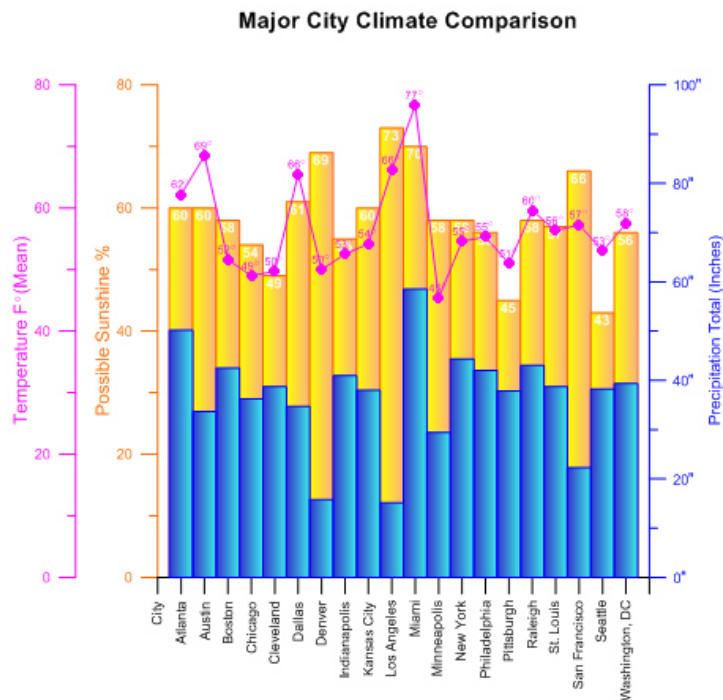
Grapher

Creating Graphs from the Worksheet.....	24
Creating Graphs Using Templates	24
Scripter	25
Script Recorder.....	25
Tutorial Introduction.....	25
Tutorial Overview.....	26
A Note About the Documentation	26
Starting Grapher.....	26
Printing the Online Help.....	50
Getting Help.....	51
Internet Help Resources	51
Technical Support	51
Index	53

Introduction to Grapher

Welcome to **Grapher™**, the easy-to-use 2D & 3D technical graphing package for scientists, engineers, business professionals, or anyone who needs to generate publication quality graphs quickly and easily. **Grapher** is an efficient and powerful graphing program for all of your most complex graphing needs. Create exciting graphs and plots for presentations, papers, marketing, analysis, sales, and more.

With **Grapher**, creating a graph is as easy as choosing the graph type, selecting the data file, and clicking the Open button. **Grapher** automatically selects reasonable default settings for each new graph, though all of the graph settings can be modified. For example, you can change tick mark spacing, tick labels, axis labels, axis length, grid lines, line colors, symbol styles, and more. You can add legends, images, fit curves, and drawing objects to the graph. To apply the same custom settings to several graphs, you can create a **Grapher** template containing the preferred styles. Automate data processing and graph creation using Golden Software's **Scripter™** program or any Active X automation program. Once the graph is complete, you can export it in a variety of formats for use in presentations and publications.



Grapher is extremely flexible. For example, you can combine multiple plot types, display graph titles, customize axis settings, and more.

Grapher

System Requirements

The minimum system requirements for **Grapher** are:

- Windows 7 SP1, 8 (excluding RT), 10 or higher
- 512MB RAM minimum for simple data sets, 1GB RAM recommended
- At least 500MB free hard disk space
- 1024x768 or higher monitor resolution with a minimum of 16-bit color depth

Installing Grapher

Installing **Grapher** requires Administrator rights. Either an administrator account can be used to install **Grapher**, or the administrator's credentials can be entered before installation while logged in to a standard user account. If you wish to use a **Grapher** single-user license, the product key must be activated while logged in to the user account under which **Grapher** will be used. For this reason, we recommend logging into Windows under the account for the **Grapher** user, and entering the necessary administrator credentials when prompted.

Golden Software does not recommend installing **Grapher 15** in the same location as any previous version of **Grapher**. **Grapher 15** can coexist with older versions (e.g. **Grapher 14**) as long as they are installed in different directories, which is the default.

To install **Grapher** from a download:

1. Log into Windows under the account for the individual who is licensed to use **Grapher**.
2. Download **Grapher** according to the emailed directions you received or from the **My Products** page of the Golden Software [My Account](#) portal.
3. Double-click on the downloaded file to begin the installation process.
4. Once the installation is complete, run Grapher.
5. License **Grapher** by activating a single-user license product key or connecting to a license server.

Uninstalling Grapher

To uninstall **Grapher**, follow the directions below for your specific operating system. We recommend deactivating your license prior to uninstalling **Grapher** if you are using a single-user license.

Windows 7

To uninstall **Grapher**, go to the *Windows Control Panel* and click the *Uninstall a program* link. Select **Grapher 15** from the list of installed applications. Click the *Uninstall* button to uninstall **Grapher 15**.

Windows 8

From the *Start* screen, right-click the **Grapher 15** tile and click the *Uninstall* button at the bottom of the screen. Alternatively, right-click anywhere on the *Start* screen and click *All apps* at the bottom of the screen. Right-click the **Grapher 15** tile and click *Uninstall* at the bottom of the screen.

Windows 10

Select *Settings* in the **Start** menu. In *Settings*, select **Apps | Apps & features**. Select **Grapher 15**, and then click *Uninstall*. To uninstall **Grapher** from the Windows Control Panel, click **Programs | Programs and Features**. Next select **Grapher 15** and click *Uninstall*.

Grapher Trial Functionality

The **Grapher** trial is a fully functioning time-limited trial. This means that commands work exactly as the commands work in the full program for the duration of the trial. The trial has no further restrictions on use. The trial can be installed on any computer that meets the system requirements. The trial can be licensed by activating a product key or connecting to a license server.

Scripter

The [Scripter](#) program, included with **Grapher**, is useful in creating, editing, and running script files that automate **Grapher** procedures. By writing and running script files, simple mundane tasks or complex system integration tasks can be performed precisely and repetitively without direct interaction. **Grapher** also supports ActiveX Automation using any compatible client, such as Visual BASIC. The automation capabilities allow **Grapher** to be used as a data visualization and graph generation post-processor for any scientific modeling system.

The [script recorder](#) records commands in a script as you perform them in **Grapher**. Run the script, and **Grapher** repeats the steps. This is ideal for users that need to perform repetitive tasks but are unfamiliar with automation or for advanced users who do not want to manually enter all of the syntax.

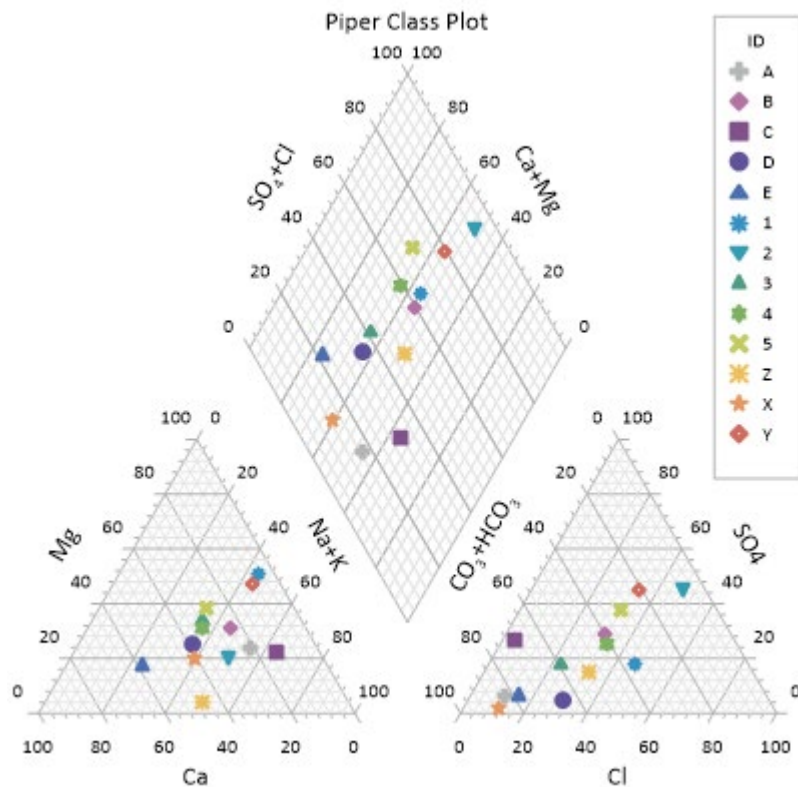
Grapher

Three-Minute Tour

We have included several [sample files](#) with **Grapher** so that you can quickly see some of **Grapher's** capabilities. Only a few example files are discussed here, and these examples do not include all of **Grapher's** many plot types and features. The **Object Manager** is a good source of information as to what is included in each file.

To view the sample files:

1. Open **Grapher**.
2. Select *Sample Files* in the *Files* list of the [Welcome to Grapher](#) dialog.
3. Select a sample file from the *Sample Files* list.
4. Click the *Open* button. The sample file is now displayed. Repeat as necessary to see the files of interest.
5. Click on various parts of the graph, axes, and plots in the **Object Manager**. View the object properties in the **Property Manager**.



The piper class plot.grf sample file provides an example piper class plot with axis and graph titles, as well as a class legend.

Using Grapher

Graphs can be created in several ways in **Grapher**. The **Home | New Graph** commands create a graph with a single plot, and then the **Add to Graph** commands can be used to add plots and features as desired. The [Graph Wizard](#) quickly creates a new graph with one or more plots from a single data file. The **Graph Wizard** can also be used to add features to the graph, such as legends and titles, as well as to apply a color palette to the plots in the graph.



Using Scripter

Tasks can be automated in **Grapher** using Golden Software's **Scripter** program or any ActiveX Automation-compatible client, such as Visual BASIC. A script is a text file containing a series of instructions for execution when the script is run. **Scripter** can be used to perform almost any task in **Grapher**. You can do practically anything with a script that you can do manually with the mouse or your keyboard. Scripts are useful for automating repetitive tasks and consolidating a sequence of steps. **Scripter** is installed in the same location as **Grapher**. Refer to the *Grapher Automation* help book for more information about **Scripter**. We have included several example scripts so that you can quickly see some of **Scripter's** capabilities.

Example Script Files

A variety of script files are included with **Grapher**. You can run the script as is or you can customize the script.

To run a sample script in **Grapher's** [Script Manager](#):

1. Open **Grapher**.
2. Check the **View | Display | Script Manager** command. A check mark will indicate the manager is displayed.
3. In the **Script Manager**, click the  button.
4. In the **Open** dialog, select a sample .BAS file and click *Open*. The sample scripts folder is located at C:\Program Files\Golden Software\Grapher 13\Samples\Scripts by default. The script is displayed in the **Script Manager**.
5. Click the  button to execute the script.

To run a sample script in **Scripter**:

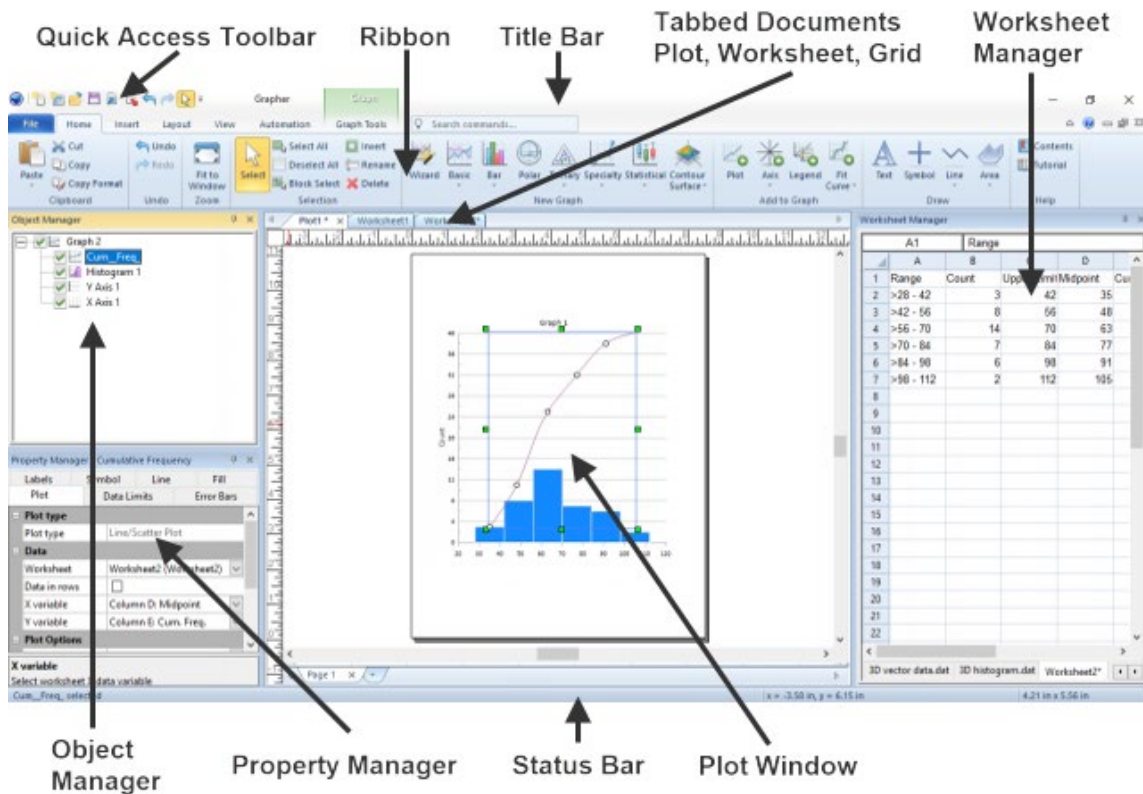
1. Open **Scripter** by navigating to the installation folder, C:\Program Files\Golden Software\Grapher 15. Double-click on the Scripter.exe application file.

Grapher

2. Click the **File | Open** command and select a sample script .BAS file from the C:\Program Files\Golden Software\Grapher 15\Samples\Scripts folder.
3. Click the **Script | Run** command to execute the script.

Grapher User Interface

Grapher contains four document window types: the plot window, worksheet window, grid window, and Excel worksheet window. Graphs and maps are displayed and edited in the plot window. Tabular data files are displayed, edited, transformed, and saved in the worksheet window. A native Excel workbook can be opened in the Excel window. Grid files can be viewed in the grid window. The **Grapher** user interface consists of the quick access toolbar, ribbon tabs and commands, tabbed documents, managers, and a status bar.



The **Grapher** user interface includes several managers and windows with a command ribbon at the top.

The following table summarizes the function of each component of the **Grapher** layout.

Component Name	Component Function
Ribbon	The ribbon contains the commands used to run Grapher . Some commands are unique to the plot document , worksheet document , and grid document .
Tabbed Windows	Multiple plot windows, worksheet windows, Excel worksheet windows and grid windows can be displayed as tabs. Click on a tab to display the window.
Plot Window	The plot window contains the graphs and other graphics in one or more pages.
Worksheet Window	The worksheet window displays the contents of the plot data sources and data files.
Status Bar	The status bar shows information about the activity in Grapher . The status bar is divided into three sections that contain information about the selected command or object position, the cursor position, and the size of the selected object.
Object Manager	The Object Manager contains a hierarchical list of objects in a Grapher plot window; these objects can be selected, arranged, and renamed in the Object Manager . The Object Manager is initially docked on the left side above the Property Manager .
Property Manager	The Property Manager lists the properties of a selected object. Multiple objects can be edited at the same time by selecting all of the objects and changing the shared properties. The Property Manager is initially docked on the left side below the Object Manager .
Script Manager	The Script Manager controls scripts that are recorded and run within Grapher . Right-click in the Script Manager to see relevant menu commands for opening, saving, and running scripts. The Script Manager is hidden by default.
Worksheet Manager	The Worksheet Manager contains a view of all data loaded into Grapher . Edits made in the Worksheet Manager are automatically reflected in the graph. Right-click in the Worksheet Manager to save, edit, transform, sort, or obtain statistics on cells. When plots are first created or when they are opened from a GRF file, the data file contents is displayed in the Worksheet Manager . When a GPJ file is opened, the embedded data is displayed in the Worksheet Manager .

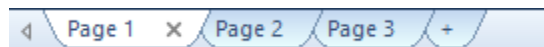
Grapher

Plot Window

A plot window is the area used for creating and modifying graphs. When you first open **Grapher**, you can choose to start from an empty plot window. Multiple plot windows can be open at one time. Click the [document tabs](#) to easily move between multiple plot windows.

Plot Document Pages

A plot document can have multiple pages. By default a plot document is created with a single page. Add pages to the plot document by clicking the + button next to the page tabs. Pages are displayed as tabs at the bottom of the plot window. Remove pages from the plot document by clicking the X on the tab. Double-click the tab name, type a new name, and press ENTER to rename the page.

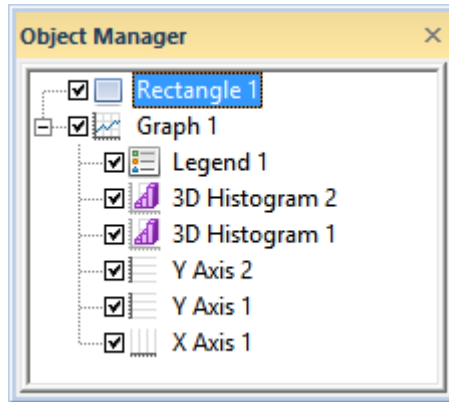


The page tabs are displayed at the bottom of the plot document.

Click the tab to activate the page. The active page is displayed in the plot window. Only the active page is [printed](#) or [exported](#). When saving to a Grapher 13 or earlier file format, only the active page is saved.

Object Manager

The **Object Manager** contains a hierarchical list of the objects in a **Grapher** plot window. The objects can be selected, arranged, and renamed in the **Object Manager** or with ribbon commands. Changes made in the **Object Manager** are reflected in the plot window, and vice versa.



The **Object Manager** contains a list of all objects in a plot window. The **Object Manager** can be used to select objects, arrange objects, and control object visibility.

Each item in the **Object Manager** list consists of an icon indicating the object type, a text label for the object, and a visibility check box. A check mark indicates that the object is visible. An empty box indicates that the object is not visible. Click the check box to change the visibility of the item. Invisible objects do not appear in the plot window or on printed output.

To change the visibility for multiple selected objects, right-click in the **Object Manager** and click **Toggle Visibility**. Visible selected objects will be hidden, and hidden selected objects will become visible.

If an object contains sub-objects, a or displays to the left of the object name. Click the or icon to expand or collapse the list. For example, a graph object contains a plot, e.g., line/scatter, plus at least two axes. To expand the tree, click on the icon, select the item and press the plus key (+) on the numeric keypad, or press the right arrow key on your keyboard. To collapse a branch of the tree, click on the icon, select the item and press the minus key (-) on the numeric keypad, or press the left arrow key.

Click on the object name to select an object and display its properties in the [Property Manager](#). The plot window updates to show the selected object with a selection bounding box and the status bar displays the name of the selected object. To select multiple objects, hold down the CTRL key and click on each object. To select multiple adjacent objects at the same

Grapher

level in the tree, click on the first object's name, hold down the SHIFT key, and then click on the last object's name.

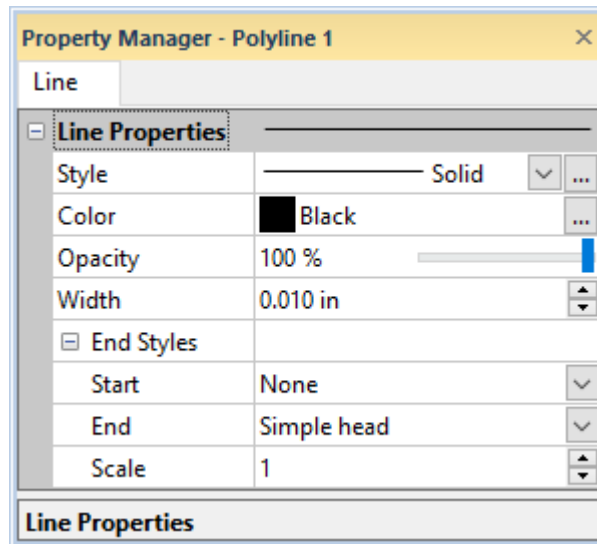
Select the object and then click again on the selected object (two slow clicks) to edit the object name. You must allow enough time between the two clicks so the action is not interpreted as a double-click. Enter the new name into the box. Alternatively, right-click on an object name and click **Rename Object**, select an object and click the [Home | Selection | Rename](#) command, or select an object and press F2. Enter a name in the **Rename Object** dialog and click OK to rename the object.

To change the display order of the objects with the mouse, select an object and drag it to a new position in the list above or below an object at the same level in the tree. The cursor changes to a black right arrow if the object can be moved to the cursor location or a red circle with a diagonal line if the object cannot be moved to the indicated location. For example, a line/scatter plot can be moved anywhere within its graph object or into another graph object, but not into a group object. Objects can also be arranged using the [Layout | Move](#) commands: **To Front**, **To Back**, **Forward**, and **Backward**.

To delete an object, select the object and press the DELETE key. Some objects cannot be deleted. For example, you cannot delete an axis that is currently in use by a plot in a graph.


Property Manager

The **Property Manager** allows you to edit the properties of an object, such as a plot or axis. The **Property Manager** contains a list of all properties for a selected object. The **Property Manager** can be left open so that the properties of selected objects are always visible.



The **Property Manager** displays the properties associated with the selected object.


Sections with multiple properties appear with a plus \oplus or minus \ominus to the left of the name. To expand a section, click on the \oplus button. To collapse a section, click on the \ominus icon. For example, the expanded *End Styles* section contains three properties: *Start*, *End*, and *Scale*.

The **Property Manager** displays the properties for selected objects. To change a property, click on the property's value and type a new value, scroll to a new number using the \updownarrow buttons, select a new value using the  slider, or select a new value from the list or palette. For example, a polyline has *Style*, *Color*, *Opacity*, and *Width* properties and an *End Styles* sub-section with *Start*, *End*, and *Scale* properties. Changing the *Color* requires clicking on the current color and selecting a new color from the [color palette](#). Changing the *Opacity* requires typing a new value or clicking on the slider bar and dragging it left or right to a new value. Changing the *Width* requires typing a new number or scrolling to a new number. Changing the *End* requires clicking on the existing style and clicking on a new style in the list.

The selections in the **Property Manager** control which properties are displayed. Properties are hidden when they do not have an effect on the object. For example when the *Gradient* is set to *None* on the [Fill](#) page, the *Colormap* and *Fill orientation* properties are hidden. When the *Gradient* is changed to *Linear*, the *Colormap* and *Fill orientation* properties are displayed, while the *Pattern*, *Foreground color*, and *Foreground opacity* properties are hidden.

Grapher

You can modify more than one object at a time. For example, click on *X Axis 1* in the **Object Manager**, and then hold the CTRL key and click *Y Axis 1*. You can change the properties of each axis simultaneously in the **Property Manager**. Only shared properties may be edited when multiple objects are selected. For example, only the line properties are displayed when both a polyline and polygon are selected. You can edit multiple plots of the same type at one time. However, no properties are displayed when the selected plots are different [plot types](#).

Object properties automatically update after you select an item from a palette, press ENTER, or click outside the property field. When using the  buttons or slider, changes are displayed on the graph immediately.

Press ALT+ENTER to access the **Property Manager**. Pressing ALT+ENTER will also show the **Property Manager** if it is hidden or pinned. When working with the **Property Manager**, the up and down arrow keys move up and down in the **Property Manager** list. The TAB key activates the highlighted property. The right arrow key expands collapsed sections, e.g., *PlotProperties*, and the left arrow collapses the section.

Worksheet Manager

The **Worksheet Manager** contains a view of all data loaded into **Grapher**. Multiple data files are displayed in a tabbed format. By default, the **Worksheet Manager** appears at the right of the **Grapher** window.

Right-click inside the **Worksheet Manager** to open the worksheet menu commands. These commands are named similarly to the commands on the ribbon. Use the **Home | New Graph** commands to create a graph in the current plot window. Use the [Data Tools](#) menu commands to transform, sort, or generate statistics for the worksheet data.

Script Manager

The **Script Manager** allows you to work with automation within **Grapher** rather than opening Golden Software's automation program, **Scripter**, separately. All of **Scripter's** functionality is available within the **Script Manager**. Right-click in the **Script Manager** to access **Scripter's** menu commands.

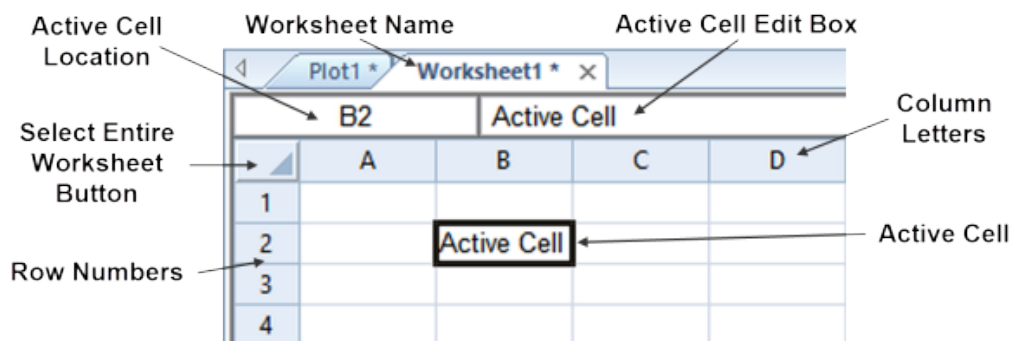
By default, the **Script Manager** is not displayed. Click the **View | Display | Script Manager** or **Automation | Script Manager | View Script Manager** command to show or hide the **Script Manager**. A check mark indicates the manager is visible. No check mark indicates the manager is

hidden. When the **Script Manager** is displayed, the default location is tabbed with the **Worksheet Manager**.

Worksheet Window

The worksheet window contains commands to display, edit, enter, and save data. The worksheet window has several useful and powerful editing, transformation, and statistical operations available. Several import and export options are available for opening data files from other spreadsheet programs. The **Data Tools** tab is automatically selected when you open or switch to a worksheet document.

To enter data in a worksheet, use the [File | Open](#) command to open an existing data file or click the [File | New | Worksheet](#) command to create a blank worksheet. Data already used to create plots can be opened in the worksheet window with the [Graph Tools | Worksheet | Display](#) command.



The components of a worksheet window shown above are described in the following table.

Column Letters	The column letters identify a column in the worksheet.
Row Numbers	The row numbers identify a row in the worksheet.
Active Cell	The active cell is highlighted with a bold outline. The active cell receives data input (numeric values or text strings) from the keyboard. Only one cell is active at a time.
Active Cell Location	The active cell location is specified by column letter and row number.
Active Cell Edit Box	The active cell edit box displays the contents of the active cell. Data typed into an empty cell appears in both the edit box and the active cell.

Worksheet Name The worksheet name displays the data file name or the worksheet number if the data file has not been saved.

[Select Entire Worksheet Button](#) The select entire worksheet button is used to select all cells in the worksheet.

Status Bar

The status bar is located at the bottom of the window. Check or clear the **View | Display | Status Bar** command to show or hide the status bar. The status bar displays information about the current command or selected object in **Grapher**. The status bar is divided into three sections. The left section shows the selected object name. If a menu command is selected, a brief description of the command appears in the left section. The middle section shows the cursor coordinates in page units. The middle section also displays the graph's X and Y coordinates when using the **Graph Tools | Digitize** commands or when the *Display value on click* option is selected in the **Options** dialog. The right section displays the dimensions of the selected object.

Customizing the Quick Access Toolbar

The Quick Access Toolbar is a customizable toolbar. One method that can be used to add commands to the Quick Access Toolbar is to right-click on the command in the ribbon and click **Add to Quick Access Toolbar**. The command is automatically added to the end of the Quick Access Toolbar. To customize the commands and their locations on the Quick Access Toolbar, right-click the [ribbon](#) and click **Customize Quick Access Toolbar**.

Customizing the Ribbon

The ribbon is customizable in **Grapher**. To customize the commands in the ribbon, right-click the [ribbon](#) and select **Customize the Ribbon**. In the dialog, you can add new tabs, add groups, add commands to custom group, hide existing tabs or groups, and rearrange the tabs into an order that better fits your needs.

Customizing the Keyboard Shortcuts

Keyboard shortcuts can be changed by right-clicking on the ribbon and selecting **Customize the Ribbon**.


1. In the dialog, click the *Customize* button next to *Keyboard shortcuts*.
2. On the left side of the **Customize Keyboard** dialog, select the ribbon tab name in the *Categories* list where the desired command is located.
3. On the right side of the dialog, click on the command name in the *Commands* list.

4. Click in the *Press new shortcut key* box and press and hold the keys that should be used for the command. For instance, you might press and hold the CTRL, SHIFT, and H keys on the keyboard. The key names CTRL+SHIFT+H will be listed in the *Press new shortcut key* box. If no other command uses the key combination, the *Assigned to* section lists [Unassigned].
5. When the keys are unassigned, click the *Assign* button at the bottom of the dialog to assign the key combination to the selected command.



Changing the Window Layout

The [managers](#) display in a docked view by default. However, they can also be displayed as floating windows. The visibility, size, and position of each manager may also be changed.

Manager Visibility

Use the [View | Display](#) commands to show or hide the [Object Manager](#), [Property Manager](#), [Script Manager](#), [Worksheet Manager](#), and [Status Bar](#). A check mark indicates the manager is displayed. An empty check box indicates the manager is closed. Alternatively, you can click the  button in the title bar of the manager to close the manager window.

Auto-Hiding Managers

You can increase the plot document space by minimizing the managers with the *Auto Hide* feature. The manager slides to the side or bottom of the **Grapher** main window and a tab appears with the window name. To hide the manager, click the  button in the upper right corner of the manager. When the manager is hidden, place the cursor directly over the tab to display the manager again. Click the  button to return the manager to its docked position.

Docking Managers

Grapher has a docking mechanism that allows for easy docking of managers. Left-click the title bar of a manager and drag it to a new location while holding down the left mouse button. The docking mechanism displays arrow indicators as you move the manager around the screen. When the cursor touches one of the docking indicators in the docking mechanism, a blue rectangle shows the window docking position. Release the left mouse button to allow the manager to be docked in the specified location. Double-click the title bar of a manager to switch between the docked and floating positions.



The docking mechanism makes it easy to position managers.

Tabbed Managers

To create tabbed managers:

1. Left-click the title bar of the manager and drag over the other manager. A docking mechanism will be displayed.
2. Hover the cursor over the center of the docking mechanism. The blue rectangle shows where the tabbed manager will display.
3. Release the mouse button.

To return to individual managers from the tabbed view:

1. Click on the manager's name on the tab.
2. Drag the tab to a new position.

Restoring the Managers to Their Default Locations

If the managers have moved or become invisible, or if they are in undesired locations, you can use the [View | Display | Reset Windows](#) command to move them back to their original locations. You must restart **Grapher** for the changes to take effect.

File Types

Grapher primarily uses data files and **Grapher** files. Grid files can be used to create maps. Image files and vector data files can be imported into plot documents. There are three types of **Grapher** files: **Grapher** .GRF, .GPJ, and .GRT files. The type of file you create when [saving](#) your project should be determined by how you wish to link the plots and their data:

- The *Grapher File (*.grf)* file stores a link to the data file(s) used by the plots. Data files are saved separately from the GRF file. A GRF file and one or more data files are necessary to open a GRF file.
- The *Grapher Project (*.gpj)* file embeds the data for the plots in the GPJ file. When opening a GPJ file, the plots are recreated exactly as they were saved. No outside data file is necessary to open a GPJ file.
- The *Grapher Template (*.grt)* file does not embed the data nor store links to the data. Only the plot and graph properties and layout are saved. When opening a GRT file, **Grapher** will prompt you for the data files to use for your plots.

Grapher .GRF Files

Grapher .GRF files contain all of the information necessary to reproduce the graph, except for the data. When you save a **Grapher** file, all the scaling, formatting, and parameters for the graph are preserved in the file. **Grapher** .GRF files save a link to the data and do not store the data internally in the file. For example, if a .GRF file needs to be sent to a colleague, you would need to send the data file(s) used to create the graph in addition to the .GRF file. This format is preferred for graphs where the data changes periodically and needs to link to the external source data file. When opening a GRF file, the data files are reloaded into **Grapher**. If the data files haven't changed, the plots will look the exact same as when they were saved. However, if the data files have been changed, the plots will automatically update to reflect the changes in their source data. If the data files can't be found, **Grapher** will prompt you for the data files to use for your plots.

Grapher .GPJ Project Files

Grapher .GPJ files store all of the information necessary to reproduce the graph including embedding the data. All scaling, formatting, and parameters for the graph are preserved in the file. If a .GPJ file needs to be sent to a colleague, you would only need to send the .GPJ file. This format is preferred when you want to have the data and the graph contained in a single file and the data does not change often. If the embedded worksheets contain fewer than 16,384 rows x 1,048,576 columns, then cell formatting is maintained in the GPJ.

Grapher .GRT Template Files

Grapher .GRT files are used to create a template with set graphing preferences. A saved template file does not contain a reference to a specific data file. This means that once the template graph is created, you can use the template with any data set. You can use the template to set options such as the number of decimal places on axis tick mark labels, label angles, axis labels, graph titles, line plot colors, fill colors, symbol

Grapher

size, or any other graphing option. If a .GRT file is sent to a colleague, they can use their own data set with the file to create a graph based on the specifications in the template file. This format is preferred when the layout of the graph needs to remain consistent with a variety of similarly formatted data files.

Data Files

In most cases, there is a prompt for a data file when you create a graph in **Grapher**. Data files can be imported from a variety of sources, such as ASCII text files, Excel files, or database files. Data can be entered directly into **Grapher's** worksheet if the files do not already exist. The data needs to be in column and row format. Data files can also be created, edited, and saved in **Grapher's** worksheet. Some of the most commonly used data types are described in the following sections.

ASCII Data

ASCII files are generic format files that can be read or produced by most applications. There are three common ASCII data formats: .DAT, .CSV, and .TXT. These files can also be imported into most applications, including word processors, spreadsheets, and ASCII editors. The files differ in the types of delimiters, or column separators, between the data. ASCII files do not contain any worksheet formatting information such as row height, column width, or cell formatting. This format does not have a limitation on the number of rows or columns.

Excel Files

Microsoft Excel .XLS, .XLSX, and .XLSM files contain data and retain some cell formatting in **Grapher**. Some information, such as formulas, is ignored. Excel files can preserve all formatting information available in the Golden Software worksheet. An Excel 2003 .XLS worksheet has a 65,536-row limit and a 256-column limit; therefore, this format cannot be used to store very large data sets. An Excel 2007 .XLSX worksheet has a 1,048,576 row limit and a 16,384 column limit.

To save all the formatting, formulas, and worksheets in an .XLS or .XLSX file, you can use Excel directly in **Grapher**. Use the [File | Open Excel](#) command to utilize all of Excel's features and create graphs in **Grapher**. Excel disables the save command, so you can only use the **Save As** command and save to a new .XLS or .XLSX file.

Use Caution when Saving Excel Files!

Use the [File | Save To Multi-Sheet Excel File](#) command to save multiple worksheets in a single Excel document.

A file can be saved in an Excel format from **Grapher** worksheet, **but only one worksheet can be saved** when using the [File | Save](#) or [File | Save As](#) command. If a multi-worksheet Excel file is opened and saved as an .XLS or .XLSX file from the **Grapher** worksheet, be aware that only the single worksheet is saved in the document. If the existing file is overwritten, all the unused worksheets are destroyed. In this case, a warning message is issued. The message reads: *Saving this worksheet will destroy all but one of the sheets in the existing *.xls, *.xlsx file. To overwrite the file, click OK. To choose a different file name, click Cancel.*

Database Files

In **Grapher**, graphs can be created from Access .ACCDB and .MDB files and dBase .DBF files directly without first converting to a new worksheet. A graph is created directly from the database file and will reference the database. Changes made in the database table will automatically update the graph.

Other database formats can be imported into **Grapher's** worksheet. Click the **File | Open** command. In the [Open](#) dialog, click the *Database* button. Step through the dialogs to import the file and the database is converted into a worksheet format. These files cannot be saved in their native format, but you can save the files in any of the available worksheet formats by clicking the [File | Save As](#) command.

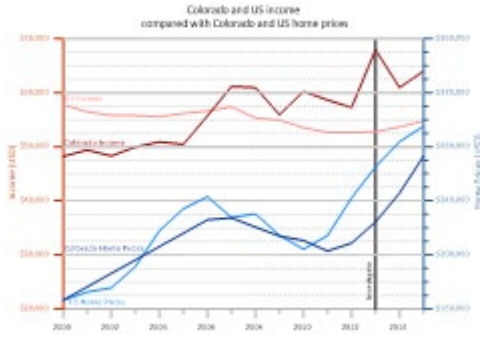
Grid Files

Grid files are used to produce grid-based contour and surface maps in **Grapher**. Grid files contain a regularly spaced rectangular array of Z values organized in columns and rows. Grid files can be imported from a wide variety of sources. For example, the *contour grid map.GPJ* sample file uses a Surfer .GRD file to create an [XY contour grid](#) map.

Plot Types

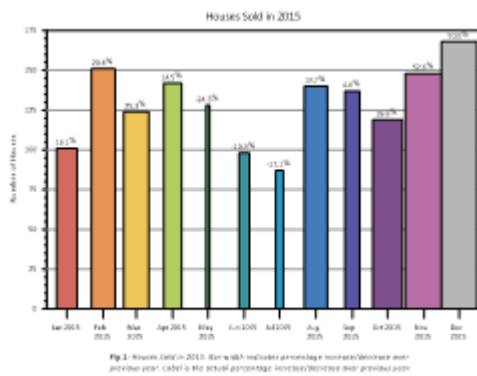
Several unique 2D and 3D plot types can be created, modified, and displayed with **Grapher**. The [Home](#) tab **New Graph** commands or the [graph wizard](#) are used to create a graph. The plot types are organized in the **Home | New Graph** groupby category:

Grapher



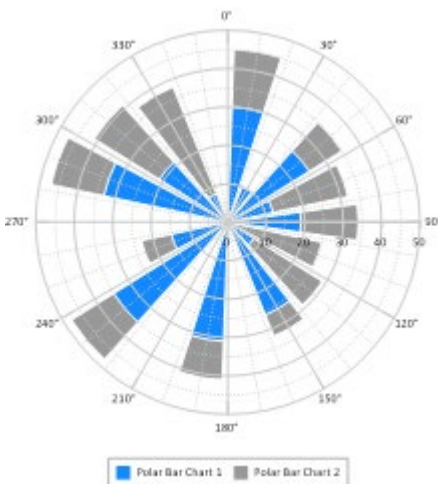
Basic Plots

Basic plots include 2D line plots, scatter plots, line/scatter plots, step plots, function plots, bubble plots, and class plots. In most cases, two variables are displayed on two axes. The Basic plots also include 3D ribbon plots, 3D wall plots, 3D step plots, and 3D function plots. In these cases, two variables are displayed with a 3D view. Basic plots also include XYZ line/scatter plot, bubble plots, and class plots. These are true three-dimensional plots, using at least three variables and three axes.



Bar Plots

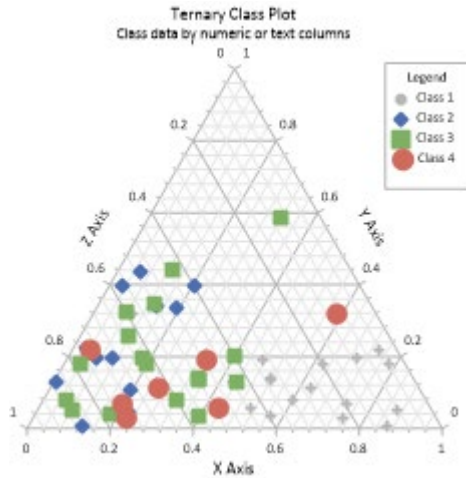
Bar plots include 2D, 3D, or XYZ horizontal and vertical bar charts and floating bar charts. For 2D bar charts, two variables are displayed on two axes. For 3D bar charts, two variables are displayed with a 3D aspect. 2D and 3D bar charts can also be created directly from category data. XYZ bar charts are true three-dimensional bar charts, where three variables are displayed on three axes.



Polar Plots

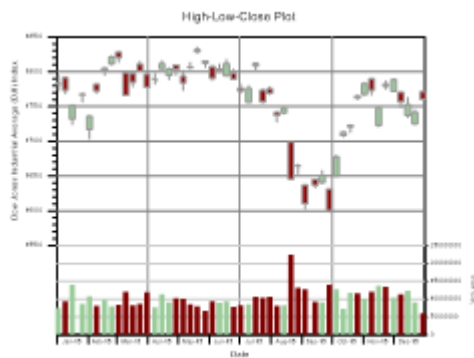
Polar plots include polar line plots, scatter plots, line/scatter plots, class plots, vector plots, function plots, bar charts, rose charts, wind charts, and radar charts. Data are positioned on a circular plot at an angle and a specified distance away from the center location. Rose charts are histograms where data are binned by angle value. Wind charts are similar to rose charts but the data in the bins is further categorized by a second

variable. Radar charts represent multi-variate data on equi-angular spokes, or radii.



Ternary Plots

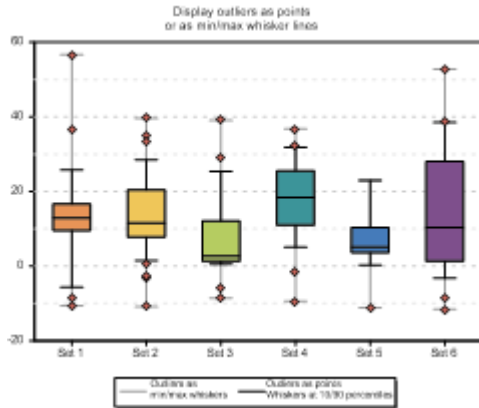
Ternary plots include ternary scatter, line/scatter, line, class, and bubble plots. The Ternary group also includes piper and piper class plots. All ternary plots display three variables on three axes, arranged in a triangle display. Classification information can be displayed on the plot when using a ternary class plot. Ternary bubble plots add a fourth dimension to the plot by varying symbol size based on another data column. Piper plots include two ternary plots, typically one cationic and one anionic. The cationic and anionic plots are projected onto a diamond plot.



Specialty Plots

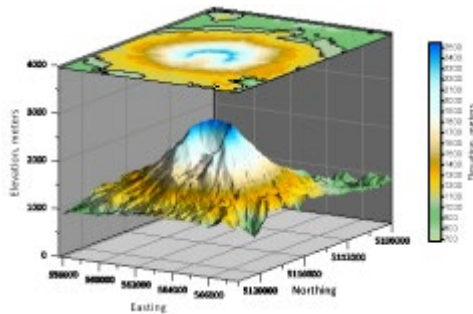
Specialty plots include high-low-close plots, candlestick plots, 2D and 3D vector plots, and stiff plots. High-low-close and candlestick plots display at least three variables on two axes. Vector plots display four or six variables on two or three axes. Vectors can be displayed between two points (XYXY and XYZ-XYZ plot types) or from a starting point to another point (XYAM and XYZ-dx, dy, dz plot types). Stiff plots show concentrations, typically anion and cation concentrations in water.

Grapher



Statistical Plots

Statistical plots include 2D and 3D vertical and horizontal histograms, box-whisker plots, 2D and 3D pie charts, Q-Q plots, and 2D and 3D doughnut plots. Histograms read raw data and count the number of instances in each bin and then display the bin frequency as a bar. Pie charts display data as percentages of a whole. Doughnut plots are similar to pie charts, but can be stacked and have a hole in the center. Box-whisker plots and notched box-whisker plots display median, quartile, and outliers for a data set. Q-Q plots display a data set compared to another data set or to the normal distribution.



Contour Surface Maps

Contour maps include contour data maps, grid maps, and function maps. Contour maps are 2D representations of three variables. The contour line defines the equal Z values across the map. Contour maps can be displayed with an XY or XZ orientation. Surface Maps include surface data maps, grid maps, and function maps. Surface maps are 3D color representations of three variables.

Creating Graphs

You can create graphs in several ways in **Grapher**. These methods include creating graphs with the [graph wizard](#), from the [Home](#) tab commands, from the [worksheet](#), and from [templates](#).

[Additional plots](#), [axes](#), [legends](#), [titles](#), [summation plots](#), [duplicate axes](#), and [magnifiers](#) can be added to the graph after it is created. All properties of the plot can be edited after the graph is created.

Creating Graphs with the Graph Wizard

The [Graph Wizard](#) leads you through the necessary steps to create a new graph. This is often the fastest way to make a graph with multiple plots from a single data file. The **Graph Wizard** also makes it easy to add items such as axes, legends, and titles.

To create a graph with the graph wizard:

1. Click the **Home | New Graph | Wizard** command.
2. In the **Graph Wizard - Select Data** dialog, select the data file for the graph from the *Select File* list. A preview of the data file is displayed in the *Data Preview* section.
3. Click the *Next* button.
4. In the **Graph Wizard - Select Plot Type** dialog, choose a plot type for the new graph. Filter available *Plot types* with the *Category* list or search for plot types with the *Search* bar. See a description of the selected plot type in the *Description* section, or click *Help* to view descriptions for all plot types.
5. After selecting a plot type, define the number of plots you wish to create and their associated data columns in the *Data Columns* section.
6. Click the *Next* button.
7. In the **Graph Wizard - Properties** dialog, select which graph components you wish to display. If the graph contains multiple plots, you can select a *Color palette* for the plots as well.
8. Click the *Finish* button to create the graph.

The graph is created with the specified properties. You can change the properties of a [selected](#) graph, plot, or axis through the [Property Manager](#).

Creating Graphs in the Plot Window

The most common method of creating graphs is to use the **Home | New Graph** commands. To create a graph in the plot window:

1. Click or scroll to the **Home** tab.
2. In the **New Graph** group, click the **Basic, Bar, Polar, Ternary, Specialty, Statistical, or Contour Surface** plot category.
3. Click on the plot type you would like to create.
4. Select a data file in the **Open Worksheet** dialog and click *Open*. If you are creating a contour grid map or surface grid map, you are prompted for a .GRD file. If you are creating any type of function plot, you are not prompted for a data or grid file.

Grapher

The graph is created with the default properties. You can change the properties of a [selected](#) plot or axis through the [Property Manager](#).

Creating Graphs from the Worksheet

If you are working with the data in the [worksheet](#), you can create a graph without switching to the plot window. Simply select the columns you wish to plot and choose the graph type you wish to create. To create a graph from the worksheet:

1. Open the worksheet you wish to use for the plot or plots.
2. Highlight the columns to use in the plot or plots.
3. Click the **Home** tab. If you are using the **Worksheet Manager**, right-click in the worksheet and select **Home | New Graph** from the context menu.
4. In the **New Graph** group, click the **Basic, Bar, Polar, Ternary, Specialty, Statistical, or Contour Surface** button. In the **Worksheet Manager**, click the **Basic, Bar, Polar, Ternary, Specialty, Statistical, or Contour Surface** in the context menu.
5. Select the plot type you would like to create and the graph is created with the default plot properties.

When creating a graph with multiple plots, the plot colors are automatically varied. You can change the properties of a [selected](#) plot or axis through the [Property Manager](#).

Creating Graphs Using Templates

[Templates](#) are used to set graphing preferences in **Grapher**. A template file does not contain any reference to a data file. This means that once the template graph is created, you can use the template to create a new graph with any compatible data set. To create a new plot from a template:

1. Click the **File | New | Plot from Template** command.
2. Select a .GRT template file in the **Open** dialog, and click *Open*.
3. Select the data file to use with the template. Select the *Use this worksheet for remaining items* option if all the plots in a template use the same worksheet.
4. Check the *Set columns* if you want to change the column specifications for individual plots in the graph.
5. Click the *Open* button and the new plot is created.

You can change the properties of a [selected](#) plot or axis through the [Property Manager](#). Refer to [template graphs](#) for information on creating or saving an edited template.

Scripter

Golden Software's **Scripter** is a program for developing and running scripts. A script is a text file containing a series of instructions carried out when the script is run. Instructions are written in a Visual BASIC-like programming language. **Scripter** offers many features to help you write, edit, and debug scripts. Its features include language syntax coloring, a list of the procedures defined in the script, an object browser for examining procedures available in external objects, a visual dialog editor, break points, single-step execution (including options to step over and to step out of procedures), a watch window for displaying the values of script variables, and more.

Grapher operations can be controlled through automation scripts. You can do almost everything with a script that you can do manually with the mouse or from the keyboard. Scripts are used to automate repetitive tasks or consolidate a complicated sequence of steps. Since **Grapher** exposes its services through automation, you can use any programming tool that accesses automation objects, such as Visual BASIC, Windows Scripting Host, and many of the Microsoft Office applications.

To open Scripter, click the Windows Start button and navigate to **Programs | Golden Software Grapher 15 | Scripter**. If **Scripter** is not present, the installation of **Scripter** may have been skipped when **Grapher** was installed. See the README.RTF file in the **Grapher** installation directory for information about the installation process.

Script Recorder

Grapher includes a **Script Recorder**, accessed through the **Automation | Scripts** commands. The **Script Recorder** records all commands as you make them in **Grapher**. When the script is run, **Grapher** performs all the steps for you. This is ideal for users that need to perform repetitive tasks but are unfamiliar with automation, for advanced users who do not want to manually enter all of the syntax, or for average users having difficulty with syntax. Check the box next to the **View | Display | Script Manger** command to display the **Script Manager** if you would like to view a script while it is recording. Recording must be stopped before editing scripts within the [Script Manager](#).

Tutorial Introduction

The tutorial is designed to introduce you to some of **Grapher's** basic features and should about an hour to complete. After you have completed the tutorial, you will have the skills needed to begin creating your own

Grapher

graphs with your own data. The lessons should be completed in order; however, they do not need to be completed in one session.

Tutorial Overview

The following is an overview of lessons included in the tutorial.

- [Starting Grapher](#) shows you how to begin a new **Grapher** session and open a new plot window.
- *Lesson 1* - [Viewing and Creating Data](#) opens and edits an existing data file and creates a new data file.
- *Lesson 2* - [Creating a Graph](#) shows you one way to create a graph.
- *Lesson 3* - [Editing Axes](#) shows you how to add an axis title, how to change the tick mark spacing, how to change the tick label source, and how to add a second linked axis.
- *Lesson 4* - [Adding and Editing a Legend](#) shows you how to add a legend and modify the legend's appearance.
- *Lesson 5* - [Working with the Script Recorder](#) shows you how to use the **Script Recorder** with the techniques in the previous lessons and adds a few new items. This is an optional advanced lesson. Because other features are covered in this advanced lesson, it is highly encouraged that you complete *Lesson 8*, even if you do not wish to use the script recorder.

A Note About the Documentation

Various font styles are used throughout the **Grapher** quick start guide and online help. **Bold** text indicates command names, dialog names, and page names. *Italic* text indicates items within a dialog such as section or group names, options, and property names. For example, the **Save As** dialog contains a *Save as type* list. Bold and italic text occasionally may be used for emphasis.

In addition, commands appear as **Home | Clipboard | Copy**. This means, "click or scroll to the **Home** tab at the top of the document, then click the **Copy** command in the **Clipboard** group." The first word is always the [ribbon](#) tab name, followed by the group name, and the last word is always the specific command.


Starting Grapher

To begin a **Grapher** session:

1. Navigate to the installation folder, C:\Program Files\Golden Software\Grapher 15 by default.
2. Double-click on the Grapher.EXE application file.

3. Select the type of document to create in the [Welcome to Grapher](#) dialog. For the tutorial, select *New Plot*.
4. A new empty plot window opens in **Grapher**. This is the work area for producing graphs.

If this is the first time that you have opened **Grapher**, you will be prompted to license **Grapher**. Activate your Single-User product key, select a license server, or continue using the trial. Your product key is located in the download instructions email. You may also access your product key at your Golden Software [My Account](#) page.


If you have already been working with **Grapher**, open a new plot window before starting the tutorial. To open a new plot window, click the [File | New | Plot](#) command, click the  button on the Quick Access Toolbar, or press CTRL+N on the keyboard.

Lesson 1 - Viewing and Editing Data

A data file is a file that contains columns or rows of data values. At minimum, two columns or rows are required to create most 2D graphs in **Grapher**. Data files can contain header information, labels, point identifiers, filter information, and data. It is often a good idea to examine the data file contents before creating your graph. The **Grapher** worksheet can be used to create a new data file. Refer to the [Worksheet Window](#) help topic for information about the various components of the worksheet window.

Opening an Existing Data File

If you would like to view or edit data, you can open the data file in **Grapher**. There are several ways to view a data file. If a graph has already been created, the most common method to view the data is to use the **Worksheet Manager**. If a graph is not yet created, you can open the data in the worksheet window.

1. Click the **File | Open** command, click the  button on the Quick Access Toolbar or press CTRL+O on the keyboard. The **Open** dialog displays.
2. If you are not in the Samples folder, browse to it. The Samples directory is located at C:\Program Files\Golden Software\Grapher 15\Samples by default. In the list of files, click *Tutorial.dat*.
3. Click *Open* to display the data in the worksheet window.

Grapher

Notice that there are several columns of data. Column A contains Month number data. Columns B through I contain site information. Column J contains an abbreviation of month names. Row 1 contains header text, which is helpful for identifying which column contains which data. When a header row exists, the information in the header row is used in the [Property Manager](#) when selecting worksheet columns.

	A1	Month									
	A	B	C	D	E	F	G	H	I	J	K
1	Month	Site A	Site B	Site C	Site D	Site E	Site F	Site G	Site H	Month Name	
2	1	45.2	26.2	42	63.6	27.7	36.1	27.1	33.7	Jan	
3	2	50.4	33.1	50.3	67.5	32.9	41.2	35.7	34.6	Feb	
4	3	51.2	37.7	53.5	68.3	38	44.8	41.7	37.8	Mar	
5	4	53.1	47.5	60.1	71.5	45.6	54.5	50.8	46.8	Apr	
6	5	57.2	54.2	66.2	74.1	58	60.5	55.5	57.9	May	
7	6	59.7	58.9	73.3	80.7	65.6	67.2	63.4	67	Jun	
8	7	62.2	64.1	78.9	83	69.4	74.4	67.4	71.8	Jul	
9	8	62.7	62.6	74.7	81.9	66.4	69.7	66.1	70.5	Aug	
10	9	58.5	58.3	70.5	81.3	61.9	66.3	61.8	65.2	Sep	
11	10	55.1	48.5	61.7	75.4	50.4	53.3	53.6	52.5	Oct	
12	11	48.5	28.8	48.3	73.8	38.3	45.6	34.4	44.5	Nov	
13	12	42.2	22.5	43.3	67.1	28.5	36.7	30.1	36.5	Dec	
14											

The data is displayed in a worksheet window. Note that each variable is a separate column. Row 1 contains a description of what the column contains.

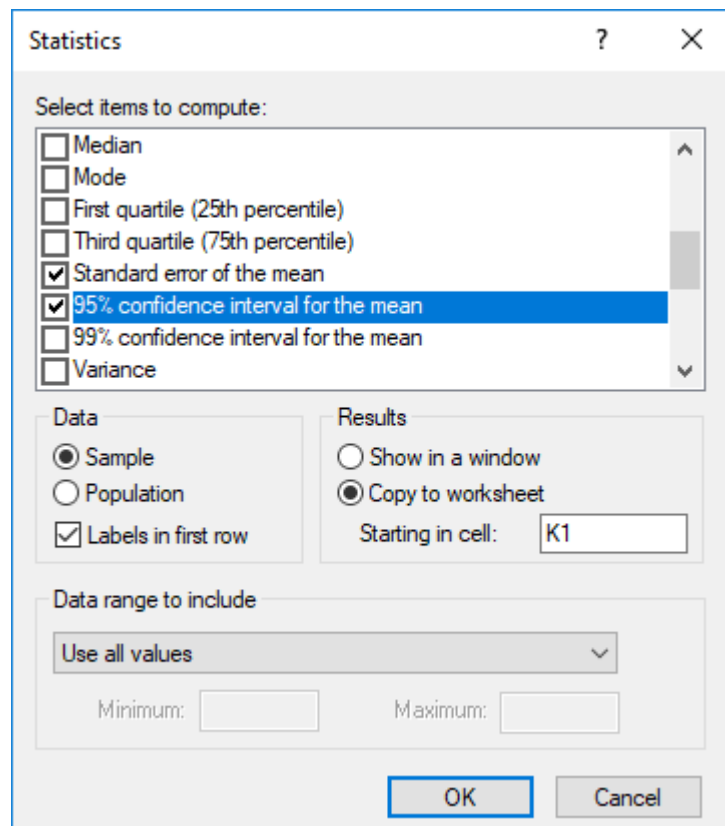
Editing Data

To edit any value, click in the cell to select it. Type information and the existing value is overwritten. Data can be [sorted](#), [transformed](#), or [transposed](#) in this window. You can also calculate [statistics](#) for the worksheet data in this window. New columns or rows can also be added. For instance, if we notice that the value in cell B13 is incorrect, we can change it.

1. Click in cell B13.
2. Type the value 46.2.
3. Press ENTER on the keyboard. The new value is entered in cell B13.

Calculating Statistics on the Data

Sometimes, it is necessary to know some basic [statistical](#) information about the data. For instance, what is the maximum value for each site and how do the average values relate to one another? This information can be calculated in the worksheet. To compare multiple site average values and compare confidence in the values, we could click on each column separately or we could display all of the information at once. To display all of the information at once:



Check all of the desired options and select Copy to worksheet to copy the results to the existing worksheet.

1. Click on the header B and hold down the left mouse button. Drag the mouse across all column headers between column B and column I, and then release the mouse button. All Site columns are now selected.
2. Click the **Data Tools | Data | Statistics** command.

Grapher

3. In the **Statistics** dialog, select the items that should be displayed. In this case, we are interested in the maximum value, average values, and confidence in the average values. Select *Maximum*, *Mean*, *Standard error of the mean*, and *95% confidence interval for the mean* in the *Select items to compute* list.
4. Select *Copy to worksheet* and set the *Starting in cell* to K1 to display the summary information in the same worksheet as the actual data instead of in a report window.
5. Click *OK* and the information is displayed in columns K through S.

Mean values can be compared visually. The standard error of the mean and 95% confidence value can also be compared. In addition, plots can be created directly from the summary statistics information, if desired.

K	L	M	N	O	P	Q	R	S
	Site A	Site B	Site C	Site D	Site E	Site F	Site G	Site H
Maximum	62.70	64.10	78.90	83.00	69.40	74.40	67.40	71.80
Mean	54.00	45.20	60.23	74.02	48.56	54.19	48.97	51.57
Standard error	1.83	4.32	3.67	1.91	4.46	3.86	4.22	4.20
95% confidence interval	4.04	9.51	8.08	4.20	9.81	8.50	9.28	9.25
Standard deviation	6.36	14.97	12.71	6.61	15.44	13.38	14.61	14.55

Visually inspect the statistical results to compare various site data.

Saving the Data File

When you have completed entering all of the data, the data can be saved in a variety of [formats](#).

1. Click the [File | Save As](#) command. The **Save As** dialog is displayed.
2. Specify a save location for the new data file, your *Documents* folder for example.
3. In the *Save as type* list, choose the [XLSX Excel 2007 Spreadsheet \(*.xlsx\)](#) option.
4. Type *Tutorial* in the *File name* field if it is not there already.
5. Click the *Save* button.

The file is saved in the XLSX format with the file name you specified. The name of the data file appears in the title bar and on the worksheet tab.

Lesson 2 - Creating a Graph

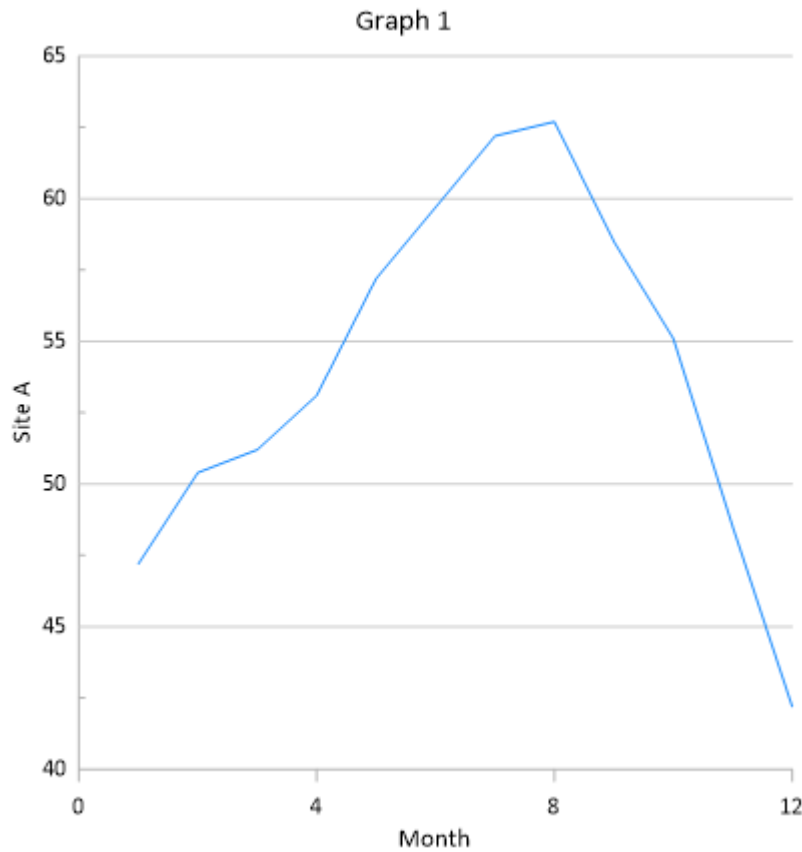
You can create graphs in several ways in **Grapher**. Graphs can be created with the [graph wizard](#), from the **Home | New Graph** commands, from the [worksheet](#), and from [templates](#). We will use the most common method for

the tutorial, creating a graph through the **Home** tab **New Graph** group. We will create a line/scatter plot from an existing data set.

To create a line plot graph:

1. If the worksheet window is still open, click the *Plot1* tab. Alternatively, you can create a new plot window by clicking the [File | New | Plot](#) command.
2. Click the [Home | New Graph | Basic | Line Plot](#) command.
3. In the **Open Worksheet** dialog, select the *Tutorial.dat* file you saved in Lesson 1. You can select the file in the file list section or in the *Open worksheets* section at the bottom of the dialog. You can open the *Tutorial.dat* sample file if you did not complete Lesson 1.
4. Once the file is selected, click the *Open* button.

A line plot is created using the default properties. By default, **Grapher** uses the first two columns containing numeric or date/time data in the data file. In this example, the X values are in column A and the Y values are in column B.





The line plot is created with the default settings.

Changing the Line/Scatter Plot Properties

You can edit any of the plot properties after the graph has been created. You can edit the columns used to create the plot, the plot line color, the symbol display, and label display, add fill to the plot, or change just about anything you see on the plot.

1. Select the plot by clicking *Site_A* in the **Object Manager**.
2. In the **Property Manager**, select the [Line](#) page
3. Set *Style* to *.1 in. Dash*.
4. In the *Plot Line Properties* section, set the *Width* to *0.03 in (0.08 cm)*.

The **Property Manager** contains all of the properties for the selected object on multiple pages. A line/scatter plot contains [Plot](#), [Data Limits](#), [Error Bars](#), [Labels](#), [Symbol](#), [Line](#), and [Fill](#) tabs. Click the tab name to open the property page. You may need to click on the  or  buttons next to the section names to access the properties, as discussed in the [Property Manager](#) help topic.

Adding a New Plot

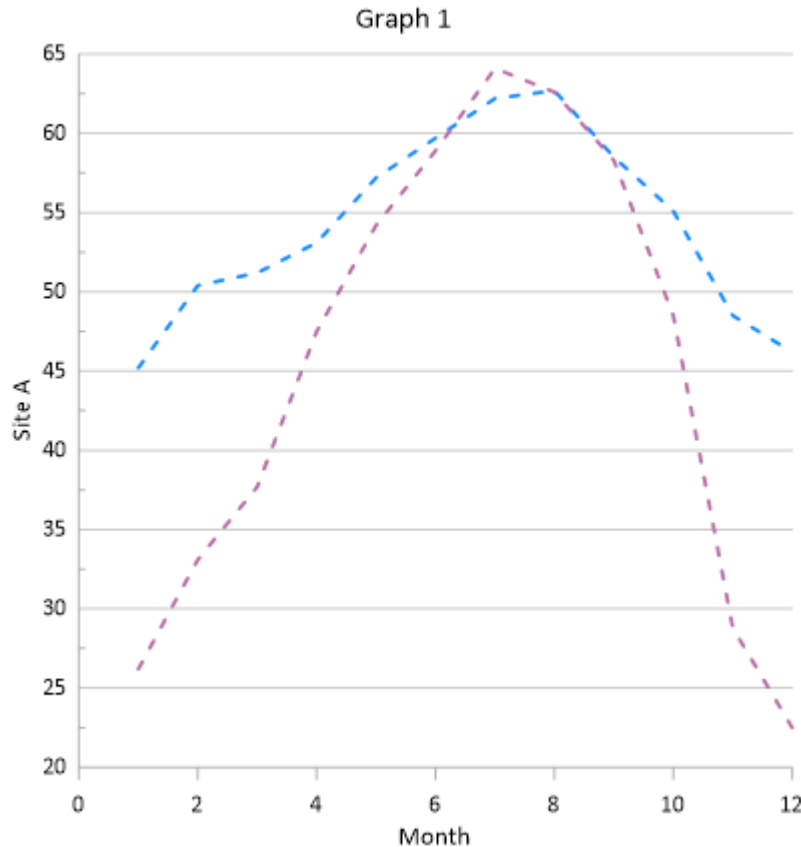
You can add several plots to one graph in **Grapher**. In *Tutorial.dat*, columns B through I are additional Y data, making it simple to add additional plots to the graph. To add a plot to the graph:

1. Click *Site_A* in the [Object Manager](#) to select the existing line plot.
2. Click the **Plot** tab in the **Property Manager**.
3. In the *Add to Graph* section, click *Create* next to the *New plot* field to add a new plot to the graph.

Clicking the *Create* button creates a new line/scatter plot using the same worksheet as the original plot. The same axes and plot properties are also used for the new plot, the plot color is automatically changed. The *X column* stays the same and the *Y column* increments to the next column with data. The new plot is selected after the command is executed. The **Property Manager** title changes to **Property Manager - Site_B** and the *Y variable* changes to *Column C: Site B*.

The *New plot* feature in the **Plot** page only creates plots from the original plot's data file. In addition, not all plot types have this option. When many plot types are selected, the **Graphs | Add to Graph** commands are available. These allow additional axes, duplicate axes, plots from a different data file, legends, summation plots, and magnifiers to be added

to the selected graph. For additional information on this command, see [Plot - Add to Graph](#). The [Graph Wizard](#) can also be used to quickly create a graph with multiple plots from a single data file.



The second line plot is added to the graph using the same axes and properties as the first plot.

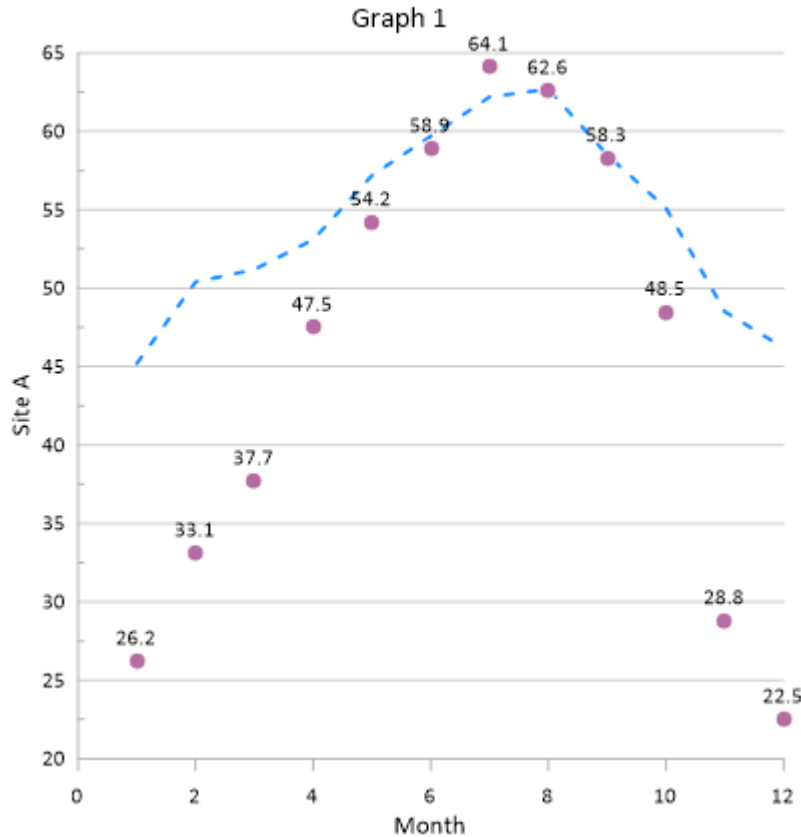
Displaying Plot Labels

Labels can be displayed at any data point on the plot. Labels can come from the X or Y data columns or from any other data column in the worksheet. To display labels for the data points:

1. Click *Site_B* in the [Object Manager](#) to select the plot.
2. In the [Property Manager](#), click on the **Labels** tab to display the plot labels properties.
3. In the *Label variable* property, select *Column C: Site B* from the list.

The Y data values from column B are shown as data point labels on the plot.


Grapher



Add plot labels to show values or distinguish between data points.

Moving Labels

Grapher allows you to manually move labels that are displayed for plots and axes with the **Move Labels** command. You can also move axis and graph titles and legend entries with the **Move Labels** command. To move the plot labels:


1. Click *Site_B* in the [Object Manager](#) to select the plot.
2. Click the [Graph Tools | Plot Tools | Move Labels](#) command. The **Move Labels** command remains highlighted to indicate **Move Labels** mode is active. The first label will appear with a box around it, .
3. Click on the label, hold down the left mouse button, and drag the label to the desired location. Alternatively, press the ARROW keys on the keyboard to move the label a small amount.
4. When you are finished moving this label, click on another label to move it. Repeat the clicking on labels and moving until all labels are in the desired location.
5. When finished, press the ESC key on the keyboard or click the **Graph Tools | Plot Tools | Move Labels** command again to end moving labels mode.

To return the labels to their original positions, you can use the [Graph Tools | Plot Tools | Reset Positions](#) command.

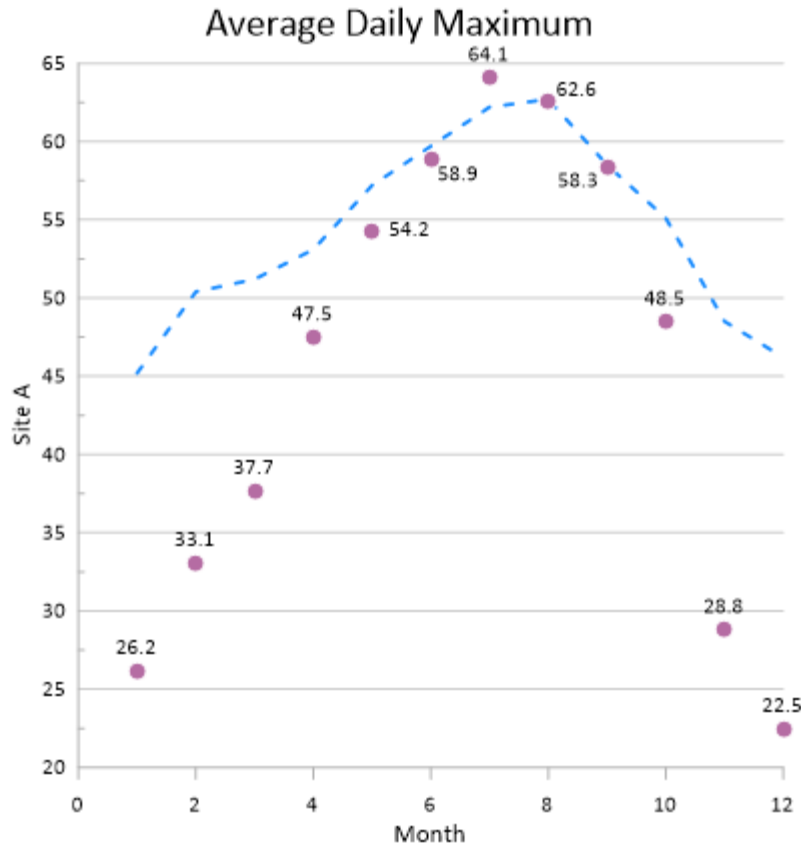
Adding a Graph Title

Graph properties control settings that affect the entire graph, such as titles, background line and fill colors, and fill patterns that fill between multiple plots. Let's edit the graph title and add a fill between the plots in the graph.

To add a graph title:

1. Click on the *Graph 1* object in the **Object Manager** to select the entire graph.
2. Click on the **Title** tab in the **Property Manager**.
3. In the *Text* property field, delete *Graph 1* and type the graph title, *Average Daily Maximum*.
4. Click the  button next to *Font* to open the section, if necessary.
5. Highlight the current *Size (points)* value and change it to 24.

The *Text* and *Font* properties can be used to quickly add and modify a simple text title. The **Text Editor** can be used to add multiple lines and various fonts, sizes, and colors to the title.



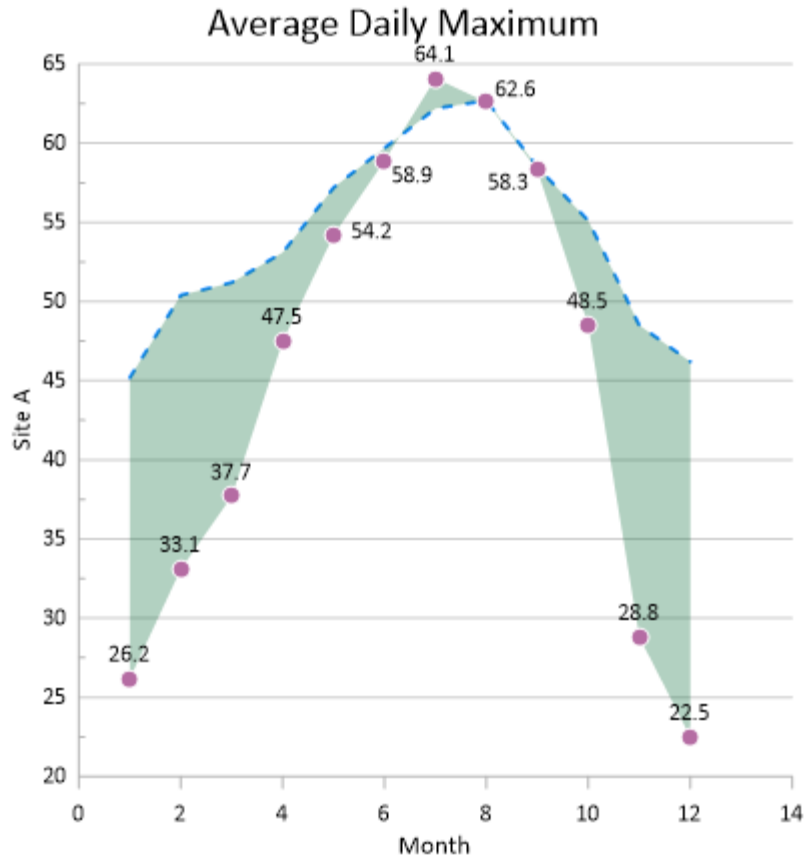
Add a graph title to display additional information about the graph.

Adding a Fill Between Plots

Adding a fill between the two plots will help indicate the difference in values for the plots. Color gradients and/or transparency can be used to enhance the appearance of the fill. To add fill between the plots:

1. Click *Graph 1* in the **Object Manager** to select the graph.
2. Click the **Fill** tab in the **Property Manager**.
3. In the *Between Plots Fill Properties* section, click *Add* in the *Add fill* field. The *Fills* list will be updated with *Fill 1*.
4. Set the *Plot one* property to *Site_A*.
5. Set the *Plot two* property to *Site_B*.
6. Expand the *Fill style* section, if necessary. Set the *Foreground color* to *Forest Green*.
7. Type *30* in the *Foreground opacity* property to set the opacity to 30%.



A semi-transparent green fill has been added between the *Site_A* line plot and *Site_B* scatter plot.



The fill between plots highlights the difference in values.

Lesson 3 - Editing Axes

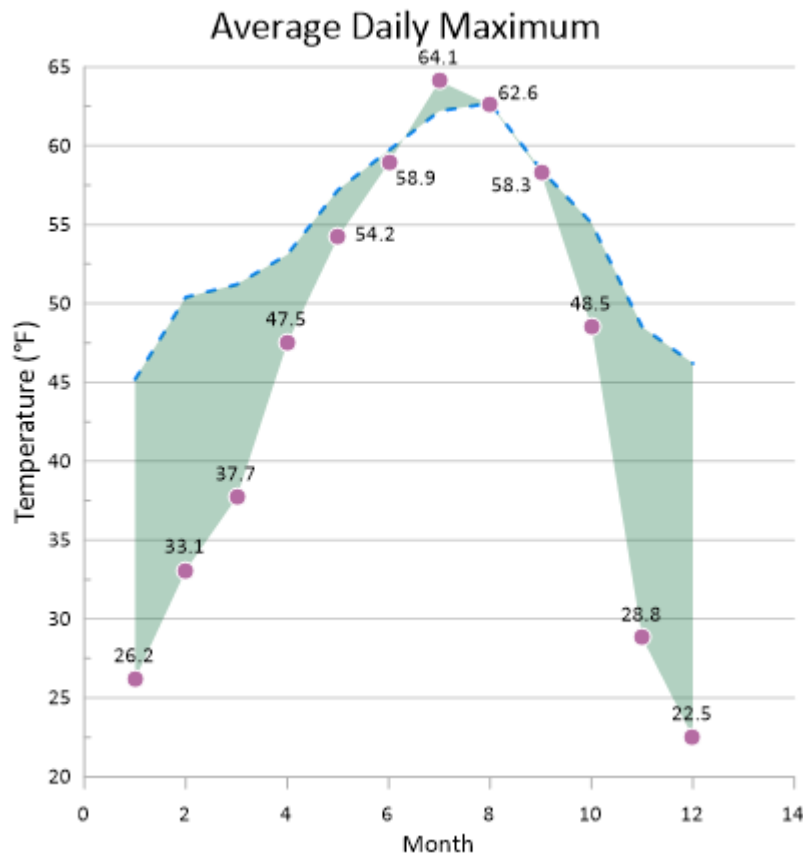
Grapher's axes can be modified to fit any design needs. The axis scale, axis length, tick mark spacing, tick mark labels, axis titles, colors, etc. can all be customized. Once the axis is selected, all of the axis properties are displayed in the [Property Manager](#). Standard axes have [Axis](#), [Ticks](#), [Labels](#), [Link Axis](#), and [Line](#) tabs. The axis title options are on the **Axis** tab. By default, the axis title is linked to the first row in the data file. In this example, we will change the Y axis title.

1. Click *Y Axis 1* in the **Object Manager** to select the Y axis.
2. Click the **Axis** tab in the **Property Manager** to edit the axis properties.
3. In the *Title* section, click the  button in the *Text* field. The [Text Editor](#) opens.
4. In the **Text Editor** dialog, highlight and delete the current linked text, <<@B1>>.
5. Type the word *Temperature (F)*.
6. Click in the space just before the *F* and click the  button.

Grapher

7. In the **Symbol Properties** dialog, change the *Symbol Set* to *Calibri* and select the degree symbol, *Number 144*. Click *OK* to return to the **Text Editor**. Alternatively, you can click in the space before the *F* and press and hold the *ALT* key while typing the number *0176*. This will also insert the symbol, without opening the **Symbol Properties** dialog. This is a good method to use when inserting Unicode or international characters in any text box.
8. Next, let's change the properties of the axis title. In the **Text Editor**, click and drag to highlight the text *Temperature (° F)*.
9. Highlight the current font size and type *18*, to make the font 18 points. The font size is located to the right of the font name in the upper left corner of the dialog. Only the highlighted text changes size, so be sure to select all of the text.
10. Click *OK* to close the **Text Editor** and save the changes to the axis title.

The text *Temperature (°F)* now appears along the Y axis.



*Axis titles are added by selecting the axis and then adding the Text in the **Axis** page of the **Property Manager**.*

Changing the Tick Mark Spacing

Tick marks are a means of indicating units of measure and are typically equally spaced like the lines on a ruler. [Tick marks](#) are the lines that emerge perpendicularly from an axis. Normally, the major tick marks are longer and the minor tick marks are shorter and appear between the major tick marks. For example, in the tutorial graph the major tick mark spacing on the Y axis is five units, e.g., 40, 45, 50, etc. In addition, there is a single unlabeled minor tick mark between each set of major tick marks. In the following exercise, the tick spacing is changed to one for the X axis. To change the tick mark spacing:

1. Click on the *X Axis 1* in the [Object Manager](#) to select it.
2. In the [Property Manager](#), click the **Ticks** tab to open the [tick mark properties](#).
3. Click the next to *Major Ticks*, if necessary.
4. Change the *Spacing* from 2 to 1. To change the *Spacing*, highlight the existing number 4, type the new number 1, and press ENTER on your keyboard. The word *Auto* is automatically replaced with the word *Custom*, indicating a custom spacing value.
5. Click the next to *Minor Ticks*, if necessary. If either the *Show ticks on top* or *Show ticks on bottom* options are selected in the *Minor Ticks* section, clear the check boxes.

Now the major tick marks spacing is 1, and no minor tick marks are displayed.

Changing the Tick Labels

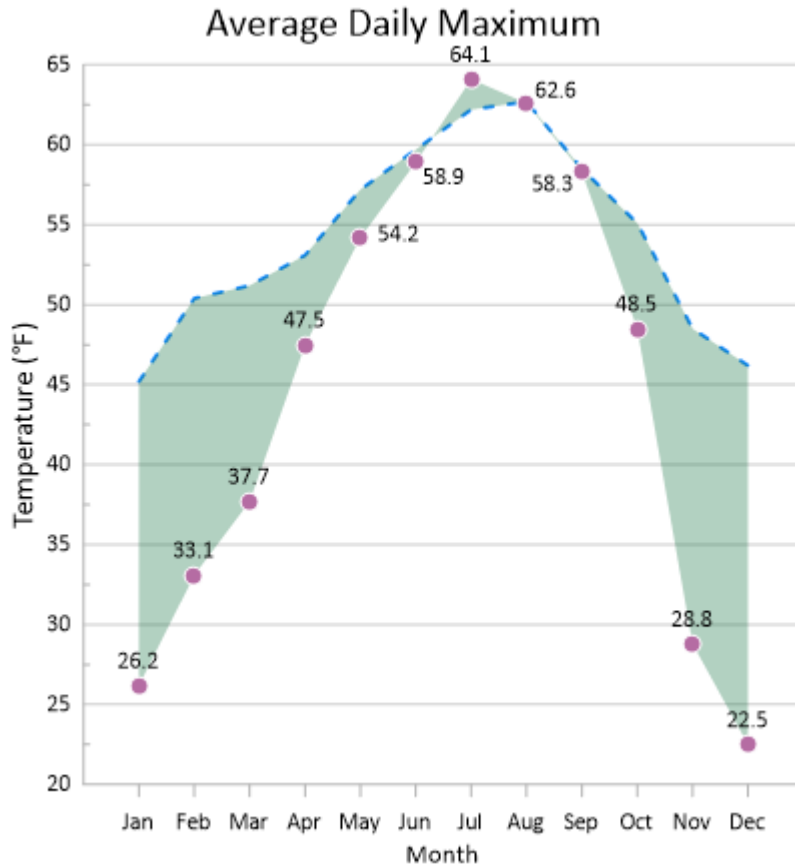
[Tick labels](#) can be displayed using different label sources including *Automatic*, [Date/Time](#), and *From worksheet*. Automatic labels are the default, however there may be situations where either using either a number to represent date/time values or labels directly from a worksheet source may be useful. For this tutorial, we will change the X Axis labels to use a data column from the worksheet where we have tick label names specified. To change the tick labels source:

1. Click on the *XAxis 1* in the [Object Manager](#) to select it.
2. In the [Property Manager](#), click on the **Labels** tab to open the [tick label properties](#).
3. Click the word *Automatic* next to the *Label source* option and select *From worksheet* in the list. This displays the *Worksheet* properties in the **Labels** page.
4. Next to *Worksheet*, click the word *None* to display a list of open worksheets and the *Browse* option. The *Browse* option would be used to select a worksheet that is not already open. In this tutorial, the worksheet we want to use is already open. Select the *Tutorial.xlsx* file from the list (or *Tutorial.dat* if you are using the sample file).

Grapher

5. Next to the *Data variable* property, click the current column and select *Column A: Month*.
6. Next to the *Label variable* property, click the current column and select *Column J: Month Name*.

The graph updates with the worksheet labels defined by the text in Column J of the worksheet.



You can customize tick labels to display information from a column in the worksheet.

If the axis labels or the axis title overlap or need to be moved slightly, the [Graph Tools | Plot Tools | Move Labels](#) command can be used to move the axis labels just as the plot labels were moved earlier in the tutorial.

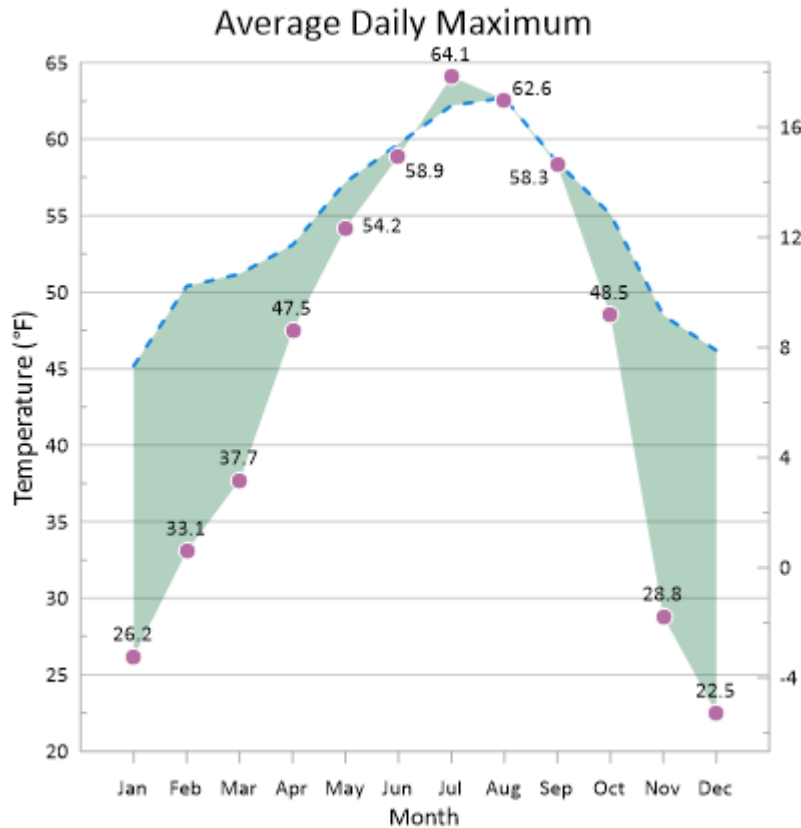
Adding a Secondary Linked Axis

Secondary axes are used to display different scales on the graph. In this example we will add a second Y axis to display temperature in degrees Celsius.

To add a linked axis:

1. Click on the *Graph 1* object in the [Object Manager](#).
2. Click the [Home | Add to Graph | Axis | Y Axis](#) command to add a second Y axis.
3. In the [Position Y Axis 2](#) dialog, check the *Flip tick marks and labels* check box.
4. Click *OK*.
5. Click the [Link Axis](#) tab in the [Property Manager](#) to link the new axis.
6. In the *Link axis* field, click *None* and select *Y Axis 1* from the list.
7. Check the *Link limits* check box.
8. In the *Limits $Y = F(X) =$* field, highlight the current text, type $(X - 32) * 5/9$, and press ENTER. The axis limits automatically update to apply the equation to the dependent axis limits. X in the equation refers to the controlling axis. So, the *Minimum* value (40) has 32 subtracted from it and then is multiplied by 5/9 to get the *Minimum* value for the new dependent axis. The same process is used with the *Maximum* value (70) to calculate the dependent axis maximum. The new axis *Minimum* is 4.444 and the *Maximum* is 21.111.
9. We also want the axis to stay located in the same relative position when the graph moves. Check the boxes next to *Link X position* and *Link Y position*. Now, when any portion of the graph is moved, the axis will also move.
10. Click the **Line** tab to open the *Y Axis 2* line properties.
11. In the *Grid Line Properties* section, clear the *Major tick grid line* option to remove the *Y Axis 2* grid lines.
12. Click the **Ticks** tab to open the *Y Axis 2* tick mark properties.
13. In the *Major Ticks* section, select the *Show ticks on left* option.

Now the secondary Y axis is displayed to the right of the graph with a degrees Celsius scale. When the graph is moved or the axis limits change, the *Y Axis 2* automatically updates to stay in the same relative location and the same relative axis limits as *Y Axis 1*. Use the processes from the previous lessons to add an axis title, change the tick mark spacing, and move any overlapping labels if you desire.



Add multiple axes to display alternate scales on the graph.

Lesson 4 - Adding and Editing a Legend

Legends provide information for interpreting a graph. You can add a legend for most plot types. Typically, legends are linked to the graph so that any changes made to the graph are automatically updated in the legend. The legend features, such as font and legend placement, can be customized. To add a legend:

1. Select the entire graph or select any part of the graph by clicking on an object in the graph, such as *Y Axis 1* or *Site_B*.
2. Click the [Home | Add to Graph | Legend](#) command.
3. Position the cursor over the legend in the plot window. Click and hold the left mouse button.
4. Drag the legend to any position you wish. Release the mouse button to position the legend in the new location.

A legend is created for the graph using the default properties. Currently, the legend displays *Legend* for the title and the plot names are linked to the names in the **Object Manager**.



*When a legend is first created, it contains the graph and plot names listed in the **Object Manager**.*

Changing the Number of Symbols

The number of symbols in a legend can be set from zero to three. To change the number of symbols:

1. Click on *Legend 1* in the **Object Manager** to select the legend.
2. In the [Property Manager](#), click on the **Legend** tab to open the legend properties.
3. Click the number 2 next to the *Number of symbols* option and select 1 from the list. The legend is updated displaying only one symbol.

Changing the Symbol Size

By default, legend entry symbols are the same size as the symbols in the plot. To change the symbol size to a custom value:

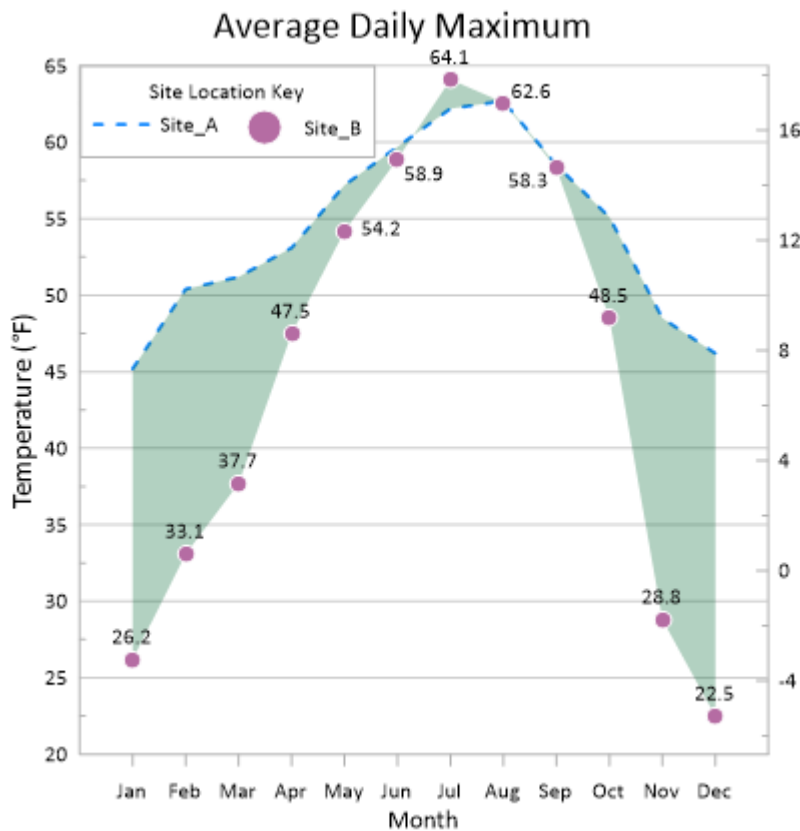
1. Click on *Legend 1* in the **Object Manager** to select the legend.
2. In the **Property Manager**, click on the **Legend** tab.
3. Click the *Edit* button next to the *Entries* option to open the **Legend Entries** dialog.
4. Select *Site_B* in the *Name* column and click the *Symbol Size* button to open the **Symbol Size** dialog.
5. Select the *Custom* option in the *Size* group.
6. Type *0.30* in. (*0.762* cm) in the *Custom* field.
7. Click *OK* in the **Symbol Size** dialog to make the change.
8. Click *OK* in the **Legend Entries** dialog.

The symbol size for Site A in the legend is now 0.3 inches, i.e. slightly larger than the symbols in the plot. If the other plot also displayed symbols, checking the *Apply to all entries* option in the **Symbol Size** dialog would make all plots show the symbols at the specified size.

Creating Multiple Columns in the Legend

Longer legends may need to be split into multiple columns to make the best use of the page space. To separate a legend into multiple columns:

1. Click on *Legend 1* in the **Object Manager** to select the legend.
2. In the **Property Manager**, click the **Legend** tab.
3. Highlight the value next to the *Number of columns* option. Type the value 2, and press ENTER on the keyboard. The legend is updated to show the two columns.



All properties of the legend can be modified.

Lesson 5 - Working with the Script Recorder

Scripter is Golden Software's automation program. You may record your actions in **Grapher** with the **Script Recorder** rather than writing the scripts manually in **Scripter**. See the [Script Manager](#), [Introducing Scripter](#), and [Script Recorder](#) help topics for more information about automation. The *Grapher Automation* book in the table of contents contains all of the help topics related to automation.

The **Script Recorder** can be used for many tasks. We will provide one scenario to demonstrate the **Script Recorder**. For example, let's say that you receive a data file once a quarter. The file has the same file name each quarter and the same number of columns, but the information contained in the file updates each time. Each quarter you need to create the graphs and then export the graph for reports. You can automate this process with the **Script Recorder** to save time and increase efficiency.

The graph in this example is fairly simple for time's sake, but keep in mind that complex graphs are very well suited to automation. We will record the process of creating a graph, changing some features of a graph, and adding a fit curve. The creation of this graph uses the features included in the previous lessons and includes a few new items. If you do not understand part of the directions, review the material in the previous lessons or consult the online help.

The [Script Manager](#) can be used to view scripts as they record.

1. Select the **View | Display | Script Manager** option to display the **Script Manager**.

A check mark is displayed next to visible managers. By default, the **Script Manager** is located at the right of the **Grapher** window, tabbed with the **Worksheet Manager**. Click the **Script Manager** tab to view the **Script Manager**. Right-click in the **Script Manager** to access the menu commands.

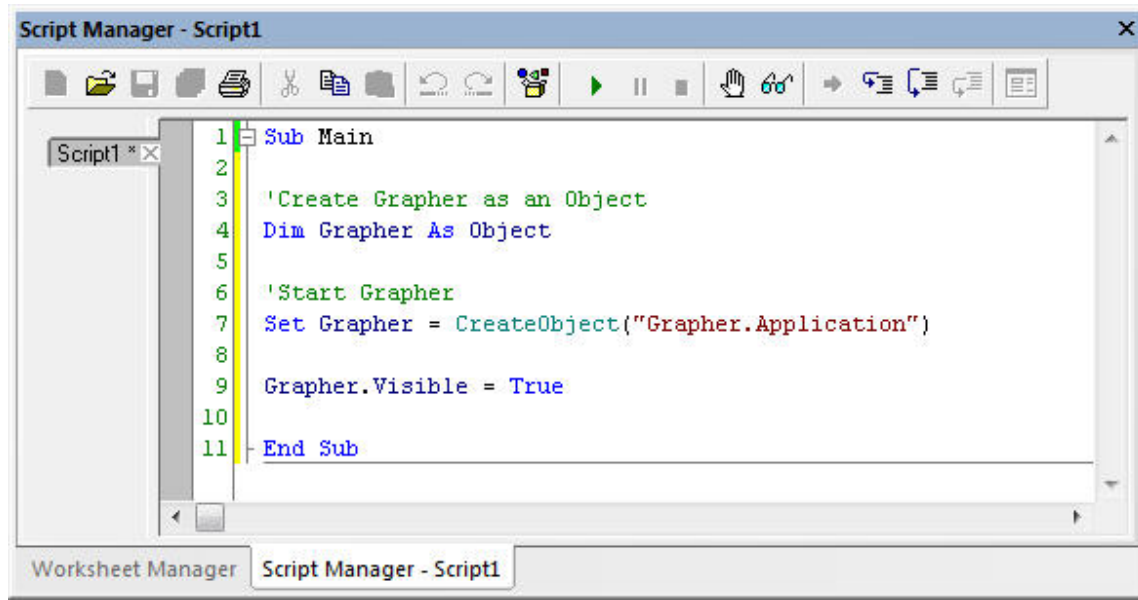
Start Recording

The **Automation** tab is used to start and stop recording scripts. Help for **Grapher** automation and Basic Language help information can also be accessed on the **Automation** tab. To start recording,

1. click the [Automation | Scripts | Record](#) command.

The **Record** button changes to **Stop Recording** to indicate that the script is recording. Information appears in the **Script Manager** as soon as recording begins. This code starts **Grapher** when the script is run later. Every action taken will be recorded in the script manager, until the recording is stopped.

Grapher



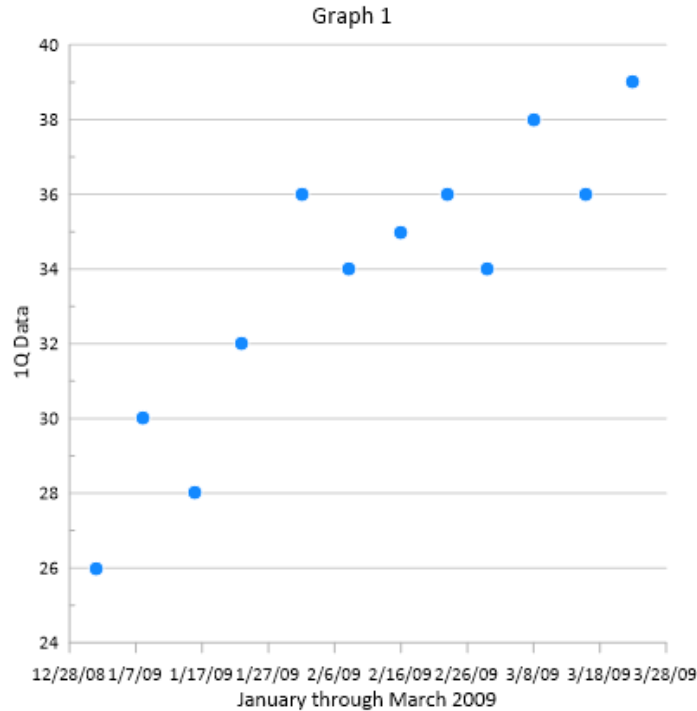
Code is immediately added to the **Script Manager** when script recording begins. This information starts **Grapher** when the script is run later. The text in green with an apostrophe prefix are comments.

Creating a Scatter Plot

To create a line plot in a new plot window:

1. Click the [File | New | Plot](#) command.
2. Click the **Home | New Graph | Basic | Scatter Plot** command.
3. The **Open Worksheet** dialog appears. Browse to **Grapher's** Samples folder. The location of this folder varies depending on where the software was installed. If the software was installed in the default folder, the path is C:\Program Files\Golden Software\Grapher 15\Samples.
4. Select the *tutorial script recorder.xls* file.
5. Click *Open* to create the default graph and scatter plot.


A scatter plot is created with the first two available columns using the default properties. **Grapher** can create graphs from data containing [date/time information](#). In this example, column A contains dates, so dates are plotted on the X axis.



The graph is created with the default properties.

Changing the X Axis Date/Time Tick Mark Spacing


Tick marks can be spaced at any desired interval. Tick marks can be changed to show one tick mark every X number of units or can be based on date/time units, such as minutes, days, months, or years. To set the tick marks to display one tick and label per month:

1. Click on the *X Axis 1* in the **Object Manager** to select it.
2. In the **Property Manager**, click on the **Ticks** tab to display the [tick mark properties](#).
3. Click the  to the left of the *Major Ticks* section to expand the major tick options, if necessary.
4. Check the box next to the *Use date/time spacing* option in the *Major Ticks* section.
5. Next to *Date/time spacing*, click *Every Year* to open the **Date/Time Spacing** dialog.
6. Change *Year* to *Month* and click *OK*.

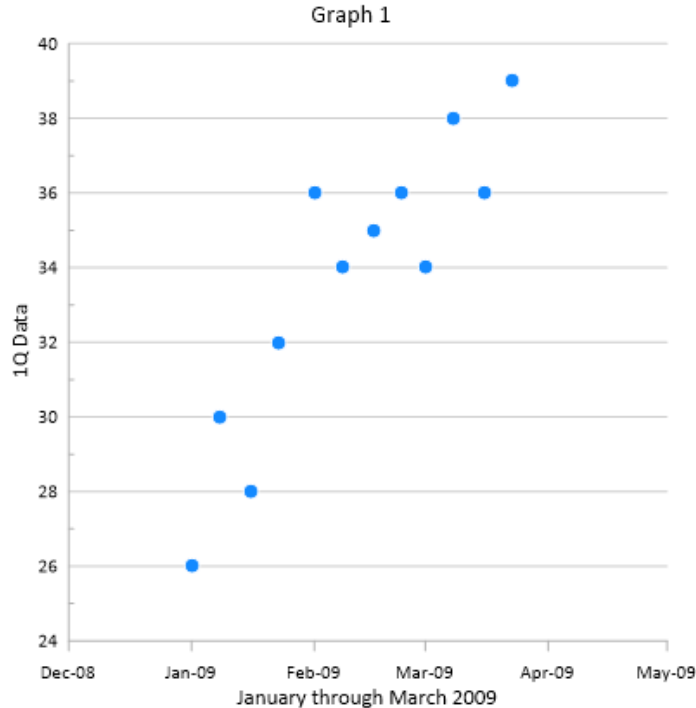
The X Axis major tick marks are now displayed at 1/1/09, 2/1/09, 3/1/09, and 4/1/09.

Changing the X Axis Date/Time Tick Label Format

There are a variety of tick label formatting options available. One of the options is to change the display of the date/time labels. There are many different predefined date/time labels available or you can create your own custom label format. To change the major label format from M/d/yy (1/1/2009) to MMM-yy (Jan-09):

1. Click on the *X Axis 1* in the **Object Manager** to select it.
2. In the **Property Manager**, click on the **Labels** tab to display the [tick label](#) properties.
3. Click the  to the left of the *General* section to expand the major label options, if necessary.
4. Click the *Select* button next to *Major label date/time format* to open the **Date/Time Format Builder** dialog.
5. Type MMM-yy in the *Date/Time format (edit to change)* field.
6. Click *OK*.

The X Axis tick labels are displayed in the *MMM-yy* format. The month abbreviations are determined by your PC's default language setting. You can force a specific language for date/time labels by adding a language identifier before the date/time format.



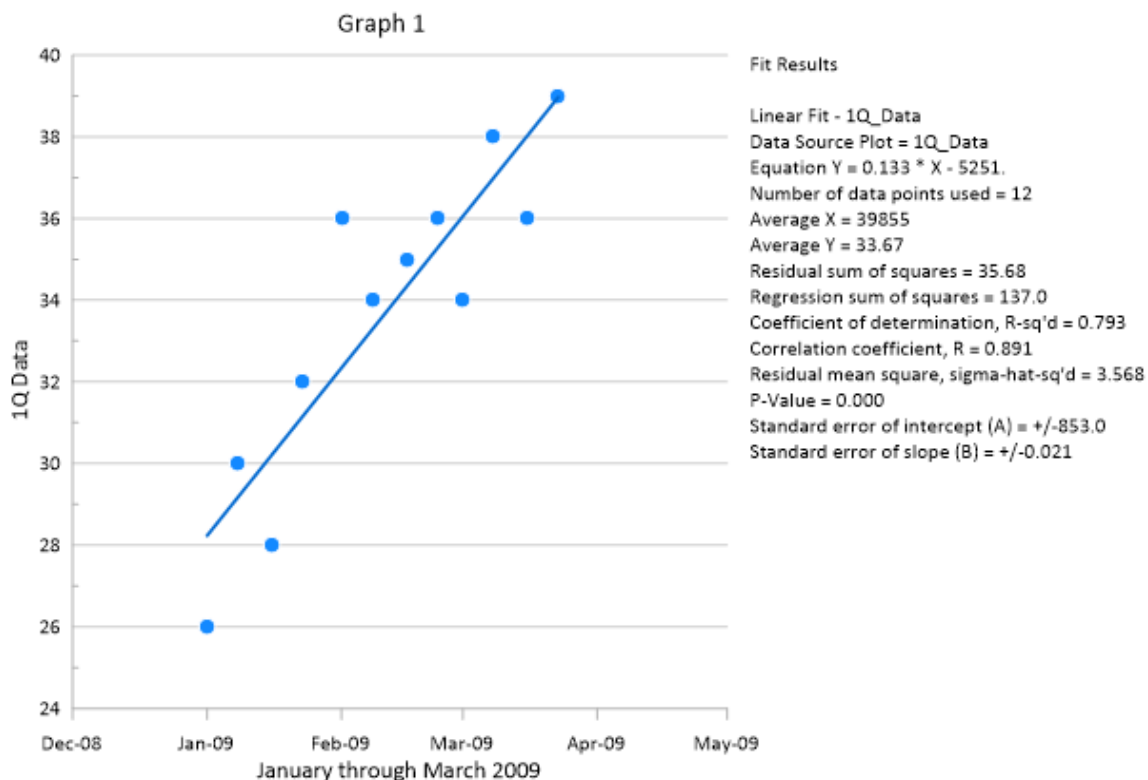
The X Axis date/time labels can be formatted with a predefined or custom format.

Adding a Fit Curve

Grapher includes many [predefined fit curves](#) as well as a tool for creating [custom fit curves](#). XY and histogram data can be fitted, and statistical information can be displayed for the fit curves in the plot or in a report. To add a fit curve,

1. Click *1Q_Data* in the **Object Manager** to select the scatter plot.
2. Click the [Home | Add to Graph | Fit Curve](#) command. A linear fit is added by default.
3. Click the **Plot** tab in the **Property Manager** to display the fit curve properties.
4. Set the *Significant digits* property to 4.
5. Click *Insert* next to the *Insert into plot document* field. The cursor changes to a crosshair to indicate draw mode.
6. Click the position in the plot window where you want to add the fit statistics.

Now a linear fit curve and various fit statistics are displayed in the plot window.



Adding fit curves helps explore and understand possible relationships in the data.

Stopping and Saving the Script

Now that the graph has been created, it is time to stop recording and save the script. To stop and save the script:

1. Click the [Automation | Scripts | Stop Recording](#) command. The **Save As** dialog appears.
2. Select a save location, such as your *Documents* folder, in the **Save As** dialog.
3. Type *tutorial script recorder* into the *File name* box.
4. Click the *Save* button.
5. Right-click in the **Script Manager** and select **File | Close** to close the script in the **Script Manager**.

The recording is stopped and the *tutorial script recorder.bas* is saved for future use. Congratulations, you have completed the **Grapher** tutorial!

Printing the Online Help

The [online help](#) topics may be printed. You can print a single topic, a section of the Table of Contents, or all topics in the Table of Contents.


To print one help topic, click the topic you wish to print and click the *Print* button. If the **Contents** page is open in the help navigation pane, the **Print Topics** dialog appears. Select *Print the selected topic* and click *OK*.

To print one help book, click the **Contents** tab in the help window navigation pane. Click the book you want to print, for example click the *Tutorial* book. Click the *Print* button, and the **Print Topics** dialog appears. Select *Print the selected heading and all subtopics* and click *OK*.

To print all the topics in the help file *Table of Contents*, select the top-level book in the Contents navigation pane, *Surfer 15*. Click the *Print* button, and the Print Topics dialog appears. Select *Print the selected heading and all subtopics* and click *OK*. WARNING: Printing the entire help file takes hundreds of letter-sized sheets of paper and is very time consuming. There is no *Table of Contents* or *Index* printed with the file.

You can purchase the PDF *Surfer User's Guide* that includes all of the documentation for the program. The PDF user's guide is the online help rearranged in a book format and can be printed by the user, if desired. The *Surfer User's Guide* includes a *Table of Contents* and *Index*. The guide can be purchased at www.goldensoftware.com.

Getting Help

Within **Grapher**, the [online help](#) file is opened by clicking the **Home | Help | Contents** command, the **Home | Help | Tutorial** command, the **Automation | Help | Grapher Automation Help** command, or the  button in the upper right corner of the program. You can also quickly search the help by typing a term in the command and help search above the [ribbon](#) and clicking *Search help file* in the results list. Alternatively, press F1 at anytime to open the help file.

Internet Help Resources

There are several Internet help resources.

- Click the **File | Feedback** commands to send a problem report, suggestion, or information request by email.
- Search our website at www.goldensoftware.com or click the **File | Online** commands to update your copy of **Grapher** and for links to the [Golden Software Home Page](#), [Frequently Asked Questions](#), and [Knowledge Base](#).
- The Golden Software website has a variety of resources including [training videos](#), a [blog](#), a [user image gallery](#), and a variety of [links and downloads](#).
- The **Grapher** help can be viewed in a browser window by navigating to grapherhelp.goldensoftware.com.

Technical Support

Golden Software's technical support is free to [registered](#) users of our products. Our technical support staff is trained to help you find answers to your questions quickly and accurately. We are happy to answer any of your questions about any of our products, both before and after your purchase. We also welcome suggestions for improvements to our software and encourage you to contact us with any ideas you may have for adding new features and capabilities to our programs.

Technical support is available Monday through Friday 8:00 AM to 5:00 PM Mountain Time, excluding major United States holidays. We will respond to email and fax technical questions within one business day. When contacting us with your question, please have the following information available:

- Your **Grapher** product key, found in the **File | License Info** dialog or in the email received with the download directions
- Your **Grapher** version number, found in [File | About Grapher](#)
- The operating system you are using (7, 8, 10 or higher)

Grapher

- The steps you took prior to experiencing your problem
- The exact wording of the first error message (if any) that appeared

If you cannot find the answer to your question in the help, the [frequently asked questions](#), or the [knowledge base](#), please do not hesitate to contact us:

Email: GrapherSupport@GoldenSoftware.com

Web: www.GoldenSoftware.com

Phone: 303-279-1021

Fax: 303-279-0909

Mail: Golden Software, LLC, 809 14th Street, Golden, Colorado, 80401-1866, USA

Index

A

- active cell, 16
- active cell edit box, 16
- active cell location, 16
- add to graph, 25
- adding a graph title, 38
- adding a legend, 45
- adding semi-transparent fill - tutorial, 39
- automation, 27
- axes, 50
- axis, 40, 50
- axis properties, 13, 40, 50
- axis title, 40

B

- bar, 16
- bold text, 28

C

- changing the line/scatter plot properties - tutorial, 34
- changing the number of symbols - tutorial, 46
- changing the symbol size - tutorial, 46
- changing the tick mark spacing - tutorial, 50
- changing the window layout, 17
- changing the X axis date/time tick label format - tutorial, 51
- changing the y axis limits - tutorial, 51
- changing tick mark labels, 42
- changing tick mark spacing - tutorial, 42
- column letters, 16
- columns in legend, 47
- creating a graph, 33

- creating a line/scatter plot tutorial, 49
- creating a new data file, 29
- creating a template graph, 25
- creating data, 29, 33
- creating graphs, 25
- creating graphs from the worksheet, 26
- creating graphs in the plot window, 26
- creating graphs using templates, 27
- creating graphs with the graph wizard, 25
- cursor coordinates, 16
- customize Quick Access Toolbar, 17

D

- data values, 16
- delete, 13
- demo, 3
- demo and the tutorial, 28
- displaying plot labels - tutorial, 36
- docking managers, 18
- docking mechanism, 18

E

- edit properties, 13
- editing worksheet cells, 15
- entering data, 15

F

- file types, 19
- files that Grapher supports, 19
- floating managers, 17
- from worksheet, 42

G

GPJ, 19

graph, 25

graph properties, 13

graph title, 38

graph types, 22

graph wizard, 25

Grapher demo, 3

Grapher project files, 19

Grapher user interface, 9

GRF, 19

H

hard disk space, 5

I

interface, 9

international, 41

internet help resources, 54

introducing Scripter, 27

introduction to Grapher, 3

italic text, 29

K

keyboard shortcuts, 17

L

labels, 37

layout, 17

legend, 47

line/scatter plot, 33

M

major ticks, 50

manager layout, 17

manager positions, 17

managers, 9, 17

menu commands, 28

minimum system requirements,
4

monitor resolution, 5

move labels, 37

moving labels, 37

multiple columns in the legend,
47

N

new data, 30

new worksheet, 29

O

object dimensions, 16

object manager, 11

object name, 16

object visibility, 12

online help, 54

opening object properties, 11

opening the script manager, 47

P

paper copy of help, 53

plot document, 11

plot properties, 13

plot types, 22

plot window, 10

plot window, 9

pointer coordinates, 16

printing help topics, 53

printing the online help, 53

project, 19

project file, 20

properties, 12

property inspector, 13, 17

Property Manager, 13

property window, 13

R

RAM, 3

remove program, 3

requirements, 4

reset managers, 17

restore managers to original locations, 17

restore windows to original locations, 17

row numbers, 16

S

saving data, 33

saving worksheet, 33

script, 27

script manager, 15, 48

script recorder, 6, 28

Scripter, 4, 27

select entire worksheet button, 16

select objects, 12

spacing, 50

spacing value, 50

special characters, 40

standard axis, 40

start recording, 48

status, 16

status bar, 9, 16

support, 54

system requirements, 4

T

tabbed documents, 9

tabbed managers, 18

technical support, 54

template, 25

template graphs, 27

text editor, 41

three-minute tour, 6

tick label source, 42

tick mark spacing, 42, 50

tick marks, 50

title, 40

toolbars, 9

tutorial, 28, 29, 30, 33, 34, 36, 37, 38, 40, 42, 45, 46, 47, 48, 49, 50, 51, 53

tutorial introduction, 28

types of files, 19

U

unicode, 41

uninstall, 5

user interface, 9

using a template graph, 25

using Grapher, 25

V

visibility, 12

W

what is this file?, 19

window layout, 17

worksheet document, 15

worksheet manager, 14, 18

worksheet name, 16

worksheet window, 15