Microsoft Excel

Charts

Chart Wizard
To create a chart in Microsoft Excel, select the data you wish to graph or place yourself with in the conjoining data set and choose Chart… from the Insert menu, or click on the Chart Wizard button on the standard toolbar.

Either method will launch the Chart Wizard shown here.

Step 1 of 4 - Chart Type
There are several chart types available. Within each chart type there are sub-types to choose from.

These are the standard types, but there is a second tab of charts, Custom Types available at the top of this window. These would be for unique charts, such as combining a column and line chart.

As you pick your Chart sub-type: a description for that chart will display at the bottom of this window.

The Press and hold to view sample button will show you a tiny preview of your data's chart.

Once you have your options for the chart type, click on the Next > button to continue with the Chart Wizard.
**Step 2 of 4 - Chart Source Data**

Step two allows you to choose the Chart's Source Data. This is the data you want to graph. Here we can also see a sample of the chart. If Excel is charting the wrong data, simply click on the collapse button ("go out and get it" button) and choose the data you wish to graph, once it is selected, press enter to return to this window.

From this Data Range tab you can also change the Series in: option, such that instead of charting the data by column, it will chart the data by row.

The data that is being graphed is shown here on the right.

Excel recognizes that Item is the title for column A and $$$ is the title for column B. We can see that in the sample charts, but it becomes even more apparent when we look at the second tab of Step 2.

Since we are graphing this based on the Series in Columns, our Series lists the only column of data we have, our $$$$. The Name: of our Series is linked to cell B1, thus the "$$" showing up as the chart title, in the legend and as our Series name. If you want to type in your own title here, you may do so, simply erase what's in the Name: box and type in your own title, or use the collapse button ("go out and get it" button) to link the title to a different cell.

The values can also be directly typed in, however this is not recommended, but you can redefine the values if needed.

The Category (X) axis labels: are the names across the bottom of the chart. Just as with the Name: and Values:, this can be changed to whatever you want it to say.
Step 3 of 4 - Chart Options

Each part of the Chart can be changed with in the options. After the chart is created you will still be able to change these options. The **Chart title**: goes across the top of the graph, the **Category (X) axis**: goes under our X-axis labels (shown here as Pants, Shoes, Socks…), the **Value (Y) axis**: will be the label for the vertical labels (shown here as 2500, 2000, 1500…).

<table>
<thead>
<tr>
<th>Chart Title</th>
<th>Axes Gridlines Legend Data Labels Data Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chart Title</td>
<td>X-axis</td>
</tr>
<tr>
<td>Category (X) axis</td>
<td>X-axs</td>
</tr>
<tr>
<td>Value (Y) axis</td>
<td>Y-axis</td>
</tr>
<tr>
<td>Second category (X) axis</td>
<td></td>
</tr>
<tr>
<td>Second value (Y) axis</td>
<td></td>
</tr>
</tbody>
</table>

These titles will not show up on your sample chart until you have left that text box. (Click somewhere else in the window).

The second tab **Axes**, allows you to turn off the data labels across the bottom (Category X-axis) and side (Value Y-axis).

**Automatic** is the best choice for your **Category (X) axis** because it will choose the Time-scale if your labels are date formatted and it will choose Category if they are not.

The third tab **Gridlines** allows you to turn the gridlines behind the graph, on or off. The major lines will appear at each data point listed on the labels such as shown here with the y-axis at 500, 1000, 1500… The minor lines are some fraction of the data points (in this case it would be at every 100).

Remember the Category X-axis is the horizontal lines, and the Value Y-axis will be the vertical lines.
The **Legend** tab here in Step 3 allows you to show or hide a legend for this Chart. In cases such as this graph, when there is only one data set, you may choose to have a very descriptive chart title and leave the legend off.

When the legend is showing you can choose its placement. It is possible to move and resize the legend after the graph is created, however it is much simpler to do it here first.

The **Data Labels** tab allows you to place labels inside the chart. The type of data labels that can be used will vary with the type of chart. Because this is a bar chart we can only use the **Show value** and **Show label** options.

Once you show a data label you have the option to show the **Legend key next to label**. This means it will show a tiny colored square matching the legend color for that data point.

The final tab on Step 3, **Data Table**, allows you to place a data table under your chart. Here you also have the ability to **Show legend keys**. This table is easy to add and remove after the chart is created.

Once you have set all of your Chart Options to your specifications click the **Next >** button to continue to the final step in the Chart Wizard.
**Step 4 of 4 - Chart Location**

This final step is to determine the location of your chart. You can place it as a new sheet, which will insert a new worksheet into your workbook and completely fill the tab with the chart such that when you print you will only get the chart.

If you place the graph as an object in an existing worksheet, it will size to fit within the window trying not to cover existing data. With this option when you print you will get the data on that sheet and the graph.

Insert in an existing sheet:

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<thead>
<tr>
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<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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<th>H</th>
<th>I</th>
<th>J</th>
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<td>1</td>
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</tbody>
</table>

Insert as a new workbook:
Chart Toolbar

1. **Chart Objects**: This is a list of the different parts of your chart. Sometimes it's difficult to click on the specific part you wish to highlight. This list will help you choose the specific object you wish to change. This does not list *all* the chart objects but it does give a good quick list for the most common items.

2. **Format**: This button will open the format screen for whichever object you have listed in the **Chart Objects** list (or whichever item on the chart you have just selected.)

3. **Chart Type**: This button allows you to change the chart type, simply by choosing a different type from the list. You can do this for the whole chart or for just a single data series.

   This is not a list of every chart type available. To see a list of all the chart types, choose **Chart Type…** from the **Chart** menu.

4. **Legend**: This button will show/hide your chart legend.

5. **Data Table**: This button will show/hide your data table.

6. & 7. **By Row**: and **By Column**: These two buttons are toggles, one must be chosen. If you choose **By Row** then the **By Column** turns off, if you choose **By Column**, both **By Row** will turn off. Remember this from Step 2 in the Chart Wizard, when you choose how the series will be graphed, by row or by column.

8. & 9. **Angle Text Downward**: and **Angle Text Upward**: These two buttons will only highlight when you have a text object chosen such as the axis labels. The button will turn the text to the angle shown on the button.
There are four steps to creating your chart with the Chart Wizard: Chart Type, Chart Series Data, Chart Options and Chart Location. These four windows can be accessed after the chart is created from a new menu that will appear Chart. The first four options on the Chart menu match the four steps of the Chart Wizard. For more information on those screens see the Chart wizard worksheets.

**Add Data...** will allow you to do just that, add new data to your chart. This is a great tool if you missed a column or you have added new information to your data.

The Chart->Add Data... option will open this window. You can type in the range of the new data or simply click and drag over the information you wish to add to your chart. If you cannot see your data, click the Collapse button (jis) to "go out and get" your data.

A trend line is a line on a graph indicating a statistical trend. The **Add Trend line...** option is not always available. You can only add a trendline to flat (non 3-D) Area, Bar, Column, Line, Bubble and XY (scatter) charts.

<table>
<thead>
<tr>
<th>Trendline name</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear</td>
<td>Uses the linear equation $y=mx+b$.</td>
</tr>
<tr>
<td>Logarithmic</td>
<td>This uses the logarithmic equation $y = c\ln x + b$.</td>
</tr>
<tr>
<td>Polynomial</td>
<td>Uses the polynomial equation $y = b + c_1 x + c_2 x^2 + \ldots + c_6 x^6$.</td>
</tr>
<tr>
<td>Power</td>
<td>Uses the equation $y = cx^b$. Your data must contain zero or negative values to use this option.</td>
</tr>
<tr>
<td>Exponential</td>
<td>Uses the equation $y = ce^{bx}$. Your data must not contain zero nor negative values to use this option.</td>
</tr>
<tr>
<td>Moving Average</td>
<td>Uses a moving average to set data points for the line. The points are set by the average of the number of points in the Period option.</td>
</tr>
</tbody>
</table>
Formatting Chart

The major parts of the chart settings can be done in the four steps of the chart wizard. To modify the individual parts of the chart select the part and choose the first option from the format menu, or click on the Format button on the Chart Toolbar. Sometimes it is possible to double click on the area as well to open the formatting feature.

Format Axis
Since the axes have text you can use the formatting toolbar to change the font, alignment and number formats or you can do so here in the Format Axis window. The Patterns tab is where you set the Style, Color and Weight of your lines. This is also where you determine how the tick marks will show.

The Scale Tab allows you to manually set the Maximum, Minimum scales as well as the Major and Minor units it will use.

Format Data Series
You can change the color of a series by using the fill bucket on the formatting toolbar, or you can use the format window for the series.

Line Charts

Other Charts
The data labels tab gives you the same options you have with the Data Labels tab on the Chart Options screen of the Chart Wizard. The Series Order tab allows you to choose which series is graphed first. The Move Up and Move Down buttons allow you to arrange the data in the desired order. This is especially useful in 3-D Charts and Graphs. This won't be available for Pie Charts.
3-D Charts and Graphs

Three-dimensional charts add a depth to your charts that often makes them more appealing.

There is a 3-D View option available under the Chart menu, when you have a 3-D Chart.

**Elevation:** Click on the up and down arrows to adjust the elevation number or type in value. Most charts can adjust from –90 (below the plot line) to 90 degrees (above the plot line).

**Rotation:** Click on the left and right rotation arrows or type in a value to rotate your graph around the vertical (Z) axis. Rotation for most charts is from 0 to 360 degrees. Bar charts range from 0 to 44 degrees.

**Height:** This option determines the height of the vertical (Z) axis. It is measured as a percent of the x-axis length. A value of 50 percent would make the chart height, half the length of the x-axis.

**Auto scaling:** This option scales a chart such that it is close to the 2-D version. This option is available when the Right angle axes option is checked.

**Right angle axes:** This option sets the axes at right angles, no matter what the elevation and rotation are set to. You cannot use the perspective while this option is selected.

**Perspective:** Click on the up and down arrows to adjust the perspective number or type in value. The perspective ranges from 0 to 100 degrees. Not available for Bar charts or when the Right angle axes is checked.

**Default:** This button will return all the settings in this window to the charts original settings.