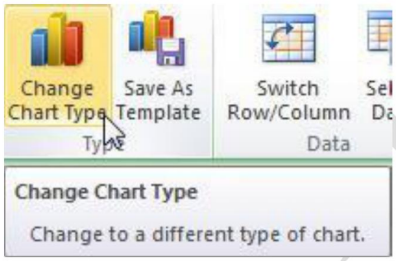
Working with Charts, Part 2

In the last lesson, we explored how to create and modify the visual look of a chart. In this lesson, we will explore the background manipulation of charts including how to apply a new chart type and change the source data. We will also learn how to create chart templates and how to work with the chart axes and data series.

Changing the Type of Chart

To change the chart type, click the chart and then click Chart Tools – Design → Change Chart Type.



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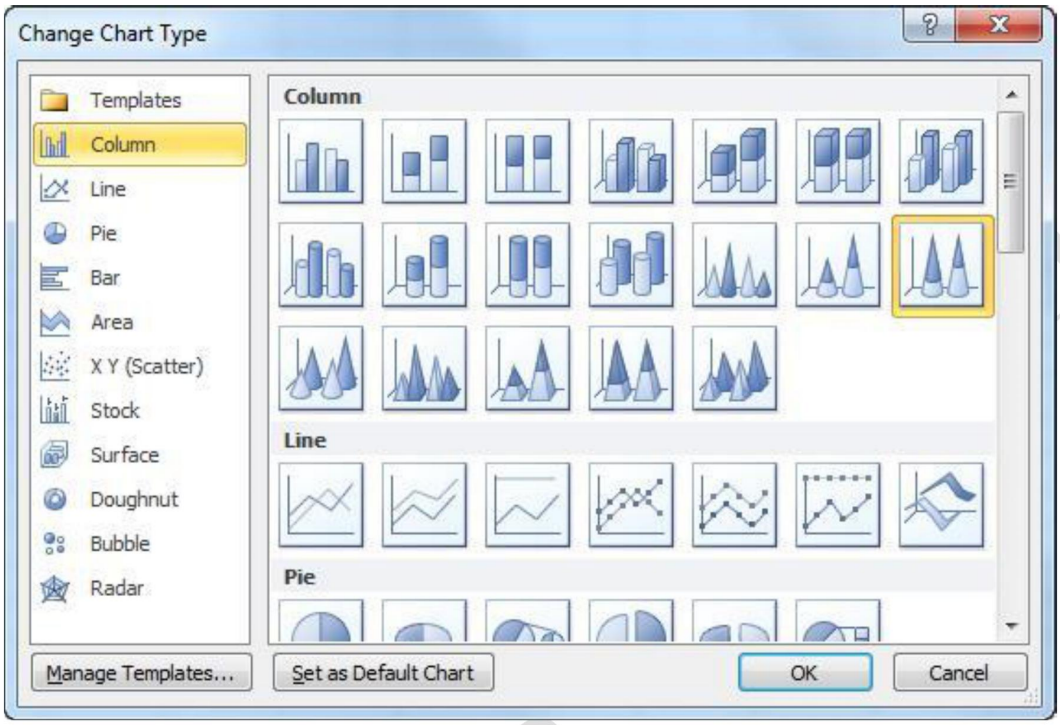
This will display the Change Chart Type dialog box and highlight the current chart type:



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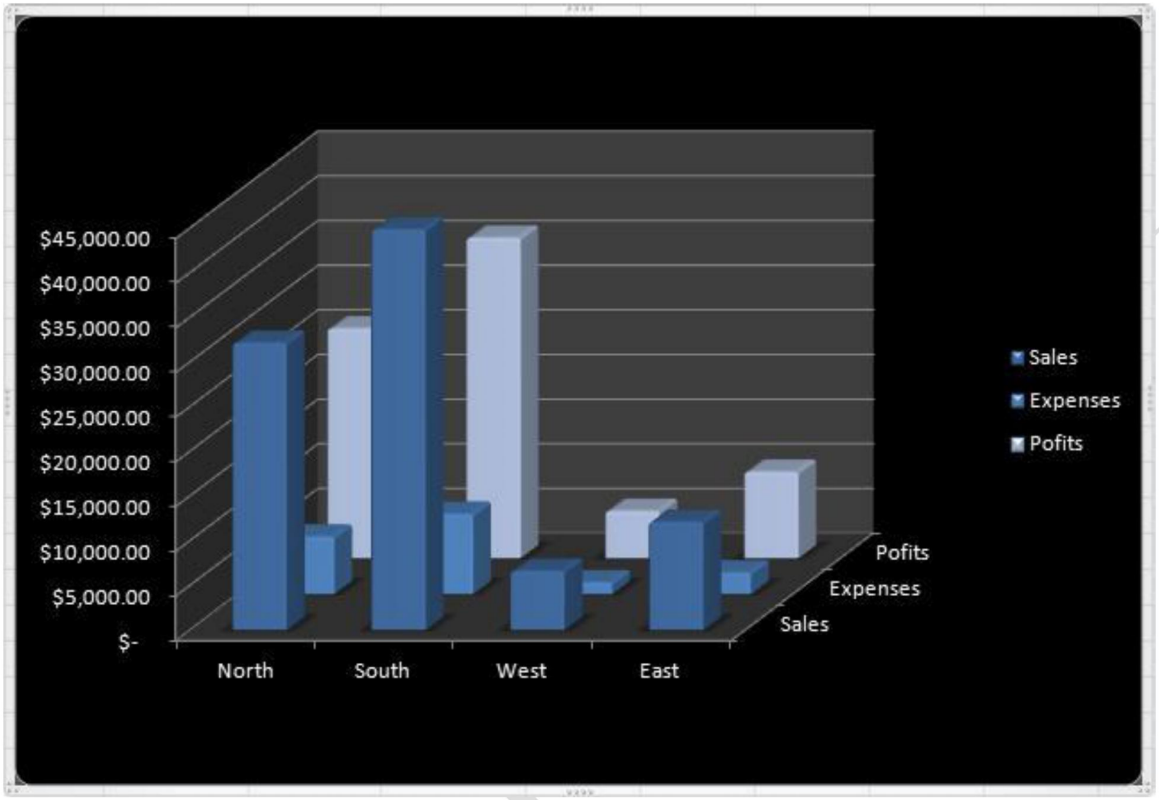
With this box, you can select a new chart type from the list on the left and then choose a chart style. Click OK to continue:



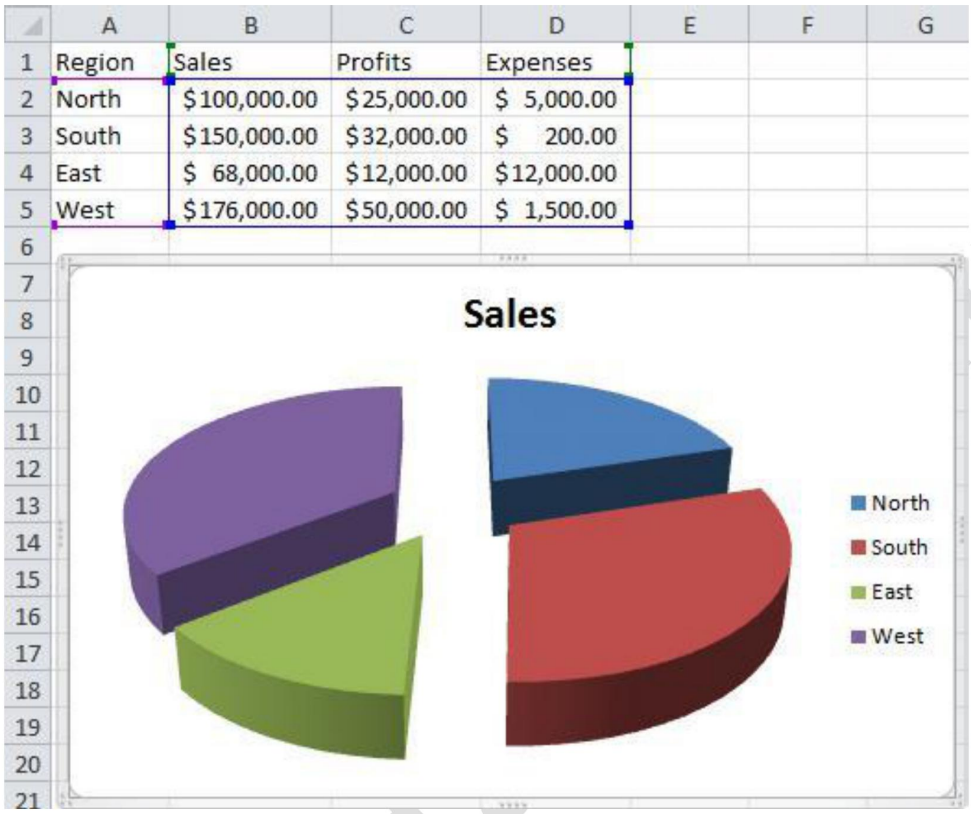
Additional commands in this dialog include the ability to manage chart templates (which we will discuss in a moment) and choosing to make a certain chart type the default.

Note that not all chart types will do justice to your data. In fact, some chart types just won't make any sense at all! You may need to experiment with some different chart formats in order to find one that makes sense. Remember that changing the chart type does not affect the source data, so feel free to switch chart types until you get it right.

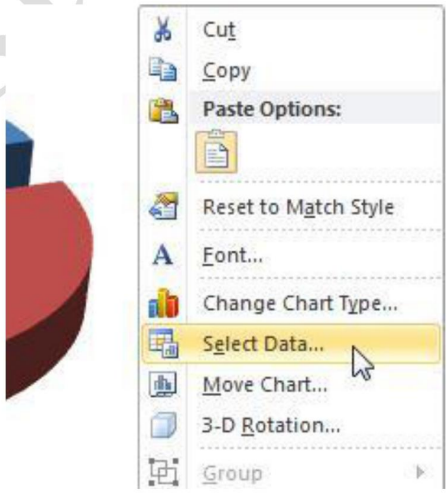
Changing the Source Data

As we have just seen, Excel makes it easy to change the chart type for your data set. Excel also makes it easy to change the source data for your chart while retaining the original chart type.

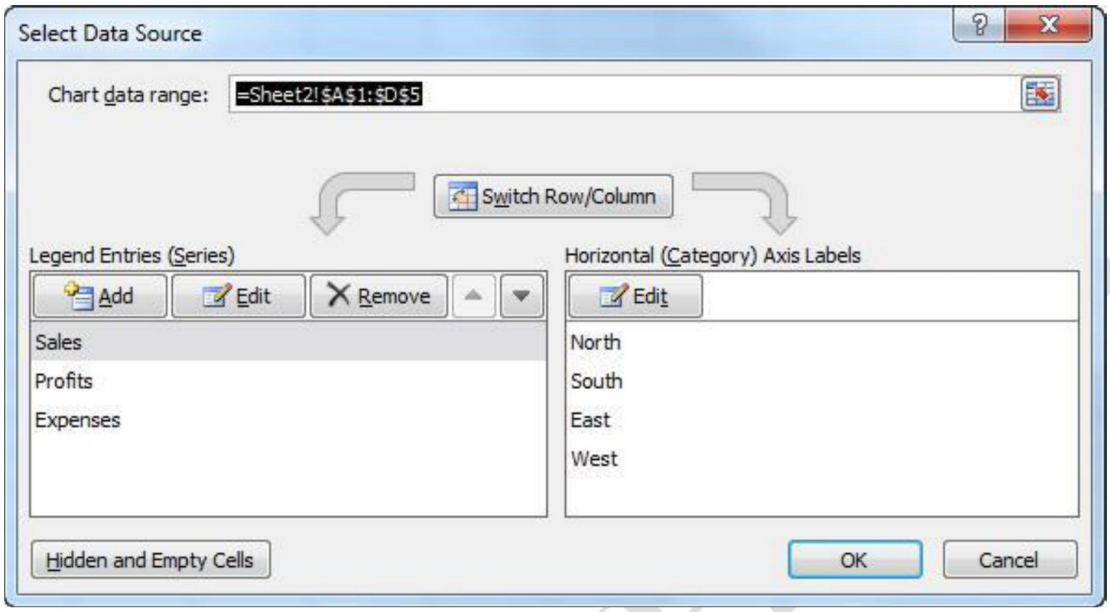
In the example below, the pie chart is based on sales data per region:



If you wanted to depict expenses per region, you would have to change the source data of the chart from the sales data (B2:B5), to the expenses data (D2:D5). To do this, right-click the chart and click Select Data:

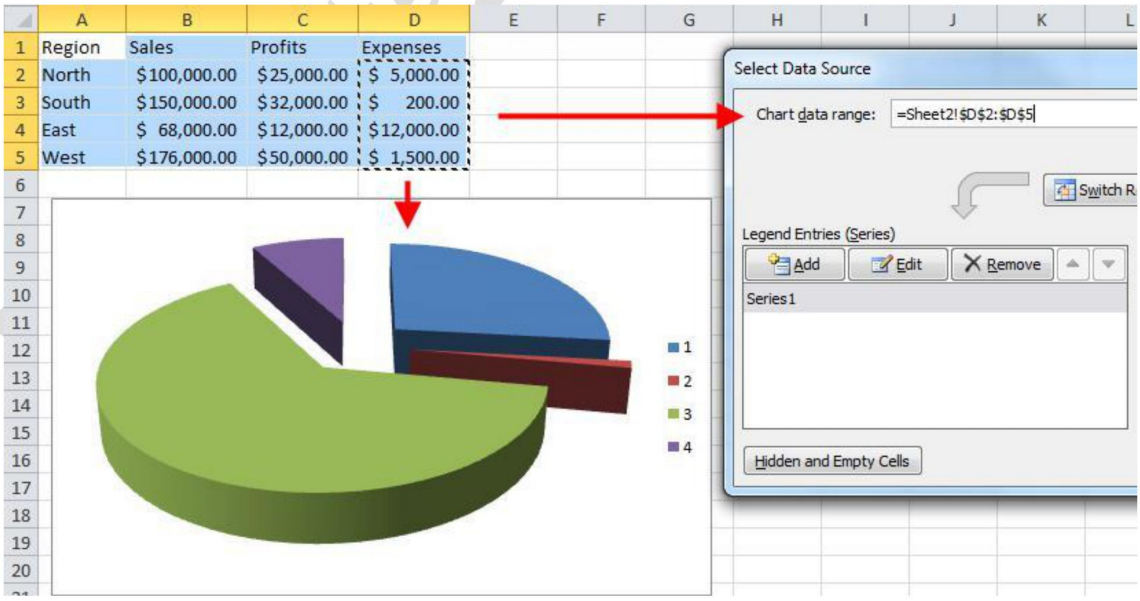


This will display the Select Data Source dialog box:



At the top of the dialog box, the Chart data range field shows the range of cells that serve as the current chart data: cells A1:D5. (As you can see, the range includes dollar signs. We will explore what these dollar signs mean later; for now, just ignore them.)

To change the data source, use your mouse to select the new data range from the spreadsheet (D2:D5). You will see the new range entered into the Chart data range field. The chart itself will also change:

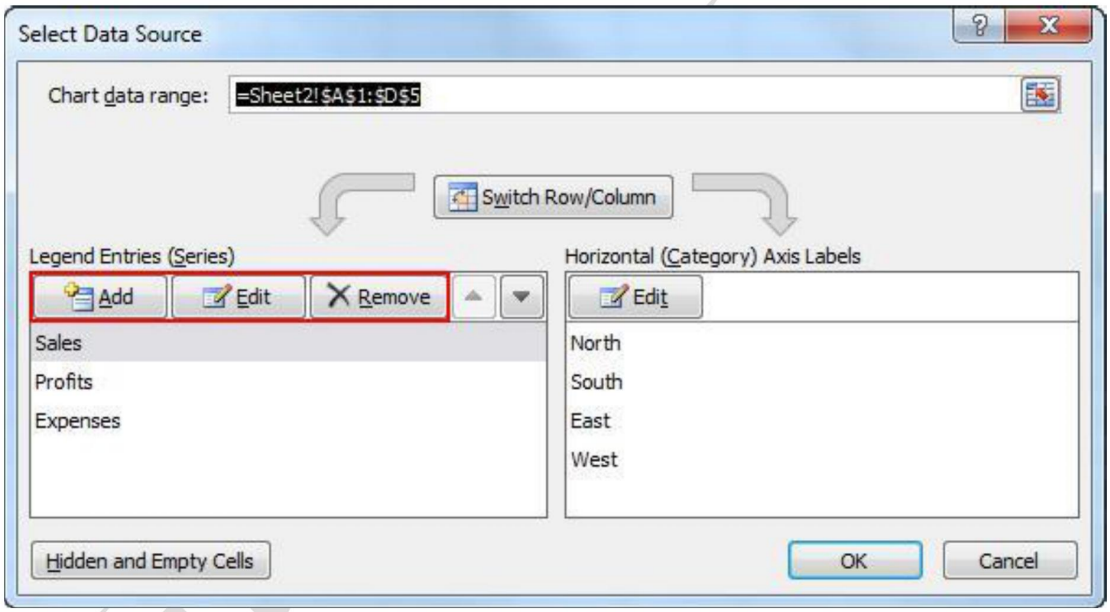


If you added custom elements such as a chart title, you may have to change the title if you changed the source data. Otherwise, Excel takes care of all other updates and your chart is ready to go.

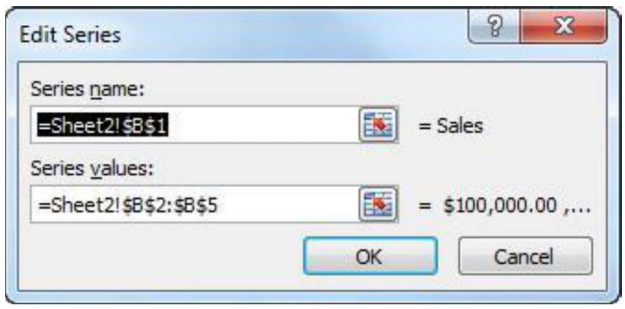
Working with the Chart Axes and Data Series

In a typical chart, the axes are the horizontal and vertical scales. Basically, data is charted with respect to its numerical position along the X or Y axis. A series is a group of data (normally a selection of cells) that is to be charted against an axis. You can have more than one series represented in a chart to show how the different series (selections of data) compare to each other.

To add more than one series to a chart, right-click on the chart and click Select Data from the menu that appears. When the Select Data Source dialog box appears, you will see buttons for adding and removing a series of data:

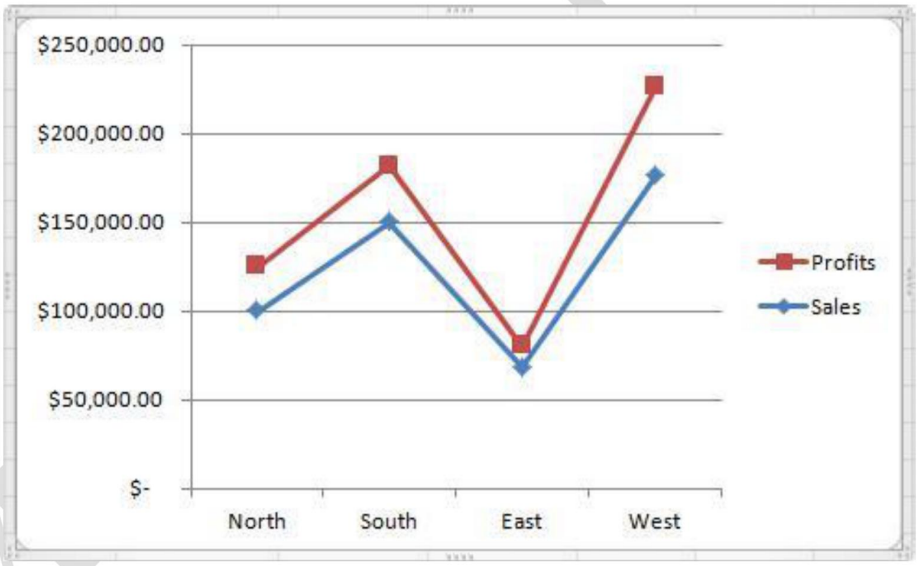


To add a new series to the chart, click the Add button. This will display an Edit Series box where you can enter a name for the series in the name field that is provided. You can also edit an existing series (for example, by selecting more or less data) using the Edit button:

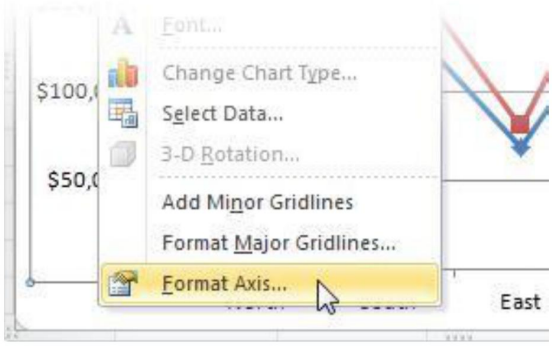


If you click the button, you will be switched back the worksheet where you can select a range by clicking and dragging your mouse pointer. (You can also enter a data series by typing a range directly into the text fields, but selecting with the mouse is usually simpler.)

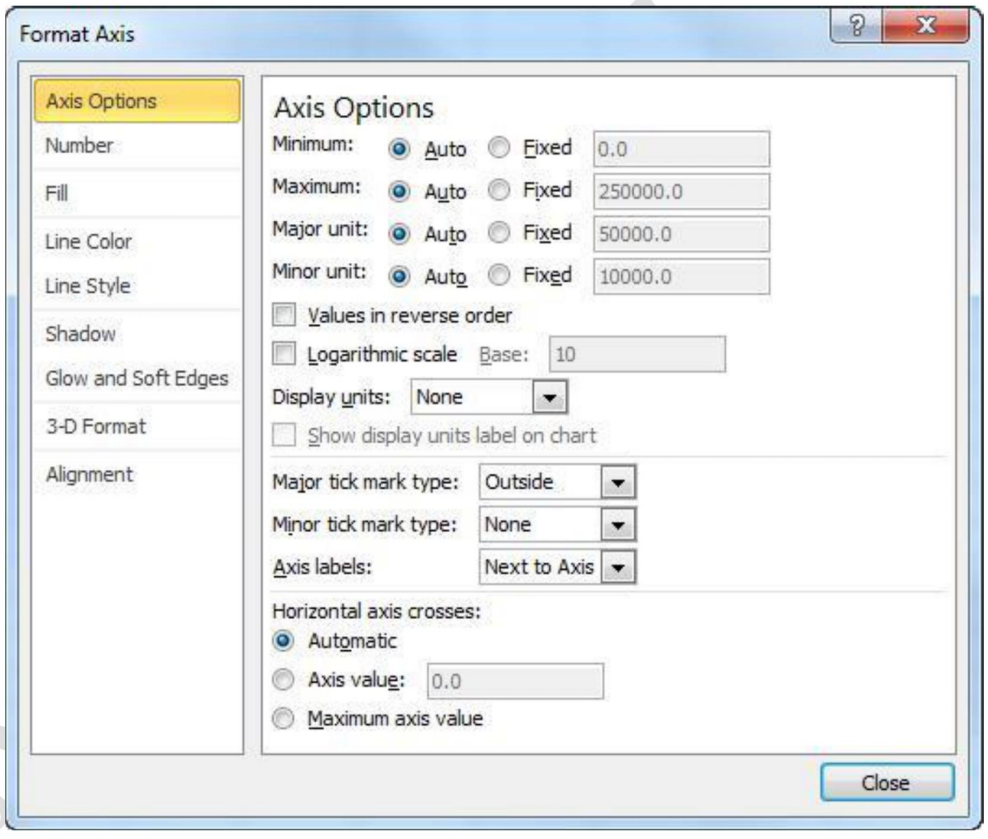
In the following stacked line chart, the Sales data and Profit data are represented against a Y axis consisting of dollar amounts.



To control the chart axes, right-click on one of the dollar amounts on the Y axis and click Format Axis:



This will display a Format Axis dialog box with the Axis Options heading highlighted on the left:

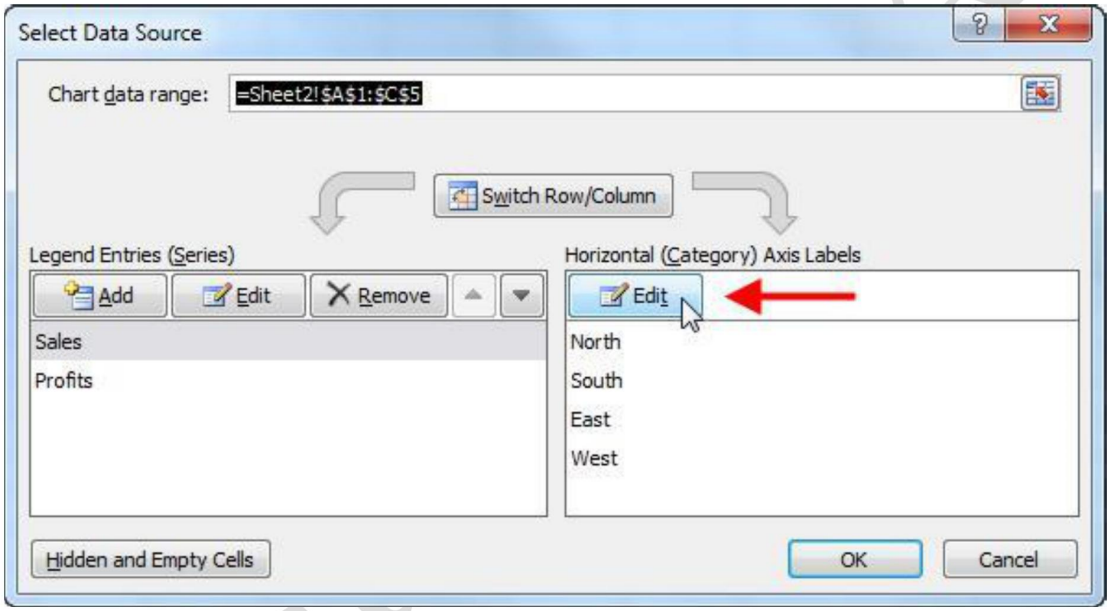


The formatting categories on the left should look familiar by now! Here you have controls to specify the units and adjust the scale, tick mark, and position of the axis labels. Use any of the other headings on the left to modify the look and feel of the axis' components.

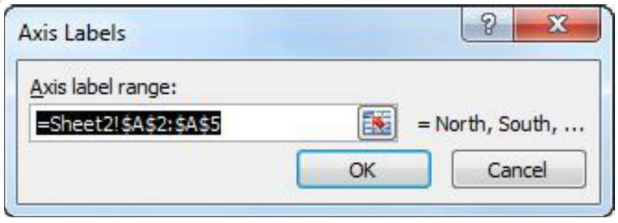
Usually, the more information Excel has to create your chart, the better. If all of your source data is appropriately labeled, and you select those data labels before creating a chart, chances are the chart will be correctly labeled. However, if you want to change the labels on an axis, do the following.

First, type the new labels somewhere in your worksheet **in the same order as the original labels** (you'll need them in a moment). This means that if the current headings (North, South, East, West) were written horizontally across four columns, type the new headings (A, B, C, D) horizontally across four columns somewhere else in the worksheet.

Next open the Select Data Source dialog box and click the Edit button under the Horizontal (Category) Axis Labels heading:



The Axis Labels dialog box will appear and let you select the labels you want from the worksheet. Click and drag your mouse to select the appropriate cells, or manually type the cell range into the box provided:



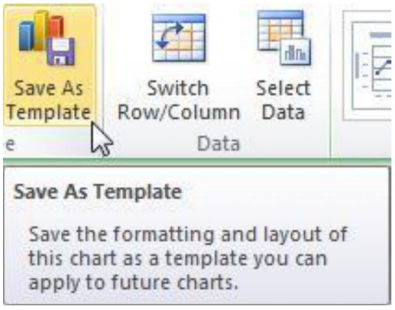
Saving a Chart as a Template

If you have spent a lot of time getting your chart just right, you might want to save the chart settings as a template. This will allow you to create another chart with the same formatting in just a few clicks, rather than spending a lot of time doing the same formatting over and over again. Templates allow you to save the chart type, colors, and formatting.

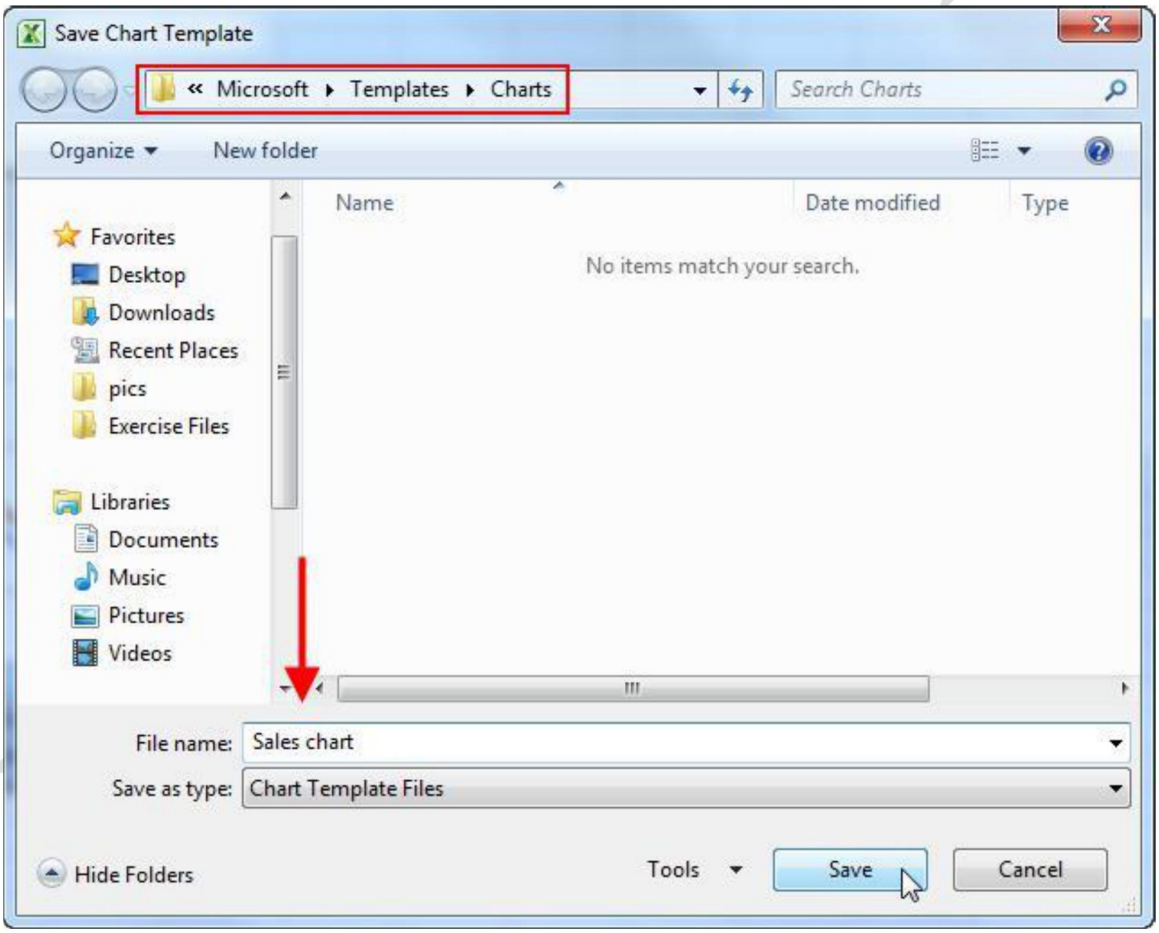
Consider the following chart style and layout that we want to save as a template:

	A	B	C	D
1	Region	Sales	Profits	Expenses
2	North	$100,000.00	$25,000.00	$ 5,000.00
3	South	$150,000.00	$32,000.00	$ 200.00
4	East	$ 68,000.00	$12,000.00	$12,000.00
5	West	$176,000.00	$50,000.00	$ 1,500.00

To save this chart as a template, click the chart and click Chart Tools – Design → Save As Template:



When the Save Chart Template dialog appears, choose a save location (the default template location is highlighted), give the template a name, and then click Save:



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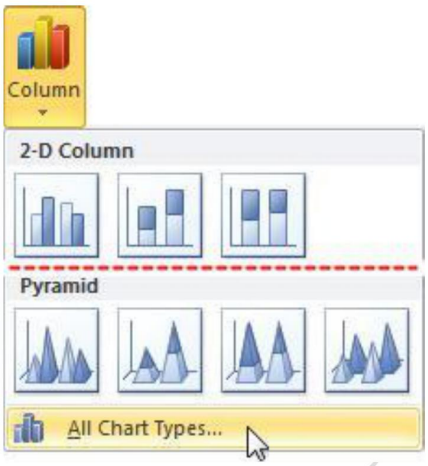
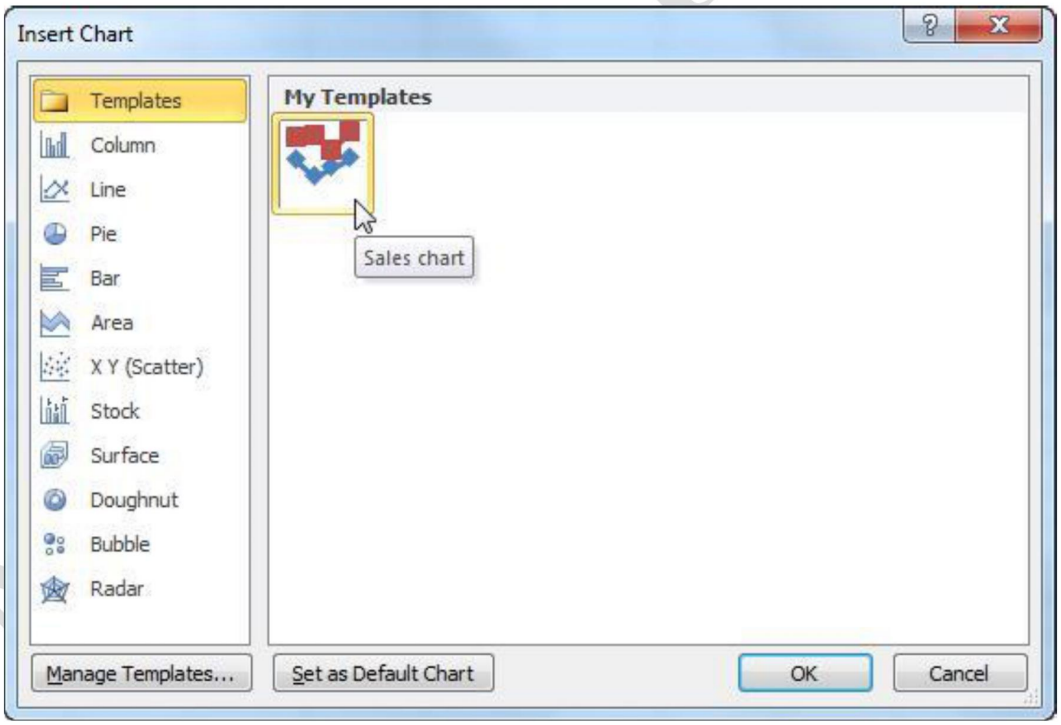
When you want to use the template, select some data, choose a chart type (it doesn't matter which), and click All Chart Types:



When the Create Chart dialog appears, click the Templates option at the top of the list on the left and select your template. You can hover over each template for a moment to see which is which:

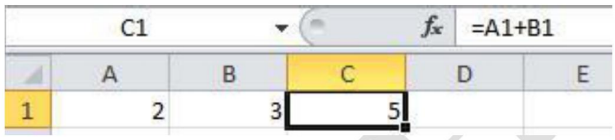


Experiment with different charts and see what works best for you. However, keep in mind that the pre-set chart styles in Excel were very thoughtfully designed and implemented. It may be difficult to surpass this new, quick, and easy method of formatting charts.

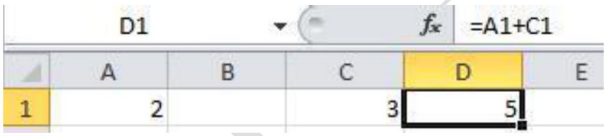
Absolute and Relative Cell References

Earlier in this lesson we saw a cell range that contained some dollar signs. Throughout this manual, we have written the references without dollar signs, which indicate **relative cell references**. These dollar signs indicate **absolute cell references**. Absolute cell references are a way of making sure your charts and formulae are always referencing the right thing. Relative cell references can move around based on what is happening in the worksheet.

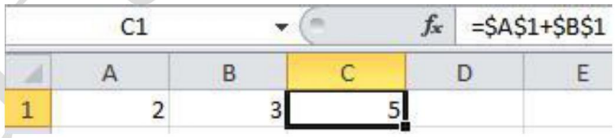
Let's take a moment to discuss how the dollar signs work by looking at an example. Consider the following worksheet. It contains two values and a simple equation in C1:



If we add a column between A and B, watch what happens to the formula:



As you can see, Excel changed the formula from =A1+B1 to =A1+C1. Excel was able to change the relative cell references to make the equation work. Let's remove the new column and add dollar signs in front of the column/row identifiers, making the cell references absolute:



If we were to add a column between A and B, the formula would still adjust to its surroundings. That is, the formula would become =$A$1+$C$1, meaning if you had to add more data to your current worksheet, you could insert rows/columns easily.

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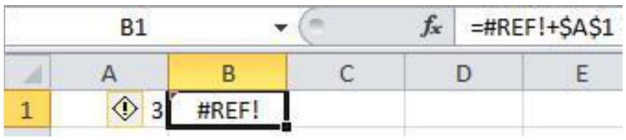
But if we delete column A, watch what happens:



As you can see, there is now a cell reference error because what was column A has disappeared, and column C is now column B, erasing the cell reference.

We will discuss cell references further in the more advanced level of Velsoft's Microsoft Office Excel 2010 courseware.

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