Microsoft Excel Visualising Data with Charts

Contents

If you have a St. George's username and password you can access all the files that goes with this manual.
Files can be found in a folder on the **N** drive in the **IT Training folder** named:
Microsoft Excel Visualising Data with Charts

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UNDERSTANDING THE CHARTING PROCESS

Charts provide a way of seeing trends in the data in your worksheet. The charting feature in Excel is extremely flexible and powerful and allows you to create a wide range of charts from the worksheet data. But the real benefit of inserting charts is that the process is very easy and simple once you know how to do it.

Inserting Charts

The first step when creating a chart is to select the data from the worksheet that you want to chart. It is important to remember that the selected range (which can be either contiguous or non-contiguous), should include *headings* (e.g. names of months, countries, departments, etc). These become *labels* on the chart. Secondly, the selected range should not (normally) include totals as these are inserted automatically when a chart is created.

The second step is to create a chart using the **INSERT** tab on the ribbon. You can choose a **Recommended Chart** where Excel analyses the selected data and suggests several possible chart layouts.

Alternatively you can create the chart yourself from scratch by choosing one of the **Insert** commands in the **Charts** group. Charts that you create in Excel can be either *embedded* into a worksheet, or they can exist on their own sheets, known as **chart sheets**.

Embedded Charts

Charts that appear within a worksheet are known as embedded charts. A chart is really an object that sits on top of the worksheet – unlike numbers and letters, charts are not actually placed into worksheet cells.
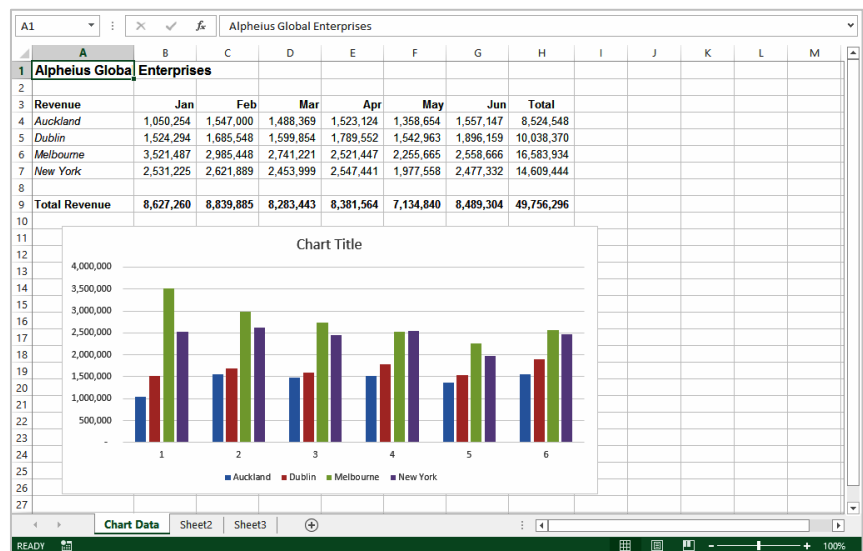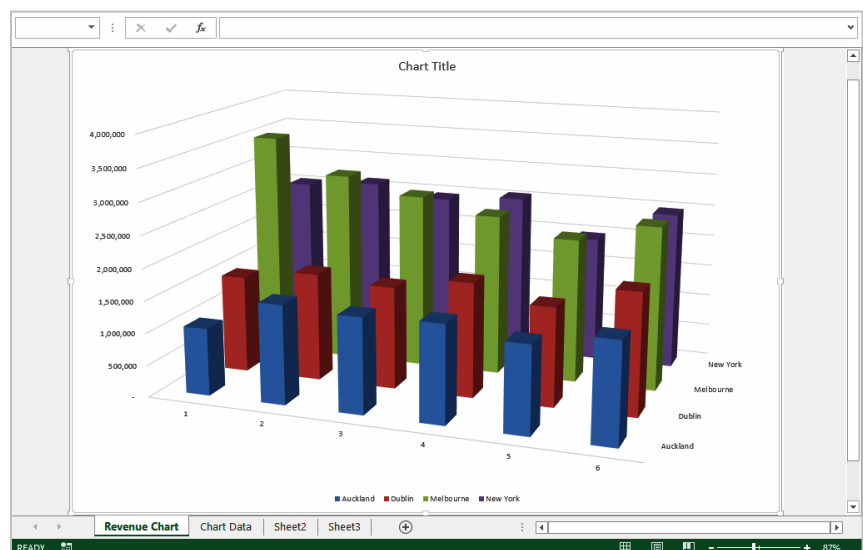

Chart Sheets

If you want to keep your chart separate from the data you can move the chart to its own sheet. Chart sheets make it easier and more convenient to work with your chart because you'll see more of it on the screen – since the data is not there!

CHOOSING THE RIGHT CHART

A chart is far more effective at communicating results, outcomes or trends than a table of figures displaying the same information. Different *chart types* have been created to communicate different types of information. Some charts show simple relationships between values, while others are designed for quite technical purposes. Here is a summary of the use of different chart types.

Column, Bar
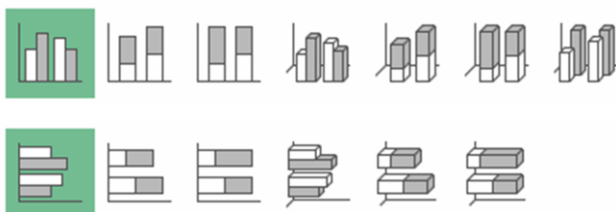
These chart types, either in 2D or 3D, are used to compare values across categories. For example, they could compare the populations of different countries.

Line, Area
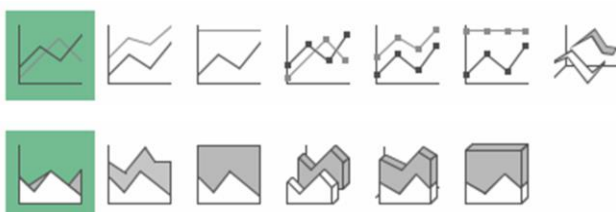
Lines in 2D or 3D are useful for showing trends such as sales or employment figures. An area chart is a line chart with the area below the line filled in.

Surface

The surface chart plots trends in two dimensions. You could use this to plot departmental sales figures over time. The chart then shows you the trends between departments, as well as the sales trends over time.

Pie, Doughnut

If you want to show proportion, such as the sales figures from different departments that make up a total, then the pie and doughnut charts are for you. The only variation between the doughnut chart and the pie chart is that the doughnut chart can display more than one series of values.

Stock
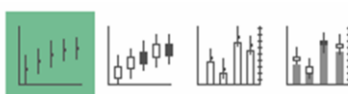
The stock chart type has been designed to show the stock figures for a day, and the trend over time. At its simplest, you can plot the high, low and close figures, and at its most complex, the volume, open, high, low, and close. It can be adapted to show the relationships between any five sets of values.

XY (Scatter)

Scatter diagrams are used to display the relationship between two variables. For example, you could research the age and price of a series of cars, and plot the values you find. You could also investigate the height and weight relationship of a group of people.

Radar

A radar diagram is designed to show the change in values from a central point. For example, it can be used to show mobile telephone coverage, including multiple networks and multiple measurements.

USING A RECOMMENDED CHART

If you are undecided about the best type of chart for the data you have selected to graph, then you may wish to use Excel's *Recommended Charts* feature. This feature analyses your selected data and presents you with what it considers to be the best way to chart that data. Several alternatives are presented and you simply choose the one you like most.

Try This Yourself:

Open File

Before starting this exercise you MUST open the file E1317 Charting_1.xlsx…

1. Click in cell *A3*, hold down `Shift`, then click in cell *G7* to select the range *A3:G7*

2. Click on the *INSERT* tab, then click on *Recommended Charts* in the *Charts* group

   The Insert Chart dialog box will display with a number of recommended chart options…

3. Click on each of the alternatives in the left pane to see a preview of how the chart will appear in the right pane and spend a few moments reading the descriptions

4. Click on *Line chart* (the second alternative in the left pane), then click on *[OK]* to embed the chart in the worksheet

5. Point to the top border of the chart, then click and drag the chart immediately below the data

6. Click in cell *A1* to deselect the chart

❶ *You can also use the Quick Analysis tool that appears at the bottom right corner of a selected range to create a quick chart. However, this method will not allow you to preview a wide variety of charts.*
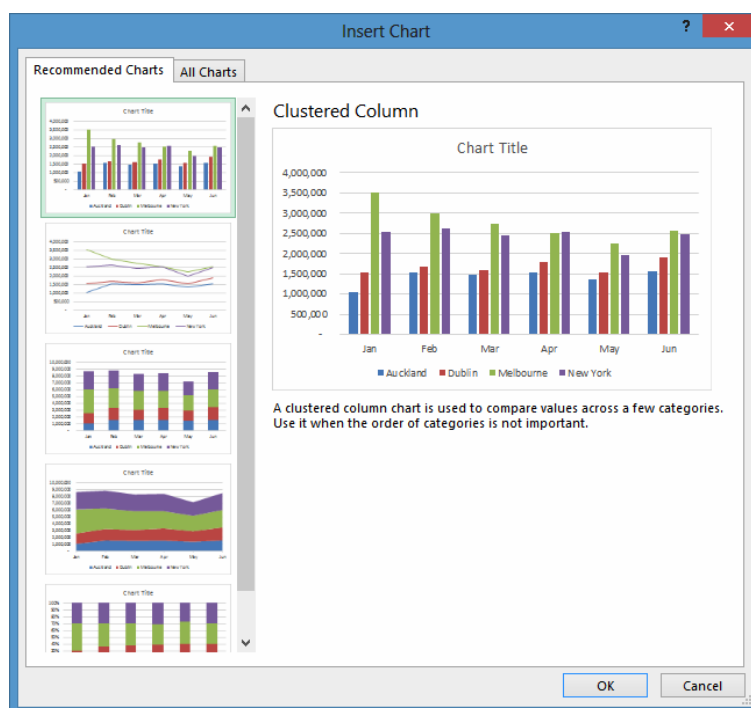
For Your Reference…

To *use* the *Recommended Charts feature*:

1. Select the data to be charted
2. Click on the *INSERT* tab, then click on *Recommended Charts* in the *Charts* group
3. Click on the desired chart and click on *[OK]*

Handy to Know…

- When selecting data for a chart you should include headings (e.g. names of the month, regions, etc.) but not the totals derived from the data. In the example above the names of the months and the cities are selected but the total revenue and the regional totals are not.

CREATING A NEW CHART FROM SCRATCH

The easiest way to create a chart is by using the **Recommended Chart** feature. However, you can create a chart yourself from scratch using any of the **Insert** commands in the **Charts** group on the **INSERT** tab of the ribbon. This may be faster if you have a specific style of chart in mind.

Try This Yourself:

Open File

Before starting this exercise you MUST open the file E1317 Charting_1.xlsx…

1 Click in cell **A3**, hold down `Shift`, then click in cell **G7** to select the range **A3:G7**

Note that we have selected the data including headings but excluding the totalling…

2 Click on the **INSERT** tab, then click on **Insert Column Chart** in the **Charts** group to see a gallery of **Column** chart types

3 Under **2-D Column**, click on **Clustered Column**

The chart will be embedded in the worksheet. The chart will be active (selected) and you'll see additional tabs on the ribbon for working with the chart…

4 Point to the chart, then click to select it and drag the chart so that it is underneath the data, as shown

5 Click in cell **A1** to deselect the chart

2

4
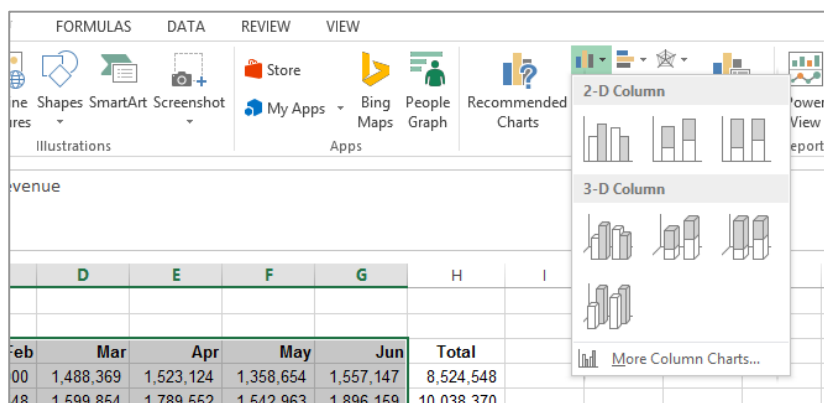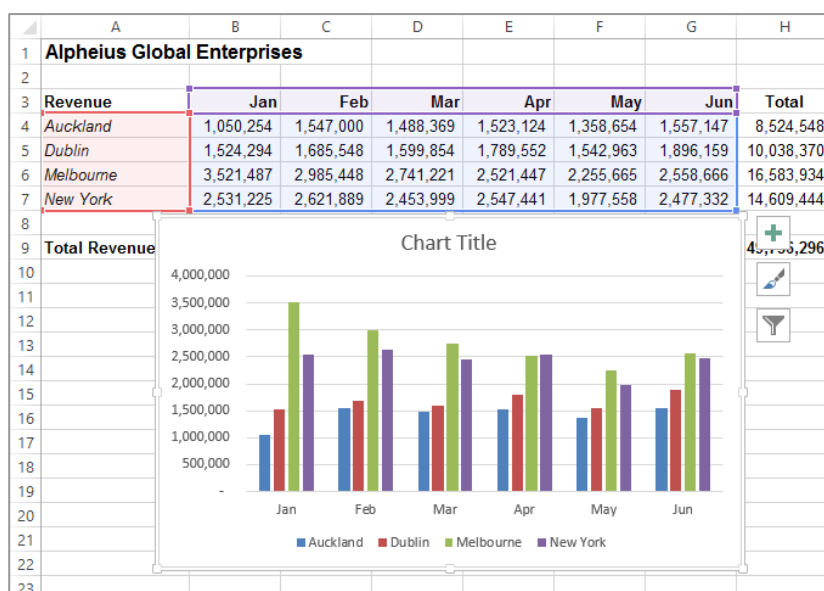
For Your Reference…

To **create a chart** from **scratch**:

1. Select the range to chart
2. Click on the **INSERT** tab, then click on the appropriate **Insert** command in the **Charts** group
3. Click on the desired chart type

Handy to Know…

- When a chart gallery appears after you've used the **Insert chart** command, you can point over each image in the gallery to see a Live Preview of the chart in the worksheet. This will help you to select the right chart for your needs.

WORKING WITH AN EMBEDDED CHART

By default, new charts are placed in the active worksheet, which is usually the one that contains the data. Charts are placed over the top of the worksheet, *embedded* as *objects*. When you want to work with a chart you must select it – this can be done by clicking on the chart. The chart itself is made up of many objects and these too can be selected by clicking on them.

## Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1317 Charting_2.xlsx...

1. Point to the border of the chart and click once to select the chart as an object

   The border of the chart will thicken to indicate that the chart is selected, the range of data used for the chart will be coloured, the ribbon will show chart-specific tabs and commands, and additional tools will appear to the right of the chart…

2. Click on the chart *legend* to make it the active object in the chart

3. Click on the **vertical axis** to make it the active object

4. Click on the **horizontal axis** to make it the active object

5. Click on the border of the chart to make the overall chart the active object again – notice that the range of data has been coloured again

6. Click in cell *A1* to deselect the chart
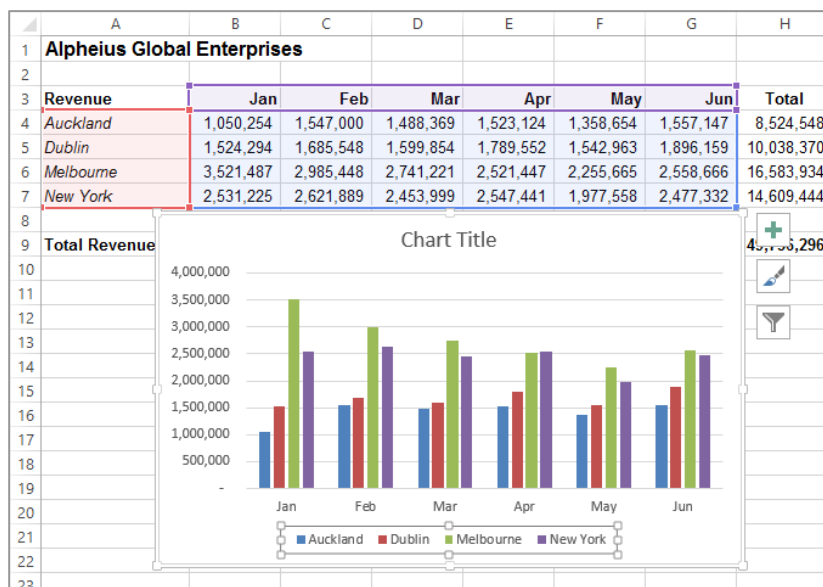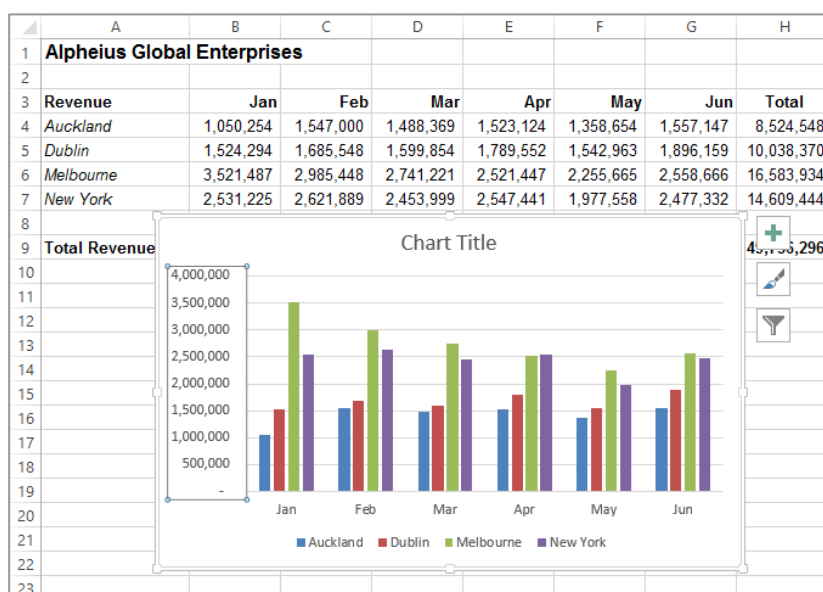
For Your Reference…

To *select a chart* and its *objects*:

1. Click on the border of the chart to select an embedded chart
2. Click on the various objects of a chart to select them

Handy to Know…

- Once an object is selected, be it a chart, a legend on the chart, or the like, you can right-click on the object to see a shortcut menu specific to the selected object.

RESIZING A CHART

There are two main ways to resize a chart if you are not satisfied with its current size. A chart that has been selected can be resized by dragging one of the sizing handles around its border.

These handles appear with dots in them. You can also resize a chart using commands in the *Size* group on the *CHART TOOLS: FORMAT* tab that appears when the chart is selected.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1317 Charting_3.xlsx...

1. Click on the chart to select it

2. Point to the sizing handle on the left border of the chart until the mouse pointer changes to a double arrow

3. Hold down the left mouse button and drag left until the chart appears as shown

   You can also resize a chart from the ribbon…

4. Click on the *CHART TOOLS: FORMAT* tab

5. Click on the up spinner arrow for *Shape Height* in the *Size* group until it shows *8.5 cm*

6. Click on the up spinner arrow for *Shape Width* in the *Size* group until it shows *17 cm*

7. Click in cell *A1* to deselect the chart

3

4
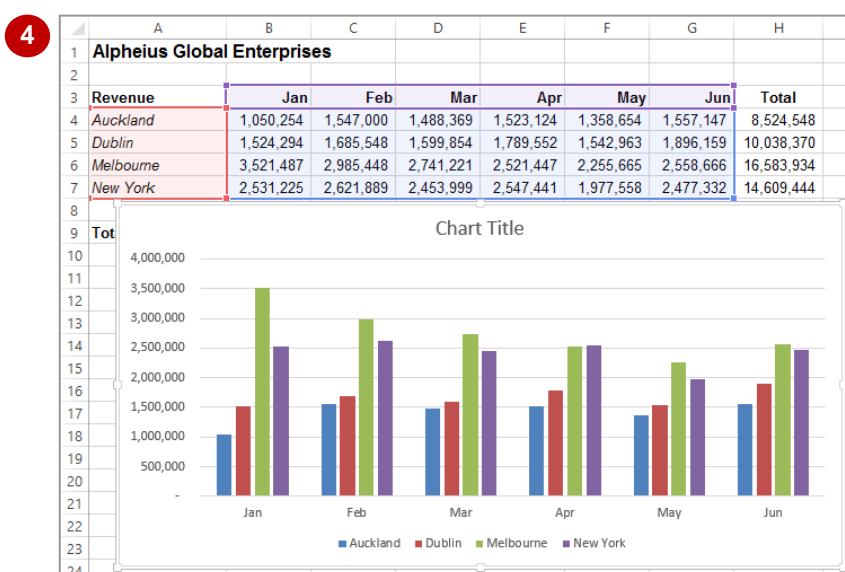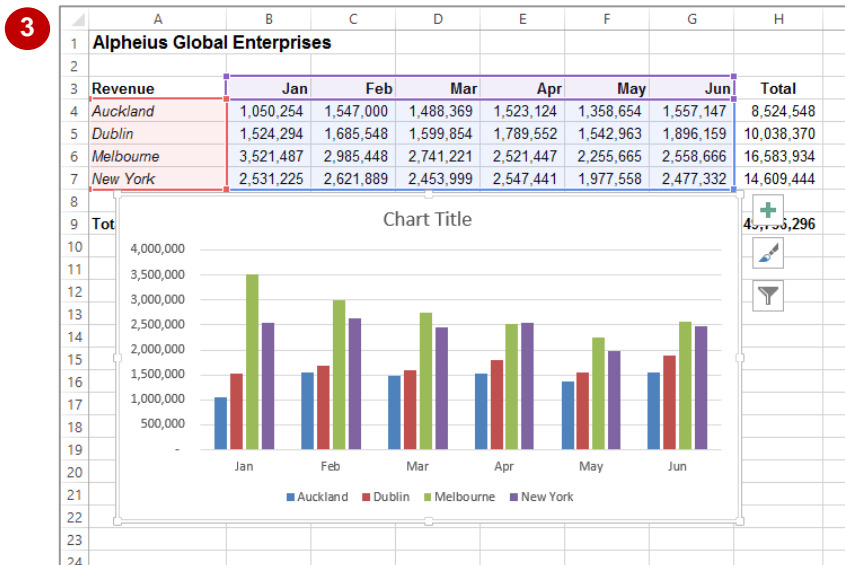
For Your Reference…

To *resize* a *chart*:

1. Select the chart, then click on and drag a sizing handle on the border of the chart, or Click on the *CHART TOOLS: FORMAT* tab, then click on up/down spinner arrows for *Shape Height* and *Shape Width* in the *Size* group

Handy to Know…

- If you wish to change the size of a chart quickly and easily, clicking on and dragging the resize handles is the best option whereas if you want to resize a chart to a specific size it is best to resize the chart using the tools in the *Size* group on the *CHART TOOLS: FORMAT* tab.

REPOSITIONING A CHART

It's unlikely that a chart embedded in the worksheet by Excel will be exactly where you would like it to be. You can easily relocate a chart to a more appropriate position by clicking on and dragging the border of the chart to the desired location. The chart obviously must be selected before it can be dragged to a new position.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1317 Charting_4.xlsx...

1 Click on the chart to select it

2 Point to the border of the chart until the mouse pointer changes to a four-headed arrow

3 Hold down the left mouse button and drag the chart below the data so that the **Total Revenue** row in the worksheet is visible

4 Click in cell **A1** to deselect the chart
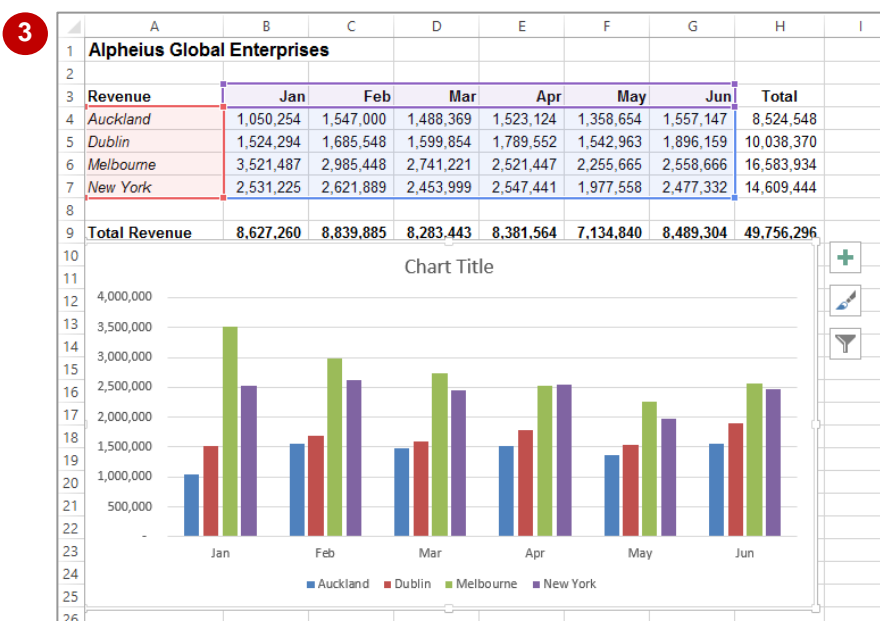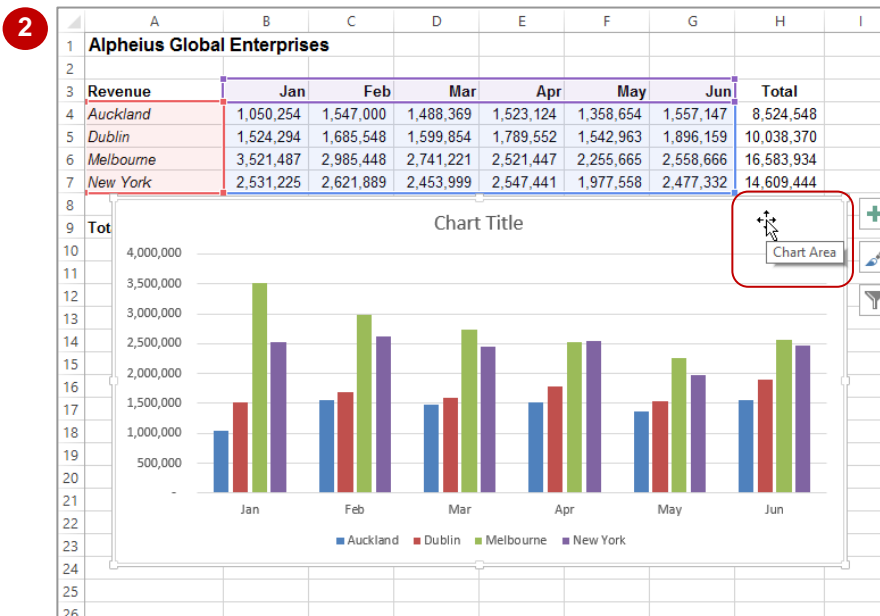
For Your Reference…

To *move* a *chart*:

1. Click on the chart to select it
2. Move the mouse pointer to the border of the chart until the mouse pointer changes to a four-headed arrow
3. Drag the chart to a new location

Handy to Know…

- You can use the standard cut and paste commands to move a chart. Select the chart, click on the **HOME** tab, then click on **Cut** in the **Clipboard** group to copy it to the clipboard. Click in a new location and, on the **HOME** tab, click on **Paste** in the **Clipboard** group to paste the chart.

PRINTING AN EMBEDDED CHART

When you print a worksheet, Excel will print whatever is in or *embedded* in that worksheet (including charts). This makes it easy and convenient to print both the chart and its underlying data. All you need to do is to position the chart in the appropriate location then access the print commands in the usual way.

Try This Yourself:

Open File

Before starting this exercise you MUST open the file E1317 Charting_5.xlsx…

1 Click on the *FILE* tab, then click on *Print* to see a preview of the data and the chart

Not all of the chart or data may be visible so we'll change the orientation to landscape…

2 Click on *Portrait Orientation* in *Settings* then select **Landscape Orientation**

3 Click on **[Print]** to print the chart

If you don't have a printer connected or you don't wish to print, click on the Back arrow to display the workbook again

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For Your Reference…

To *print* an *embedded chart*:

1. Click on the *FILE* tab, then click on *Print*
2. Click on **[Print]**

Handy to Know…

- If you only want to print the chart and not the data, click on the chart to select it, click on the *FILE* tab, then click on *Print*. You will notice that only the chart will appear in the preview.

CREATING A CHART SHEET

Charts can either be stored in a worksheet or in a separate sheet of their own known as a *chart sheet*. Chart sheets separate the chart from the underlying data and are useful especially if you are interested in printing the chart on its own page. Charts can be shifted back and forth between a worksheet and a chart sheet.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1317 Charting_6.xlsx...

1   Click on the chart to select it and display the *CHART TOOLS:DESIGN* and *CHART TOOLS: FORMAT* tabs

2   Click on the *CHART TOOLS: DESIGN* tab, then click on *Move Chart* in the *Location* group to display the *Move Chart* dialog box

3   Click on *New Sheet*, then type **Revenue Chart**

    This will become the sheet name for the chart…

4   Click on **[OK]** to move the embedded chart to its own sheet

5   Click on the *Chart Data* worksheet tab to see the data again

    Notice that the chart is no longer embedded on this worksheet
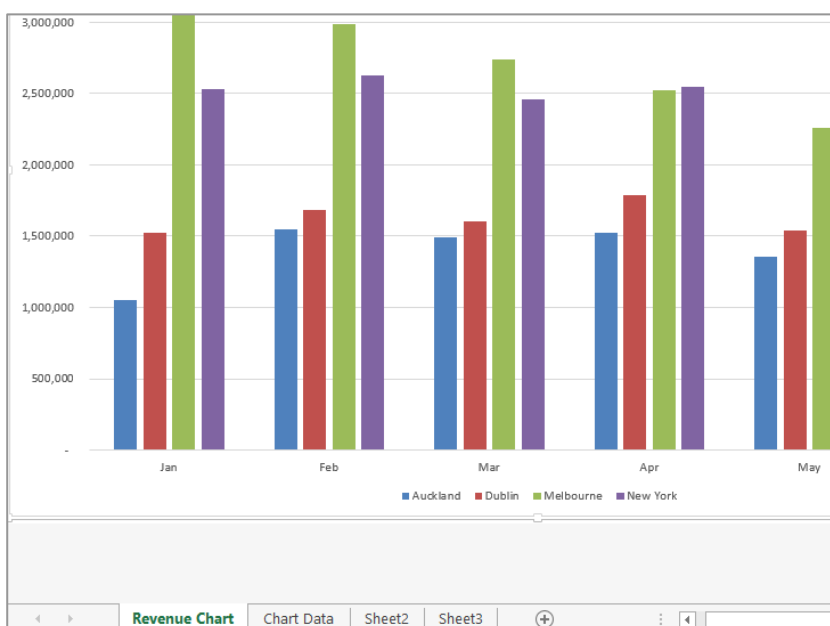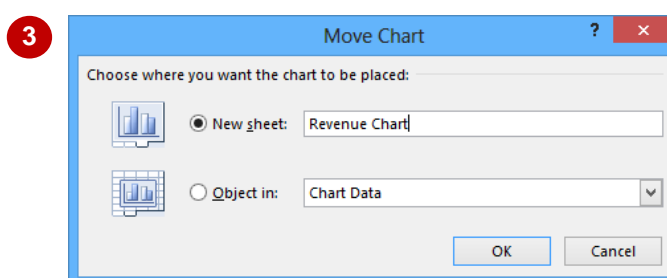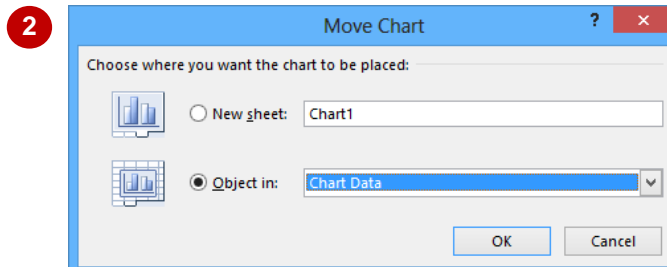
For Your Reference…

To *create* a *chart sheet*:

1. Click on the *CHART TOOLS: DESIGN* tab, then click on *Move Chart* in the *Location* group

2. Click on *New Sheet*, type a name for the sheet and click on **[OK]**

Handy to Know…

• Keeping charts on their own sheets makes them easier to work with as they do not obstruct the data.

CHANGING THE CHART TYPE

When you create a chart, you may not always achieve the result that you desire. Fortunately, the process for changing a chart type is quite simple. You just need to have an understanding of what each chart type is designed for and to select the format that best suits your purpose. Just be aware that some chart types are designed for specialised applications.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1317 Charting_7.xlsx...

1. Click on the **Revenue Chart** worksheet tab to see the chart, then click anywhere on the chart to select it and display the chart commands on the ribbon

2. Click on the **CHART TOOLS: DESIGN** tab, then click on **Change Chart Type** in the **Type** group to display the **Change Chart Type** dialog box

3. Click on **3-D Column**, as shown

4. Click on **[OK]** to apply the change to the chart

5. Click on the **Chart Data** worksheet tab to return to the worksheet
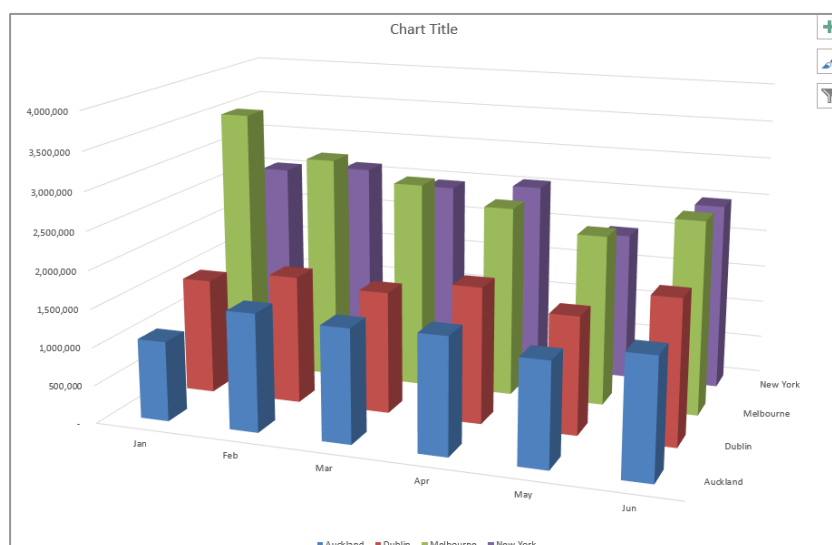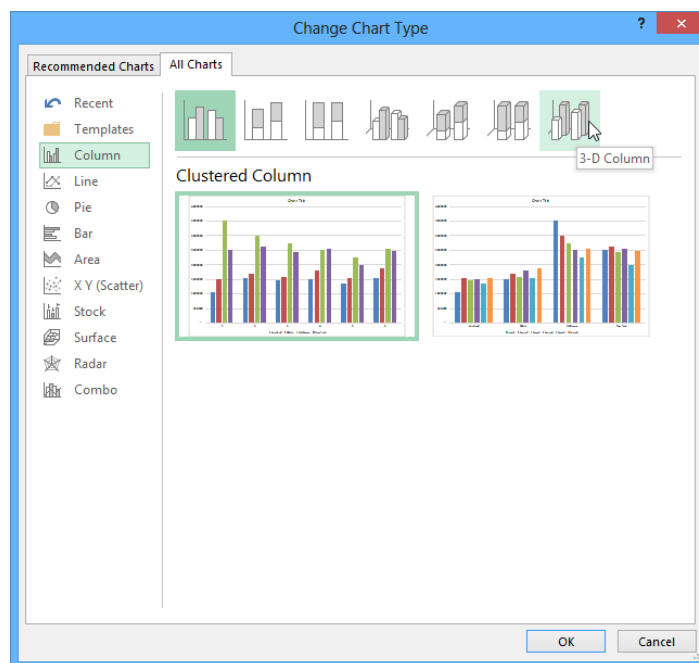
For Your Reference…

To **change** the **chart type**:

1. Ensure the chart or chart sheet is selected
2. Click on the **CHART TOOLS: DESIGN** tab, then click on **Change Chart Type** in the **Type** group
3. Click on the desired chart and click on **[OK]**

Handy to Know…

- You can use **Change Chart Type** in the **Type** group on the **CHART TOOLS: DESIGN** tab for either embedded charts or charts that have their own worksheet tabs.

CHANGING THE CHART LAYOUT

Excel has a gallery of *chart layouts* that can be applied to an existing and selected chart that is either in its own worksheet or embedded into the data worksheet. *Chart layouts* are the way elements of the chart are placed within the chart. Different layout options can therefore change the appearance of your chart and its readability.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1317 Charting_8.xlsx...

1. Click on the *Revenue Chart* worksheet tab to see the chart, then click anywhere on the chart to select it and see the *CHART TOOLS: DESIGN* and *CHART TOOLS: FORMAT* tabs

2. Click on the *CHART TOOLS: DESIGN* tab, then click on *Quick Layout* in the *Chart Layouts* group to display a gallery of layout options

3. Click on *Layout 3* to apply this chart layout to the chart

4. Repeat steps *2* and *3* to select other *chart layouts* and see how they appear when applied to the chart

5. Click on *Quick Layout* in the *Chart Layouts* group and click on *Layout 5*

6. Click on the *Chart Data* worksheet tab to display this worksheet

	1	2	3	4	5	6
Auckland	1,050,254	1,547,000	1,488,369	1,523,124	1,358,654	1,557,147
Dublin	1,524,294	1,685,548	1,599,854	1,789,552	1,542,963	1,896,159
Melbourne	3,521,487	2,985,448	2,741,221	2,521,447	2,255,665	2,558,666
New York	2,531,225	2,621,889	2,453,999	2,547,441	1,977,558	2,477,332
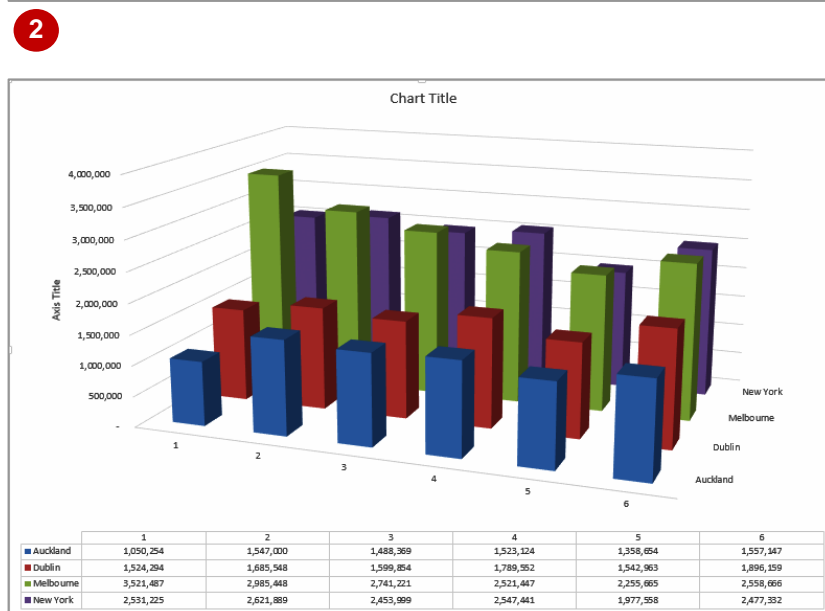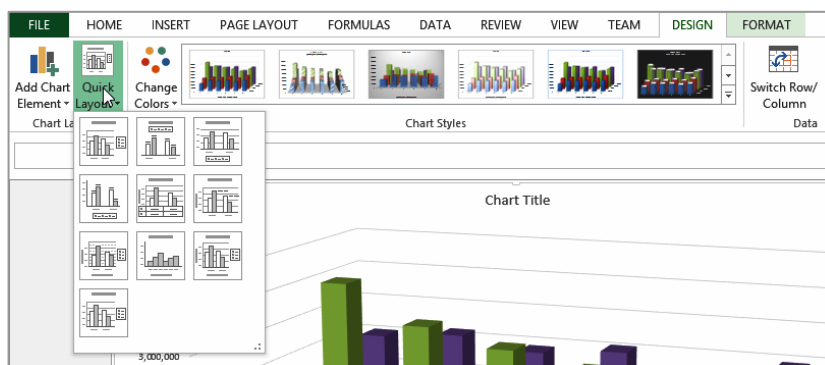
For Your Reference…

To **change** the *chart layout*:

1. Ensure the chart or chart sheet is selected
2. Click on the *CHART TOOLS: DESIGN* tab, then click on *Quick Layout* in the *Chart Layouts* group
3. Select the desired layout

Handy to Know…

- *Chart layouts* are predefined themes created by Microsoft. Even if you choose one of these layouts you can still make your own modifications to the way the elements and objects are positioned and how they appear.

CHANGING THE CHART STYLE

The style of a chart refers to its colour scheme and overall appearance and can impact the clarity of the content of the chart. Choosing a predefined chart style can save valuable time and effort. Excel also makes it easy to change chart styles if you decide the style you have chosen is not appropriate.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1317 Charting_9.xlsx...

1 Click on the **Revenue Chart** worksheet tab to see the chart, then click anywhere on the chart to select it

2 Click on the **Chart Styles** tool to the right of the chart to see a gallery of style options, as shown

3 Scroll through the gallery and point to each style to see how your chart will look in Live Preview

4 Scroll to and click on **Style 9**

5 Click on the **Chart Styles** tool to the right of the chart to close the gallery

6 Click on the **Chart Data** worksheet tab
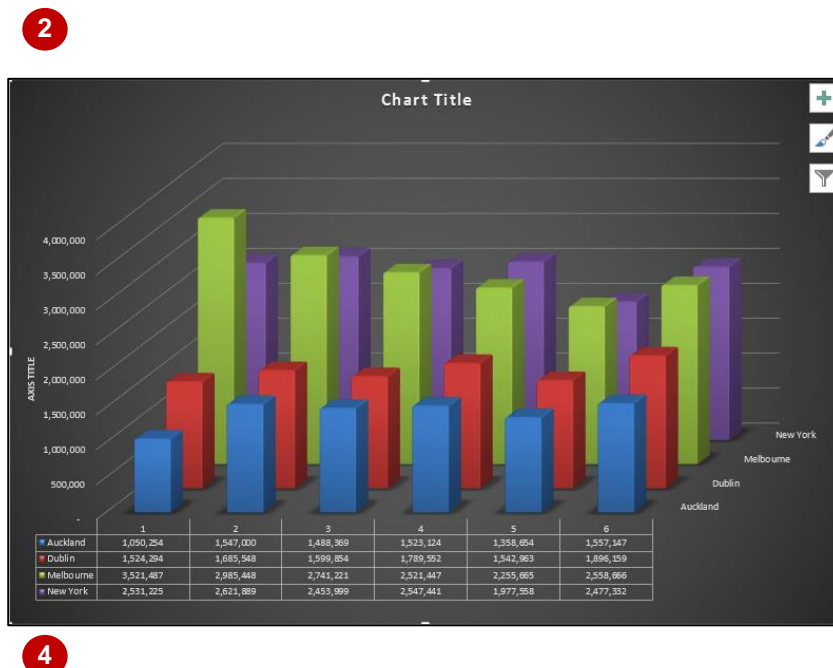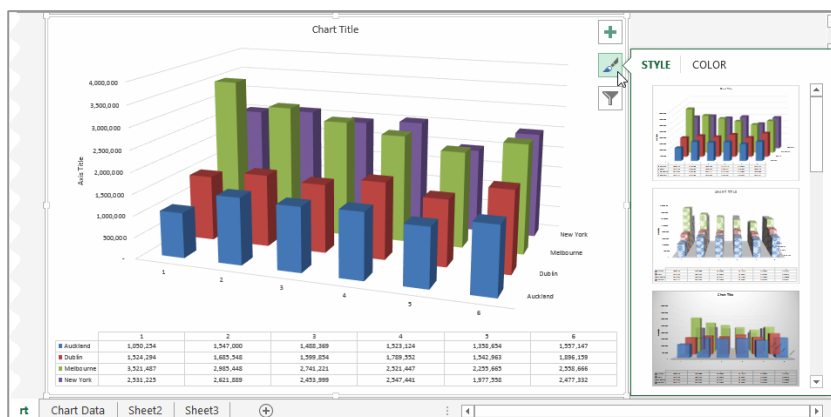
For Your Reference…

To **change** the **chart style**:

1. Ensure the chart or chart sheet is selected
2. Click on the **Chart Styles** tool to the right of the chart
3. Click on the desired style

Handy to Know…

- Instead of using the **Chart Styles** tool to the right of the chart, you can also choose chart styles from the **CHART TOOLS: DESIGN** tab on the ribbon when a chart is selected.

PRINTING A CHART SHEET

You can print an embedded chart simply by printing the worksheet as if it is a standard worksheet. You can also print a chart sheet in exactly the same way. To print a chart sheet, simply ensure that the chart sheet is active, then click on the *FILE* tab, click on *Print*, apply the print settings as desired and click on **[Print]**.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1317 Charting_10.xlsx...

1. Click on the *Revenue Chart* worksheet tab

2. Click on the *Chart Title* text box, select the text, then type **Revenue Chart** to change the title

3. Repeat step *2* to change the *Axis Title* to **Euros**

4. Click on the *FILE* tab, then click on *Print* to see the print options and a preview of the chart

   No further adjustment is required here so we can go ahead and print it…

5. If you wish to print the chart, click on **[Print]**

   If you don't have a printer connected or wish to save paper, click on the Back arrow to return to the worksheet…

6. Click on the *Chart Data* worksheet tab

2

4
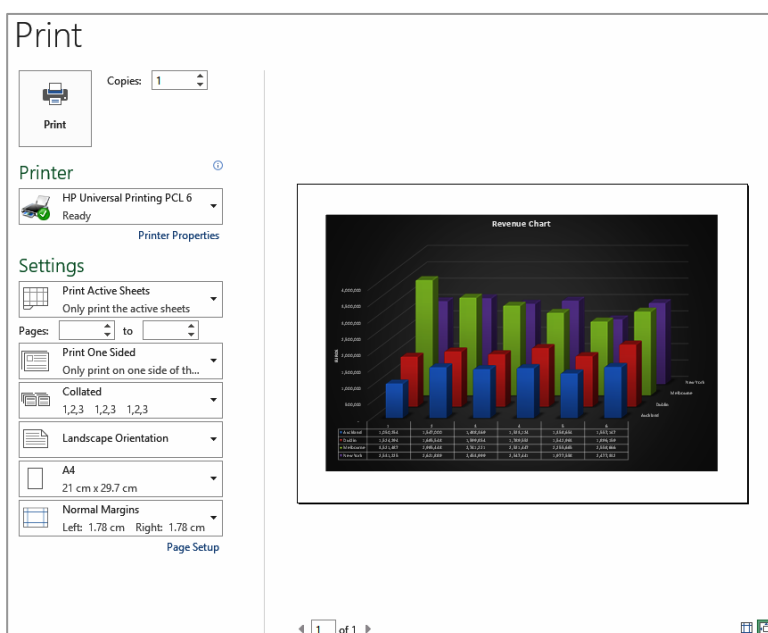
For Your Reference…

To *print* a *chart sheet*:

1. Click on the chart sheet tab
2. Click on the *FILE* tab, then click on *Print*
3. Click on **[Print]**

Handy to Know…

* When you preview a chart prior to printing, it may not appear as clearly as you would like. This is due to the screen resolution, not the chart itself. The printed version of the chart will appear clearer than the preview.

EMBEDDING A CHART INTO A WORKSHEET

Charts can either be presented in their own sheets or they can be embedded into a worksheet that contains data. In fact, you can move a chart back and forth between its own sheet and a worksheet as often as you wish without impacting at all on the chart. Sometimes it is easier to work with a chart in its own sheet, but it may be necessary to print the chart with its data.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1317 Charting_11.xlsx...

1. Click on the **Revenue Chart** worksheet tab

2. Click on the **CHART TOOLS: DESIGN** tab, then click on the **Move Chart** tool in the **Location** group to display the **Move Chart** dialog box

3. Click on **Object in**, then click on the drop arrow and click on **Sheet 2**

4. Click on **[OK]** to move the chart to the worksheet

5. Reposition the chart by dragging it to the top left of the sheet, then drag the resizing handles to resize it as shown

6. Click on the **Chart Data** worksheet tab

3

4

5
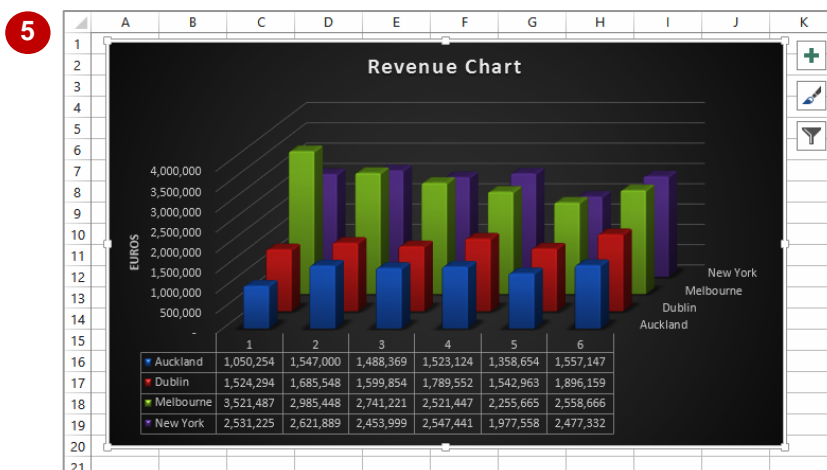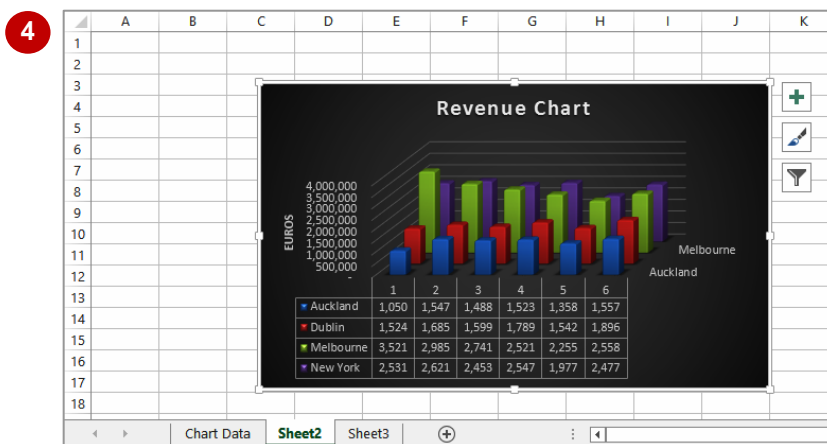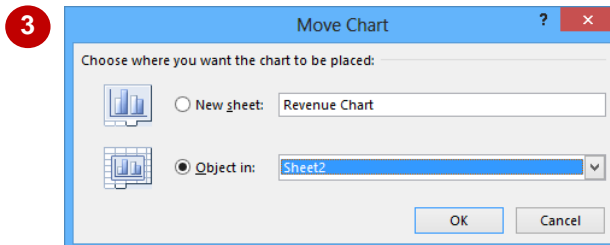
For Your Reference…

To **embed** a **chart** in a **worksheet**:

1. Click on the **CHART TOOLS: DESIGN** tab, then click on **Move Chart** in the **Location** group

2. Click on the drop arrow, select the sheet to embed it into, then click on **[OK]**

Handy to Know…

- Embedding is normally only done when it is necessary to print the worksheet and the data together.

DELETING A CHART

If you no longer require a chart you can easily delete it. With embedded charts you must first select the chart in the worksheet and then press the Del key to delete the chart. With charts in chart sheets you can delete the sheet by right clicking on the chart sheet tab and choosing the deletion option.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1317 Charting_12.xlsx...

1. Click on **Sheet 2** to see the chart in the worksheet, then click on the chart to select it

2. Press Del to delete the chart

For Your Reference…

To *delete* a *chart*:

1. Click on the worksheet to see the chart, then click on the chart to select it

2. Press Del

Handy to Know…

- Because it is so easy to delete a chart object it is also easy to delete it by accident! Remember, you can use the *Undo* feature in Excel to restore accidental deletions.

UNDERSTANDING CHART ELEMENTS

Microsoft Excel provides a range of chart elements that can be added to the layout or used to modify the layout so that the chart is easier to interpret. Charts can be used to communicate a range of ideas, and *chart layout elements* help you emphasise particular ideas, information and trends. This page takes an introductory look at the elements that you can take advantage of.
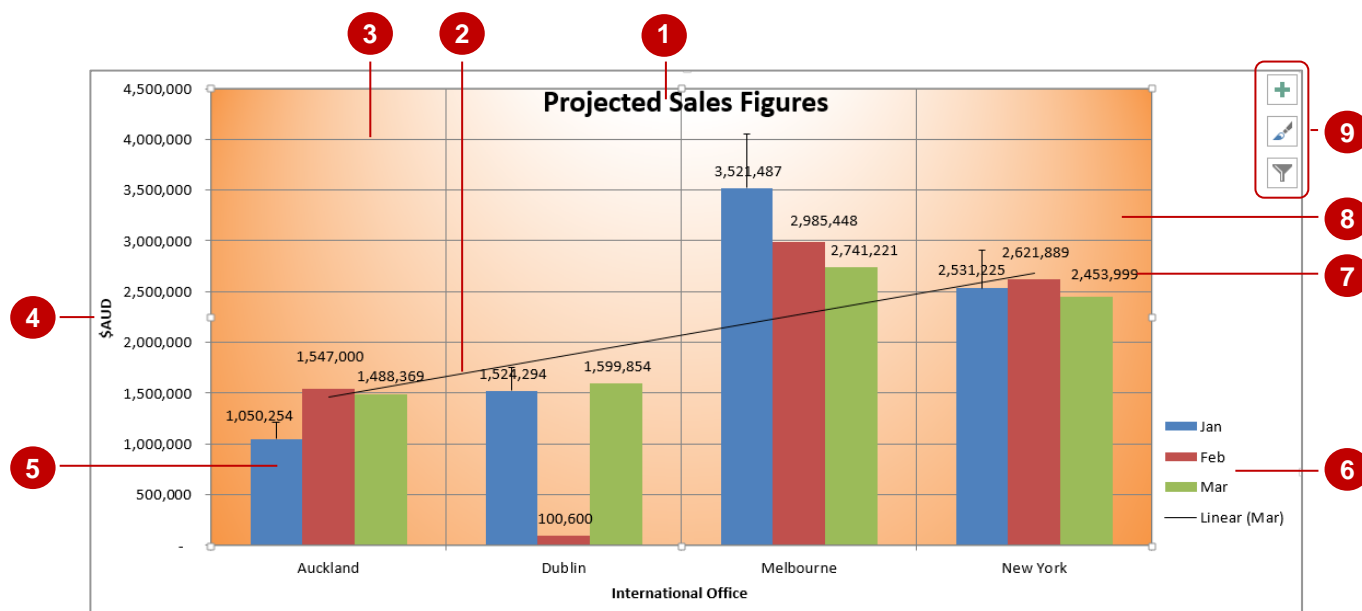
Chart Layout Elements

The chart above has been overladen with chart layout elements so that you can see how they fit in and work together. In reality, you would only ever use a few at a time to avoid confusion.

1 **Chart Title** The **chart title** explains the chart's purpose and can be edited and moved to any location as required.

2 **Trendline** A **trendline** shows you the trend of a particular data series, while **error bars** show you possible variations in figures.

3 **Gridlines** **Horizontal** and **vertical gridlines** can be drawn across the **plot area** (background) to help the reader judge the position of the elements, e.g. the size of the column.

**4** **Axes Titles** The horizontal and vertical **axes titles** give an overview of the data that is plotted on the chart.

5 **Data Series** Related data points that are plotted in a chart and originate from datasheet rows or columns. Each data series in a chart has a unique colour or pattern. You can plot one or more data series in a chart, as shown above. Pie charts have only one data series.

6 **Legend** The **legend** tells you the name of each data series in the chart.

7 **Data Labels** A **data label** is a label that provides additional information about a **data marker**, which represents a single data point or value that originates from a worksheet cell. Data labels can be applied to a single data marker, an entire data series or all data markers in a chart.

8 **Plot Area** In a **2-D chart**, the **plot area** is the area bounded by the axes and includes the data series. In a **3-D chart** the **plot area** is the area bounded by the axes and includes the **data series**, **category names** and **axes titles**. In the example above, it also includes the horizontal **gridlines**.

9 **Chart Buttons** There are three chart buttons and they are **chart elements**, **chart styles** and **chart filters**. These buttons only appear when a chart is selected and can be used to perform a range of basic functions.

ADDING A CHART TITLE

The *chart title* tells the reader at a glance what the chart is about. It is effectively a summary of the purpose of the chart. Chart titles generally appear at the top of the chart where they don't interfere with the plotted figures in the chart. Excel provides two pre-set title positions – one *above* the chart and one *overlaid* on the chart so that there is more room for the plot area.

Try This Yourself:

Open File

Before starting this exercise you MUST open the file E1329 Charting Techniques_1.xlsx...

1 Spend a few moments studying the data, then click on the *Projected Sales Chart* worksheet tab

This column chart shows sales as projections, but without a title it is a bit hard to work this out…

2 Click on the *CHART ELEMENTS* button, then point to *Chart Title*

Live Preview will show a default title…

3 Click on the black arrow next to *Chart Title* to see further options

Centred Overlay Title leaves the size of the plot area unchanged while Above Chart resizes the chart and places the title outside the plot area...

4 Click on *Centred Overlay* to display a title over the plot area

5 Select the text *Chart Title* in the *Chart Title* place holder, then type **Projected Sales Figures**

CHART ELEMENTS
- ☑ Axes
- ☐ Axis Titles
- ☐ Chart Title ▸
- ☐ Data Labels
- ☐ Data Table
- ☐ Error Bars
- ☑ Gridlines
- ☑ Legend
- ☐ Trendline

CHART ELEMENTS
- ☑ Axes
- ☐ Axis Titles
- ☐ Chart Title ▸ | Above Chart / Centered Overlay / More Options…
- ☐ Data Labels
- ☐ Data Table
- ☐ Error Bars
- ☑ Gridlines
- ☑ Legend
- ☐ Trendline

Projected Sales Figures

For Your Reference…

To *add* a *title* to a *chart*:

1. Click on the *CHART ELEMENTS* tool, then click on *Chart Title* and select the desired placement option
2. Type the title text and press ⌷Enter⌷

Handy to Know…

- In lieu of using the *CHART ELEMENTS* tool, you can use *Add Chart Element* on the *CHART TOOLS: DESIGN* tab to add a title to a chart.
- Removing the tick next to *Chart Title* on the *CHART ELEMENTS* pane will remove the title from the chart.

ADDING AXES TITLES

Axes titles appear outside the **vertical** (Y) axis and the **horizontal** (X) axis and are used to provide units of measure or an overall text description of the data elements plotted on each axis. For example, if your vertical axis shows dollar amounts, you can detail which currency you've used by adding a vertical axis title.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1329 Charting Techniques_2.xlsx...

1 Click on the **CHART ELEMENTS** button, then point to **Axis Titles** to see default X and Y axis titles on the chart

2 Click on the black arrow to the right of **Axis Titles** to see further options

3 Click on **Primary Horizontal** to display an axis title on the *X* (horizontal) axis

4 Select **Axis Title** in the **Axis Title** placeholder, then type **International Office**

5 Repeat steps *1* and *2*

6 Click on **Primary Vertical** to display an axis title on the *Y* (vertical) axis

7 Type **$AUD** and press Enter
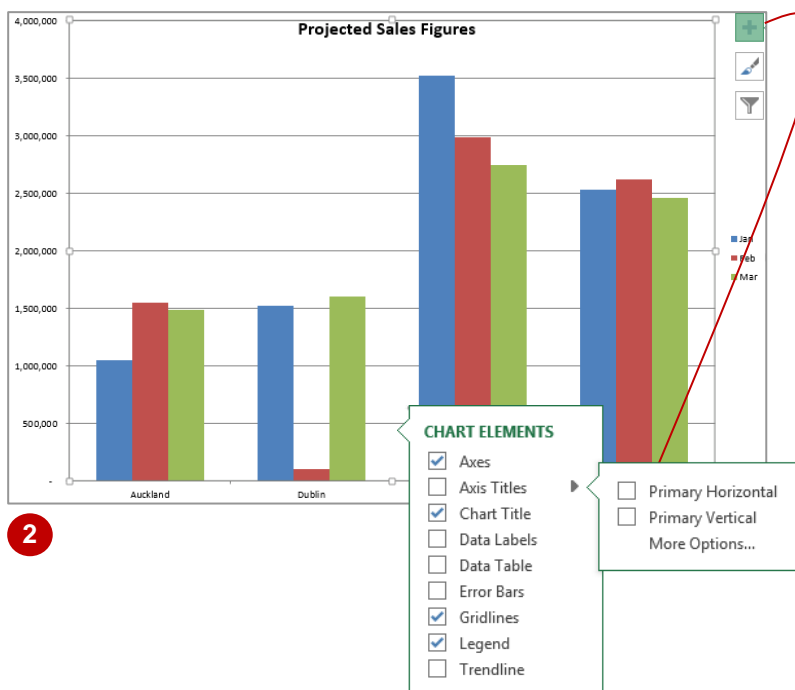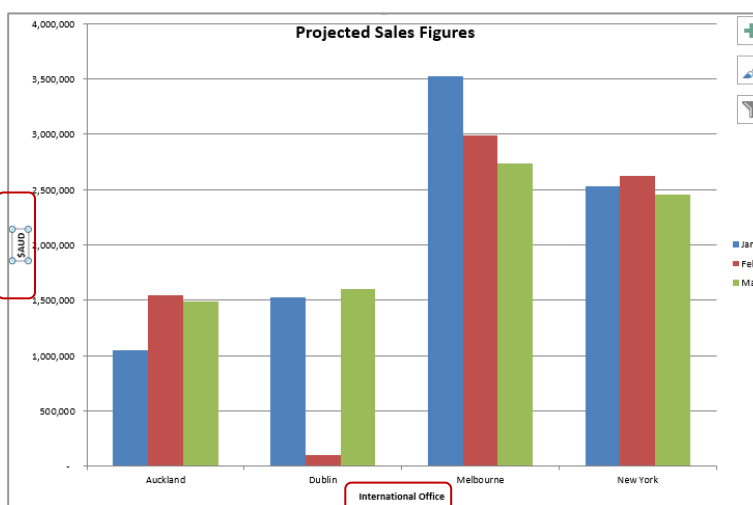
For Your Reference…

To **add axis titles** to a **chart**:

1. Click on the **CHART ELEMENTS** button, point to **Axis Titles**, then click on the black arrow

2. Click on the desired axis (Horizontal or Vertical)

Handy to Know…

- Instead of using the **CHART ELEMENTS** button, you can use **Add Chart Element** on the **CHART TOOLS: DESIGN** tab to add axes to a chart.

REPOSITIONING THE LEGEND

A *legend* is a list of the data series that have been plotted on a chart along with their corresponding colours or other identifying marks. By default, charts are created with a legend that appears to the right of and outside the plot area. There are six preset position options for you to select from, some overlaying the plot area, others being placed outside the plot area.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1329 Charting Techniques_3.xlsx...

1 Click on the **CHART ELEMENTS** button, point to **Legend**, then click on the black arrow to the right

Currently, the legend is positioned on the right as indicated by the tick and green highlighting…

2 Click on **Top** to move the legend to the top of the chart

3 Click on the legend so that it is selected and *selection handles* appear around it

Be careful not to select the chart title by mistake…

4 Hold down the left mouse button, then drag the legend down below the chart title

You can actually position the legend wherever you want to. Let's put it back where it was...

5 Repeat step *1*, then click on **Right** to return the legend to the right side of the chart again

---
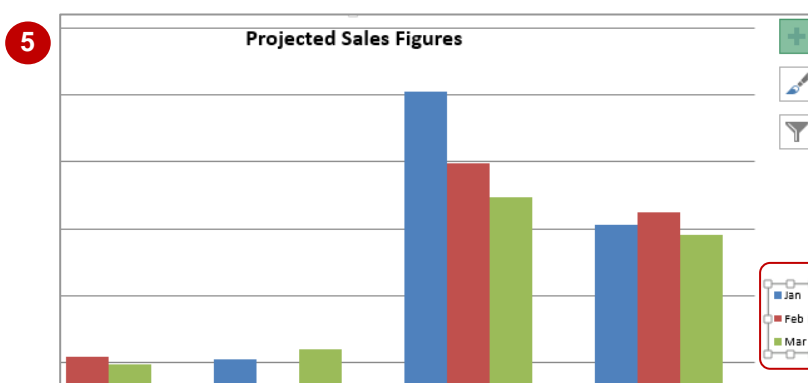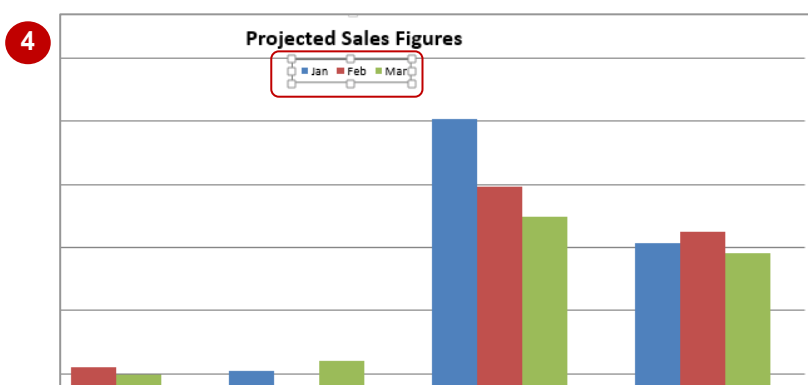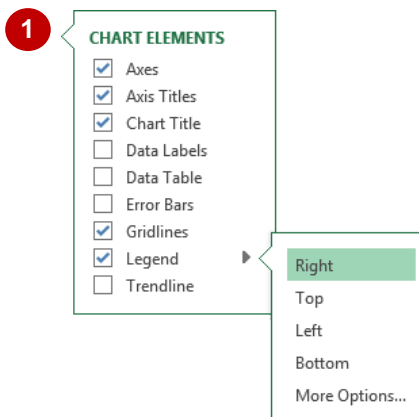
For Your Reference…

To *reposition* the *legend*:

1. Click on the **CHART ELEMENTS** button
2. Point to **Legend**, then click on the black arrow to the right
3. Click on the desired position

Handy to Know…

- Instead of using the **CHART ELEMENTS** button you can use **Add Chart Element** on the **CHART TOOLS: DESIGN** tab to either add a legend or reposition the current one.

SHOWING DATA LABELS

Data labels are text boxes placed on the chart that show the actual figures behind the chart. Data labels can show the value, the category label or the percentage of a total. They are particularly useful for pie charts as they can be used to show the exact percentage of each slice. Data labels can be placed in several preset positions on the chart.

Try This Yourself:

<table>
<tr><td rowspan="1">*Same File*</td><td>*Continue using the previous file with this exercise, or open the file E1329 Charting Techniques_4.xlsx...*</td></tr>
</table>

1 Click on the **CHART ELEMENTS** button, point to **Data Labels**, then click on the black arrow to the right

2 Point to the options to view the effect in Live Preview

3 Click on **Outside End** to position the labels at the top of the bars

Some labels may appear too close…

4 Click on the **Feb** figure for **Auckland** – notice that all of the *Feb* series will be selected

5 Click again on the data label for **Feb** for **Auckland** to select only this label, then drag it up to position it, as shown

Notice that it has drawn a line to the column it represents…

6 Click on the line to select it, then press Del to delete it

7 Repeat steps **4** to **6** to move any other labels as necessary
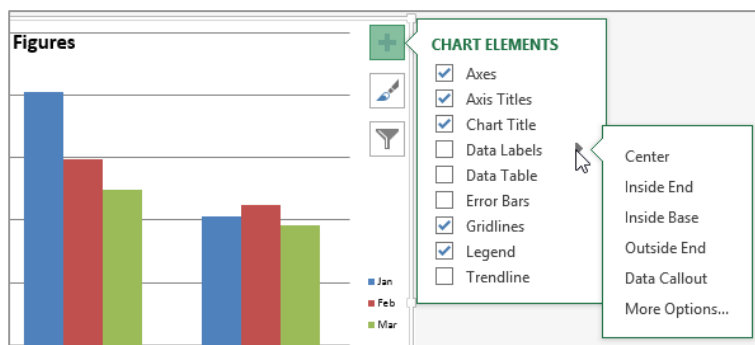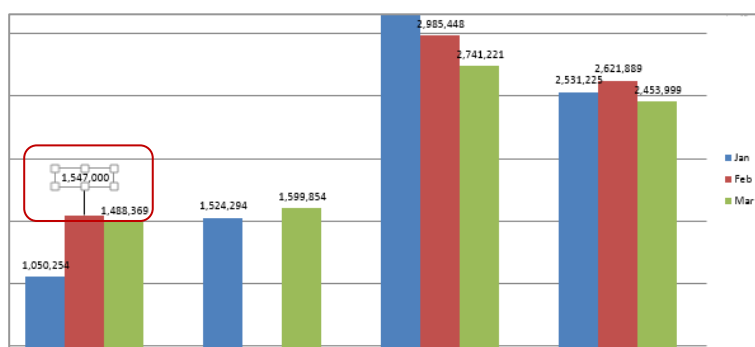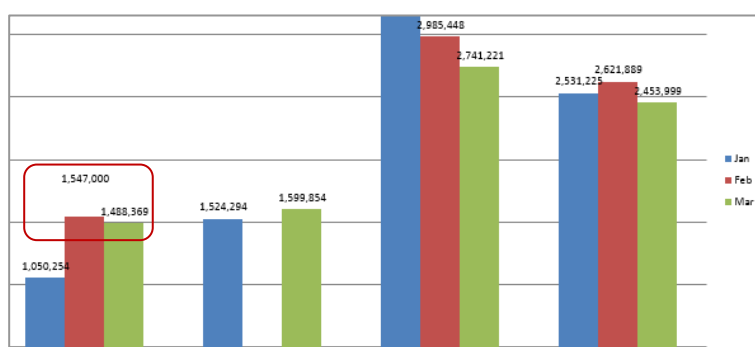
For Your Reference…

To **show data labels**:
1. Click on the **CHART ELEMENTS** button
2. Point to **Data Labels**, then click on the black arrow to the right
3. Click on the desired label position

Handy to Know…

- Instead of using the **CHART ELEMENTS** button you can use **Add Chart Element** on the **CHART TOOLS: DESIGN** tab to either add data labels or reposition the current one.

SHOWING GRIDLINES

Many of Excel's chart types include major *gridlines* by default. Gridlines help you to determine the numeric value of each data point and are therefore very useful when the absolute size of the data value is important. You can show or hide horizontal and vertical gridlines and decide whether to display them for major and/or minor units.

Try This Yourself:

Same File

> *Continue using the previous file with this exercise, or open the file E1329 Charting Techniques_5.xlsx...*

1 Click on the **CHART ELEMENTS** button, point to **Gridlines**, then click on the black arrow to the right to see further options

> *At the moment, only the horizontal gridlines are displayed and these align with the major units...*

2 Point to the different options to see how the chart will look in Live Preview

3 Click on **Primary Minor Horizontal** to see more detailed horizontal gridlines
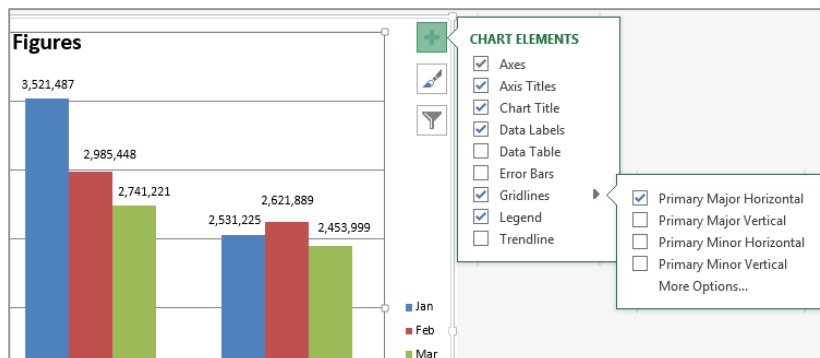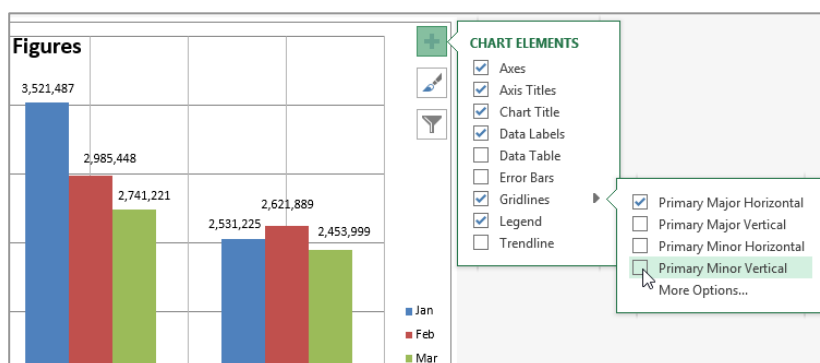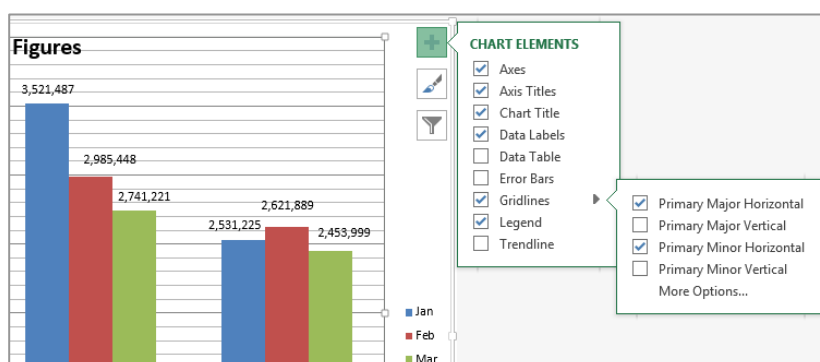
For Your Reference…

To **display gridlines** in a **chart**:

1. Click on the **CHART ELEMENTS** button
2. Point to **Gridlines** and click on the black arrow to the right
3. Click on the desired gridline

Handy to Know…

- In lieu of using the **CHART ELEMENTS** button you can use the ribbon commands **CHART TOOLS: DESIGN** > **Add Chart Element** > **Gridlines** to either add or remove gridlines from a chart.

FORMATTING THE CHART AREA

The **plot area** on a chart is the area between the axes in which the data is plotted. You can also think of it as the chart **background**. Depending upon the default format of the chart you choose, the plot area may be white, but you can select from a range of colours, textures or images to fill the plot area. This can enhance charts if you plan to use them for presentations.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1329 Charting Techniques_6.xlsx...

1. Click on the outer border of the chart to select the plot area

2. Click on the **CHART TOOLS: FORMAT** tab, then click on **Format Selection** in the **Current Selection** group to display the **Format Chart Area** pane
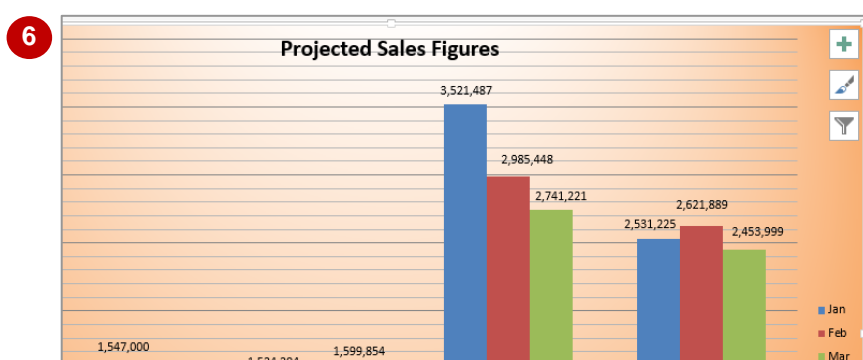
3. Click on the various options to see how they appear in the chart

4. Click on **Gradient fill**

5. Click on the drop arrow for **Preset gradients**, then click on **Top Spotlight – Accent 6**

6. Click on **Close** in the **Format Plot Area** pane to close the pane

---
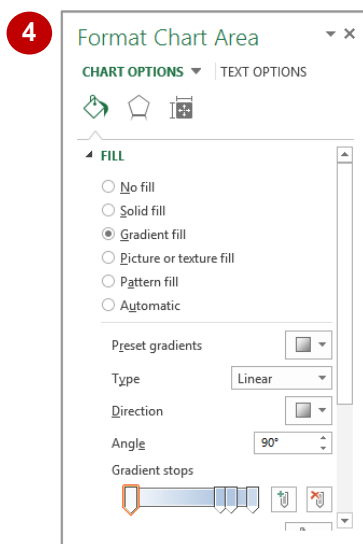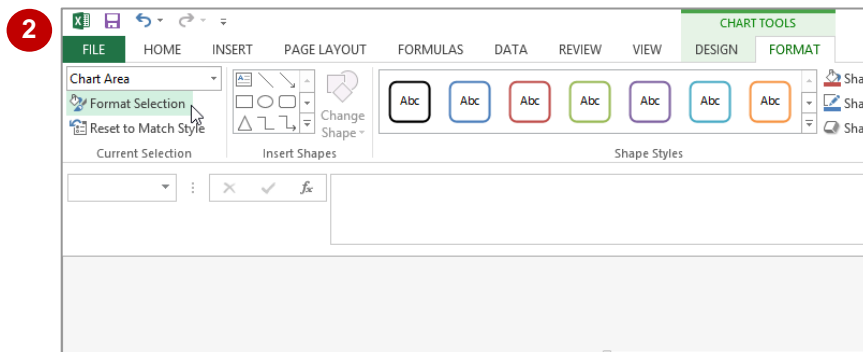
For Your Reference…

To **format** the **plot area** of a **chart**:

1. Click on the **CHART TOOLS: FORMAT** tab, then click on **Format Selection** in the **Current Selection** group
2. Choose the desired **Fill** and **Border** options from the **Format Plot Area** pane

Handy to Know…

- The **Automatic** option in the **Fill** and **Border** commands on the **Format Plot Area** pane will return the plot area background to the default formatting for the chart.

ADDING A TRENDLINE

A *trendline* is used to depict the trend, showing an average figure for the values that the chart is built on and building a prediction of what the values are likely to be. Trendlines show the general direction of results and the expected direction of future results. There are six trend types to select from, being linear, logarithmic, polynomial, power, exponential and moving average.

Try This Yourself:

Open File

Before starting this exercise you MUST open the file E1329 Charting Techniques_7.xlsx…

1 Click on the **CHART ELEMENTS** button, point to **Trendline**, then click on the black arrow to the right to see further options

The options include various calculation methods for trends. Interestingly, this time Live Preview won't show how trend lines will look…

2 Click on **Linear**

Since the trend will be applied to a series, Excel will prompt you for the series to trend…

3 Click on **Mar** and click on **[OK]**

A trendline will be added to your chart and the trendline information will be added to the legend

1

2

3
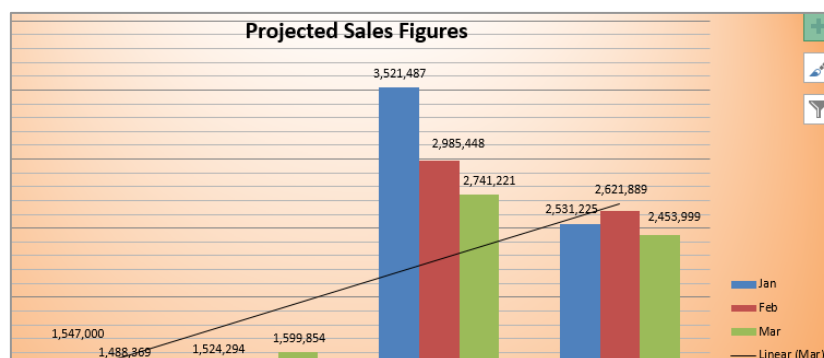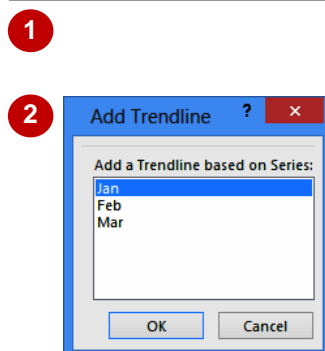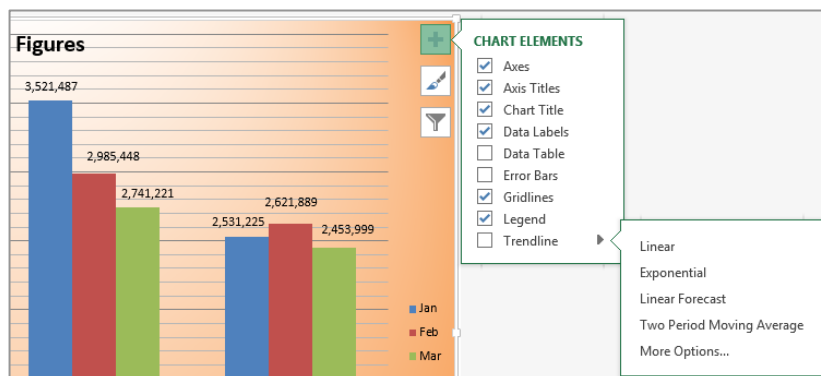
For Your Reference…

To *add* a *trend line* to a *chart*:

1. Click on the **CHART ELEMENTS** button, point to **Trendline**, then click on the black arrow
2. Click on the desired trend line and choose the series to trend

Handy to Know…

- Instead of using the **CHART ELEMENTS** tool you can use **Add Chart Element** on the **CHART TOOLS: DESIGN** tab to add a trendline to a specific series.

ADDING ERROR BARS

Interested to know how sales projections would look on your sales chart if predictions were exceeded by 25%? This is what the oddly-named *Error Bars* feature will tell you. Error bars are used to display a *margin of error* on your chart so that you can see what the impact of exceeding or failing to meet targets or projections will be in a graphical format.

Try This Yourself:

Same File

*Continue using the previous file with this exercise, or open the file E1329 Charting Techniques_8.xlsx...*

1. Click on the *CHART ELEMENTS* button, point to *Error Bars*, then click on the black arrow to the right to see further options

2. Click on *More Options* to receive a prompt for a data series to use

3. Click on *Jan*, then click on **[OK]**

   The Format Error Bars pane will now appear. We want to see what will happen to sales if we exceed targets by 25%...

4. Click on *Percentage*, double click on *5.0* and type **25**

5. Click on *Plus* in *Direction* to see only positive error bars

6. Click on *Close* in the *Format Error Bars* pane to close the pane
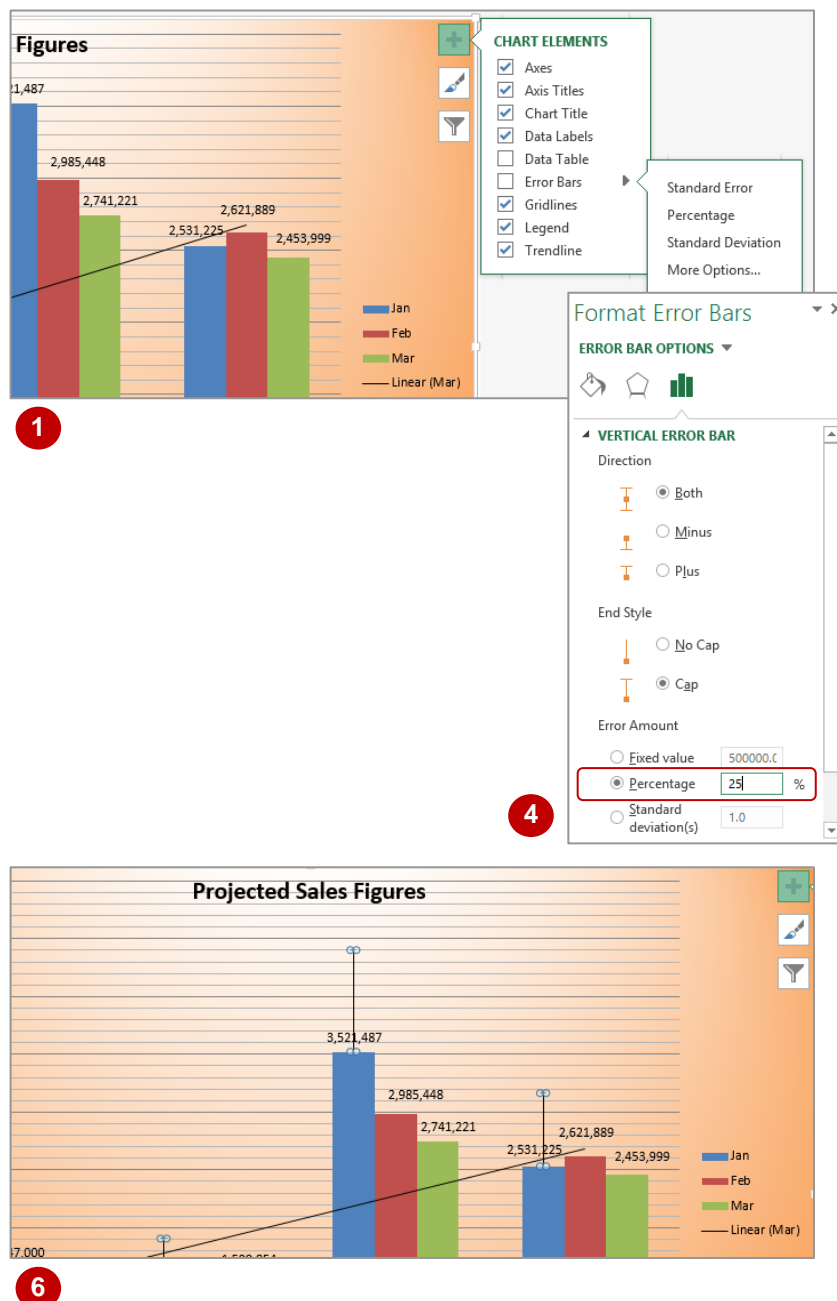
For Your Reference…

To *add error bars* to a *chart*:

1. Click on the *CHART ELEMENTS* button, point to *Error Bars*, then click on the black arrow
2. Click on the desired option

Handy to Know…

- Instead of using the *CHART ELEMENTS* button you can use *Add Chart Element* on the *CHART TOOLS: DESIGN* tab to add error bars to a specific series.

ADDING A DATA TABLE

A *data table*, in reference to charts, is a table of the figures used to create the chart. It allows you to report both the data and the chart in one place. A *data table* is only ever placed below the chart itself, and the figures are aligned with their corresponding data point or column in the chart – unless you create a horizontal bar chart. You can choose to include *legend keys* if you like.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1329 Charting Techniques_9.xlsx...

1 Click on the **CHART ELEMENTS** button, point to **Data Table** and click on the black arrow to the right to see further options

2 Point to **With Legend Keys** option to see the legend repeated in the table, then on the **No Legend Keys** to see the table without the legend

3 Click on **With Legend Keys** to choose this option
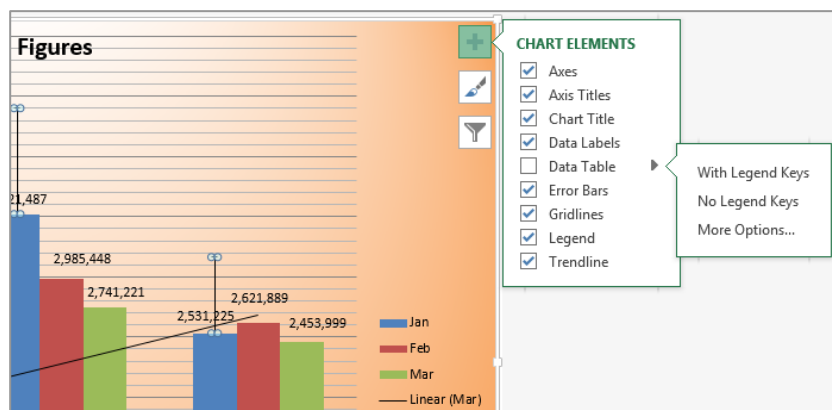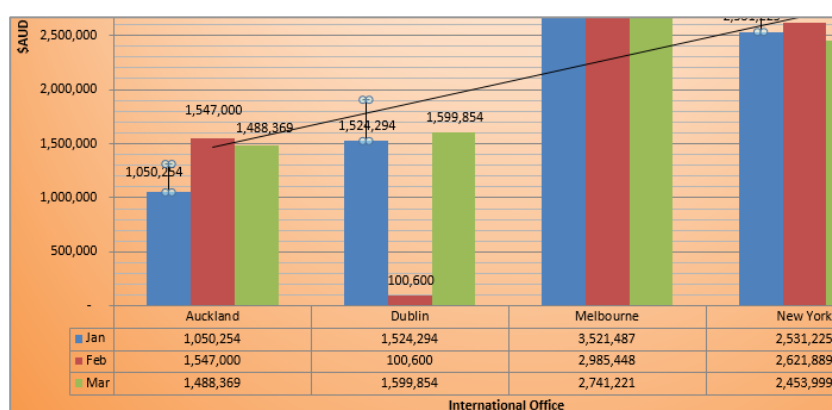
For Your Reference…

To *add* a *data table* to a *chart*:

1. Click on the **CHART ELEMENTS** button, point to **Data Table**, then click on the black arrow
2. Click on the desired option

Handy to Know…

- Instead of using the **CHART ELEMENTS** tool you can use **Add Chart Element** on the **CHART TOOLS: DESIGN** tab to add a data table.

UNDERSTANDING CHART FORMATTING

Charts are complex drawings that are made up of a wide range of text and graphical elements, or *objects*. Each object can individually be *formatted* to create fully customised charts.

While the objects in a chart may visually vary, the way they work and how they are formatted are remarkably similar.

Chart Objects

The chart above may seem to be one complete entity but in reality it is made up of quite a number of *objects*, and some of those objects are made up of further sub-objects.

The title, for example, is an *object*, as is the legend on the right.

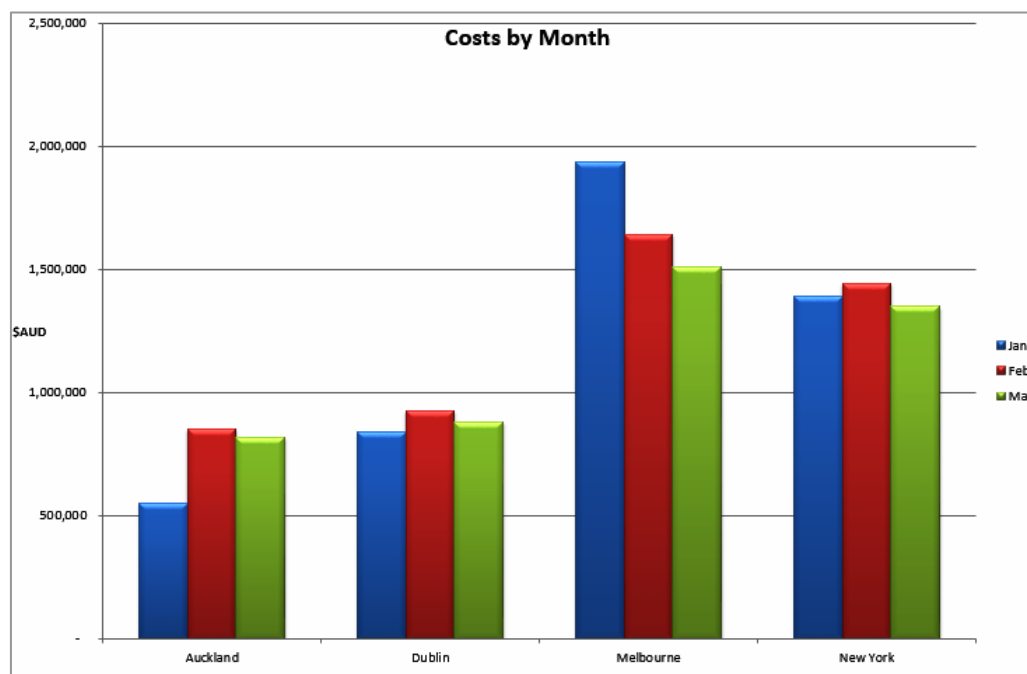The chart shows three data series (*Jan*, *Feb*, and *Mar*), each of which is an object in its own right. However, each data series has four plot points (*Auckland*, *Dublin*, *Melbourne* and *New York*) which themselves are sub-objects of their parent data series object.

Object Formatting

Objects are sometimes referred to as *elements* and other times as *shapes*. This confusing mixture of jargon is often found on the ribbon commands.

While there are many objects, and many with sub-objects, and while they may have several names, the way to format them doesn't vary a great deal and once you know the basic principles, formatting is easy.

Generally each object has three characteristics that can be formatted:

Fill   *Fill* refers to the way its inside appears. You can change the inside (*fill*) colour, apply a gradient colour or a texture, and in some instances also place a picture inside an object.

Outline   An object's *outline* is the border that is placed around it. You can do all sorts of things to a border – you can colour it, give it thick lines or thin lines, and even make it disappear altogether.

Effects   *Effects* are the fun part of object formatting. With the various effects you can give an object a *shadow*, make it *glow*, turn it into a *3D* wonder, give it *soft edges* (sometimes known as *feathering*) and much more.

All of this is performed through a series of commands found on the **CHART TOOLS:FORMAT** tab on the ribbon, and the **Format** pane which can be displayed to the right of the chart.

SELECTING CHART OBJECTS

Before you can apply formatting to an object in a chart, you need to be able to *select* it accurately so that you don't accidentally format the wrong object. Once you're comfortable working with charts, you'll learn where to click to select specific objects, but if you're not sure, Excel provides a special control on the ribbon to help you.

Try This Yourself:

Open File
Before starting this exercise you MUST open the file E1333 Chart Formatting_1.xlsx…

1. Click on the **Sales Trends** worksheet tab to see a line chart

2. Click on the **CHART TOOLS: FORMAT** tab to see the available formatting tools

3. Click on the title (*Sales Trends*) in the chart to select it

    A selected object will appear with handles (squares) around it. The name of the selected object will appear in the Current Selection group on the ribbon…

4. Click on the drop arrow next to **Chart Title** in the **Current Selection** group to see all of the objects that can be selected in the chart

5. Click on **Series "Dublin"**

    Notice the selection handles around the data points of the Dublin series…

6. Click outside the chart to deselect everything

3
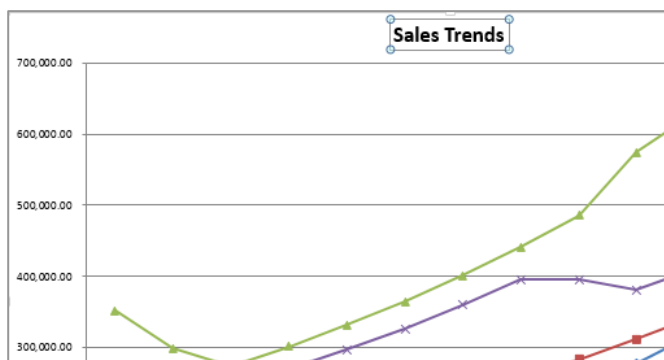
4
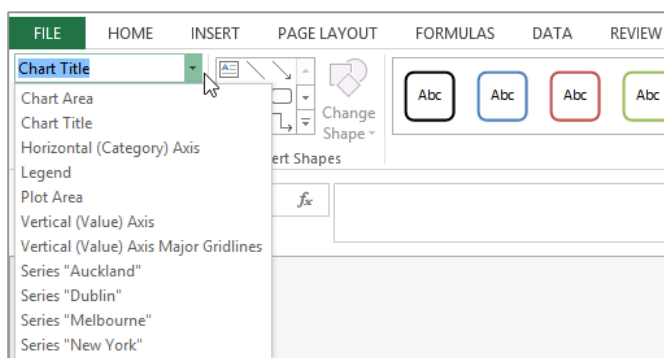
5
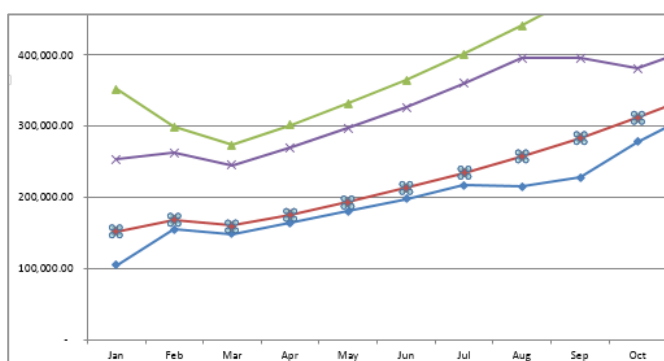
Sometimes it can be a little tricky to see what is selected. The Dublin series is the second line up from the bottom of the chart – notice how the data points have four "handles" around them to indicate that they are selected.

For Your Reference…

To *select* an *object* in a *chart*:

1. Click directly on the object that you want to select until handles appear around it, or
2. Click on the drop arrow for the chart object selector in the **Current Selection** group on the **CHART TOOLS: FORMAT** tab

Handy to Know…

- A chart itself is also an object and can be selected as such. When the chart object itself is selected it will appear with a border and selection handles around it. The words **Chart Area** will appear in the chart object selector in the **Current Selection** group on the ribbon.

USING SHAPE STYLES

Individual parts of an object such as its fill colour, border, shadow, and the like can easily be formatted once the object is selected. However, if design and good taste is not your forte you can actually use a preset *shape style* where a combination of formatting options are already done for you.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1333 Chart Formatting_ 1.xlsx...

1 Click on the **Costs By Month** worksheet tab

2 Click on the **CHART TOOLS: FORMAT** tab, click on the drop arrow for the object selector in the **Current Selection** group, then click on **Series "Jan"**, as shown, to select all of the blue columns

3 Click on the **More** arrow for the **Shape Styles** gallery in the **Shape Styles** group to see the available shape style options

4 Click on the second option in the bottom row (*Intense Effect – Blue, Accent 1*) to apply this shape style to the **Jan** columns

5 Click on the **Feb** column for **Auckland** to select the whole **Feb** series

6 Repeat step **3** to apply the shape style (*Intense Effect – Red, Accent 2*) to the **Feb** columns

7 Click on the **Mar** column for **Auckland**

8 Repeat step **3** to apply the shape style (*Intense Effect – Olive Green, Accent 3*) to the **Mar** columns

2

8
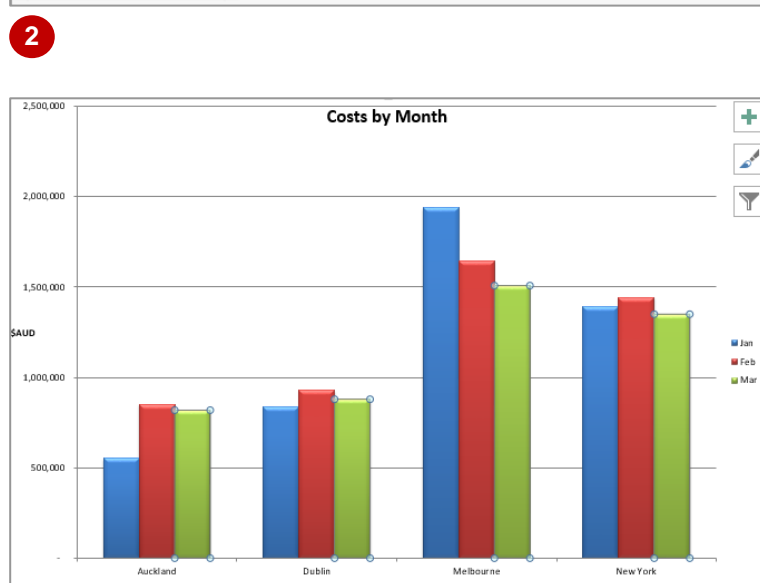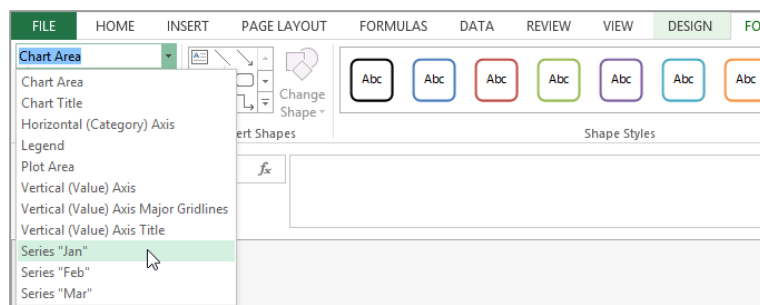
For Your Reference…

To **use** a **shape style** to **format** an **object**:

1. Select the object to be formatted
2. Click on the **CHART TOOLS: FORMAT** tab
3. Click on the **More** arrow for the **Shape Styles** gallery in the **Shape Styles** group and select an option

Handy to Know…

- You can remove a **Shape Style** that has been applied to a chart object by clicking on the object and clicking on **Reset to Match Style** in the **Current Selection** group on the **CHART TOOLS: FORMAT** tab.

CHANGING COLUMN COLOUR SCHEMES

The colours that are applied to columns or lines in a chart are derived from a theme. A default theme is applied to a chart when the chart is created. However, you can override the colours in that theme to choose other colours as desired. To do this, you can choose from one of the *colourful* or *monochromatic* schemes assigned to a chart theme.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1333 Chart Formatting_2.xlsx...

1. On the *Costs By Month* worksheet tab, click anywhere in the chart to display three tools at the top right corner of the chart

2. Click on the *Chart Styles* tool, as shown, to see the *STYLE* and *COLOUR* options available for the chart

3. Click on the *COLOUR* tab to see the choice of either *Colourful* or *Monochromatic* palettes

4. Point to the second row (*Colour 2*) in the *Colourful* palette and notice how Live Preview applies the style to the chart

5. Point to the rows of both the *Colourful* and *Monochromatic* palettes to see how the styles appear

6. Click on the third row of the *Monochromatic* palette (*Colour 7*)

7. Click outside the chart to see the result

Each line in a palette is like a theme and the colours/shades on that line can be applied to the data series in the chart.

For Your Reference…

To *change column colour schemes*:

1. Click on the *Chart Styles* tool
2. Click on the *COLOUR* tab
3. Click on one of the rows from either the *Colourful* or *Monochromatic* palettes

Handy to Know…

- In lieu of using the *Chart Styles* tool, you can change the colours in a chart by using *Change Colours* in the *Chart Styles* group on the *CHART TOOLS: DESIGN* tab.
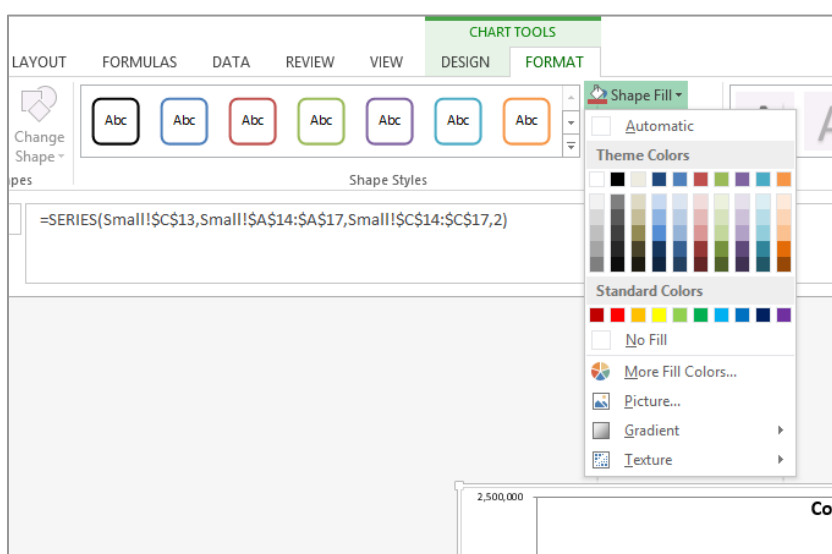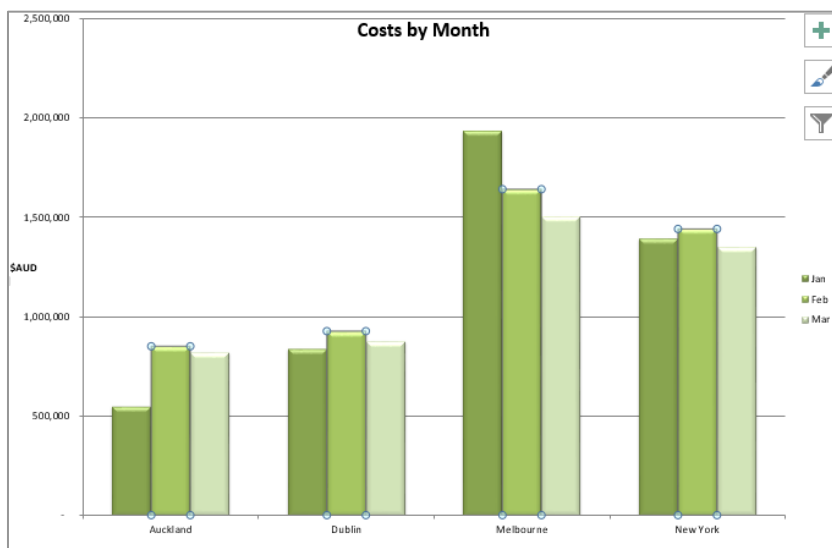

CHANGING THE COLOUR OF A SERIES

While theme colours are handy for ensuring consistency in a chart, sometimes you just want one data series to stand out (or perhaps hide) from the crowd. Each data series represented on a chart is in its own *object* and that object takes the form of a *shape*. You can therefore use the options on the *CHART TOOLS:FORMAT* tab to change how that shape appears.

Try This Yourself:

Open File

Before starting this exercise you MUST open the file E1333 Chart Formatting_3.xlsx…

1. Ensure the chart is selected

2. Click on the *Feb* column for *Auckland* to select the entire *February* data series of shapes on the chart

3. Click on the *CHART TOOLS:FORMAT* tab, then click on *Shape Fill* in the *Shape Styles* group to see a palette of colours

4. Click on a deep orange colour (just to make it stand out) to recolour only the *February* series

=SERIES(Small!$C$13,Small!$A$14:$A$17,Small!$C$14:$C$17,2)

For Your Reference…

To *change* the *colour* of a *specific data series*:

1. Click on the series to select it
2. Click on the *CHART TOOLS: FORMAT* tab and click on *Shape Fill* in the *Shape Styles* group
3. Click on the desired colour

Handy to Know…

- The Shape Fill command in the *Shape Styles* group on the *CHART TOOLS: FORMAT* tab can be used to change a variety of aspects of a shape, including its colour (*fill*), its *texture*, and its *gradient* fill shading.

CHANGING LINE CHART COLOURS

Objects such as columns and lines on a chart have both a *fill* property that can be changed and an *outline* property that can be changed. Sometimes knowing which to change to achieve the desired effect can prove a bit daunting. If you want to change the colour of a line series in a chart you'll need to work with its *outline* and not its *fill*.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1333 Chart Formatting_4.xlsx...

1. Click on the **Sales Trends** worksheet tab to display a typical line chart

2. Click on the **New York** line to select it

3. Click on the **CHART TOOLS:FORMAT** tab, click on **Shape Fill** in the **Shape Styles** group, then under **Standard Colours**, click on **Yellow**

   The markers on the line will change to yellow but the line itself will retain its previous colour…

4. Click on **Shape Outline** in the **Shape Styles** group and under **Standard Colours** click on **Yellow**

   This time the line will change to yellow

5. Click outside the chart to deselect it and view the result
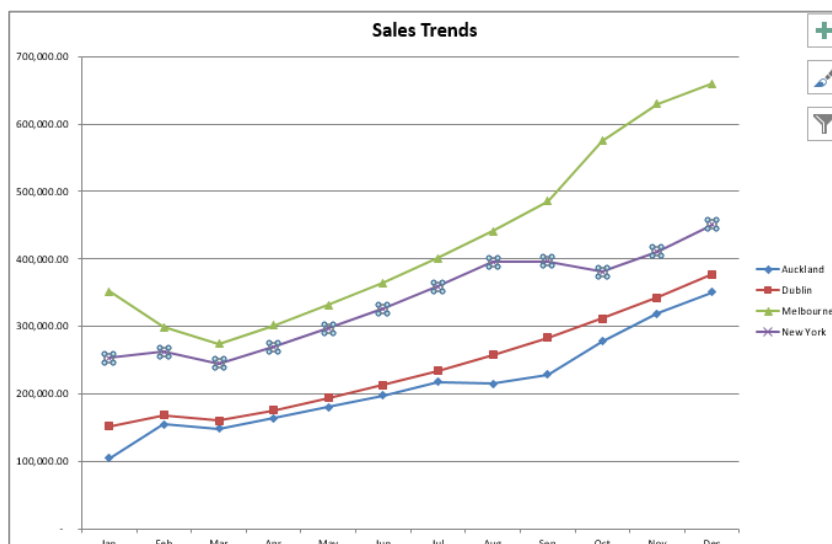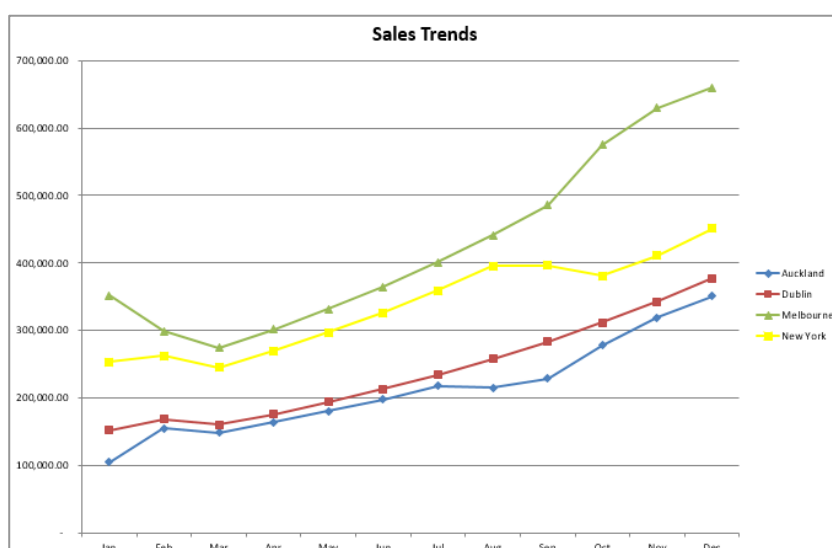
For Your Reference…

To **change** the **colour** of a **line data series**:

1. Click on a line data series to select it
2. Click on the **CHART TOOLS: FORMAT** tab
3. Click on **Shape Outline** in the **Shape Styles** group and click on the desired colour

Handy to Know…

- In a column or bar chart the **Shape Outline** command in the **Shape Styles** group on the **CHART TOOLS: FORMAT** tab will change the border around the column or bar. The inside (*fill*) will not be changed by this command.

USING SHAPE EFFECTS

Just to make sure that you never run out of options or get bored creating charts, Excel includes a huge range of *shape effects* that you can apply to objects in your chart. Shape effects include presets, shadows, reflections, glow, soft edges, bevel and 3-D rotation. You can apply one or more effects although some settings override others. Try a few and have fun!

Try This Yourself:

3

Same File

Continue using the previous file with this exercise, or open the file *E1333 Chart Formatting_5.xlsx*...

1   Ensure the *Sales Trends* worksheet is selected

2   Click on the *Auckland* line to select it

3   Click on the *CHART TOOLS:FORMAT* tab on the ribbon, and click on *Shape Effects* in the *Shape Styles* group

*You'll now receive a series of options for changing the effects on the line…*

4   Point to *Shadow* then click on the first option under *Outer* (*Offset Diagonal, Bottom Right*) to apply this shadow style to the line

5   Click on the *Dublin* line and press F4 to repeat the formatting on this line

F4 repeats the previously used command and therefore the same shadow effect will be applied…

6   Repeat step *5* for the remaining lines in the chart
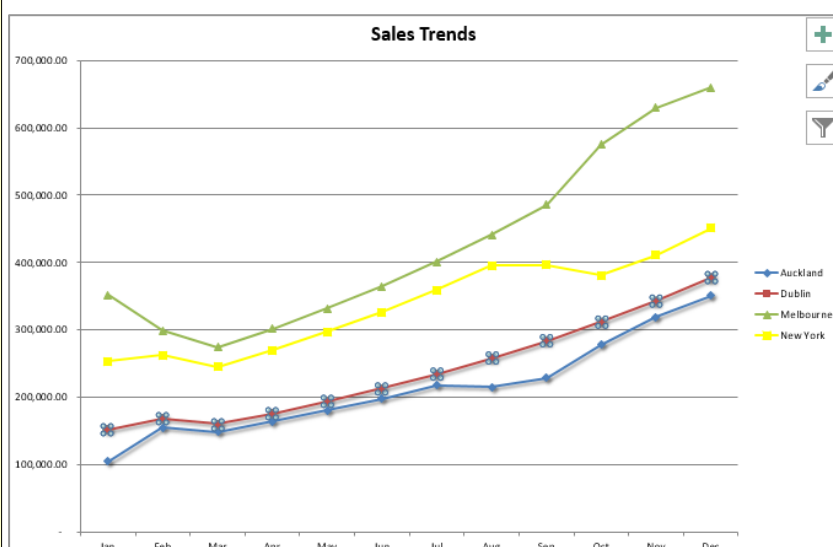
4

The bottom line here has the shadow effect applied. Sometimes you may need to look closely to see the changes.

For Your Reference…

To *apply shape effects* to a *chart object*:

1. Select the object to format
2. Click on the *CHART TOOLS: FORMAT* tab, and click on *Shape Effects* in the *Shape Styles* group
3. Choose the desired effect

Handy to Know…

- The F4 key is handy for applying the same operation a number of times. It is particularly useful for formatting a number of objects one at a time.

COLOURING THE CHART BACKGROUND

While you can experiment with the colours of lines and bars on a chart, sometimes all you need to do to improve the appearance of a chart is to change the background areas. The area behind the lines, columns, bars and pie slices is known as the *plot area*, while the area outside the plot area is known as the *chart area*. These areas can be modified using the *Shape Fill* options.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1333 Chart Formatting_6.xlsx...

1. Ensure the **Sales Trends** worksheet tab is selected
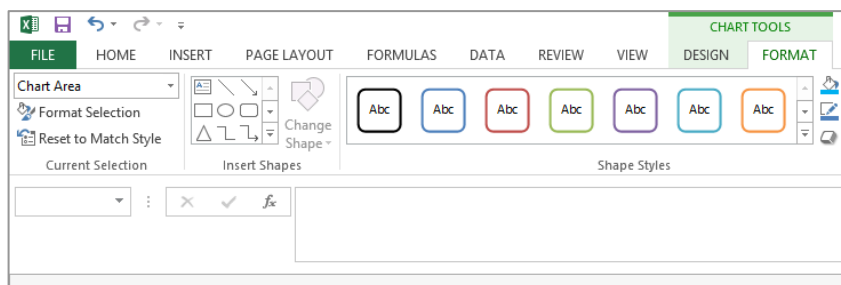
2. Click on the **CHART TOOLS:FORMAT** tab, then ensure **Chart Area** is selected in the drop down box in the **Current Selection** group

   The Chart Area is the background area of the chart and includes the title, axes, and legend locations…
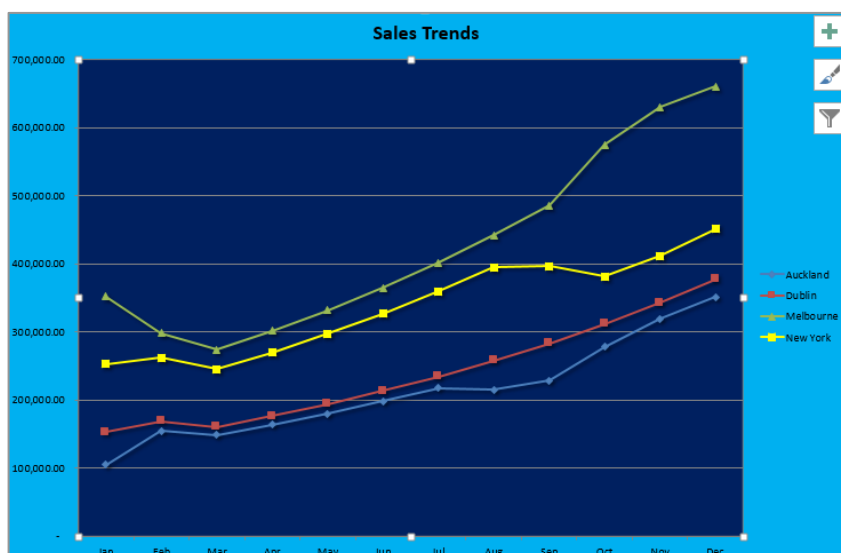
3. Click on **Shape Fill** in the **Shape Styles** group and click on light blue under **Standard Colours**

4. Click on the drop arrow in the **Current Selection** group, and click on **Plot Area**

5. Click on **Shape Fill** in the **Shape Styles** group and click on dark blue under **Standard Colours**

For Your Reference…

To *colour* the *chart background*:

1. Click on the **CHART TOOLS: FORMAT** tab, click on the drop arrow in the **Current Selection** group and select **Chart Area** or **Plot Area**
2. Click on **Shape Fill** in the **Shape Styles** group and select an option

Handy to Know…

- The *plot area* on a chart is the area where the data is plotted and displayed. The *chart area* is the area around the plot area and includes where the title, axes labels, and legend are normally displayed.

UNDERSTANDING THE FORMAT PANE

Each object in a chart can be formatted and adjusted in a myriad of ways. These settings are so numerous that they would just not fit on a ribbon or in a single dialog box, so Excel has created the *Format* pane. The *Format* pane has all of the commands you need to format a particular object. The pane varies depending upon the chart object you are working on.

Accessing The Format Pane

The *Format* pane is there waiting to be used whenever you need it. The *Format* pane is normally accessed using the *Format Selection* command in the *Current Selection* group on the *CHART TOOLS:FORMAT* tab of the ribbon. It can also sometimes appear when you choose more advanced options from either the ribbon or from one of the three chart tools that appear to the right of the chart.

Variety Is The Spice Of Charting Life

Depending upon the object that you have selected when you display the *Format* pane, and the *type* of chart that you are working with, you will see a series of setting categories and various options within these.

Each variation of the *Format* pane has a title preceded by the word *Format* and then the name of the object that you are formatting.

Below the title is a mini-menu system. The first, and often only, item on the menu displays the name of the object you are working on and also allows you to change to a different object. When more than one item appear on the menu it generally is used to change a sub-object (for example text) of the current object.

Below the mini-menu you'll find a mini-toolbar. These categorise the various formatting options available for the object. The most common categories are:

Fill and Line: provides options for changing the colours and border of the object.

Effects: provides options for changing the visual effects of the object such as shadowing, glow, edges, and 3-D format.

Size and Properties: provides options for changing the size of the object and other specific properties such as alignment.

Options: provides options within options! This category includes options that don't sit comfortably within the other categories and may apply to things such as position and the way the object interacts with other aspects of the chart.
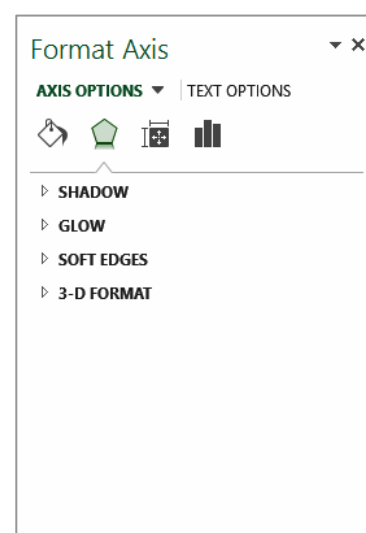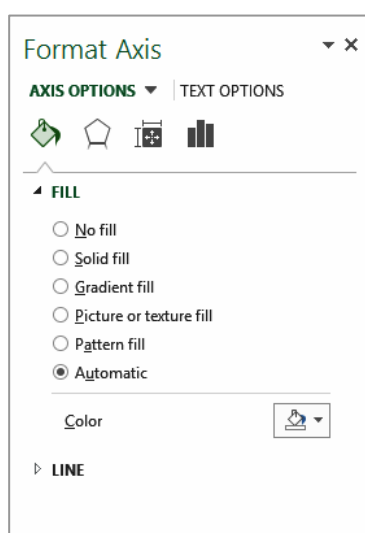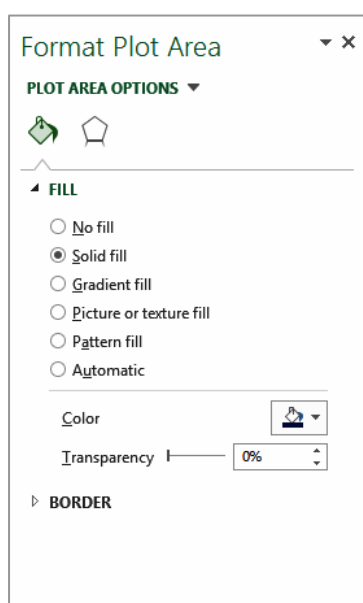
USING THE FORMAT PANE

The *Format* pane provides easy and central access to all of the formatting options applicable to a specific object. When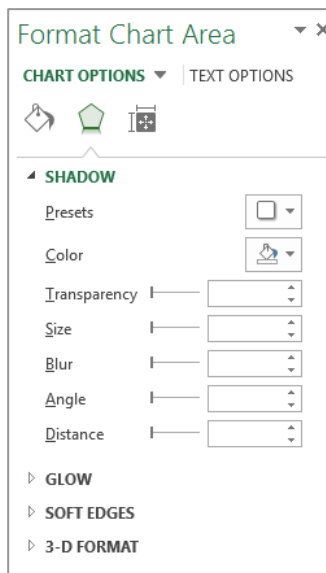 you want to do more than just adjust fill or line characteristics the *Format* pane for an object will provide you with all of the tools and options you need to push the formatting of the object to advanced levels.
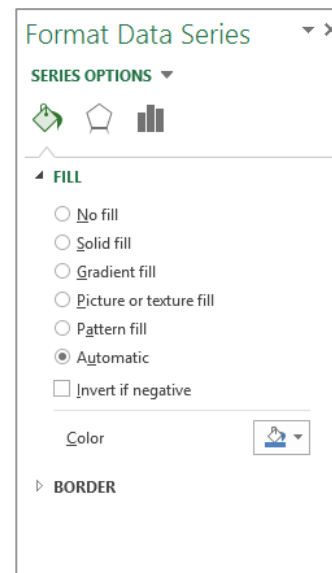
Try This Yourself:

Same File

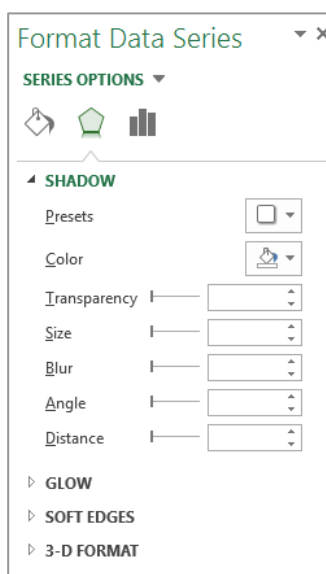*Continue using the previous file with this exercise, or open the file E1333 Chart Formatting_7.xlsx...*

1 Click on the **Sales Pie Chart** worksheet tab

2 Click on the chart area of the chart to select it

3 Click on the **CHART TOOLS:FORMAT** tab and click on **Format Selection** in the **Current Selection** group to see the **Format** pane for the chart area

4 Click on the chart title to see the **Format** pane for the title

5 Click on the drop arrow in the selection box in the **Current Selection** group and click on **Series 1** to see the format options for the series

6 Click on the **Effects** tool and click on **Shadow** to see the shadow options available

7 Click on the **Series Options** tool to see the further options available here

8 Click on the **Format** pane close button to close the pane

Format Chart Area
CHART OPTIONS ▼ | TEXT OPTIONS

▲ SHADOW
Presets
Color
Transparency
Size
Blur
Angle
Distance
▷ GLOW
▷ SOFT EDGES
▷ 3-D FORMAT

(3)

Format Data Series
SERIES OPTIONS ▼

▲ FILL
○ No fill
○ Solid fill
○ Gradient fill
○ Picture or texture fill
○ Pattern fill
● Automatic
☐ Invert if negative

Color
▷ BORDER

(5)

Format Data Series
SERIES OPTIONS ▼

▲ SHADOW
Presets
Color
Transparency
Size
Blur
Angle
Distance
▷ GLOW
▷ SOFT EDGES
▷ 3-D FORMAT

(6)

For Your Reference…

To *use* the *Format* pane:
1. Click on an object in a chart
2. Click on the **CHART TOOLS: FORMAT** tab
3. Click on **Format Selection** in the **Current Selection** group

Handy to Know…

- The *Format* pane always displays the formatting options for the object that is currently selected. No matter which way you select an object (i.e. using the ribbon or clicking on an object) the *Format* pane will update to show the relevant options for that object.

EXPLODING PIE SLICES

The data points in a pie chart are represented as *slices* on the pie chart. These slices are normally assembled together as a coherent circular pie. A really neat visual effect you can apply to a pie

chart is the ability to separate and expand the slices from one another. This is sometimes referred to as exploding the slices from the pie.
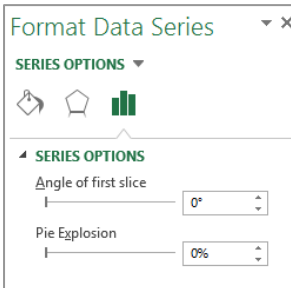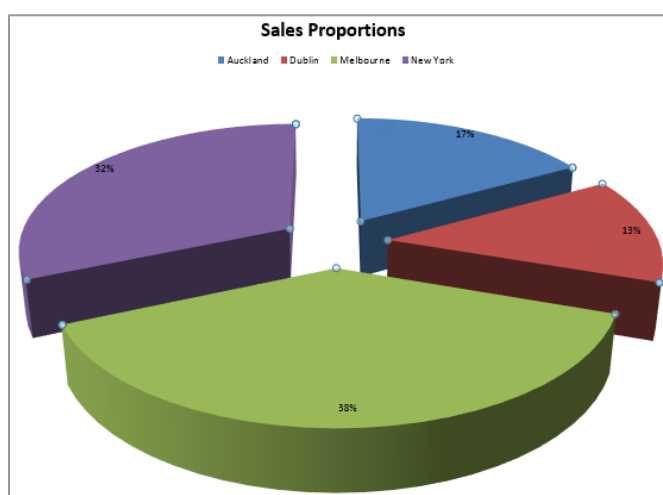
Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1333 Chart Formatting_7.xlsx...

1. Click on the **Sales Pie Chart** worksheet tab

2. Click on any of the pie slices

   All of the slices will appear selected…

3. Click on the **CHART TOOLS: FORMAT** tab, then click on **Format Selection** in the **Current Selection** group to display the **Format** pane

4. Ensure the **Series Options** tool is selected to see the angle and explosion options

5. Drag the **Pie Explosion** slider until it shows around **20%** (you can also type **20** in the percentage box)

6. Double click in the **Angle of first slice** box, type **50**, then press Enter to rotate the pie

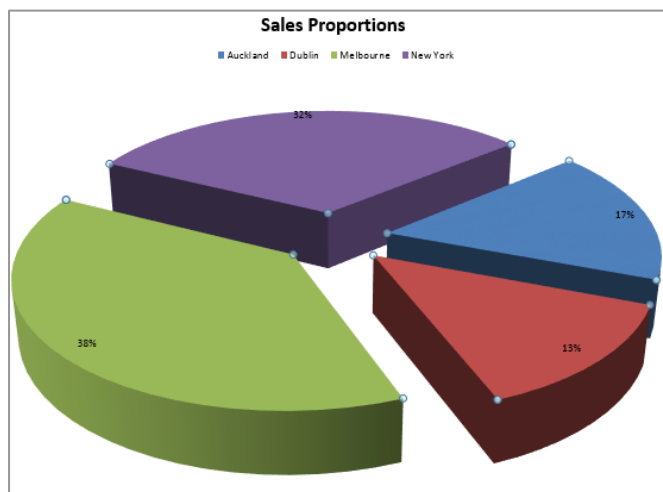7. Click on the **Format** pane close button to close the pane

4 Format Data Series — SERIES OPTIONS — Angle of first slice 0° — Pie Explosion 0%

5 Sales Proportions

6 Sales Proportions

For Your Reference…

To *explode* the *slices* of a *pie chart*:

1. Click on the slices to select them
2. Click on the **CHART TOOLS: FORMAT** tab, then click on **Format Selection**
3. Click on the **Series Options** tool and change the **Pie Explosion** setting

Handy to Know…

* To explode only a single slice, click on the slice you want to explode until only it appears with selection handles. You can then drag that slice or use the **Format** pane to explode it out.

CHANGING INDIVIDUAL BAR COLOURS

If you have a column or bar chart that plots multiple data series then each series will receive its own colouring. A legend can then be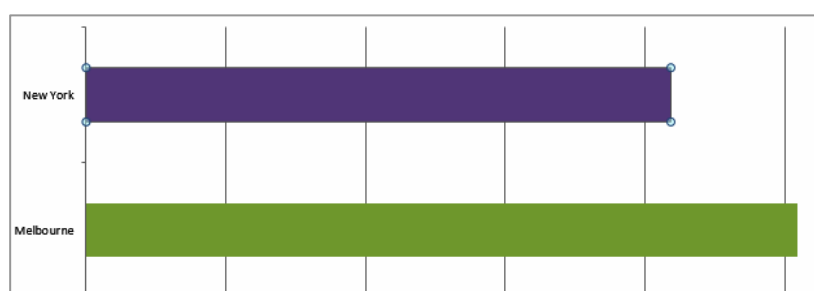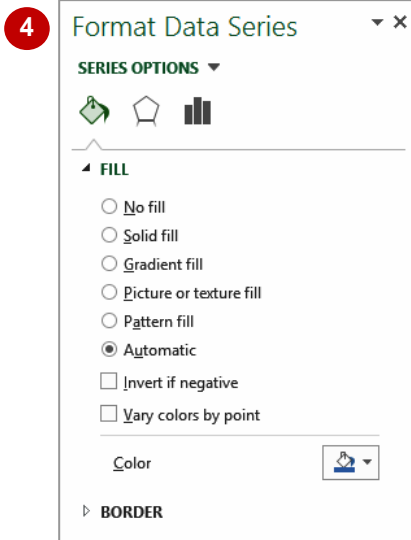 used to identify the series on the chart. If your bar or column chart only plots one data series the bars and columns normally appear in a single colour. In single series charts you can have Excel vary the colours of each data point.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1333 Chart Formatting_8.xlsx...

1. Click on the **Costs Bar Chart** worksheet tab

   This is a single series chart as seen by the colouring…

2. Click on a bar – they will all appear selected

3. Click on the **CHART TOOLS: FORMAT** tab and click on **Format Selection** in the **Current Selection** group to display the **Format** pane

4. Click on the **Fill & Line** tool to see the fill options

5. Click on **Vary colours by point** under **FILL** to present each bar in a separate colour

6. Click on the top bar until it appears as the only bar selected

7. Click on the **Fill** colour drop arrow on the **Format** pane and click on **Yellow** to change only this bar

8. Click on the **Format** pane close button to close the pane

4

Format Data Series ▾ ✕

SERIES OPTIONS ▾

▴ FILL

○ No fill
○ Solid fill
○ Gradient fill
○ Picture or texture fill
○ Pattern fill
◉ Automatic
☐ Invert if negative
☐ Vary colors by point

Color

▹ BORDER

6

For Your Reference…

To *vary column* or *bar colours* by *point*:

1. Select the column or bar to change
2. Click on the **CHART TOOLS: FORMAT** tab and click on **Format Selection**
3. Click on the **Fill & Line** tool and click on **Vary colours by point** under **FILL**

Handy to Know…

- You can change the colour of an individual bar or column, even in a multi-series chart, by clicking on the column or bar until only it appears selected. You can then use the normal **Fill** options to change the colour of that bar or column.

FORMATTING TEXT

Many of the elements and objects on a chart are made up of *text*. Chart titles, legends, axes titles, data labels are all made up of text that has specific formatting options and features associated with it. The default text and its format can be changed using the options on the ribbon or even in the **Format** pane where the *TEXT OPTIONS* appear.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1333 Chart Formatting_9.xlsx...

1. Click on the **Sales Trends** worksheet tab

2. Click on the **Title** to select it

3. Click on the **HOME** tab, click on the drop arrow for **Font** and click on **Cambria**

4. Click on the drop arrow for **Font Size** and click on **24** pt

5. Click on the **Legend** to select it and click on **Italic** in the **Font**

6. Click on the names of the months on the horizontal axis, click on the **Orientation** drop arrow in the **Alignment** group, and click on **Angle Counterclockwise**

Sales Trends

Auckland · Dublin · Melbourne · New York
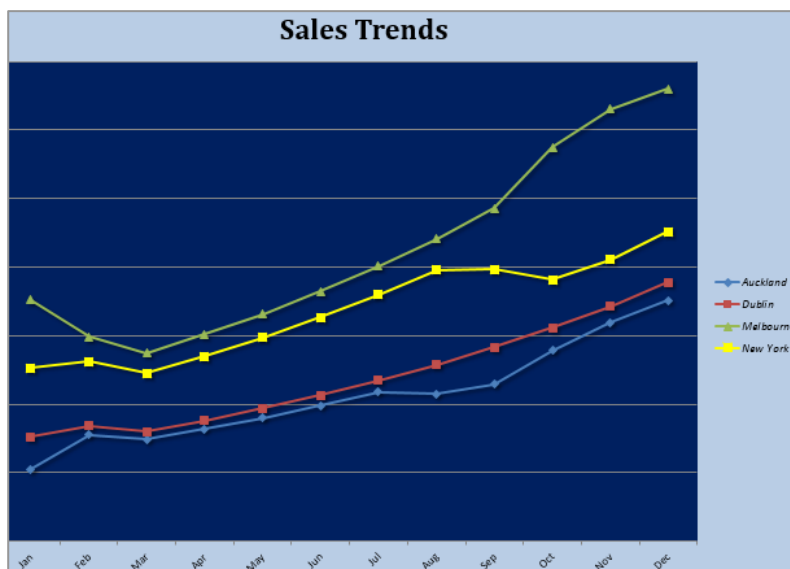
For Your Reference…

To *format text* on a *chart*:

1. Click on the desired text object
2. Choose the appropriate formatting options from the **HOME** tab

Handy to Know…

- There are more text options and effects available from the **Format** pane. When you click on a text object, such as the **Chart Title** for example, the **Format** pane will reveal a special **TEXT OPTIONS** mini-menu with specialised effects that you can apply.

FORMATTING WITH WORDART

WordArt Styles are combinations of fill colours, outline colours and text effects that can be applied to normal text in a chart. The title is the most obvious textual element that you would apply a *WordArt Style* to because it has prominence on the page. The WordArt Styles for use with chart text appear on the *CHART TOOLS: FORMAT* tab.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1333 Chart Formatting_10.xlsx...

1. Click on the *Costs By Month* worksheet tab

2. Click on the chart title to select it

3. Click on the *CHART TOOLS: FORMAT* tab, then click on the *More* arrow for the *WordArt Styles* gallery in the *WordArt Styles* group to display a gallery of options

4. Click on the last option in the gallery (*Pattern Fill – Dark Blue*)

5. Click on the *HOME* tab, click on the drop arrow for *Font Size* and click on *32* pt
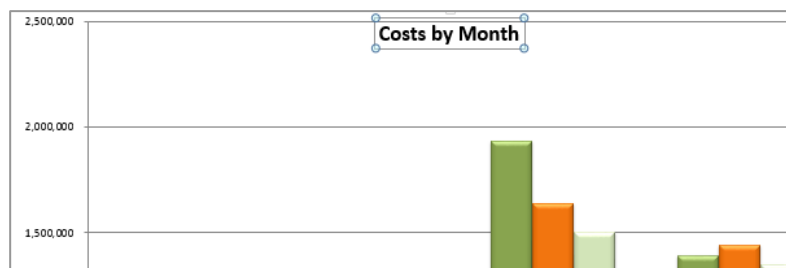
2
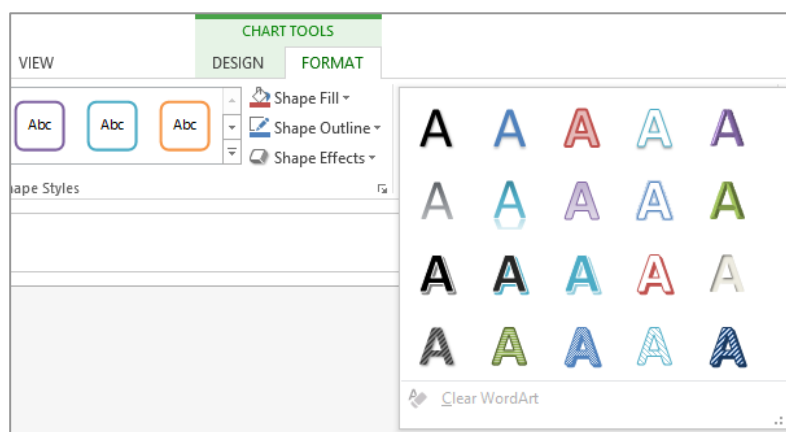
3

5

For Your Reference…

To *apply WordArt* to *chart text*:

1. Click on the text object
2. Click on the *CHART TOOLS: FORMAT* tab and click on the *More* arrow for the *WordArt Styles* gallery in the *WordArt Styles* group
3. Click on the desired style

Handy to Know…

- *WordArt* tends to often be over-used on charts and in documents. Use it sparingly and don't feel you have to convert every piece of text on a chart to *WordArt*.

CHANGING WORDART FILL

So, you're not particularly taken with the various WordArt fill options in the standard WordArt gallery? Well, don't worry because you can change aspects of WordArt just as you would change formatting with plain text. These can be changed using options on the **CHART TOOLS**: **FORMAT** tab or in the **Format** pane.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1333 Chart Formatting_11.xlsx...

1. Ensure that the title box on the **Costs By Month** chart is selected

2. Click on the **CHART TOOLS**: **FORMAT** tab, then click on the drop arrow for **Text Fill** in the **WordArt Styles** group to see a gallery of options

3. Click on **Dark Blue, Text 2** under **Theme Colours**

4. Click on the drop arrow for **Text Fill** again, point to **Gradient**, then click on **From Centre** under **Light Variations**
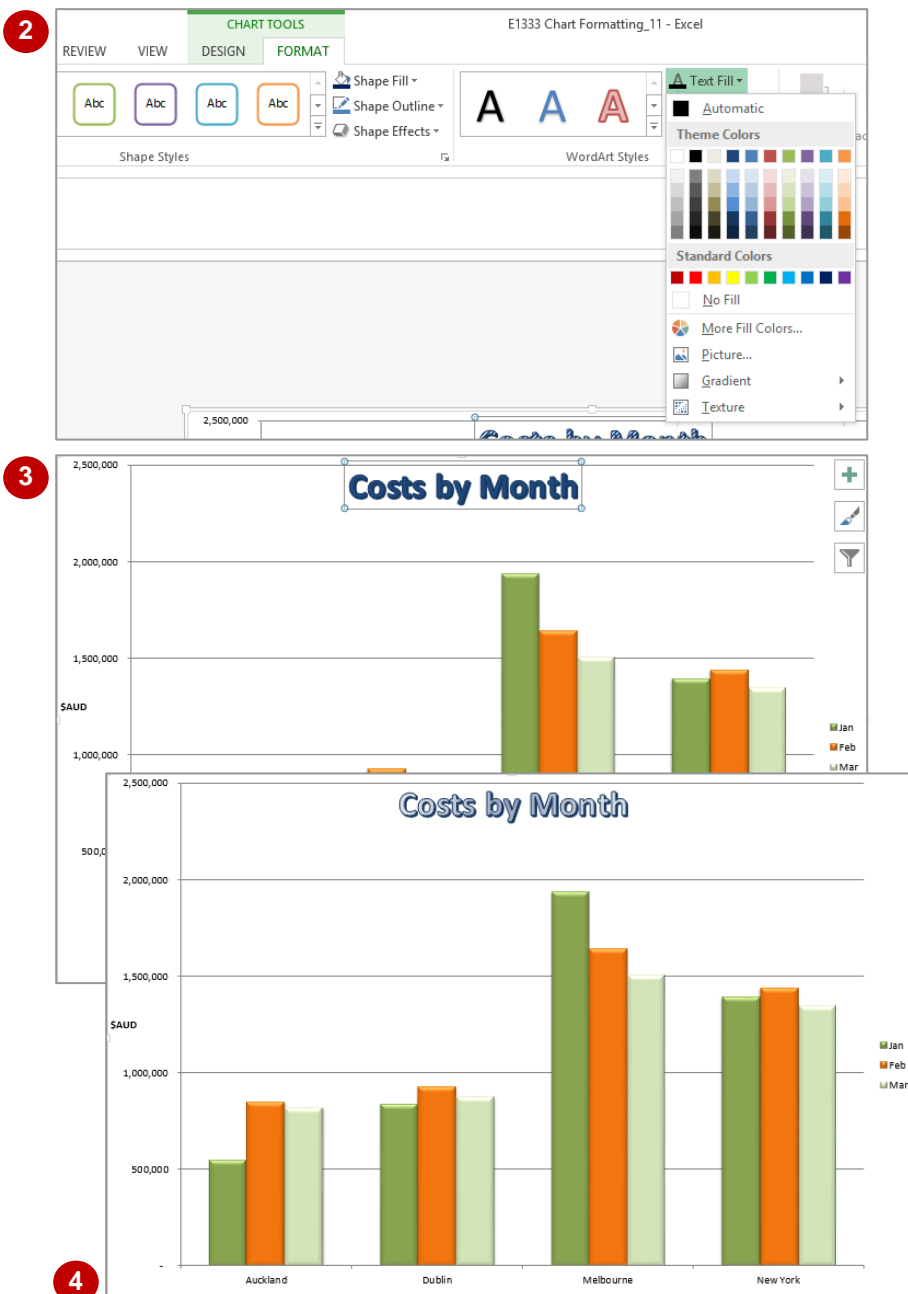
For Your Reference…

To **change chart-based WordArt fills**:

1. Click on the object that has WordArt text
2. Click on the **CHART TOOLS**: **FORMAT** tab and click on the drop arrow for **Text Fill** in the **WordArt Styles** group
3. Choose the desired option

Handy to Know…

- The **TEXT OPTIONS** mini-menu on the **Format** pane provides many useful tools for changing the fill and gradients of text in a chart. These allow you to build even further on basic **WordArt** fills and gradients.

CHANGING WORDART EFFECTS

Standard WordArt elements in a chart can be modified by the application of a range of fancy *text effects*. You can add shadows, reflections and/or glow effects to the letters to create

interesting results. Some settings override others, but you can combine glow with shadows and reflections to create some pretty dazzling headings.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1333 Chart Formatting_12.xlsx...

1 Ensure that the title on the *Costs By Month* chart is still selected

2 Click on the *CHART TOOLS*: *FORMAT* tab, then click on the drop arrow for *Text Effects* in the *WordArt Styles* group to see a menu of options

3 Point to *Reflection*, then click on *Tight Reflection, touching* under *Reflection Variations*

4 Click on the drop arrow for *Text Effects* in the *WordArt Styles* group, point to *Glow*, then click on *Red, 8pt glow, Accent Colour 2* under *Glow Variations*
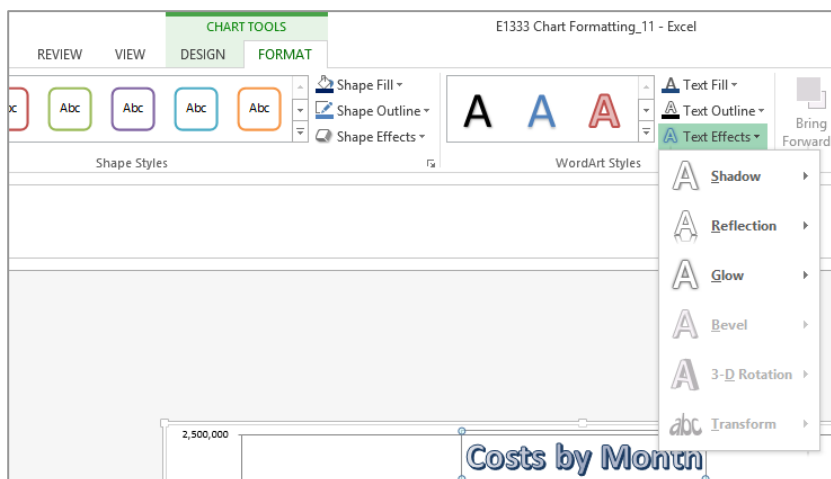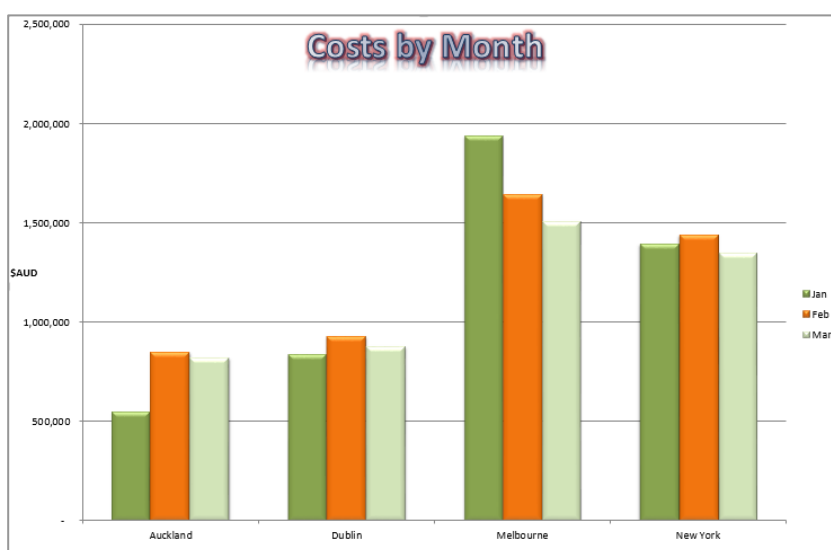
For Your Reference…

To *change chart-based WordArt effects*:

1. Click on the object that has WordArt text
2. Click on the *CHART TOOLS*: *FORMAT* tab and click on the drop arrow for *Text Effects*
3. Choose the desired option

Handy to Know…

- The *TEXT OPTIONS* mini-menu on the *Format* pane provides many useful tools for changing the special effects that can be applied to text in a chart. These allow you to build even further on basic *WordArt* effects.