

# Section 33

## Advanced Charts

By the end of this Section you should be able to:

- Use Chart Options
- Add Moving Averages to Charts
- Change a 3D Chart View
- Use Data Labels and Markers
- Create Stacked Bar Charts

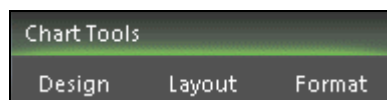
## Exercise 245 - Chart Options

### Guidelines:

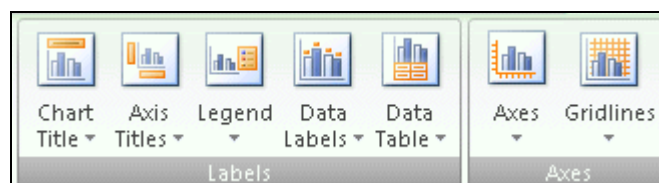
The **Chart Tools** tabs; **Design**, **Layout** and **Format** on the **Ribbon**, control all the features relevant to charts, their construction, location and appearance.

### Actions:

1. Open the workbook **Charts**.
2. Click the **Sales Chart** sheet tab to display the **Sales Chart**. Click on the chart to select it. The **Ribbon** changes because the chart is active. The **Chart Tools** tabs are displayed; **Design**, **Layout** and **Format**.



3. Display the **Design** tab. To change the type of chart click the **Change Chart Type** button. Choose a different chart type and click **OK** to display it.
4. Change the chart back to a standard **Column** chart.
5. The **Select Data** button allows changes to the data to be charted. Click the **Select Data** button. The data for this chart is correct. Data can be added to the chart using this dialog box. Series names can be added or edited as well as the axis labels. Click **OK** to leave them unchanged.
6. Display the **Layout** tab. The buttons in the **Labels** and **Axes** groups are used to change the various parts of a chart.



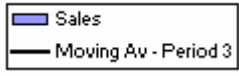
7. Click on each button in turn to see what changes can be made to a chart. Click on the **Chart Title** button, select the **Above Chart** option and change the title to **Sales 2006**.
8. Click on the **Plot Area** (grey). Click the **Format Selection** button. Remove the background colour by selecting the **No fill** option under **Fill**. Click **Close**.
9. Print a copy of the **Sales Chart** and leave the workbook open.

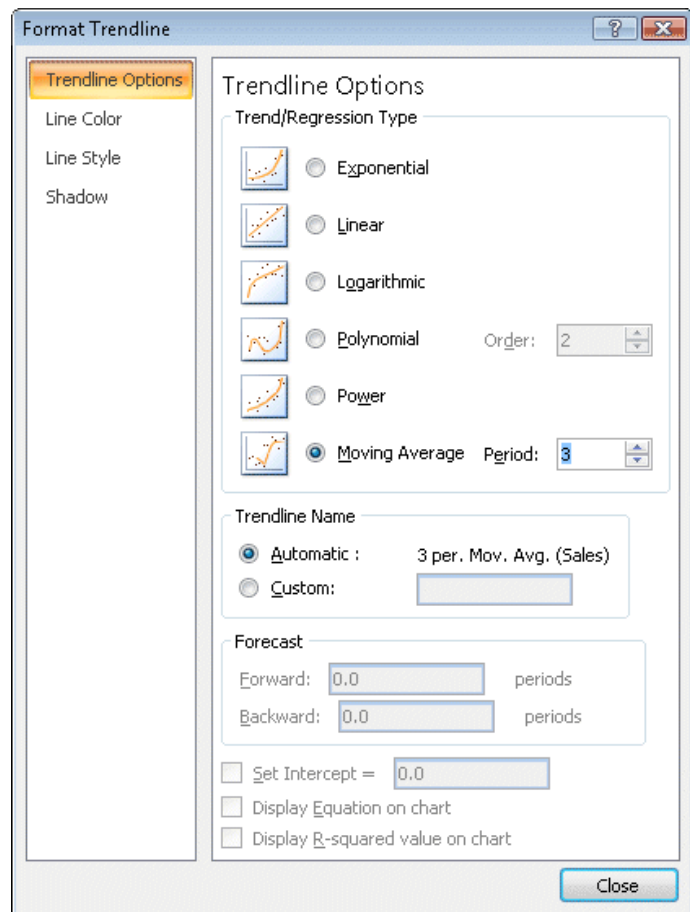
## Exercise 246 - Moving Average

### Guidelines:

**Moving Average** is a **Trendline** option, where each value is an average of the data from a specified number of previous months.

### Actions:

1. The workbook **Charts** should still be open. If not open it.
2. With the **Sales Chart** active and the **Layout** tab displayed, click the **Trendline** button.
3. Select **More Trendline Options**.
4. Select the **Moving Average** option and change the **Period** to **3**.
5. Each **Moving Average** value is the average for each of the three previous months, and therefore starts at the third month. Move the **Format Trendline** dialog box if necessary.
6. The **Moving Average** can be formatted. Under **Trendline Name**, select **Custom** and enter the name **Moving Av - Period 3**. This is the legend name.
7. Display the **Line Style** section and change the **Width** to **2pt**. Click **Close**.
8. The legend is not displayed, to display it, click the **Legend** button and select **Show Legend at Right**.
9. The legend is displayed at the right, . Move the legend up slightly to clear the moving average trendline and the columns.
10. Leave the workbook open.



## Exercise 247 - 3-D Chart Rotation

### Guidelines:

**3-D Rotation** changes the point and angle from which a 3D chart is viewed.

### Actions:

1. The workbook **Charts** should still be open. If not open it.
2. Select the sheet tab **TvS Chart**. This is a **3-D chart** with 2 data series.

3. Display the **Layout** tab and click the **3-D Rotation** button.

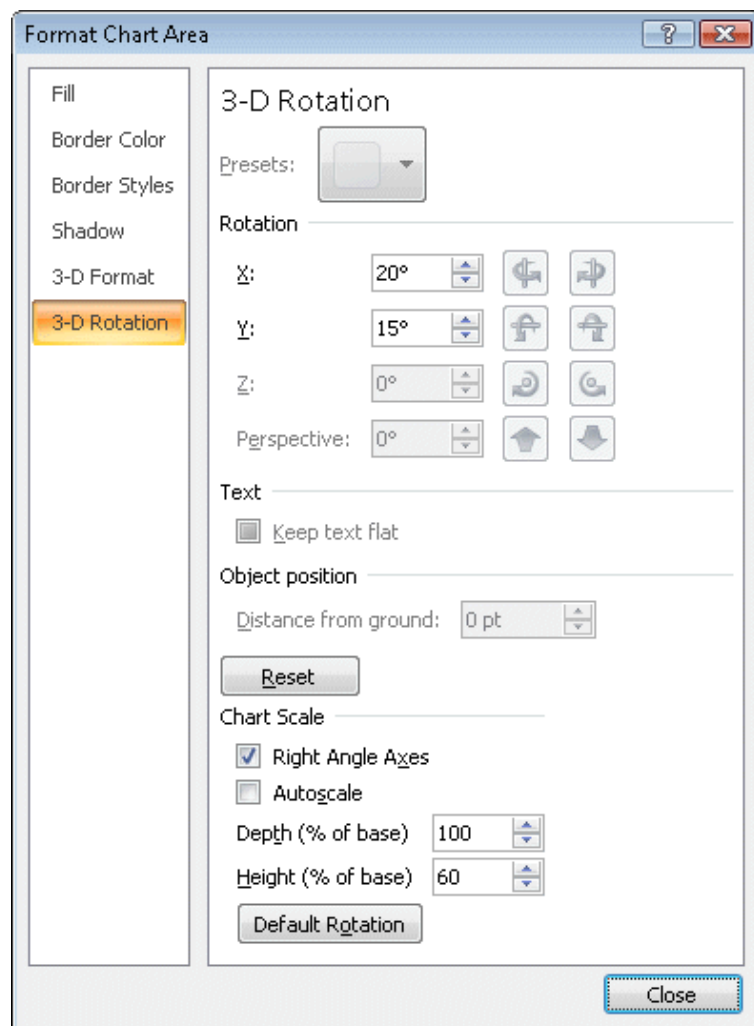
4. The sideways and vertical rotation can be altered. Under **Chart Scale** uncheck **Right Angle Axes**.

5. Experiment with the angles by clicking on the various buttons.

6. Click the **Default Rotation** button to return to the start position.

7. Change the **X:** to **30** and the **Y:** to **20**. Click **Close**.

8. Right click on a data point in the blue series (the **Turnover**) and select **Format Data Series**.



9. Click the **Shape** tab to display the available shapes.
10. Display **Series Options**, this controls the gaps between the data by using the sliders. Drag the **Gap Width** slider to the far left (no gap), then to **100%**. Click **Close**.
11. Leave the workbook **Charts** open.

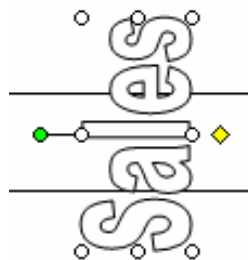
## Exercise 248 - Data Labels and Markers

### Guidelines:

**Data Labels** add information via values or graphics to data ranges to improve the ease of use. **Markers** are the symbols or objects that define a data point on a chart. In Bar and Columns charts, the usual markers of coloured bars or blocks can be replaced by other objects such as graphic images or **WordArt**.

### Actions:

1. The workbook **Charts** should still be open. If not open it.
2. Make the **Sales Chart** active and right click on the **Moving Average Trendline** and select **Delete** to remove it.
3. On the **Layout** tab, click the **Data Labels** button. A list of positions is displayed, click **More Data Label Options**. By default the **Values** are added to the **Outside End** position. Click **Close**.
4. Graphic objects, e.g. *WordArt* can be added to **Bar** and **Column** charts. To add **WordArt** to the columns, display the **Insert** tab and click the **WordArt** button.
5. Select the first *WordArt* option.
6. Enter **Sales**. This inserts the *WordArt* as an object.
7. As columns of the chart are vertical, the object needs rotating, click the green rotate button and drag to the left until the graphic is vertical.

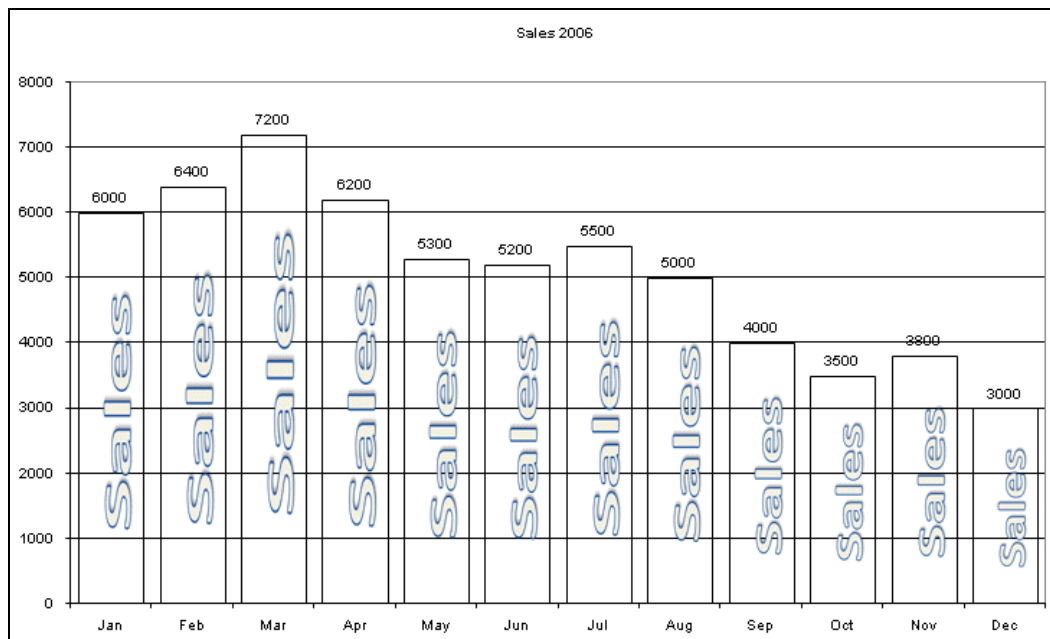


8. Using the **Home** tab, click **Copy** to copy the object.
9. Select the data series by clicking on one of the columns and then **Paste** the graphic to add it to all the columns.
10. Click on the original **WordArt** and press <Delete> to remove it.
11. To remove the legend, display the **Layout** tab, click the **Legend** button and select **None**.



## Exercise 248 - Continued

12. Right click on a data column and select **Format Data Series**.
13. Under **Series Options**, reduce the **Gap Width** to about **25%** to make the columns wider.
14. Close the dialog box.



*Note: Picture markers can be added to **Bar** and **Column** charts using the **Fill** section of the **Format Data Series** dialog box. With the **Picture or texture fill** option selected, use the options from **Insert from** to locate and insert a suitable graphic.*

15. Leave the workbook **Charts** open.

## Exercise 249 - Stacked Bar Charts

### Guidelines:

**Stacked Bar Charts** are column charts with the data series placed above each other and are used to compare how the parts make up the total.

There are 4 **Stacked Bar Chart** options within **Column** types:

Compare the contribution of each value to a total across categories 2D.

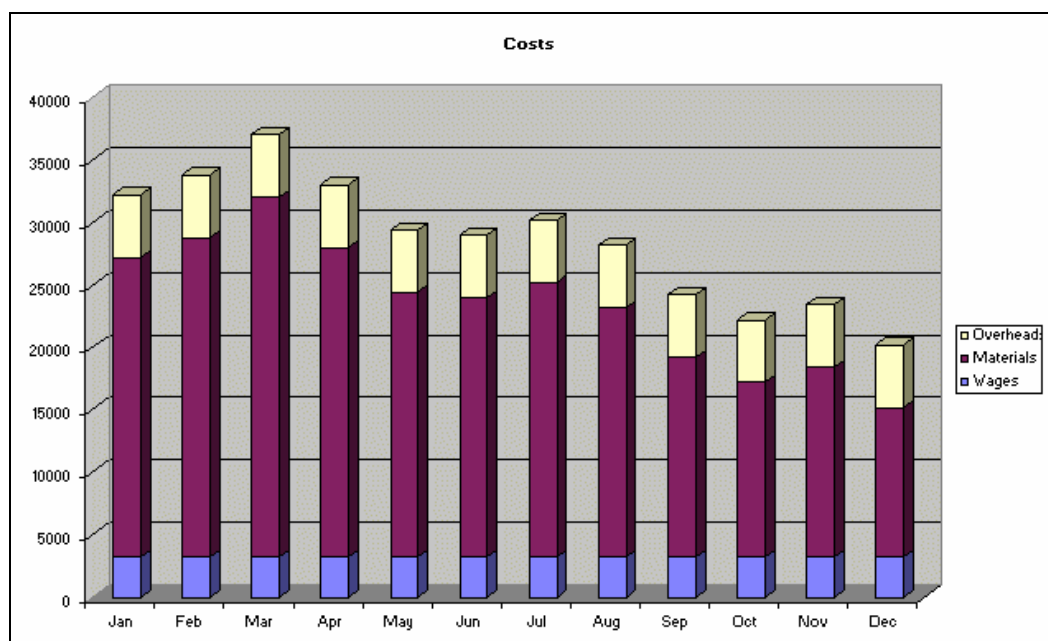
100% stacked compares the percentage of each value 2D.

Compare the contribution of each value to a total across categories 3D.

100% stacked compares the percentage of each value 3D.

### Actions:

1. The workbook **Charts** should still be open. If not open it.
2. Make the **Costs** sheet chart active. Click the **Change Chart Type** button on the **Design** tab.
3. The **Column** options are displayed. Select the **Stacked Column in 3-D** option (fifth option on first row), click **OK**. This chart shows all the costs stacked on top of each other, so that comparisons can be made.



4. Save the workbook as **Charts Complete**.
5. Close the workbook.

## **Exercise 250 - Revision: Advanced Charts**

1. Open the workbook **Store**. This worksheet represents the yearly cash flow for a company producing one product.
2. Create a **2D Column Chart** of the **Sales** values (row **4**) on a separate sheet, named **Sales Chart**.
3. Add the chart title **Sales for 2003** and format appropriately.
4. Change the **Chart Type** to a **Line Chart**.
5. Chart the **Income** figures (row **6**) as an embedded **2D Column** chart with a suitable title.
6. Add a four monthly period **Moving Average** to the **Sales Chart**. Two lines are confusing even with a legend. Change the chart type back to a column.
7. Format the **Moving Average** to be a thick red line.
8. Create a **2D 100% Stacked Bar** chart of the **Expenditure** items (data on rows **7** to **11**) on a new sheet.
9. Change the sheet tab name to **Expenditure**.
10. Add a chart title **Comparison of Expenditure Items**.
11. Format the chart title to be in a **Shadow** box with a blue border, light yellow background and blue 20 point text in any fancy font.
12. On the embedded **Income Chart**, change the chart type to a **3D Column Chart**.
13. Change the **3D View**, using **X:** and **Y:** values, slightly.
14. Print a copy of the **Income Chart** only.
15. Save the workbook as **Store2**.
16. Close the workbook.