

Chart Types

Choosing the right chart type can be the difference between an effective chart and an ineffective chart. In addition, sometimes your data dictates the exact type of chart that you must use (for example, when you have X and Y data points). The following subsections describe some of the charts available in Excel and when to use them.

Pie Charts

Pie charts are for when you have parts that make up a whole, or categories of numbers, and you add to get a total. The total amount will be the whole pie, and the pieces of the pie will be the individual categories.

When you make pie charts, you highlight the cells with the individual numbers. Never highlight the total numbers. This chart is good for when you want to see percentages or proportions.

2D pie charts do not distort the percentages or proportions.

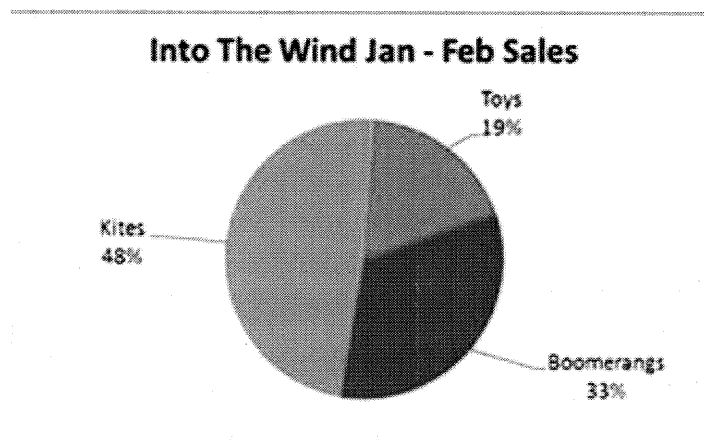


Figure 993

When you have more than six pie pieces, it is useful to select the pie within pie/column charts to avoid “cluttered” pie charts.

3D pie charts do not present an honest visual presentation because they distort the percentages or proportions.

Column Charts

Column charts are good for when you have a range of source data (often created with a PivotTable) with row and column header labels and you want to show how a group of categories did within a second category (such as items sold within a month).

The row labels from the source data range will appear in the

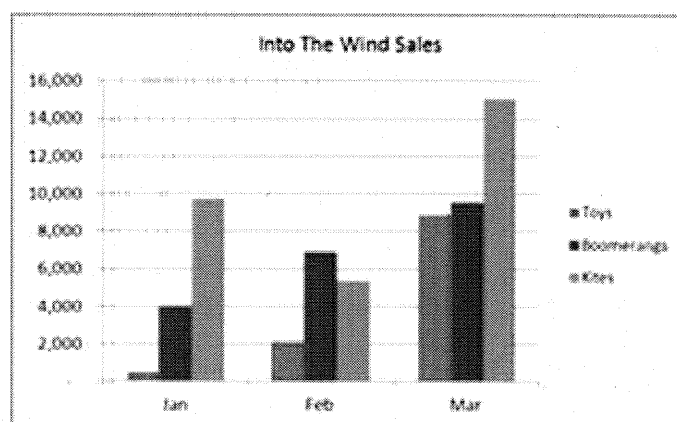
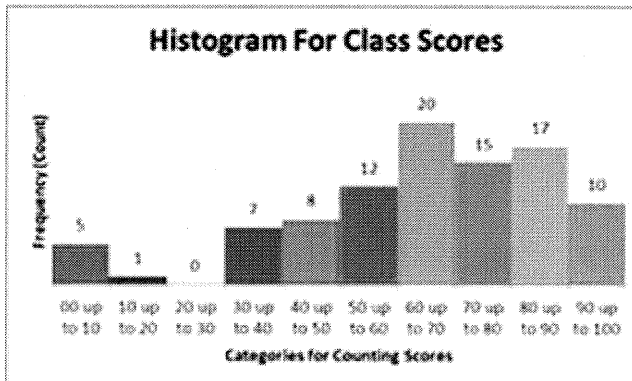


Figure 994

legend, and the column headers will appear on the horizontal axis. Column charts show difference based on column heights across categories. Hint: Column charts have vertical bars, and bar charts have horizontal bars.

Histograms

Histograms are a special type of column chart where the horizontal categories are grouped numbers, such as 0 up to 10, 10 up to 20, 20 up to 30, and so on.



The “gap width” between columns is zero. This is to visually indicate that there are no values possible between categories. The height of each column is the number of scores (in our example) counted in that category.

Figure 995

Bar Charts

Bar charts are very similar to column charts, except that the bars are horizontal rather than vertical. Bar charts are good for emphasizing differences across categories.

Like Column Charts, the source data can come from a range of numbers that have row headers (legend) and column headers (categories). Visually it is easier to decipher the differences between bar lengths when they are oriented horizontally rather than vertically. Hint: Column charts have vertical bars, and bar charts have horizontal bars.

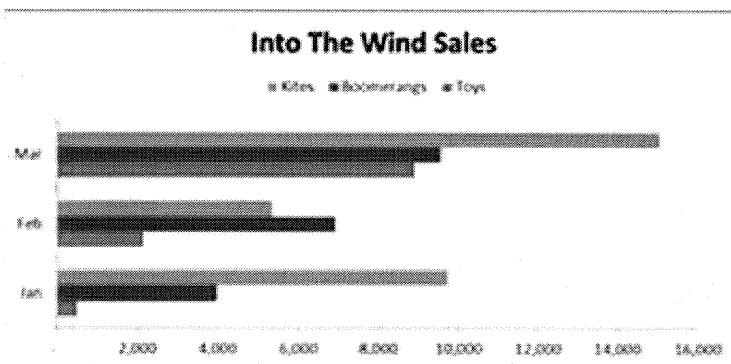


Figure 996

Stacked Bar or Column Charts

Stacked bar charts are good for when you want to see bars compared across categories, but within each bar you can see a color coding that indicates the amount of the bar that came from each legend name.

Like the column or bar charts, the source data can come from a range of numbers that have row headers (legend) and column headers (categories). Hint: Column charts have vertical bars, and bar charts have horizontal bars.

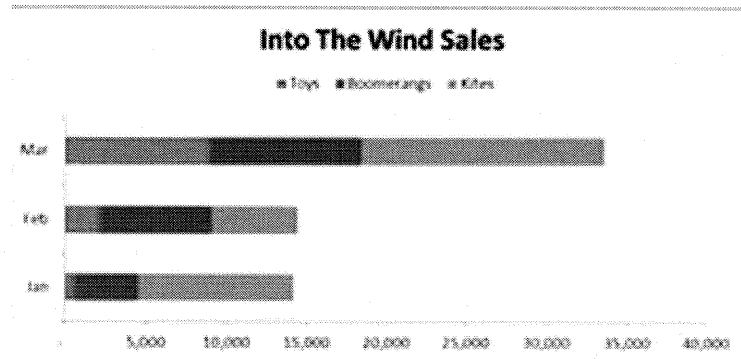


Figure 997

Line Charts

Line charts are good for showing up or down trends across categories. Line charts have a non-numeric category for the horizontal axis and a numeric category or variable for the vertical axis. Even if the horizontal axis contains a variable like year, which is a number, it is considered a non-numeric category because the distance between each new category is always the same.

This is in stark contrast to an X-Y scatter chart, where there are two numeric variables. Line charts have only one numeric variable, and it is listed on the vertical axis.

Like the column or bar charts, the source data can come from a range of numbers that have row headers (legend) and column headers (categories).

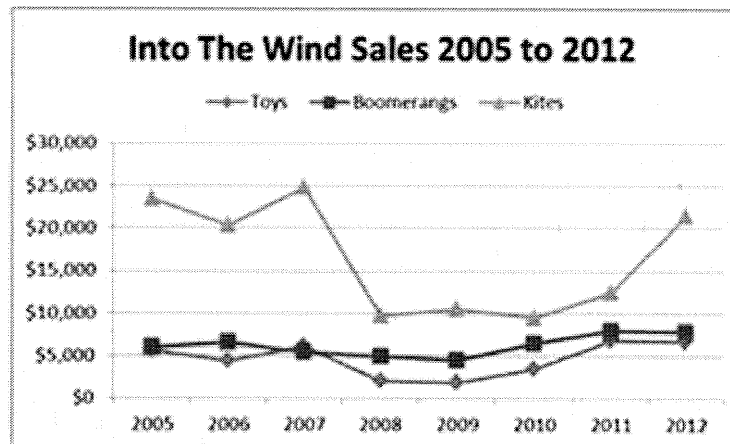


Figure 998

Remember X-Y scatter charts and line charts are not the same. Line charts have one numeric variable, whereas X-Y scatter charts have two numeric variables.

X-Y Scatter Charts

X-Y scatter charts are for when you have two numeric variables and you want to plot an X value or independent value on the horizontal axis and a Y value or dependent value on the vertical axis.

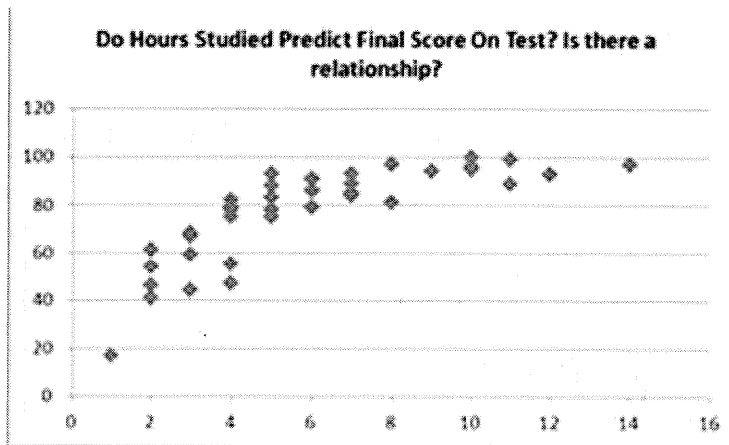


Figure 999

Excel plots these by moving left or right on the horizontal axis by the X distance and then up or down the vertical axis by the Y distance.

Remember X-Y scatter charts and line charts are not the same. Line charts have one numeric variable, whereas X-Y scatter charts have two numeric variables.

Our next Excel Efficiency-Robust Rule is as follows:

Rule 42: The two rules for charts are 1) Choose the best chart type that matches the data type and the particular message you are delivering, and 2) eliminate chart junk.

Next we cover the general guidelines for creating and formatting charts.

Creating and Formatting Charts

Creating and formatting charts can be accomplished with these general steps:

1. Highlight range with labels (categories) and numeric data (series).
2. Select the chart type:
 - a. Go to Insert tab, Charts group, and select your preference from the Chart Type drop-down list.
 - b. The F11 key will create the default chart on a new sheet.
 - c. Alt, F1 will create the default chart on the current sheet.
3. Look at chart elements such as columns, pie pieces, axes, and legends to determine whether they need to be changed to enhance your visual message.

When setting up the data in the worksheet, the X values should be in the first column with a series name in the first row, and the Y values should be in the second column with a series name in the first row.

This gives each row in the data set an X value and a