



Graphing in Excel

Turning Numbers into Pictures

By Curtis Jerry Smothers

A Picture Really Is Worth a Thousand Numbers

Imagine someone hands you a spreadsheet containing five years of monthly sales figures. You could spend several minutes scanning rows of numbers looking for trends, or you could create a chart that tells the entire story in just a few seconds.

That's the purpose of graphing. A chart transforms columns of numbers into a visual picture that your brain can understand almost instantly. Rising sales become an upward-sloping line. Falling expenses become descending columns. Market shares become slices of a pie. Trends, patterns, and comparisons that might remain hidden in a worksheet suddenly become obvious.

This ability to transform data into information is one of Excel's greatest strengths.

Why Graphs Matter

People often understand pictures faster than tables of numbers. Imagine trying to compare the quarterly sales of four different products over three years by reading a spreadsheet. It can be done, but it requires patience and concentration.

A well-designed chart reveals the answer immediately. Which product sells the most? Which is growing? Which is declining? The information practically jumps off the screen.

That's why charts are used in business presentations, scientific research, school reports, financial planning, and even the evening television news.

Choosing the Right Chart



Excel offers dozens of chart types, but most everyday users rely on just a few.

Column Charts

Column charts compare one group with another. They're excellent for comparing monthly sales, student grades, yearly expenses, or survey results.

Think of a column chart as answering the question:

"Which one is larger?"

Where to find it: Select your data, then choose **Insert** → **Column or Bar Chart**.

Bar Charts

Bar charts perform the same job as column charts but display the bars horizontally instead of vertically. They're particularly useful when category names are long or when comparing many items.

Where to find it: Insert → Column or Bar Chart.

Line Charts

Line charts show change over time. If you want to display stock prices, monthly temperatures, population growth, or your retirement savings over several years, a line chart is usually the best choice.

Think of a line chart as answering the question:

"How has something changed?"

Where to find it: Insert → Line or Area Chart.

Pie Charts

Pie charts show how individual pieces contribute to a whole. They're ideal for displaying a household budget, market share, or election results.

A pie chart answers the question:

"What percentage does each part contribute?"

Because the slices must represent portions of a whole, pie charts work best when there are relatively few categories.

Where to find it: Insert → Pie or Doughnut Chart.

Scatter Charts

Scatter charts are used when you want to examine the relationship between two sets of numbers. Scientists, engineers, economists, and researchers frequently use them to determine whether one variable changes as another changes.

Most beginning Excel users won't need scatter charts very often, but it's useful to know they exist.

Where to find it: Insert → Scatter (X, Y).

Creating a Chart

Creating a chart is surprisingly easy. First, select the data you want to graph, including the row or column headings. Next, click the **Insert** tab on the Ribbon and choose the chart type that best represents your information. Excel immediately creates the chart and usually does an excellent job of choosing colors, labels, and formatting.

Once the chart appears, you can move it, resize it, change colors, edit titles, or select a completely different chart type with just a few mouse clicks.

Adding Titles and Labels

A chart without a title is like a book without a cover. Readers shouldn't have to guess what they're looking at.

Give every chart a descriptive title, and whenever appropriate, label both the horizontal and vertical axes. If several groups of data appear on the same chart, include a legend so readers know what each color or line represents.

A few extra seconds spent labeling your chart can make the difference between confusion and instant understanding.

Where to find it: Click the chart, then use the **Chart Design** and **Format** tabs (or **Chart** tab on some Mac versions) to add titles, legends, labels, and other chart elements.

Keep It Simple

Excel offers dramatic three-dimensional effects, shadows, gradients, and dozens of colorful design themes. While these features can be attractive, they aren't always helpful.

A simple chart with clear labels and readable colors usually communicates information far better than one overloaded with decorative effects. Remember that your goal is to explain the data—not impress readers with special effects.

Curt's Quick Tip

When choosing a chart, ask yourself one simple question:

- **Comparing things?** Use a **Column** or **Bar Chart**.
- **Showing change over time?** Use a **Line Chart**.
- **Showing parts of a whole?** Use a **Pie Chart**.
- **Looking for relationships?** Use a **Scatter Chart**.

If you answer that question first, choosing the right chart becomes much easier.

Let the Numbers Tell Their Story

A spreadsheet stores information, but a chart communicates it. By transforming rows and columns into lines, bars, or slices, Excel helps readers see patterns they might otherwise overlook.

Throughout this **Spreadsheets for Everyone** series, we've learned how to navigate Excel, enter data, write formulas, use functions, format worksheets, and organize information. Graphing is the final step in that journey. It transforms raw numbers into meaningful pictures that inform, persuade, and communicate.

That's the real power of spreadsheets. They don't merely calculate—they help us understand.