

- » Learning the essentials of Excel charts
- » Creating charts
- » Modifying and personalizing charts

Chapter **1**

Creating Charts

Excel offers a powerful array of tools for visualizing and summarizing data, including a wide variety of regular charts, in-cell graphics such as sparklines, PivotTables, and PivotCharts. In this chapter, you first explore the essentials of regular charts and how to create and format them. You then learn how to modify and personalize charts so they look and act the way you prefer.

To learn about PivotTables, turn to Chapter 2 of this minibook. And if you want to know about PivotCharts, turn to Chapter 4 of this minibook.

Introducing Excel Charts

Excel charts are visual representations of worksheet data, designed to spotlight trends, patterns, and comparisons. These versatile tools come in many flavors, from trusty bar and line charts to specialized options like scatter plots.

Seasoned users can craft their go-to favorites using commands on the Insert tab of the ribbon, while the Recommended Charts feature acts as a helpful sidekick, suggesting the best way to graphically showcase your data when inspiration runs dry. And don't worry about buyers' remorse — switching to a different chart type is quick and easy, especially when your boss takes one look and says, "Huh?"

This exploration of charts riffs off one of the most data-driven sports in America: baseball. Much like every pitch, swing, and hit is analyzed to uncover patterns and trends, Excel charts allow you to visualize and break down your data with the precision of a seasoned statistician.



Excel charts are referred to as *objects*, meaning they float above the worksheet. This design makes charts easy to move around, but keep in mind that they can obscure any data sitting beneath them.

Creating a Chart from Scratch

Before you can create a chart, you need some data. If you need a sample dataset before stepping into the batter's box, follow these steps to whip one up:

1. **Type Inning 1 into cell B1 of a blank worksheet.**
2. **Drag the Fill Handle for cell B1 across to cell D1.**
The headers Inning 1, Inning 2, and Inning 3 appear in cells B1:D1.
3. **Type Fastball and Curveball into cells A2 and A3, respectively.**
4. **Type 3, 5, and 7 into cells B2, C2, and D2, respectively.**
5. **Type 6, 8, and 10 into cells B3, C3, and D3, respectively.**



TIP

When entering data across rows, press Tab or Right Arrow instead of Enter to jump to the cell in the next column.

Using Recommended Charts

Recommended Charts was one of Excel's earliest forays into artificial intelligence (AI) over a decade ago. This feature helps you transform a dataset into a polished chart without breaking a sweat:

1. **Select any cell within your dataset (for example, cell A1).**



REMEMBER

By default, Excel charts use the contiguous block of cells surrounding the active cell as their data source. This means you can skip preselecting your data — unless there are blank rows or columns, which may lead to some awkward gaps in your chart.

2. Click the Insert tab of the ribbon, and then click Recommended Charts.

In Excel for Windows, the Recommended Charts tab of the Insert Chart dialog box opens, as shown in Figure 1-1. In macOS, an abbreviated drop-down list offers a few suggestions.

3. Take a quick detour to the All Charts tab (see Figure 1-2), your comprehensive playbook for exploring the 50-odd chart types Excel has to offer.

4. Select the Recommended Charts tab, and click any chart in the scrollable list on the left to display a larger preview of the chart along with an explanation of the story it tells and when to use it.

All charts in the Insert Chart dialog box are based on your data.

5. Click OK to confirm your choice and close the Insert Chart dialog box.

A new chart now graces your worksheet.

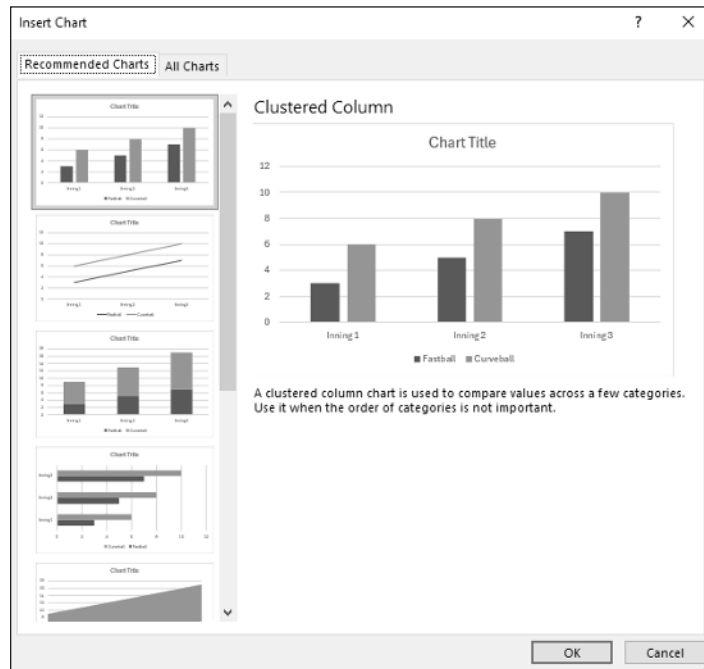
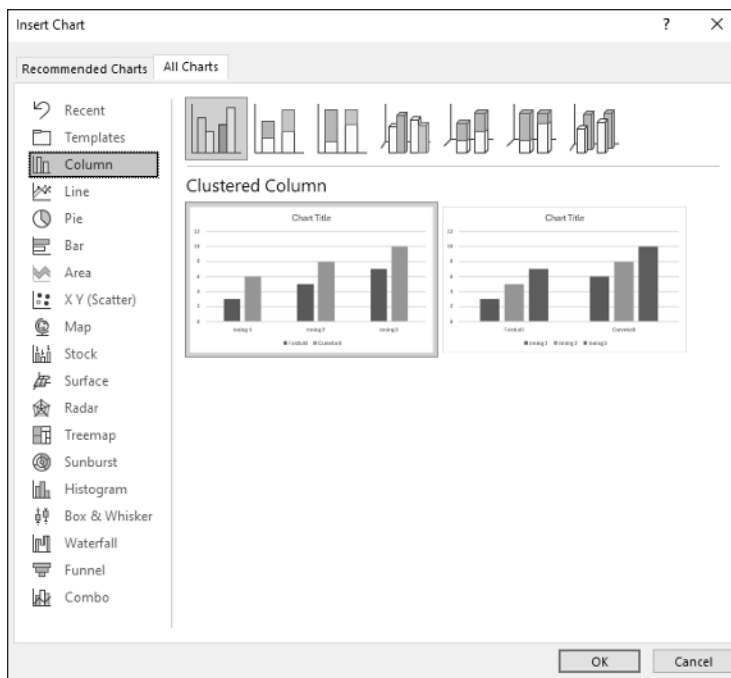


FIGURE 1-1:
The Recommended Charts
tab of the Insert Chart
dialog box.

FIGURE 1-2:
The All Charts
tab of the Insert
Chart dialog box.



Building charts directly

Instead of using the Recommended Charts command, you can insert a chart directly from the Insert tab of the ribbon:

1. Click any cell in your data range (for example, A1).
2. Select the Insert tab of the ribbon, and then choose a chart category drop-down:



TIP



- **Insert Column or Bar Chart:** Use these charts to visually compare values across a few categories.

Press Alt-F1 (Windows) or Fn+Option+F1 (macOS) to create a column chart on the fly in the active worksheet.

- **Insert Line or Area Chart:** Perfect for showing trends over time or categories, like tracking runs scored in inning by inning.
- **Insert Pie or Doughnut Chart:** These round charts give you virtual slices of your data.
- **Insert Hierarchy Chart:** Featuring Treemap and Sunburst charts. These are great for visualizing hierarchies, such as how data is organized into categories and subcategories.



- **Insert Statistic Chart:** Baseball geeks, rejoice! Here reside the Histogram and Box and Whisker chart types, ideal for analyzing performance metrics.



- **Insert Scatter (X, Y) or Bubble Chart:** Show relationships between two sets of values, like comparing batting averages and on-base percentages.



- **Insert Waterfall, Funnel, Stock, Surface, or Radar Chart:** This category catches the specialized chart types that didn't make it onto any other teams.



- **Insert Combo Chart:** This is a chart that lets you display data using bar and line charts together.



- **Maps:** This drop-down features a single Filled Map option, perfect for comparing values across geographic regions. But beware of the More Map Charts option — it's a trap! Excel just loops you back to the same Filled Map chart.

The chart lands on your worksheet, ready for you to jazz up with labels, colors, or whatever flair your heart desires.



REMEMBER

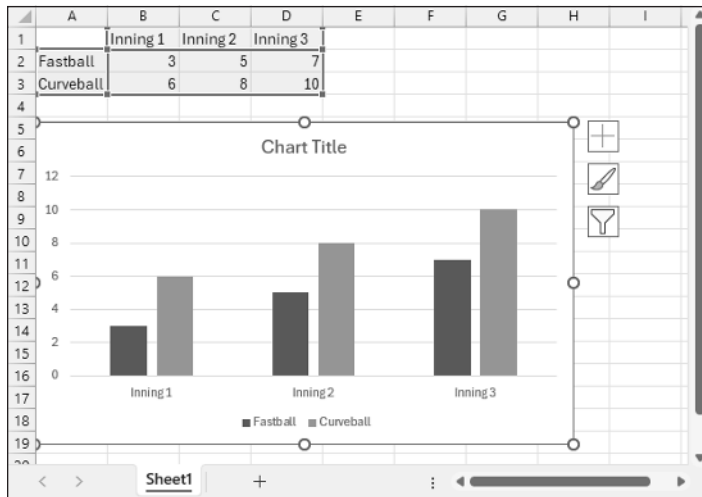
Excel gives you a sneak peek at your chart, but if your screen resolution blocks part of the preview, don't sweat it. Just resize your window or grab a bigger monitor.

Deconstructing and Customizing Charts

Depending on the chart you pick, a standard set of default elements rolls out (see Figure 1-3):

- » **Chart area:** The outer borders of your chart's world — like the outfield fence, it defines the boundaries while leaving space for the action in the middle.
- » **Chart title:** The name of the chart, telling your audience what it contains.
- » **Horizontal (Category) Axis:** Also known as the x-axis, this is the baseline that groups your data.
- » **Legend:** The chart's dugout lineup card, translating colors and symbols so fans (and you) can follow the game.
- » **Plot area:** The infield of your chart — where the action happens.

FIGURE 1-3:
A standard
Clustered
Columns chart.



Customizing charts

The Chart Design tab and Format tab appear in the ribbon whenever you click a chart, accompanied by the following three buttons — the Chart Elements button (top), the Chart Styles button (middle), and the Chart Filters button (bottom) — shown in Figure 1-3:

» **Chart Elements:** Think of the Chart Elements menu as your chart's coach, ready to swap players in and out of the lineup to create a winning combination. Whether you're fine-tuning your chart for the big leagues or just tinkering in the minors, this menu has you covered.

The first layer of the menu acts like a manager calling plays from the dugout — toggle features on or off with a simple click. Hover over a chart element to display options to fine-tune that feature. To reach the full set of options available, click the More Options command, which opens the Format task pane for the feature.

Here's the lineup of chart elements you can adjust by clicking the Chart Elements button or by clicking the Chart Design tab on the ribbon and then clicking Add Chart Element:

- **Axes:** The first and third base lines of your chart, keeping everything in play and defining the x-axis (horizontal, category labels) and y-axis (vertical, value numbers). Enabled by default.
- **Axis Titles:** These titles provide extra context for your axes. Optional, but they can be a game changer for clarity.
- **Chart Title:** Use the title to explain your chart's purpose.

- **Data Labels:** The play-by-play announcers of your chart, calling out exact numbers at each data point. Disabled by default, because sometimes less is more.
 - **Data Table:** The raw numbers beneath the action of the chart. Ideal for when you want both the game highlights and the stat sheet.
 - **Error Bars:** The ballpark range for your data points, showing the potential variation or uncertainty in the numbers.
 - **Gridlines:** The chalk lines of your chart, giving structure to the field. Horizontal lines appear by default, but you can add vertical ones, too.
 - **Legend:** Your chart's playbook, decoding colors and shapes into understandable categories.
 - **Trend line:** The trend line reveals patterns or the overall direction in your data.
 - **Up/Down Bars:** On a line chart or stock chart, these bars highlight the highs and lows between two series over time.
- » **Chart Styles:** The Chart Styles button lets you adjust color palettes for a cohesive theme, with more advanced options available through the Format menu if you're ready to channel your inner graphic designer.
- » **Chart Filters:** Filters enable you to highlight specific data series or points. Much like the Filter feature in worksheets (see Book 1, Chapter 4), just remember to click Apply to lock in your lineup.

Hiding rows or columns in your worksheet can result in data points or series vanishing from the chart.



REMEMBER

With this roster of tools, charts go from rookie status to championship contenders. With these options at your disposal, striking out isn't even on the table!

Maintaining chart data

Data marches on, just like the accumulation of baseball statistics, which means you may need to periodically add more data to your charts. Carry out these steps to build on the chart from the “Creating a Chart from Scratch” section, earlier in this chapter:

1. **Enter** Slider into cell A4.
2. **Enter** 5, 7, and 9 into cells B4, C4, and D4, respectively.
3. **Select** cells A4:D4.



4. Click the Home tab of the ribbon and then click Copy. Alternatively, press Ctrl+C (Windows) or ⌘+C (macOS).



5. Click the chart and then press Ctrl+V (Windows) or ⌘+V (macOS).

A new data series appears on the chart.

6. Select cells C1:D4 and then drag the Fill Handle from cell D4 to cell E4.

A fourth inning appears within the data range but doesn't appear on the chart.

7. Click the chart and then drag the selector handle in cell D4 to cell E4.

The new data appears on the chart.

8. Select cells C1:E4 and then drag the Fill Handle from cell E4 to cell F4.

9. Click the chart to activate the object, click the Chart Design tab of the ribbon, and then click Select Data.

The Select Data Source dialog box opens, as shown in Figure 1-4.

10. Select cells A1:F4 in the worksheet to update the chart's data range.

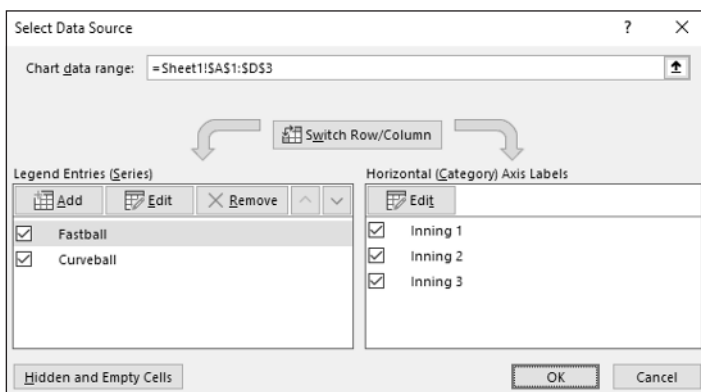
11. Click OK to close the Select Data Source dialog box.

The Select Source Data dialog box also enables you to add or remove data series and control the display of horizontal (category) axis labels.



REMEMBER

FIGURE 1-4:
The Select
Data Source
dialog box.



TIP

If you need to create a chart that expands itself automatically when new data series are available, base the chart on a table and select the Include New Rows and Columns in Table check box on the AutoFormat As You Type tab of the AutoCorrect dialog box. See Book 1, Chapter 4 for information on tables.

Moving and resizing charts

Charts are a switch-hitter feature in Excel, typically floating above worksheet cells but ready to transition into a *chart sheet* (a blank canvas with a worksheet-style tab but no grid of cells) instead. Chart sheets make charts more accessible compared to those embedded within worksheets.

To move a chart within a worksheet, click anywhere in the chart area and drag the chart to its new location. Alternatively, use cut and paste: Right-click the chart and select Cut to cut the chart to the Clipboard, then right-click the cell where you want the upper-left corner of the chart to land and click Paste.

To move a chart to a chart sheet or another worksheet, follow these steps:

1. **Click the chart to activate it as an object.**
2. **Click the Chart Design tab of the ribbon, and then click Move Chart.**

The Move Chart dialog box opens, as shown in Figure 1-5.

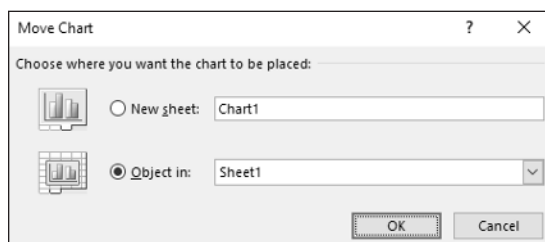


FIGURE 1-5:
The Move Chart
dialog box.

3. **Choose your desired location:**
 - **New Sheet:** Moves the chart to a chart sheet.
 - **Object In:** Moves the chart to any existing worksheet within the current workbook.
4. **Click OK to close the dialog box and complete the move.**



WARNING

You can't undo any prior actions, including moving a chart, after using the Move Chart dialog box.

Charts can be resized as well, letting you create Little League-size graphs or go all out with full-size charts ready for the big leagues. To begin, click a chart to activate the object, and then use either of the following techniques:

- » **Use the resizing handles.** Drag any of the eight resizing handles to change the size of the chart.



TIP



REMEMBER



TIP

Hold down Alt (Windows) or Option (macOS) while resizing to snap the chart to the worksheet grid. To snap multiple charts on Windows, click the Page Layout tab of the ribbon, click Align, and then click Snap to Grid. On macOS, click the Shape Format tab of the ribbon, click Align, and then click Snap to Grid. Going forward, charts automatically align to the underlying worksheet grid as you resize.

Snap to Grid stays enabled as a permanent setting until you repeat the steps to turn it off.

- » **Change the shape height and/or width.** Update the Shape Height and Shape Width fields in the Size group of the Format tab of the ribbon to specify the chart's dimensions in inches. For more detailed adjustments, right-click the chart; click Format Chart Area, click Size & Properties, and click Size; and then fine-tune the settings as needed.

To adjust the dimensions of two or more charts simultaneously, hold down Ctrl (Windows) or ⌘ (macOS) while clicking each chart. Then use the Shape Height and Shape Width fields on the Shape Format tab of the ribbon to set uniform dimensions.

Transferring chart formatting and elements

Excel enables you to transfer most formatting and elements between charts:

1. **Click the chart area of the chart that has the desired formatting and elements.**
2. **Click the Home tab of the ribbon and click Copy; alternatively, right-click the chart area and click Copy.**
3. **Click the chart area of the chart that you want to update.**
4. **Click the Home tab of the ribbon, click the drop-down arrow below the Paste button, and then click Paste Special.**

An abbreviated version of the Paste Special dialog box opens, as shown in Figure 1-6.

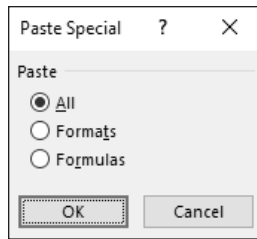
5. **Select the Formats radio button and then click OK.**



REMEMBER

All formatting is applied from the first chart to the second chart, and the mix of chart elements on the second chart is adjusted to match those of the first chart. Excel adds to the second chart any extra elements the first chart has and removes from the second chart any elements the first chart doesn't have.

FIGURE 1-6:
The abbreviated
version of the
Paste Special
dialog box.



WARNING

If you choose the Paste command instead of Paste Special, or select the All radio button or the Formulas radio button, you may paste more than you bargained for — merging the data from both charts together. Fortunately, you can erase your error by choosing Undo or pressing Ctrl+Z (Windows) or ⌘+Z (macOS).

Creating and applying chart templates

In Excel for Windows (but not macOS), chart templates are the pinch hitters of the game, ready to step in at a moment's notice. These templates bundle a chart type, chart elements, and formatting into a single package that you can apply with just a few mouse clicks, helping you give your charts a consistent look and feel. Follow these steps:

1. Click a chart, such as the sample chart expanded on in the “Maintaining chart data” section, earlier in this chapter.
2. On the Chart Design tab of the ribbon, click the drop-down button on the right side of the Chart Styles gallery, and then select a style from the gallery or customize the chart formatting to your liking.
3. Still on the Chart Design tab, click Add Chart Element, click Data Table, and then click the With Legend Keys item or the No Legend Keys item, as needed.

A data table appears on the chart.



TIP

The Data Table option isn't available for certain chart types, such as Pie or Waterfall Charts.

4. Right-click the chart area — not a chart element, such as the plot area — and then choose Save As Template.

The Save Chart Template dialog box opens.

5. Assign a name to the chart template file and then click Save.

Chart template files have a .crtx file extension and can't be opened directly in Excel. You can, however, update a template by saving over an existing copy.



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6. Click any cell within the source data for your existing chart.
7. Click the Insert tab of the ribbon, and then click Recommended Charts.

The Change Chart Type dialog box opens, displaying the Recommended Charts tab.

8. Select the All Charts tab, and choose Templates.
9. Choose a chart template and then click OK (or get a running start by double-clicking the template).

A new chart appears on the worksheet that includes all formatting and chart elements bundled into the template.



TIP

To apply a template to an existing chart, click the chart, click the Chart Design tab on the ribbon, and then click Change Chart Type. The Change Chart Type dialog box opens to the All Charts tab, from which you can make a selection from the Templates section.

Managing templates

You can mark a single chart template as the default template in Excel for Windows, and then start new charts by way of a keyboard shortcut:

1. Click the Insert tab of the ribbon, and then click Recommended Charts.
2. Select the All Charts tab, and choose Templates.
3. Right-click your preferred template and click Set as Default Chart.
4. Click OK.

You can now insert that type of chart quickly: Select any cell within the range of data that you want to chart, and then press Alt+F1. A chart using the default template settings appears in your worksheet.



TIP

A Manage Templates button appears at the bottom of both the Insert Chart and Change Chart Type dialog boxes when you click Templates on the sidebar. This button opens a Windows Explorer window, allowing you to back up, copy, or remove templates as needed.