

Excel 2016 Essentials

Training Manual

Corporate Training Materials



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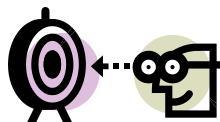
*When men yield up the privilege of thinking,
the last shadow of liberty quits the horizon.*

Thomas Paine

Module One: Getting Started

Welcome to the Excel 2016 Essentials workshop. Get ready to improve your Core Data Analysis, Manipulation, and Presentation skills by learning the core skills to succeed with Microsoft Excel 2016.

Workshop Objectives



Research has consistently demonstrated that when clear goals are associated with learning, it occurs more easily and rapidly. With that in mind, let's review our goals for today.

At the end of this workshop, participants should be able to:

- Create worksheets and workbooks
- Navigate in worksheets and workbooks
- Format worksheets and workbooks
- Change views and configurations
- Print and distribute worksheets and workbooks
- Manage data cells and ranges
- Create tables, charts and objects
- Perform operations with formulas and functions



Before the beginning of great brilliance, there must be chaos. Before a brilliant person begins something great, they must look foolish in the crowd.

Lao-Tsu

Module Two: Create and Manage Worksheets and Workbooks

Worksheets live in workbooks in Excel and create the building blocks of documenting, analyzing, manipulating, and presenting data. This module will help you get started by creating worksheets and workbooks. You'll also learn how to navigate your way around Excel worksheets and workbooks. We'll take a look at formatting both worksheets and workbooks. Then you'll learn how to customize your options and views while working within Excel. Finally, we'll take a look at distributing your worksheets and workbooks via printing or sharing.

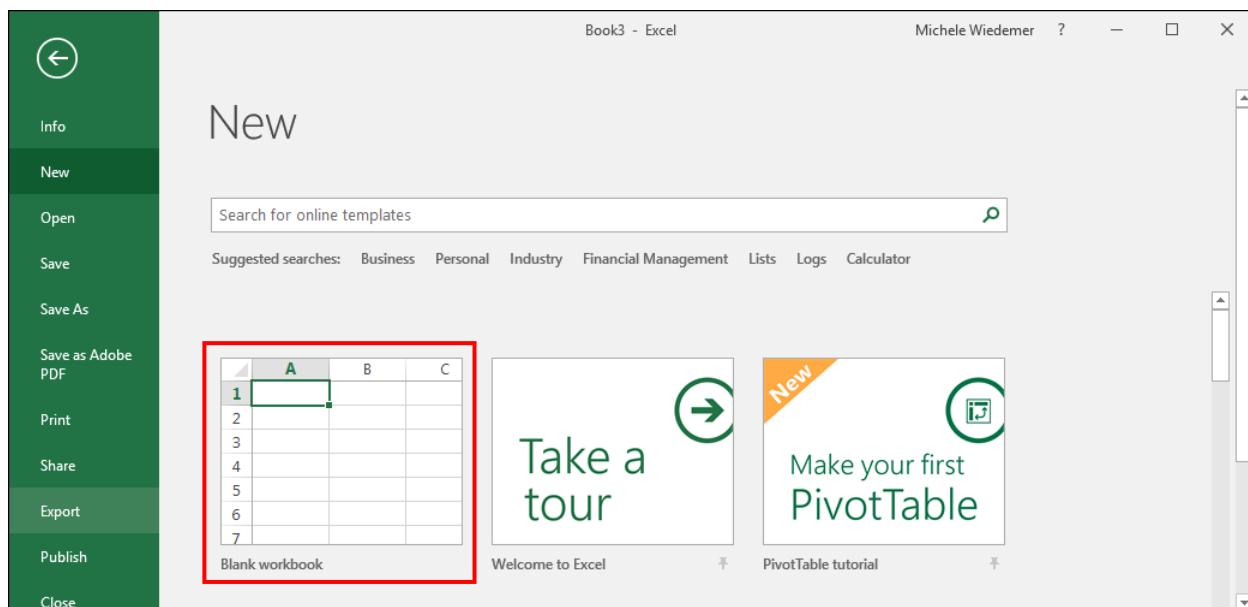
Create Worksheets and Workbooks

Create a Workbook

A blank workbook allows you to start from scratch.

Here's how to create a blank workbook. Use the following procedure.

1. If the Backstage view is not showing, select the **File** tab from the Ribbon. Select **New**.
2. From the **New** tab, or if you have just opened Excel 2016, select **Blank Workbook**.

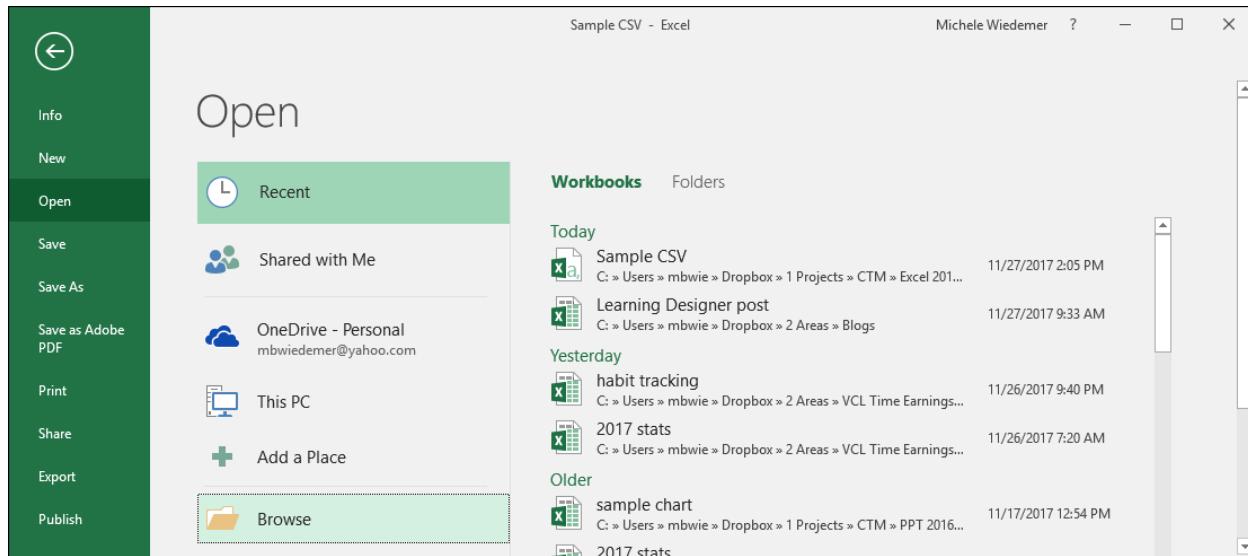


Open a Comma Separated Values File

Many programs and services allow you to create or download a comma separated values (or CSV) file that contains your data. Excel can open these files.

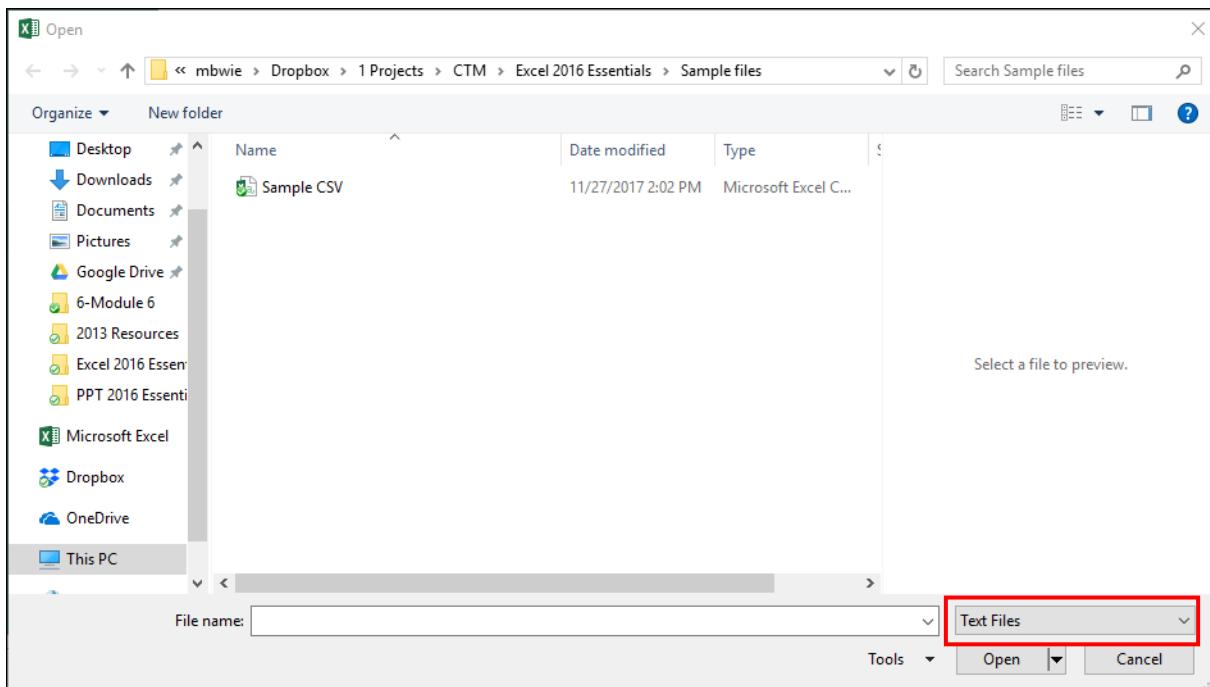
Here's how to open a comma separated values file.

1. Select the **File** tab to open the Backstage view.
2. Select **Open**.
3. Select **Browse**.



4. Navigate to the location of the file you want to import.
5. Make sure in the Open dialog box to choose "All Files" or "Text Files" from the types drop down list.





6. Highlight the file you want to open and select **Open**.

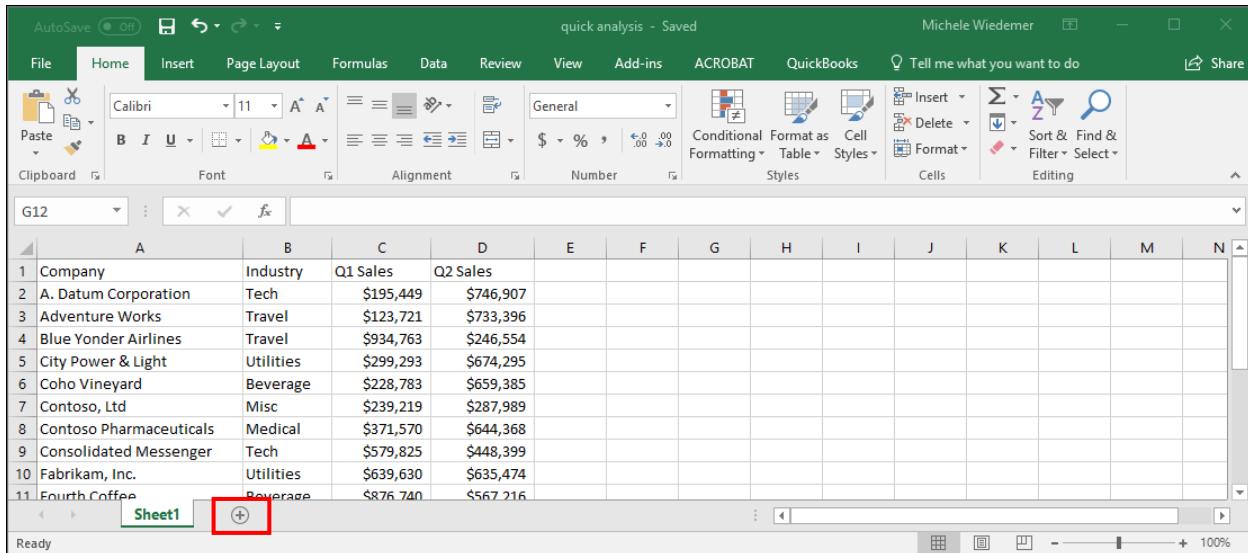


Add a Worksheet to An Existing Workbook

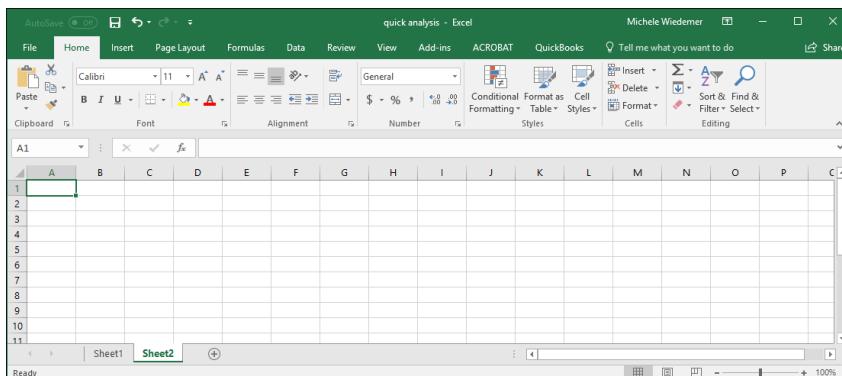
Workbooks can be made up of more than one sheet, which can be useful as you get into more advanced data analysis.

Here's how to insert a new worksheet. Use the following procedure.

1. Click the New Sheet plus sign at the bottom of the window.



Excel opens the new worksheet to the first cell, so that you can begin entering data right away.



Navigate in Workbooks and Worksheets

Search for Data

Use Excel's search feature to find specific text or numbers in a workbook.

Here's how to search for text or numbers in a workbook.

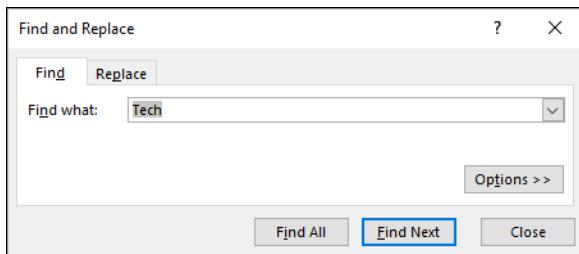
1. Select the **Home** tab on the Ribbon.
2. Select **Find & Select**.



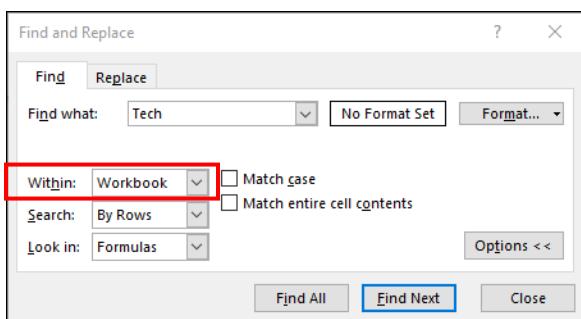
3. Select Find.

A screenshot of the Microsoft Excel interface. The ribbon at the top shows the 'Home' tab selected. In the 'Editing' group of the ribbon, the 'Find & Select' icon (a magnifying glass) is highlighted with a red box. Below the ribbon, a table is displayed on 'Sheet1 (2)' containing data about various companies and their sales. The column headers are Company, Industry, Q1 Sales, and Q2 Sales. The data includes entries like A. Datum Corporation (Tech, \$195,449, \$746,907), Adventure Works (Travel, \$123,721, \$733,396), and Blue Yonder Airlines (Travel, \$934,763, \$246,554).

4. In the Find and Replace dialog box, enter the text or numbers you want to find.



5. To search the entire workbook, select Options and select Workbook from the Within drop down list.



6. Select Find Next to find each instance individually. Select Find All to see a list of locations where the item is found.

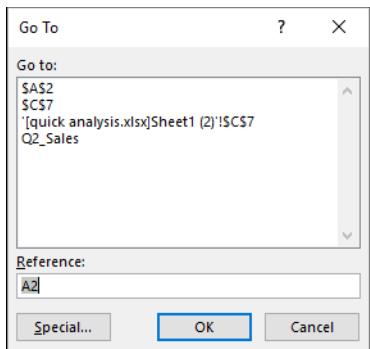


Navigate to a Named Cell

Complicated workbooks may make use of Names to refer to a specific cell or cells. The Go To dialog box can help you navigate to that location.

Here's how to navigate to a named cell.

1. Select the **Home** tab on the Ribbon.
2. Select **Find & Select**.
3. Select **Go To**.
4. Select the named reference from the list of locations.



5. Select **OK**.

The named reference is highlighted.

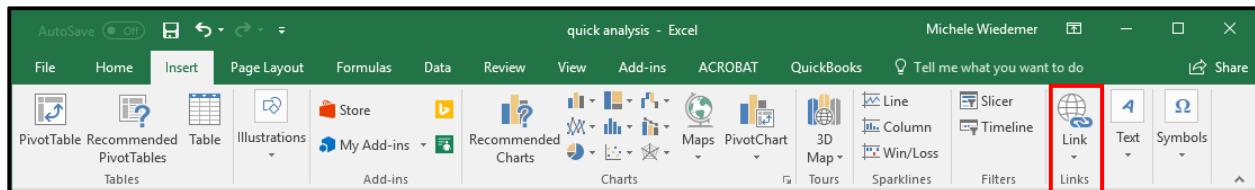


Insert and Remove Hyperlinks

Hyperlinks provide a clickable shortcut to another location.

Here's how to insert a hyperlink .

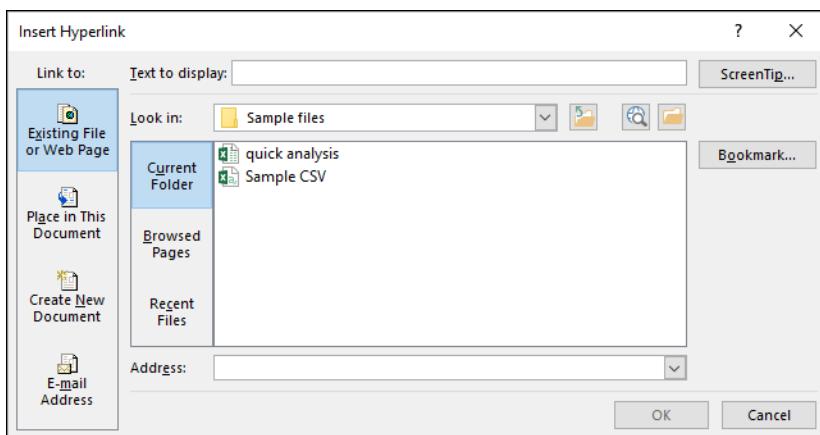
1. Select the cell where you want to create a link to another location.
2. On the **Insert** tab of the Ribbon, select **Link**.



3. Select **Insert Link**.

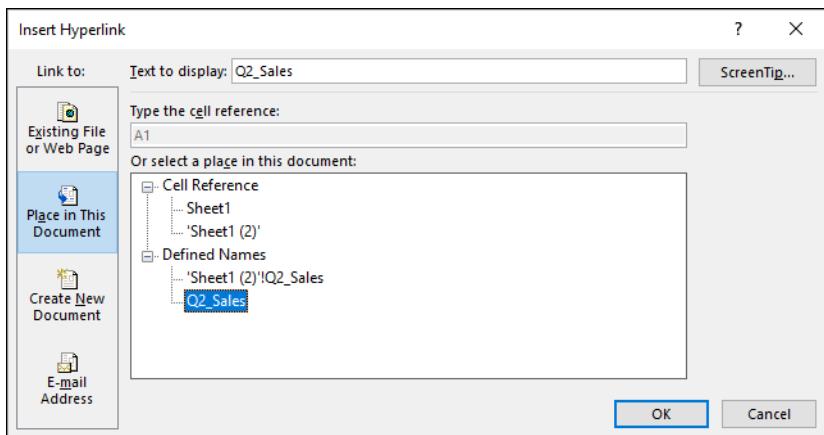


4. A dialog box appears allowing you to link to:
 - a. An existing file or web address
 - b. Another place in the current document
 - c. An entirely new document
 - d. An e-mail address



5. Enter the address to link to, or browse for a link destination.
6. Add or modify the text to serve as the link in the **Text to Display** field.
7. Select **OK**.



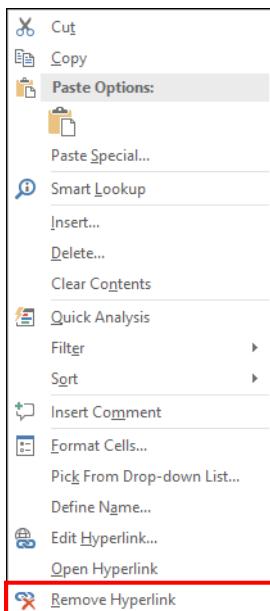


The text is colored and underlined to indicate a link.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
2	A. Datum Corporation	Tech	\$195,449	\$746,907	Q2_Sales									
3	Adventure Works	Travel	\$123,721	\$733,396										
4	Blue Yonder Airlines	Travel	\$934,763	\$246,554										
5	City Power & Light	Utilities	\$299,293	\$674,295										
6	Coho Vineyard	Beverage	\$228,783	\$659,385										
7	Contoso, Ltd	Misc	\$239,219	\$287,989										
8	Contoso Pharmaceuticals	Medical	\$371,570	\$644,368										
9	Consolidated Messenger	Tech	\$579,825	\$448,399										
10	Fabrikam, Inc.	Utilities	\$639,630	\$635,474										
11	Fourth Coffee	Beverage	\$876,740	\$567,216										
12	Graphic Design Institute	Education	\$788,390	\$540,282										

Here's how to remove a hyperlink.

1. Right click on the hyperlink.
2. Select **Remove Hyperlink** from the context menu.



The text remains but the link is removed.

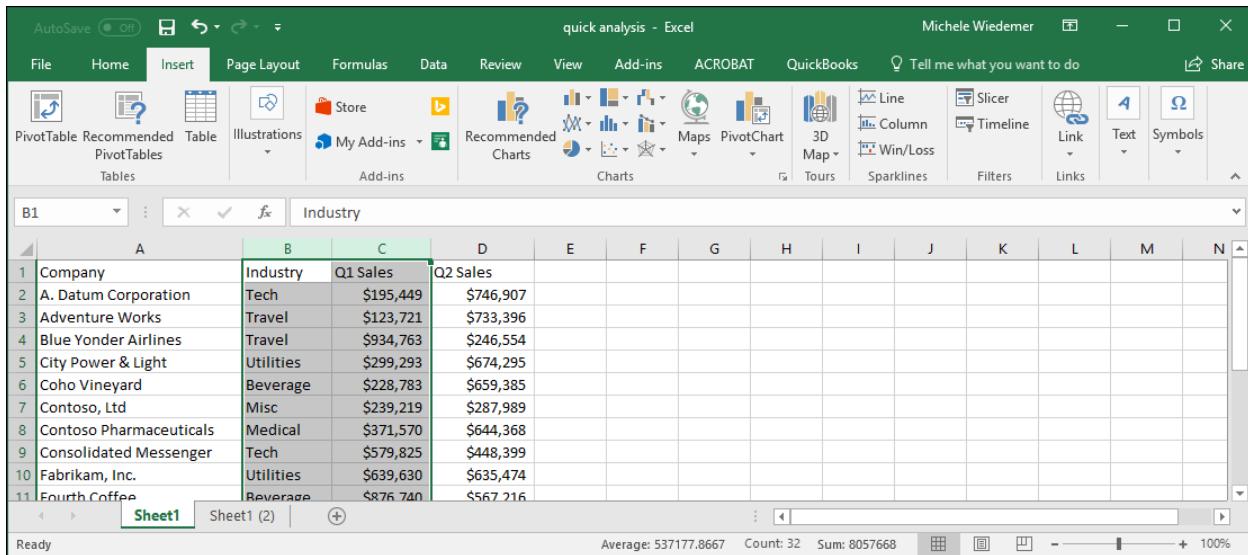


Hide or Unhide Columns and Rows

You can temporarily hide information in your worksheet to help you limit what is shown or printed.

Here's how to hide columns.

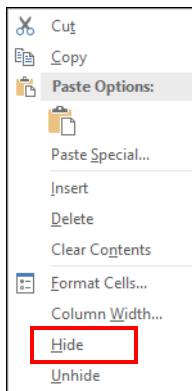
1. Highlight the column(s) you want to hide.



A screenshot of Microsoft Excel showing a table of sales data. The table has columns A through N. Columns B and C are selected and highlighted with a green border. The data includes company names in column A and industry and sales figures in columns B and C. The rest of the columns (D through N) are empty.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Company	Industry	Q1 Sales	Q2 Sales										
2	A. Datum Corporation	Tech	\$195,449	\$746,907										
3	Adventure Works	Travel	\$123,721	\$733,396										
4	Blue Yonder Airlines	Travel	\$934,763	\$246,554										
5	City Power & Light	Utilities	\$299,293	\$674,295										
6	Coho Vineyard	Beverage	\$228,783	\$659,385										
7	Contoso, Ltd	Misc	\$239,219	\$287,989										
8	Contoso Pharmaceuticals	Medical	\$371,570	\$644,368										
9	Consolidated Messenger	Tech	\$579,825	\$448,399										
10	Fabrikam, Inc.	Utilities	\$639,630	\$635,474										
11	Fourth Coffee	Beverage	\$876,740	\$567,216										

2. Right click and select **Hide** from the context menu.



The information is hidden and a double line indicates the missing columns.



The screenshot shows the Microsoft Excel interface with the ribbon at the top. The 'Insert' tab is selected. Below the ribbon, there's a toolbar with various icons for PivotTables, Recommended Tables, Illustrations, and Add-ins. A table titled 'Industry' is displayed in the worksheet area, listing company names and their Q2 Sales. The table has columns for Company (A1:A11) and Q2 Sales (B1:B11). The total sales for all companies is \$567,216.

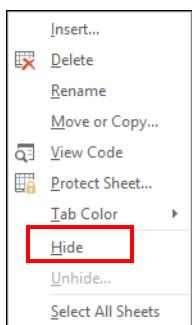
Company	Q2 Sales
A. Datum Corporation	\$746,907
Adventure Works	\$733,396
Blue Yonder Airlines	\$246,554
City Power & Light	\$674,295
Coho Vineyard	\$659,385
Contoso, Ltd	\$287,989
Contoso Pharmaceuticals	\$644,368
Consolidated Messenger	\$448,399
Fabrikam, Inc.	\$635,474
Fourth Coffee	\$567,216

Hide or Unhide Sheets

Entire worksheets can also be hidden.

Here's how to hide a worksheet.

1. Right click on the tab you want to hide at the bottom of the Excel window.
2. Select **Hide** from the context menu.



The worksheet tab is removed from the bottom of the Excel window.



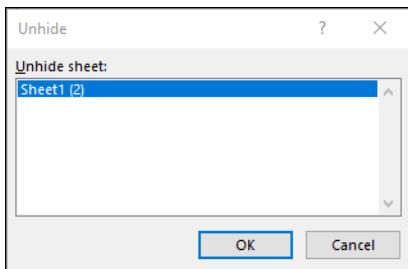
Here's how to unhide a worksheet.

1. Right click on any tab at the bottom of the Excel window.
2. Select Unhide from the context menu.





3. In the **Unhide** dialog box, select the sheet you want to restore.



4. Select **OK**.



Modify Worksheets

Insert and Delete Table Rows and Columns

Edit your worksheets by inserting and deleting rows and columns.

Show participants how to add a new row. Use the following procedure.

1. Highlight the row below where you want to insert a row. Click to the left of the row number to highlight the whole row.
2. Select **Insert** from the **Home** tab on the Ribbon.
3. Select **Insert Sheet Rows**.

A screenshot of the Microsoft Excel interface. The ribbon is visible at the top with the 'Home' tab selected. In the 'Cells' group of the ribbon, the 'Insert' button is highlighted with a red box. A dropdown menu is open from this button, showing options: 'Insert Cells', 'Insert Sheet Rows' (which is also highlighted with a red box), 'Insert Sheet Columns', and 'Insert Sheet'. The main worksheet area shows a table with 11 rows of data. Row 6, which contains the entry 'Coho Vineyard', is highlighted with a green selection bar. The formula bar above the table displays the text 'Coho Vineyard'. The status bar at the bottom of the screen shows 'Ready'.

The blank row is added above the selected row. It is highlighted and ready for you to add text.

A screenshot of the Microsoft Excel interface, similar to the previous one but with a key difference. The row 'Coho Vineyard' is now at row 7, and a new blank row has been inserted above it, becoming row 6. This new row 6 is highlighted with a green selection bar. The formula bar above the table is empty. The status bar at the bottom of the screen shows 'Ready'.





Adjust Row Height and Column Width

You can adjust row height and column width within your worksheets.

Here's how to widen a column. Use the following procedure.

1. Select the column you want to widen. When you hover the mouse over one of the dividers, the cursor changes to a cross with double arrows.

A screenshot of Microsoft Excel showing a table titled "Company". The table has columns labeled A through M. Column A is selected, as indicated by its green background. The column divider between columns A and B is highlighted with a red box and a cursor icon showing a cross with double arrows, indicating it can be dragged to widen the column. The table data includes company names and their industry, Q1 and Q2 sales figures.

	Industry	Q1 Sales	Q2 Sales
1 Company	Tech	\$195,449	\$746,907
2 A. Datum Corporation	Travel	\$123,721	\$733,396
3 Adventure Works	Travel	\$934,763	\$246,554
4 Blue Yonder Airlines	Utilities	\$299,293	\$674,295
5 City Power & Light	Beverage	\$228,783	\$659,385
6 Coho Vineyard	Misc	\$239,219	\$287,989
7 Contoso, Ltd	Medical	\$371,570	\$644,368
8 Contoso Pharmaceuticals	Tech	\$579,825	\$448,399
9 Consolidated Messenger	Utilities	\$639,630	\$635,474
10 Fabrikam, Inc.	Beverage	\$876,740	\$567,216
11 Fourth Coffee			

2. Drag the border to the new width. The screen tips indicate the width of the column.

A screenshot of Microsoft Excel showing the same table as the previous image, but with column B widened. A screen tip "Width: 29.29 (210 pixels)" is visible near the column header, indicating the new width. The table data remains the same.

	Industry	Q1 Sales	Q2 Sales
1 Company	Tech	\$195,449	\$746,907
2 A. Datum Corporation	Travel	\$123,721	\$733,396
3 Adventure Works	Travel	\$934,763	\$246,554
4 Blue Yonder Airlines	Utilities	\$299,293	\$674,295
5 City Power & Light	Beverage	\$228,783	\$659,385
6 Coho Vineyard	Misc	\$239,219	\$287,989
7 Contoso, Ltd	Medical	\$371,570	\$644,368
8 Contoso Pharmaceuticals	Tech	\$579,825	\$448,399
9 Consolidated Messenger	Utilities	\$639,630	\$635,474
10 Fabrikam, Inc.	Beverage	\$876,740	\$567,216
11 Fourth Coffee			

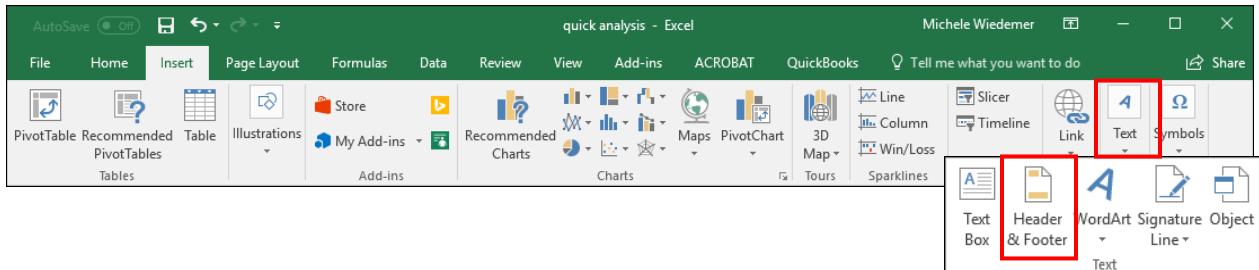
Insert Headers and Footers

You can add headers and footers to your worksheet for printing. You can only see the headers and footers if you are in Page Layout view, for a Print Preview, or on printed pages.

Here's how to insert a header and footer.

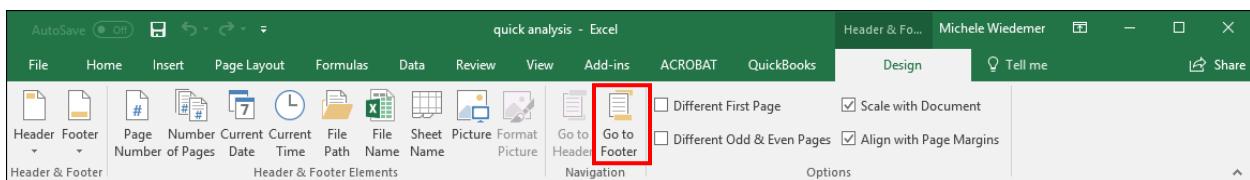


1. Select the **Insert** tab from the Ribbon.
2. Select **Text**.
3. Select **Header & Footer**.



4. The Header opens. You can insert text in the left, middle, or right sections of the header.

5. Select **Go to Footer** from the **Header & Footer Design** tab on the Ribbon to add footer text to the left, in the middle or to the right.



The screenshot shows the Microsoft Excel interface with the 'Design' tab selected in the ribbon. The 'Header & Footer Tools' ribbon is open, displaying various options for header and footer elements like 'Header & Footer', 'Page Number', 'Current Date', etc. A footer element is currently being edited in the worksheet area, specifically at cell A3. The worksheet contains several rows and columns of data, and the footer section is visible below the main content.

Change Worksheet Tab Color

You can color code the different worksheets in a workbook.

Here's how to change the worksheet tab color.

1. Right click on the tab you want to change at the bottom of the Excel window.
2. Select **Tab color** from the context menu.



3. Select a color from the color options.



The tab is highlighted with the selected color.



A screenshot of Microsoft Excel showing a spreadsheet titled "quick analysis - Excel". The ribbon is visible at the top with tabs like File, Home, Insert, Page Layout, Formulas, Data, Review, View, Add-ins, ACROBAT, QuickBooks, and Tell me what you want to do. The Home tab is selected. The main area shows a table with columns: Company, Industry, Q1 Sales, and Q2 Sales. The Q2 Sales column has a currency format applied. The cell D2 contains the value 746907. The worksheet tab "Sheet1 (2)" is highlighted with a red box. The status bar at the bottom says "Ready".

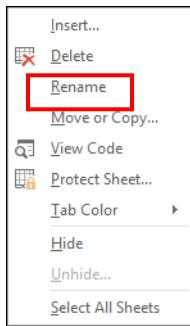
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	C
1	Company	Industry	Q1 Sales	Q2 Sales											
2	A. Datum Corporation	Tech	\$195,449	\$746,907											
3	Adventure Works	Travel	\$123,721	\$733,396											
4	Blue Yonder Airlines	Travel	\$934,763	\$246,554											
5	City Power & Light	Utilities	\$299,293	\$674,295											
6	Coho Vineyard	Beverage	\$228,783	\$659,385											
7	Contoso, Ltd	Misc	\$239,219	\$287,989											
8	Contoso Pharmaceuticals	Medical	\$371,570	\$644,368											
9	Consolidated Messenger	Tech	\$579,825	\$448,399											
10	Fabrikam, Inc.	Utilities	\$639,630	\$635,474											
11	Fourth Coffee	Beverage	\$876,740	\$567,216											

Rename Worksheet

The context menu also allows you to change the name of a worksheet.

Here's how to rename a worksheet.

1. Right click on the tab for the worksheet you want to rename.
2. Select **Rename** from the context menu.



The current name of the worksheet is highlighted.



1	Company	Industry	Q1 Sales	Q2 Sales
2	A. Datum Corporation	Tech	\$195,449	\$746,907
3	Adventure Works	Travel	\$123,721	\$733,396
4	Blue Yonder Airlines	Travel	\$934,763	\$246,554
5	City Power & Light	Utilities	\$299,293	\$674,295
6	Coho Vineyard	Beverage	\$228,783	\$659,385
7	Contoso, Ltd	Misc	\$239,219	\$287,989
8	Contoso Pharmaceuticals	Medical	\$371,570	\$644,368
9	Consolidated Messenger	Tech	\$579,825	\$448,399
10	Fabrikam, Inc.	Utilities	\$639,630	\$635,474
11	Fourth Coffee	Reverage	\$876,740	\$567,216

3. Enter the new name over the highlighted text and press Enter.

1	Company	Industry	Q1 Sales	Q2 Sales
2	A. Datum Corporation	Name	\$195,449	\$746,907
3	Adventure Works	Travel	\$123,721	\$733,396
4	Blue Yonder Airlines	Travel	\$934,763	\$246,554
5	City Power & Light	Utilities	\$299,293	\$674,295
6	Coho Vineyard	Beverage	\$228,783	\$659,385
7	Contoso, Ltd	Misc	\$239,219	\$287,989
8	Contoso Pharmaceuticals	Medical	\$371,570	\$644,368
9	Consolidated Messenger	Tech	\$579,825	\$448,399
10	Fabrikam, Inc.	Utilities	\$639,630	\$635,474
11	Fourth Coffee	Reverage	\$876,740	\$567,216



Format Workbooks

Copy and Move Worksheets

You can create new worksheets by copying an existing one. Once you have multiple worksheets, you can move them to reorganize the order they appear in the workbook.

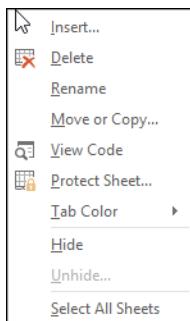
Here's how to move a worksheet. Use the following procedure.

1. Select the worksheet tab that you want to move. The cursor has a small icon next to it to indicate you are moving a worksheet.
2. Drag the selected sheet to the new location in the workbook. A small black triangle shows where the worksheet will be placed.

A screenshot of the Microsoft Excel application. The ribbon at the top includes tabs for Home, Insert, Page Layout, Formulas, Data, Review, View, Add-ins, ACROBAT, QuickBooks, and a 'Tell me what you want to do' search bar. The Home tab is selected. The main area shows a table with four columns and six rows of data. The first row contains column headers: 'A', 'B', 'C', 'D'. The subsequent rows contain data: Row 13: 'Humongous Insurance', 'Financial', '\$682,545', '\$577,599'; Row 14: 'Litware, Inc.', 'Tech', '\$902,264', '\$206,331'; Row 15: 'Lucerne Publishing', 'Misc', '\$905,906', '\$443,552'; Row 16: 'Margie's Travel', 'Travel', '\$289,570', '\$843,834'. Row 17 is blank. The status bar at the bottom indicates 'Ready'. The worksheet tab bar at the bottom shows 'Sheet1' (highlighted with a red box) and 'Sheet2'. A mouse cursor is positioned over the 'Sheet2' tab, indicating it is being moved.

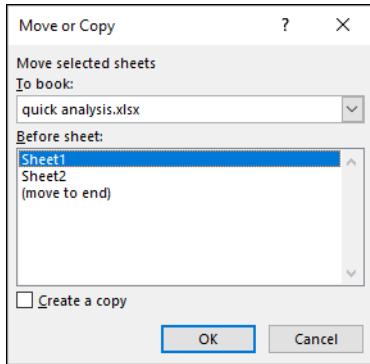
Here's how to copy a worksheet.

1. Right click on the worksheet tab that you want to copy.
2. Select **Move or Copy**.



3. Highlight where you want the new sheet to be added.
4. Check the **Create a copy** box.





5. Select **OK**.

The new sheet is created in the selected location with the same name as the original sheet, but with a number appended to the name.

Modify Page Setup

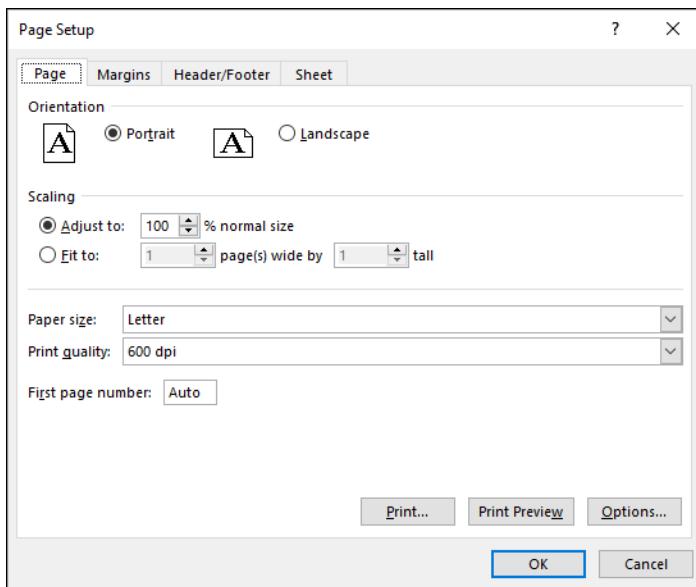
The Page Setup dialog box allows you to set up the layout and print options for a page.

Here's how to open the Page Setup dialog box.

1. Select the **Page Layout** tab on the Ribbon.
2. Select the small square in the **Page Setup** group.



The **Page Setup** dialog box opens to the **Page** tab.

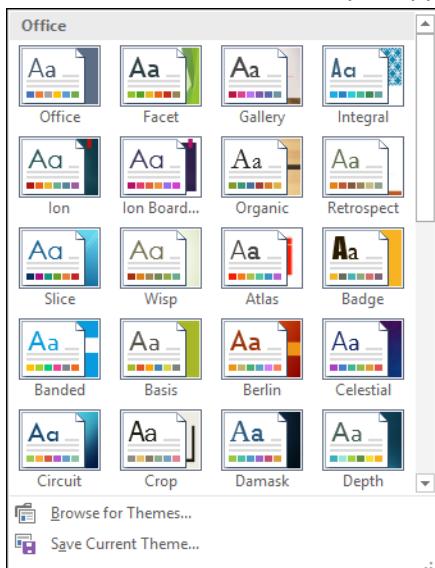


Change Workbook Themes

Changing the theme instantly changes the colors, fonts and effects used in your workbook.

Here's how to change the theme.

1. Select the **PAGE LAYOUT** tab from the Ribbon.
2. Select **THEMES**.
3. Select a new theme from the gallery. Hover your mouse over an option to see a preview of each theme before you apply it.



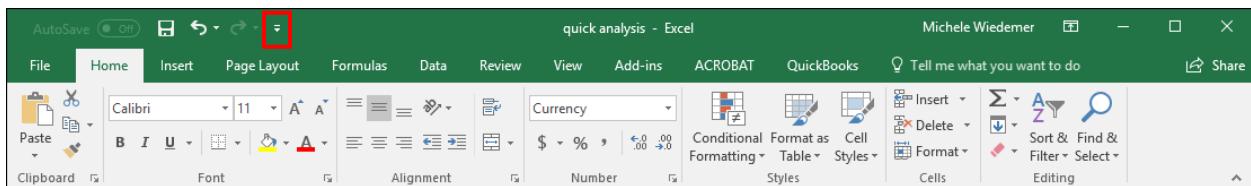
Customize Options and Views for Worksheets and Workbooks

Add a Tool to the Quick Access Toolbar

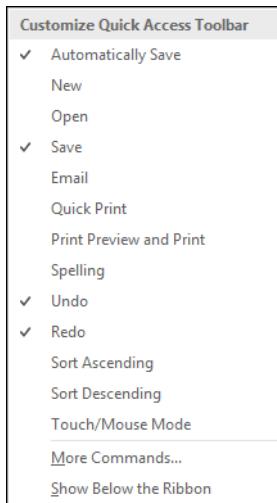
The Quick Access Toolbar is at the very top left corner of the Excel window. It has the Save, Undo, and Repeat commands available by default, but you can add almost any command you need for quick access.

Here's how to add a tool to the Quick Access Toolbar.

1. Select the small arrow in the top left corner of the window.



2. Select a tool to add it to the Quick Access Toolbar.



3. Select it again to remove it.

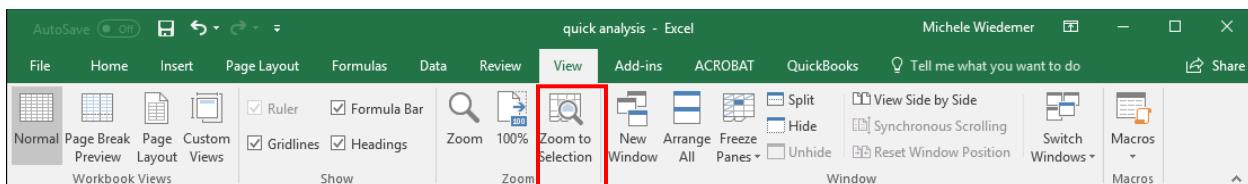


Zoom

Zoom the view in or out on your worksheet depending on whether you need to see details close up or look at the big picture.

Here's how to zoom to a selection.

1. Highlight the cells to view.
2. Select the **VIEW** tab from the Ribbon.
3. Select **ZOOM TO SELECTION**.



4. The view fills the screen with the selected cells.

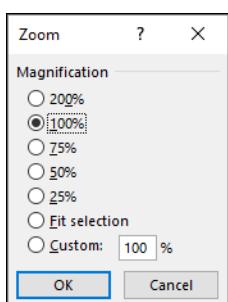
A screenshot of Microsoft Excel showing a table of data. Row 7 is selected, highlighted with a green border. The table has columns A, B, C, and D. The data includes:

	A	B	C	D
7	Contoso, Ltd	Misc		\$287,989
8	Contoso Pharmaceuticals	Medical	\$371,570	\$644,368
9	Consolidated Messenger	Tech	\$579,825	\$448,399
10	Fabrikam, Inc.	Utilities	\$639,630	\$635,474

The ribbon shows the 'View' tab is selected. The 'Zoom to Selection' button is highlighted with a red box. The status bar at the bottom shows 'Average: 553211 Count: 12 Sum: 3319266' and a zoom level of '231%'.

Here is the **ZOOM** dialog box.

1. Select the **VIEW** tab from the Ribbon.
2. Select **ZOOM**.
3. Select the desired view.



4. Select **OK**.



Experiment with the Zoom slider shortcut at the bottom right of the window.

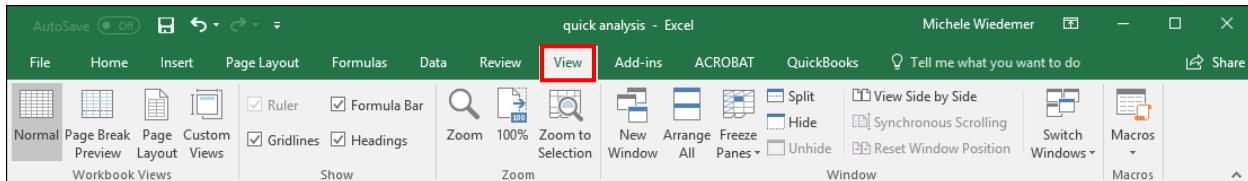


Change Workbook Views

The default view for working in Excel is the normal view, so that you can easily enter data.

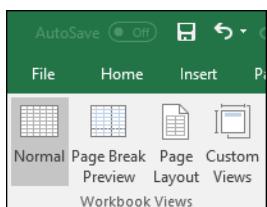
Here's how to change the document view.

1. Select the **View** tab from the Ribbon.



2. Choose one of the following views:

- a. Select **NORMAL** to focus on entering data.
- b. Select **PAGE BREAK PREVIEW** to view where the page breaks will appear when the file is printed.
- c. Select **PRINT PREVIEW** to view how it will look printed or to work with the headers and footers.

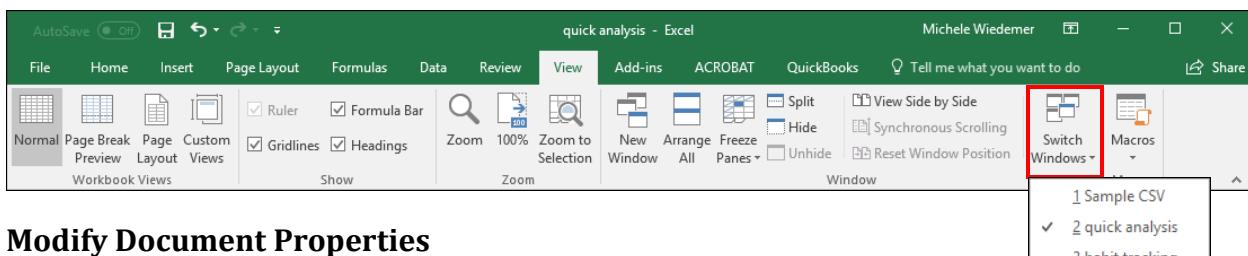


Change Window Views

You can simplify working with multiple Excel files by using the **Switch Windows** tool.

Here's how to switch from one open workbook to another.

1. Select the **View** tab on the Ribbon.
2. Select **Switch Windows**.
3. Select the workbook you want to view from the list.



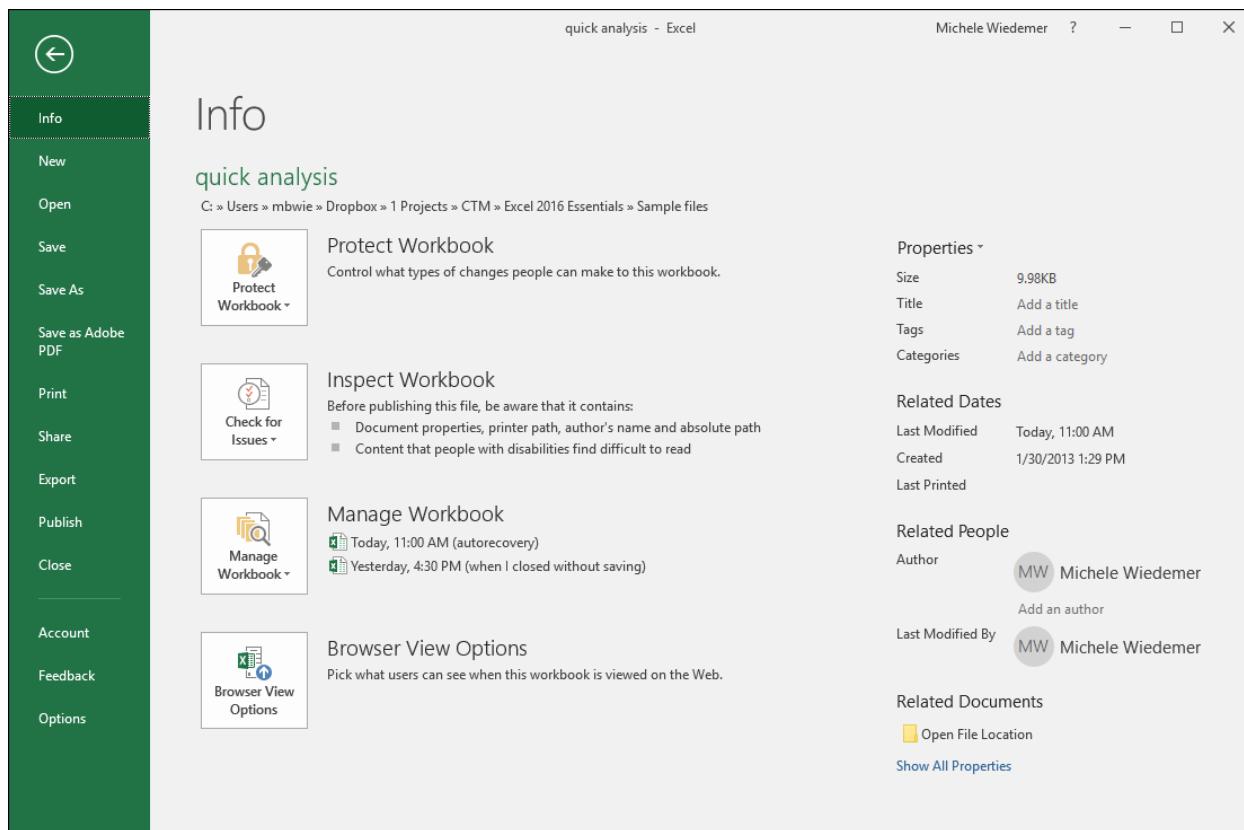
Modify Document Properties

You can view and edit workbook properties such as Title, Author and Keywords.



Here's how to edit the file properties of an Excel workbook.

1. Select the **File** tab from the Ribbon to open the Backstage View.
1. In the Backstage view, select the **Info** tab (if it isn't already showing)
2. In the **Properties** section on the right side of the screen, you can change the Title, Tags, and Categories, add an author, or click **Show All Properties** to change other properties.



Show or Hide Formulas

You can control how you view formulas and values in your workbook.

Here's how to show or hide formulas.

1. Select the **FORMULAS** tab from the Ribbon.
2. Select **SHOW FORMULAS**.



SampleCost Analysis - Shared - Excel											
File		Home		Insert		Page Layout		Formulas		Review	
f	x	AutoSum	Logical	Lookup & Reference				Trace Precedents	Show Formulas		
Insert Function		Recently Used	Text	Math & Trig		Name Manager	Use in Formula	Trace Dependents	Error Checking		
Function Library		Financial	Date & Time	More Functions		Create from Selection		Remove Arrows	Evaluate Formula	Watch Window	
B12	:	X	✓	f	=SUM(B2:B11)						
A		B		C		D		E			
1	Cost Center			Annual Cost							
2	Parts and materials			1325000							
3	Manufacturing equipment			900500							
4	Salaries			575000							
5	Maintenance			395000							
6	Office lease			295000							
7	Warehouse lease			250000							
8	Insurance			180000							
9	Benefits and pensions			130000							
10	Vehicles			125000							
11	Research			173000							
12	Total			173000							
13				=SUM(B2:B11)							

Ready



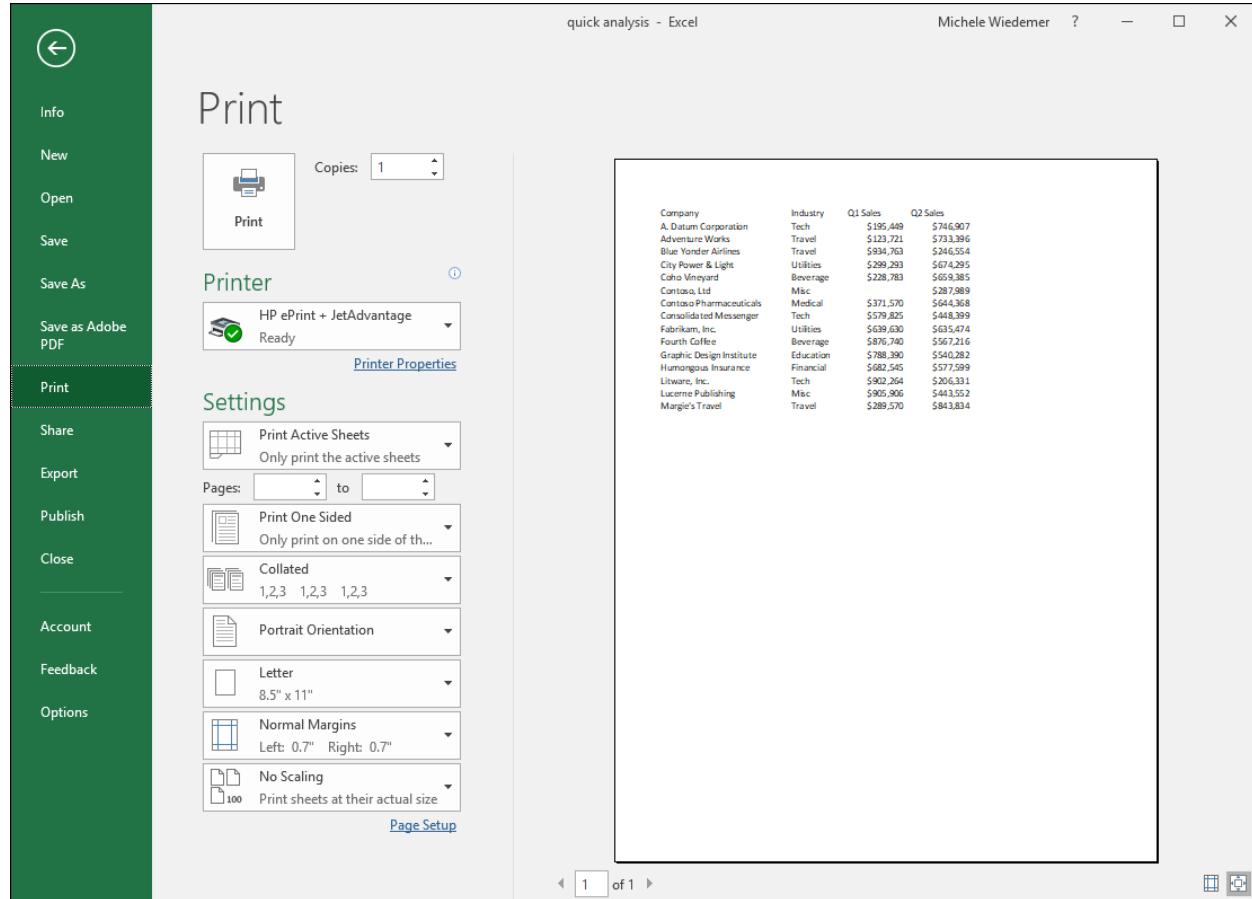
Configure Worksheets and Workbooks for Distribution

Print

The print command gets your worksheet from the computer to paper.

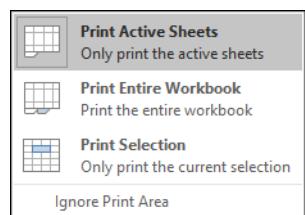
Here's how to modify print settings and print all or part of the document.

1. Select the **FILE** menu from the Ribbon.
2. Select the **PRINT** tab from the left tabs.



3. Select the **PRINTER** from the drop down list if there is more than one option.
4. Adjust the **Settings** and **Scaling**, if desired.
5. Select **PRINT**.

Discuss the print settings.

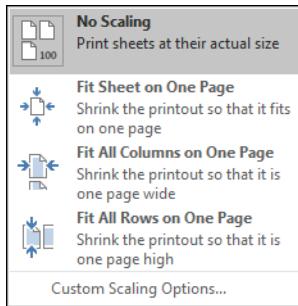


- **PRINT ACTIVE SHEETS** – prints the worksheet you are currently viewing



- **PRINT ENTIRE WORKBOOK** – prints all worksheets in the workbook
- **PRINT SELECTION** – prints only the cells you currently have selected

Discuss the print scaling settings.



- **No Scaling** – Print sheets at their actual size
- **Fit Sheet on One Page** – Shrinks the printout so that it fits on one page
- **Fit All Columns on One Page** – Shrinks the printout so that it is one page wide
- **Fit All Rows on One Page** – Shrinks the printout so that it is one page high
- **Custom Scaling Options** – Opens the Page Setup dialog box to set custom scaling options

Set a Print Area

A print area is a designated range of cells that can be printed without printing the whole worksheet. This defined area is saved with the workbook, so that it can be reused later.

Here's how to set a print area.

1. Select the cells to include in the print area.
2. Select the **Page Layout** tab on the Ribbon.
3. Select **Print Area**.

The screenshot shows the Microsoft Excel ribbon with the 'Page Layout' tab selected. In the 'Page Break Preview' group, the 'Print Area' button is highlighted with a red box. A callout bubble with the text 'Set Print Area' points to this button. The main worksheet area displays a table of company sales data, with rows 1 through 10 visible. The table includes columns for Company, Industry, Q1 Sales, and Q2 Sales. The data shows various companies like A. Datum Corporation, Adventure Works, Blue Yonder Airlines, City Power & Light, Coho Vineyard, Contoso, Ltd., Contoso Pharmaceuticals, and Consolidated Messenger across different industries and sales figures.



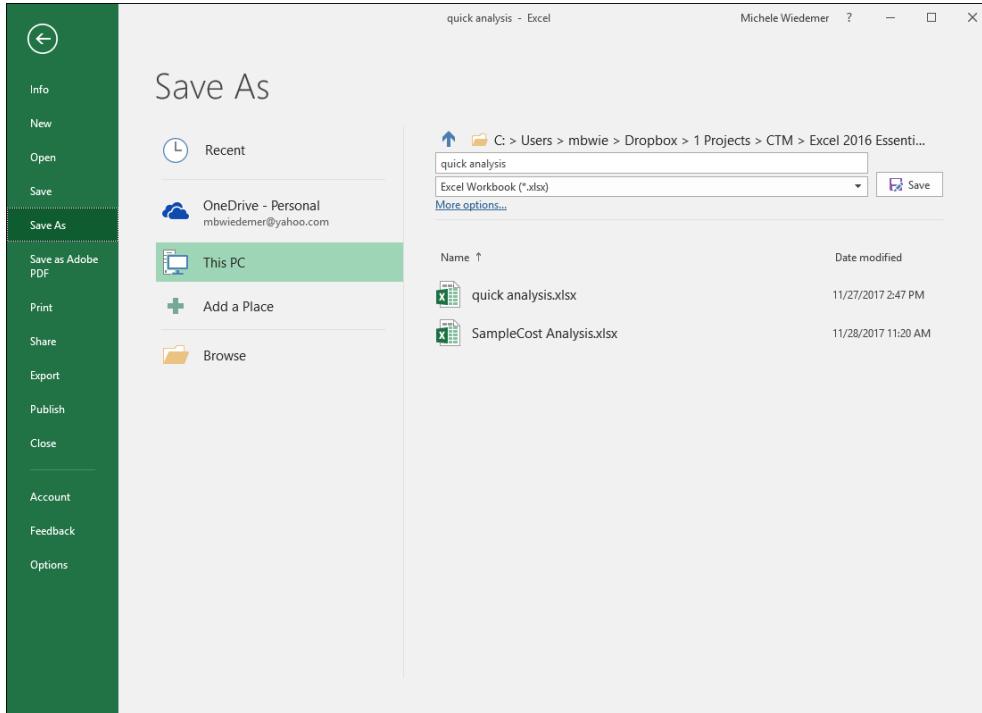
4. Select **Set Print Area**.

Save in Another File Format

The Save As command allows you to save in a different format, as well as in a different location.

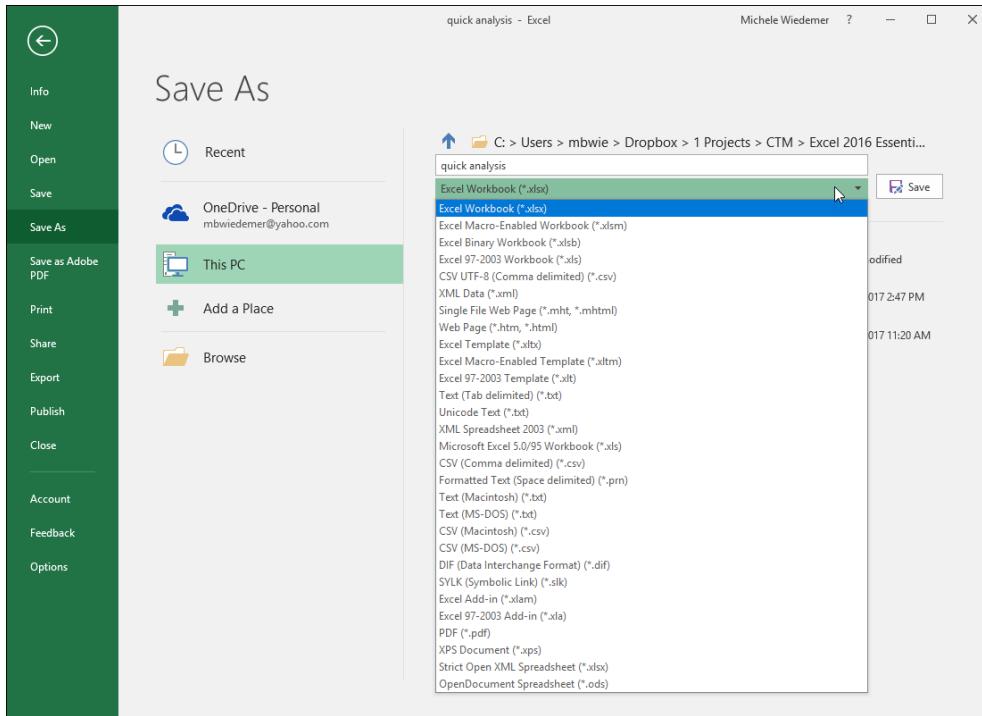
Here's how to save a workbook in another file format.

1. Select the **FILE** menu from the Ribbon.
2. Select **SAVE AS** from the left tabs.



3. Select the format from the drop down list.





4. Select **SAVE**.

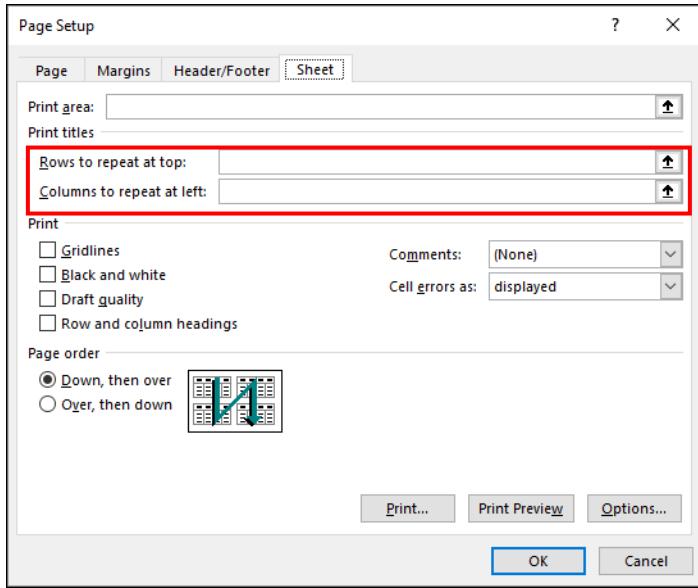
Repeat Columns or Rows Across Multiple Pages

You can have row and column headings repeat across multiple pages for print outs.

Here's how to create print titles.

1. Select the **Page Layout** tab on the Ribbon.
2. Select **Print Titles**.
3. Select the **Rows to Repeat at Top** field.





4. Point to the left of the row you want to use as a Print Title. The cursor changes to an arrow. Select the row. The reference is added to the **Rows to repeat at top** field.

Company	Industry	Q1 Sales	Q2 Sales
A. Datum Corporation	Tech	\$195,449	\$746,907
Adventure Works	Travel	\$123,721	\$733,396
Blue Yonder Airlines	Travel	\$934,763	\$246,554
City Power & Light	Utilities	\$299,293	\$674,295
Coho Vineyard	Beverage	\$228,783	\$659,385
Contoso, Ltd	Misc		\$287,989
Contoso Pharmaceuticals	Medical	\$371,570	\$644,368
Consolidated Messenger	Tech	\$579,825	\$448,399
Fabrikam, Inc.	Utilities	\$639,630	\$635,474
Fourth Coffee	Beverage	\$876,740	\$567,216

5. Select the **Columns to repeat at left** field.
 6. Point to the top of the column you want to use as a Print Title. The cursor changes to an arrow. Select the column. The reference is added to the **Columns to repeat at left** field.
 7. Select **OK**.



The screenshot shows a Microsoft Excel spreadsheet titled "quickanalysis - Excel". The ribbon is visible with tabs like File, Home, Insert, Page Layout, Formulas, Data, Review, and View. The "Page Layout" tab is selected. A "Page Setup" dialog box is open over the spreadsheet, specifically the "Sheet" tab. In the "Print titles" section, the "Rows to repeat at top" field contains "\$1:\$1" and the "Columns to repeat at left" field contains "\$A:\$A". There are other options like "Gridlines", "Black and white", "Draft quality", and "Row and column headings". Below that, the "Page order" section has two radio button options: "Down, then over" (selected) and "Over, then down". At the bottom of the dialog box are "Print...", "Print Preview", and "Options..." buttons, along with "OK" and "Cancel" buttons. The main Excel window shows a table with data from row 1 to 11, with the first row (Company) highlighted.

Inspect a Workbook for Hidden Properties and Personal Information

When preparing a workbook to share with others, you may want to remove certain types of information or objects.

Here's how to inspect a workbook for hidden properties and personal information.

1. Make sure you've saved the workbook.
2. Select the **FILE** menu from the Ribbon.
3. The **INFO** area should open. If not, select the **INFO** tab from the left tabs.
4. Select **CHECK FOR ISSUES**.



quick analysis

C:\Users\mbwie\Dropbox\1 Projects\CTM\Excel 2016 Essentials\Sample files

Protect Workbook
Control what types of changes people can make to this workbook.

Inspect Workbook
Before publishing this file, be aware that it contains:

- Document properties, printer path, author's name and absolute path
- Content that people with disabilities find difficult to read

Manage Workbook

- Today, 12:45 PM (autorecovery)
- Today, 12:33 PM (autorecovery)
- Today, 11:25 AM (autorecovery)
- Today, 11:00 AM (autorecovery)
- Yesterday, 4:30 PM (when I closed without saving)

Browser View Options
Pick what users can see when this workbook is viewed on the Web.

Properties

Size	9.98KB
Title	Add a title
Tags	Add a tag
Categories	Add a category

Related Dates

Last Modified	Today, 12:45 PM
Created	1/30/2013 1:29 PM
Last Printed	Today, 1:00 PM

Related People

Author	Michele Wiedemer
Last Modified By	Michele Wiedemer

Related Documents

- Open File Location
- Show All Properties

5. Select INSPECT DOCUMENT.

Inspect Document
Check the workbook for hidden properties or personal information.

Check Accessibility
Check the workbook for content that people with disabilities might find difficult to read.

Check Compatibility
Check for features not supported by earlier versions of Excel.

6. Check the boxes for the items you want to check.

To check the document for the selected content, click Inspect.

Comments
Inspects the document for comments.

Document Properties and Personal Information
Inspects for hidden metadata or personal information saved with the document.

Data Model
Inspects Data Model for embedded data that may not be visible on the sheets.

Content Add-ins
Inspects for Content add-ins saved in the document body.

Task Pane Add-ins
Inspects for Task Pane add-ins saved in the document.

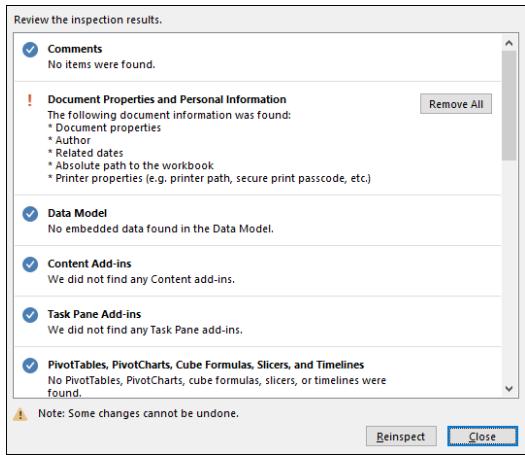
PivotTables, PivotCharts, Cube Formulas, Slicers, and Timelines
Inspects for PivotTables, PivotCharts, cube formulas, slicers, and timelines, which may include data that's not visible on the sheets.

Embedded Documents
Inspects for embedded documents, which may include information that's not visible in the file.

Inspect **Close**

7. Review the inspection results.





Inspect a Workbook for Accessibility Issues

Make your workbook optimized for users with certain types of disabilities. For example, blind readers may have your file read by a screen reader, and images explained with alternate text.

Here's how to inspect a workbook for accessibility issues.

1. Select the **FILE** menu from the Ribbon.
2. The Info area should open. If not, select the **INFO** tab from the left tabs.
3. Select **CHECK FOR ISSUES**.

quick analysis - Excel

Michele Wiedemer ? — ×

Info

- New
- Open
- Save
- Save As
- Save as Adobe PDF
- Print
- Share
- Export
- Publish
- Check for Issues**
- Close
- Account
- Feedback
- Options

quick analysis

C: \Users\mbwie\Dropbox\1 Projects\CTM\Excel 2016 Essentials\Sample files

Protect Workbook

Control what types of changes people can make to this workbook.

Inspect Workbook

Before publishing this file, be aware that it contains:

- Document properties, printer path, author's name and absolute path
- Content that people with disabilities find difficult to read

Manage Workbook

- Today, 12:45 PM (autorecovery)
- Today, 12:33 PM (autorecovery)
- Today, 11:25 AM (autorecovery)
- Today, 11:00 AM (autorecovery)
- Yesterday, 4:30 PM (when I closed without saving)

Browser View Options

Pick what users can see when this workbook is viewed on the Web.

Properties

- Size 9.98KB
- Title Add a title
- Tags Add a tag
- Categories Add a category

Related Dates

- Last Modified Today, 12:45 PM
- Created 1/30/2013 1:29 PM
- Last Printed Today, 1:00 PM

Related People

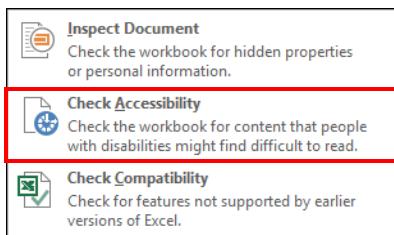
- Author MW Michele Wiedemer
Add an author
- Last Modified By MW Michele Wiedemer

Related Documents

- Open File Location
- Show All Properties

4. Select **CHECK ACCESSIBILITY**.





5. The Inspection Results are shown in a pane on the right side of the window.

	A	B	C	D	E	F	G	H	I	J
1	Company	Industry	Q1 Sales	Q2 Sales						
2	A. Datum Corporation	Tech	\$195,449	\$746,907						
3	Adventure Works	Travel	\$123,721	\$733,396						
4	Blue Yonder Airlines	Travel	\$934,763	\$246,554						
5	City Power & Light	Utilities	\$299,293	\$674,295						
6	Coho Vineyard	Beverage	\$228,783	\$659,385						
7	Contoso, Ltd	Misc	\$287,989							
8	Contoso Pharmaceuticals	Medical	\$371,570	\$644,368						
9	Consolidated Messenger	Tech	\$579,825	\$448,399						
10	Fabrikam, Inc.	Utilities	\$639,630	\$635,474						
11	Fourth Coffee	Beverage	\$876,740	\$567,216						
12	Graphic Design Institute	Education	\$788,390	\$540,282						
13	Humongous Insurance	Financial	\$682,545	\$577,599						
14	Litware, Inc.	Tech	\$902,264	\$206,331						
15	Lucerne Publishing	Misc	\$905,906	\$443,552						
16	Margie's Travel	Travel	\$289,570	\$843,834						
17										
18										
19										
20										
21										
22										
23										
24										

Inspect a Workbook for Compatibility Issues

Older versions of Excel don't have all of the same functionality, so some items in your workbook may not work properly. You can check for these issues before sharing.

Here's how to inspect a workbook for compatibility issues.

1. Select the **FILE** menu from the Ribbon.
2. The Info area should open. If not, select the **INFO** tab from the left tabs.
3. Select **CHECK FOR ISSUES**.



quick analysis

C: \Users\mbwie\Dropbox\1 Projects\CTM\Excel 2016 Essentials\Sample files

Protect Workbook

Control what types of changes people can make to this workbook.

Properties

- Size: 9.98KB
- Title: Add a title
- Tags: Add a tag
- Categories: Add a category

Related Dates

- Last Modified: Today, 12:45 PM
- Created: 1/30/2013 1:29 PM
- Last Printed: Today, 1:00 PM

Related People

- Author: Michele Wiedemer
- Add an author
- Last Modified By: Michele Wiedemer

Related Documents

- Open File Location
- Show All Properties

Inspect Workbook

Before publishing this file, be aware that it contains:

- Document properties, printer path, author's name and absolute path
- Content that people with disabilities find difficult to read

Manage Workbook

Today, 12:45 PM (autorecovery)
Today, 12:33 PM (autorecovery)
Today, 11:25 AM (autorecovery)
Today, 11:00 AM (autorecovery)
Yesterday, 4:30 PM (when I closed without saving)

Browser View Options

Pick what users can see when this workbook is viewed on the Web.

4. Select CHECK COMPATIBILITY.

Inspect Document

Check the workbook for hidden properties or personal information.

Check Accessibility

Check the workbook for content that people with disabilities might find difficult to read.

Check Compatibility

Check for features not supported by earlier versions of Excel.

The results of the check are displayed.

Microsoft Excel - Compatibility Checker

If the workbook is saved in an earlier file format or opened in an earlier version of Microsoft Excel, the listed features will not be available.

Summary

No compatibility issues were found.

Check compatibility when saving this workbook.

OK



Module Two: Review Questions

1. A workbook can contain many different worksheets.
 - a) True
 - b) False
2. You can create links to which of the following?
 - a) A web address
 - b) Another cell in the current worksheet
 - c) A named or defined range of cells
 - d) All of the above
3. When you hide an entire worksheet, the missing tab indicator shows as a double-line.
 - a) True
 - b) False
4. When inserting Sheet Rows, where does it appear?
5. The new width is displayed as a tool tip when resizing a column width.
 - a) True
 - b) False
6. In the **Move or Copy** dialog box, which of the following is NOT an option?
 - a) To another workbook
 - b) Before a selected worksheet
 - c) After a selected worksheet
 - d) At the end of the current worksheet
7. Which workbook view shows headers and footers?
 - a) Normal
 - b) Page Break Preview
 - c) Page Layout
 - d) All of the Above
8. Which tab includes the Show Formulas tool?
9. What are the print scaling options?
10. A workbook with more than one defined print area can be printed on one page.
 - a) True
 - b) False





*Like tourists huffing and puffing to reach the peak
we forget the view on the way up.*

Friedrich Nietzsche

Module Three: Manage Data Cells and Ranges

Now let's get more detailed by working with the data on your worksheets. This module introduces you to the tools you need to insert, format, summarize and organize your data.

Insert Data in Cells and Ranges

Replace Data

You can save lots of time by learning to replace data properly in Excel.

Here's how to edit data using the Formula bar.

1. Highlight the cell that needs to be updated.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	Household Budget																			
2																				
3																				
4		January	February	March	April	May	June		Total - first six months											
5	Mortgage	890	890	890	890	890	890													
6	Heat	250	250	175	125	80	0													
7	Power	225	225	175	175	150	150													
8																				
9	Phone	65	75	65	65	75	75													
10	Car Payment	275	275	275	275	275	275													
11	Gas	240	240	360	240	240	240													
12	Insurance	180	180	180	180	180	180													
13	Food	600	600	600	600	600	600													

2. Place your cursor in the Formula bar.
3. Edit the cell contents.



	January	February	March	April	May	June	Total - first six months
1 Household Budget							
5 Mortgage	890	890	890	890	890	890	
6 Heat	250	250	175	125	80	0	
7 Power	225	225	175	175	150	150	
8							
9 Phone	65	75	65	65	75	75	
10 Car Payment	275	275	275	275	275	275	
11 Gas	240	240	360	240	240	240	
12 Insurance	180	180	180	180	180	180	
13 Food	600	600	600	600	600	600	
14							

4. Press Enter.

Excel updates the cell with your changes and moves to the next cell.

	January	February	March	April	May	June	Total - first six months
1 Household Budget							
5 Mortgage	890	890	890	890	890	890	
6 Heat	250	250	175	125	80	0	
7 Power	225	225	175	175	150	150	
8							
9 Phone	65	75	65	65	75	75	
10 Car Payment	275	275	275	275	275	275	
11 Gas	240	240	360	240	240	240	
12 Insurance	180	180	180	180	180	180	
13 Food	600	600	600	600	600	600	
14							

Cut, Copy and Paste Data

You can easily reuse information in Excel use the cut, copy and paste features.

Here's how to copy and paste a cell's contents. Use the following procedure.

1. Select the cell with the contents you want to copy. You can highlight multiple cells at once.
2. Select **COPY** from the **HOME** tab on the Ribbon. You can also select the cell(s) and use the keyboard shortcut: **CTRL + C**.



	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
4	January	February	March	April	May	June	Total - first six months												
5	Mortgage	890	890	890	890	890	890												
6	Heat	250	250	175	125	80	0												
7	Power	225	225	175	175	150	150												
8																			
9	Phone	65	75	65	65	75	75												
10	Car Payment	275	275	275	275	275	275												
11	Gas	240	240	360	240	240	240												
12	Insurance	180	180	180	180	180	180												
13	Food	600	600	600	600	600	600												
14																			
15																			
16																			
17																			

Excel highlights the cell whose contents you are copying with a blinking dotted line. This will remain highlighted until you finish pasting, in case you want to paste the cell contents more than once.

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
4	January	February	March	April	May	June	Total - first six months												
5	Mortgage	890	890	890	890	890	890												
6	Heat	250	250	175	125	80	0												
7	Power	225	225	175	175	150	150												
8																			
9	Phone	65	75	65	65	75	75												
10	Car Payment	275	275	275	275	275	275												
11	Gas	240	240	360	240	240	240												
12	Insurance	180	180	180	180	180	180												
13	Food	600	600	600	600	600	600												
14																			
15																			
16																			
17																			

3. Select the cell where you want to copy the contents.

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
4	January	February	March	April	May	June	Total - first six months												
5	Mortgage	890	890	890	890	890	890												
6	Heat	250	250	175	125	80	0												
7	Power	225	225	175	175	150	150												
8																			
9	Phone	65	75	65	65	75	75												
10	Car Payment	275	275	275	275	275	275												
11	Gas	240	240	360	240	240	240												
12	Insurance	180	180	180	180	180	180												
13	Food	600	600	600	600	600	600												
14																			
15																			
16																			
17																			



4. Select **Paste** or use the keyboard shortcut: **CTRL + V**.

Budget - Excel

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Clipboard Calibri 11 A A Wrap Text General \$ % $\frac{e}{.00}$ Conditional Formats as Cell Styles Insert Delete Format Cells AutoSum Fill Sort & Find & Filter Clear

A14 January February March April May June Total - first six months

	January	February	March	April	May	June	Total - first six months
5 Mortgage	890	890	890	890	890	890	
6 Heat	250	250	175	125	80	0	
7 Power	225	225	175	175	150	150	
9 Phone	65	75	65	65	75	75	
10 Car Payment	275	275	275	275	275	275	
11 Gas	240	240	360	240	240	240	
12 Insurance	180	180	180	180	180	180	
13 Food	600	600	600	600	600	600	
14 Car Payment	275	275	275	275	275	275	

Sheet1 Sheet2 Sheet3 + Average: 275 Count: 7 Sum: 1650

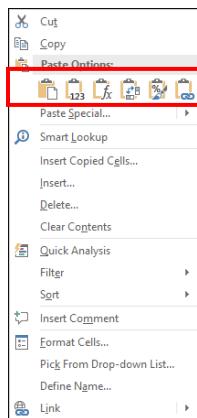
5. You can repeat the paste as many times as desired.

Paste Data Using Paste Options

Excel provides a number of shortcuts to help you reuse more than just your data.

Here's how to paste using options.

1. Copy the cell(s).
2. Right-click in the cell where you want to paste to display the context menu.



3. When you hover over one of the Paste Options, the rest of the context menu dims.



	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
4	January	February	March	April	May	June	Total - first six months												
5	Mortgage	890	890	890	890	890													
6	Heat	250	250	175	125	80													
7	Power	225	225	175	175	150													
8																			
9	Phone	65	75	65	65	75													
10	Car Payment	275	275	275	275	275													
11	Gas	240	240	360	240	240													
12	Insurance	180	180	180	180	180													
13	Food	600	600	600	600	600													
14	Car Payment	275	275	275	275	275													
15		3000																	
16		3010																	
17																			

4. Select the option to paste.

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
4	January	February	March	April	May	June	Total - first six months												
5	Mortgage	890	890	890	890	890													
6	Heat	250	250	175	125	80													
7	Power	225	225	175	175	150													
8																			
9	Phone	65	75	65	65	75													
10	Car Payment	275	275	275	275	275													
11	Gas	240	240	360	240	240													
12	Insurance	180	180	180	180	180													
13	Food	600	600	600	600	600													
14	Car Payment	275	275	275	275	275													
15		3000																	
16		3010																	
17																			

Fill Cells using Autofill

Autofill can help you quickly create a list.

Here's how to create a list using AutoFill. Use the following procedure. This example creates new columns in the Budget worksheet to cover the second six months.

1. Create a new column heading with the text "July" in cell J4.
2. Select that cell to make it active. Excel displays a handle around the cell.



Budget - Excel

	January	February	March	April	May	June	Total - first six months	
4								
5	Mortgage	890	890	890	890	890	890	
6	Heat	250	250	175	125	80	0	
7	Power	225	225	175	175	150	150	
8								
9	Phone	65	75	65	65	75	75	
10	Car Payment	275	275	275	275	275	275	
11	Gas	240	240	360	240	240	240	
12	Insurance	180	180	180	180	180	180	
13	Food	600	600	600	600	600	600	
14	Car Payment	275	275	275	275	275	275	
15		3000	3010					
16								
17								

3. Drag the handle across the columns. Excel displays a screen tip showing what AutoFill will place in those cells.

Budget - Excel

	January	February	March	April	May	June	Total - first six months	
4								
5	Mortgage	890	890	890	890	890	890	
6	Heat	250	250	175	125	80	0	
7	Power	225	225	175	175	150	150	
8								
9	Phone	65	75	65	65	75	75	
10	Car Payment	275	275	275	275	275	275	
11	Gas	240	240	360	240	240	240	
12	Insurance	180	180	180	180	180	180	
13	Food	600	600	600	600	600	600	
14	Car Payment	275	275	275	275	275	275	
15		3000	3010					
16								
17								

4. Release the mouse button at the end of the range.



	January	February	March	April	May	June	Total - first six months	July	August	September	October	November	December
5 Mortgage	890	890	890	890	890	890	5340						
6 Heat	250	250	175	125	80	0	780						
7 Power	225	225	175	175	150	150	1100						
9 Phone	65	75	65	65	75	75	450						
10 Car Payment	275	275	275	275	275	275	1650						
11 Gas	240	240	360	240	240	240	1480						
12 Insurance	180	180	180	180	180	180	1080						
13 Food	600	600	600	600	600	600	3600						
14 Car Payment	275	275	275	275	275	275	1650						
	3000	3010											

Insert and Delete Cells

You can use the Insert and Delete tools to shift an existing cell or range of cells.

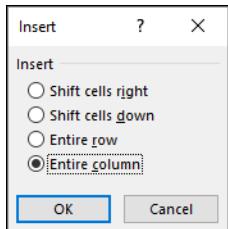
Here's how to insert cells.

1. Select the cell next to the cell you want to insert. You can select more than one cell to insert the same number of cells.
2. Select **Insert** from the **Home** tab on the Ribbon.
3. Select **Insert Cells...**.

	January	February	March	April	May	June	Total - first six months	July	August	September	October	November	December
5 Mortgage	890	890	890	890	890	890	5340						
6 Heat	250	250	175	125	80	0	780						
7 Power	225	225	175	175	150	150	1100						
9 Phone	65	75	65	65	75	75	450						
10 Car Payment	275	275	275	275	275	275	1650						
11 Gas	240	360	240	240	240	240	1480						
12 Insurance	180	180	180	180	180	180	1080						
13 Food	600	600	600	600	600	600	3600						
14 Car Payment	275	275	275	275	275	275	1650						
	3000	3010											

4. In the **Insert** dialog box, select the option for shifting the existing selected cells and select OK.





5. Blank cells are inserted in the selected location with the selected cells shifted as indicated.

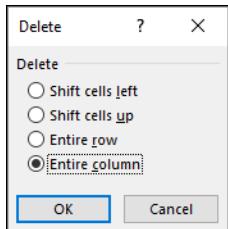
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
4		January	February				March	April	May	June	Total - first six months		July	August	September	October	November	December	
5	Mortgage			890	890		890	890	890	890									
6	Heat	250	250				175	125	80	0									
7	Power	225	225				175	175	150	150									
8																			
9	Phone	65	75				65	65	75	75									
10	Car Payment	275	275				275	275	275	275									
11	Gas	240	240				360	240	240	240									
12	Insurance	180	180				180	180	180	180									
13	Food	600	600				600	600	600	600									
14	Car Payment	275	275				275	275	275	275									
15		3000	3010																
16																			
17																			

Here's how to delete cells.

1. Select the cell(s) you want to delete.
2. Select **Delete** from the **Home** tab on the Ribbon.
3. Select **Delete Cells...**.

4. In the **Delete** dialog box, select the option for shifting the existing selected cells and select **OK**.





5. The selected cells are removed and the remaining cells are shifted as indicated.

The screenshot shows an Excel spreadsheet titled 'Budget - Excel'. The spreadsheet tracks monthly expenses from January to December. Row 4 contains month names from January to December. Row 5 lists 'Mortgage' with values 890, 890, 890, 890, 890, 890, and a total 'Total - first six months' of 5340. Rows 6 and 7 list 'Heat' and 'Power' respectively, with their respective monthly values. Row 8 is blank. Rows 9 through 14 list 'Phone', 'Car Payment', 'Gas', 'Insurance', 'Food', and 'Car Payment' again, each with its monthly value. Row 15 is a summary row with values 3000 and 3010. Row 16 is blank. Row 17 is the current active row. The 'Home' tab is selected in the ribbon. A 'Delete' button is visible in the ribbon's 'Cells' group. The status bar at the bottom shows 'Average: 280 Count: 3 Sum: 840' and a zoom level of 100%.

Format Cells and Ranges

Merge Cells

You can create a single cell from more than one cell.

Here's how to merge cells. Use the following procedure.

1. Highlight the cell range that you want to merge.



Budget - Saved

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Cut Copy Format Painter Paste Font Alignment Number Styles Cells Editing

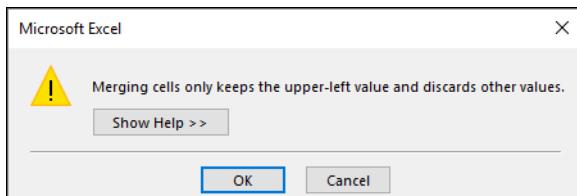
H4 Total First Six Months

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
4		January	February	March	April	May	June	Total												
5		6 Mortgage	890	890	890	890	890													
6		7 Heat	250	250	175	125	80													
7		8 Power	225	225	175	175	150													
8		10 Phone	65	75	65	65	75													
9		11 Car Payment	275	275	275	275	275													
10		12 Gas	240	240	360	240	240													
11		13 Insurance	180	180	180	180	180													
12		14 Food	600	600	600	600	600													
13								1370												
14																				
15																				
16																				
17																				
18																				
19																				
20																				
21																				
22																				
23																				
24																				
25																				
26																				
27																				
28																				
29																				
30																				
31																				

Sheet1 Sheet2 Sheet3 + Count: 2

2. Select Merge & Center.

If more than one cell includes content, Excel displays a warning message.



3. Select OK to merge the cells.

Budget - Excel

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Cut Copy Format Painter Paste Font Alignment Number Styles Cells Editing

H4 Total

	A	B	C	D	E	F	G	H	I
4		January	February	March	April	May	June	Total	
5		6 Mortgage	890	890	890	890	890		
6		7 Heat	250	250	175	125	80		
7		8 Power	225	225	175	175	150		
8		10 Phone	65	75	65	65	75		
9		11 Car Payment	275	275	275	275	275		
10		12 Gas	240	240	360	240	240		
11		13 Insurance	180	180	180	180	180		
12		14 Food	600	600	600	600	600		
13								1370	
14									
15									

Align and Indent Cell Contents

You can align or indent cell contents.

Here's how to align or indent cell contents. Use the following procedure.



- Select the cell or cell range that you want to align or indent.

Budget - Saved

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Font Alignment Number Styles Cells Editing

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
4								Total										
5		January	February	March	April	May	June	First Six Months										
6	Home																	
7	Mortgage	890	890	890	890	890	890											
8	Heat	250	250	175	125	80	0											
9	Power	225	225	175	175	150	150											
10	Other																	
11	Phone	65	75	65	65	75	75											
12	Car Payment	275	275	275	275	275	275											
13	Gas	240	240	360	240	240	240											
14	Insurance	180	180	180	180	180	180											
15	Food	600	600	600	600	600	600											
16		1370																
17																		
18																		

Sheet1 Sheet2 Sheet3 +

Ready Count: 3 100%

- Select the type of alignment or indent you want to use from the Alignment group tools on the Home tab of the Ribbon.

Budget - Excel

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File Home Insert Page Layout Formulas Data Review View Add-ins Tell me what you want to do

Font Alignment Number Styles Cells Editing

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
4								Total										
5		January	February	March	April	May	June	First Six Months										
6	Home																	
7	Mortgage	890	890	890	890	890	890											
8	Heat	250	250	175	125	80	0											
9	Power	225	225	175	175	150	150											
10	Other																	
11	Phone	65	75	65	65	75	75											
12	Car Payment	275	275	275	275	275	275											
13	Gas	240	240	360	240	240	240											
14	Insurance	180	180	180	180	180	180											
15	Food	600	600	600	600	600	600											
16		1370																
17																		
18																		

Sheet1 Sheet2 Sheet3 +

Ready Count: 3 100%

Wrap Text Within Cells

The Wrap Text tool increases a row height so that all of the contents are displayed.

Here's how to wrap text. Use the following procedure.

- Select the cell that you would like to wrap.
- Select WRAP TEXT from the HOME tab on the Ribbon.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
4		January	February	March	April	May	June	Total - First Six Months										
5		890	890	890	890	890	890											
6	Home																	
7	Mortgage	890	890	890	890	890	890											
8	Heat	250	250	175	125	80	0											
9	Power	225	225	175	175	150	150											
10	Other																	
11	Phone	65	75	65	65	75	75											
12	Car Payment	275	275	275	275	275	275											
13	Gas	240	240	360	240	240	240											
14	Insurance	180	180	180	180	180	180											
15	Food	600	600	600	600	600	600											
16		1370																

Apply Number Formats

You can have Excel display numbers in one of many different formats, depending on the data the number represents.

Here's how to format a number as currency without decimals. Use the following procedure.

- Select the cell or cell range that you want to format.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
4								Total - First Six Months										
5		January	February	March	April	May	June											
6	Home																	
7	Mortgage	890	890	890	890	890	890											
8	Heat	250	250	175	125	80	0											
9	Power	225	225	175	175	150	150											
10	Other																	
11	Phone	65	75	65	65	75	75											
12	Car Payment	275	275	275	275	275	275											
13	Gas	240	240	360	240	240	240											
14	Insurance	180	180	180	180	180	180											
15	Food	600	600	600	600	600	600											
16		1370																

- Select the type of number formatting you want to use from the **NUMBER** group drop down list in the **HOME** tab of the Ribbon.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
4							Total - First Six Months											
5		January	February	March	April	May	June											
6	Home																	
7	Mortgage	\$ 890.00	890	890	890	890	890											
8	Heat	\$ 250.00	250	175	125	80	0											
9	Power	\$ 225.00	225	175	175	150	150											
10	Other																	
11	Phone	\$ 65.00	75	65	65	75	75											
12	Car Payment	\$ 275.00	275	275	275	275	275											
13	Gas	\$ 240.00	240	360	240	240	240											
14	Insurance	\$ 180.00	180	180	180	180	180											
15	Food	\$ 600.00	600	600	600	600	600											
16		\$1,370.00																

Apply Cell Formats

Cell formats include the font, size, highlighting, color or borders for your cell.

Here's how to apply font face and size.

1. Select the cell you want to change.
2. Select the arrow next to the current font name to display the list of available fonts.
3. Use the scroll bar or the down arrow to scroll down the list of fonts.
4. Select the desired font to change the font of the cells.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
4		January	February	March	April	May	June	Total - First Six Months										
5	Home																	
6	Mortgage	\$ 890.00	890	890	890	890	890											
7	Heat	\$ 250.00	250	175	125	80	0											
8	Power	\$ 225.00	225	175	175	150	150											
10	Other																	
11	Phone	\$ 65.00	75	65	65	75	75											
12	Car Payment	\$ 275.00	275	275	275	275	275											
13	Gas	\$ 240.00	240	360	240	240	240											
14	Insurance	\$ 180.00	180	180	180	180	180											
15	Food	\$ 600.00	600	600	600	600	600											
16		\$1,370.00																

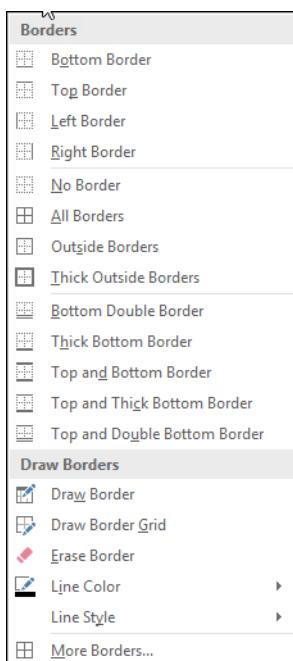
5. With the cells still selected, select the arrow next to the current font size to see a list of common font sizes.
6. Use the scroll bar or the down arrow key to scroll to the size you want and select it. You can also highlight the current font size and type in a new number to indicate the font size you want.



Budget - Excel																Michele Wiedemer	Share
File		Home		Insert		Page Layout		Formulas		Data		Review		View		Add-ins	
Cut	Copy	Font	Font	Wrap Text	General	Conditional	Format as	Cell	Styles	Insert	Delete	Format	Cells	AutoSum	Sort & Find & Filter		
Paste	Format Painter	Clipboard	Font	Font	Font	Font	Font	Font	Font	Font	Font	Font	Font	Font	Font	Font	
B5																	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	R
4							Total -										
5		Janua	February	March	April	May	First Six										
6							Months										
7	Home																
8	Mortgage	\$ 890.00	890	890	890	890											
9	Heat	\$ 250.00	250	175	125	80	0										
10	Power	\$ 225.00	225	175	175	150	150										
11	Other																
12	Phone	\$ 65.00	75	65	65	75	75										
13	Car Payment	\$ 275.00	275	275	275	275	275										
14	Gas	\$ 240.00	240	360	240	240	240										
15	Insurance	\$ 180.00	180	180	180	180	180										
16	Food	\$ 600.00	600	600	600	600	600										
		\$1,370.00															

Here's how to add borders.

1. Select the cells you want to format.
2. Select the borders tool.



3. Select the type of border to apply.



Budget - Excel

Michele Wiedemer

File Home Insert Page Layout Formulas Data Review View Add-ins Tell me what you want to do

Font Alignment Number

Formatting Styles Cells Editing

A B C D E F G H I J K L M N O P Q R

Total - First Six Months

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
4																		
5		January	February	March	April	May	June											
6	Home																	
7	Mortgage	\$ 890.00	890	890	890	890	890											
8	Heat	\$ 250.00	250	175	125	80	0											
9	Power	\$ 225.00	225	175	175	150	150											
10	Other																	
11	Phone	\$ 65.00	75	65	65	75	75											
12	Car Payment	\$ 275.00	275	275	275	275	275											
13	Gas	\$ 240.00	240	360	240	240	240											
14	Insurance	\$ 180.00	180	180	180	180	180											
15	Food	\$ 600.00	600	600	600	600	600											
16		\$1,370.00																

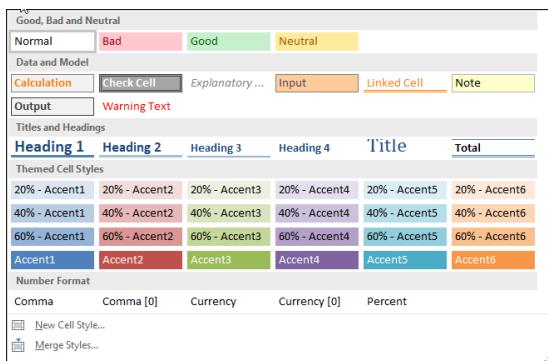
Sheet1 Sheet2 Sheet3 +

Apply Cell Styles

Cell styles are pre-built combinations of font, shading and background that can help you communicate your data.

Here's how to apply a cell style. Use the following procedure.

1. Highlight the cell or cell range where you want to apply your style.
2. Select the **CELL STYLES** tool from the **HOME** tab of the Ribbon to see the style gallery.



3. Select the style that you want to apply. You can see a preview before you select a style by hovering the mouse over the style.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
4		January	February	March	April	May	June	Total - First Six Months										
5																		
6	Home																	
7	Mortgage	890	890	890	890	890	890											
8	Heat	250	250	175	125	80	0											
9	Power	225	225	175	175	150	150											
10	Other																	
11	Phone	65	75	65	65	75	75											
12	Car Payment	275	275	275	275	275	275											
13	Gas	240	240	360	240	240	240											
14	Insurance	180	180	180	180	180	180											
15	Food	600	600	600	600	600	600											
16		1370																

Apply Conditional Formatting

Conditional formatting changes the appearance of a cell based on the criteria you choose.

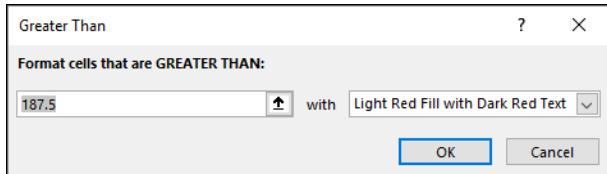
Here's how to apply conditional formatting. In this example, we will format all Power amounts in the budget that are over \$200.

1. Highlight the cell or cell range where you want to use conditional formatting.
2. Select the **Conditional Formatting** tool from the **HOME** tab on the Ribbon.
3. Select **Highlight Cell Rules**. Select **Greater Than**.

The screenshot shows the 'Greater Than...' rule selected in the 'Highlight Cell Rules' dropdown. The 'Greater Than...' rule is highlighted with a red box. Other options like 'Less Than...', 'Between...', and 'More Rules...' are also visible in the dropdown menu.

Excel displays the *Greater Than* dialog box to help you complete the conditional formatting rule.





4. Enter 200 in the left field.
5. Select a formatting option from the right drop down list.
6. Select **OK** to apply the conditional formatting.

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
4	A	January	February	March	April	May	June	Total - First Six Months									
5																	
6	Home																
7	Mortgage	890	890	890	890	890	890										
8	Heat	250	250	175	125	80	0										
9	Power	225	225	175	175	150	150										
10	Other																
11	Phone	65	75	65	65	75	75										
12	Car Payment	275	275	275	275	275	275										
13	Gas	240	240	360	240	240	240										
14	Insurance	180	180	180	180	180	180										
15	Food	600	600	600	600	600	600										
16		1370															
17																	
18																	

Format Cells using the Format Painter

Once you've styled your number and cell formatting like you want, you can use the Format Painter to apply the same settings to another set of cells.

Here's how to apply formatting by using Format Painter.

1. Select the cells that already have the formatting you want to use elsewhere.
2. Select the **FORMAT PAINTER** tool from the **HOME** tab on the Ribbon.

3. Select the cells you want to format. The cursor has a little paintbrush icon while using the Format Painter.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
4							Total - First Six Months											
5		January	February	March	April	May												
6	Home																	
7	Mortgage	890	890	890	890	890												
8	Heat	250	250	175	125	80												
9	Power	225	225	175	175	150												
10	Other																	
11	Phone	65	75	65	65	75												
12	Car Payment	275	275	275	275	275												
13	Gas	240	240	360	240	240												
14	Insurance	180	180	180	180	180												
15	Food	600	600	600	600	600												
16		1370																

The formats are applied.

To use the Format Painter on more than one group of cells, double-click the Format Painter tool first. When you've finished applying formats, select the Format Painter tool again to stop using it.

Summarize and Organize Data

Insert Sparklines

Sometimes trends are hard to spot from the data alone.

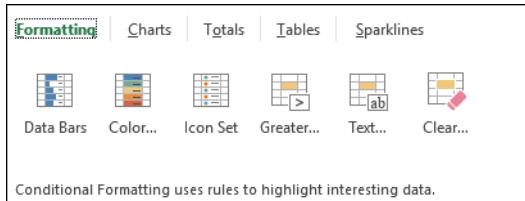
Here's how to create Quick Analysis Sparklines.

1. Select one or more rows of data.
2. Select the icon that appears at the bottom right of the table.

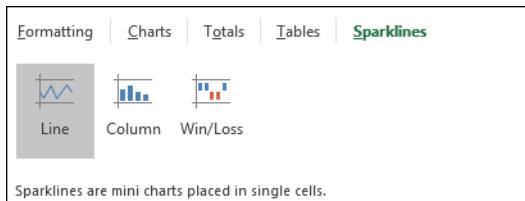
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Company	Industry	Q1 Sales	Q2 Sales													
2	A. Datum Corporation	Tech	\$195,449	\$746,907													
3	Adventure Works	Travel	\$123,721	\$739,016													
4	Blue Yonder Airlines	Travel	\$934,763	\$246,554													
5	City Power & Light	Utilities	\$299,293	\$674,295													
6	Coho Vineyard	Beverage	\$228,783	\$659,385													
7	Contoso, Ltd	Misc	\$239,219	\$287,989													
8	Contoso Pharmaceuticals	Medical	\$371,570	\$644,368													
9	Consolidated Messenger	Tech	\$579,825	\$448,399													
10	Fabrikam, Inc.	Utilities	\$639,630	\$635,474													
11	Fifth Coffee	Beverage	\$876,740	\$567,216													
12	Graphic Design Institute	Education	\$788,390	\$540,282													
13	Humongous Insurance	Financial	\$682,545	\$577,599													
14	Litware, Inc.	Tech	\$902,264	\$206,331													
15	Lucerne Publishing	Misc	\$905,906	\$443,552													

3. Select SPARKLINES.





4. Select the type of mini chart that you want to use.



Excel displays the Sparkline in the next open column.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Company	Industry	Q1 Sales	Q2 Sales													
2	A. Datum Corporation	Tech	\$195,449	\$746,907													
3	Adventure Works	Travel	\$123,721	\$733,396													
4	Blue Yonder Airlines	Travel	\$934,763	\$246,554													
5	City Power & Light	Utilities	\$299,293	\$674,295													
6	Coho Vineyard	Beverage	\$228,783	\$659,385													
7	Contoso, Ltd	Misc	\$239,219	\$287,989													
8	Contoso Pharmaceuticals	Medical	\$371,570	\$644,368													
9	Consolidated Messenger	Tech	\$579,825	\$448,399													
10	Fabrikam, Inc.	Utilities	\$639,630	\$635,474													
11	Fourth Coffee	Beverage	\$876,740	\$567,216													
12	Graphic Design Institute	Education	\$788,390	\$540,282													
13	Humongous Insurance	Financial	\$682,545	\$577,599													
14	Litware, Inc.	Tech	\$902,264	\$206,331													
15	Lucerne Publishing	Misc	\$905,906	\$443,552													

Grouping Data

Grouped data helps you structure worksheets.

Here's how to create a group.

1. Select the range of cells you want to group.
2. Select the **Data** tab from the Ribbon.

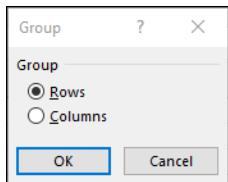


A screenshot of Microsoft Excel showing the ribbon with the "Data" tab selected. The "Group" button in the Data Tools group is highlighted with a red box. The main area of the screen displays a table of sales data.

	Country	Salesperson	Order Date	OrderID	Order Amount
1	UK	Buchanan	7/16/2008	10248	\$440.00
2	UK	Buchanan	7/23/2008	10254	\$556.62
3	UK	Buchanan	8/9/2008	10269	\$642.20
4	UK	Buchanan	9/10/2008	10297	\$1,420.00
5	UK	Buchanan	10/18/2008	10320	\$516.00
6	UK	Buchanan	10/25/2008	10333	\$877.20
7	UK	Buchanan	11/27/2008	10358	\$429.40
8	UK	Buchanan	11/26/2008	10359	\$3,471.68
9	UK	Buchanan	4/29/2010	11043	\$210.00
10	UK	Buchanan			\$8,563.10
11					
12	UK	Dodsworth	7/15/2008	10255	\$2,490.50
13	UK	Dodsworth	7/31/2008	10263	\$1,873.80
14	UK	Dodsworth	10/10/2008	10324	\$5,275.71
15	UK	Dodsworth	10/21/2008	10331	\$88.50

3. Select Group.

4. In the Group dialog box, select whether to group the selection by rows or columns.



5. Select OK.

A screenshot of Microsoft Excel showing the same sales data as before, but with the first two rows collapsed. The row numbers 1 and 2 are now preceded by a minus sign (-), indicating they are collapsed. The rest of the data remains visible.

	Country	Salesperson	Order Date	OrderID	Order Amount	
-	1	UK	Buchanan	7/16/2008	10248	\$440.00
-	2	UK	Buchanan	7/23/2008	10254	\$556.62
-	3	UK	Buchanan	8/9/2008	10269	\$642.20
-	4	UK	Buchanan	9/10/2008	10297	\$1,420.00
-	5	UK	Buchanan	10/18/2008	10320	\$516.00
-	6	UK	Buchanan	10/25/2008	10333	\$877.20
-	7	UK	Buchanan	11/27/2008	10358	\$429.40
-	8	UK	Buchanan	11/26/2008	10359	\$3,471.68
-	9	UK	Buchanan	4/29/2010	11043	\$210.00
-	10	UK	Buchanan			\$8,563.10
-	11					
-	12	UK	Dodsworth	7/15/2008	10255	\$2,490.50
-	13	UK	Dodsworth	7/31/2008	10263	\$1,873.80
-	14	UK	Dodsworth	10/10/2008	10324	\$5,275.71
-	15	UK	Dodsworth	10/21/2008	10331	\$88.50

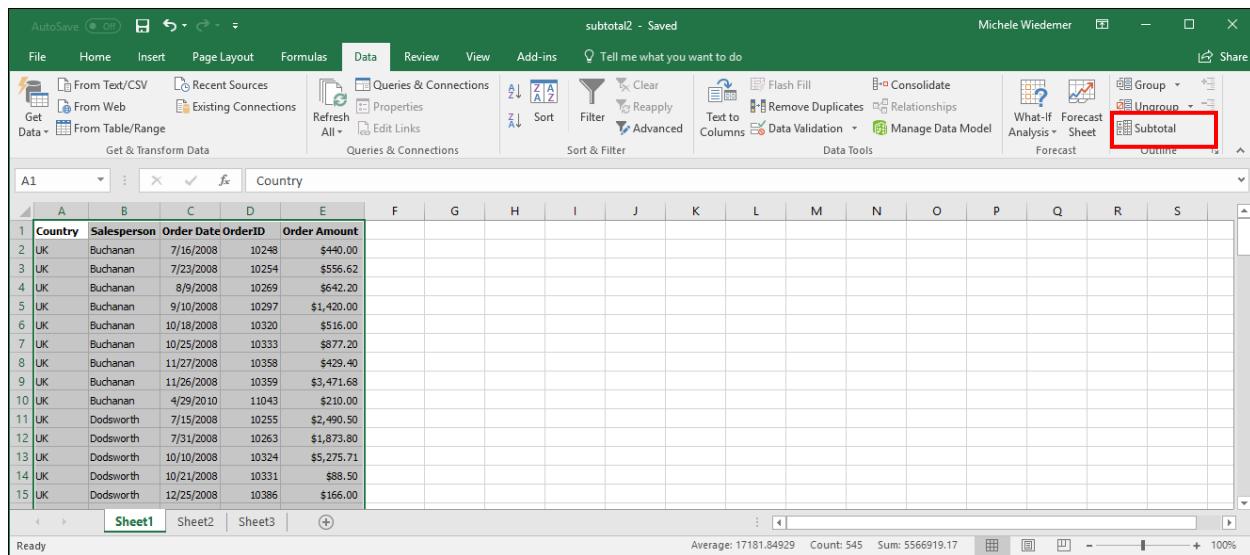


Adding Subtotals

The Subtotals feature automatically creates groups and subtotals the related data according to your specifications.

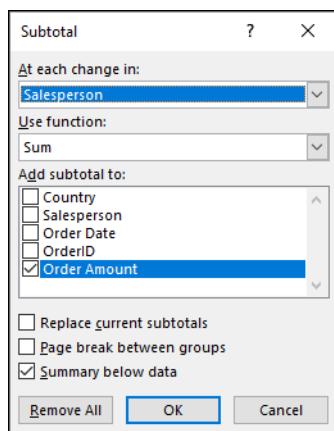
Here's how to add subtotals. Use the following procedure.

1. Select the data to subtotal. Make sure that each column of data has a label in the first row. It must also contain similar facts. Don't include any blank rows or columns.
2. Select the **Data** tab from the Ribbon.
3. Select **Subtotal**.



A screenshot of Microsoft Excel showing the Data ribbon tab selected. The Subtotal button in the Data Tools group is highlighted with a red box. The main window displays a table of sales data with columns for Country, Salesperson, Order Date, OrderID, and Order Amount. The table has 15 rows of data starting from row 1. The ribbon tabs shown are File, Home, Insert, Page Layout, Formulas, Data (selected), Review, View, Add-ins, and Tell me what you want to do. The status bar at the bottom shows Average: 17181.84929, Count: 545, Sum: 5566919.17, and a zoom level of 100%.

4. In the *Subtotal* dialog box, select the locations for the subtotals from the **At each change in** drop down list.



5. Select the function to use in the subtotal fields from the **Use Function** drop down list.
6. Check the boxes that correspond to your column headers for which column(s) to subtotal.
7. Check the boxes to indicate the other formatting options by checking or clearing the **Replace current subtotals**, **Page break between groups**, and **Summary below data**.



8. Select OK.

A screenshot of Microsoft Excel showing the Data tab ribbon selected. A table of sales data is displayed, with row 11 (Buchanan Total) collapsed. The Outline button in the ribbon is highlighted.

Country	Salesperson	Order Date	OrderID	Order Amount
UK	Buchanan	7/16/2008	10248	\$440.00
UK	Buchanan	7/23/2008	10254	\$556.62
UK	Buchanan	8/9/2008	10269	\$642.20
UK	Buchanan	9/10/2008	10297	\$1,420.00
UK	Buchanan	10/18/2008	10320	\$516.00
UK	Buchanan	10/25/2008	10333	\$877.20
UK	Buchanan	11/27/2008	10358	\$429.40
UK	Buchanan	11/26/2008	10359	\$3,471.68
UK	Buchanan	4/29/2010	11043	\$210.00
Buchanan Total				\$8,563.10
UK	Dodsworth	7/15/2008	10255	\$2,490.50
UK	Dodsworth	7/31/2008	10263	\$1,873.80
UK	Dodsworth	10/10/2008	10324	\$5,275.71
UK	Dodsworth	10/21/2008	10331	\$88.50

Outline Data

Outlining provides structure to your worksheet to quickly hide or display detail and summary information.

Here's how to create an outline. Use the following procedure.

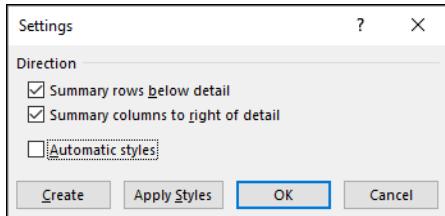
1. Select the range of cells to include in the outline.
2. Select the **Data** tab from the Ribbon.

A screenshot of Microsoft Excel showing the Data tab ribbon selected. A table of sales data is displayed, with row 11 (Buchanan Total) collapsed. The Outline button in the ribbon is highlighted with a red box. The small square icon in the corner of the Outline group is also highlighted with a red box.

Country	Salesperson	Order Date	OrderID	Order Amount
UK	Buchanan	7/16/2008	10248	\$440.00
UK	Buchanan	7/23/2008	10254	\$556.62
UK	Buchanan	8/9/2008	10269	\$642.20
UK	Buchanan	9/10/2008	10297	\$1,420.00
UK	Buchanan	10/18/2008	10320	\$516.00
UK	Buchanan	10/25/2008	10333	\$877.20
UK	Buchanan	11/27/2008	10358	\$429.40
UK	Buchanan	11/26/2008	10359	\$3,471.68
UK	Buchanan	4/29/2010	11043	\$210.00
Buchanan Total				\$8,563.10
UK	Dodsworth	7/15/2008	10255	\$2,490.50
UK	Dodsworth	7/31/2008	10263	\$1,873.80
UK	Dodsworth	10/10/2008	10324	\$5,275.71
UK	Dodsworth	10/21/2008	10331	\$88.50

3. Select the small square in the corner of the **Outline** group.
4. In the *Settings* dialog box, check the direction of the summary rows and columns.
5. Check the **Automatic styles** box to have Excel automatically apply styles to the outline.





6. Select Create.

Country	Salesperson	Order Date	OrderID	Order Amount
UK	Buchanan	7/16/2008	10248	\$440.00
UK	Buchanan	7/23/2008	10254	\$556.62
UK	Buchanan	8/9/2008	10269	\$642.20
UK	Buchanan	9/10/2008	10297	\$1,420.00
UK	Buchanan	10/18/2008	10320	\$516.00
UK	Buchanan	10/25/2008	10333	\$877.20
UK	Buchanan	11/27/2008	10358	\$429.40
UK	Buchanan	11/26/2008	10359	\$3,471.68
UK	Buchanan	4/29/2010	11043	\$210.00
Buchanan Total				\$8,563.10
UK	Dodsworth	7/15/2008	10255	\$2,490.50
UK	Dodsworth	7/31/2008	10263	\$1,873.80
UK	Dodsworth	10/10/2008	10324	\$5,275.71
UK	Dodsworth	10/21/2008	10331	\$88.50

Viewing Grouped and Outlined Data

When you have added groups or created an outline, either manually or automatically, Excel includes several features to make it easy to view different parts of the data at once.

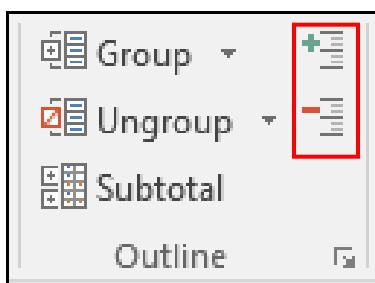
Here's how to work with grouped or outlined data.

The **Show Detail** and **Hide Detail** tools allow you to quickly show or hide the detail data. You can use the tools multiple times to expand or collapse multiple levels of data.

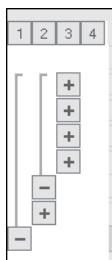


The screenshot shows a Microsoft Excel spreadsheet titled "subtotal3 - Saved". The "Data" tab is active. The data table includes columns for Country, Salesperson, Order Date, OrderID, and Order Amount. Subtotal rows are present, such as "Buchanan Total", "Dodsworth Total", "King Total", "Suyama Total", "UK Total", "USA Total", and "Grand Total". The "Outline" button is highlighted with a red box in the ribbon's "Data Tools" section.

Country	Salesperson	Order Date	OrderID	Order Amount
10	Buchanan	Total		\$5,091.42
17	Dodsworth	Total		\$10,861.31
26	King	Total		\$5,663.08
65	Suyama	Total		\$38,705.17
66	UK	Total		\$60,320.98
118	USA	Total		\$45,808.51
119	Grand	Total		\$106,129.49
120				
121				
122				
123				
124				
125				
126				



The + icons indicate hiding detail data. Select a + to expand. Select a – to collapse. The numbers in the top left corner indicate a level. Click on a number to show that level.



AutoSave (Off) Share

File Home Insert Page Layout Formulas Data Review View Add-ins Tell me what you want to do

From Text/CSV From Web Existing Connections
Get Data From Table/Range Get & Transform Data

Queries & Connections Refresh All Properties Edit Links Sort Filter Advanced

Text to Columns Data Validation Manage Data Model

Flash Fill Consolidate Remove Duplicates Relationships

What-If Forecast Analysis Sheet Forecast Outline

B10 'Buchanan Total

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Country	Salesperson	Order Date	OrderID	Order Amount													
2	UK	Buchanan	7/16/2008	10248	\$440.00													
3	UK	Buchanan	7/23/2008	10254	\$556.62													
4	UK	Buchanan	8/9/2008	10269	\$642.20													
5	UK	Buchanan	9/10/2008	10297	\$1,420.00													
6	UK	Buchanan	10/18/2008	10320	\$516.00													
7	UK	Buchanan	10/25/2008	10333	\$877.20													
8	UK	Buchanan	11/27/2008	10358	\$429.40													
9	UK	Buchanan	4/29/2010	11043	\$210.00													
10		Buchanan Total			\$5,091.42													
11	UK	Dodsworth	7/15/2008	10255	\$2,490.50													
12	UK	Dodsworth	7/31/2008	10263	\$1,873.80													
13	UK	Dodsworth	10/10/2008	10324	\$5,275.71													
14	UK	Dodsworth	10/21/2008	10331	\$88.50													
15	UK	Dodsworth	12/25/2008	10386	\$166.00													

Sheet1 Sheet2 Sheet3 +

Ready 100%



Module Three: Review Questions

1. Where can you edit the contents of a cell?
 - a) The Name box
 - b) The Formula bar
 - c) The Cell itself
 - d) A and B
2. Which feature helps you create a series of information?
 - a) Autofill
 - b) Number format
 - c) Number styles
 - d) None of the above
3. You can paste a formula or its values using paste options.
 - a) True
 - b) False
4. Where do existing cells move when adding cells?
5. What are the different number formats?
6. Cell styles include which of the following?
 - a) Text color
 - b) Cell background/shading
 - c) Cell border
 - d) All of the above
7. Conditional formatting formats cells based on rules.
 - a) True
 - b) False
8. What is the tiny chart that resides in one cell?
 - a) Chart
 - b) Subtotal
 - c) Sparkline



- d) Outline
9. Where is the group command?
 10. If you want to create multiple levels for your data and subtotals, you should check the **Replace current subtotals** box in the **Subtotals** dialog box.
 - a) True
 - b) False



Whenever you are asked if you can do a job, tell 'em, 'Certainly I can!' Then get busy and find out how to do it.

Theodore Roosevelt

Module Four: Create Tables

Tables help you sort, filter, and summarize data. Table data is managed independently from data in the other rows and columns on the worksheet. In this module, you'll learn to create and manage tables, apply styles and configure table style options, and work with filtering and sorting strategies.

Create and Manage Tables

Create an Excel Table from a Cell Range

Create a table to access additional tools.

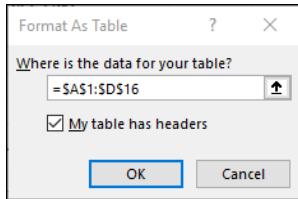
Here's how to create a table from an existing cell range.

1. Select the cells you'd like to convert to a table.
2. On the **Home** tab of the Ribbon, select **Format as Table**.
3. Select a starting Table Style. The options are organized into Custom, Light, Medium, and Dark styles.

A screenshot of the Microsoft Excel application. The ribbon is visible at the top with the 'Home' tab selected. In the center of the screen, a table is displayed with columns labeled 'Company', 'Industry', 'Q1 Sales', and 'Q2 Sales'. The first row contains data: Company (A1), Industry (B1), Q1 Sales (\$195,449) (C1), and Q2 Sales (\$746,907) (D1). The table has 16 rows in total. Below the table, the status bar shows 'Average: 543774.9667', 'Count: 64', and 'Sum: 16313249'. At the bottom right, the zoom level is set to 100%. A 'Format as Table' dialog box is overlaid on the ribbon. It shows a preview of the table with a 'Light' style applied. The 'Custom' section is selected, and the 'Light' style is highlighted with a red box. Other sections like 'Medium' and 'Dark' are also visible. The 'Format' tab is selected in the dialog box.

4. In the **Format As Table** dialog box, check the **My table contains headers** box if you want the first selected row to be treated as table headers.





5. Select **OK** to create the table. The data is now formatted as a table, with filtering options in the column headers.

	A	B	C	D
1	Company	Industry	Q1 Sales	Q2 Sales
2	A. Datum Corporation	Tech	\$195,449	\$746,907
3	Adventure Works	Travel	\$123,721	\$733,396
4	Blue Yonder Airlines	Travel	\$934,763	\$246,554
5	City Power & Light	Utilities	\$299,293	\$674,295
6	Coho Vineyard	Beverage	\$228,783	\$659,385
7	Contoso, Ltd	Misc	\$239,219	\$287,989
8	Contoso Pharmaceuticals	Medical	\$371,570	\$644,368
9	Consolidated Messenger	Tech	\$579,825	\$448,399
10	Fabrikam, Inc.	Utilities	\$639,630	\$635,474
11	Fourth Coffee	Beverage	\$876,740	\$567,216
12	Graphic Design Institute	Education	\$788,390	\$540,282
13	Humongous Insurance	Financial	\$682,545	\$577,599
14	Litware, Inc.	Tech	\$902,264	\$206,331
15	Lucerne Publishing	Misc	\$905,906	\$443,552
16	Margie's Travel	Travel	\$289,570	\$843,834

Add or Remove Table Rows and Columns

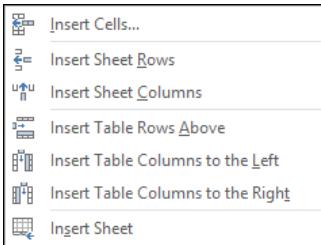
When working in a table, the Insert and Delete tools on the Home tab of the Ribbon include additional options specific to a table.

Here's how to add a row or column to a table.

1. Select a cell adjacent to where you'd like to insert the row.
2. Select **Insert** from the **Home** tab on the Ribbon.

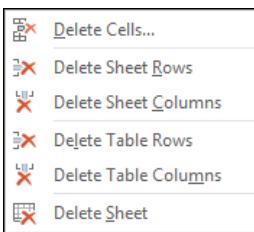
3. Select **Insert Table Rows Above** to add a row, or select either **Insert Table Columns to the Left** or **Insert Table Columns to the Right** to add a column.





Here's how to delete a row or column from a table.

1. Select a cell in the row you'd like to delete.
2. Select **Delete** from the **Home** tab on the Ribbon.
3. Select **Delete Table Rows** or **Delete Table Columns**.



Convert a Table to a Cell Range

If you no longer need data separated as a table, you can return it to cell range.

Here's how to create a cell range from a table.

1. Select the table you'd like to convert to a cell range.
2. Select the **Table Tools Design** tab on the Ribbon.
3. Select **Convert to Range**.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Company	Industry	Q1 Sales	Q2 Sales														
2	A. Datum Corporation	Tech	\$195,449	\$746,907														
3	Adventure Works	Travel	\$123,721	\$733,396														
4	Blue Yonder Airlines	Travel	\$934,763	\$246,554														
5	City Power & Light	Utilities	\$299,293	\$674,295														
6	Coho Vineyard	Beverage	\$228,783	\$659,385														
7	Contoso, Ltd	Misc	\$239,219	\$287,989														
8	Contoso Pharmaceuticals	Medical	\$371,570	\$644,368														
9	Consolidated Messenger	Tech	\$579,825	\$448,399														
10	Fabrikam, Inc.	Utilities	\$639,630	\$635,474														
11	Fourth Coffee	Beverage	\$876,740	\$567,216														
12	Graphic Design Institute	Education	\$788,390	\$540,282														
13	Humongous Insurance	Financial	\$682,545	\$577,599														
14	Litware, Inc.	Tech	\$902,264	\$206,331														
15	Lucerne Publishing	Misc	\$905,906	\$443,552														
16	Margie's Travel	Travel	\$289,570	\$843,834														

4. In the confirmation window, select **Yes**.





The table is converted to a cell range.

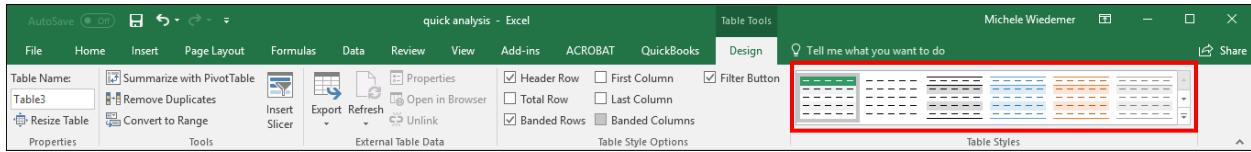
Manage Table Styles and Options

Apply Styles to Tables

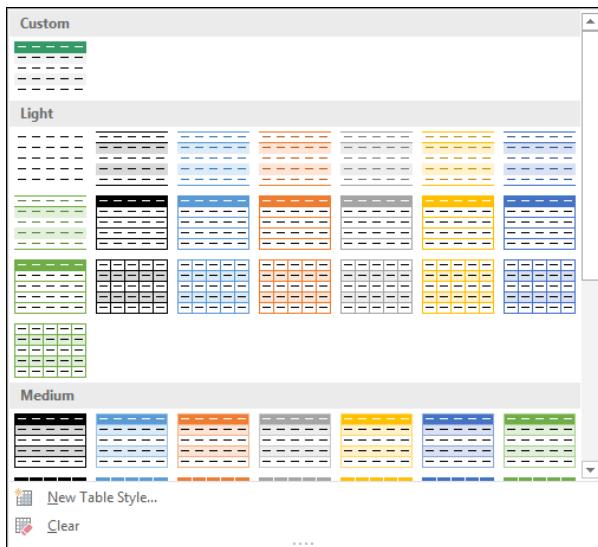
The Table Styles gallery includes a number of pre-built border and shading options to help you style your table quickly.

Here's how to apply a table style.

1. Place your cursor anywhere in the table you want to style.
2. Select the **TABLE TOOLS DESIGN** tab on the Ribbon.



3. Select the style that you want to apply. You can select the arrow at the bottom of the Table Styles group to see additional options categorized as Custom, Light, Medium and Dark.



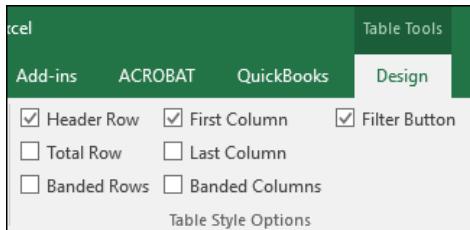
Configure Table Style Options

The Table Style Options allows you to control special formatting in your table.



Here's how to change the Table Style Options.

1. Place your cursor anywhere in the table you want to style.
2. Select the **TABLE TOOLS DESIGN** tab on the Ribbon.
3. Check the **Header Row**, **First Column**, or **Last Column** boxes to customize the format.
4. If you'd like to alternate shading, check the **Banded Rows** and/or **Banded Columns** boxes.



Insert Total Rows

One of the advantages to formatting data as a table is the option to quickly see a total.

Here's how to add a table row.

1. Place your cursor anywhere in the table you want to style.
2. Select the **TABLE TOOLS DESIGN** tab on the Ribbon.
3. Check the **Total Row** box to see the total.

Company	Industry	Q1 Sales	Q2 Sales
A. Datum Corporation	Tech	\$195,449	\$746,907
Adventure Works	Travel	\$123,721	\$733,396
Blue Yonder Airlines	Travel	\$934,763	\$246,554
City Power & Light	Utilities	\$299,293	\$674,295
Coho Vineyard	Beverage	\$228,783	\$659,385
Contoso, Ltd	Misc	\$239,219	\$287,989
Contoso Pharmaceuticals	Medical	\$371,570	\$644,368
Consolidated Messenger	Tech	\$579,825	\$448,399
Fabrikam, Inc.	Utilities	\$639,630	\$635,474
Fourth Coffee	Beverage	\$876,740	\$567,216
Graphic Design Institute	Education	\$788,390	\$540,282
Humongous Insurance	Financial	\$682,545	\$577,599
Litware, Inc.	Tech	\$902,264	\$206,331
Lucerne Publishing	Misc	\$905,906	\$443,552
Margie's Travel	Travel	\$289,570	\$842,824
Total			\$8,255,581

Filter and Sort a Table

Filter Records

When your data is formatted as a table, you can easily filter your data. A filter removes some data from your table, allowing you to focus on one or more aspects of the data.

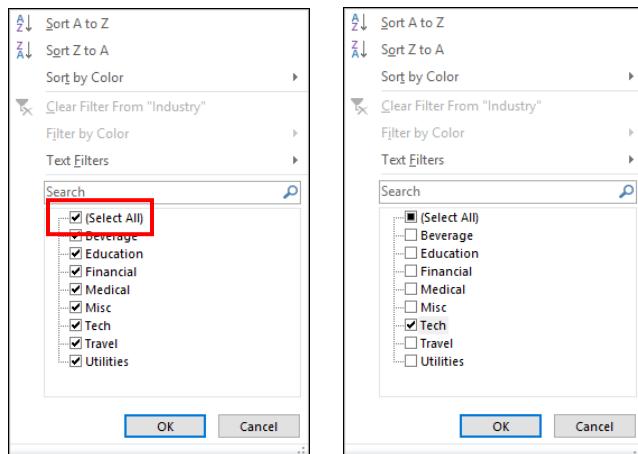
Here's how to apply a filter.



- Select the arrow next to the column header for the column including type of data you want to filter.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Company	Industry	Q1 Sales	Q2 Sales													
2	A. Datum Corporation	Tech	\$195,449	\$746,907													
3	Adventure Works	Travel	\$934,763	\$246,554													
4	Blue Yonder Airlines	Travel	\$934,763	\$246,554													
5	City Power & Light	Utilities	\$299,293	\$674,295													
6	Coho Vineyard	Beverage	\$228,783	\$659,385													
7	Contoso, Ltd	Misc	\$239,219	\$287,989													
8	Contoso Pharmaceuticals	Medical	\$371,570	\$644,368													
9	Consolidated Messenger	Tech	\$579,825	\$448,399													
10	Fabrikam, Inc.	Utilities	\$639,630	\$635,474													
11	Fourth Coffee	Beverage	\$876,740	\$567,216													
12	Graphic Design Institute	Education	\$788,390	\$540,282													
13	Humongous Insurance	Financial	\$682,545	\$577,599													
14	Litware, Inc.	Tech	\$902,264	\$206,331													
15	Lucerne Publishing	Misc	\$905,906	\$443,552													
16	Margie's Travel	Travel	\$289,570	\$843,834													
17	Total			\$8,255,581													

- Clear the **SELECT ALL** check box to clear all boxes. Check one or more boxes from the items that are taken from your data. Select **OK** to apply the filter.



Excel only shows the rows that match the filter. The other rows are still present, but hidden.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Company	Industry	Q1 Sales	Q2 Sales													
2	A. Datum Corporation	Tech	\$195,449	\$746,907													
9	Consolidated Messenger	Tech	\$579,825	\$448,399													
14	Litware, Inc.	Tech	\$902,264	\$206,331													
17	Total			\$1,401,637													

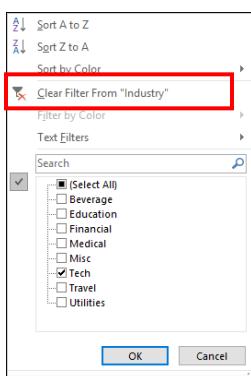
Clear Filters

Excel displays a filter icon in the column header to indicate that you've applied a filter to that column.

Here's how to clear a filter.



1. Select the arrow next to the column header for the filtered column.
2. Select **Clear Filter From**. This option will have additional text customized to the specific filter you have applied.



The filter is immediately removed and the data returned to the unfiltered state (for that column).

Use a Number Filter or Text Filter

Above the specific options taken from the column of data you want to filter is a Text Filter or Number Filter option, depending on which type of data your column contains.

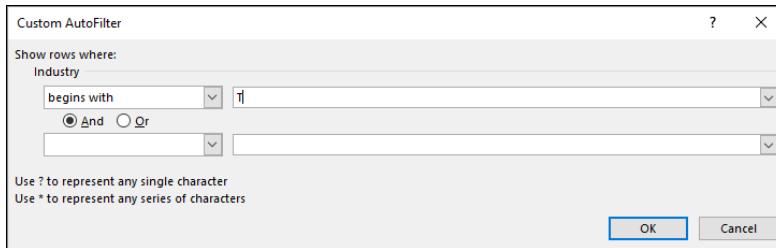
Here's how to apply a text filter.

1. Select the arrow next to the column header for the column including the value you want to filter.
2. Select **TEXT FILTERS**.
3. Select the type of text filter you want to apply.

Industry	Q1 Sales	Q2 Sales
Beverage	\$195,449	\$746,907
Education	\$123,721	\$733,396
Financial	\$934,763	\$246,554
Medical	\$299,293	\$674,295
Misc	\$228,783	\$659,385
Tech	\$239,219	\$287,989
Travel		
Utilities		

4. In the **Custom AutoFilter** dialog box, enter the letter(s) or text you want to use as the filter.





5. Select **OK**. The table is filtered to show matching records.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Company	Industry	Q1 Sales	Q2 Sales													
2	A. Datum Corporation	Tech	\$195,449	\$746,907													
3	Adventure Works	Travel	\$123,721	\$733,396													
4	Blue Yonder Airlines	Travel	\$934,763	\$246,554													
9	Consolidated Messenger	Tech	\$579,825	\$448,399													
14	Litware, Inc.	Tech	\$902,264	\$206,331													
16	Margie's Travel	Travel	\$289,570	\$843,834													
17	Total			\$3,225,421													
18																	
19																	
20																	
21																	
22																	
23																	
24																	
25																	
26																	
27																	
28																	

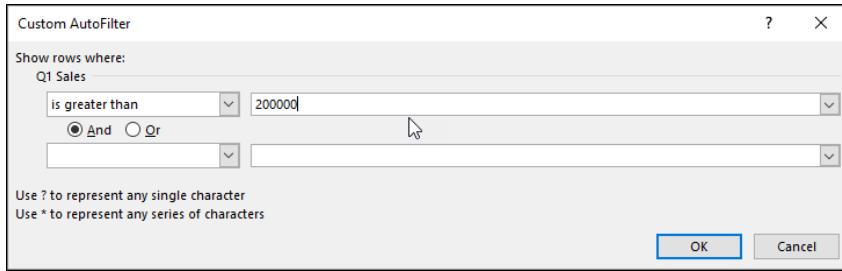
Here's how to apply a number filter.

1. Select the arrow next to the column header for the column including the value you want to filter.
2. Select **NUMBER FILTERS**.
3. Select the type of number filter you want to apply.

The screenshot shows the 'Table Tools' ribbon selected. In the 'Design' tab, the 'Filter' button is checked. The 'Q1 Sales' column header has a dropdown arrow. A context menu is open, showing options like 'Sort Smallest to Largest', 'Sort Largest to Smallest', 'Sort by Color', 'Clear Filter From "Q1 Sales"', 'Filter by Color...', and 'Number Filters...'. The 'Number Filters...' option is highlighted with a red box. A sub-menu for 'Number Filters...' is open, showing 'Greater Than...', which is also highlighted with a red box. Other options include 'Equal To...', 'Does Not Equal...', 'Less Than...', 'Less Than Or Equal To...', 'Between...', 'Top 10...', 'Above Average', 'Below Average', and 'Custom Filter...'. The status bar at the bottom shows 'Average: 520917.75', 'Count: 28', and 'Sum: 6251013'.

4. In the **Custom AutoFilter** dialog box, enter the letter(s) or text you want to use as the filter.





5. Select **OK**. The table is filtered to show matching records.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Company	Industry	Q1 Sales	Q2 Sales													
4	Blue Yonder Airlines	Travel	\$934,763	\$246,554													
9	Consolidated Messenger	Tech	\$579,825	\$448,399													
14	Litware, Inc.	Tech	\$902,264	\$206,331													
16	Margie's Travel	Travel	\$289,570	\$843,834													
17	Total			\$1,745,118													
18																	
19																	
20																	
21																	
22																	
23																	
24																	
25																	
26																	
27																	
28																	
29																	
30																	

Change Sort Order

Sorting places selected data in a new order.

Here's how to create a custom sort. Use the following procedure.

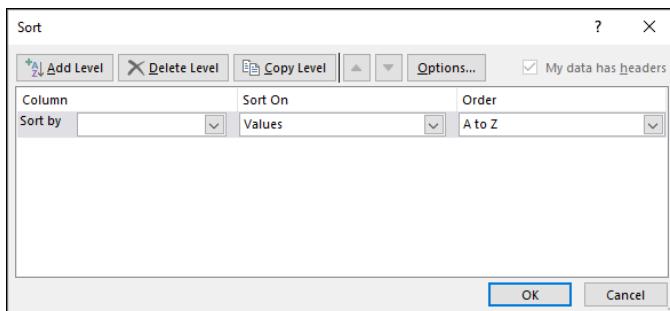
1. Select one column header you want to use in your sort.
2. Select the **Sort & Filter** tool from the Ribbon.



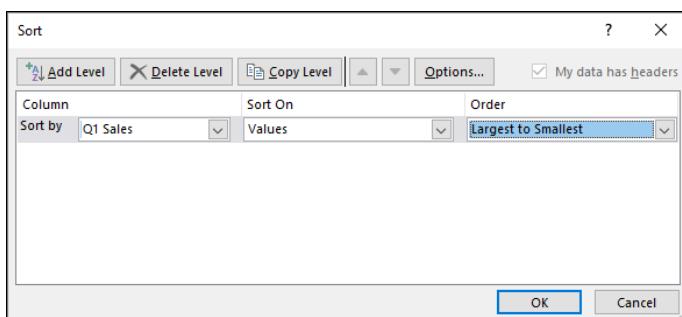
The screenshot shows a Microsoft Excel spreadsheet titled "Tables - Excel". The ribbon at the top has tabs for File, Home, Insert, Page Layout, Formulas, Data, Review, View, Add-ins, ACROBAT, QuickBooks, Design, Tell me, and Share. The Home tab is selected. In the top right corner, the name "Michele Wiedemer" is displayed. The main area shows a table with columns: Company, Industry, Q1 Sales, and Q2 Sales. The "Industry" column header is currently selected. On the far right of the ribbon, the "Cells" group under the "Design" tab is visible, with the "Sort & Filter" button highlighted by a red box. A dropdown menu is open from this button, showing options: "Sort A to Z", "Sort Z to A", and "Custom Sort...". The "Custom Sort..." option is also highlighted with a red box.

3. Select Custom Sort.

Excel opens the **Sort** dialog box.



4. You can choose the first column by which to sort from the **Sort By** drop down list. The options displayed match the column headers in your worksheet.
5. Select an option from the **Sort On** drop down list. **Values** is selected by default.
6. Select an **Order** from the drop down list.



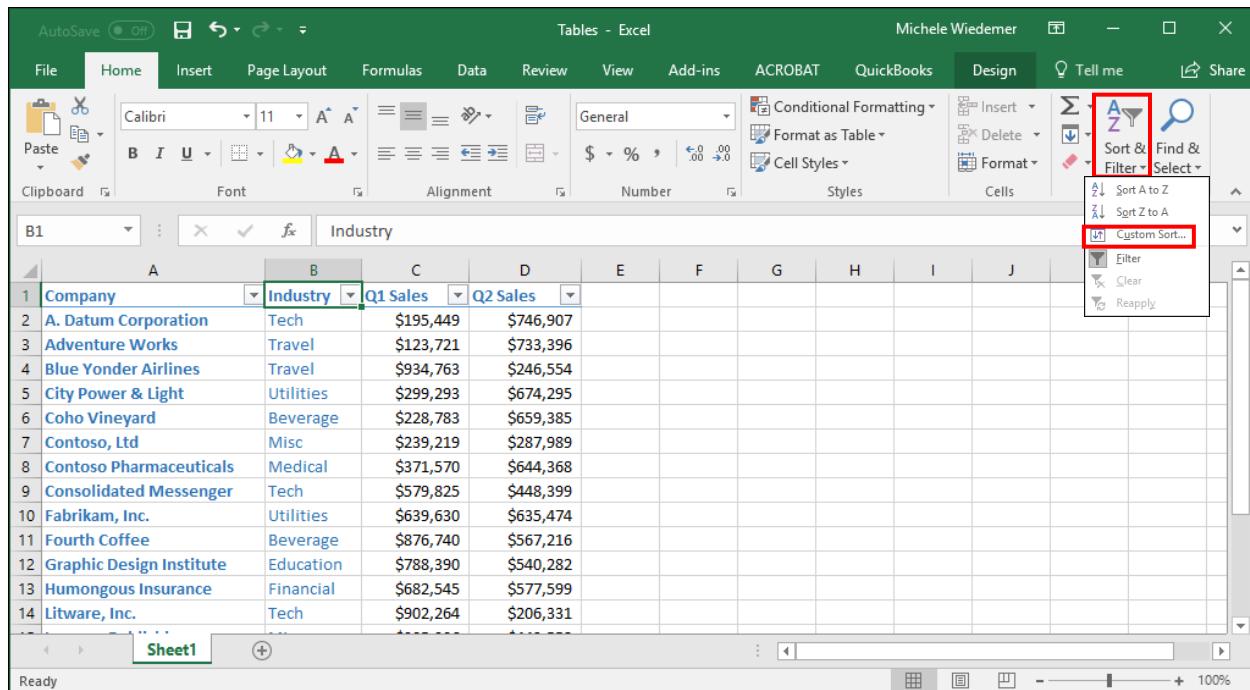
7. Select **OK** when you have finished setting up your sort to see the results.

A	B	C	D	E	F	G	H	I	J	K	L
1	Company	Industry	Q1 Sales	Q2 Sales							
2	Blue Yonder Airlines	Travel	\$934,763	\$246,554							
3	Lucerne Publishing	Misc	\$905,906	\$443,552							
4	Litware, Inc.	Tech	\$902,264	\$206,331							
5	Fourth Coffee	Beverage	\$876,740	\$567,216							
6	Graphic Design Institute	Education	\$788,390	\$540,282							
7	Humongous Insurance	Financial	\$682,545	\$577,599							
8	Fabrikam, Inc.	Utilities	\$639,630	\$635,474							
9	Consolidated Messenger	Tech	\$579,825	\$448,399							
10	Contoso Pharmaceuticals	Medical	\$371,570	\$644,368							
11	City Power & Light	Utilities	\$299,293	\$674,295							
12	Margie's Travel	Travel	\$289,570	\$843,834							
13	Contoso, Ltd	Misc	\$239,219	\$287,989							
14	Coho Vineyard	Beverage	\$228,783	\$659,385							

Sort Data by Multiple Columns

The Custom Sort dialog box allows you to sort based on more than one column for more advanced options.

1. Select one column header you want to use in your sort.
2. Select the **Sort & Filter** tool from the Ribbon.



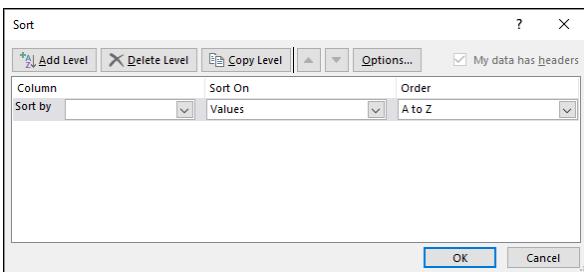
The screenshot shows the Microsoft Excel ribbon with the 'Home' tab selected. In the 'Cells' group of the ribbon, the 'Sort & Filter' button is highlighted with a red box. A dropdown menu is open from this button, showing options like 'Sort A to Z', 'Sort Z to A', and 'Custom Sort...'. The 'Custom Sort...' option is also highlighted with a red box. Below the ribbon, a table is displayed with columns for Company, Industry, Q1 Sales, and Q2 Sales. The 'Industry' column is currently selected.

A	B	C	D	E	F	G	H	I	J	K	L
1	Company	Industry	Q1 Sales	Q2 Sales							
2	A. Datum Corporation	Tech	\$195,449	\$746,907							
3	Adventure Works	Travel	\$123,721	\$733,396							
4	Blue Yonder Airlines	Travel	\$934,763	\$246,554							
5	City Power & Light	Utilities	\$299,293	\$674,295							
6	Coho Vineyard	Beverage	\$228,783	\$659,385							
7	Contoso, Ltd	Misc	\$239,219	\$287,989							
8	Contoso Pharmaceuticals	Medical	\$371,570	\$644,368							
9	Consolidated Messenger	Tech	\$579,825	\$448,399							
10	Fabrikam, Inc.	Utilities	\$639,630	\$635,474							
11	Fourth Coffee	Beverage	\$876,740	\$567,216							
12	Graphic Design Institute	Education	\$788,390	\$540,282							
13	Humongous Insurance	Financial	\$682,545	\$577,599							
14	Litware, Inc.	Tech	\$902,264	\$206,331							

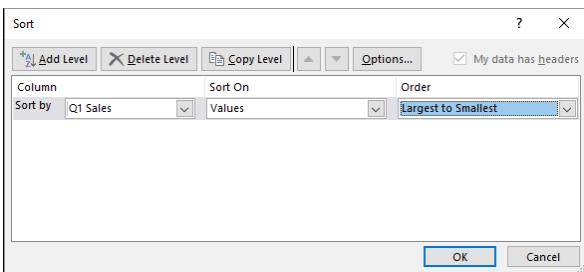
3. Select **Custom Sort**.



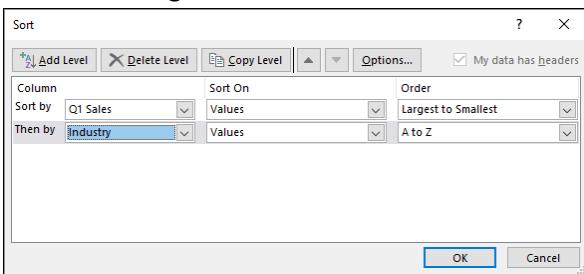
Excel opens the **Sort** dialog box.



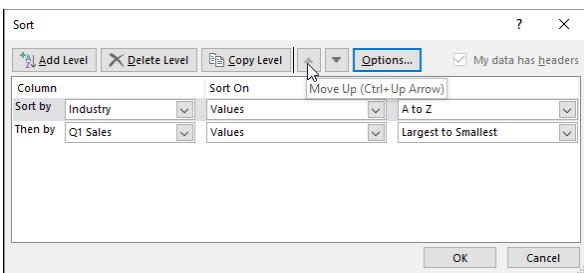
4. You can choose the first column by which to sort from the **Sort By** drop down list. The options displayed match the column headers in your worksheet.
5. Select an option from the **Sort On** drop down list. **Values** is selected by default.
6. Select an **Order** from the drop down list.



7. To add another column to your sort, select **Add Level**. Repeat steps 4, 5, and 6 for the next sorting level.



8. You can **Delete the Level**, **Copy a Level**, and rearrange the order of the sorting levels by using the up or down arrows.



9. Select **OK** when you have finished setting up your sort to see the results.



	A	B	C	D	E	F	G	H	I	J	K	L
1	Company	Industry	Q1 Sales	Q2 Sales								
2	Fourth Coffee	Beverage	\$876,740	\$567,216								
3	Coho Vineyard	Beverage	\$228,783	\$659,385								
4	Graphic Design Institute	Education	\$788,390	\$540,282								
5	Humongous Insurance	Financial	\$682,545	\$577,599								
6	Contoso Pharmaceuticals	Medical	\$371,570	\$644,368								
7	Lucerne Publishing	Misc	\$905,906	\$443,552								
8	Contoso, Ltd	Misc	\$239,219	\$287,989								
9	Litware, Inc.	Tech	\$902,264	\$206,331								
10	Consolidated Messenger	Tech	\$579,825	\$448,399								
11	A. Datum Corporation	Tech	\$195,449	\$746,907								
12	Blue Yonder Airlines	Travel	\$934,763	\$246,554								
13	Margie's Travel	Travel	\$289,570	\$843,834								
14	Adventure Works	Travel	\$123,721	\$733,396								

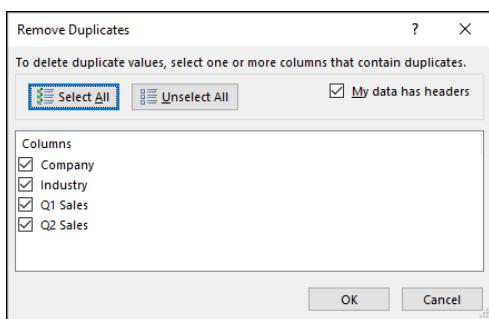
Remove Duplicate Records

When working with large worksheets with lots of data, it's possible to find data that has been entered or imported in a way to create duplicates.

Here's how to check for duplicate data. Use the following procedure.

1. Place your cursor anywhere in the table with duplicates.
2. Select the **Table Tools Design** tab from the Ribbon.
3. Select **Remove Duplicates**.

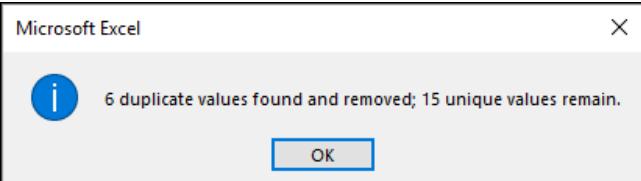
4. Select the columns you want to check for duplicates. The **Select All** and **Unselect All** tools can help you manage a large list of columns. The **My Data has Headers** box indicates whether the list includes header rows.



5. Select **OK**.

Excel notifies you of how many duplicates are removed.





Module Four: Review Questions

1. You should not include the header rows in your selection when you are formatting data as a table.
 - a) True
 - b) False
2. Where do you find the tool to convert a table back to a cell range?
3. Which of the following Table Style Options allows you to alternate shading?
 - a) Header Row
 - b) Banded Rows
 - c) First Column
 - d) Last Column
4. You can remove the filter buttons in a table's header row.
 - a) True
 - b) False
5. The **Clear Filter** tool is on the **Table Tools Design** tab of the Ribbon.
 - a) True
 - b) False
6. How would you create a filter to hide data that is missing certain text from a table?
7. Which of the following is not a Number Filter option?
 - a) Does Not Equal
 - b) Begins With
 - c) Less Than
 - d) Above Average
8. What are the three pieces of information needed to perform a custom sort?
9. You can sort on more than one column.
 - a) True
 - b) False
10. Which tool deletes data from your table if it is not a unique value?
 - a) Remove Duplicates
 - b) Convert to Range
 - c) Delete Table Rows
 - d) None of the Above



All which is beautiful and noble is the result of reason and calculation.

Charles Baudelaire

Module Five: Perform Operations with Formulas and Functions

Excel's power lies in its ability to make calculations that help you analyze data. This module explains how to build the formulas and use the functions that can help you make your calculations. You'll learn about formulas, basic functions, conditional functions and using functions to format and modify text.

Building Formulas

Understand Math Basics of Excel

To build formulas, you need to understand how Excel performs calculations. Formulas use operators and cell references.

Review the different types of operators.

The Arithmetic operators are:

- + Plus Sign – Adds values
- - Minus Sign – Subtracts values
- * Asterisk – Multiplies values
- / Forward slash – Divides values
- % Percent sign – Finds the percentage of a value
- ^ Caret – Exponentiation – Finds the exponential value

The Comparison operators are:

- = Equals sign – Equates values
- > Greater than sign – Indicates that one value is greater than the other
- < Less than sign – Indicates that one value is less than the other
- >= Greater than or equal to – Indicates that one value is greater than or equal to the other
- <= Less than or equal to – Indicates that one value is less than or equal to the other
- <> Not Equal – Indicates that values are not equal

Text concatenation allows you to combine text from different cells into a single piece of text. The operator is the & sign.



The reference operators combine a range of cells to use together in an operation. The reference operators are:

- : Colon – A Range operator that produces a reference to all of the cells between the references on either side of the colon
- , Comma – A Union operator that combines multiple range references
- Space – An intersection operator that returns a reference to the cells common to the ranges in the formula

Build a Formula

Formulas in Excel have a specific structure.

Here's how to enter a formula to calculate the Total Value in the sample worksheet.

1. Select the **Total Value** column for the first product (cell D4).
2. Enter the = sign to begin the formula.
3. Select cell **B4** to use it as the first value in the formula. Excel enters the reference as part of the formula.
4. Enter the * sign.
5. Select cell **C4** to use it as the second value in the formula. Excel enters the references as part of the formula.

Inventory					
Part No.	# In Stock	Unit Price	Total Value	Reorder level	# left to reorder
QS12578	26	\$248.89	=B4*C4	20	
DSP4543	14	\$124.50		10	
DS45848	2	\$588.00			1

6. Press **ENTER** to complete the formula. Excel moves to the next row and performs the calculations in the formula.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Inventory													
2														
3	Part No.	# In Stock	Unit Price	Total Value	Reorder level	# left to reorder								
4	QS12578	26	\$248.89	\$ 6,471.14	20	20								
5	DSP4543	14	\$124.50		10	10								
6	DS45848	2	\$588.00		1	1								
7	SS12566	18	\$224.67		10	10								
8	SSP2777	12	\$118.00		5	5								
9	QS12585	5	\$555.22		5	5								
10	DS12566	2	\$470.99		1	1								
11	DS12556	8	\$430.37		5	5								
12	KSP4333	4	\$585.00		2	2								
13	QP133	12	\$255.23		10	10								
14	KS36678	3	\$685.75		1	1								
15														
16	Tax rate	10%												
17														

Note that if you select the cell, the Formula bar shows the formula, while the cell contents show the calculation.

	A	B	C	D	E	F							
1	Inventory												
2													
3	Part No.	# In Stock	Unit Price	Total Value	Reorder level	# left to reorder							
4	QS12578	26	\$248.89	\$ 6,471.14	20	20							
5	DSP4543	14	\$124.50		10	10							
6	DS45848	2	\$588.00		1	1							

Edit a Formula

You can change the operators or cell references in a formula in the Formula bar.

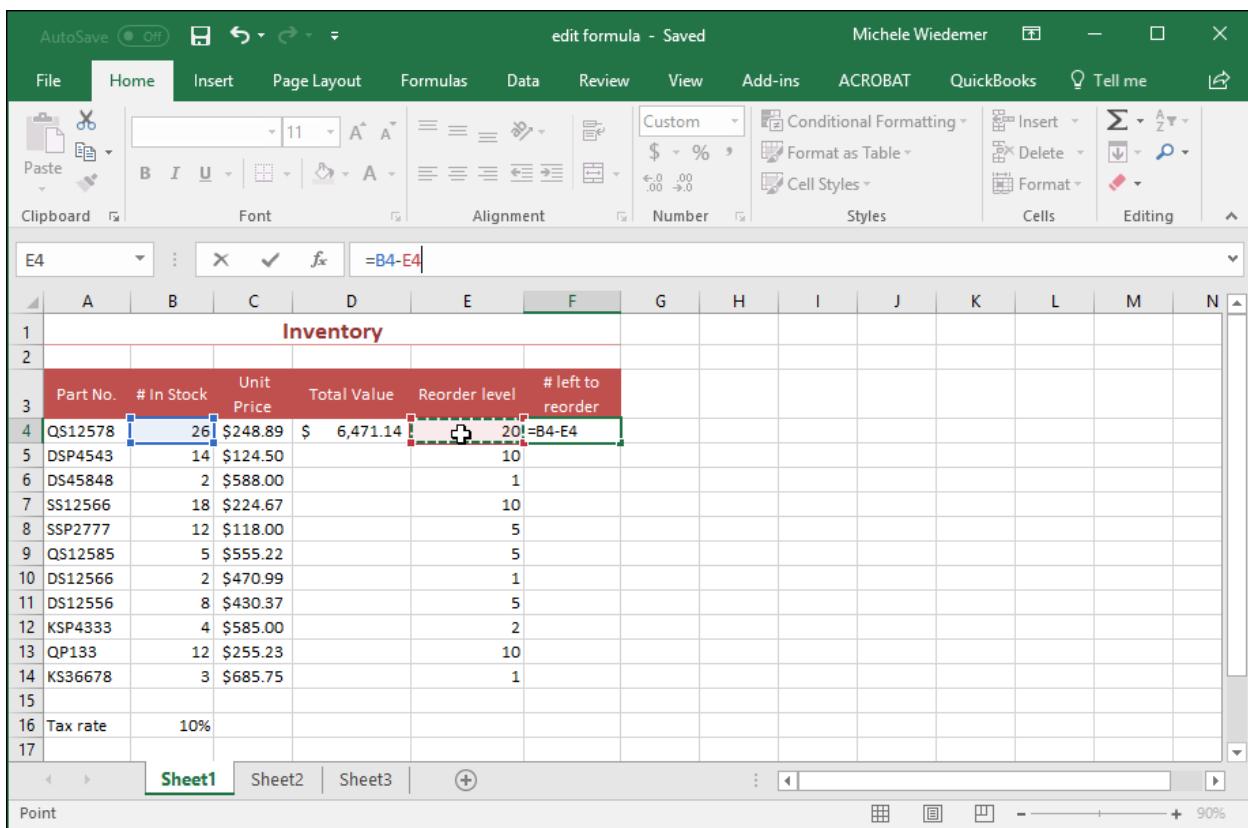
Here's how to edit a formula. The example uses an incorrect cell reference in the formula.

1. Select the cell with the formula you want to correct to make it active.
2. Select the Formula Bar. Excel highlights the cell references in the current formula.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Inventory													
2	Part No.	# In Stock	Unit Price	Total Value	Reorder level	# left to reorder								
3	QS12578	26	\$248.89	\$ 6,471.14	20	=B4-C4								
4	DSP4543	14	\$124.50		10									
5	DS45848	2	\$588.00		1									
6	SS12566	18	\$224.67		10									
7	SSP2777	12	\$118.00		5									
8	QS12585	5	\$555.22		5									
9	DS12566	2	\$470.99		1									
10	DS12556	8	\$430.37		5									
11	KSP4333	4	\$585.00		2									
12	QP133	12	\$255.23		10									
13	KS36678	3	\$685.75		1									
14	Tax rate	10%												
15														
16														
17														

3. Highlight the operator or cell references and either type over with the correct reference or operator, or select the correct cell to replace a cell reference.



The screenshot shows the Microsoft Excel interface with the 'Home' tab selected. The formula bar displays the formula `=B4-C4`. The cell `E4` contains the formula `=B4-E4`, which is highlighted with a red selection bar. The rest of the spreadsheet shows an 'Inventory' table with various parts and their values.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Inventory													
2	Part No.	# In Stock	Unit Price	Total Value	Reorder level	# left to reorder								
3	QS12578	26	\$248.89	\$ 6,471.14	20	=B4-C4								
4	DSP4543	14	\$124.50		10									
5	DS45848	2	\$588.00		1									
6	SS12566	18	\$224.67		10									
7	SSP2777	12	\$118.00		5									
8	QS12585	5	\$555.22		5									
9	DS12566	2	\$470.99		1									
10	DS12556	8	\$430.37		5									
11	KSP4333	4	\$585.00		2									
12	QP133	12	\$255.23		10									
13	KS36678	3	\$685.75		1									
14	Tax rate	10%												
15														
16														
17														

4. Press ENTER to complete the formula. Excel calculates the formula and moves to the next row.

Copy a Formula

In Excel, you often repeat the same formula, changing only the cells you are referencing.



Here's how to copy and paste a formula.

1. Select the cell with the formula you want to copy.
2. Select **COPY** from the **HOME** tab on the Ribbon. You can also click on the cell and use the keyboard shortcut: **CTRL + C**.

Excel highlights the cell whose contents you are copying. This will remain highlighted until you finish pasting, in case you want to paste the cell contents more than once.

3. Select the cell where you want to copy the formula. Excel displays a number of paste options. To paste a formula, select **Paste** or **Paste formula**. Note that as you hover your mouse over the paste options, the rest of the context menu is dimmed. You can also select the cell and use the keyboard shortcut: **CTRL + V**.

A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Inventory												
2	Part No.	# In Stock	Unit Price	Total Value	Reorder level	# left to reorder							
3	QS12578	26	\$248.89	\$ 6,471.14	20	6							
4	DSP4543	14	\$124.50	\$ 1,743.00	10								
5	DS45848	2	\$588.00		1								
6	SS12566	18	\$224.67		10								
7	SSP2777	12	\$118.00										
8	QS12585	5	\$555.22										
9	DS12566	2	\$470.99										
10	DS12556	8	\$430.37										
11	KSP4333	4	\$585.00										
12	QP133	12	\$255.23		10								
13	KS36678	3	\$685.75		1								
14	Tax rate	10%											
15													
16													
17													

4. You can repeat the paste as many times as desired. Or you can highlight multiple cells at once before pasting to repeat the paste for all highlighted cells.
5. Press **ENTER** to stop pasting.

A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Inventory												
2	Part No.	# In Stock	Unit Price	Total Value	Reorder level	# left to reorder							
3	QS12578	26	\$248.89	\$ 6,471.14	20	6							
4	DSP4543	14	\$124.50	\$ 1,743.00	10								
5	DS45848	2	\$588.00	\$ 1,176.00	1								
6	SS12566	18	\$224.67	\$ 4,044.06	10								
7	SSP2777	12	\$118.00	\$ 1,416.00	5								
8	QS12585	5	\$555.22	\$ 2,776.10	5								
9	DS12566	2	\$470.99	\$ 941.98	1								
10	DS12556	8	\$430.37	\$ 3,442.96	5								
11	KSP4333	4	\$585.00	\$ 2,340.00	2								
12	QP133	12	\$255.23	\$ 3,062.76	10								
13	KS36678	3	\$685.75	\$ 2,057.25	1								
14	Tax rate	10%											
15													
16													
17													



Here's how to copy a formula using Autofill.

1. Select the cell with the formula you want to copy.
2. Drag the handle at the bottom right corner of the cell to include the cells that should also contain the formula.

The screenshot shows a Microsoft Excel spreadsheet titled "Inventory". The data starts at row 3 with columns: Part No., # In Stock, Unit Price, Total Value, Reorder level, and # left to reorder. Row 4 contains the formula =B4-E4 in cell F4, which is highlighted with a green selection border. A green plus sign (+) is located at the bottom right corner of the selection, indicating it can be dragged to copy the formula down the column. The formula bar also displays =B4-E4. The status bar at the bottom indicates "Drag outside selection to extend series or fill; drag inside to clear".

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Inventory													
2														
3	Part No.	# In Stock	Unit Price	Total Value	Reorder level	# left to reorder								
4	QS12578	26	\$248.89	\$ 6,471.14	20	6								
5	DSP4543	14	\$124.50	\$ 1,743.00	10									
6	DS45848	2	\$588.00	\$ 1,176.00	1									
7	SS12566	18	\$224.67	\$ 4,044.06	10									
8	SSP2777	12	\$118.00	\$ 1,416.00	5									
9	QS12585	5	\$555.22	\$ 2,776.10	5									
10	DS12566	2	\$470.99	\$ 941.98	1									
11	DS12556	8	\$430.37	\$ 3,442.96	5									
12	KSP4333	4	\$585.00	\$ 2,340.00	2									
13	QP133	12	\$255.23	\$ 3,062.76	10									
14	KS36678	3	\$685.75	\$ 2,057.25	1									
15														
16	Tax rate	10%												
17														

3. Release the mouse button at the end of the range.

Understand Relative vs. Absolute References

Copying formulas works because of relative referencing.

Here's how to copy a formula with an absolute reference.

1. Create a new column labeled **Taxes**.
2. Select the **Taxes** column for the first product (cell E4).
3. Enter the = sign to begin the formula.
4. Select cell **B16** to use it as the first value in the formula. Excel enters the reference as part of the formula. Use the **Formula Bar** to enter dollar signs before the column and the row (i.e., \$B\$16). You can also press F4 to switch the cell reference to absolute.
5. Enter * and select the relative reference in the **Total Value** column.



D4 : X ✓ f_x =-\$B\$16*D4

A	B	C	D	E	F	G	H	I	J	K	L	M
1	Inventory											
3	Part No.	# In Stock	Unit Price	Total Value	Taxes	Reorder level	# left to reorder					
4	QS12578	26	\$248.89	\$ 6,471.14	\$ 647.11	20	6					
5	DSP4543	14	\$124.50	\$ 1,743.00	\$ 174.30	10	4					
6	DS45848	2	\$588.00	\$ 1,176.00		1	1					
7	SS12566	18	\$224.67	\$ 4,044.06		10	8					
8	SSP2777	12	\$118.00	\$ 1,416.00		5	7					
9	QS12585	5	\$555.22	\$ 2,776.10		5	-					
10	DS12566	2	\$470.99	\$ 941.98		1	1					
11	DS12556	8	\$430.37	\$ 3,442.96		5	3					
12	KSP4333	4	\$585.00	\$ 2,340.00		2	2					
13	QP133	12	\$255.23	\$ 3,062.76		10	2					
14	KS36678	3	\$685.75	\$ 2,057.25		1	2					
15												
16	Tax rate		10%									
17												

Sheet1 | Sheet2 | Sheet3 | + | 90%

6. Press **ENTER** to complete the formula. Excel moves to the next row and performs the calculations in the formula.

Try copying the formula for the other products and selecting some of them to see the results.

E6 : X ✓ f_x =-\$B\$16*D6

A	B	C	D	E	F	G	H	I	J	K	L	M
1	Inventory											
3	Part No.	# In Stock	Unit Price	Total Value	Taxes	Reorder level	# left to reorder					
4	QS12578	26	\$248.89	\$ 6,471.14	\$ 647.11	20	6					
5	DSP4543	14	\$124.50	\$ 1,743.00	\$ 174.30	10	4					
6	DS45848	2	\$588.00	\$ 1,176.00	\$ 117.60	1	1					
7	SS12566	18	\$224.67	\$ 4,044.06	\$ 404.41	10	8					
8	SSP2777	12	\$118.00	\$ 1,416.00	\$ 141.60	5	7					
9	QS12585	5	\$555.22	\$ 2,776.10	\$ 277.61	5	-					
10	DS12566	2	\$470.99	\$ 941.98	\$ 94.20	1	1					
11	DS12556	8	\$430.37	\$ 3,442.96	\$ 344.30	5	3					
12	KSP4333	4	\$585.00	\$ 2,340.00	\$ 234.00	2	2					
13	QP133	12	\$255.23	\$ 3,062.76	\$ 306.28	10	2					
14	KS36678	3	\$685.75	\$ 2,057.25	\$ 205.73	1	2					
15												
16	Tax rate		10%									
17												

Sheet1 | Sheet2 | Sheet3 | + | Ready | 90%

Perform Basic Functions

Understand Formulas vs. Functions

Functions are not the same as formulas.

Here's how to open the **Insert Function** dialog box.

- Select the **Insert Function** tool right next to the Formula bar.



The screenshot shows a Microsoft Excel spreadsheet titled "Budget - Excel". The spreadsheet contains a list of household expenses from row 1 to 16. The first column lists categories like Mortgage, Heat, Power, etc., and the second column lists amounts. Row 16 is empty. The formula bar at the top shows cell H5, and the formula $=$ is entered, with the "fx" button highlighted by a red box. A context menu is open over cell H5, showing options like Insert, Delete, and Format. The "Insert" option is selected, opening the "Insert Function" dialog box. This dialog box has a search bar with the placeholder "Type a brief description of what you want to do and then click Go", a dropdown for "Or select a category: Most Recently Used", and a list of functions under "Select a function:". The "SUM" function is selected and highlighted in blue. Below it, the syntax "SUM(number1,number2,...)" and the description "Adds all the numbers in a range of cells." are displayed. At the bottom of the dialog box are "OK" and "Cancel" buttons.

Notice that each function includes the name and argument syntax that you'll need to use to complete the function calculation.



Calculate Using Status Bar

The Status Bar at the bottom of the Excel window provides a quick way to perform some basic functions.

Here's how to find the average of selected cells.

1. Highlight the cells to include in the average.
2. Find the Average in the Status Bar.

A screenshot of a Microsoft Excel spreadsheet titled "Household Budget" for the year 2013. The spreadsheet tracks monthly expenses from January to June. Row 7 highlights the first six months with a green background. The status bar at the bottom shows the average of the selected range as 183.3333333. A red box surrounds this status bar area.

	A	B	C	D	E	F	G	H	I	J	K
1	Household Budget										
2		2013									
3											
4		January	February	March	April	May	June	Total - first six months			
5	Mortgage	890	890	890	890	890	890				
6	Heat	250	250	175	125	80	0				
7	Power	225	225	175	175	150	150				
8											
9	Phone	65	75	65	65	75	75				
10	Car Payment	275	275	275	275	275	275				
11	Gas	240	240	360	240	240	240				
12	Insurance	180	180	180	180	180	180				
13	Food	600	600	600	600	600	600				
14											
15											
16											

Here's how to customize the Status Bar.

1. Right click on the Status Bar to see a list of Functions that can be displayed.
2. Select the Functions to include.



Customize Status Bar	
✓ Cell Mode	Ready
✓ Flash Fill Blank Cells	
✓ Flash Fill Changed Cells	
✓ Signatures	Off
✓ Information Management Policy	Off
✓ Permissions	Off
Caps Lock	Off
Num Lock	On
✓ Scroll Lock	Off
✓ Fixed Decimal	Off
✓ QWERTY Mode	
✓ End Mode	
Macro Recording	Not Recording
✓ Selection Mode	
✓ Page Number	
✓ Average	183.3333333
✓ Count	6
Numerical Count	
Minimum	890
Maximum	890
✓ Sum	1100
✓ Upload Status	
✓ View Shortcuts	
✓ Zoom Slider	
✓ Zoom	100%

This Status bar has the MAX function added.



Perform Basic Functions

Basic functions include the SUM, MIN, MAX, COUNT and AVERAGE functions.

Here's how to use a basic function.

1. Select the cell to display the function results.
2. Select the SUM tool in the Editing Group on the Home tab of the Ribbon. For functions other than SUM, select the small arrow next to the tool to see the list of functions and select the function.

The screenshot shows the Microsoft Excel ribbon with the 'Home' tab selected. In the 'Editing' group, the 'Σ' button is highlighted with a red box. A dropdown menu is open from this button, listing several functions: Sum, Average, Count Numbers, Max, Min, and More Functions... The 'Max' option is visible in the list.

3. Excel enters the function with a default selection of cell references.



	A	B	C	D	E	F	G	H	I	J	K
1	Household Budget										
2		2013									
3											
4		January	February	March	April	May	June	Total - first six months			
5	Mortgage	890	890	890	890	890	890				
6	Heat	250	250	175	125	80	0				
7	Power	225	225	175	175	150	150	=AVERAGE(B7:G7)			
8								AVERAGE(number1, [number2], ...)			
9	Phone	65	75	65	65	75	75				
10	Car Payment	275	275	275	275	275	275				
11	Gas	240	240	360	240	240	240				
12	Insurance	180	180	180	180	180	180				
13	Food	600	600	600	600	600	600				
14											
15											
16											

4. If the cell references are not accurate, you can drag the highlighted area to include additional cells or remove cells you do not want used in the function. You can also edit the cell references in the Formula bar.
5. Press **Enter** to complete the function.

Excel performs the calculation and moves to the next row.

In the following illustration, the cell with the function is active, so that you can see the function syntax in the Formula Bar and the result in the cell.

	A	B	C	D	E	F	G	H	I	J	K
1	Household Budget										
2		2013									
3											
4		January	February	March	April	May	June	Total - first six months			
5	Mortgage	890	890	890	890	890	890				
6	Heat	250	250	175	125	80	0				
7	Power	225	225	175	175	150	150	183.33333			
8											
9	Phone	65	75	65	65	75	75				
10	Car Payment	275	275	275	275	275	275				
11	Gas	240	240	360	240	240	240				
12	Insurance	180	180	180	180	180	180				
13	Food	600	600	600	600	600	600				
14											
15											
16											



AutoComplete a Function

AutoComplete is an Excel feature that helps you save time.

Here's how to use the AutoComplete feature.

1. Begin typing the SUM function. As soon as you type the Equals sign and the letter S, Excel displays a possible list of matching functions.

The screenshot shows a Microsoft Excel spreadsheet titled "Household Budget" for the year 2013. The data includes monthly expenses for Mortgage, Heat, Power, Phone, Car Payment, Gas, Insurance, and Food from January to June, along with a total for the first six months. In cell H7, the user has typed "=s" and is viewing a dropdown menu of function suggestions. The "SUM" function is the top item in the list.

	A	B	C	D	E	F	G	H	I
1	Household Budget								
2		2013							
3									
4		January	February	March	April	May	June	Total - first six months	
5	Mortgage	890	890	890	890	890	890		
6	Heat	250	250	175	125	80	0		
7	Power	225	225	175	175	150	150	=s	
8								SEARCH	
9	Phone	65	75	65	65	75	75	SEC	
10	Car Payment	275	275	275	275	275	275	SECH	
11	Gas	240	240	360	240	240	240	SECOND	
12	Insurance	180	180	180	180	180	180	SERIESSUM	
13	Food	600	600	600	600	600	600	SHEET	
14								SHEETS	
15								SIGN	
16								SIN	

2. To select the SUM Function from the list, double-click on the SUM function.
3. Excel enters the function, but you must still enter the arguments.

The screenshot shows the same Excel spreadsheet as the previous one, but now the user has double-clicked on the "SUM" function in the dropdown list. The formula "=SUM(" is now entered into cell H7, and the status bar at the bottom of the screen displays the full formula "SUM(number1, [number2], ...)".

	A	B	C	D	E	F	G	H	I	J	K	L
1	Household Budget											
2		2013										
3												
4		January	February	March	April	May	June	Total - first six months				
5	Mortgage	890	890	890	890	890	890					
6	Heat	250	250	175	125	80	0					
7	Power	225	225	175	175	150	150	=SUM(
8								SUM(number1, [number2], ...)				
9	Phone	65	75	65	65	75	75					
10	Car Payment	275	275	275	275	275	275					
11	Gas	240	240	360	240	240	240					
12	Insurance	180	180	180	180	180	180					
13	Food	600	600	600	600	600	600					
14												
15												
16												

4. You can simply click on multiple cells, or click and drag to select a cell range. You can also type in the cell references.



A screenshot of a Microsoft Excel spreadsheet titled "Household Budget 2013". The spreadsheet contains a table of monthly expenses from January to June, with a column for the total of the first six months. The formula `=SUM(B7:G7)` is entered into cell H7, which is highlighted with a dashed blue border. The formula bar at the top also displays `=SUM(B7:G7)`. The table includes rows for Mortgage, Heat, Power, Phone, Car Payment, Gas, Insurance, and Food.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Household Budget											
2		2013										
3												
4		January	February	March	April	May	June	Total - first six months				
5	Mortgage	890	890	890	890	890	890					
6	Heat	250	250	175	125	80	0					
7	Power	225	225	175	175	150	150	=SUM(B7:G7)	SUM(number1, [number2], ...)			
8												
9	Phone	65	75	65	65	75	75					
10	Car Payment	275	275	275	275	275	275					
11	Gas	240	240	360	240	240	240					
12	Insurance	180	180	180	180	180	180					
13	Food	600	600	600	600	600	600					
14												
15												
16												

5. In the Formula Bar, enter the final parenthesis mark to end the function.

A screenshot of the same Microsoft Excel spreadsheet as above, but with the formula bar now showing `=SUM(B7:G7)=`. The formula has been completed with the final equals sign. The rest of the spreadsheet and its data remain the same.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Household Budget											
2		2013										
3												
4		January	February	March	April	May	June	Total - first six months				
5	Mortgage	890	890	890	890	890	890					
6	Heat	250	250	175	125	80	0					
7	Power	225	225	175	175	150	150	=SUM(B7:G7)=	SUM(number1, [number2], ...)			
8												
9	Phone	65	75	65	65	75	75					
10	Car Payment	275	275	275	275	275	275					
11	Gas	240	240	360	240	240	240					
12	Insurance	180	180	180	180	180	180					
13	Food	600	600	600	600	600	600					
14												
15												
16												

6. Press ENTER to enter the function in the cell.

Create Functions using Formulas Tab

The **Formulas** tab on the Ribbon can help you create functions.

Here's how to insert a function from the Formulas tab.

1. Select the cell to display the function results.
2. Select the **Formulas** tab on the Ribbon.
3. Select the **Function Library** tool categorizing the type of function you want to use and select the function from the list.



Budget - Excel

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AVERAGE

	February	March	April	May	June	Total - first six months
1 House	890	890	890	890	890	5340
2	250	250	175	125	80	0
3	225	225	175	175	150	1100
4						
5 Mortgage	890	890	890	890	890	5340
6 Heat	250	250	175	125	80	0
7 Power	225	225	175	175	150	1100
8						
9 Phone	65	75	65	65	75	70
10 Car Payment	275	275	275	275	275	275
11 Gas	240	240	360	240	240	240
12 Insurance	180	180	180	180	180	180
13 Food	600	600	600	600	600	600
14						
15						
16						

Sheet1 Sheet2 Sheet3 + 100%

- In the **Function Arguments** dialog box, place your cursor in the first argument and then select one cell or a range of cells to use for that argument. You can hold down the CTRL key to select multiple cells that are not next to each other.

Budget - Excel

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AVERAGE

H11 : =AVERAGE(B11,C11,D11,E11)

	January	February	March	April	May	June	Total - first six months
1 Household Budget	890	890	890	890	890	890	5340
2 2013	250	250	175	125	80	0	0
3	225	225	175	175	150	1100	1100
4							
5 Mortgage	890	890	890	890	890	890	5340
6 Heat	250	250	175	125	80	0	0
7 Power	225	225	175	175	150	1100	1100
8							
9 Phone	65	75	65	65	75	70	70
10 Car Payment	275	275	275	275	275	275	275
11 Gas	240	240	360	240	240	240	240
12 Insurance	180	180	180	180	180	180	180
13 Food	600	600	600	600	600	600	600
14							
15							
16							

Sheet1 Sheet2 Sheet3 + 100%

- Continue selecting arguments in the dialog box and selecting or entering the relevant cells to build the function.
- Select **OK** to complete and enter the function.



Budget - Excel

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Insert Function

fx Sum AutoSum Logical Lookup & Reference Define Name Trace Precedents Show Formulas

Recently Used Text Math & Trig Use in Formula Trace Dependents Error Checking

Financial Date & Time More Functions Name Manager Create from Selection Remove Arrows Evaluate Formula

Function Library

Defined Names

Formula Auditing

Watch Window

Calculation Options Calculation

H11 =AVERAGE(B11,C11,D11,E11)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Household Budget													
2	2013													
3														
4		January	February	March	April	May	June	Total - first six months						
5	Mortgage	890	890	890	890	890	890							
6	Heat	250	250	175	125	80	0							
7	Power	225	225	175	175	150	150	1100						
8														
9	Phone	65	75	65	65	75	75	70						
10	Car Payment	275	275	275	275	275	275	70						
11	Gas	240	240	360	240	240	240	270						
12	Insurance	180	180	180	180	180	180							
13	Food	600	600	600	600	600	600							
14														
15														
16														

Sheet1 Sheet2 Sheet3

Ready

Perform Conditional Functions

Perform the IF Function

The IF function makes a logical comparison and provides one of two different results.

Here's how to create an IF function.

1. Place your cursor in the cell that should display the results of the IF function.
 2. Select the **Formulas** tab.
 3. Select the arrow next to the **Logical** tool.
 4. Select **IF**.

The screenshot shows the Microsoft Excel ribbon with the 'Formulas' tab selected. In the formula bar, the text '=IF(' is entered. A context menu is open over the 'IF' option, listing other logical functions: AND, FALSE, IF, IFERROR, IFNA, IFS, NOT, OR, SWITCH, TRUE, and XOR. The 'IF' option is highlighted with a gray background.



5. In the **Logical_test** field of the **Function Arguments** dialog box, enter the test. In this example, we'll evaluate whether the **Actual** column amount is more than the **Budget** column amount. You would select B2, enter the **>** symbol, and select B1.

The screenshot shows an Excel spreadsheet with a table of data. The columns are labeled 'Budget', 'Actual', and 'Status'. The formula `=IF(B2>A2)` is entered into cell C2. A callout box from the 'Formulas' tab in the ribbon points to the 'Function Arguments' dialog box. This dialog box is open for the IF function, showing the logical test `B2>A2` and the value_if_true cell `= any`. The formula result is shown as `= "Over Budget"`.

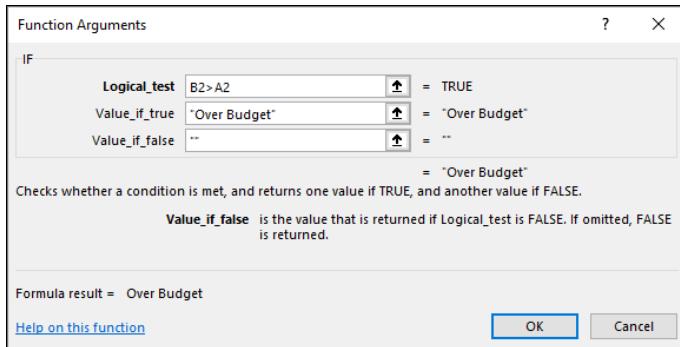
A	B	C	D	E	F	G	H	I	J	K	L	M
1	Budget	Actual	Status	Amount Over								
2	\$ 300.00	\$ 325.00	=IF(B2>A2)									
3	\$ 170.00	\$ 168.00										
4	\$ 290.00	\$ 295.00										
5	\$ 250.00	\$ 400.00										
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												

6. In the **Value_if_true** field, enter the result to display if the logical test is true. In this example, we'll have Excel enter the text "Over Budget." Since we want Excel to enter text, it will be enclosed in quotation marks.

The screenshot shows the 'Function Arguments' dialog box for the IF function. The logical test is `B2>A2`, and the value_if_true field contains the text `"Over Budget"`. The formula result is displayed as `= "Over Budget"`.

7. In the **Value_if_false** field, enter the result to display if the logical test is not true. In this example, we'll leave the cell blank, which is indicated by entering open and close quotation marks.





8. Select OK.

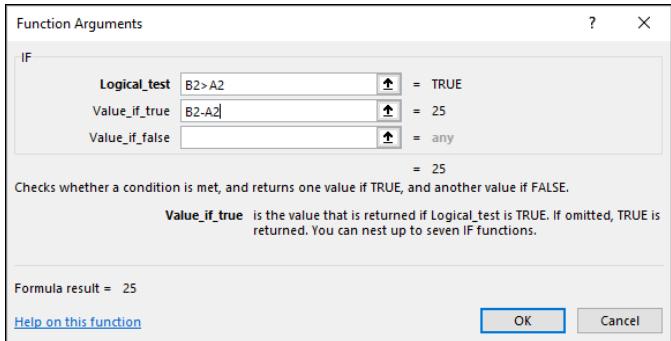
Now try copying the cell to the rest of the column to see the differing results. Note that you can double-click the bottom right corner of the cell with the formula to AutoFill the column.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Budget	Actual	Status	Amount Over									
2	\$ 300.00	\$ 325.00	Over Budget										
3	\$ 170.00	\$ 168.00											
4	\$ 290.00	\$ 295.00	Over Budget										
5	\$ 250.00	\$ 400.00	Over Budget										
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													

Here's how to create an IF function that calculates the results.

1. Place your cursor in the cell that should display the results of the IF function. In this example, select the Amount Over column first blank cell.
2. Select the **Formulas** tab.
3. Select the arrow next to the **Logical** tool.
4. Select **IF**.
5. In the **Logical_test** field of the **Function Arguments** dialog box, enter the test. In this example, we'll evaluate whether the **Actual** column amount is more than the **Budget** column amount. You would select B2, enter the **>** symbol, and select B1.
6. In the **Value_if_true** field, enter the calculation for the result to display if the logical test is true. In this example, we'll have Excel calculate the amount over budget.





7. In the **Value_if_false** field, enter the result to display if the logical test is not true. In this example, we'll leave the cell blank again.
8. Select **OK**.

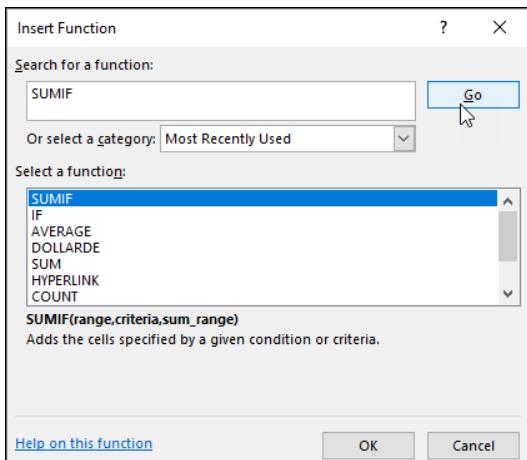
=IF(B2>A2,B2-A2,"")				
	A	B	C	D
1	Budget	Actual	Status	Amount Over
2	\$ 300.00	\$ 325.00	Over Budget	25
3	\$ 170.00	\$ 168.00		
4	\$ 290.00	\$ 295.00	Over Budget	
5	\$ 250.00	\$ 400.00	Over Budget	
6				

Perform the SUMIF Function

The SUMIF function adds values in a range of cells IF they meet your criteria.

Here's how to create a SUMIF function.

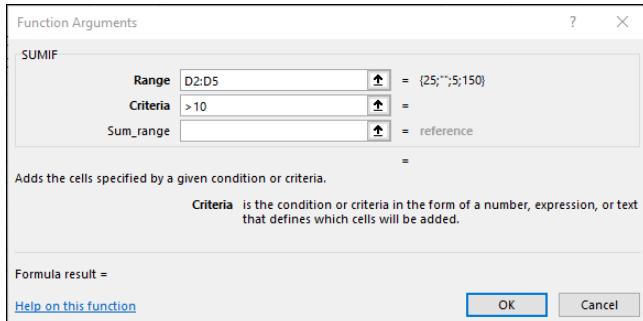
1. Place your cursor in the cell that should display the results of the SUMIF function.
2. Select the **Formulas** tab.
3. Select **Insert Function**.
4. In the **Insert Function** dialog box, enter SUMIF and select **Go**.



5. Double-click the SUMIF option in the list or select **OK**.



- In the **Function Arguments** dialog box, place your cursor in the **Range** field and select the cells to evaluate. In this example, we'll use D2:D5.
- In the **Criteria** field, enter the criteria to compare the range against. In this example, we'll use greater than 10. We'll leave the **Sum_range** field blank in this example to sum the same range.



- Select **OK**.

=SUMIF(D2:D5,>10")				
	A	B	C	D
1	Budget	Actual	Status	Amount Over
2	\$ 300.00	\$ 325.00	Over Budget	\$ 25.00
3	\$ 170.00	\$ 168.00		
4	\$ 290.00	\$ 295.00	Over Budget	\$ 5.00
5	\$ 250.00	\$ 400.00	Over Budget	\$ 150.00
6				
7			Sum of Overages over \$10	\$ 175.00
8				
9				

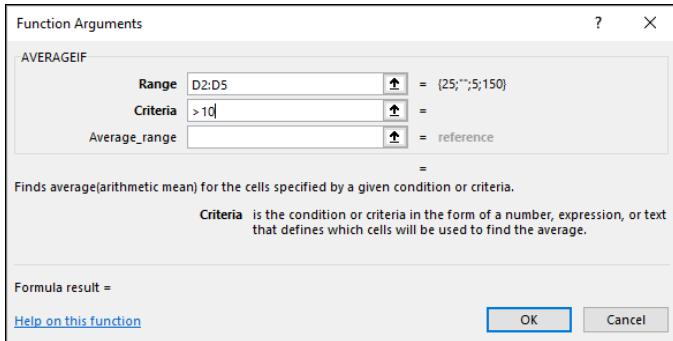
Perform the AVERAGEIF Function

The AVERAGEIF function provides the average (arithmetic mean) of values in a range of cells IF they meet your criteria.

Here's how to create an AVERAGEIF function.

- Place your cursor in the cell that should display the results of the AVERAGEIF function.
- Select the **Formulas** tab.
- Select **Insert Function**.
- In the **Insert Function** dialog box, enter AVERAGEIF and select **Go**.
- Double-click the AVERAGEIF option in the list or select **OK**.
- In the **Function Arguments** dialog box, place your cursor in the **Range** field and select the cells to evaluate. In this example, we'll use D2:D5.
- In the **Criteria** field, enter the criteria to compare the range against. In this example, we'll use greater than 10. We'll leave the **Average_range** field blank in this example to average the same range.





8. Select **OK**.

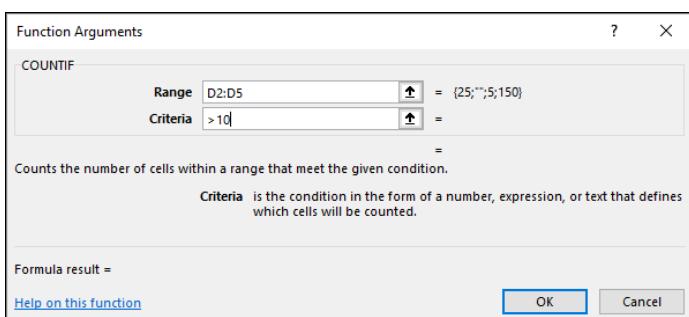
=AVERAGEIF(D2:D5,>10")				
	A	B	C	D
1	Budget	Actual	Status	Amount Over
2	\$ 300.00	\$ 325.00	Over Budget	\$ 25.00
3	\$ 170.00	\$ 168.00		
4	\$ 290.00	\$ 295.00	Over Budget	\$ 5.00
5	\$ 250.00	\$ 400.00	Over Budget	\$ 150.00
6				
7			Average of Overages over \$10	\$ 87.50
8				

Perform the COUNTIF Function

The COUNTIF function counts the number of cells within a given range if they meet your criteria.

Here's how to create a COUNTIF function.

1. Place your cursor in the cell that should display the results of the COUNTIF function.
2. Select the **Formulas** tab.
3. Select **Insert Function**.
4. In the **Insert Function** dialog box, enter COUNTIF and select **Go**.
5. Double-click the COUNTIF option in the list or select **OK**.
6. In the **Function Arguments** dialog box, place your cursor in the **Range** field and select the cells to evaluate. In this example, we'll use D2:D5.
7. In the **Criteria** field, enter the criteria to compare the range against. In this example, we'll use greater than 10.



8. Select **OK**. Note that in this example, the field has had a different number format applied, since the currency format would be confusing applied to a count.

A screenshot of Microsoft Excel showing a table with data and a formula in cell D7. The formula is =COUNTIF(D2:D5,">10"). The table has columns A, B, C, D, and E. Column A is labeled "Budget", column B is "Actual", column C is "Status", and column D is "Amount Over". Row 2 shows values \$300.00, \$325.00, Over Budget, and \$25.00 respectively. Row 3 shows values \$170.00, \$168.00, and Over Budget. Row 4 shows values \$290.00, \$295.00, Over Budget, and \$5.00. Row 5 shows values \$250.00, \$400.00, Over Budget, and \$150.00. Row 7 contains the formula and its result: Number of Overages over \$10 and 2.

	A	B	C	D	E
1	Budget	Actual	Status	Amount Over	
2	\$ 300.00	\$ 325.00	Over Budget	\$ 25.00	
3	\$ 170.00	\$ 168.00			
4	\$ 290.00	\$ 295.00	Over Budget	\$ 5.00	
5	\$ 250.00	\$ 400.00	Over Budget	\$ 150.00	
6					
7			Number of Overages over \$10		2
8					

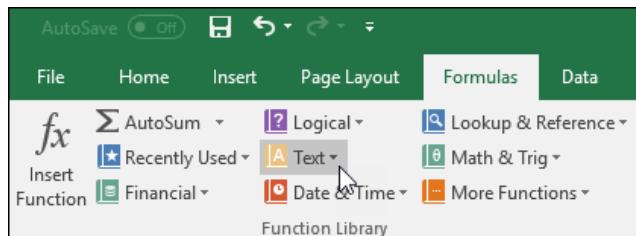
Format and Modify Text Using Functions

Format Text Using UPPER, LOWER, and PROPER Functions

The UPPER, LOWER and PROPER functions copy text in selected cells and return that text with the specified case.

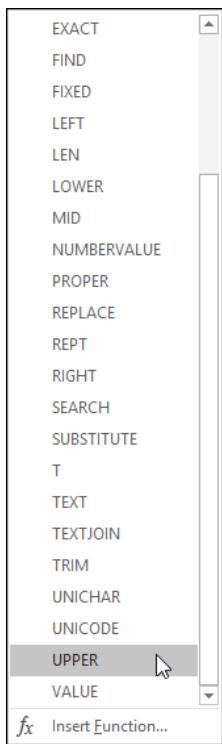
Here's how to use the UPPER function.

1. Place your cursor in the cell that should display the results of the function.
2. Select the **Formulas** tab from the Ribbon.
3. Select the arrow next to **Text**.



4. Select **UPPER**.





5. In the **Function Arguments** dialog box, place your cursor in the Text field and select the cell that includes the text you want to display as all caps.

A screenshot of an Excel spreadsheet titled 'case examples - Excel'. The ribbon shows the 'Formulas' tab is active. The formula bar at the top displays '=UPPER(A1)'. The main area shows a table with two rows. Row 1 has cells A1 ('buchanan') and B1 ('PER(A1)'). Row 2 has cells A2 ('A WORD') and B2 (''). A 'Function Arguments' dialog box is open over the spreadsheet. It shows the 'UPPER' function with the 'Text' field set to 'A1'. Below the dialog, the formula bar also shows '=UPPER(A1)'. The dialog box contains the following text:

Converts a text string to all uppercase letters.
Text is the text you want converted to uppercase, a reference or a text string.

Formula result = BUCHANAN

[Help on this function](#)

At the bottom right of the dialog are 'OK' and 'Cancel' buttons.

6. Select **OK**.

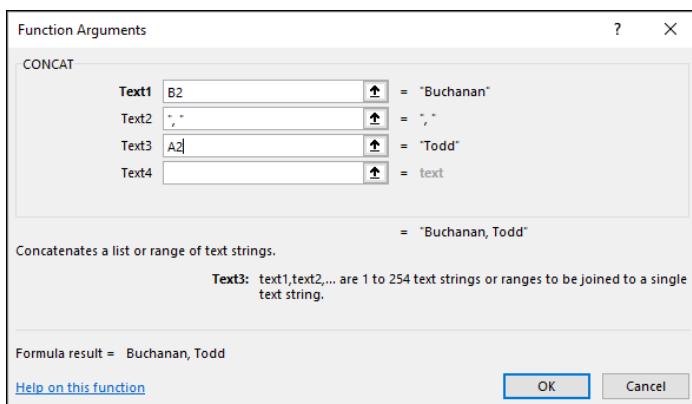


Format Text Using the CONCAT Function

The concatenate function combines the text strings from two or more cells into one text string.

Here's how to create a CONCAT function.

1. Place your cursor in the cell that should display the results of the function.
2. Select the **Formulas** tab from the Ribbon.
3. Select the arrow next to **Text**.
4. Select **CONCAT**.
5. In the **Function Arguments** dialog box, place your cursor in the **Text1** field and select the cell with the text that should appear first in the joined text string.
6. In the additional **Text** fields, select additional cells with the text that should appear in the joined text string in the order they should appear. You can also indicate actual characters or text instead of a text string. In this example, we'll add a comma and a space in between the contents of the two cells. Any items that are not a cell reference are placed in quotation marks.



7. Select **OK**.

		C2		
			X	✓
			f _x	=CONCAT(B2, ", ",A2)
A	B	C	D	E
1	First Name	Last Name		
2	Todd	Buchanan	Buchanan, Todd	
3	Joyce	Suyama		
4	Nina	Peacock		
5	Joseph	Leverling		
6	Brian	Dodsworth		
7	Leo	Davolio		
8				

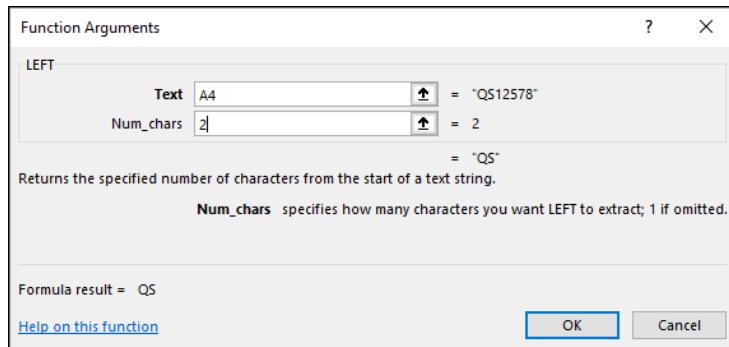
Format Text Using LEFT, RIGHT and MID Functions

As opposed to joining text, The RIGHT, LEFT and MID functions allow you to grab a specified number of characters from a specified cell.

Here's how to create a LEFT function.



1. Place your cursor in the cell that should display the results of the function.
2. Select the **Formulas** tab from the Ribbon.
3. Select the arrow next to **Text**.
4. Select **LEFT**.
5. In the **Function Arguments** dialog box, place your cursor in the **Text** field and select the cell to evaluate.
6. In the **Num_chars** field, enter the number of characters to return.



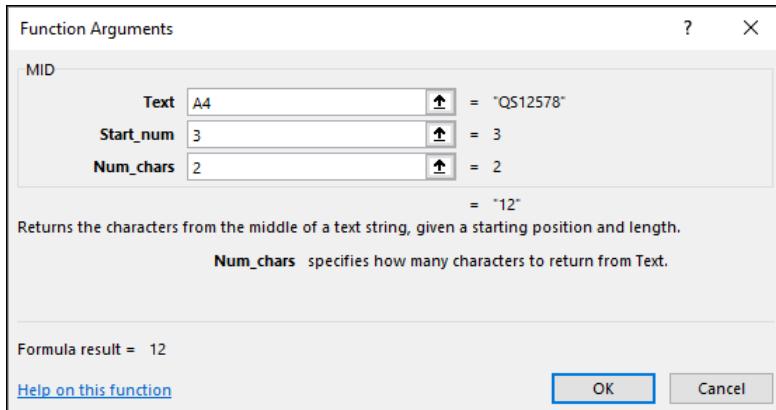
7. Select **OK**.

Inventory						
	Part No.	# In Stock	Unit Price	Total Value	Reorder level	# left to reorder
4	QS12578	26	\$ 248.89		20	QS
5	DSP4543	14	\$ 124.50		10	
6	DS45848	2	\$ 588.00		1	
7	SS12566	18	\$ 224.67		10	
8	SSP2777	12	\$ 118.00		5	
9	QS12585	5	\$ 555.22		5	
10	DS12566	2	\$ 470.99		1	
11	DS12556	8	\$ 430.37		5	
12	KSP4333	4	\$ 585.00		2	
13	QP133	12	\$ 255.23		10	
14	KS36678	3	\$ 685.75		1	
15						

Here's how to create MID function.

1. Place your cursor in the cell that should display the results of the function.
2. Select the **Formulas** tab from the Ribbon.
3. Select the arrow next to **Text**.
4. Select **MID**.
5. In the **Function Arguments** dialog box, place your cursor in the **Text** field and select the cell to evaluate.
6. In the **Start_num** field, enter the number of characters from the left to start extracting the characters.
7. In the **Num_chars** field, enter the number of characters to extract.





8. Select OK.

Inventory						
	Part No.	# In Stock	Unit Price	Total Value	Reorder level	# left to reorder
4	QS12578	26	\$ 248.89		20	12
5	DSP4543	14	\$ 124.50		10	
6	DS45848	2	\$ 588.00		1	
7	SS12566	18	\$ 224.67		10	
8	SSP2777	12	\$ 118.00		5	
9	QS12585	5	\$ 555.22		5	
10	DS12566	2	\$ 470.99		1	
11	DS12556	8	\$ 430.37		5	
12	KSP4333	4	\$ 585.00		2	



Module Five: Review Questions

1. Cell references are highlighted when you double-click on a cell with a formula.
 - a) True
 - b) False
2. Which type of reference includes dollar signs?
 - a) Absolute
 - b) Relative
3. Name three simple calculations you can see on the Status bar when you highlight more than one cell.
4. A formula uses a NAME with arguments.
 - a) True
 - b) False
5. What surrounds the arguments in a function?
 - a) Quotation marks
 - b) Spaces
 - c) Commas
 - d) Parenthesis
6. Name three functions that appear on the Home tab of the Ribbon.

7. Explain the shortcut for entering functions.

8. Which of the following is NOT a category on the Function Library group of the Formulas tab?
 - a) Names
 - b) Date & Time
 - c) Text
 - d) Logical
9. Which of the following is not an argument for the IF function?
 1. Logical_test
 2. Value_if_true
 3. Value_if_false
 4. Range



10. You can include text that does not appear in any cells as part of a CONCAT function.

- a) True
- b) False



The wisest mind has something yet to learn.

George Santayana

Module Six: Use Quick Analysis, Charts and Objects

Quick Analysis includes a number of formatting, charts, and totals shortcuts to help you visualize your data. Recommended Charts are another way of quickly visualizing your information. This module looks at these shortcuts, as well as creating and formatting your own charts and using and formatting other types of objects.

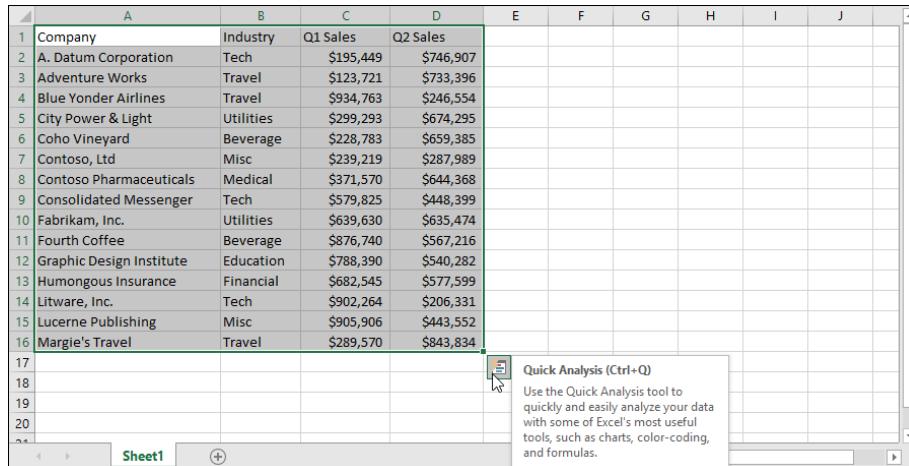
Analyze Data with Quick Analysis

Format with Quick Analysis

The Quick Analysis tool that shows when you have a range of rows and columns selected includes some quick conditional formatting options.

Here's how to apply Quick Analysis formatting.

1. Select the data to format in the sample worksheet.
2. Select the icon that appears at the bottom right of the table.



A screenshot of a Microsoft Excel spreadsheet titled "Sheet1". The data is organized into four columns: Company (A), Industry (B), Q1 Sales (C), and Q2 Sales (D). The rows contain 16 entries from A. Datum Corporation to Margie's Travel. The "Q1 Sales" column (C) contains numerical values like \$195,449 and \$746,907. The "Q2 Sales" column (D) contains values like \$733,396 and \$659,385. At the bottom right of the selected data range, a small green square icon with a white arrow is visible, which is the Quick Analysis tool button. A tooltip window titled "Quick Analysis (Ctrl+Q)" is displayed, providing instructions: "Use the Quick Analysis tool to quickly and easily analyze your data with some of Excel's most useful tools, such as charts, color-coding, and formulas." The Excel ribbon and standard toolbar are visible at the top and bottom of the interface.

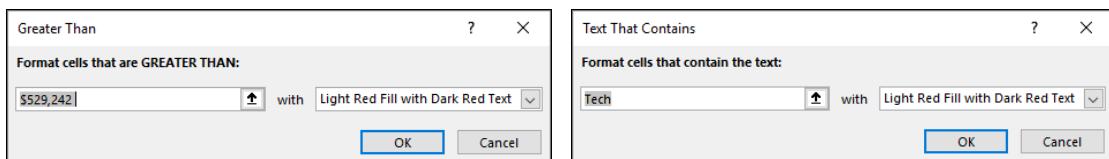
A	B	C	D	E	F	G	H	I	J
1 Company	Industry	Q1 Sales	Q2 Sales						
2 A. Datum Corporation	Tech	\$195,449	\$746,907						
3 Adventure Works	Travel	\$123,721	\$733,396						
4 Blue Yonder Airlines	Travel	\$934,763	\$246,554						
5 City Power & Light	Utilities	\$299,293	\$674,295						
6 Coho Vineyard	Beverage	\$228,783	\$659,385						
7 Contoso, Ltd	Misc	\$239,219	\$287,989						
8 Contoso Pharmaceuticals	Medical	\$371,570	\$644,368						
9 Consolidated Messenger	Tech	\$579,825	\$448,399						
10 Fabrikam, Inc.	Utilities	\$639,630	\$635,474						
11 Fourth Coffee	Beverage	\$876,740	\$567,216						
12 Graphic Design Institute	Education	\$788,390	\$540,282						
13 Humongous Insurance	Financial	\$682,545	\$577,599						
14 Litware, Inc.	Tech	\$902,264	\$206,331						
15 Lucerne Publishing	Misc	\$905,906	\$443,552						
16 Margie's Travel	Travel	\$289,570	\$843,834						
17									
18									
19									
20									

3. Select the formatting type that you want to use.



A	B	C	D	E	F	G	H	I	J
1 Company	Industry	Q1 Sales	Q2 Sales						
2 A. Datum Corporation	Tech	\$195,449	\$746,907						
3 Adventure Works	Travel	\$123,721	\$733,396						
4 Blue Yonder Airlines	Travel	\$934,763	\$246,554						
5 City Power & Light	Utilities	\$299,293	\$674,295						
6 Coho Vineyard	Beverage	\$228,783	\$659,385						
7 Contoso, Ltd	Misc	\$239,219	\$287,989						
8 Contoso Pharmaceuticals	Medical	\$371,570	\$644,368						
9 Consolidated Messenger	Tech	\$579,825	\$448,399						
10 Fabrikam, Inc.	Utilities	\$639,630	\$635,474						
11 Fourth Coffee	Beverage	\$876,740	\$567,216						
12 Graphic Design Institute	Education	\$788,390	\$540,282						
13 Humongous Insurance	Financial	\$682,545	\$577,599						
14 Litware, Inc.	Tech	\$902,264	\$206,331						
15 Lucerne Publishing	Misc	\$905,906	\$443,552						
16 Margie's Travel	Travel	\$289,570	\$843,834						

4. For the **GREATER THAN** option (and some other types of options), enter the cell that contains the value to which you want to compare the others or the actual value or text. Also select the formatting you want to use from the drop down list.



To remove any formatting you have applied, select **CLEAR**.

Create Charts with Quick Analysis

Quick Analysis can also help you create recommended charts to help you visualize the information.

Here's how to create Quick Analysis charts.

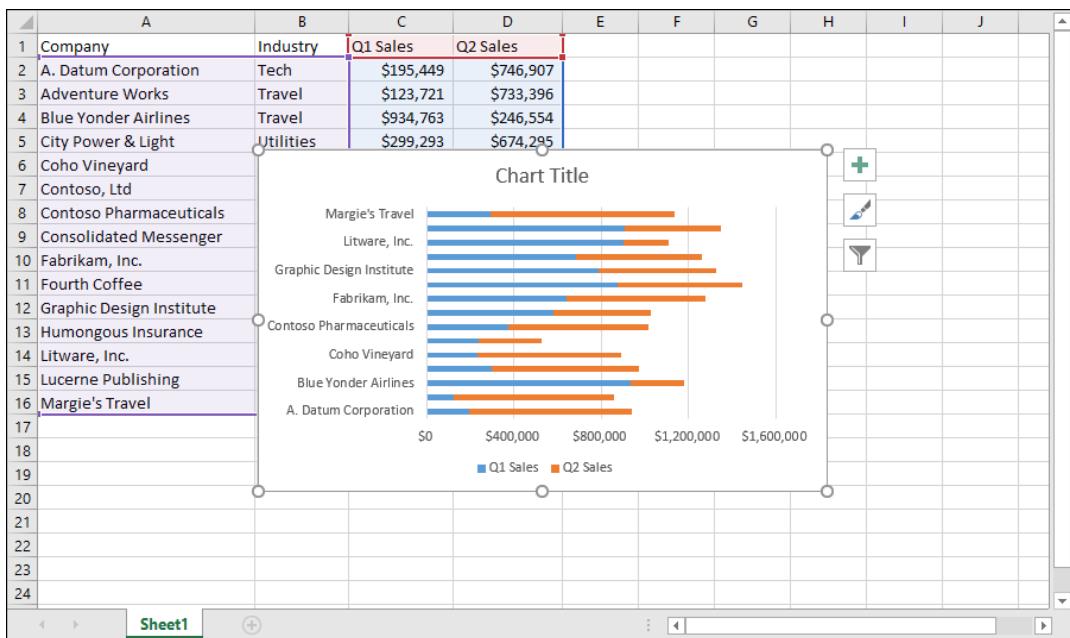
1. Select the data to include in the chart.
2. Select the icon that appears at the bottom right of the table.
3. Select **CHARTS**.
4. Select the chart type that you want to use.



A screenshot of a Microsoft Excel spreadsheet titled 'Sheet1'. The data is organized into columns: Company (A), Industry (B), Q1 Sales (C), and Q2 Sales (D). The 'Charts' tab of the Quick Analysis ribbon is selected, showing options for different chart types such as Clustered Bar, Stacked Bar, and More... A message at the bottom of the ribbon says 'Recommended Charts help you visualize data.'

A	B	C	D	E	F	G	H	I	J
1 Company	Industry	Q1 Sales	Q2 Sales						
2 A. Datum Corporation	Tech	\$195,449	\$746,907						
3 Adventure Works	Travel	\$123,721	\$733,396						
4 Blue Yonder Airlines	Travel	\$934,763	\$246,554						
5 City Power & Light	Utilities	\$299,293	\$674,295						
6 Coho Vineyard	Beverage	\$228,783	\$659,385						
7 Contoso, Ltd	Misc	\$239,219	\$287,989						
8 Contoso Pharmaceuticals	Medical	\$371,570	\$644,368						
9 Consolidated Messenger	Tech	\$579,825	\$448,399						
10 Fabrikam, Inc.	Utilities	\$639,630	\$635,474						
11 Fourth Coffee	Beverage	\$876,740	\$567,216						
12 Graphic Design Institute	Education	\$788,390	\$540,282						
13 Humongous Insurance	Financial	\$682,545	\$577,599						
14 Litware, Inc.	Tech	\$902,264	\$206,331						
15 Lucerne Publishing	Misc	\$905,906	\$443,552						
16 Margie's Travel	Travel	\$289,570	\$843,834						

The chart is inserted into your worksheet.



Calculate Totals with Quick Analysis

Calculate totals in a variety of ways with the Quick Analysis tool.

Here's how to create Quick Analysis totals. Use the following procedure.

1. Select the data to total in the sample worksheet.
2. Select the icon that appears at the bottom right of the table.
3. Select **TOTALS**.



A	B	C	D	E	F	G	H	I	J
1 Company	Industry	Q1 Sales	Q2 Sales						
2 A. Datum Corporation	Tech	\$195,449	\$746,907						
3 Adventure Works	Travel	\$123,721	\$733,396						
4 Blue Yonder Airlines	Travel	\$934,763	\$246,554						
5 City Power & Light	Utilities	\$299,293	\$674,295						
6 Coho Vineyard	Beverage	\$228,783	\$659,385						
7 Contoso, Ltd	Misc	\$239,219	\$287,989						
8 Contoso Pharmaceuticals	Medical	\$371,570	\$644,368						
9 Consolidated Messenger	Tech	\$579,825	\$448,399						
10 Fabrikam, Inc.	Utilities	\$639,630	\$635,474						
11 Fourth Coffee	Beverage	\$876,740	\$567,216						
12 Graphic Design Institute	Education	\$788,390	\$540,282						
13 Humongous Insurance	Financial	\$682,545	\$577,599						
14 Litware, Inc.	Tech	\$902,264	\$206,331						
15 Lucerne Publishing	Misc	\$905,906	\$443,552						
16 Margie's Travel	Travel	\$289,570	\$843,834						

Note that there is a right and left arrow to scroll through additional options.

Formatting Charts **Totals** Tables Sparklines

◀ Running... Sum Average Count % Total Running... ▶

Formulas automatically calculate totals for you.

4. Select the formula that you want to use.

The type of total you selected is inserted into your worksheet.

A	B	C	D	E	F	G	H	I	J
1 Company	Industry	Q1 Sales	Q2 Sales	Sum					
2 A. Datum Corporation	Tech	\$195,449	\$746,907	942356					
3 Adventure Works	Travel	\$123,721	\$733,396	857117					
4 Blue Yonder Airlines	Travel	\$934,763	\$246,554	1181317					
5 City Power & Light	Utilities	\$299,293	\$674,295	973588					
6 Coho Vineyard	Beverage	\$228,783	\$659,385	888168					
7 Contoso, Ltd	Misc	\$239,219	\$287,989	527208					
8 Contoso Pharmaceuticals	Medical	\$371,570	\$644,368	1015938					
9 Consolidated Messenger	Tech	\$579,825	\$448,399	1028224					
10 Fabrikam, Inc.	Utilities	\$639,630	\$635,474	1275104					
11 Fourth Coffee	Beverage	\$876,740	\$567,216	1443956					
12 Graphic Design Institute	Education	\$788,390	\$540,282	1328672					
13 Humongous Insurance	Financial	\$682,545	\$577,599	1260144					
14 Litware, Inc.	Tech	\$902,264	\$206,331	1108595					
15 Lucerne Publishing	Misc	\$905,906	\$443,552	1349458					
16 Margie's Travel	Travel	\$289,570	\$843,834	1133404					

Create Charts

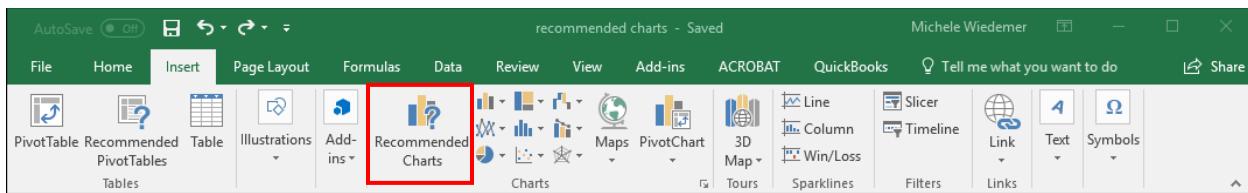


Use Recommended Charts

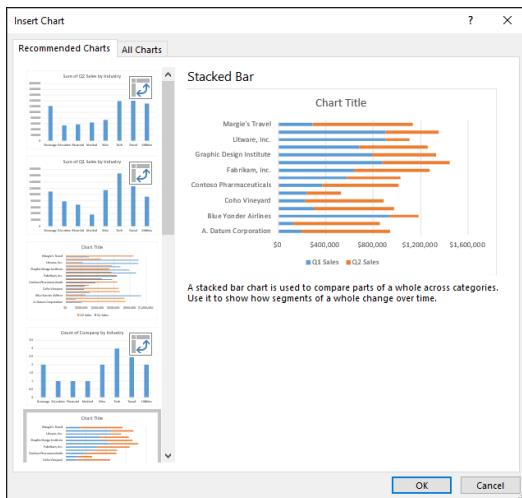
Excel can evaluate selected data and make recommendations on charts that would best showcase that information.

Here's how to insert a recommended chart.

1. Select the data that you want to use in your chart.
2. Select the **INSERT** tab from the Ribbon.
3. Select **RECOMMENDED CHARTS**.

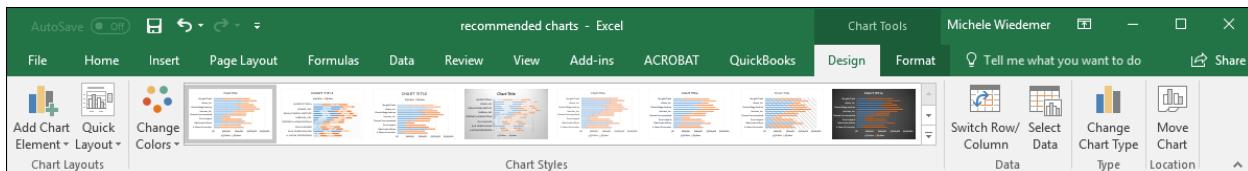


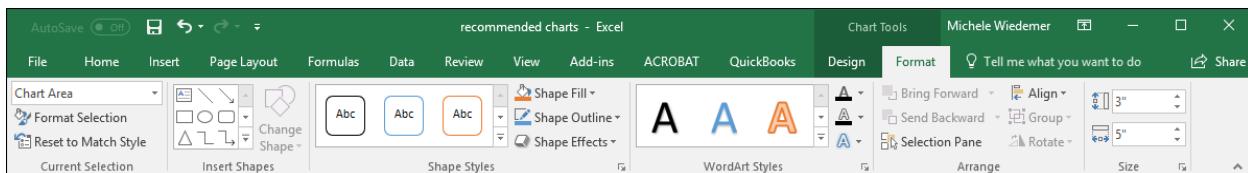
4. In the *Insert Chart* dialog box, the Recommended Charts tab shows several charts that Excel recommended for the type of data you have selected. As you select each option on the left side of the dialog box, the right side shows a preview.



5. When you find a chart that you want to use, select it in the list and select **OK**.

Excel displays the chart on the same worksheet. It also displays two new context-sensitive tabs: the **Chart Tools Design** tab and the **Chart Tools Format** tab.



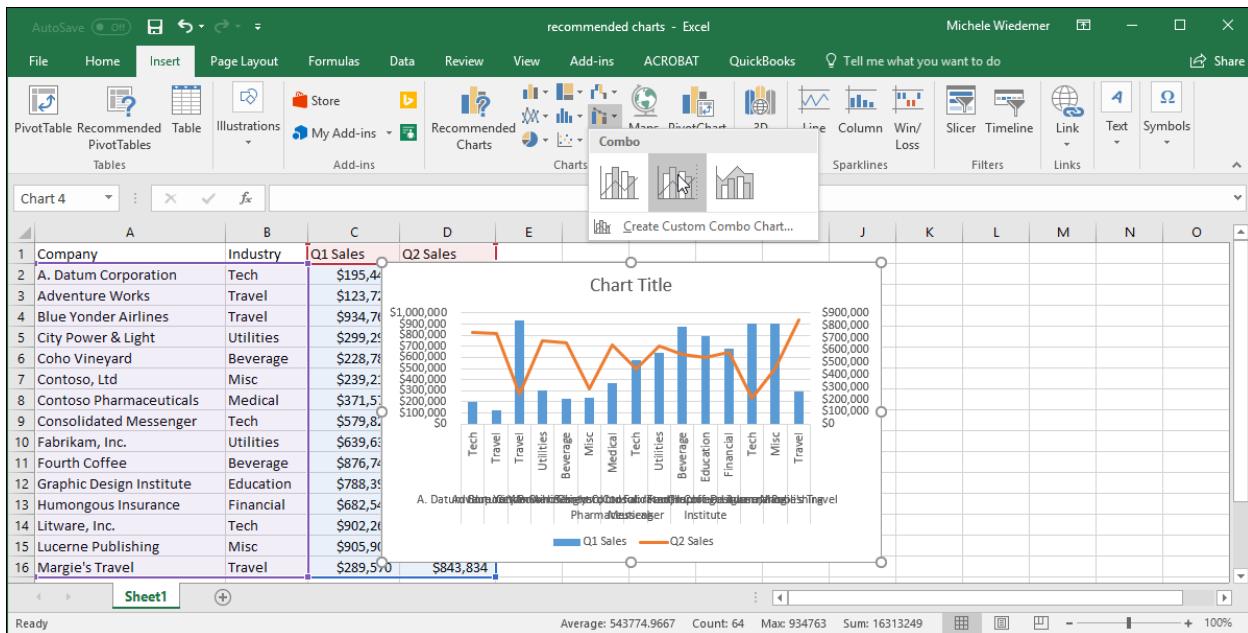


Create a New Chart

You can also insert any type of chart using selected data.

Show participants how to insert a chart.

1. Select the cells, including the labels to include in the chart.
2. Select the **Insert** tab from the Ribbon.
3. Select the type of chart you would like to use.



Excel displays the chart.

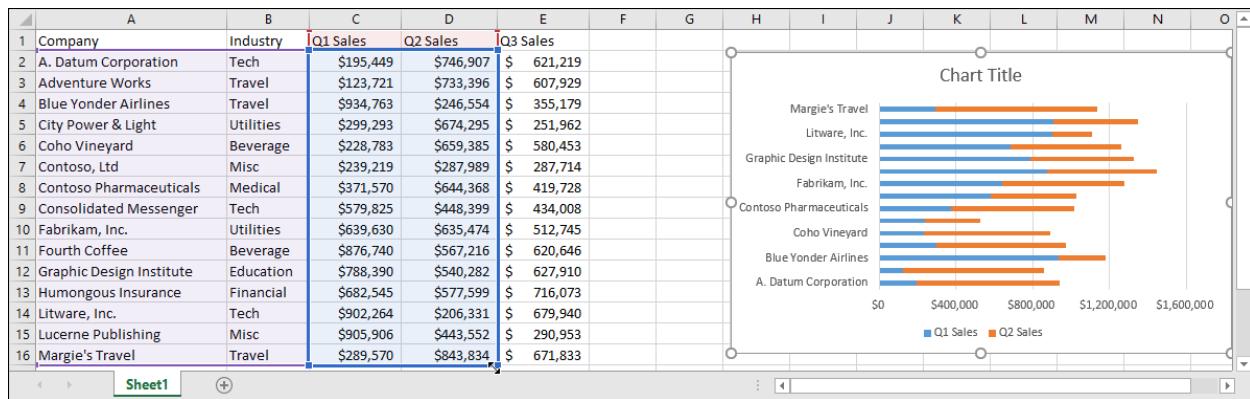
Add Additional Data Series

If you later add new data to your worksheet, you can include it in your chart.

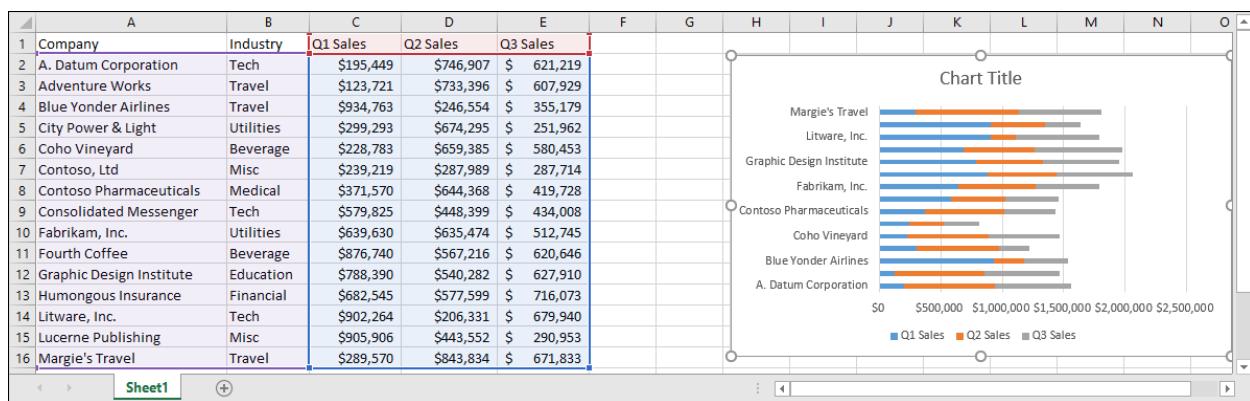
Here's how to include additional data in a chart.

1. Select the chart.
2. When you hover your mouse over the bottom right corner of the highlighted source, your cursor changes to a diagonal with arrows.





3. Drag the “handles” around the highlighted area to include the additional data.



The chart is automatically updated with the new data series.

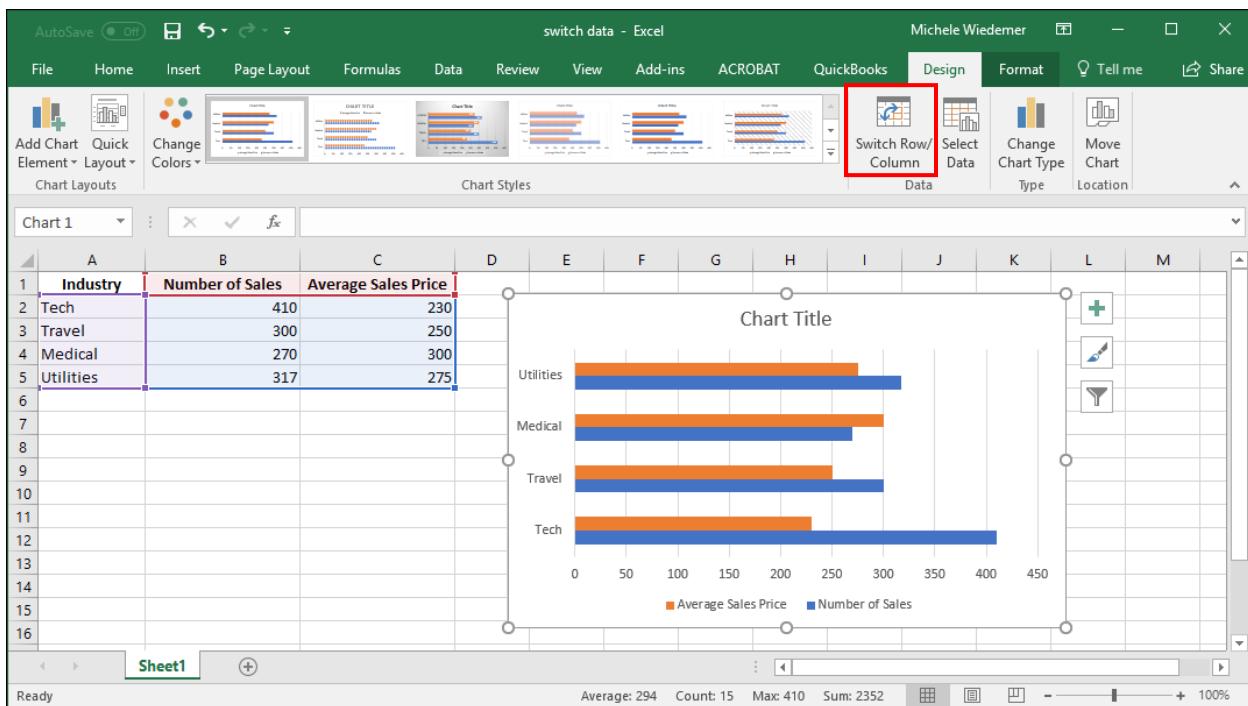
Switch Between Rows and Columns in Source Data

Excel determines how to plot your selected data into your selected chart based on the number of worksheet rows and columns. The larger number goes on the horizontal axis of the chart.

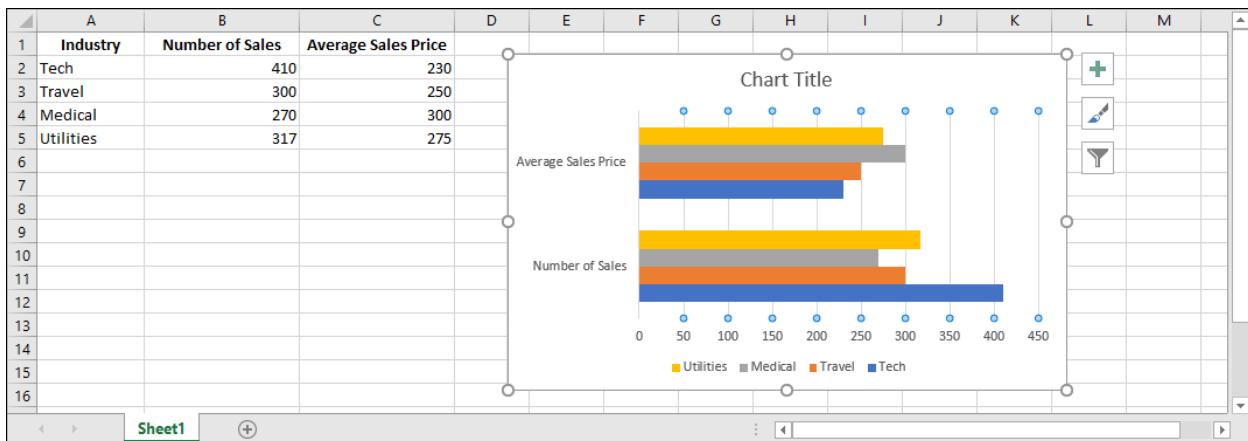
Here's how to switch rows and columns for a chart.

1. Select the chart.
2. Select the **Chart Tools Design** tab from the Ribbon.
3. Select **Switch Row/Column**.





Excel immediately updates the chart.



Format Charts

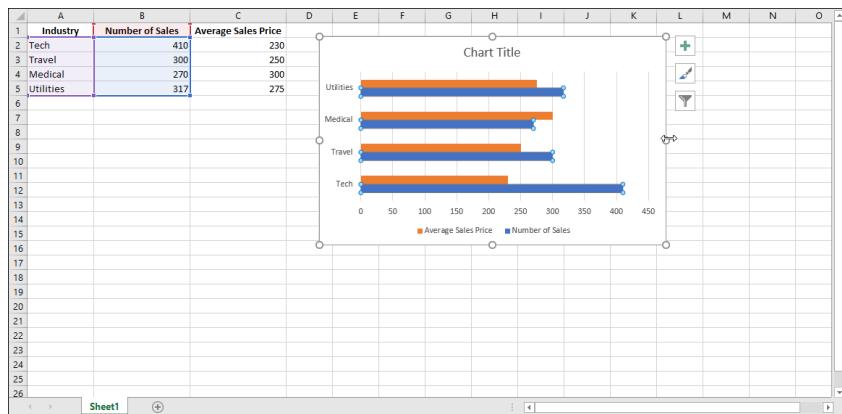
Resize Charts

Charts have “handles” around the edges when you select it. These handles help you resize the chart.

Show participants how to resize a chart.

1. Select the chart you want to resize.
2. Click one of the handles. The cursor changes to a line with arrows pointing in the direction of resizing.





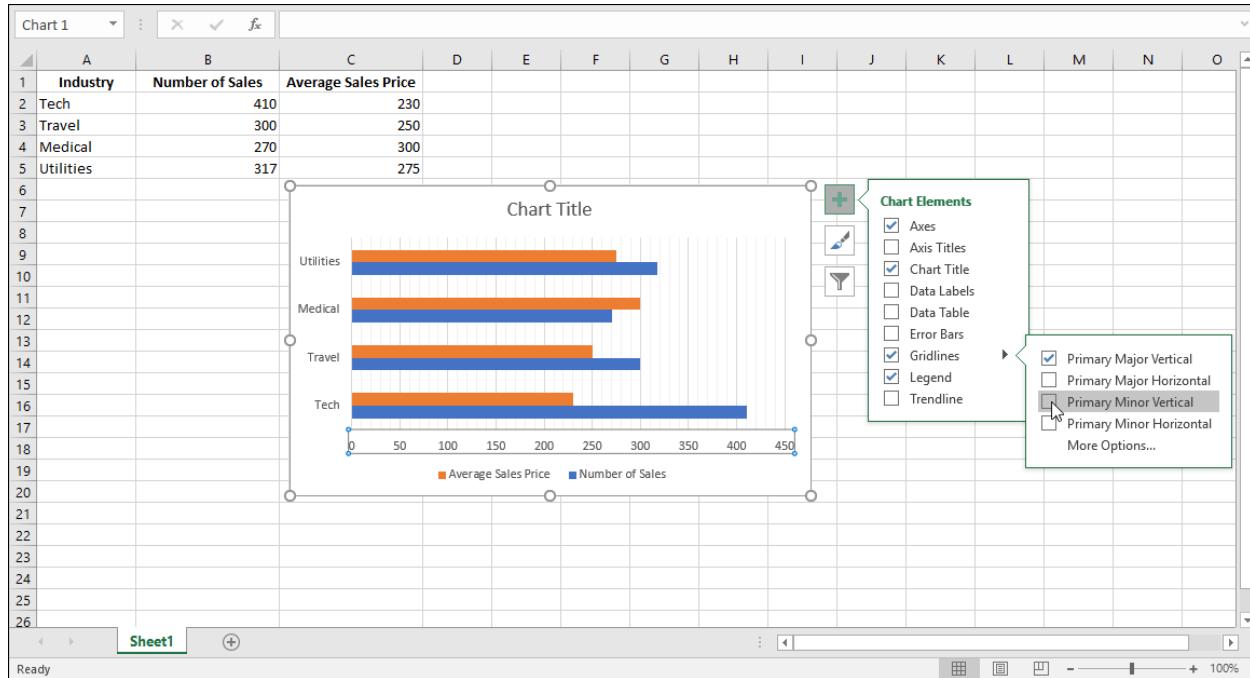
- Drag the handle and release the mouse when the chart is the desired size.

Add and Modify Chart Elements

A standard chart includes many different elements which can be included or removed and formatted.

Here's how to add a chart element.

- Select the + sign on the right side of your chart.
- Check the box of the element you want to add. (Or clear the box for the element you want to remove).
- Many of the elements include a small arrow to the right of the option. Click the arrow to apply additional options.

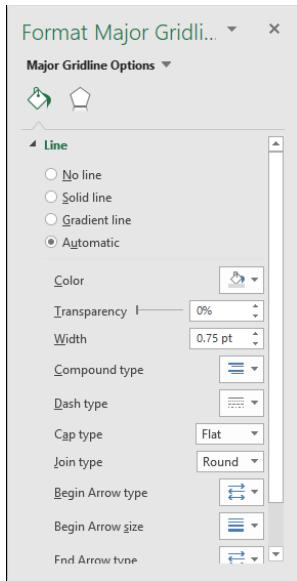


Here's how to access the additional formatting options for one or more elements.

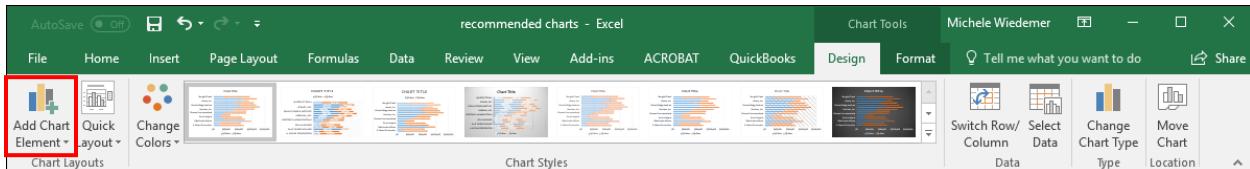
- Select **MORE OPTIONS** from the Chart Elements detail list.

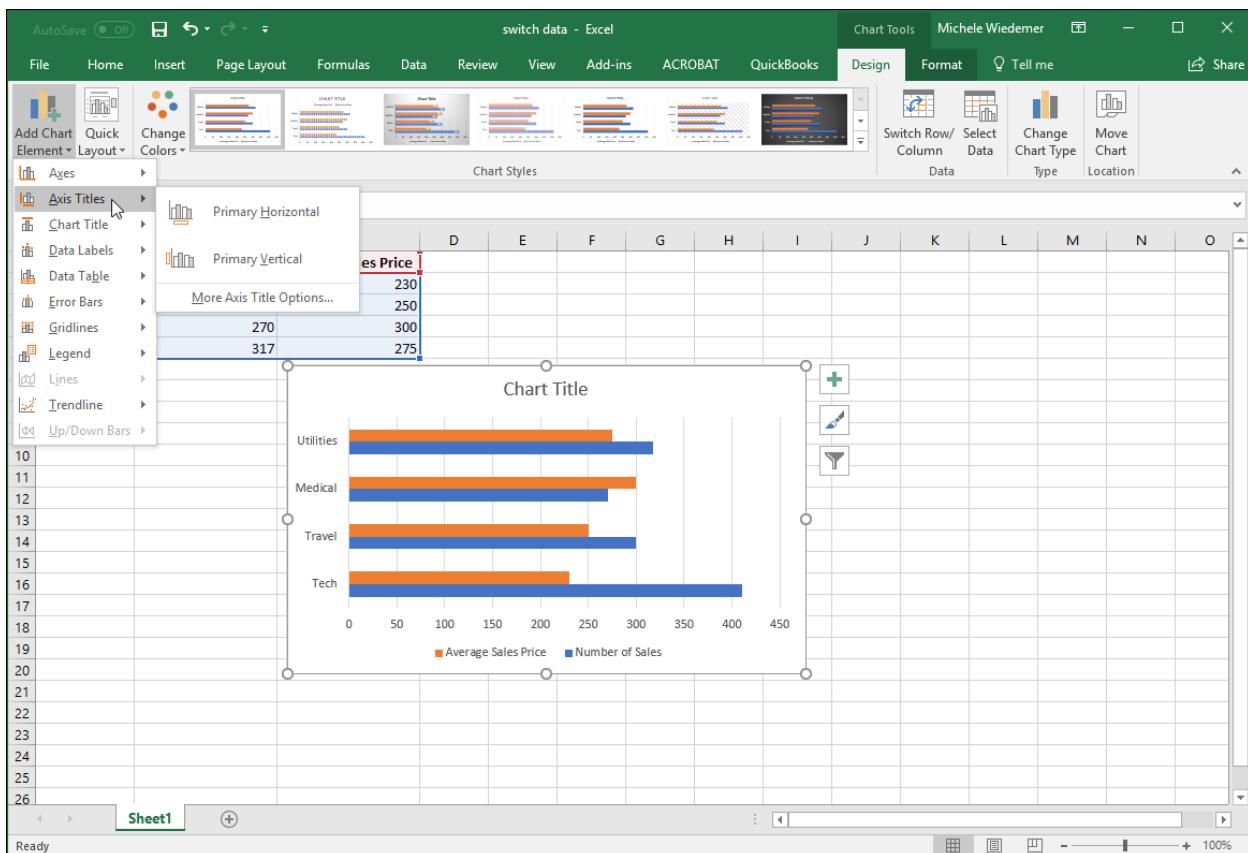


2. The **Format** pane opens for the selected element. Note that this formatting pane looks different, depending on which element you selected.



You can also add chart elements by selecting the **Chart Tools Design** tab on the Ribbon and using the **Add Chart Element** tool. The tool includes the same elements with options for each element. Hover the mouse over an option to see a preview of that chart element.





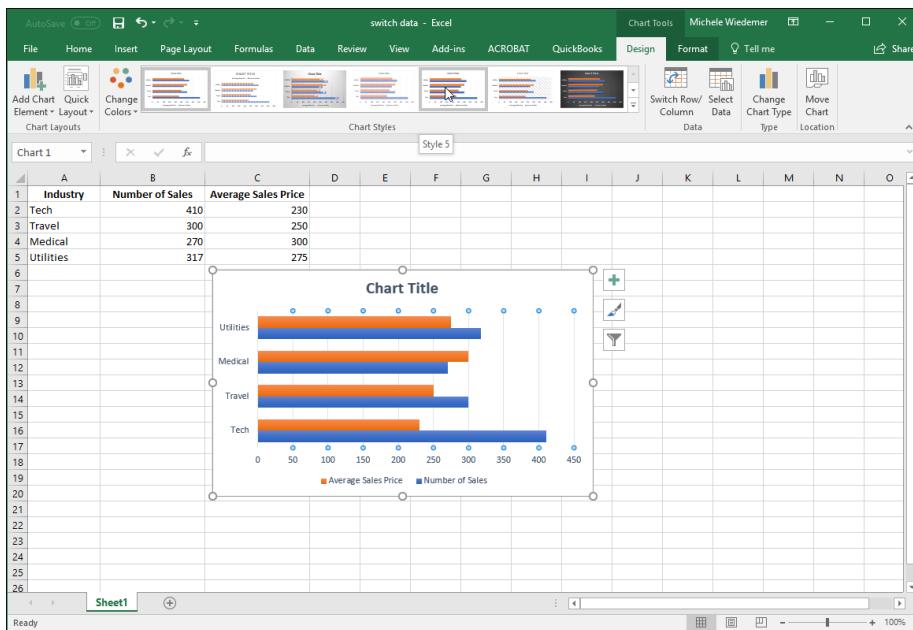
Apply Chart Styles and Layouts

The **Chart Tools Design** tab on the Ribbon includes a gallery of **Styles**, **Layouts** and **Colors** to quickly change how your chart appears.

Here's how to select a new chart style.

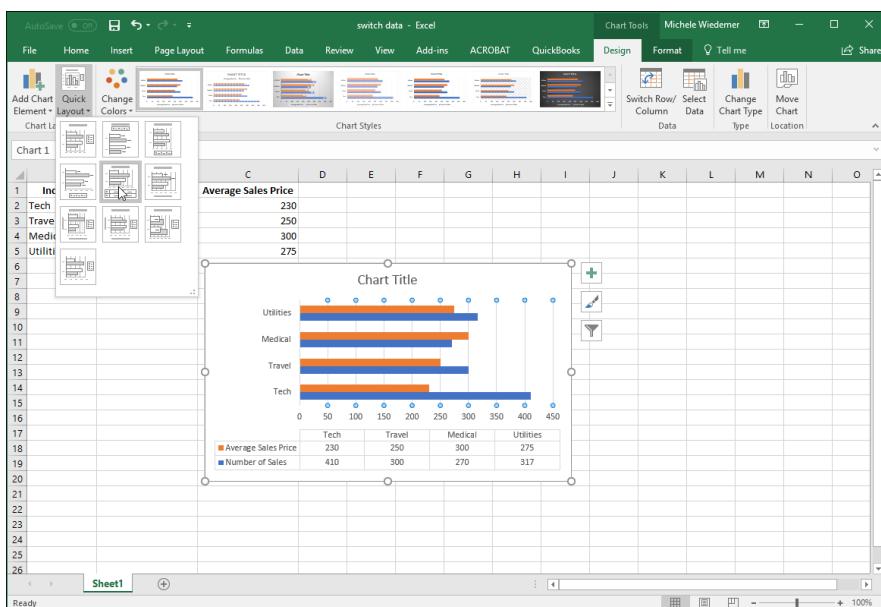
1. Select the chart you want to format.
2. Select the **Chart Tools Design** tab on the Ribbon.
3. Select the desired chart style to apply it.





Show participants how to select a new chart layout.

1. Select the chart you want to format.
2. Select the **Chart Tools Design** tab on the Ribbon.
3. Select **Quick Layout**.
4. Select the new layout.

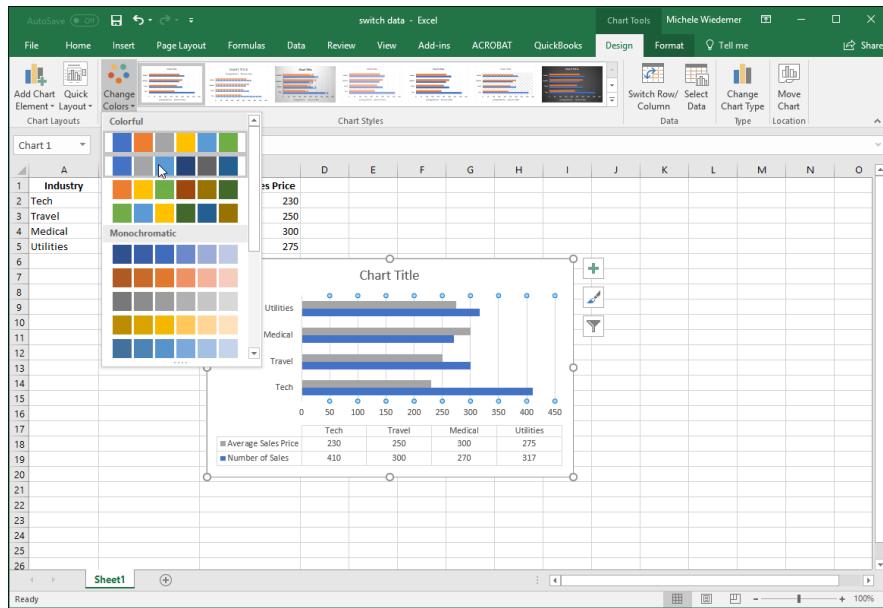


Here's how to change the chart colors.

1. Select the chart you want to format.
2. Select the **Chart Tools Design** tab on the Ribbon.
3. Select **Change Colors**.



4. Select the new color scheme.

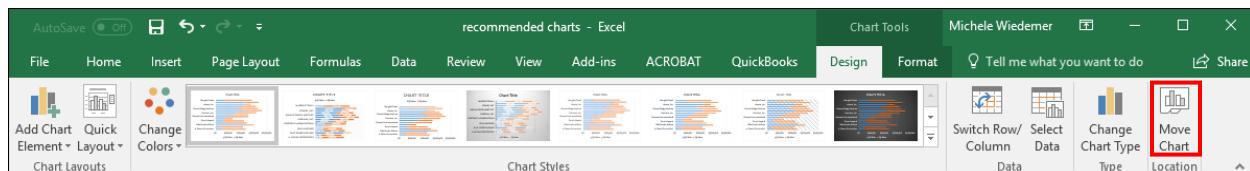


Move Charts to a Chart Sheet

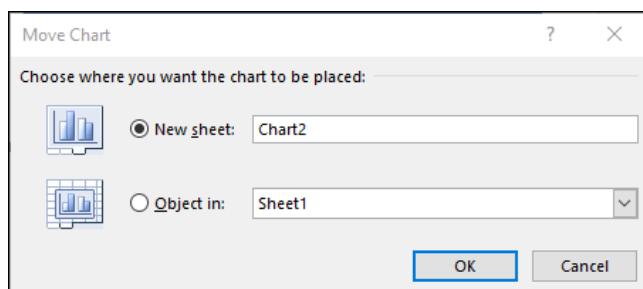
You can move your chart to a separate worksheet in the workbook called a Chart Sheet.

Here's how to move the chart to a new worksheet in the workbook.

1. Select the chart.
2. Select the **Chart Tools Design** tab.
3. Select the **Move Chart** tool.



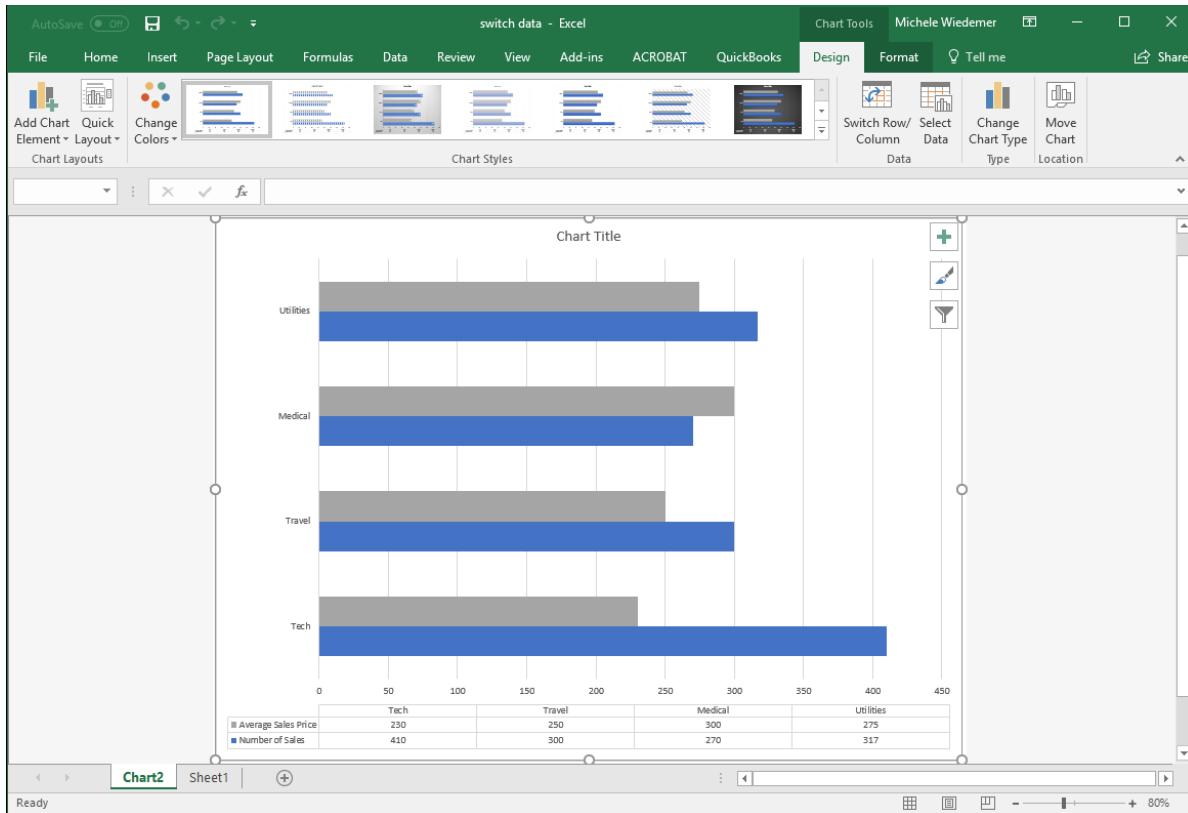
Excel displays the **Move Chart** dialog box.



4. Select **New Sheet**.
5. Give the new worksheet a new name, if desired.
6. Select **OK**.



Excel creates a new worksheet in the workbook (notice the tabs at the bottom). The chart has also been resized to fill the window.

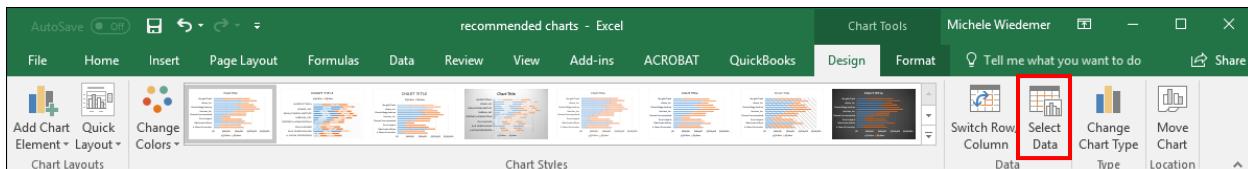


Add Data to Chart on a Chart Sheet

The process for adding a new data series to a chart on a chart sheet is different than we previously covered.

Here's how to include additional data in a chart.

1. With the chart sheet active, select the **Chart Tools Design** tab from the Ribbon.
2. Select the **Select Data** tool.

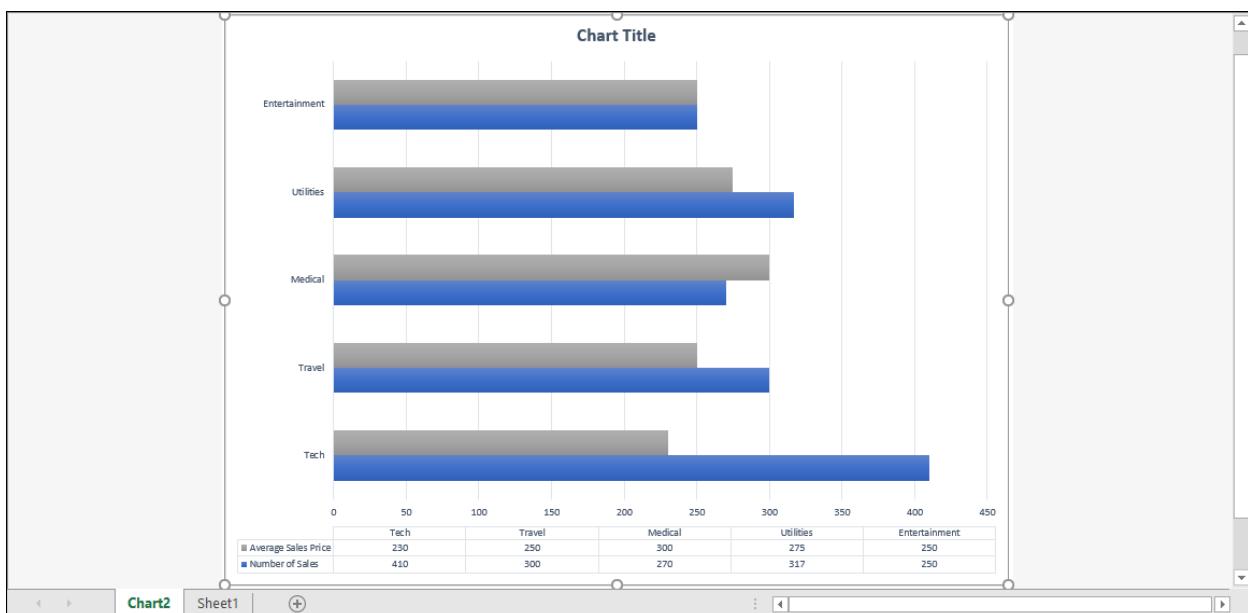


3. Place your cursor in the **Chart data range** field of the **Select Data Source** dialog box.
4. Switch to the worksheet that has the source data by clicking its tab at the bottom of the window.



The screenshot shows an Excel spreadsheet titled "switch data - Excel". The ribbon tabs are File, Home, Insert, Page Layout, Formulas, Data, Review, View, Add-ins, ACROBAT, QuickBooks, Chart Tools (Design, Format), Michele Wiedemer, and Share. The Design tab is selected. A chart is being created based on data in columns A, B, and C. The "Chart data range" is set to =Sheet1!\$A\$1:\$C\$6. The "Legend Entries (Series)" list includes "Number of Sales" and "Average Sales Price". The "Horizontal (Category) Axis Labels" list includes "Tech", "Travel", "Medical", "Utilities", and "Entertainment". The "OK" button is highlighted.

5. Select the cell range that you want to include in the chart. It will be outlined with a dotted green line. The **Chart data range** contents will include the sheet in the absolute cell reference.
6. Select **OK**.
7. The additional data is added to the chart.



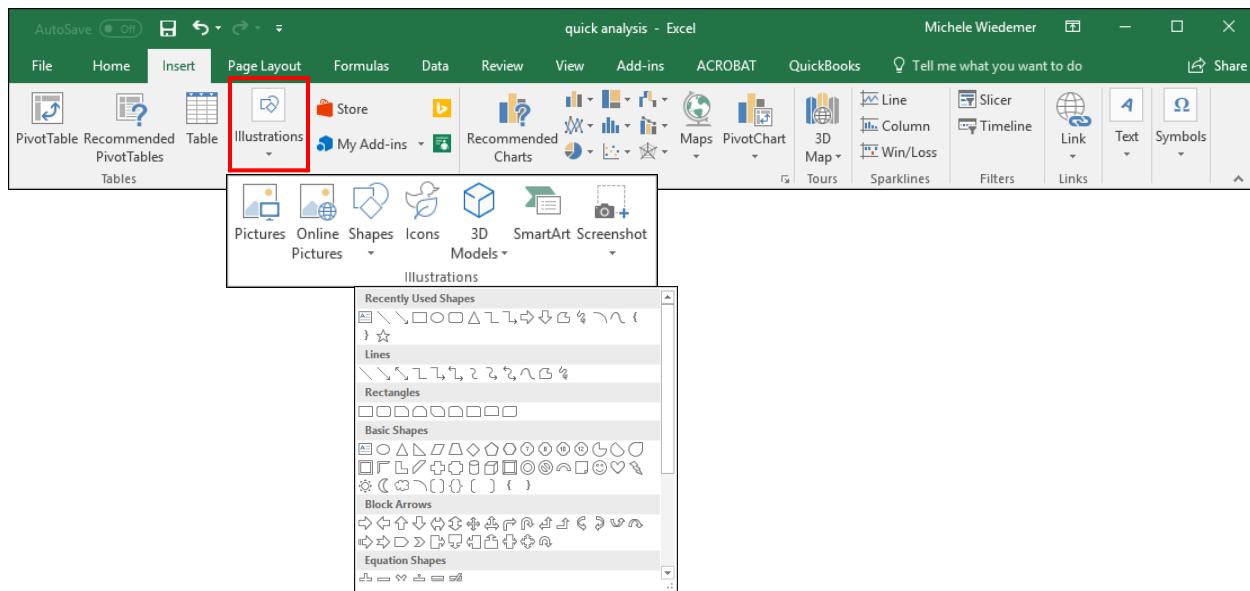
Insert and Format Objects

Insert Shapes

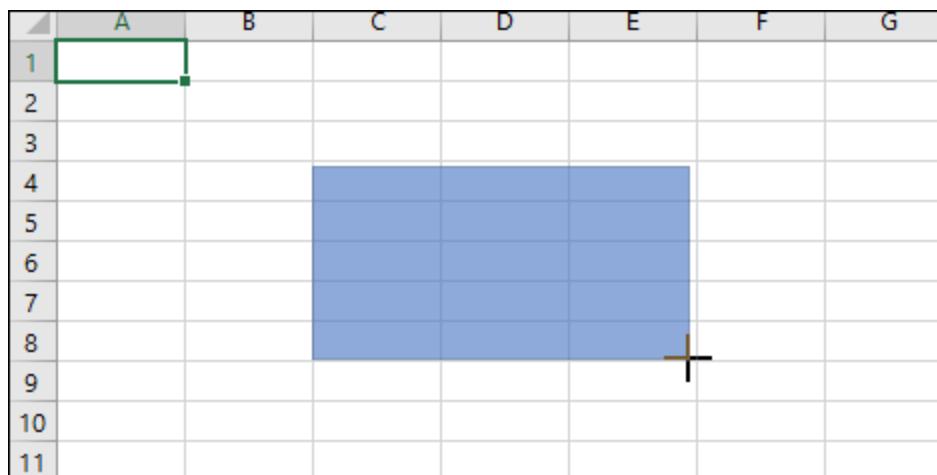
You can enhance your worksheets with shapes.

Here's how to insert shapes.

1. Select the **INSERT** tab from the Ribbon.
2. Select **Illustrations**.
3. Select **SHAPES**.



4. Select the shape you want to use.
5. Hold down the mouse button from the location in the worksheet where you want to place the top left of the shape. Drag down and to the right until the shape is the desired size.

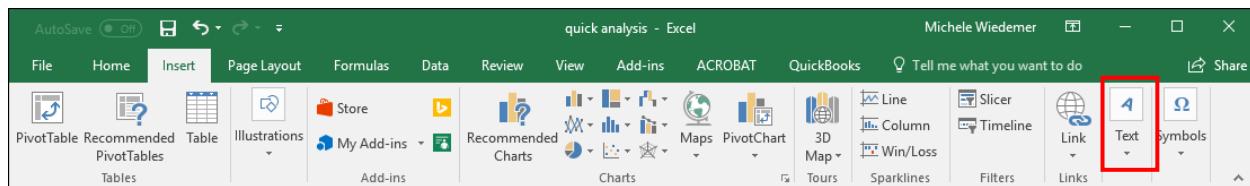


Insert Text Boxes

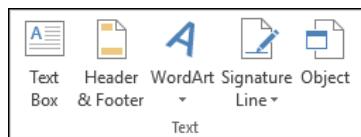
Text boxes give you the freedom to enter text anywhere on the worksheet. You simply draw the text box wherever you want it and enter the desired text.

Here's how to insert a text box.

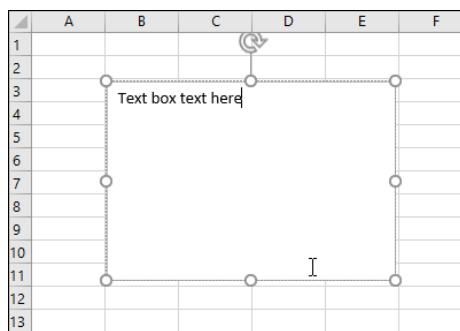
1. Place your cursor where you want the text box to appear in the presentation.
2. Select the **INSERT** tab from the Ribbon.
3. Select the **Text** group.



4. Select **TEXT BOX**.



5. Hold down the mouse button from the location in the worksheet where you want to place the top left of the shape. Drag down and to the right until the shape is the desired size.
6. Enter your text.



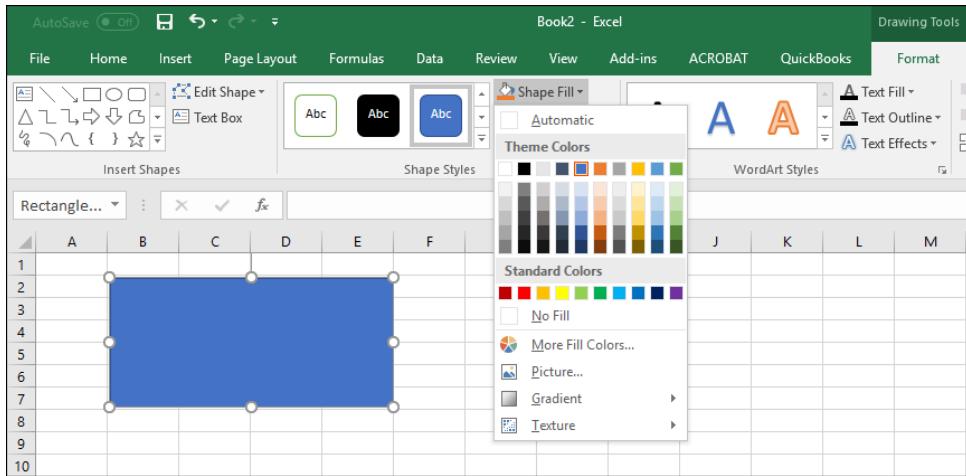
Format Shapes and Text Boxes

Shapes, including text boxes, can be formatted with fill, outline, and effects.

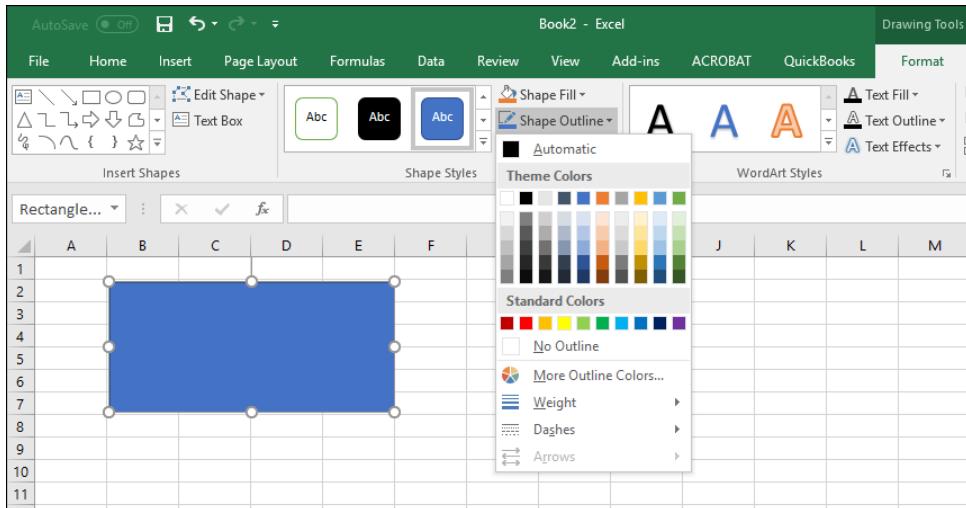
Here's how to format a shape.

1. Select the shape.
2. Select the **DRAWING TOOLS FORMAT** tab on the Ribbon.
3. Select **SHAPE FILL** to select a color, picture, gradient or texture to use inside the shape.

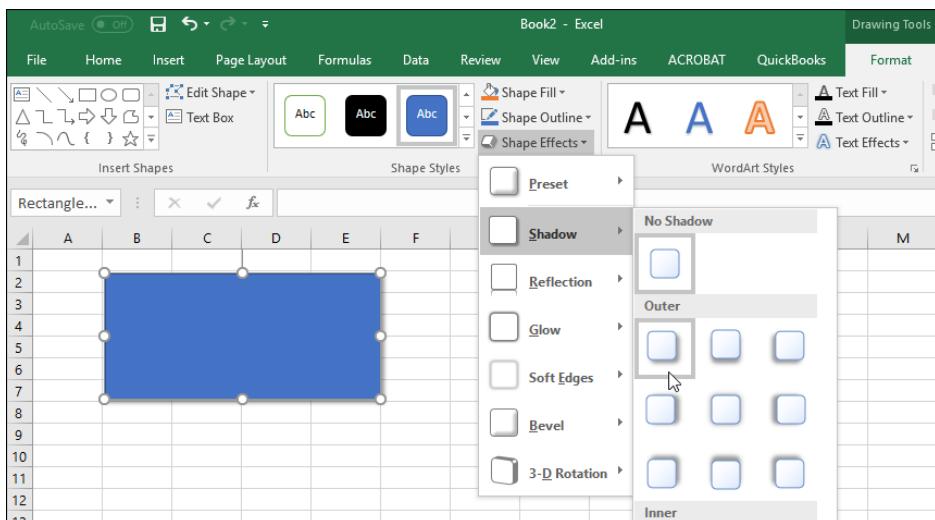




4. Select **SHAPE OUTLINE** to select a color, weight, line style, and in some cases, arrows to use for the shape outline.



5. Select **SHAPE EFFECTS** to apply additional affects to the shape.

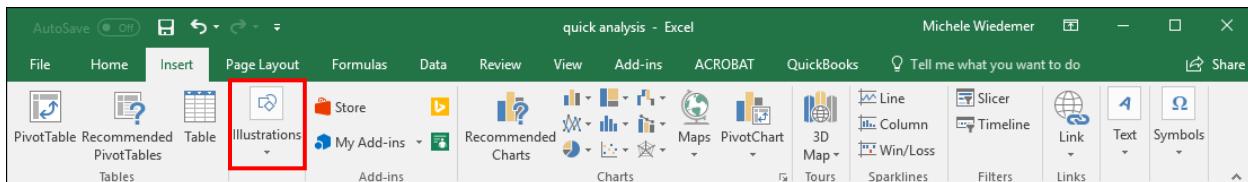


Insert Pictures

You can insert any picture file from your computer or other media drive.

Here's how to insert a picture.

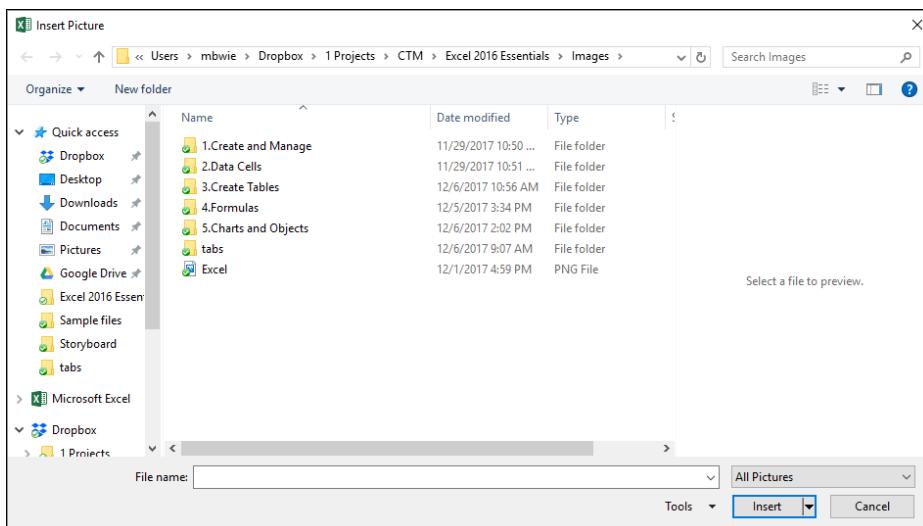
1. Place your cursor in the cell where you want the picture located. The picture will not increase the cell size, but will serve as an anchor for where the picture is located on the worksheet.
2. Select the **Insert** tab from the Ribbon.
3. Select **Illustrations**.



4. Select **Pictures**.

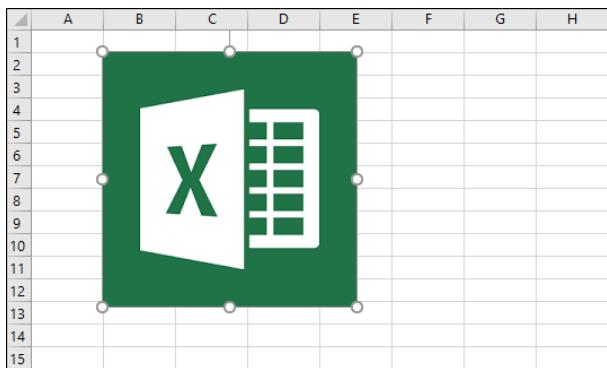


5. Navigate to the location of the file and highlight the file you want to insert.



6. Select **Insert**.



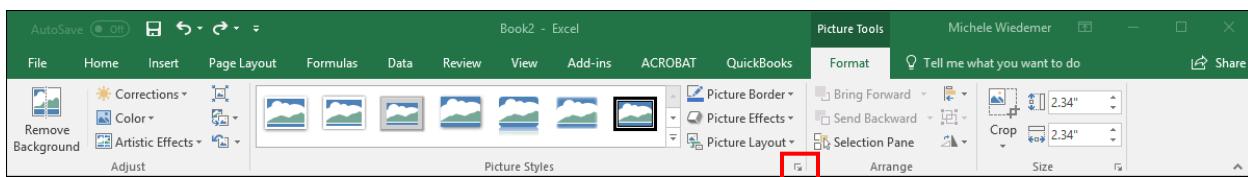


Add Alternative Text

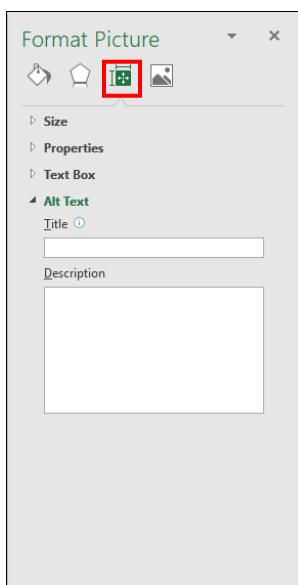
Alt Text provides additional information to make your worksheet more accessible to those with disabilities. Alt text includes a title and description for graphical elements for visually impaired users who use screen readers to read a document.

Here's how to add alternative text to objects for accessibility.

1. Select the picture or shape for which you want to provide Alt text.
2. Select the **PICTURE TOOLS** or **DRAWING TOOLS FORMAT** tab on the Ribbon (depending on whether you have selected a picture or another object).
3. Select the small square at the bottom right of the **PICTURE STYLES** or **SHAPE STYLES** group to open the **FORMAT PICTURE** panel on the right.



4. Select the **SIZE & PROPERTIES** icon.



5. Select **ALT TEXT**.
6. Enter the **TITLE** for the Alt Text.
7. Enter the **DESCRIPTION** for the Alt Text.



Module Six: Review Questions

1. What are at least three of the five tabs of the Quick Analysis icon?

2. The contents of the Recommended Charts options change, depending on what type of data you have selected.
 - a) True
 - b) False

3. You must insert a chart before you can see what it will look like with your data.
 - a) True
 - b) False

4. Which tool allows you to select a new range of data for an existing chart?
 - a) Add Chart Element
 - b) Quick Layout
 - c) Select Data
 - d) None of the above

5. Which of the following allows you to resize a chart?
 - a) “Handles” around the edges and corner
 - b) The + to the right of the chart
 - c) The paintbrush icon to the right of the chart
 - d) None of the above

6. Can you name nine chart elements?

- 7.

8. You can change how the horizontal and vertical axis in a chart display data.
 - a) True
 - b) False

9. Chart styles include which of the following?
 - a) Colors
 - b) Layouts
 - c) Legends
 - d) None of the above

10. What options are available for moving a chart?

11. Shapes, text boxes and images are NOT located within a single cell on a worksheet.
 - a) True
 - b) False



Learning is the beginning of wealth.

Jim Rohn

Module Seven: Wrapping Up

Although this workshop is coming to a close, we hope that your journey to improve your Excel 2016 skills is just beginning. Please take a moment to review and update your action plan. This will be a key tool to guide your progress in the days, weeks, months, and years to come. We wish you the best of luck on the rest of your travels.

Words from the Wise

We'd like to leave you with a few thoughts to accompany you on your Excel 2016 learning journey.

- Plan out your worksheets to make the most efficient use of time and to prepare for how you will use data in charts or tables
- Remember that workbooks can contain multiple worksheets of related information.
- Take advantage of Excel's many shortcuts for working with data, like copying and pasting either values or formulas.
- Use outlines and subtotals to gain insight into your data.
- Put your data into tables to simplify filtering data.
- Remember that Excel will walk you through the necessary arguments when using Functions.
- You can present your data with style using quick analysis, charts, shapes and text boxes.

Completion of Action Plans and Evaluations

Do a quick round robin and ask everyone to share one thing that they learned today. Then, ask participants to make sure their action plans and evaluations are complete.

If possible, ask participants to buddy up and set up a follow-up system, so that they can check up on each other in the coming days, weeks, and months. If appropriate, provide your contact information in case they have any questions.

