

Microsoft Excel Intro



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Introduction to Microsoft Excel 2019

This class is designed to cover the following basics:

- What you can do with Excel
- Excel Ribbon and Ribbon Tabs
- Moving and Selecting Cells
- Formatting Cells
- Adding Worksheets, Rows and Columns
- Resizing Rows and Columns
- Freezing Panes
- Formulas
- Functions
- Sorting
- Charts
- Autofill
- Styles

Microsoft Excel 2019

Excel allows you to create spreadsheets much like paper ledgers that can perform automatic calculations. Each Excel file is a **workbook** that can hold many **worksheets**. The worksheet is a grid of **columns** (designated by letters) and **rows** (designated by numbers). The letters and numbers of the columns and rows (called **labels**) are displayed in gray buttons across the top and left side of the worksheet. The intersection of a column and a row is called a **cell**. Each cell on the spreadsheet has a **cell address** that is the column letter and the row number. Cells can contain text, numbers, or mathematical formulas.

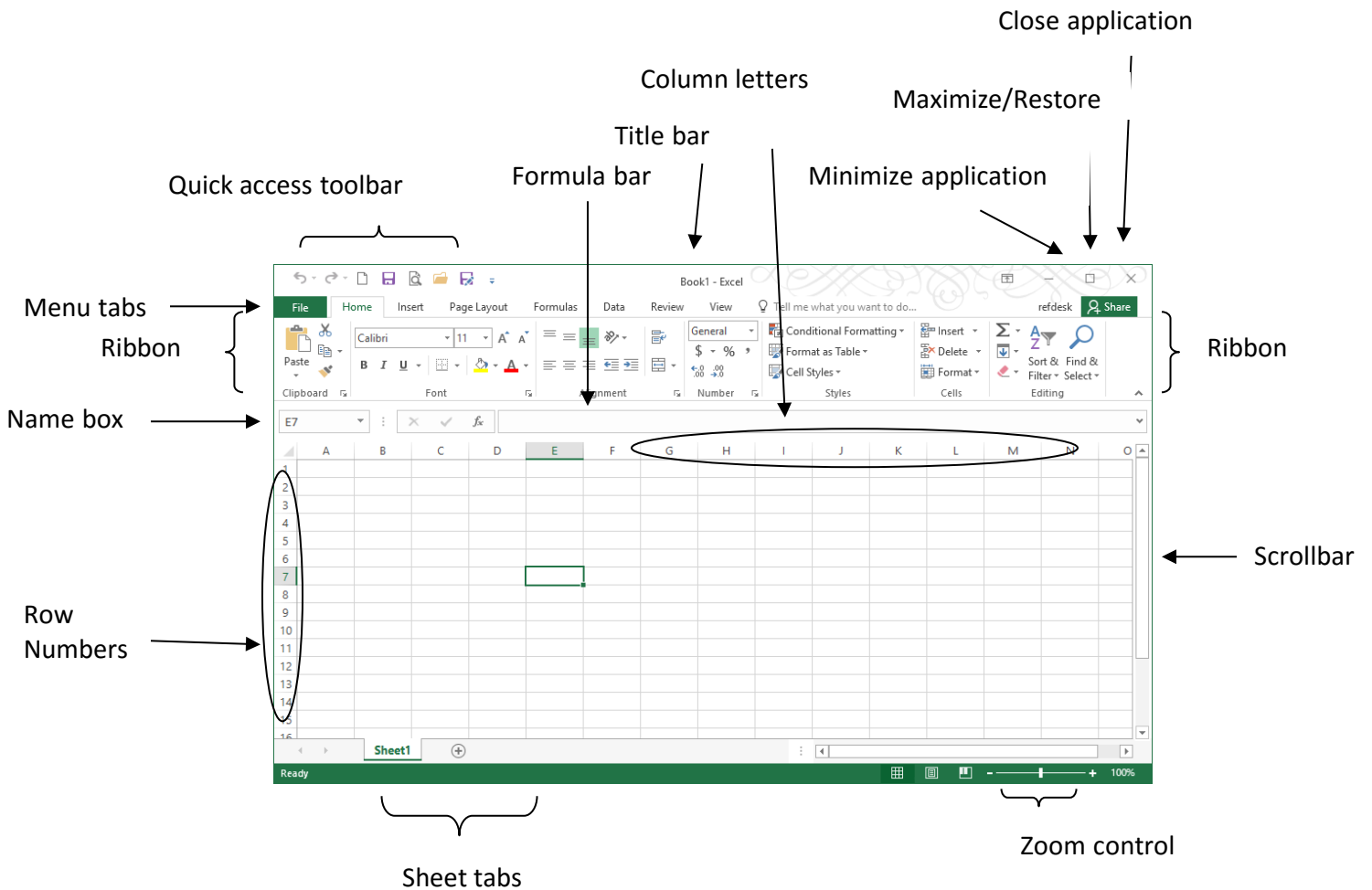
Microsoft Excel 2019 Screen Elements

Excel Ribbon

Traditional menus and toolbars from earlier versions were left behind in the 2010 Microsoft products. They have been replaced with the Ribbon. The Ribbon is the row of tool icons and shortcuts across the top portion of the screen. The Ribbon is arranged into groups of related tools, and you can select different Ribbon Tabs to see different groups of tools and commands. Here's a quick overview of Excel's Ribbon tabs:

- **File:** You can **Save**, **Save As**, **Open**, **Close**, **Print** and create a **New** workbook using this Tab. The File Tab does not look like the rest of the Ribbons you'll see when you click on the row of menu options. Instead, in the File Tab, you see the above options (and more) listed on the left-hand side of the screen. In addition, you can set **Permissions**, set up the file to be **Shared** with others and access **Version Management** in the middle of the screen. You can also look at the **Properties** of the file on the right-hand side of the screen. Microsoft sometimes refers to what you see when you click on the File Tab as the "Backstage View". Again, this is a companion feature to the Ribbon and doesn't look like the other Ribbons.
- **Home:** You'll probably spend most of your time with the **Home** Tab selected. This tab contains the basic **Clipboard** commands, **Formatting** commands, **Style** commands, commands to insert and delete rows or columns, plus an assortment of worksheet **Editing** commands.
- **Insert:** Select this tab when you need to insert something in a worksheet – a table, a diagram, a chart, symbol, and so on.

- **Page Layout:** This tab contains commands that affect the overall appearance of your worksheet, including settings that deal with **Printing**.
- **Formulas:** Use this tab to insert a **Formula**, name a range, access the formula auditing tools, or control how Excel performs calculations.
- **Data:** Excel's data-related commands are on this tab.
- **Review:** This tab contains tools to **Check Spelling, Translate Words, Add Comments, or Protect Sheets** so that they can't be changed by other users.
- **View:** The View tab contains commands that control various aspects of how a sheet is viewed.



Moving and Selecting Cells

You can use your mouse to click on any cell on your worksheet. This will select the cell. From there you can either format the cell or add data to the cell. You can also use your mouse to select and highlight a range of cells by clicking on a cell and dragging the mouse over the rest of the cells you'd like to select. When you finish selecting your cells you can let go of the mouse button. For keyboard strokes which let you move through and select cells, see one the tables below.

| Cursor Movement | |
|--|---|
| One cell up | Up arrow |
| One cell down | Down arrow or Enter |
| One cell right | Right arrow or Tab |
| One cell left | Left arrow or SHIFT+Tab |
| Top of worksheet (cell A1) | CTRL+Home |
| Where the last column with data intersects with the last row with data | CTRL+End |
| Any cell | Enter the cell address in the Cell Number Box |
| Move to next worksheet | CTRL+PageDown |

| Selecting Cells | |
|---------------------------------|---|
| One cell | Click once in the cell |
| All cells left of current cell | SHIFT+left arrow |
| All cells right of current cell | SHIFT+right arrow |
| Entire column | Click the column label |
| Entire row | Click the row label |
| Entire worksheet | Click the whole sheet button or CTRL+A |
| Cluster of cells | Drag mouse over the cells or hold down the SHIFT key while using the arrow keys |
| Non-adjacent cells | Hold down the CTRL key and use the mouse to click on non-adjacent cells |

Moving and Copying Cells

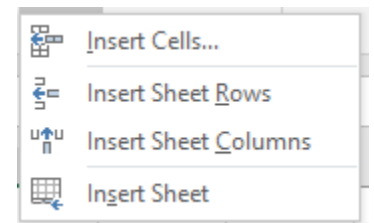
| Action | Using the Home Ribbon | Using the right mouse button | Using the keyboard |
|---|---|---|-----------------------------------|
| To cut the cell's content that will be moved to another cell, highlight the cell and ... | Click on the Cut icon on the Home Ribbon . | Right click on the highlighted cell, select Cut from the menu that appears. | Use the keystroke CTRL + X |
| To copy the cell's content, highlight the cell and ... | Click on the Copy icon on the Home Ribbon . | Right click on the highlighted cell, select Copy from the menu that appears. | Use the keystroke CTRL + C |

| | | | |
|---|--|---|-----------------------------------|
| Highlight the cell into which you want to paste the cut or copied cell and ... | Click on the Paste icon on the Home Ribbon . | Select Paste from the menu that appears. | Use the keystroke CTRL + V |
| Drag and Drop | Drag the highlighted border of the selected cell to the destination cell with the mouse. | | |

Formatting Worksheets

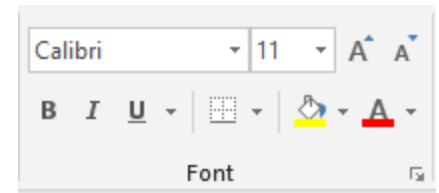
Adding Worksheets, Rows, and Columns

Highlight the cell, row or column where you'd like to make the insert. While using the **Home Ribbon**, click on the drop-down arrow to the right of the word **Insert**. A drop-down menu will appear with the option to **Insert Cells**, **Insert Rows**, **Insert Columns** or **Insert Worksheet**.

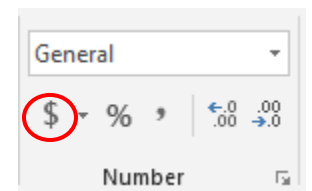


Formatting Cells

While using the **Home Ribbon**, click on one cell or highlight multiple cells to be formatted. You can use the icons and shortcuts on the **Home Ribbon** to change the **Font** (e.g. color of the font, fill of the background, underline/outline of the selected cells), **Alignment** or the way the data inside the cells is displayed.



Also, by clicking on the button with the \$ will format all selected cells which contain numbers to be displayed with a dollar sign and two decimal places. Likewise, by clicking in the drop-down menu inside this section of the Ribbon, you have access to more choices – like formatting dates and more number formatting option.



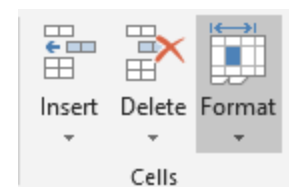
Resizing Rows and Columns

There are several ways to resize rows and columns:

1. Resize a row by dragging the line below the label of the row you would like to resize. Resize a column in a similar manner by dragging the line to the right of the label corresponding to the column you want to resize. - OR -

2. Click the **Home Ribbon** and select **Format**. A drop-down menu will appear which will allow you to change the row height or the column width. - OR -

3. Click the **Home Ribbon** and select **Format**. A drop-down menu will appear which will allow you to select **AutoFit row height** or **AutoFit column width**. This will make the column or row as wide or as deep as it currently needs to be. -OR -

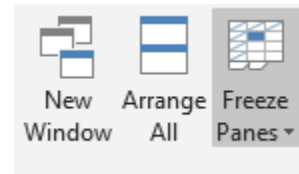


4. Select the column or row and then double-click on the line separating its label from the next label. This will make the column or row as wide or as deep as it currently needs to be.

Freezing Panes

If you have a large worksheet with column and row headings, these headings will not be visible when you scroll down or to the right. Excel provides a handy solution to this problem: freezing panes. Freezing panes keeps the headings visible while you're scrolling through the worksheet.

To freeze panes, start by moving the cell pointer to the cell below the row that you want to remain visible as you scroll vertically, and to the right of the column you want to remain visible as you scroll horizontally. Then, chose the **View** Ribbon and click on the **Freeze Panes** button. From here you can select whether to **Freeze Top Row** or **Freeze First Column** or **Freeze Panes** (i.e. freeze the row above and the column to the left) Excel inserts dark lines to indicate that frozen rows and columns. The frozen row and column remain visible as you scroll throughout the worksheet. To remove the frozen panes, click on the **Freeze Panes** button again and select the **Unfreeze Panes** option from the drop-down list.



Formulas

The distinguishing feature of a spreadsheet program such as Excel is that it allows you to create mathematical formulas and execute functions. Otherwise, it is not much more than a large table for displaying text.

Formulas are entered in the worksheet cell and must begin with an equal sign "=". The formula then includes the addresses of the cells whose values will be manipulated with appropriate operands placed in between. After the formula is typed into the cell, the calculation executes immediately and the formula itself is visible in the formula bar. See the example below to view the formula for calculating the sub total for a number of textbooks. The formula multiplies the quantity and price of each textbook and adds the subtotal for each book.

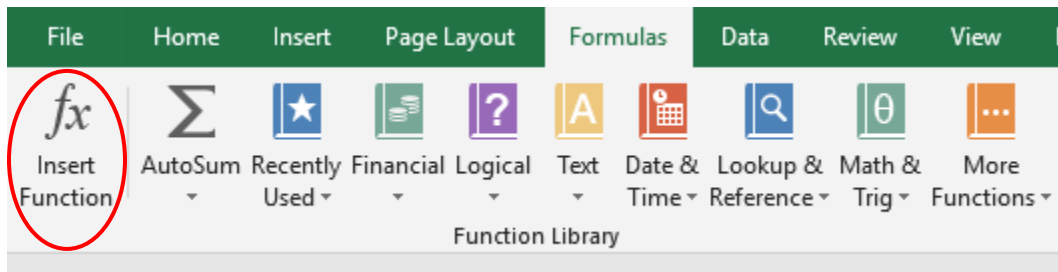
A screenshot of an Excel spreadsheet. The formula bar at the top shows the formula $= (B2 * C2) + (B3 * C3) + (B4 * C4) + (B5 * C5) + (B6 * C6)$ circled in red. Below the formula bar is a table with columns A through I and rows 1 through 10. The table contains data for textbooks: Biology, Chemistry, Calculus, English, and Science. A 'Subtotal' is calculated in cell D8, showing a value of \$2,415.92. A red arrow points from the 'Formula Bar' label to the formula bar. The 'Formula Bar' label is in a box pointing to the formula bar.

| | A | B | C | D | E | F | G | H | I |
|----|-----------------|-----------------|--------------|------------|---|---|---|---|---|
| 1 | Textbook | Quantity | Price | | | | | | |
| 2 | Biology | 4 | \$99.99 | | | | | | |
| 3 | Chemistry | 2 | \$79.95 | | | | | | |
| 4 | Calculus | 7 | \$65.99 | | | | | | |
| 5 | English | 12 | \$49.99 | | | | | | |
| 6 | Science | 15 | \$52.95 | | | | | | |
| 7 | | | | | | | | | |
| 8 | | | Subtotal | \$2,415.92 | | | | | |
| 9 | | | | | | | | | |
| 10 | | | | | | | | | |

To view the actual formula or function in the cell and its components, double-click on the cell or click once and press **F2**. Also, if you select the cell, you will see the formula or function for the cell in the Formula Bar.

Functions

Instead of manually typing a formula into the formula bar, you can use the **Formula** Ribbon to insert common functions such as **Sum**, **Date**, **Average**, **Count**, **Max**, etc.



Activate the cell where the function will be placed and select **Insert Function** from the **Formula** Ribbon. From the **Insert Function** dialog box, you can enter a description of what you want to do or you can select a category. Browse through the functions by clicking in the **Select a Function** menu choices. As each function name is highlighted a description and example of use is provided below the box. Click **OK** to select a function.

The next window allows you to choose the cells that will be included in the function. Excel will suggest a range that it thinks might be relevant to where your cursor is; notice that there is a colon in between the range of cells. If you would like Excel to use a different range, you can place your cursor in the field and edit the default range. (Remember to include the colon.)

Click **OK** when all the cells for the function have been selected.

Autosum

The **Autosum** button right next to the **Function Insert** button contains a short list of functions you can access when you click on the triangle underneath the words **Autosum**. This works the same way the **Insert Function** button works in that you activate the cell in which you would like to insert the sum of contents from the column above or the row to the left of the activated cell.



After clicking the **Autosum** button, Excel will suggest a range of cells that it thinks might be relevant to where your cursor is. As with the **Insert Function**, you can edit the range.

Autofill

The **Autofill** feature allows you to quickly fill cells with repetitive or sequential data such as chronological dates or numbers, and repeated text.

1. Type the beginning number or date of an incrementing series or the text that will be repeated into a cell.

2. Select the handle at the bottom, right corner of the cell with the left mouse button and drag it down as many cells as you want to fill.
3. Release the mouse button.

If you want to **Autofill** a column with cells displaying the same number or date you must enter identical data to two adjacent cells in a column. Highlight the two cells and drag the handle of the selection with the mouse.

Autofilling Functions

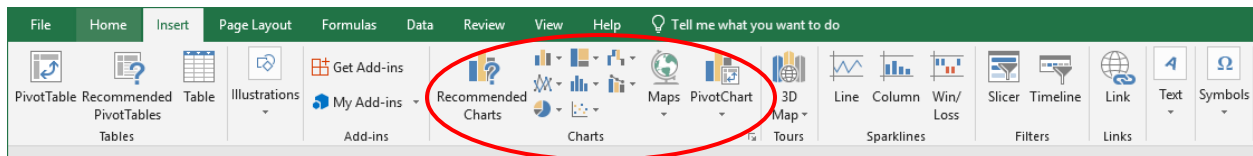
Autofill can also be used to copy functions. In the example below, column A and column B each contain lists of numbers and column C contains the sums of columns A and B for each row. The function in cell C2 would be "`=SUM(A2:B2)`". This function can then be copied to the remaining cells of column C by activating cell C2 and dragging the handle down to fill in the remaining cells. The **Autofill** feature will automatically update the row numbers as shown below if the cells are reference relatively.

| | A | B | C | D | E |
|----|-----------------|-----------------|--------------|----------|---|
| 1 | Textbook | Quantity | Price | | |
| 2 | Biology | 4 | \$99.99 | \$399.96 | |
| 3 | Chemistry | 2 | \$79.95 | | |
| 4 | Calculus | 7 | \$65.99 | | |
| 5 | English | 12 | \$49.99 | | |
| 6 | Science | 15 | \$52.95 | | |
| 7 | | | | | |
| 8 | | | | | |
| 9 | | | | | |
| 10 | | | | | |

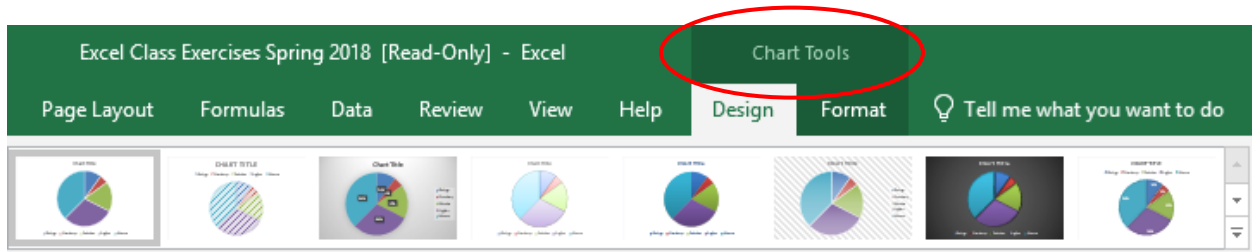
| | A | B | C | D | E |
|----|-----------------|-----------------|--------------|----------|---|
| 1 | Textbook | Quantity | Price | | |
| 2 | Biology | 4 | \$99.99 | \$399.96 | |
| 3 | Chemistry | 2 | \$79.95 | \$159.90 | |
| 4 | Calculus | 7 | \$65.99 | \$461.93 | |
| 5 | English | 12 | \$49.99 | \$599.88 | |
| 6 | Science | 15 | \$52.95 | \$794.25 | |
| 7 | | | | | |
| 8 | | | | | |
| 9 | | | | | |
| 10 | | | | | |

Creating Charts

Charts allow you to present data entered into the worksheet in a visual format using a variety of graph types. Before you can make a chart you must first enter data into a worksheet. Once you have entered data, you can select the data and headings in the worksheet that you want represented in the new chart. Click on the **Insert** Ribbon tab and then select the type of chart to create by clicking the button for the general type of chart (**Column**, **Line**, **Pie**, **Bar** and so on). You can then select the thumbnail of the subtype you want to use from the button's drop-down gallery.



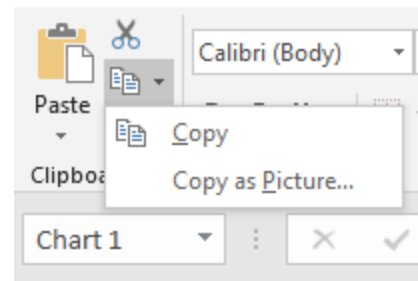
After you've created your chart, a **Chart Tools** tab will be available on the Ribbon. You can refine the new chart as needed using the command buttons on the **Design**, **Layout**, and **Format** tabs under the **Chart Tools** contextual tab on the Ribbon.



Copying a Chart to Microsoft Word

A finished chart can be copied into a Microsoft Word document. You can either copy the chart as a picture or copy it so that any changes made to the table in Excel will automatically update and change the chart you've imported into Word.

To copy the chart as a picture, click on the chart (taking care to highlight the entire chart picture and not just an element of it). Using the **Home** Ribbon, click on the drop-down arrow on the right-hand side of the **Copy** button. Select **Copy as Picture**. Now that the picture of the chart is on your clipboard, you can paste it into a Word document.

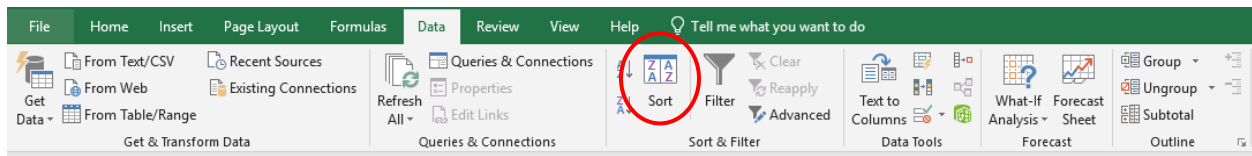


To copy the chart so that any changes made to the table in Excel will automatically update the chart in Word, copy the chart from Excel. Open Word and position your cursor where you'd like the chart to be. Click on the arrow next to the **Paste** button on the **Home** Ribbon. You will have several Paste options. To link the Excel chart to the Word document choose either: **Use Destination Theme & Link Data** -OR- **Keep Source Formatting and Link Data**. Either option links the Excel table with the Word document.

Sorting

Basic Sorts

The **Data** Ribbon can be used to sort cells in a spreadsheet. To sort by one column, highlight the cells that will be sorted and click the **Sort Ascending (A-Z)** button or **Sort Descending (Z-A)** button. Note that if you do not include the adjacent cells, you will get a warning asking you if you wish to expand the selection.



Complex Sorts

To sort by multiple columns, follow these steps:

1. Highlight the cells, rows, or columns that will be sorted.
2. Select **Sort** button from the **Data** Ribbon.
3. From the **Sort** dialog box, select the first column for sorting from the **Sort By** drop-down menu and choose either ascending or descending.
4. Select the second column and, if necessary, the third sort column from the **Then By** drop-down menus.

If the cells you highlighted included the text headings in the first row, mark **My list has...Header row** and the first row will remain at the top of the worksheet.

Cell Styles

The use of styles in Excel allows you to quickly format your worksheet, provide consistency, and create a professional look. Excel provides several preset styles which include predefined Headings, Colors, Fonts, Font Sizes and Border Styles to enhance the aesthetics of a spreadsheet. To apply a predefined Style, highlight the cells to which the predefined style should be applied. Select the **Cell Styles** drop-down box from the **Home** Ribbon. You can click on any of the options to apply a preformatted style to your selected cells.

