

Introduction to Microsoft Excel 2019 Training



with examples and
hands-on exercises

WEBUCATOR

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Class Files

Download the class files used in this manual at

<https://static.webucator.com/media/public/materials/classfiles/EXC2019.1-1.1.6.zip>.

Errata

Corrections to errors in the manual can be found at <https://www.webucator.com/books/errata/>.

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LESSON 1

Creating a Microsoft Excel Workbook

Topics Covered

- Starting Microsoft Excel.
- Creating a workbook.
- Saving a workbook.
- The **Status Bar**.
- Adding and deleting worksheets.
- Copying and moving worksheets.
- Splitting the worksheet window.
- Closing a workbook.

Evaluation
Copy

Introduction

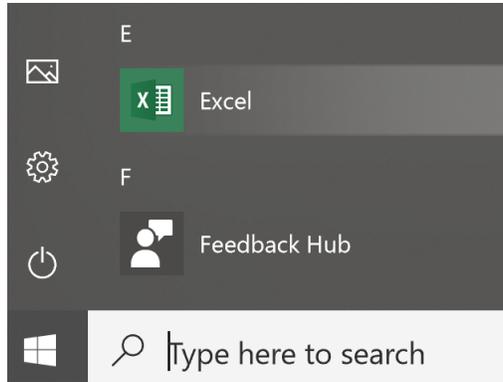
In this lesson, you will learn to start Microsoft Excel, to create, save, close, and delete a workbook, to copy and move worksheets, to split the worksheet window, and about the Status Bar.



1.1. Starting Microsoft Excel

To start Microsoft Excel (see screenshot below):

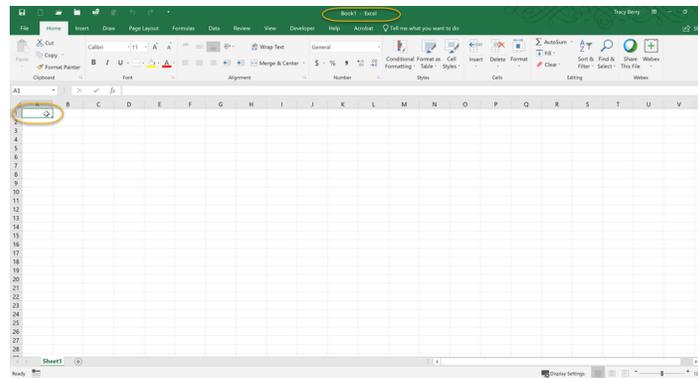
1. Click the **Windows** button.
2. Select **Excel**.



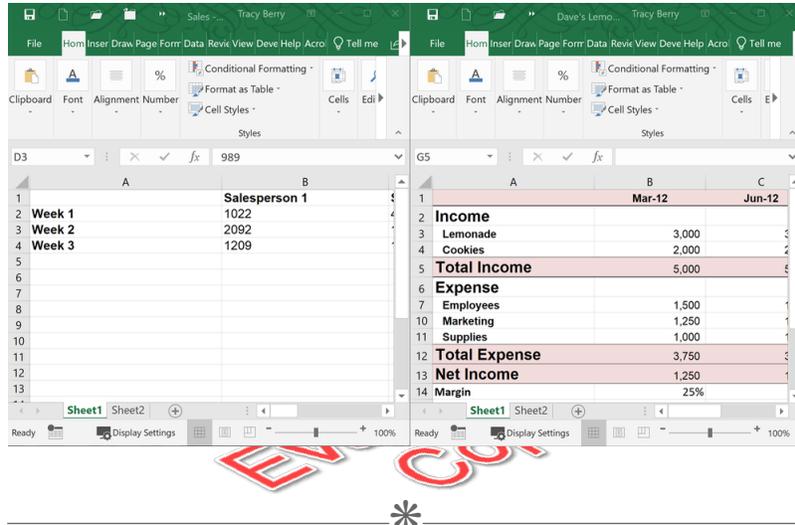
1.2. Creating a Workbook

When you open Microsoft Excel, in Excel 2019, you will have an option to open a template or a blank document; to create a new spreadsheet open a blank document. As you can see in the screenshot below, the default workbook is named “Book1”.

Cell **A1** is automatically selected when Excel opens. To enter a number or text in cell **A1**, simply begin typing:



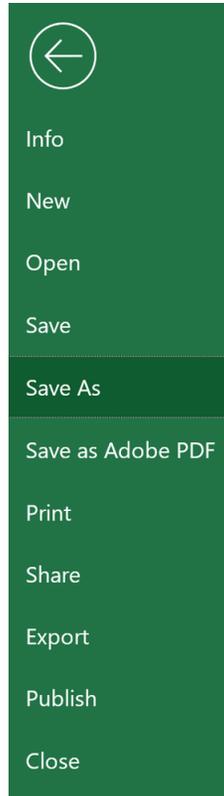
If you have multiple workbooks open, each workbook opens in its own window. This makes it easier to work with them, especially if you are using multiple monitors.



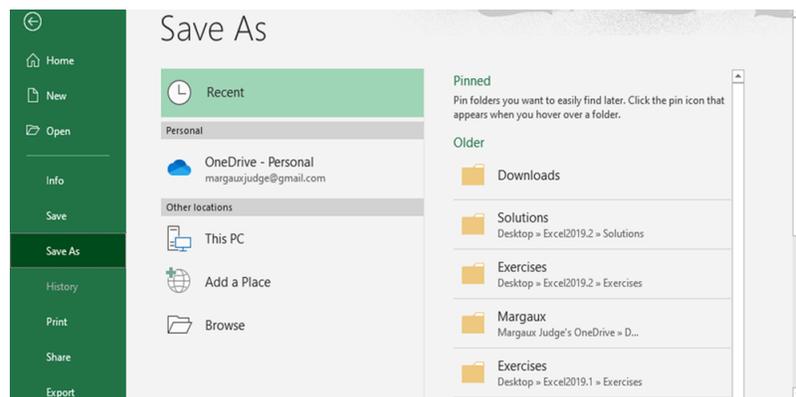
1.3. Saving a Workbook

The first time you save a Microsoft Excel workbook, you need to give it a name and location. To do this:

1. From the **File** menu, select **Save As**:



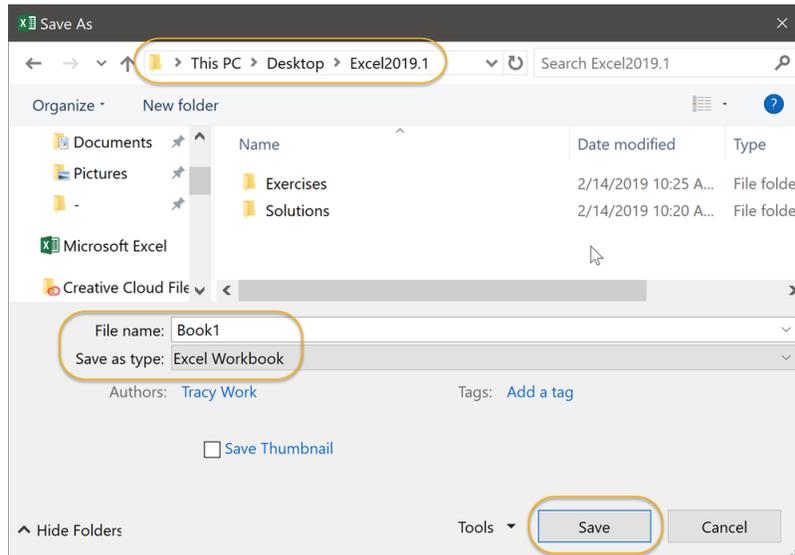
2. Selecting **Save As** opens the **Save As** section, where you can choose the location to save your workbook. New in Excel 2019 are recent folders on the right, to quickly save.



After selecting a location, dialog box opens, in which you can see:

- A. The *file name*. Note that this is highlighted as Microsoft Excel expects you to choose your own name for the workbook. Simply begin typing to do so.
- B. The *file type*. Note that this defaults to “Excel Workbook”, which is the default file type for all recent versions of Microsoft Excel (.xlsx). When final, you can choose to save your workbook as another type, such as a pdf, simply by choosing “PDF (*.pdf)”

here. If you want to maintain backward compatibility with previous versions of Excel, choose “Excel 97-2003 Workbook” here.



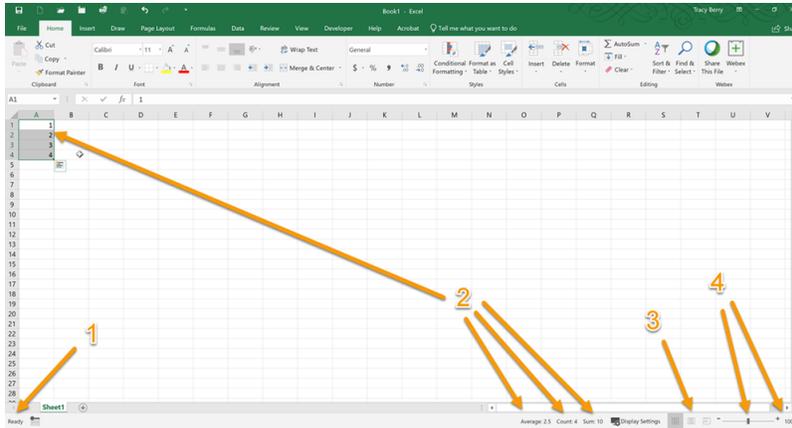
3. After you have entered these fields, simply click **Save** to save the workbook.

Evaluation
Copy

1.4. The Status Bar

The **Status Bar**, located at the bottom of Excel, shows basic information about your workbook and enables you to change your viewing settings. Specific items on the **Status Bar** include:

1. **Ready status.** *Ready* indicates that you are ready to begin entering data. *Enter* indicates that you are working within a cell. *Edit* indicates that you are editing existing data within a cell.
2. **Information about highlighted data.** You can customize what you see, but things you see by default include *Average*, *Count* and *Sum*.
3. **View controls.** You can choose from a selection of views (**Normal**, **Page Layout**, and **Page Break Preview**).
4. **Zoom control.** You can zoom in or out, to make the workbook bigger or smaller, based on your personal preference. Zooming changes the size of what you're viewing. It does not change what you actually print out.



1.5. Adding and Deleting Worksheets

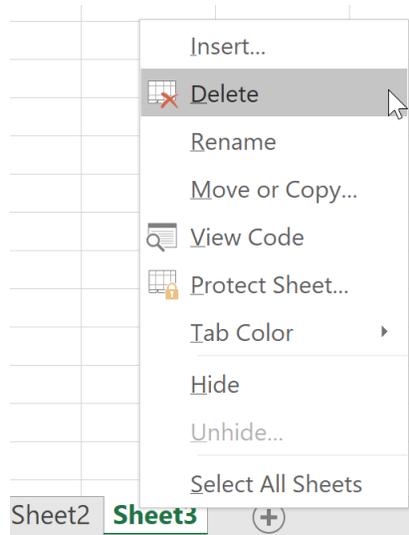
Depending on your settings, Excel workbooks typically open with one to three worksheets, named Sheet1, Sheet2, etc:



To add additional worksheets, simply click the **Insert worksheet** icon (which looks like a plus sign)



To delete a worksheet, simply right-click the worksheet name and select **Delete**:



Renaming a Worksheet

To change the name of a worksheet, double-click the current name and begin typing:

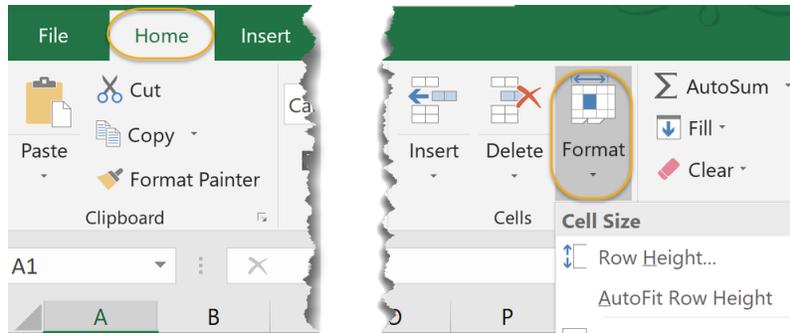


1.6. Copying and Moving Worksheets

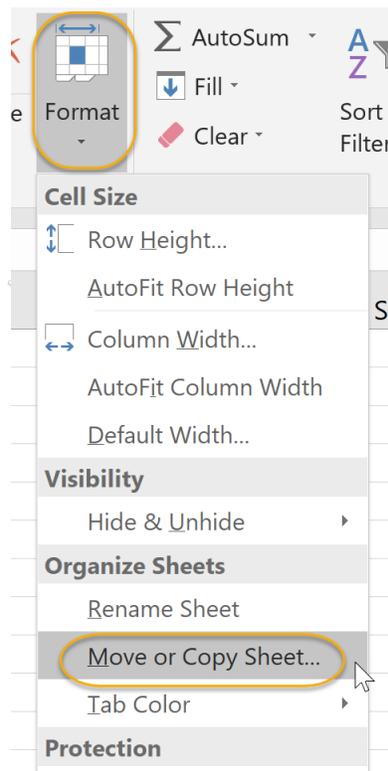
You can change the order of worksheets in an Excel workbook by moving them. In addition, you can add a worksheet to a workbook by copying an existing worksheet.

To move a worksheet:

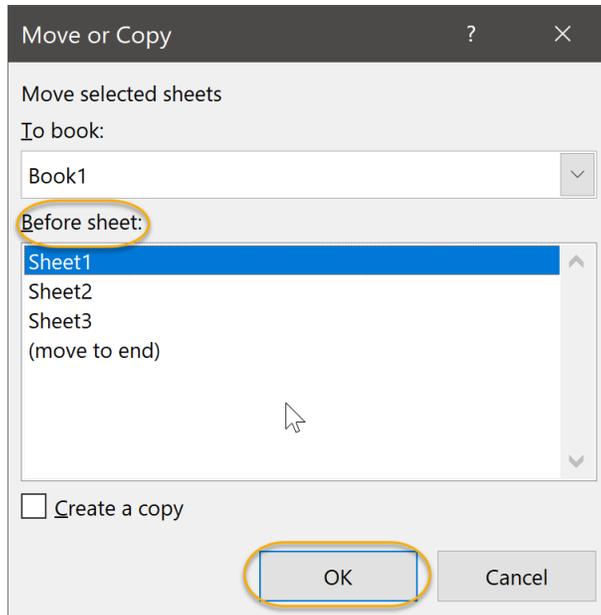
1. Select the worksheet you want to move.
2. From the **Home** tab, in the **Cells** group, select **Format**.



- From the **Format** drop-down, select **Move or Copy Sheet** under **Organize Sheets**.

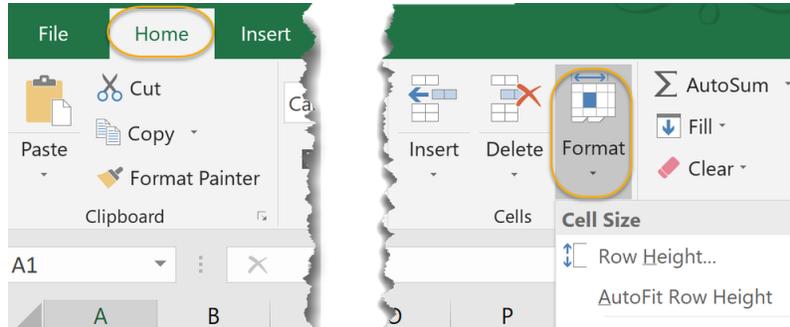


- In the **Move or Copy** dialog box, under **Before sheet:**, select the location to which to move the worksheet, and then click **OK**.

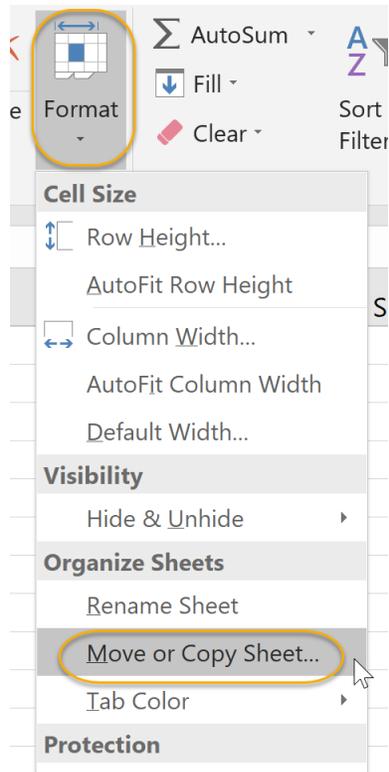


To copy a worksheet:

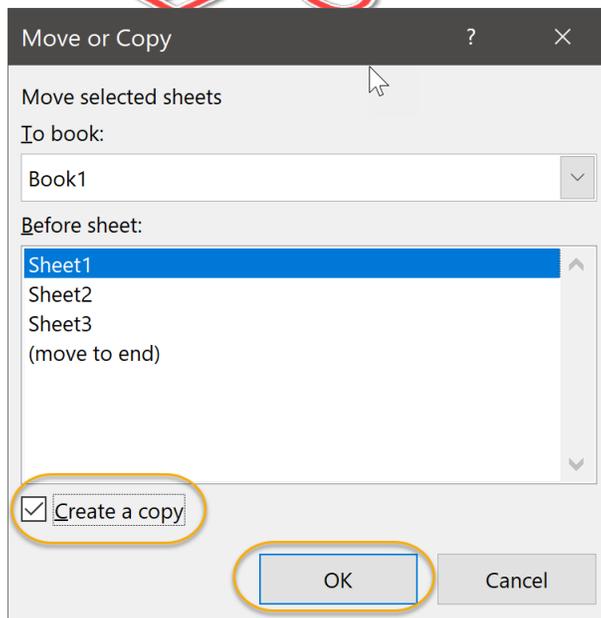
1. Select the worksheet you want to copy.
2. From the **Home** tab, in the **Cells** group, select **Format**.



3. From the **Format** drop-down, select **Move or Copy Sheet** under **Organize Sheets**.



4. In the **Move or Copy** dialog box, select **Create a copy**.



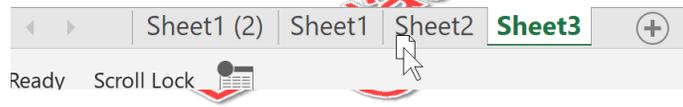
The copy now appears with the same title and (2).



1.7. Changing the Order of Worksheets

In the last activity we showed you how to move worksheets using the **Move or Copy Sheet** command. You can also move sheets by simply clicking them and dragging them to a new location.

In the image below, we clicked Sheet3 and while holding the left mouse button down we are dragging it to between Sheet1 and Sheet2.



1.8. Splitting the Worksheet Window

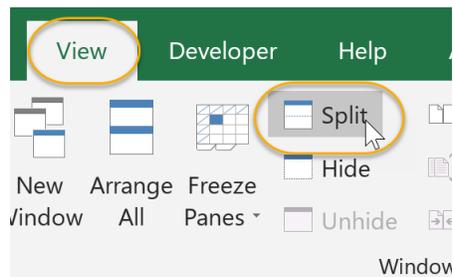
When working in Excel, it can sometimes be helpful to split the worksheet into two separate windows, so that you can compare data in the sheet.

To split the window:

1. Click where you want to split the window.

	A	B
34	2/1/2018	31
35	2/2/2018	31
36	12/25/2018	40
37	12/26/2018	37
38	12/27/2018	32
39	12/28/2018	35
40	12/29/2018	34
41	12/30/2018	41
42	12/31/2018	38
43	2019	Degrees F
44	1/1/2019	33
45	1/2/2019	29
46	1/3/2019	18
47	1/4/2019	19
48	1/5/2019	27
49	1/6/2019	22
50	1/7/2019	15
51	1/8/2019	10
52	1/9/2019	12
53		

- On the **View** tab, in the **Window** group, select **Split**.



- You can now scroll through each window separately to easily view and compare data.

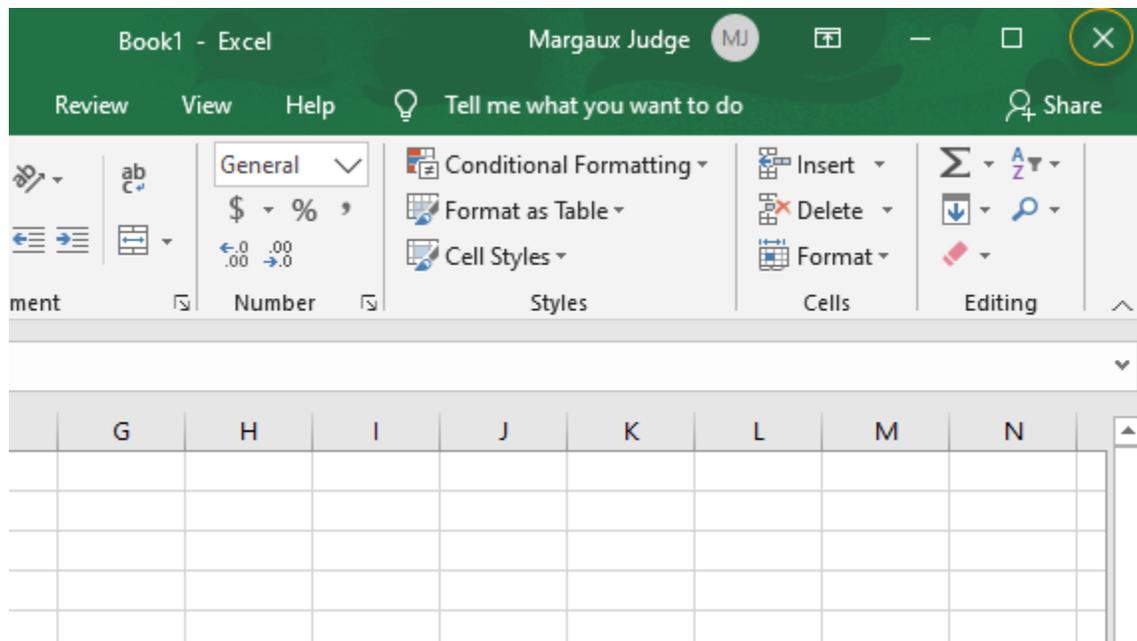
	A	B
1	Daily High Temperatures for Syracuse, NY	
2	2018	Degrees F
3	1/1/2018	12
4	1/2/2018	21
5	1/3/2018	25
6	1/4/2018	19
7	1/5/2018	9
8	1/6/2018	3
9	1/7/2018	27
43	2019	Degrees F
44	1/1/2019	33
45	1/2/2019	29
46	1/3/2019	18
47	1/4/2019	19
48	1/5/2019	27
49	1/6/2019	22
50	1/7/2019	15
51	1/8/2019	10
52	1/9/2019	12
53		



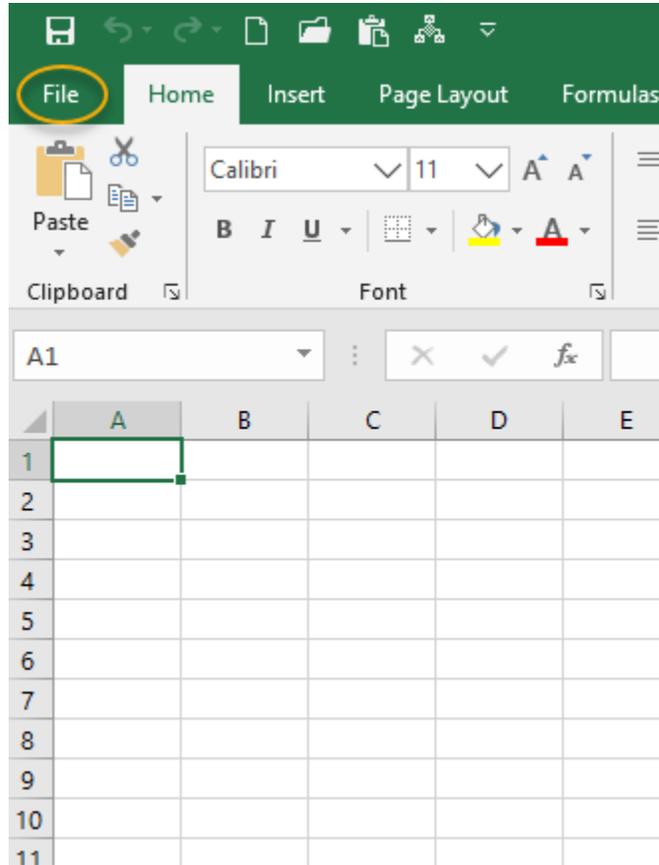
1.9. Closing a Workbook

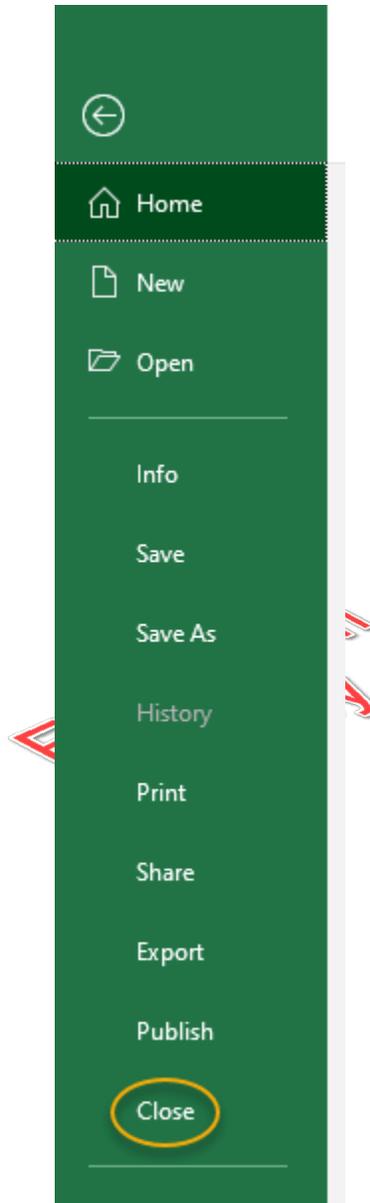
The two most common ways to close a Microsoft Excel workbook are:

1. Click the “X” in the upper-right-hand corner:



2. Select **Close** from the File menu by first selecting the File menu by clicking it and then clicking **Close**, as shown in the two images below:





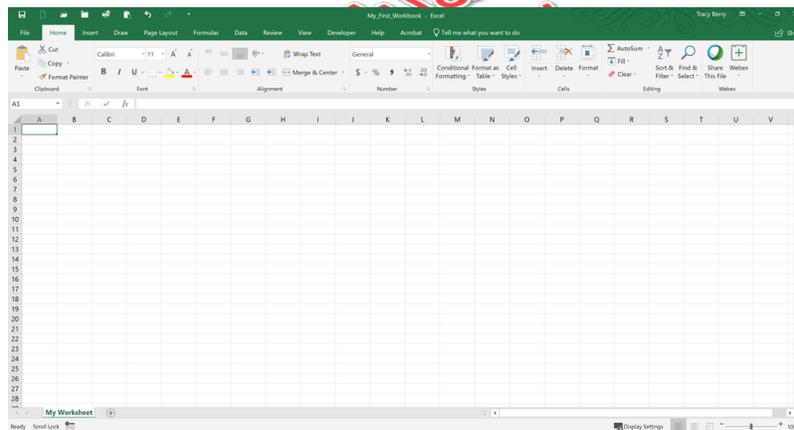
When you close your workbook, you will be prompted to save if you have made any changes since the last time you saved.

Exercise 1: Creating a Microsoft Excel Workbook

 5 to 15 minutes

In this exercise, you will create, save and close a Microsoft Excel workbook. You will also name a worksheet. If you currently have Microsoft Excel open, please close it before starting the exercise. (Note: there is one sheet named “My Worksheet” and the workbook itself is named “My First Workbook”).

1. Create and save the following workbook in your `Excel2019.1/Exercises` folder:



Solution

1. From the **Windows Menu**, select **Excel** and then select **Blank workbook**.
2. Double-click “Sheet1” (worksheet name) and type “My Worksheet”.
3. Click **File > Save As:**
 - A. Navigate to Excel2019.1/Exercises.
 - B. **File name:** type “My First Workbook”.
 - C. **Save as type:** select “Excel Workbook” if it is not already selected.
4. Click **File > Close**.

Evaluation
Copy

Conclusion

In this lesson, you have learned to start Microsoft Excel, to create, save, close, move, and copy a workbook, split the worksheet window, about the status bar and to add and delete Microsoft Excel worksheets.

LESSON 2

The Ribbon

Topics Covered

- Tabs.
- Groups.
- Commands.
- Locating groups and commands on tabs.

Introduction

The **Ribbon** is the display you see at the top of the Microsoft Excel window. It is your primary interface with Excel. It allows you to access most of the commands available to you in Excel. The **Ribbon** is composed of three parts: Tabs, Groups and Commands.

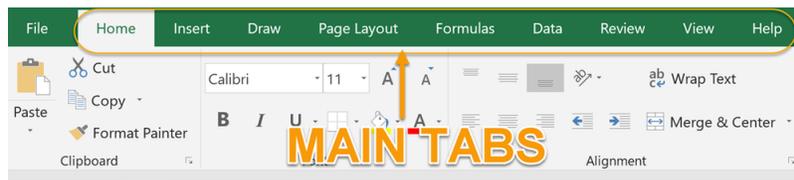
Evaluation
Copy

2.1. Tabs

Microsoft Excel is a powerful program which is used to analyze and present data, perform calculations, and much more. Microsoft Excel has hundreds of *commands* for working with different scenarios. To make it easier for users to find the specific commands they are looking for, commands are organized onto nine main tabs:

1. **Home**. The **Home** tab includes commands for formatting worksheets, cells and data and commands for inserting and deleting columns and rows.
2. **Insert**. Use the **Insert** tab to insert tables, illustrations, charts, links, sparklines, headers & footers, custom text and symbols, and more.
3. **Draw**. Use the **Draw** tab to access drawing tools, such as the eraser and pens.
4. **Page Layout**. Use the **Page Layout** tab to change your margins, change the page background, change the page orientation, and more.
5. **Formulas**. Use the **Formulas** tab to browse and select formulas and functions, to define names, to audit formulas, and more.

6. **Data.** Use the **Data** tab to access external data, to sort & filter, to access data tools, to group cells together, to add subtotals, and more.
7. **Review.** Use the **Review** tab to check spelling, add comments, protect your worksheet or workbook, and more.
8. **View.** Use the **View** tab to change your workbook view, show or hide gridlines, headings, the formula bar and the ruler, arrange windows, freeze panes, zoom in or out, and more.
9. **Help.** Use the **Help** tab to use online help, send feedback, and access community resources.
10. **Add-Ins.** You may or may not see the **Add-Ins** tab. This tab shows up after you install and activate your first Add-In. Add-Ins are beyond the scope of this course.



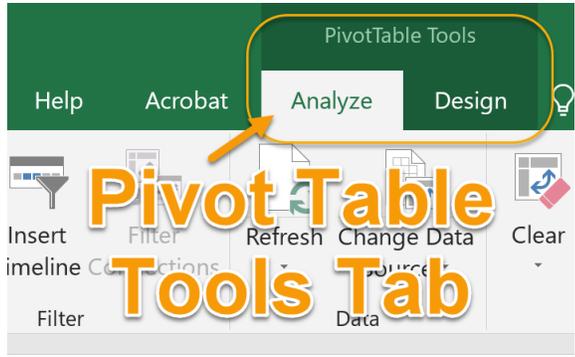
Note that the **File** menu is not the same as a tab. The **File** menu takes you to the *Backstage view*, where you manage, rather than make changes to, your workbook. The Backstage view is covered in the next lesson.

Evaluation Copy

Tool Tabs

In addition to the main tabs, there are numerous *tool tabs* which include less commonly used commands. Individual tool tabs are covered in detail in our intermediate and advanced Microsoft Excel classes. For now you should know:

- **That they exist.** Some of the most commonly used tool tabs are:
 - **SmartArt**
 - **Chart**
 - **Drawing**
 - **Picture**
 - **PivotTable**
 - **PivotChart**
 - **Header & Footer**
- **That they will appear when you select commands which have related tool tabs.** For example, when you insert a PivotTable, two PivotTable-specific tool tabs (**Analyze** and **Design**) will appear:



2.2. Groups

To further organize the many commands available in Microsoft Excel, commands are organized in *groups* on each tab. Each group contains three or more related commands. The following table lists the groups found on each tab:

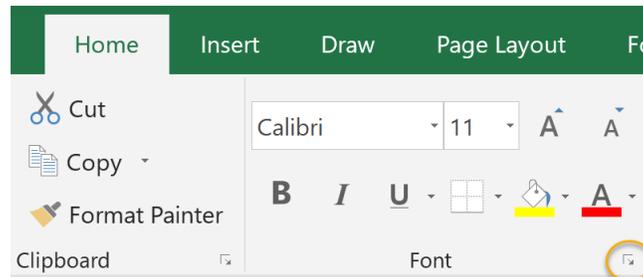
Evaluation
Copy

Tab	Group
Home	<ol style="list-style-type: none"> 1. Clipboard 2. Font 3. Alignment 4. Number 5. Styles 6. Cells 7. Editing
Insert	<ol style="list-style-type: none"> 1. Tables 2. Illustrations 3. Add-ins 4. Charts 5. Tours 6. Sparklines 7. Filters 8. Links 9. Text 10. Symbols
Page Layout	<ol style="list-style-type: none"> 1. Themes 2. Page Setup 3. Scale to Fit 4. Sheet Options 5. Arrange
Draw	<ol style="list-style-type: none"> 1. Tools 2. Pens 3. Convert 4. Replay

Tab	Group
Formulas	<ol style="list-style-type: none"> 1. Function Library 2. Defined Names 3. Formula Auditing 4. Calculation
Data	<ol style="list-style-type: none"> 1. Get & Transform Data 2. Queries & Connections 3. Sort & Filter 4. Data Tools 5. Forecast 6. Outline
Review	<ol style="list-style-type: none"> 1. Proofing 2. Accessibility 3. Insights 4. Language 5. Comments 6. Protect 7. Ink
View	<ol style="list-style-type: none"> 1. Workbook Views 2. Show 3. Zoom 4. Window 5. Macros
Help	<ol style="list-style-type: none"> 1. Help 2. Community
Add-ins	<ol style="list-style-type: none"> 1. Custom Toolbars

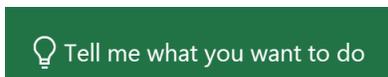
The group options may differ slightly if you are using previous versions of Excel.

In some groups, you will see a button in the lower right corner, next to the group name. This is the **Dialog Box Launcher**. Opening the group's dialog box will give you access to additional commands associated with that group:



❖ 2.2.1. Tell Me

In Excel 2016 and 2019, the Ribbon contains the text “Tell me what you want to do...”



If you click this text, it becomes a text box where you can enter text to search on to quickly perform actions. Just clicking the box pops up some possible ideas.



For example, “Add a comment” brings up a comment in the cell the cursor is in.



2.3. Commands

Commands are controls that enable you to accomplish specific tasks, such as bolding a word, wrapping text, changing the format of a number to percent, or adding a column.

Take a Few Minutes

Take a few minutes to look at the different groups and commands located on each tab.

Evaluation
Copy

Exercise 2: Exploring the Ribbon

 10 to 20 minutes

In this exercise, you will explore the **Ribbon** to answer the following questions:

1. How many tabs are there?
2. How many groups are there on the **View** tab?
3. Which tab contains the most commonly used groups and commands?
4. What is another name for the **File** menu?
5. On what tab are the following groups found:
 - A. Sort & Filter
 - B. Zoom
 - C. Charts
 - D. Page Setup
 - E. Function Library
 - F. Number
 - G. Formula Auditing
6. On what tabs and groups are the following commands found?
 - A. Font Color
 - B. New Window
 - C. Sort
 - D. Trace Precedents
 - E. Wrap Text
 - F. Group
 - G. Print Area

**Evaluation
Copy**

Solution

If your installation of Microsoft Excel has been customized, some of your answers may differ.

1. How many tabs are there? **Answer: 9**
2. How many groups are there on the **View** tab? **Answer: 5**
3. Which tab contains the most commonly used groups and commands? **Answer: Home**
4. What is another name for the **File** menu? **Answer: the Backstage view**
5. On which tab are the following groups found:
 - A. Sort & Filter - **Answer: Data**
 - B. Zoom - **Answer: View**
 - C. Charts - **Answer: Insert**
 - D. Page Setup - **Answer: Page Layout**
 - E. Function Library - **Answer: Formulas**
 - F. Number - **Answer: Home**
 - G. Formula Auditing - **Answer: Formulas**
6. On what tabs and groups are the following commands found?
 - A. Font Color - **Answer: Home > Font**
 - B. New Window - **Answer: View > Window**
 - C. Sort - **Answer: Data > Sort & Filter**
 - D. Trace Precedents - **Answer: Formulas > Formula Auditing**
 - E. Wrap Text - **Answer: Home > Alignment**
 - F. Group - **Answer: Data > Outline**
 - G. Print Area - **Answer: Page Layout > Page Setup**

Conclusion

In this lesson, you learned about tabs, groups and commands and which groups and commands are on which tabs.

LESSON 3

The Backstage view (The File Menu)

Topics Covered

- Backstage view.
- Opening a workbook.
- Starting a new workbook.
- Using templates.
- Printing a workbook.
- Personalizing Microsoft Excel.

Introduction

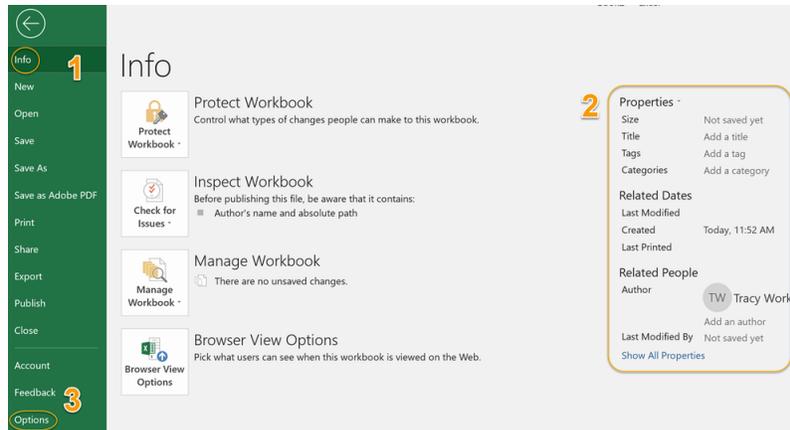
In this lesson, you will learn about the Backstage view, to open a Microsoft Excel workbook, to start a new workbook, to use templates, to print a workbook, and to personalize your copy of Microsoft Excel.



3.1. Introduction to the Backstage view

The **Ribbon**, covered in the prior lesson, is where you find all the commands necessary to make changes to your worksheets. Clicking the tabs in the **Ribbon** changes the set of commands available to you while you work in your worksheet. After clicking the **File** menu, you can no longer see your worksheet or the **Ribbon**. Instead, you see what Microsoft calls the *Backstage view*. This is where you:

1. Manage your current workbook and other workbooks (Save, Open, Close, Print, etc.).
2. See information about your current workbook (Permissions, Location, Size, Date Last Modified, Author, etc.).
3. Manage your Excel settings and options (User Interface Options, number of sheets in new workbooks, customize the **Ribbon**, etc.)



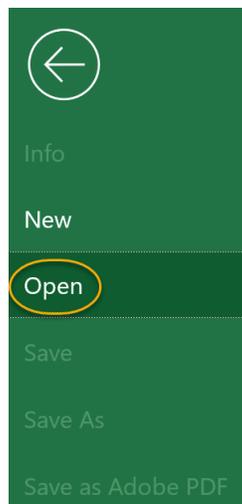
Many of the features of the Backstage view are covered in our intermediate and advanced Microsoft Excel classes. Only those that are essential to working with Microsoft Excel are covered in this class.



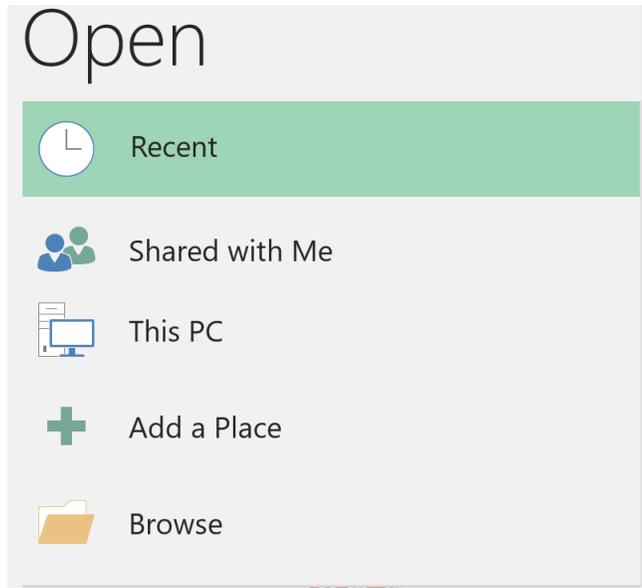
3.2. Opening a Workbook

There are two ways to open a Microsoft Excel workbook from the Backstage view:

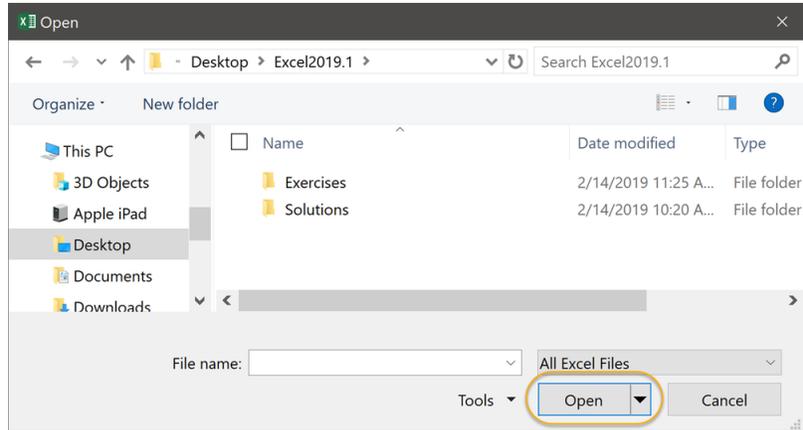
1. Select **Open** from the **File** menu.



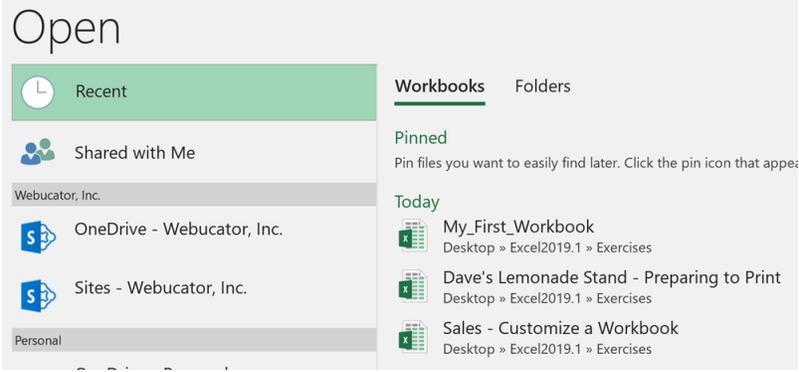
Select a location from which to open the document in the **Open** section.



In the dialog box that opens up, navigate to the file you want to open and double-click it or select it and click **Open**.



- 2. For files you have recently used, select **Recent** from the **File** menu and then select the file.



Exercise 3: Open a Workbook

 5 to 10 minutes

In this exercise, you will practice opening Microsoft Excel workbooks from the **File** menu.

1. Using the **File** menu, open My First Workbook.xlsx from the Excel2019.1/Exercises folder.
2. Close My First Workbook.xlsx.
3. Open My First Workbook.xlsx from the **File** menu, using a different method than you used the first time.
4. Close My First Workbook.xlsx.

Solution

1. **File > Open**
 - A. **File > Open**
 - B. Navigate to Excel2019.1/Exercises.
 - C. Select My First Workbook.xlsx and click the **Open** button.
2. **File > Recent**
 - A. **File > Recent**
 - B. Click the My First Workbook.xlsx workbook.



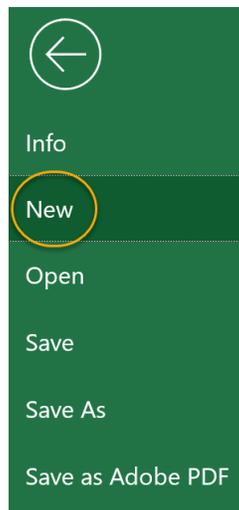
3.3. New Workbooks and Excel Templates

When creating a new Microsoft Excel workbook, you can choose between creating a *blank* workbook or creating your workbook from an existing template.

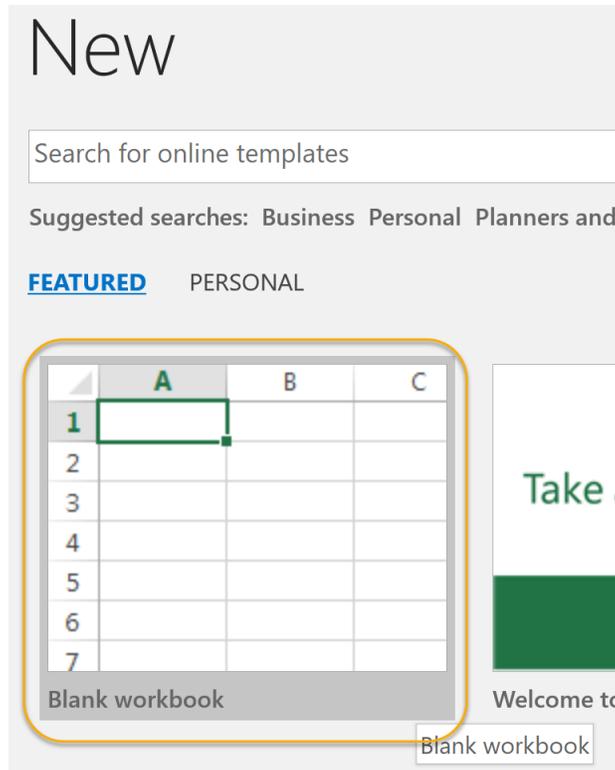
Creating a New Blank Workbook

To create a new blank workbook:

1. From the **File** menu, select **New**:



2. Click **Blank workbook**:

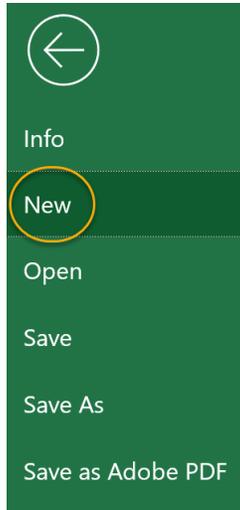


Creating a New Workbook from a Template

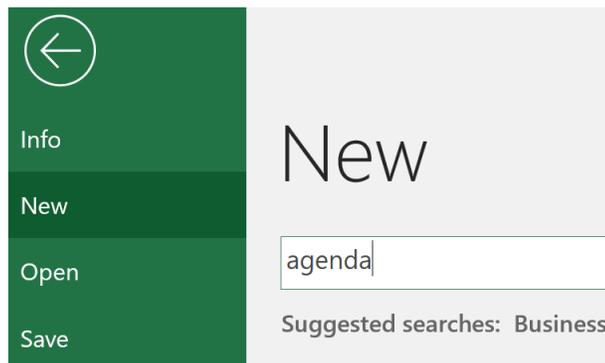
A template is a predesigned Excel workbook that you can then change to suit your needs. When you create a new workbook from a template, you are creating a copy of the original template.

To create a new workbook from a template:

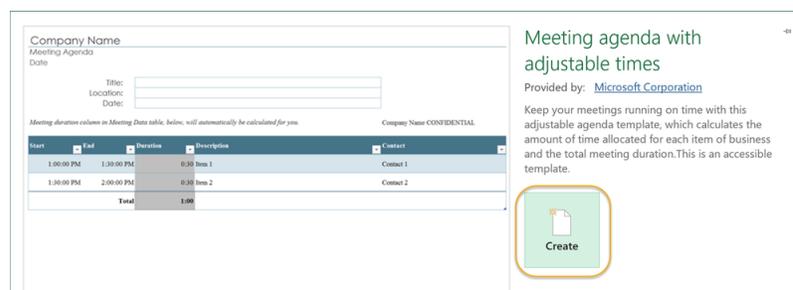
1. From the **File** menu, select **New**:



2. In the **Search** box, search a template category and press **Enter**.



3. Click a template, and to download it, click **Create**.



Modifying a Template

You can modify an Excel template:

1. Select the **File** menu, and select **New**.
2. Select a template from the list and click **Create**.
3. Make the desired changes to the template.
4. Save the template with a new name. It will by default be saved in the Templates folder.

Once you've downloaded a template, it is stored in the My Templates location on your computer.

Exercise 4: Select, Open, and Save a Template Agenda

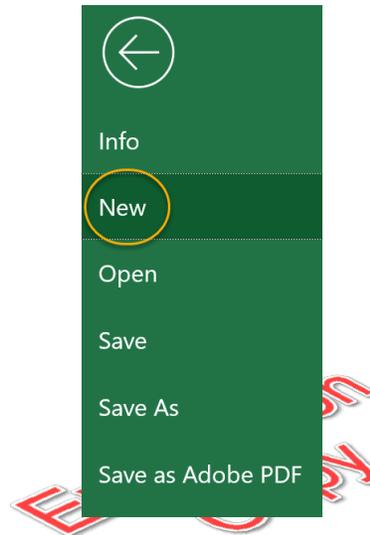
🕒 5 to 10 minutes

In this exercise, you will create a new workbook using a Microsoft template.

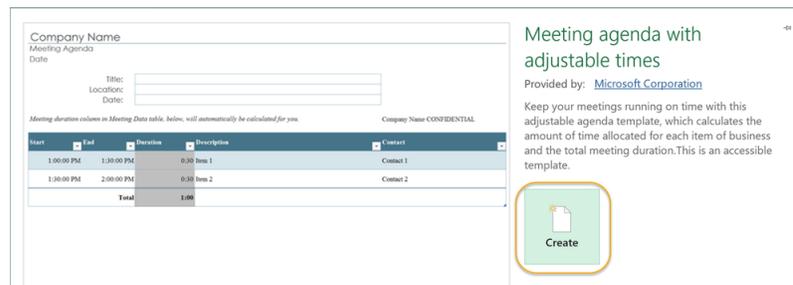
1. Locate a template to use to create an agenda for a meeting.
2. Download the template.
3. Save the workbook as My Agenda.xlsx in your Excel2019.1/Exercises folder.
4. Leave the file open as we will be using it in future exercises.

Solution

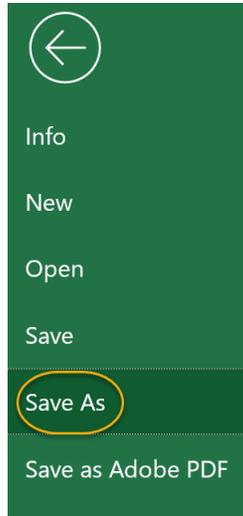
1. From the **File** menu, select **New**:



2. In the **Search** box, search “agendas” and press **Enter**.
3. Click a template, and to download it, click **Create**.



4. Click **File** > **Save As**:



- A. Navigate to the Excel2019.1/Exercises folder.
- B. **File name:** type “My Agenda”.
- C. **Save as type:** select “Excel Workbook.”
- D. If a dialog box appears asking you if you want to save changes to the workbook template, click **No**.

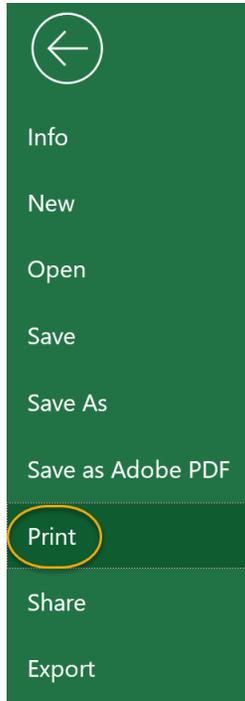


3.4. Printing Worksheets

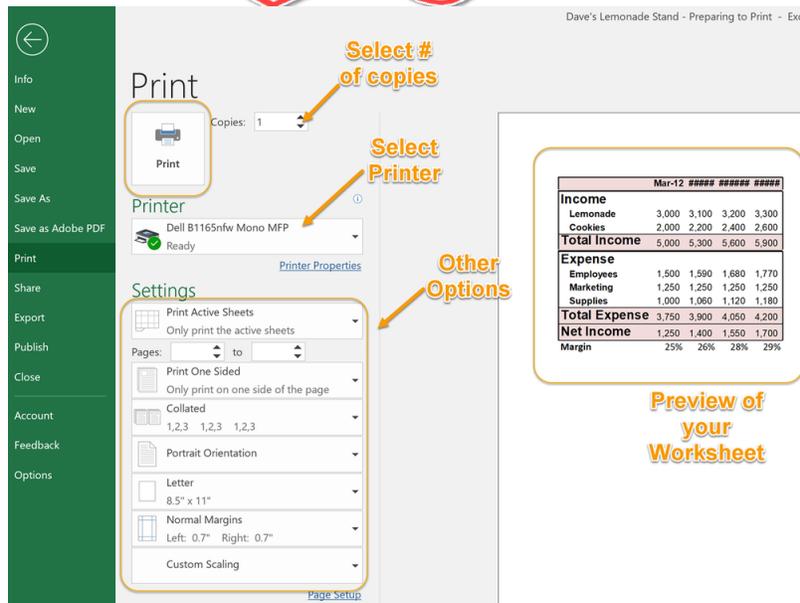
The **Print** window gives you access to several printing and page layout options. You will also see a preview of how your worksheet will print.

To print a Microsoft Excel worksheet:

1. From the **File** menu, select **Print**.



- Choose your print options (number of copies, printer, etc.) and click the **Print** button.



Exercise 5: Print a Worksheet

 5 to 10 minutes

In this exercise, you will print the agenda you created in the last exercise. You will need to have a printer connected to successfully complete this exercise.

1. Using the **File** menu, print the agenda you created in the last exercise.

Solution

1. **File > Print**
2. Select your printer.
3. Select any additional options you want.
4. Click the **Print** button.

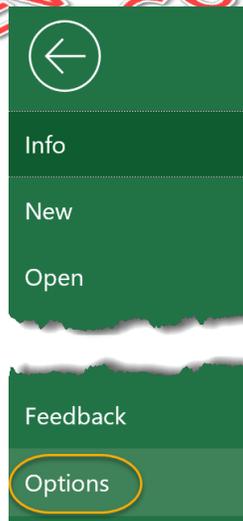


3.5. Adding Your Name to Microsoft Excel

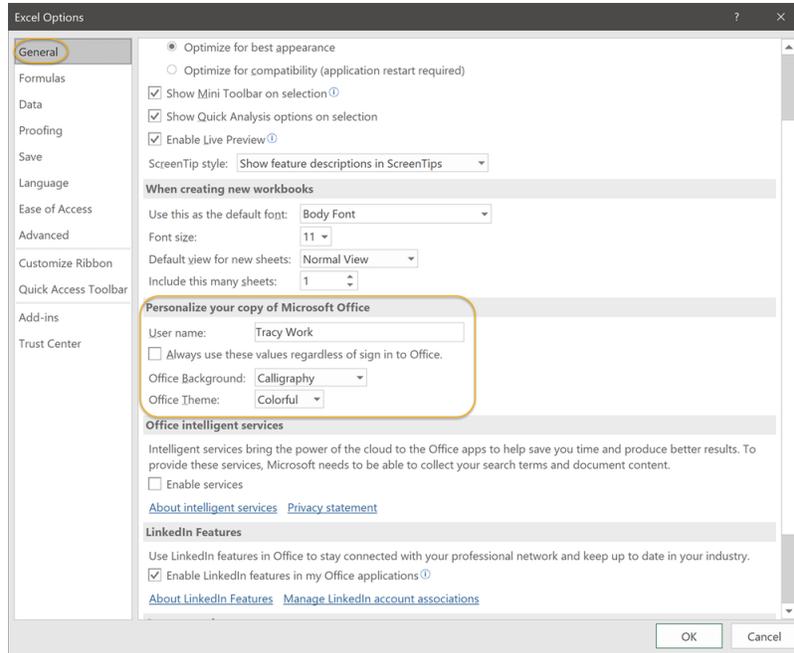
You can personalize your copy of Microsoft Excel by adding your name. When you do so, the information is used throughout the Microsoft Office products. Excel uses this information for tracking changes and assigning comments and for prefilling data used by some of the built-in templates.

To add your name and initials to Microsoft Excel:

1. From the **File** menu, select **Options**.



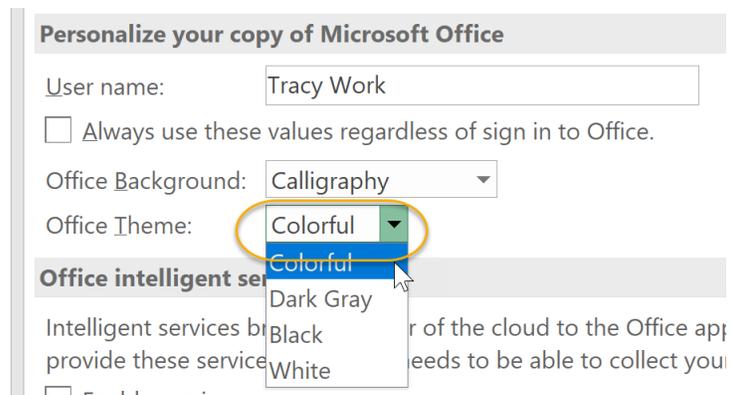
2. The options you can customize are grouped into categories, which you can see on the left side of the screenshot below. The default category is **General**. Fill in your name and initials under **Personalize your copy of Microsoft Office**.



Evaluation
*
Copy

3.6. Adding a Theme to Microsoft Excel

You can customize how Excel looks (and your other Office programs) by adding a theme. To access themes, from the **File** menu, select **Options**. Then select options from the **Office Theme** drop-down list. You can choose from the options available in the following screenshot:



Conclusion

In this lesson, you learned about the Backstage view, to open and create new Microsoft Excel workbooks, to print Microsoft Excel worksheets, to use templates, and how to personalize Microsoft Excel by adding your name.

Evaluation
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LESSON 4

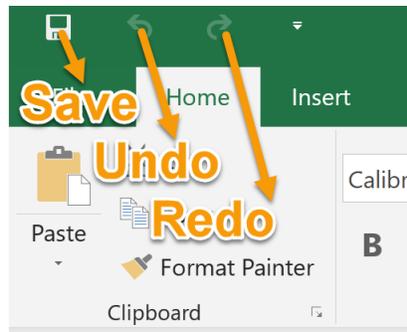
The Quick Access Toolbar

Topics Covered

- ☑ Adding common commands to the **Quick Access Toolbar**.
- ☑ Adding additional commands to the **Quick Access Toolbar**.
- ☑ Moving the **Quick Access Toolbar**.

Introduction

The **Quick Access Toolbar** is a small toolbar which includes commonly used commands and is always accessible. By default, the **Quick Access Toolbar** is located in the top left corner of Microsoft Excel. By default, the **Quick Access Toolbar** includes three commands: **Save**, **Undo**, and **Redo**:



1. **Save**. Click **Save** to save your workbook.
2. **Undo**. Click **Undo** to undo the action you last performed.
 - A. Click the drop-down arrow to the right of **Undo** to undo multiple actions at the same time.
3. **Redo**. Click **Redo** to repeat the action you last performed.



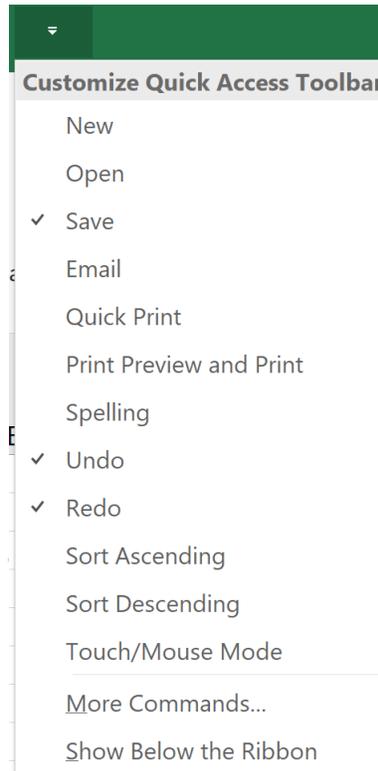
4.1. Adding Common Commands

To add commonly used commands to the **Quick Access Toolbar**:

1. Click the drop-down arrow to the right of the **Quick Access Toolbar**.



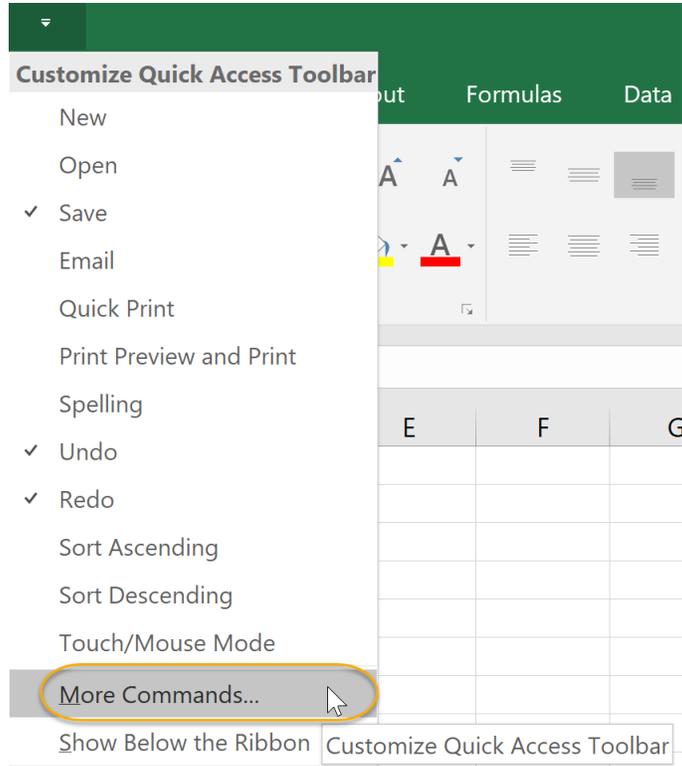
2. Select a command from the list that appears.



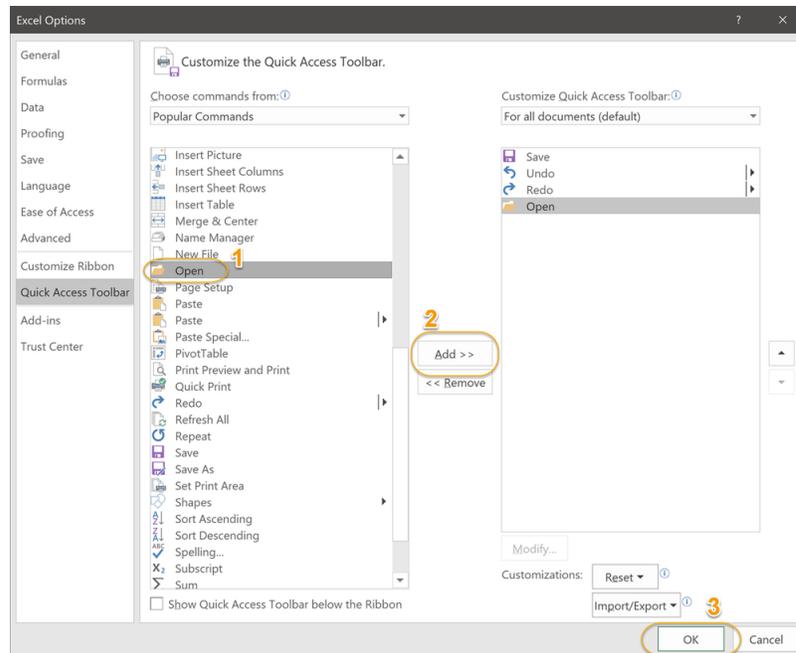
4.2. Adding Additional Commands with the Customize Dialog Box

To add additional commands to the **Quick Access Toolbar**:

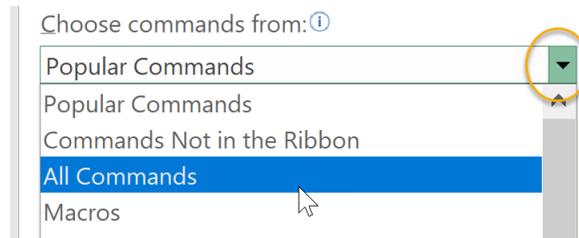
1. Click the drop-down arrow on the far right of the **Quick Access Toolbar**.
2. Select **More Commands...** toward the bottom of the list that appears:



3. Select a command from the list below and click **Add >>**.



4. Click **OK** to make your changes.
5. Note that clicking **More Commands** shows Popular Commands by default. There are many additional commands available, you can get to by changing **Popular Commands** to **All Commands**, as shown below:



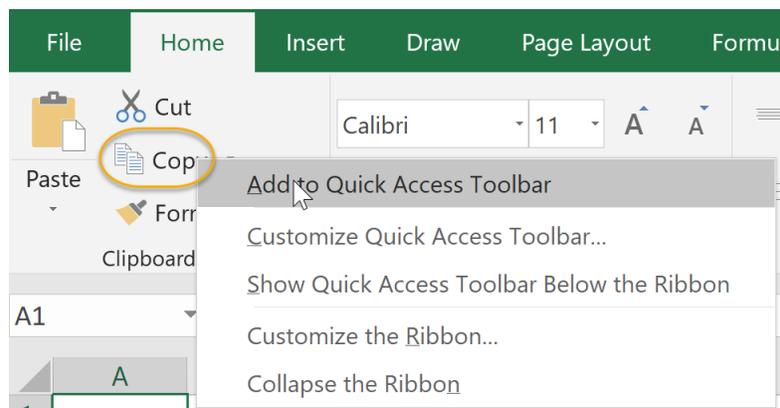
New in Excel 2019, you can add **Subscript** and **Superscript** to the Quick Access Toolbar, as well as the Ribbon.



4.3. Adding Ribbon Commands or Groups

If you find yourself using the same commands or group of commands frequently, you can quickly add them to the **Quick Access Toolbar**:

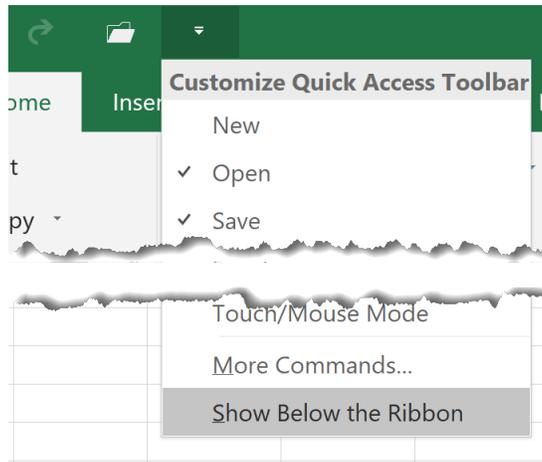
1. Right-click the command or on the group name.
2. Select **Add to Quick Access Toolbar**:



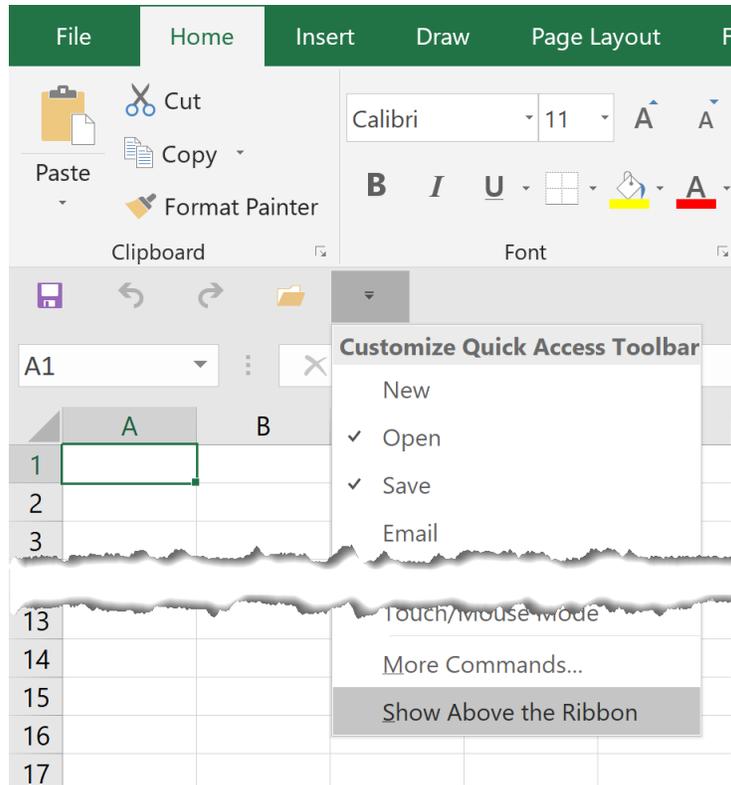
4.4. Placement

You can choose to keep the **Quick Access Toolbar** in the upper-left corner of Excel. To move the **Quick Access Toolbar** below the **Ribbon** or move it to the top left corner of Microsoft Excel:

1. Click the drop-down arrow on the far right of the **Quick Access Toolbar**.
2. Select **Show Below the Ribbon**.



3. To move it back, click the drop-down arrow again and select **Show Above the Ribbon**.



Exercise 6: Customize the Quick Access Toolbar

 10 to 20 minutes

In this exercise, you will customize the **Quick Access Toolbar**.

1. Add the following commands to the **Quick Access Toolbar**:
 - A. **New**
 - B. **Open**
 - C. **Quick Print**
 - D. **Paste**
 - E. **Find**
2. Remove **Find** from the **Quick Access Toolbar**.
3. Move the **Quick Access Toolbar** below the **Ribbon**.

Evaluation
Copy

Solution

1. To add commands to the **Quick Access Toolbar**:
 - A. **New**: click the drop-down arrow to the right of the **Quick Access Toolbar** and check **New**.
 - B. **Open**: click the drop-down arrow to the right of the **Quick Access Toolbar** and check **Open**.
 - C. **Quick Print**: click the drop-down arrow to the right of the **Quick Access Toolbar** and check **Quick Print**.
 - D. **Paste**: click the drop-down arrow to the right of the **Quick Access Toolbar** and select **More Commands...**. Highlight **Paste** in the *left* column and click **Add > >**.
 - E. **Find**: click the drop-down arrow to the right of the **Quick Access Toolbar** and select **More Commands**. Then click the drop-down arrow to the *right* of **Popular Commands** and change it to **All Commands**. Highlight **Find** in the *left* column and click **Add > >**.
2. To remove **Find** from the **Quick Access Toolbar**:
 - A. Click the drop-down arrow to the right of the **Quick Access Toolbar** and select **More Commands...**. Highlight **Find** in the *right* column and click **< < Remove**.
3. To move the **Quick Access Toolbar** below the **Ribbon**:
 - A. Click the drop-down arrow to the right of the **Quick Access Toolbar** and select **Show Below the Ribbon**.
 - B. *Optional*: to move the **Quick Access Toolbar** back to the upper-left corner, click the drop-down arrow to the right of the **Quick Access Toolbar** and select **Show Above the Ribbon**.

Conclusion

In this lesson, you learned to customize the **Quick Access Toolbar**.

LESSON 5

Entering Data in Microsoft Excel Worksheets

Topics Covered

- Entering text in worksheets.
- Adding and deleting cells.
- Adding an outline for your data.
- Hyperlinks.
- AutoComplete.
- Numbers and dates.
- Using Fill Handle.

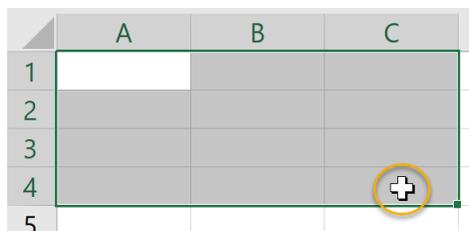
Introduction

Evaluation Copy

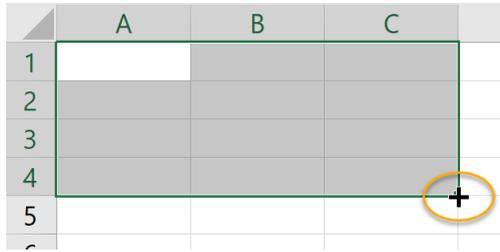
Microsoft Excel worksheets are made up of rows and columns. Rows are defined by numbers and columns are defined by letters. When you open Excel, cell **A1** is automatically highlighted. Anything you type will show up in this cell. To enter text into a different cell, simply select the cell by clicking it and then begin typing.

Before entering text, it is helpful to be aware of the three shapes your cursor will take and what each one means:

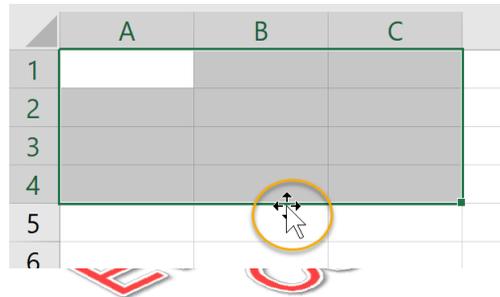
1. **The thick white cross.** This is used for cell selection.



2. **The thin black cross.** This is used for autofilling data and for copying formulas, both of which will be covered later in this course.



3. **The four-headed arrow.** This is used for moving cells or other items.

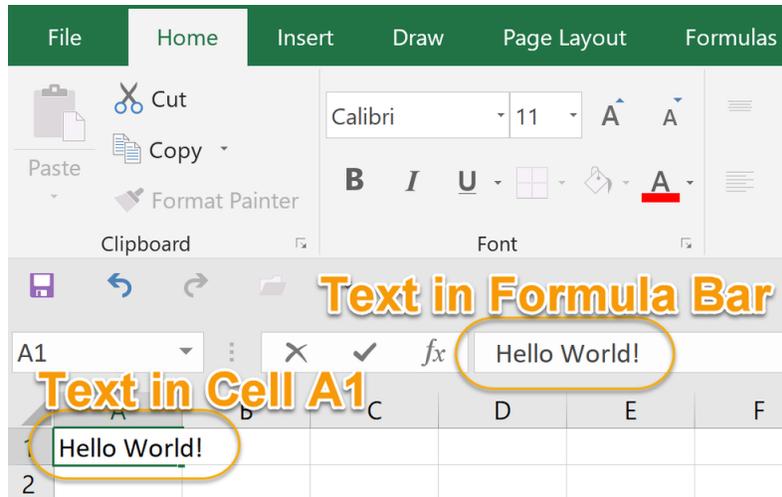


5.1. Entering Text

To enter text in Microsoft Excel:

1. Select the cell into which you wish to enter text by clicking it.
2. Begin typing.

Note that in addition to showing up in the cell, the text you are typing also shows up in the **Formula Bar**:



If you are entering a lot of text, it is sometimes easier to type directly into the formula bar. To do this, simply select the cell by clicking it and then click in the Formula Bar and begin typing.

❖ 5.1.1. Using Flash Fill

Flash Fill is similar to the AutoComplete feature. It looks for patterns in your data and shows a suggestion. As soon as it detects what you are attempting to do, it shows a recommended pattern.

In the following example, full names have been entered in Column A. In Column B, this is what happens when you begin entering just first names, pressing **Enter** after each:

	A	B	C
1	Thomas Abel	Thomas	
2	Linda Cass	Linda	
3	Robert Judge	Robert	
4	John Smith	John	
5	Mary Wood	Mary	
6			

❖ 5.1.2. Expand Data across Columns

You can also easily expand data across columns by hovering the cursor over the lower-right corner of the cell and when it turns into a thin black cross, dragging. This will copy the data to multiple columns.

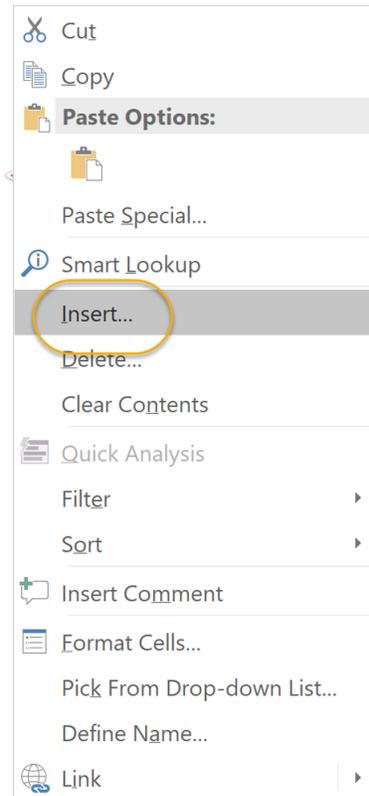


5.2. Adding and Deleting Cells

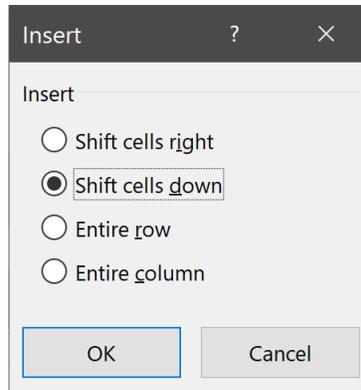
You can add and delete cells when working with a worksheet:

To add a cell to a worksheet:

1. Select the cell where you want to insert a new cell.
2. Right-click and select **Insert**.

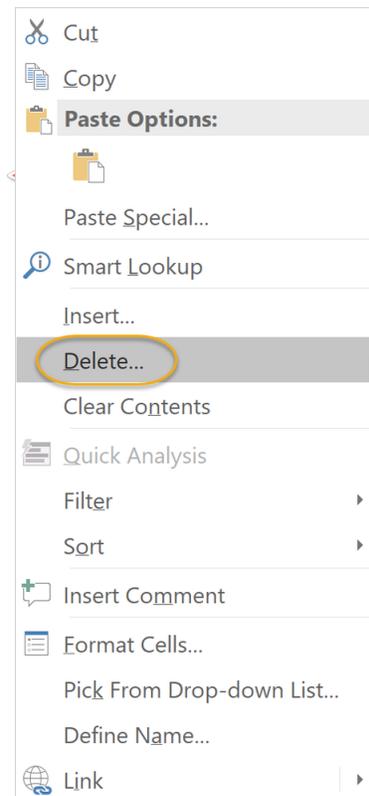


3. In the **Insert** dialog box, select an option and click **OK**.

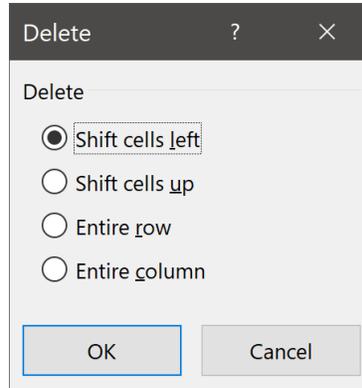


To delete a cell in a worksheet:

1. Select the cell you want to delete.
2. Right-click and select **Delete**.



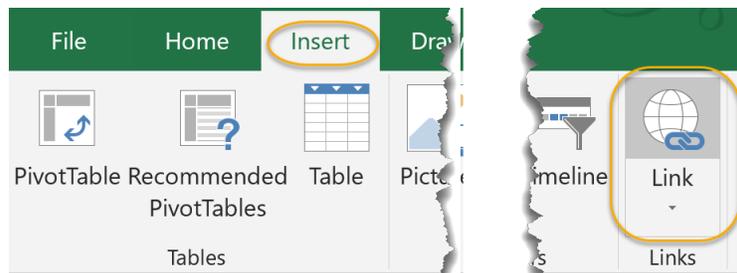
3. In the **Delete** dialog box, select an option and click **OK**.



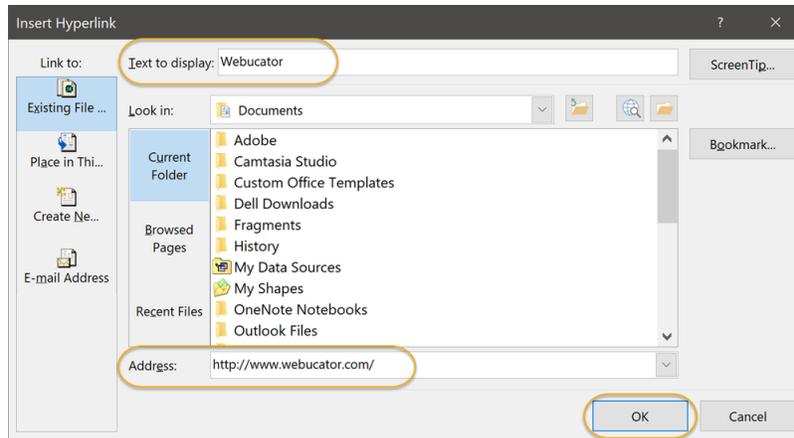
5.3. Adding a Hyperlink

To add a hyperlink to a cell in Microsoft Excel:

1. Select the cell to which you want to add the hyperlink.
2. From the **Insert** tab, in the **Links** section, select **Link**. (New in Excel 2019: if you have recently used a link in a cloud-based file or website, that link will be available as a drop-down item to quickly insert.)



3. In the **Insert Hyperlink** dialog box, select the text to display as well as the link address, and then click **OK**.



- The link now appears in the sheet.

	A	B	C
1		Webucator	
2			

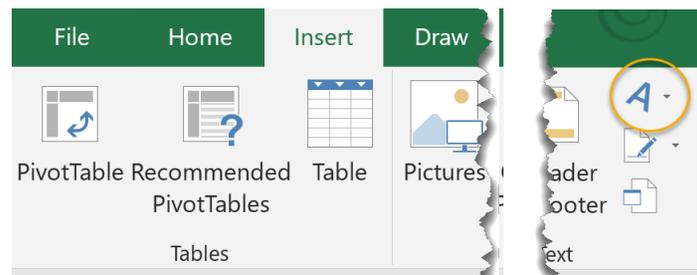
Evaluation
Copy

5.4. Add WordArt to a Worksheet

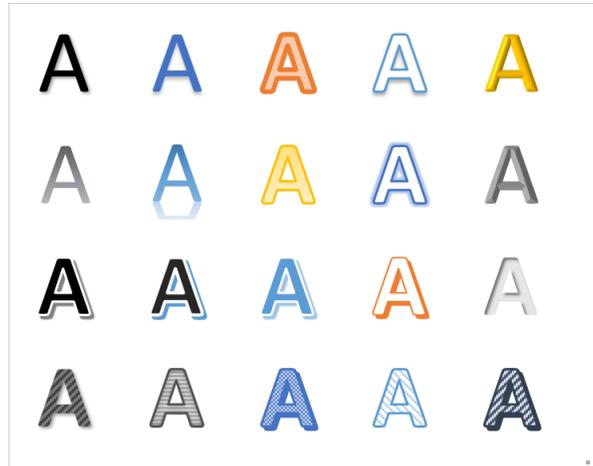
You can insert WordArt in a worksheet in Excel 2013, 2016, and 2019.

To add WordArt:

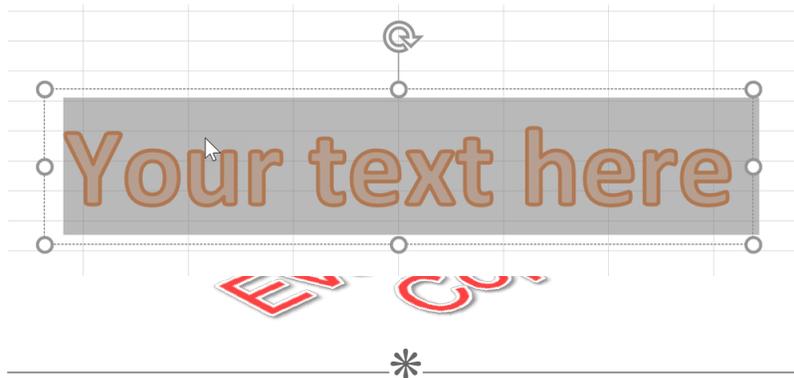
- On the **Insert** tab, in the **Text** group, select the **WordArt** arrow.



- Select a WordArt style from the list.



3. A text box appears where you can enter your WordArt text.



5.5. Using AutoComplete

When you are typing data into a list, Microsoft Excel will attempt to guess what you intend to type based on the data in the cells above the one in which you are typing. This feature has been improved in Excel 2019. The example below illustrates this. Only the letter “B” has been typed into cell A4. Excel is guessing that the user intends to type “Ball”:

	A
1	Ball
2	Frisbee
3	Hackysack
4	Ba
5	

If the user *does* intend to enter “Ball”, he or she can press **Enter** as soon as Excel has correctly guessed.

Things to be aware of regarding the AutoComplete feature:

1. If there are multiple words in a list starting with the same letter, Excel won't guess until enough letters have been typed that only one match remains:

	A	B	C	D	E	F	G
1	Ball						
2	Frisbee						
3	Hackysack						
4	Baseball						
5	Ba						
6							
7							
8							
9							
10							

Excel cannot guess what will be entered in Cell A5 because two words in the list start with "ba." If the next letter typed is "s" or "l"... Excel will guess "baseball" or "ball."

2. If there is an empty cell in the middle of a list, Excel will assume the data above and below the empty cell constitute different lists, and AutoComplete will not recognize words from the other list:

	A	B	C	D	E	F
1	Ball					
2	Frisbee					
3	Hackysack					
4	Baseball					
5						
6						
7	Hat					
8	Bathing Suit					
9	Towel					
10	Fris					
11						
12						
13						

Note that Excel is not guessing "Frisbee" if cell A5 and A6 contained any data, AutoComplete would have filled in "Frisbee" as soon as "F" was typed.

Exercise 7: Entering Text and Using AutoComplete

🕒 5 to 10 minutes

Before the end of this course we will build a spreadsheet showing the quarterly profit and loss statement for a fictitious company called Dave's Lemonade Stand. This is the first of these exercises. The spreadsheet will ultimately look like the below:

	Mar-12	Jun-12	Sep-12	Dec-12
Income				
Lemonade	3,000	3,100	3,200	3,300
Cookies	2,000	2,200	2,400	2,600
Total Income	5,000	5,300	5,600	5,900
Expense				
Employees	1,500	1,590	1,680	1,770
Marketing	1,250	1,250	1,250	1,250
Supplies	1,000	1,060	1,120	1,180
Total Expense	3,750	3,900	4,050	4,200
Net Income	1,250	1,400	1,550	1,700
Margin	25%	26%	28%	29%

In this exercise, you will enter income and expense categories in column **A** of a new worksheet.

1. Open a new workbook and enter text, using AutoComplete whenever possible, in column **A** so that your worksheet looks like the following:

	A
1	
2	Income
3	Lemonade
4	Cookies
5	Total Income
6	Some Expense
7	Some Expense
8	Some Expense
9	Some Expense
10	Total Expense
11	Net Income
12	

2. Save the workbook as Dave's Lemonade Stand.xlsx in your Excel2019.1/Exercises folder.

Solution

1. Open a new workbook.
2. Select cell **A2**, type “Income”, and press **Enter**.
3. Enter the required text in cells **A3:A6**.
4. In cells **A7**, **A8**, and **A9**, type “S” and press **Enter**.
5. Enter the required text in cells **A10** and **A11**.
6. Save the workbook in your Excel2019.1/Exercises folder.



5.6. Entering Numbers and Dates

In the next lesson we will cover formatting numbers to include commas, decimals, currency symbols and more, and formatting dates in various ways. In this lesson, however, we will simply enter dates and numbers in the most basic format, and use autofill to quickly add numbers that follow a pattern.

To enter numbers in Microsoft Excel:

1. Select the cell into which you wish to enter a number by clicking it.
2. Begin typing a number.

Things to be aware of when entering numbers:

1. There is no need to enter commas. If you wish to display commas, you can format your numbers to display them. This will be covered in the next lesson.
2. By default, trailing zeroes are not shown. For example, if you enter “5.00” into a cell and press **Enter**, the value shown will change to just “5”. We will cover displaying decimals in the next lesson.

To enter dates in Microsoft Excel:

1. Select the cell into which you wish to enter a date by clicking it.
2. Type the date in the following format: *mm/dd/yy* (e.g., 12/21/12) or *m/d/yy* (e.g., 1/1/00).



5.7. Using the Fill Handle

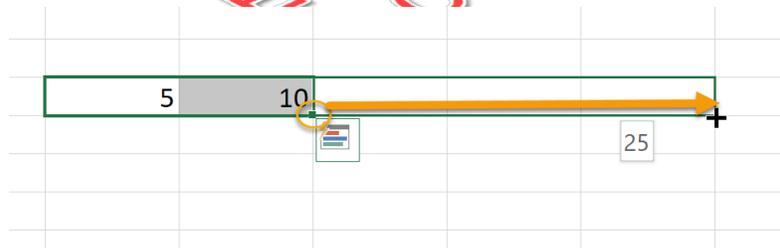
If your data follows a pattern, you can use the **Fill Handle** to quickly and easily add data to multiple rows and columns.

To use the **Fill Handle**:

1. Enter enough data to establish a pattern and then select the cells containing the pattern.
2. Click the **Fill Handle**, which is located in the bottom right cell of the selected cells:



3. Drag the **Fill Handle** for as many rows or columns as desired:



Examples of scenarios in which it might be useful to use the **Fill Handle** include:

1. Entering a numbered list:

	A	B
1	1	
2	2	
3	3	
4	4	
5	5	
6	6	
7	7	
8	8	
9	9	
10	10	
11	11	
12	12	
13	13	
14	14	
15		

2. Entering days of the month:

	A	B
1	1/1/2019	
2		
3		
4		
5		
6		1/7/2019
7		
8		
9		

	A
1	1/1/2019
2	1/2/2019
3	1/3/2019
4	1/4/2019
5	1/5/2019
6	1/6/2019
7	1/7/2019
8	1/8/2019
9	
10	

3. Entering months of the year:

	A	B	C	D
1	Jan			
2				Apr
3				

4. Entering yet to be named items which need to be differentiated:

	A	B
1	Item 1	
2		
3		
4		
5		
6		Item 6
7		

5. Copying formulas throughout a row or column. This will be covered later in this course.

Exercise 8: Entering Numbers and Dates

 5 to 10 minutes

In this exercise, you will enter the four quarters of the year at the top of your worksheet and will enter projected quarterly numbers for the two income categories.

1. Open or go to `Dave's Lemonade Stand.xlsx`, which you created in the previous exercise.
2. Follow the instructions below to add data to rows **1**, **3**, and **4** such that your worksheet looks like the following:

	A	B	C	D	E	F
1		3/31/2019	6/30/2019	9/30/2019	12/31/2019	
2	Income					
3	Lemonade	3000	3100	3200	3300	
4	Cookies	2000	2200	2400	2600	
5	Total Income					
6	Expense					
7	Payroll					
8	Marketing					
9	Supplies					
10	Total Expense					
11	Net Income					
12						

- A. Enter dates and numbers in columns **B** and **C**
 - B. Use Autofill to add dates and numbers to **D** and **E**
3. Edit cells **A6:A9** by replacing “Some Expense” with “Expense”, “Payroll”, “Marketing” and “Supplies”, as shown in the above the image.
 4. Save the workbook.

Solution

1. Open or go to Dave's Lemonade Stand.xlsx.
2. Enter "3/31/19" in cell **B1**.
3. Enter "6/30/19" in cell **C1**.
4. Enter "3000" in cell **B3**.
5. Enter "3100" in cell **C3**.
6. Enter "2000" in cell **B4**.
7. Enter "2200" in cell **C4**.
8. Select cells **B1:C1**, click the **Fill Handle** and drag to column **E**.
9. Select cells **B3:C3**, click the **Fill Handle** and drag to column **E**.
10. Select cells **B4:C4**, click the **Fill Handle** and drag to column **E**.
11. Edit cells **A7:A9** by replacing "Some Expense" with "Payroll", "Marketing" and "Supplies".
12. Save the workbook.

Conclusion

In this lesson, you learned to enter text in cells in Microsoft Excel, as well as a hyperlink, to add and delete cells, to use outlines, to use AutoComplete, to enter numbers and dates, and to use the **Fill Handle** to autofill data.

LESSON 6

Formatting Microsoft Excel Worksheets

Topics Covered

- Formatting Excel worksheets.
- Selecting a range of cells.
- Hiding worksheets.
- Adding color to workbook tabs.
- Worksheet themes.
- Bold, italicize and underline text.
- Adding borders to cells.
- Text and cell colors.
- Font and font size.
- Aligning text.
- Wrapping text.
- Indenting text.
- Merging and centering text.
- Number formats.
- Date formats.
- Showing decimals.

Evaluation
Copy

Introduction

There are many types of formatting that can be applied to Microsoft Excel worksheets. The most commonly used formatting commands show up on the **Home** tab in three groups:

1. **The Font Group.** The font group commands change the appearance of text within a cell or of the cell itself.
2. **The Alignment Group.** The alignment group commands change the position of text within a cell or cells.
3. **The Number Group.** The number group commands change the format of numbers and dates within a cell.

Formatting changes can be applied to a whole worksheet, a range of cells within a worksheet, individual cells, and sometimes even text within a cell.



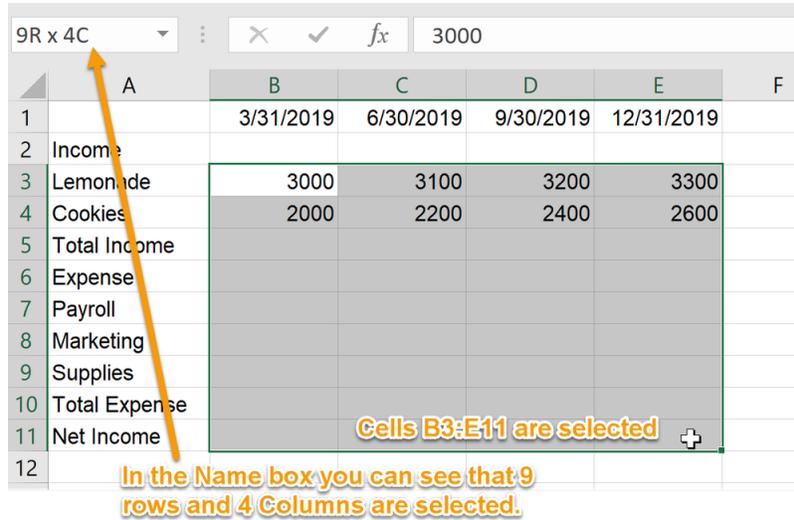
6.1. Selecting Ranges of Cells

To select a range of cells in Microsoft Excel:

1. Click a cell in one of the corners of the range of cells you wish to select:

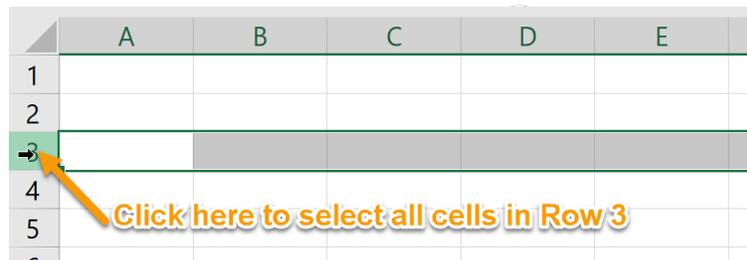
	A	B	C	D	E	F
1		3/31/2019	6/30/2019	9/30/2019	12/31/2019	
2	Income					
3	Lemonade	3000	3100	3200	3300	
4	Cookies	2000	2200	2400	2600	
5	Total Income					
6	Expense					
7	Payroll					
8	Marketing					
9	Supplies					
10	Total Expense					
11	Net Income					
12						

2. Hold the left mouse button down and drag horizontally and vertically until the range you wish to select is highlighted:

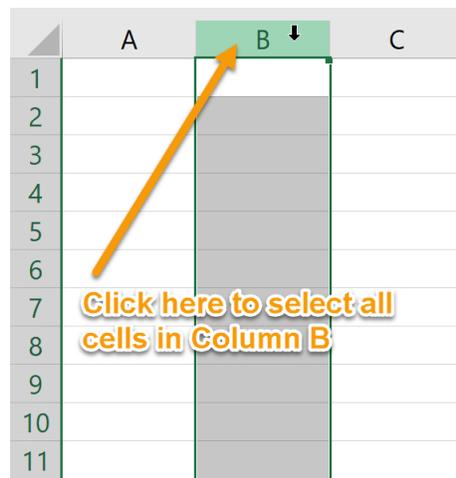


3. Release the click.

You can select all the cells in a row by clicking the number to the left of the row:

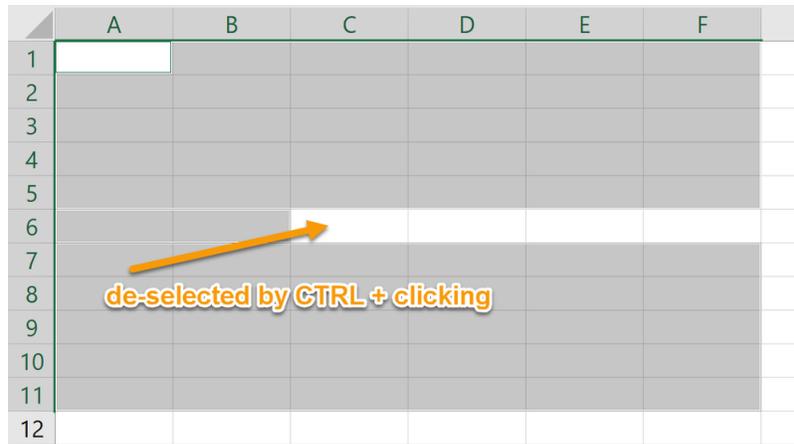


You can select all the cells in a column by clicking the letter at the top of the column:



Any formatting changes you make will be applied to all highlighted cells.

New in Excel 2019 is the ability to easily de-select cells from a selection. With your cells selected, just press Ctrl and click to de-select specific cells.

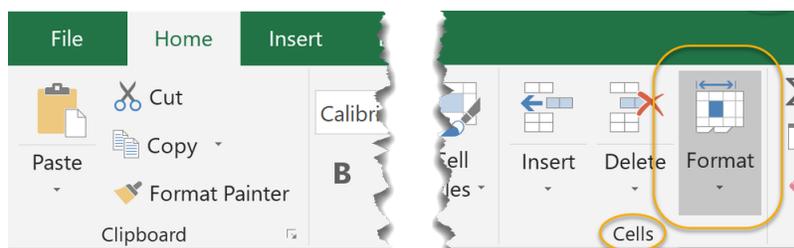


6.2. Hiding Worksheets

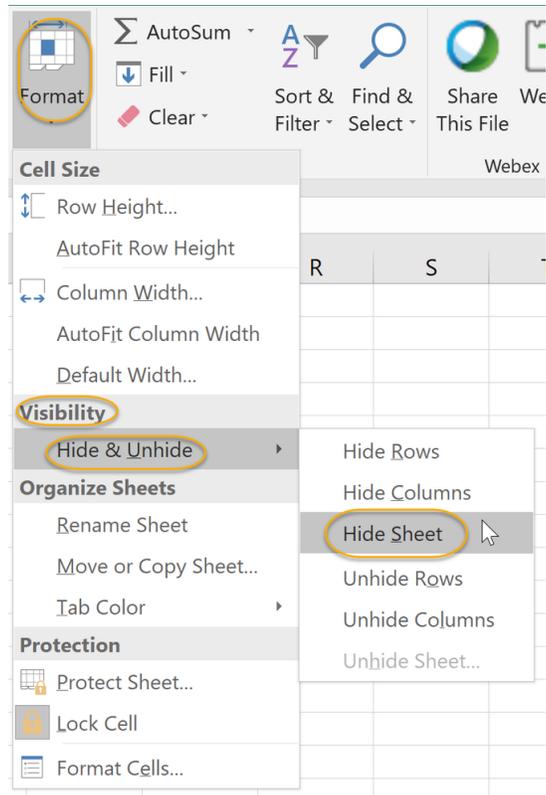
When working with worksheets and workbooks, there may be times when you want to hide worksheets.

To hide a worksheet:

1. Select the worksheet you want to hide.
2. On the **Home** tab, in the **Cells** group, select the **Format** drop-down arrow.



3. Under **Visibility**, select **Hide & Unhide**, and then select **Hide Sheet**.



The sheet is now hidden until you unhide it by selecting **Unhide Sheet**.

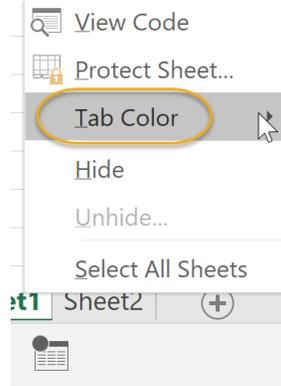


6.3. Adding Color to Worksheet Tabs

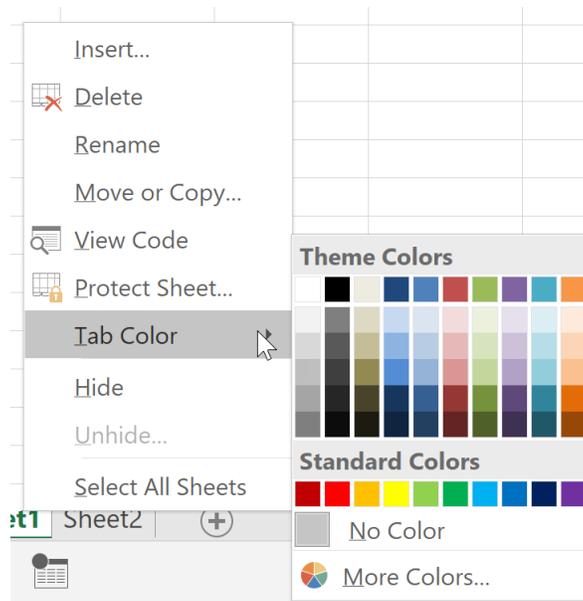
You can customize your workbook by applying colors to the sheet tabs. This can help differentiate the tabs and make them stand out.

To add color to worksheet tabs:

1. Right-click the tab to which you want to add color.
2. Select **Tab Color**.



3. Select a color from the displayed options.

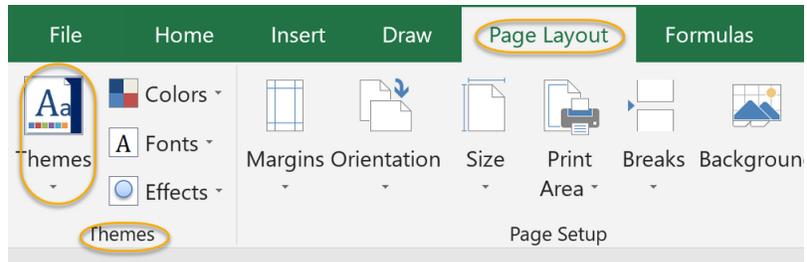


6.4. Adding Themes to Workbooks

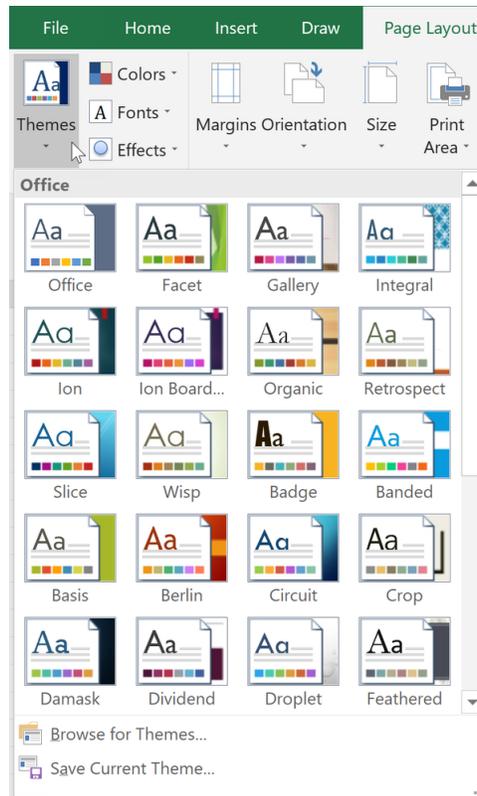
You can further customize workbooks and worksheets by using a Microsoft Office theme. Themes apply a set of fonts, colors, and other effects.

To apply a theme to a worksheet:

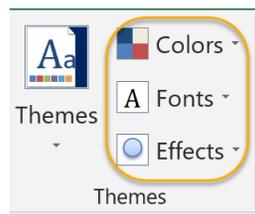
1. On the **Page Layout** tab, in the **Themes** group, select **Themes**.



- From the drop-down menu, select a theme to apply to the worksheet.



- You can further customize the theme using the **Colors**, **Fonts**, and **Effects** drop-down menus within the **Themes** group.



Exercise 9: Customize a Workbook Using Tab Colors and Themes

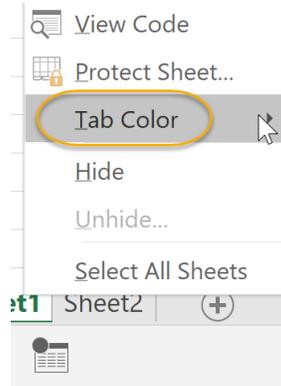
⌚ 5 to 10 minutes

In this exercise, you will use colors and themes to customize a workbook.

1. Open the Sales - Customize a Workbook.xlsx from your Excel2019.1/Exercises folder.
2. Add a color of your choice to each of the workbook tabs. In the solution, we use Blue for Sheet 1 and Red for Sheet 2.
3. Apply a theme of your choice to your workbook. In the solution, we use the Banded theme.

Solution

1. Open or go to the specified file.
2. Right-click the **Sheet1** tab and select **Tab Color**.



3. From the **Tab Color** list, select a color.



4. Right-click the **Sheet2** tab and select **Tab Color**, and then select a color from the list.
5. From the **Page Layout** tab, in the **Themes** group, select a theme to apply it to your worksheet.



6. Save the workbook.

EVALUATION COPY

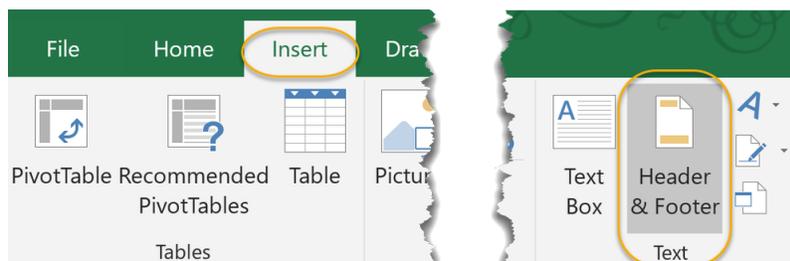


6.5. Adding a Watermark

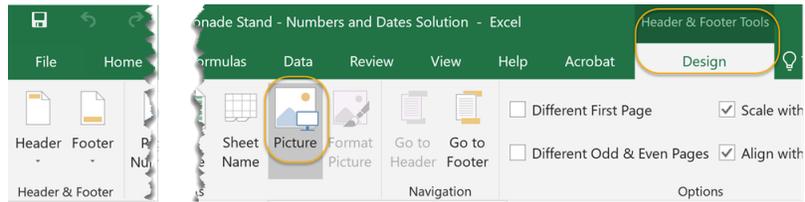
You can insert a watermark in an Excel worksheet by inserting a background image or text.

To add a watermark to a worksheet:

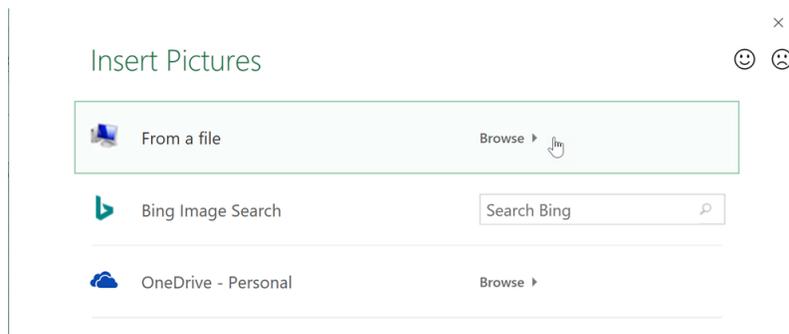
1. On the **Insert** tab, from the **Text** group, select **Header & Footer**.



- From the **Header & Footer Tools** tab, from the **Header & Footer Elements** section, select **Picture**.



- Use the **Insert Picture** dialog box to select a picture; you can select a saved image, an image from your OneDrive account, or search the Internet for a picture.



- When inserted, you will see:



- Click any cell in the worksheet and the image should appear.

	3/31/2019	6/30/2019	9/30/2019	12/31/2019
Income				
Lemonade	3000	3100	3200	3300
Cookies	2000	2200	2400	2600
Total Income				
Expense				
Payroll				

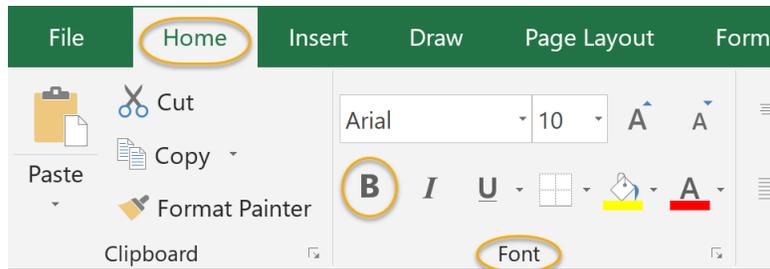


6.6. The Font Group

Bold, Italicize and Underline Text

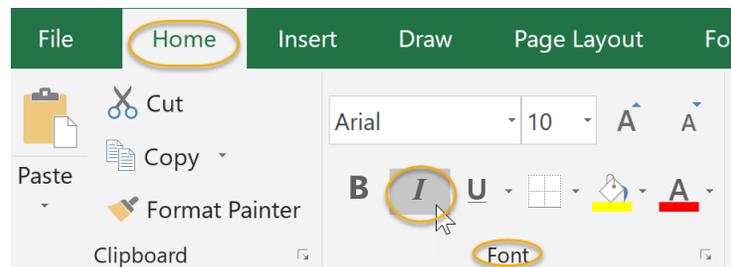
To bold text in Microsoft Excel:

1. Select the cell or cells in which you wish to bold the text.
2. On the **Home** tab, in the **Font** group, click the **Bold** command.



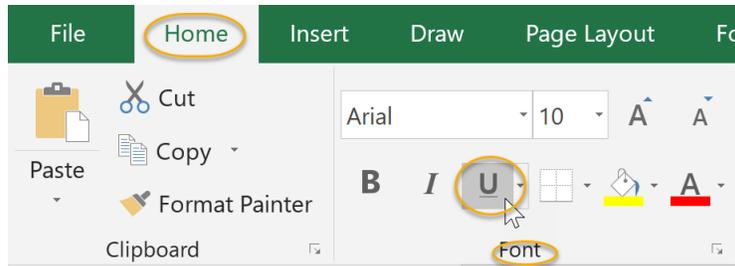
To italicize text in Microsoft Excel:

1. Select the cell or cells in which you wish to italicize the text.
2. On the **Home** tab, in the **Font** group, click the **Italic** command.



To underline text in Microsoft Excel:

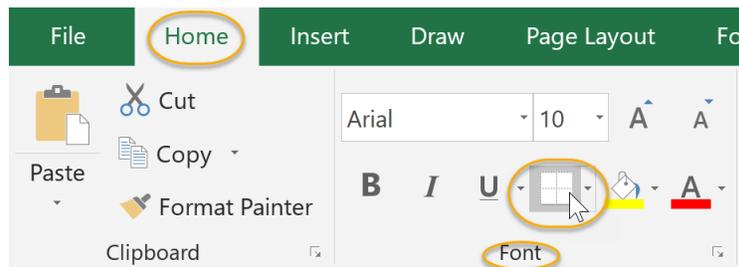
1. Select the cell or cells in which you wish to underline the text.
2. On the **Home** tab, in the **Font** group, click the **Underline** command.



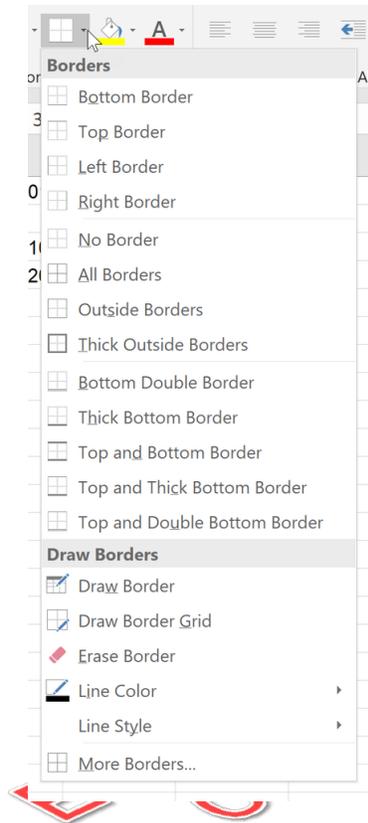
Add Borders to Cells

To add borders to cells in Microsoft Excel:

1. Select the cell or cells to which you wish to add borders.
2. On the **Home** tab, in the **Font** group, click the arrow to the right of the **Borders** command.



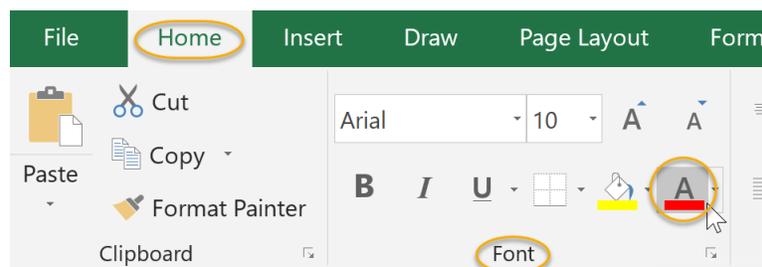
3. Select the type of border you wish to add from the dropdown menu:



Change Text and Cell Colors

To change the color of text in cells in Microsoft Excel:

1. Select the cell or cells in which you wish to change the color of the text.
2. On the **Home** tab, in the **Font** group, click the arrow to the right of the **Font Color** command.

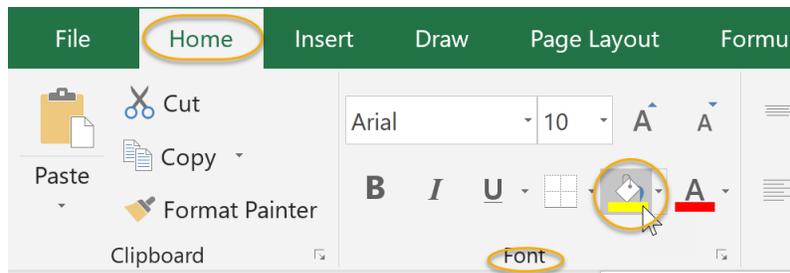


3. Select a color from the dropdown menu:



To change the fill (i.e., background) color of cells in Microsoft Excel:

1. Select the cell or cells in which you wish to change the fill color.
2. On the **Home** tab, in the **Font** group, click the arrow to the right of the **Fill Color** command.



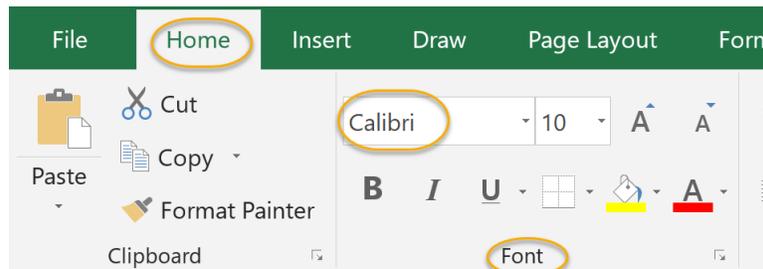
3. Select a color from the dropdown menu:



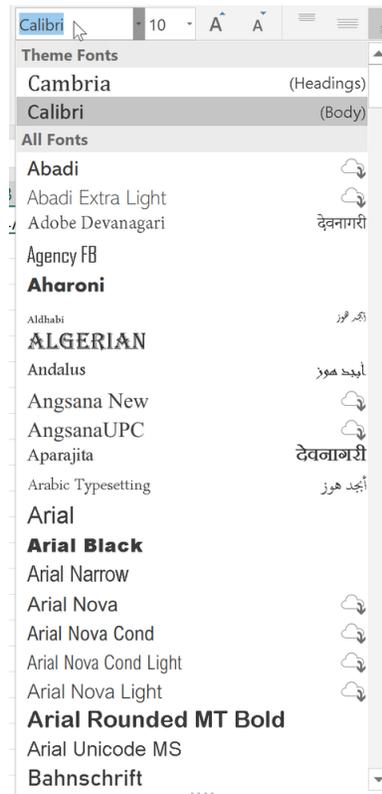
Set Font and Font Size

To change the font of text or numbers in cells in Microsoft Excel:

1. Select the cell or cells in which you wish to change the font.
2. On the **Home** tab, in the **Font** group, click the arrow to the right of the **Font** command.



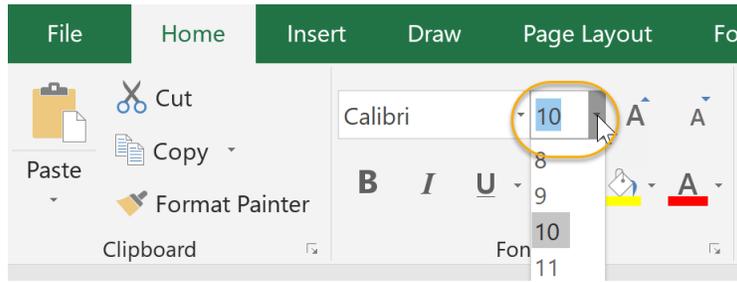
3. Select a font from the dropdown menu:



To change the size of the font of text or numbers in cells in Microsoft Excel:

1. Select the cell or cells in which you wish to change the font size.

2. On the **Home** tab, in the **Font** group, click the arrow to the right of the **Font Size** command. Select a font size from the dropdown menu:



Exercise 10: Working with Font Group Commands

 10 to 15 minutes

In this exercise, you will use commands found on the **Font** group to begin formatting the profit & loss statement for Dave's Lemonade Stand.

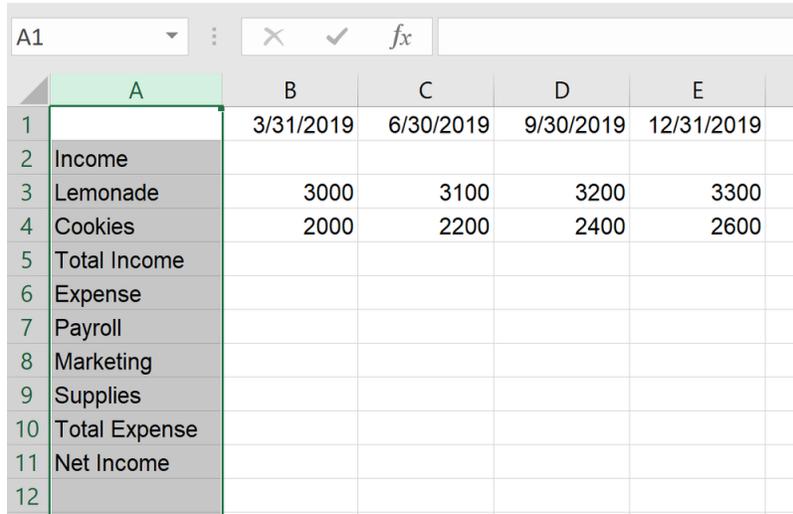
1. Continue working in the workbook from the last exercise or open Dave's Lemonade Stand - Working with Font Group Commands.xlsx from your Excel2019.1/Exercises folder.
2. Format the profit & loss statement for Dave's Lemonade Stand so that it looks like the below:

	A	B	C	D	E
1		3/31/2019	6/30/2019	9/30/2019	12/31/2019
2	Income				
3	Lemonade	3000	3100	3200	3300
4	Cookies	2000	2200	2400	2600
5	Total Income				
6	Expense				
7	Payroll				
8	Marketing				
9	Supplies				
10	Total Expense				
11	Net Income				
12					

For the fill color, choose any color you like. In the solution, we use **Red, Accent 2, Lighter 60%**.

Solution

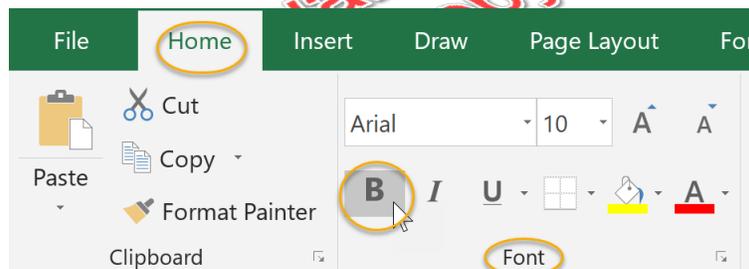
1. Open or go to the specified file.
2. Select column **A** by clicking the “A” at the top of the column:



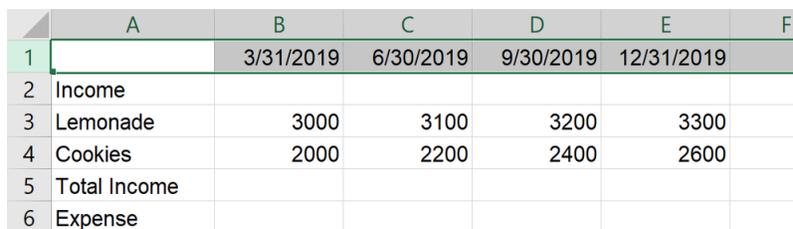
The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E
1		3/31/2019	6/30/2019	9/30/2019	12/31/2019
2	Income				
3	Lemonade	3000	3100	3200	3300
4	Cookies	2000	2200	2400	2600
5	Total Income				
6	Expense				
7	Payroll				
8	Marketing				
9	Supplies				
10	Total Expense				
11	Net Income				
12					

3. On the **Home** tab, in the **Font** group, click the **Bold** command.



4. Select row **1** by clicking the “1” to the left of the row:

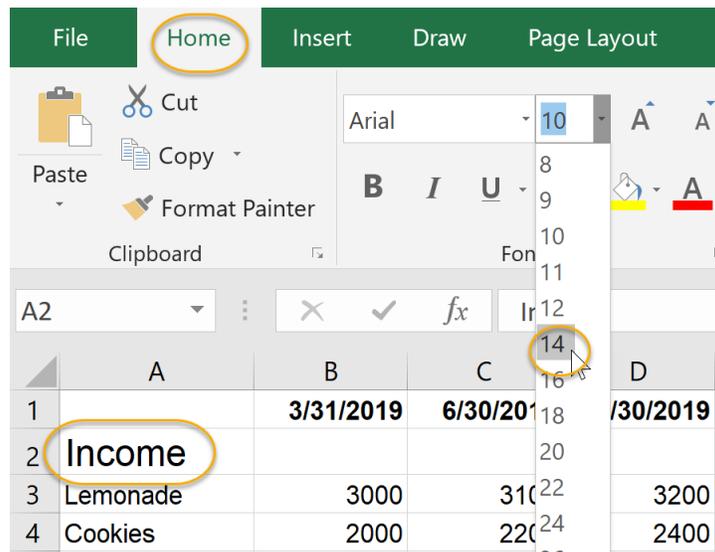


The screenshot shows the same Excel spreadsheet as before, but now row 1 is selected. The data is as follows:

	A	B	C	D	E	F
1		3/31/2019	6/30/2019	9/30/2019	12/31/2019	
2	Income					
3	Lemonade	3000	3100	3200	3300	
4	Cookies	2000	2200	2400	2600	
5	Total Income					
6	Expense					

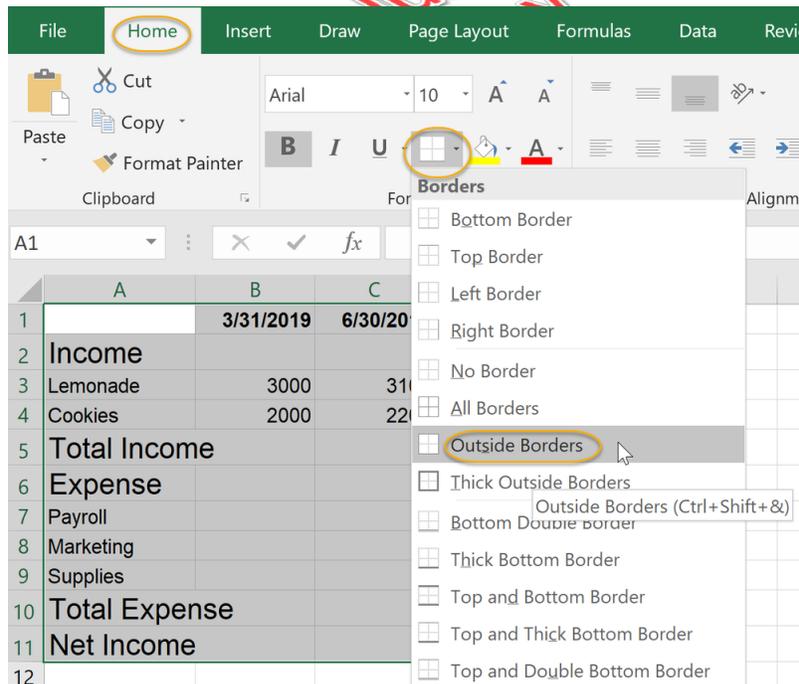
5. Click the **Bold** command twice (as cell **A1** is already bolded, the first time you click bold, **A1** will be unbolded, making all cells the same. The second time you click bold, all cells in the row will be bolded).

6. Select cell **A2** and click the drop-down arrow next to the **Font Size** command and select **14**:



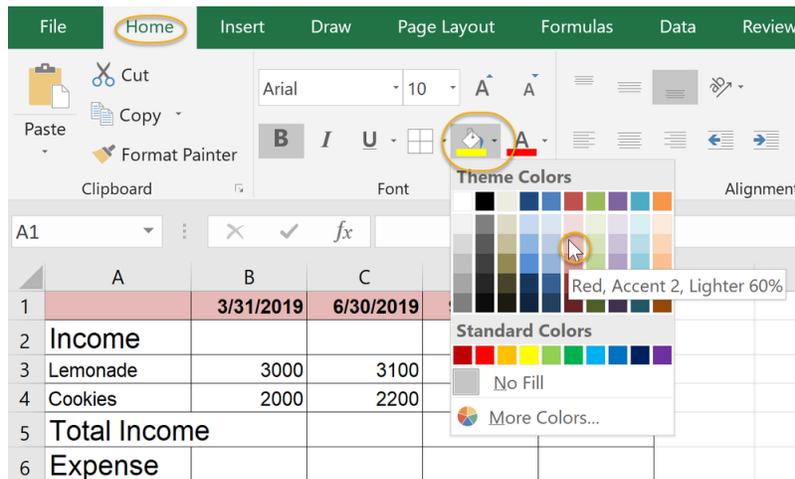
- A. Repeat this step for cells **A5**, **A6**, **A10** and **A11**.

7. Select cells **A1:E11** and click the drop-down arrow next to the **Shading** command and select **Outside Borders**:



- A. Repeat this step, choosing the appropriate borders selection, until all borders have been added.

8. Select cells **A1:E1** and click the drop-down arrow next to the **Fill Color** command and select a color:



- A. Repeat this step for cells **A5:E5** and **A10:E11**.

9. Save the workbook.

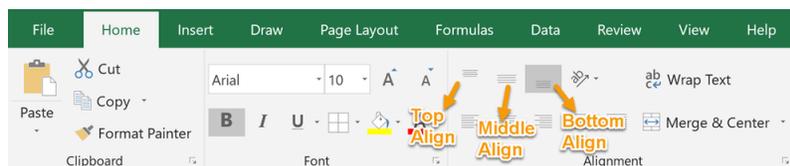
6.7. The Alignment Group

Align Text

Text within cells in Microsoft Excel can be aligned both vertically (top, center and bottom) and horizontally (left, center and right).

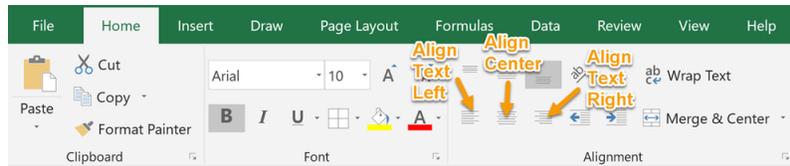
To align text vertically within a cell or cells in Microsoft Excel:

1. Select the cell or cells in which you wish to align the text.
2. On the **Home** tab, in the **Alignment** group, click either the **Top Align**, **Middle Align** or **Bottom Align** command:



To align text horizontally within a cell or cells in Microsoft Excel:

1. Select the cell or cells in which you wish to align the text.
2. On the **Home** tab, in the **Alignment** group, click either the **Align Text Left**, **Center** or **Align Text Right** command:



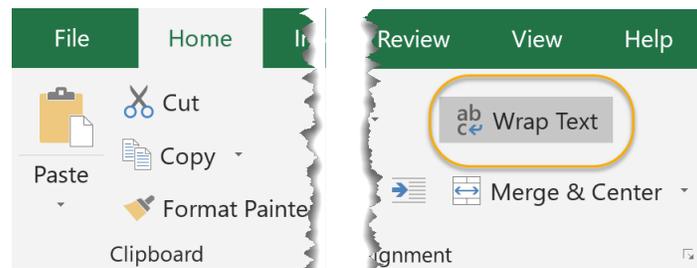
Wrap Text

By default, text in Microsoft Excel remains on one line. Wrapping text is a way of getting text to show up on multiple lines within a cell. See the following example:

	A	B	C
1	This text does not wrap		
2	This text does wrap		
3			

To wrap text within a cell or cells in Microsoft Excel:

1. Select the cell or cells in which you wish to wrap the text.
2. On the **Home** tab, in the **Alignment** group, click **Wrap Text**:



Indent Text

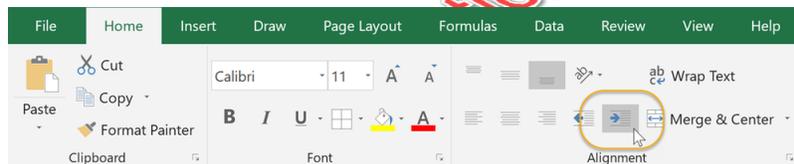
Indenting text is a way of showing that one item is a sub-item of another, as demonstrated here:

	A	
1	Tree	
2	Maple	
3	Oak	
4	Pine	
5	Flower	
6	Daffodil	
7	Tulip	
8		

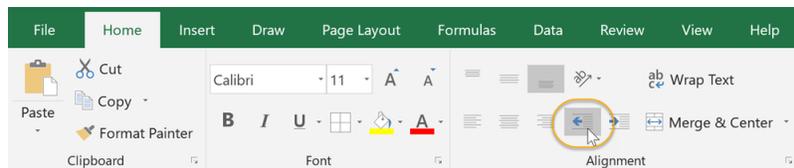
Instead of indenting sub-headings with spaces, you can do so using the **Increase Indent** command, which makes it a lot easier to keep all indented text equally indented.

To indent text within a cell or cells in Microsoft Excel:

1. Select the cell or cells in which you wish to indent text.
2. On the **Home** tab, in the **Alignment** group, click the **Increase Indent** command:



3. You can click **Increase Indent** as many times as you want to achieve the indentation you desire.
4. To decrease an indent, simply click the **Decrease Indent** command:



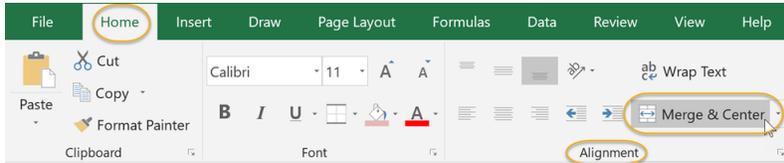
Merge & Center Text

Often a label applies to multiple columns. In these cases, it is useful to merge cells to show this. In the following example, the years “2019” and “2020” each apply to four columns:

	A	B	C	D	E	F	G	H	I
1		2019				2020			
2		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
3	Income								
4	Lemonade	3000	3100	3200	3300				
5	Cookies	2000	2200	2400	2600				
6	Total Income								
7	Expense								
8	Payroll								
9	Marketing								
10	Supplies								
11	Total Expense								
12	Net Income								

To merge cells in Microsoft Excel:

1. Select the cells you wish to merge.
2. On the **Home** tab, in the **Alignment** group, click the **Merge & Center** command:



Exercise 11: Working with Alignment Group Commands

 10 to 15 minutes

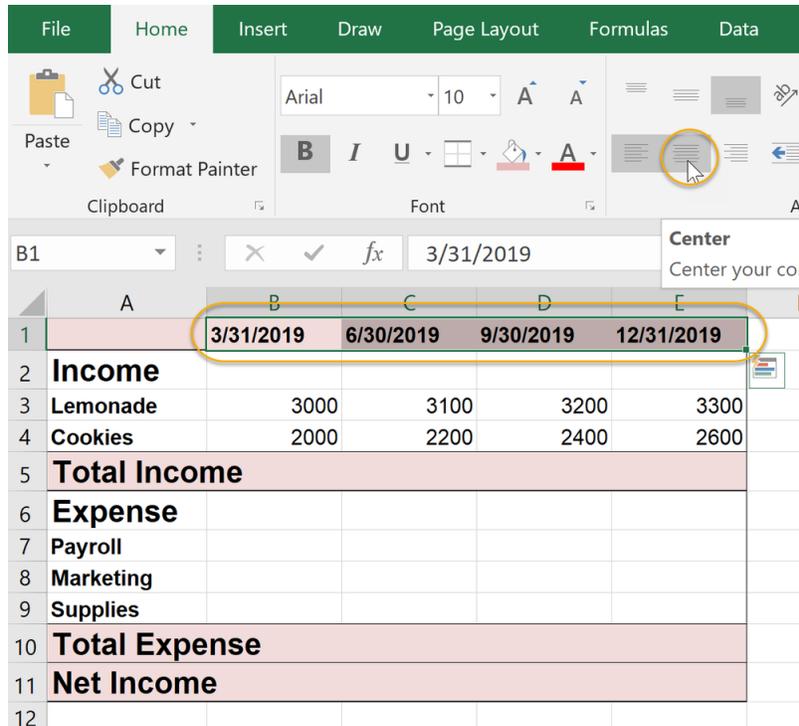
In this exercise, you will use commands found on the **Alignment** group to continue formatting the profit & loss statement for Dave's Lemonade Stand.

1. Continue working in the workbook from the last exercise or open Dave's Lemonade Stand - Working with Alignment Group Commands.xlsx from your Excel2019.1/Exercises folder.
2. Format the profit & loss statement for Dave's Lemonade Stand so that it looks like the below:

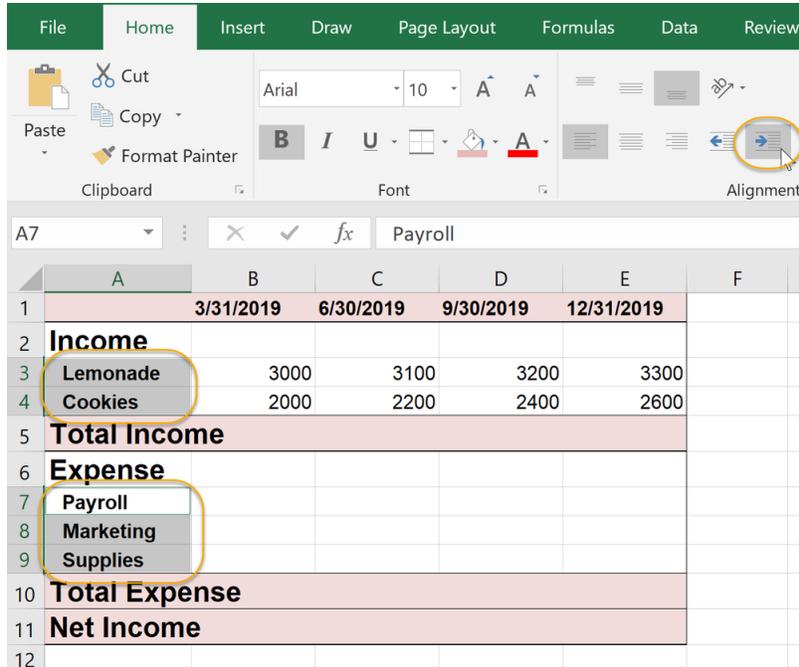
	A	B	C	D	E
1		3/31/2019	6/30/2019	9/30/2019	12/31/2019
2	Income				
3	Lemonade	3000	3100	3200	3300
4	Cookies	2000	2200	2400	2600
5	Total Income				
6	Expense				
7	Payroll				
8	Marketing				
9	Supplies				
10	Total Expense				
11	Net Income				

Solution

1. Open or go to the specified file.
2. Select cells **B1:E1** and click the **Center** command:

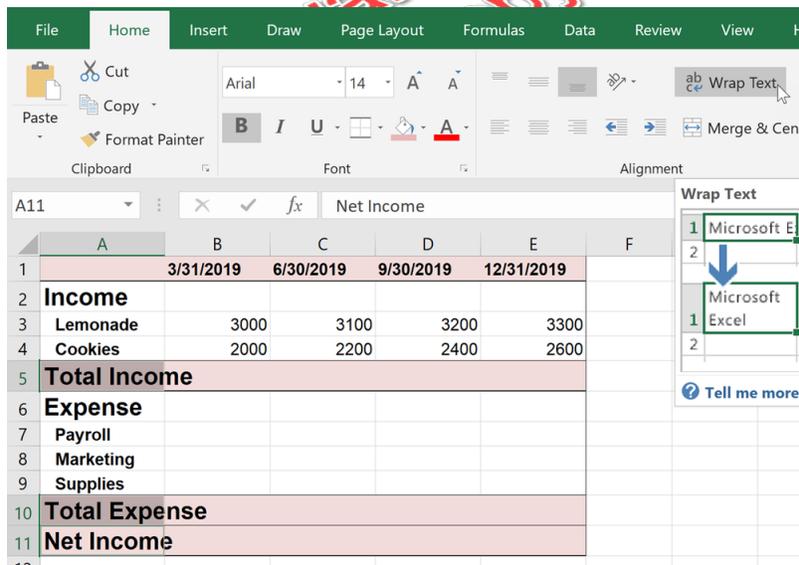


3. Select cells **A3** and **A4** and click the **Increase Indent** command:



A. Repeat for cells A7:A9.

4. Select cell A5 and click the **Wrap Text** command:



A. Repeat for cells A10 and A11.

5. Save the workbook.



6.8. The Number Group

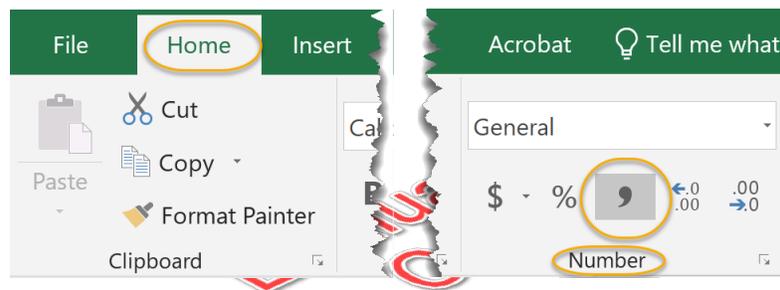
By default, numbers in Microsoft Excel do not show commas and do show the first two decimals (unless they are not 0). However, numbers can be formatted to appear in many different ways.

Number Formats

Numbers in Excel can be formatted to show commas, show currency symbols, appear as percentages, and more.

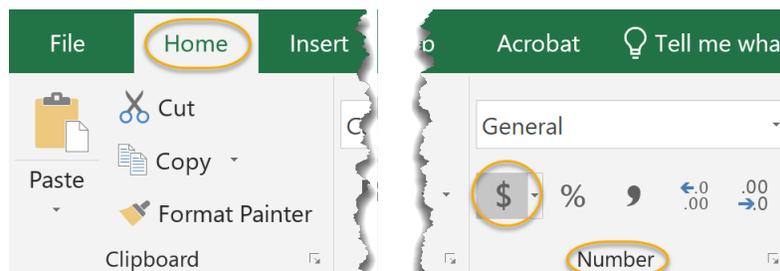
To display numbers with a thousands separator (a comma) in Microsoft Excel:

1. Select the cells for which you wish to display numbers with a thousands separator.
2. On the **Home** tab, in the **Number** group, click the **Comma Style** command:



To display numbers with a currency symbol in Microsoft Excel:

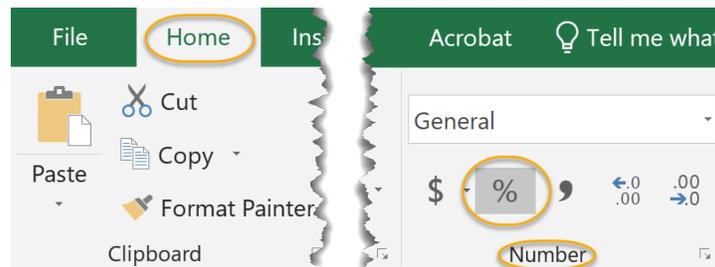
1. Select the cells for which you wish to display a currency symbol.
2. On the **Home** tab, in the **Number** group, click the **Accounting Number Format** command (or the drop-down arrow to select a currency symbol other than the one displayed):



To display numbers as percentages in Microsoft Excel:

1. Select the cells for which you wish to display numbers as percentages.

2. On the **Home** tab, in the **Number** group, click the **Percent Style** command:



Date Formats

Microsoft Excel actually stores dates as numbers, so displaying dates is really a formatting issue. Excel allows you to display dates in many ways. For example, the ways January 15, 2019 can be displayed include:

1. 01/15/2019
2. 01/15/19
3. 1/15/19
4. 1/15
5. 15-Jan
6. 15-Jan-19
7. Jan-19
8. January-19
9. January 15, 2019
10. Tuesday, January 15, 2019

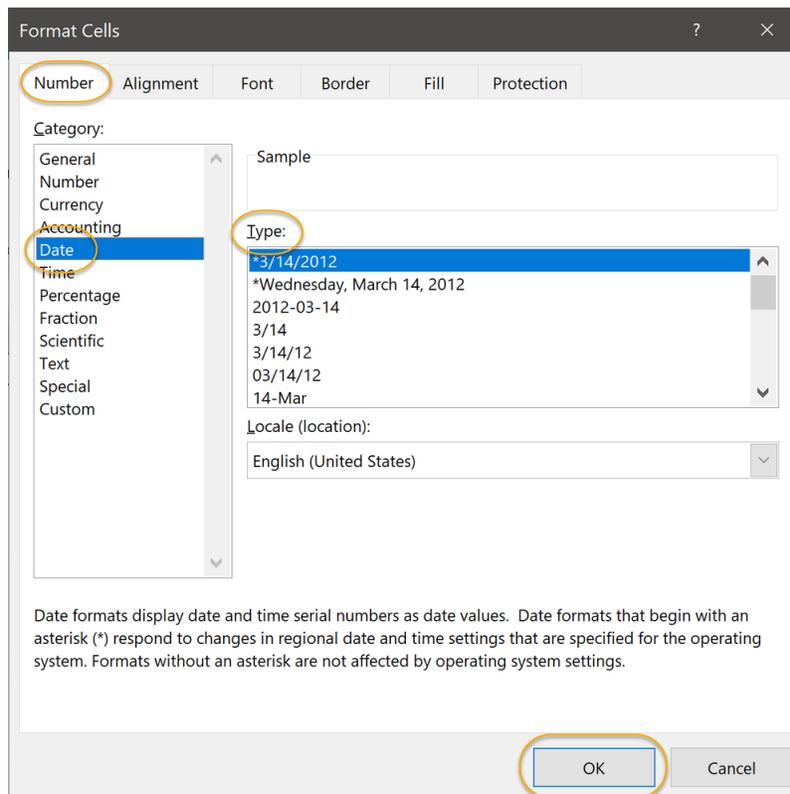
Evaluation
Copy

To set or change the way dates are displayed in Microsoft Excel:

1. Select the cell or cells for which you wish to change the way dates are displayed.
2. On the **Home** tab, in the **Number** group, click the **Dialog Box Launcher**:



3. In the **Format Cells** dialog box, in the **Number** tab, select **Date** in the **Category** box and choose a format from the **Type** box:



4. Click **OK**.

Showing Decimals

To change the number of decimals showing for numbers in Microsoft Excel:

1. Select the cell or cells for which you wish to change the number of decimals showing for numbers.

2. On the **Home** tab, in the **Number** group, click the **Increase Decimal** or the **Decrease Decimal** command:



📄 Exercise 12: Working with Number Group Commands

🕒 10 to 15 minutes

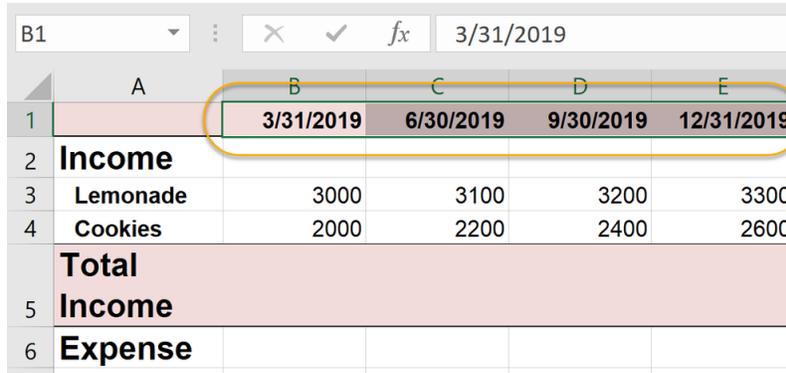
In this exercise, you will use commands found on the **Number** group to continue formatting the profit & loss statement for Dave's Lemonade Stand.

1. Continue working in the workbook from the last exercise or open Dave's Lemonade Stand - Working with Number Group Commands.xlsx from your Excel2019.1/Exercises folder.
2. Format the profit & loss statement for Dave's Lemonade Stand so that it looks like the below:

	Mar-12	Jun-12	Sep-12	Dec-12
Income				
Lemonade	3,000	3,100	3,200	3,300
Cookies	2,000	2,200	2,400	2,600
Total				
Income				
Expense				
Payroll				
Marketing				
Supplies				
Total				
Expense				
Net				
Income				

Solution

1. Open or go to the specified file.
2. Select cells **B1:E1**:

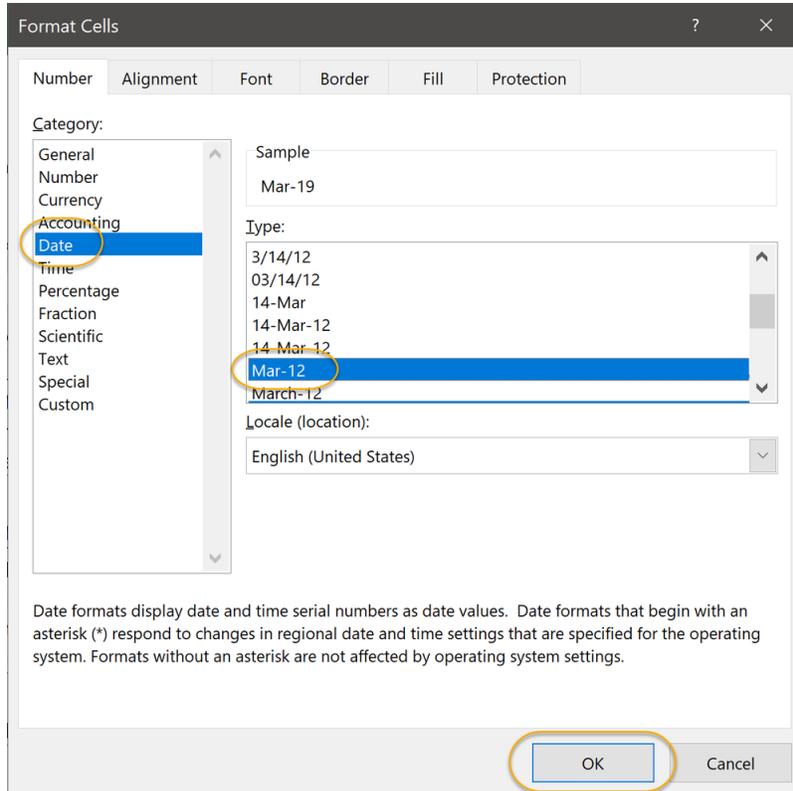


	A	B	C	D	E
1		3/31/2019	6/30/2019	9/30/2019	12/31/2019
2	Income				
3	Lemonade	3000	3100	3200	3300
4	Cookies	2000	2200	2400	2600
	Total				
5	Income				
6	Expense				

3. On the **Home** tab, in the **Number** group, click the **Dialog Box Launcher**:



4. In the **Format Cells** dialog box, in the **Number** tab, select **Date** in the **Category** box and choose the “Mar-12” format from the **Type** box and click **OK**:



5. Select cells **B3:E4**:

	A	B	C	D	E
1		Mar-19	Jun-19	Sep-19	Dec-19
2	Income				
3	Lemonade	3000	3100	3200	3300
4	Cookies	2000	2200	2400	2600
	Total				
	Income				

6. On the **Home** tab, in the **Number** group, click the **Comma Style** command:



7. On the **Home** tab, in the **Number** group, click the **Decrease Decimal** command:



8. Save the workbook.

Conclusion

In this lesson, you learned to format Microsoft Excel worksheets, ranges of cells and individual cells in many ways, including:

- To bold text.
- To italicize text.
- To underline text.
- To hide worksheets.
- To add color to workbook tabs.
- To add themes to worksheets.
- To add borders to cells.
- To change the color of the text within a cell.
- To change the fill color of a cell.
- To change the font and font size.
- To align text.
- To wrap text.
- To indent text.
- To merge and center text.
- To change number formats.
- To change date formats.
- To show decimals.

**Evaluation
Copy**

LESSON 7

Using Formulas in Microsoft Excel

Topics Covered

- Math operators and the order of operations.
- Basic formulas.
- AutoSum.
- Absolute, relative, and mixed cell references.
- Copying formulas and functions.

Introduction

This is the math lesson, and whether you love or hate math, by the end of this lesson you will agree that Excel makes math easy. We will start by explaining some of the basic concepts you need to understand regarding how Excel does math and then will get into entering formulas.



7.1. Math Operators and the Order of Operations

Math Operators

The six mathematical operators you need to know to enter basic formulas in Excel are:

1. **Addition.** Plus sign (+).
2. **Subtraction.** Minus sign (-).
3. **Multiplication.** Asterisk (*).
4. **Division.** Forward slash (/).
5. **Percent.** Percent sign (%).
6. **Exponentiation.** Exponents sign (^).

Math Operators

When a formula uses more than one operator, the order of operations in Excel is as follows:

1. **Parentheses.** Operations contained in parentheses (or brackets) are executed first.
2. **Exponents.** Exponents are executed second.
3. **Multiplication / Division.** Multiplication and division, which Excel treats equally, are executed third, from left to right.
4. **Addition / Subtraction.** Addition and subtraction, which Excel treats equally, are executed last, from left to right.



7.2. Entering Formulas

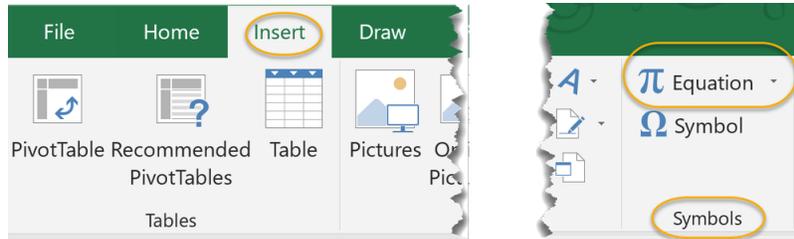
The simplest (not always the easiest) way to enter a formula in Excel is to:

1. Select the cell in which you wish to enter a formula.
2. Press “=” on your keyboard.
3. Select the first cell which contains data you will use in your formula.
4. Type the operator (+, -, *, or /).
5. Select the second cell which contains data you will use in your formula.
6. If necessary, type additional operators and select additional cells. If some operations should be performed before others, enclose those operations in parentheses.

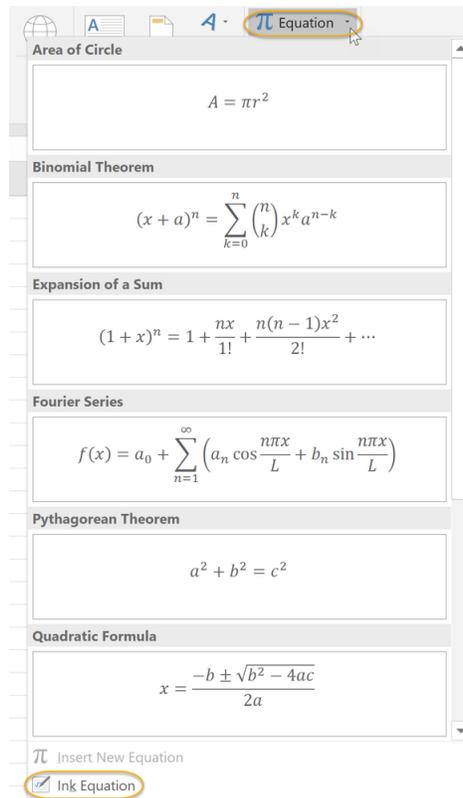
❖ 7.2.1. Ink Equations

If you are using a touch-enabled device, you can “write” equations using a stylus or your finger and Excel will convert it to text. If you are not using a touchscreen device, you can do the same using your mouse. This is useful if you are converting notes you have taken in a class and want to save them in a document.

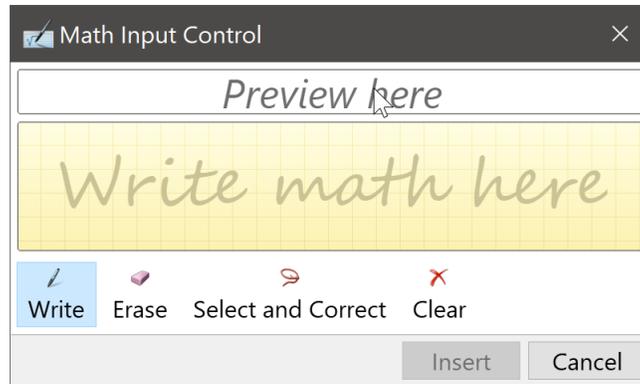
To use Ink Equations, from the **Insert** tab of the Ribbon, in the **Symbols** group, select **Equation**.



From the drop-down, select **Ink Equations**.



A dialog box opens where you can insert your equation and then click **Insert** to add it to the worksheet.



Take a Few Minutes

Take a few minutes to experiment with entering basic formulas in Excel.

Evaluation
Copy

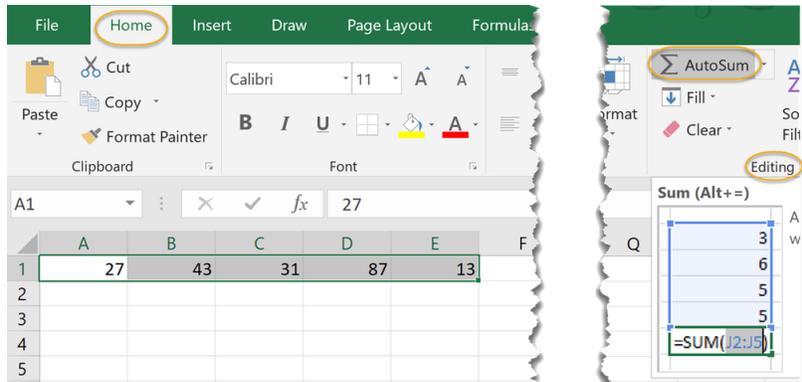
7.3. AutoSum (and Other Common Auto-Formulas)

Some formulas can be entered simply by clicking a button in Excel. Excel will even guess which data the formula applies to, meaning that if your spreadsheet is properly laid out, you don't have to select the cells.

AutoSum

To quickly sum a row or column of data:

1. Select the cell to the right or at the bottom of a set of numbers. On the **Home** tab, in the **Editing** group, click the **AutoSum** command:



- Note that Excel guesses the data you wish to sum and gives you the option to edit the formula if you wish:

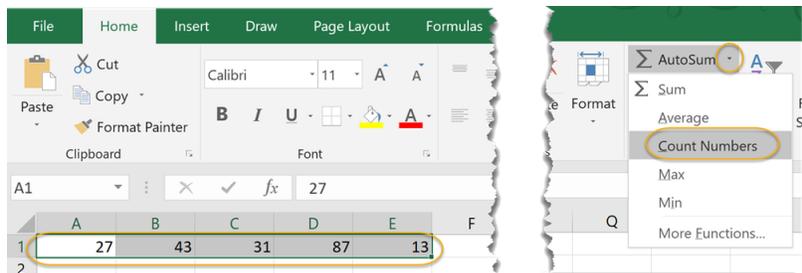
	A	B	C	D	E	F	G	H
1	27	43	31	87	13	=SUM(A1:E1)		
2						SUM(number1, [number2], ...)		
3								

- Press **Enter**.

Count Numbers

To quickly count the number of cells in a row or column that have data:

- Select the cell to the right or at the bottom of a set of numbers. On the **Home** tab, in the **Editing** group, click the drop-down arrow to the right of the **AutoSum** command. Select **Count Numbers**.



- Note that Excel guesses the cells in which you wish to count numbers and gives you the option to edit the formula if you wish:

	A	B	C	D	E	F	G	H
1	27	43	31	87	13	=COUNT(A1:E1)		
2						COUNT(value1, [value2], ...)		
3								

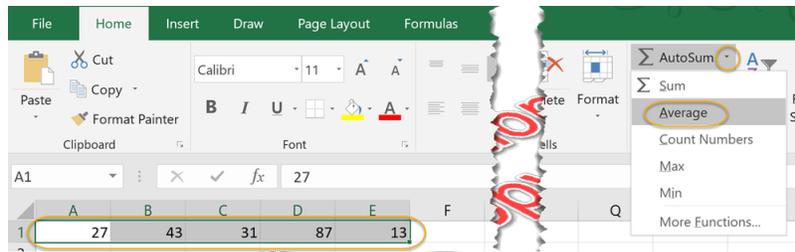
3. Press **Enter**.

If you select the **More Functions** option from the **AutoSum** command, you can also use the COUNTA and COUNTBLANK functions. COUNTA will count all cells that contain data (not just numbers). COUNTBLANK will count the empty cells in a range of cells.

Average

To quickly average the numbers in a row or column:

1. Select the cell to the right or at the bottom of a set of numbers. On the **Home** tab, in the **Editing** group, click the drop-down arrow to the right of the **AutoSum** command. Select **Average**:



2. Note that Excel guesses the cells in which the data you wish to average lies and gives you the option to edit the formula if you wish:

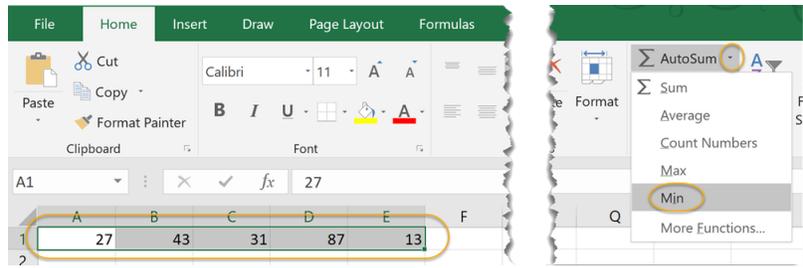
	A	B	C	D	E	F	G	H	I
1	27	43	31	87	13	=AVERAGE(A1:E1)			
2						AVERAGE(number1, [number2], ...)			

3. Press **Enter**.

Min

To quickly find the minimum number in a row or column:

1. Select the cell to the right or at the bottom of a set of numbers. On the **Home** tab, in the **Editing** group, click the drop-down arrow to the right of the **AutoSum** command. Select **Min**:



2. Note that Excel guesses the cells in which you wish to find the minimum number and gives you the option to edit the formula if you wish:

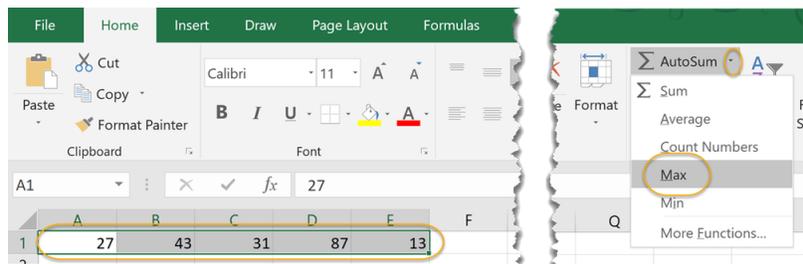
	A	B	C	D	E	F	G	H
1	27	43	31	87	13	=MIN(A1:E1)		
2						MIN(number1, [number2], ...)		

3. Press **Enter**.

Max

To quickly find the maximum number in a row or column:

1. Select the cell to the right or at the bottom of a set of numbers. On the **Home** tab, in the **Editing** group, click the drop-down arrow to the right of the **AutoSum** command. Select **Max**:



2. Note that Excel guesses the cells in which you wish to find the maximum number and gives you the option to edit the formula if you wish:

	A	B	C	D	E	F	G	H
1	27	43	31	87	13	=MAX(A1:E1)		
2						MAX(number1, [number2], ...)		

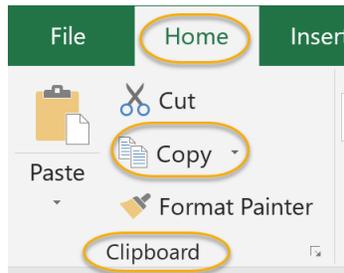
3. Press **Enter**.



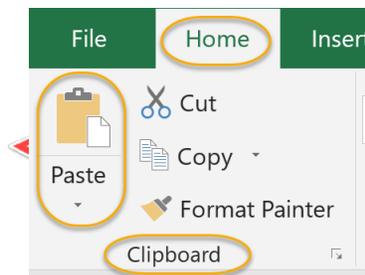
7.4. Copying Formulas and Functions

Formulas can be copied from one cell to other cells in Excel. To copy formulas in Excel:

1. Select the cell which contains the formula you wish to copy.
2. On the **Home** tab, in the **Clipboard** group, click the **Copy** command.



3. Select the cell into which you wish to copy the formula.
4. On the **Home** tab, in the **Clipboard** group, click the **Paste** command.



Another way to copy formulas is by using **Autofill**, or dragging the **Fill Handle** in the cell containing the formula to the other cell or cells in which you wish to copy the formula. Autofill, which was introduced earlier in this course, is especially useful for copying formulas.

To use Autofill to copy formulas:

1. Enter a formula in one cell:

	A	B	C	D	E	F	G
1		January	February	March	Total		
2	Groceries	321	413	398	=SUM(B2:D2)		
3	Electric	173	169	208	SUM(number1, [number2], ...)		
4	TV/Internet/Phone	131	131	131			
5	Clothes	254	0	82			
6	Fun Stuff	451	213	357			
7							
8							

- Click the **Fill Handle**, which is located in the bottom right cell of the selected cells:

	A	B	C	D	E	F
1		January	February	March	Total	
2	Groceries	321	413	398	1132	
3	Electric	173	169	208		
4	TV/Internet/Phone	131	131	131		
5	Clothes	254	0	82		
6	Fun Stuff	451	213	357		
7						

- Drag the **Fill Handle** for as many rows or columns as desired:

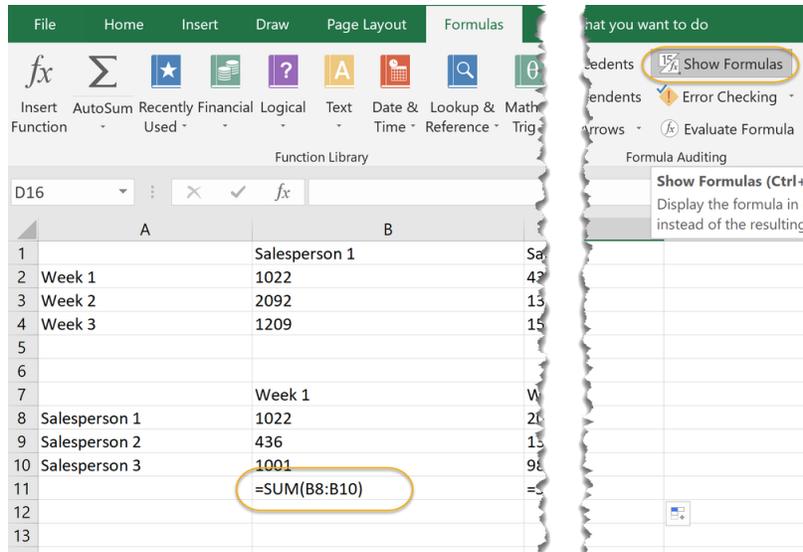
	A	B	C	D	E	F
1		January	February	March	Total	
2	Groceries	321	413	398	1132	
3	Electric	173	169	208		
4	TV/Internet/Phone	131	131	131		
5	Clothes	254	0	82		
6	Fun Stuff	451	213	357		
7						

- Release the mouse to enter the formula into the desired cells:

	A	B	C	D	E	F
1		January	February	March	Total	
2	Groceries	321	413	398	1132	
3	Electric	173	169	208	550	
4	TV/Internet/Phone	131	131	131	393	
5	Clothes	254	0	82	336	
6	Fun Stuff	451	213	357	1021	
7						
8						

❖ 7.4.1. Displaying Formulas

When working with formulas, if you wish to display the formula within its associated cell in a worksheet, select the **Formula** tab and in the **Formula Auditing** group, select **Show Formulas**.



You can toggle this option on and off by selecting and de-selecting it.



7.5. Relative, Absolute, and Mixed Cell References

Relative Cell References

Note that in the example in the prior reading, when we copied the formula from one cell to others, the formula automatically changed to add the cells in the corresponding rows:

1. The formula in cell **E2** added **B2**, **C2** and **D2**.
2. The formula in **E3** added **B3**, **C3** and **D3**.
3. etc...

This happened because the formula we entered contained *Relative* cell references.

Relative cell references are the default in Excel. They are called “relative” because the actual cell row and column used in the formula are not significant. Instead, the significant thing is the location of the cell used in the formula *relative* to the location of the cell in which the formula is entered.

The way to think of the formula $E2 = B2 + C2 + D2$ is *Result = (cell 3 places to the left) + (cell 2 places to the left) + (cell 1 place to the left)* of the cell in which the Result is entered.

Absolute Cell References

	A	B	C	D	E	F
1	Quarterly Income	\$12,000.00				
2						
3		January	February	March	Total	% Of Income
4	Groceries	321	413	398	1,132	9% <small>=E4/B1</small>
5	Electric	173	169	208	550	5% <small>=E5/B1</small>
6	TV/Internet/Phone	131	131	131	393	3% <small>=E6/B1</small>
7	Clothes	254	0	82	336	3% <small>=E7/B1</small>
8	Fun Stuff	451	213	357	1,021	9% <small>=E8/B1</small>
9						

Sometimes you want a formula to refer to a specific cell regardless of where in your worksheet the formula is executed. In the above example, the formulas in column **F** all refer to cell **B1**.

	A	B	C	D	E	F
1	Quarterly Income	\$12,000.00				
2						
3		January	February	March	Total	% Of Income
4	Groceries	321	413	398	1,132	9% <small>=E4/\$B\$1</small>
5	Electric	173	169	208	550	5% <small>=E5/\$B\$1</small>
6	TV/Internet/Phone	131	131	131	393	3% <small>=E6/\$B\$1</small>
7	Clothes	254	0	82	336	3% <small>=E7/\$B\$1</small>
8	Fun Stuff	451	213	357	1,021	9% <small>=E8/\$B\$1</small>
9						

% Of Income

=E4/\$B\$1

=E5/\$B\$1

=E6/\$B\$1

=E7/\$B\$1

=E8/\$B\$1

The way to tell Excel that a formula should always refer to a specific cell is to use dollar signs (\$). In the above example, the formula we used in cell **F4** is =E4/\$B\$1. No matter where we put this formula in our worksheet, it will divide the cell one to the left of the cell in which we enter the formula by cell **B1**.

Finally, notice that we entered the dollar sign twice in the above formula, before the “B” and before the “1”. The first \$ made the column an absolute reference and the second made the row an absolute reference. In this example, it was not actually necessary to make the column an absolute reference. The takeaway here is that when you refer to a cell in a formula, you can make either or both of the column and row references Absolute or Relative.

Mixed Cell References

Mixed cell references are a combination of relative and absolute references.

Just like in absolute cell references, in mixed cell references the dollar sign (\$) is used to refer to a specific cell that is fixed.

An example of a mixed cell reference would be: **\$F4**. This would mean that the the column letter, F, is fixed, while the row number is allowed to be copied from cell to cell.

Exercise 13: Working with Formulas

🕒 15 to 25 minutes

In this exercise, you will use formulas to enter additional data into the quarterly profit and loss statement we are creating for Dave's Lemonade Stand.

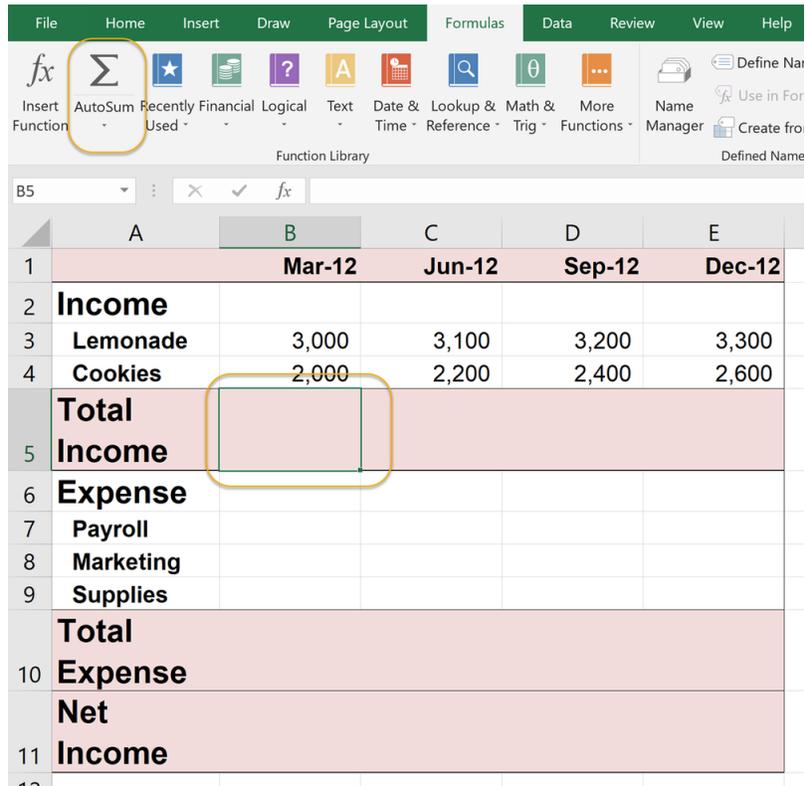
1. Continue working in the workbook from the last exercise or open Dave's Lemonade Stand - Working with Formulas.xlsx from your Webucator/Excel2019.1/Exercises folder.
2. Use AutoSum to sum the Total Income in row 5.
3. Enter a formula to make payroll 30% of Total Income each quarter.
4. Enter a formula to make marketing 25% of the first quarter's Total Income each quarter (so all formulas refer to cell B5).
5. Enter a formula to make Supplies 20% of Total Income each quarter.
6. Use AutoSum to sum the Total Expense in row 10.
7. Use a formula to calculate Net Income (Total Income - Total Expense).
8. Enter "Margin" in cell A12 and then use a formula to calculate the Margin (Net Income / Total Income).
9. Format all cells to look like they do in the below image:

	A	B	C	D	E	F
1		Mar-12	Jun-12	Sep-12	Dec-12	
2	Income					
3	Lemonade	3,000	3,100	3,200	3,300	
4	Cookies	2,000	2,200	2,400	2,600	
5	Total Income	5,000	5,300	5,600	5,900	
6	Expense					
7	Payroll	1,500	1,590	1,680	1,770	
8	Marketing	1,250	1,250	1,250	1,250	
9	Supplies	1,000	1,060	1,120	1,180	
10	Total Expense	3,750	3,900	4,050	4,200	
11	Net Income	1,250	1,400	1,550	1,700	
12	Margin	25%	26%	28%	29%	
13						

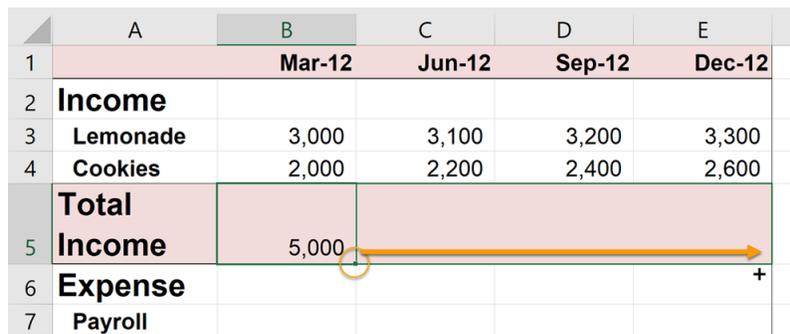
10. Save the workbook.

Solution

1. Open or go to the specified file.
2. Use AutoSum to sum the Total Income in row 5.
 - A. Select cell **B5** and click **AutoSum** and press **Enter**:



- B. Grab the **Fill Handle** in cell **B5** and drag the formula in cell **B5** to cell **E5**:



3. Enter a formula to make payroll 30% of Total Income each quarter.
 - A. In cell **B7**, enter “=B5*.3”:

	A	B	C	D	E
1		Mar-12	Jun-12	Sep-12	Dec-12
2	Income				
3	Lemonade	3,000	3,100	3,200	3,300
4	Cookies	2,000	2,200	2,400	2,600
5	Total Income	5,000	5,300	5,600	5,900
6	Expense				
7	Payroll	=B5*.3			
8	Marketing				
9	Supplies				

- B. Grab the **Fill Handle** in cell **B7** and drag the formula in cell **B7** to cell **E7**.
4. Enter a formula to make marketing 25% of the first quarter's Total Income each quarter (so all formulas refer to cell **B5**).
- A. In cell **B8**, enter "=\$B\$5*.25":

	A	B	C	D	E
1		Mar-12	Jun-12	Sep-12	Dec-12
2	Income				
3	Lemonade	3,000	3,100	3,200	3,300
4	Cookies	2,000	2,200	2,400	2,600
5	Total Income	5,000	5,300	5,600	5,900
6	Expense				
7	Payroll	\$1,500	\$1,590	\$1,680	\$1,770
8	Marketing	=B5*.25			
9	Supplies				
10	Total Expense				

- B. Grab the **Fill Handle** in cell **B8** and drag the formula in cell **B8** to cell **E8**.
5. Enter a formula to make Supplies 20% of Total Income each quarter.
- A. In cell **B9**, enter " =B5*.2".
- B. Grab the **Fill Handle** in cell **B9** and drag the formula in cell **B9** to cell **E9**.
6. Use AutoSum to sum the Total Expense in row **10**.
- A. Select cell **B10** and click **AutoSum** and press **Enter**.
- B. Grab the **Fill Handle** in cell **B10** and drag the formula in cell **B10** to cell **E10**.

7. Use a formula to calculate Net Income (Total Income - Total Expense).

A. Select cell **B11** and enter “=B5-B10”:

	A	B	C	D	E
1		Mar-12	Jun-12	Sep-12	Dec-12
2	Income				
3	Lemonade	3,000	3,100	3,200	3,300
4	Cookies	2,000	2,200	2,400	2,600
5	Total Income	5,000	5,300	5,600	5,900
6	Expense				
7	Payroll	\$1,500	\$1,590	\$1,680	\$1,770
8	Marketing	\$1,250	\$1,250	\$1,250	\$1,250
9	Supplies	\$1,000	\$1,060	\$1,120	\$1,180
10	Total Expense	\$3,750	\$3,900	\$4,050	\$4,200
11	Net Income	=B5-B10			

B. Grab the **Fill Handle** in cell **B11** and drag the formula in cell **B11** to cell **E11**.

8. Enter “Margin” in cell **A12** and then use a formula to calculate the Margin (Net Income / Total Income), which should be displayed as a percent.

A. Enter “Margin” in cell **A12**.

B. In cell **B12** enter “=B11/B5”:

9	Supplies	\$1,000	\$1,060	\$1,120	\$1,180
10	Total Expense	\$3,750	\$3,900	\$4,050	\$4,200
11	Net Income	1,250	1,400	1,550	1,700
12	Margin	=B11/B5			

C. Grab the **Fill Handle** in cell **B12** and drag the formula in cell **B12** to cell **E12**.

D. Select cells **B12:E12** and click the **Percent** command:

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G
4	Cookies	2,000	2,200	2,400	2,600		
	Total						
5	Income	5,000	5,300	5,600	5,900		
6	Expense						
7	Payroll	\$1,500	\$1,590	\$1,680	\$1,770		
8	Marketing	\$1,250	\$1,250	\$1,250	\$1,250		
9	Supplies	\$1,000	\$1,060	\$1,120	\$1,180		
	Total						
10	Expense	\$3,750	\$3,900	\$4,050	\$4,200		
	Net						
11	Income	1,250	1,400	1,550	1,700		
12	Margin	0.25	0.26415094	0.27678571	0.28813559		
13							

The formula bar shows the formula for cell B12: `=B11/B5`. The percentage style dropdown menu is open, showing the percentage symbol and the text "Percent Style (Format as a per)".

9. Make any necessary formatting changes.
10. Save the workbook.

Conclusion

In this lesson, you learned about math operators and the order of operations, to enter basic formulas, to use AutoSum to sum data with one click, about absolute, relative, and mixed cell references, and to copy formulas and functions.

LESSON 8

Working with Rows and Columns

Topics Covered

- Inserting rows and columns.
- Deleting rows and columns.
- Transposing rows and columns.
- Changing row heights and column widths.
- Hiding and unhiding rows and columns.
- Freezing panes.

Introduction

Evaluation
Copy

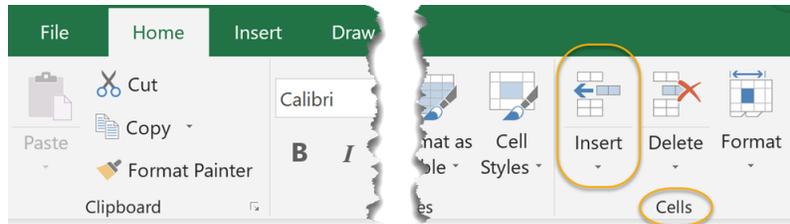
In this lesson, you will learn to insert, delete, and transpose rows and columns in worksheets, to change row heights and column widths, to hide and unhide rows and columns, and to freeze panes.



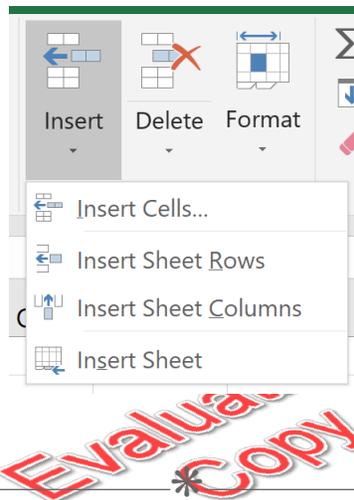
8.1. Inserting Rows and Columns

To insert a row or a column into a Microsoft Excel worksheet:

1. Select a cell in your worksheet where you would like the new row or column to be inserted.
To insert multiple rows or columns, simply select multiple cells.
 - A. New rows are inserted above the selected cell(s).
 - B. New columns are inserted to the left of selected cell(s).
2. On the **Home** tab, in the **Cells** group, click the **Insert** command.



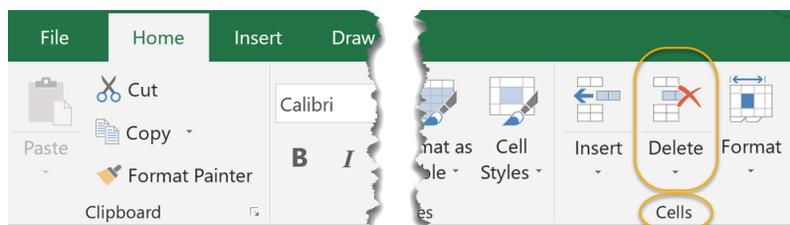
3. Select **Insert Sheet Rows** or **Insert Sheet Columns**:



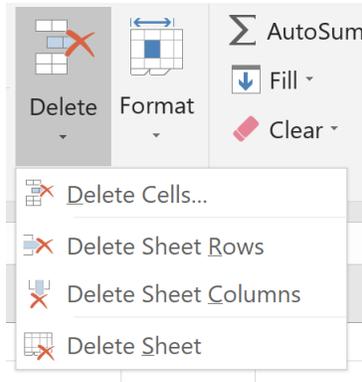
8.2. Deleting Rows and Columns

To delete a row or a column in a Microsoft Excel worksheet:

1. Select a cell in your worksheet in the row or column you wish to delete. To delete multiple rows or columns, simply select multiple cells.
2. On the **Home** tab, in the **Cells** group, click the **Delete** command.



3. Select **Delete Sheet Rows** or **Delete Sheet Columns**:



8.3. Transposing Rows and Columns

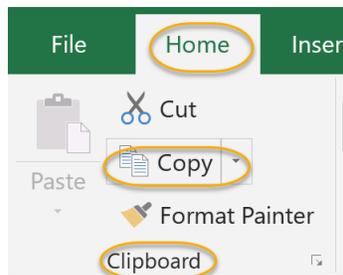
You may at times determine that data you have already entered in a worksheet would be presented more logically by transposing rows and columns.

To transpose rows and columns:

1. Select the cells with the headings and the data that you want to flip.

	A	B	C	D
1		Salesperson 1	Salesperson 2	Salesperson 3
2	Week 1	1022	450	1001
3	Week 2	2092	1584	989
4	Week 3	1209	1540	389

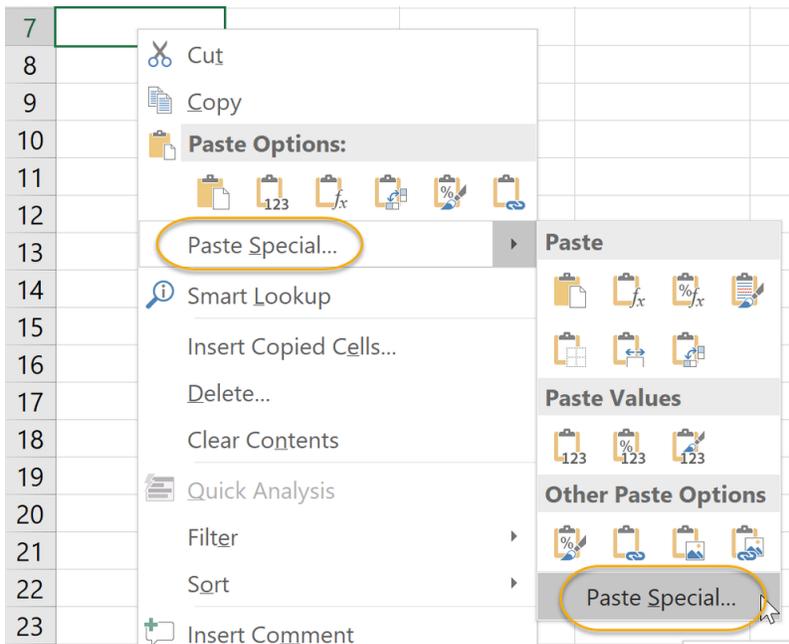
2. On the **Home** tab, in the **Clipboard** group, select **Copy**.



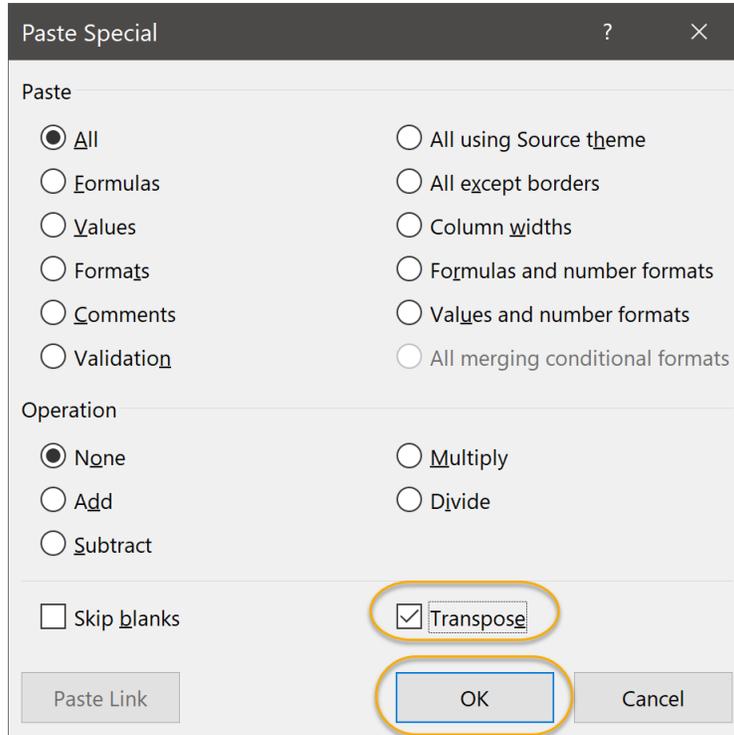
3. Place your cursor in a blank cell in the worksheet, which will become the top-left cell in the transposed group.

	A	B	C	D
1		Salesperson 1	Salesperson 2	Salesperson 3
2	Week 1	1022	450	1001
3	Week 2	2092	1584	989
4	Week 3	1209	1540	389
5				
6				
7				
8				

- Right-click, select **Paste Special**, and then click **Paste Special**.



- In the **Paste Special** dialog box, check the **Transpose** check box and click **OK**.



6. The data now appears with the rows and columns swapped.

	A	B	C	D	E
1		Salesperson 1	Salesperson 2	Salesperson 3	
2	Week 1	1022	450	1001	
3	Week 2	2092	1584	989	
4	Week 3	1209	1540	389	
5					
6					
7		Week 1	Week 2	Week 3	
8	Salesperson 1	1022	2092	1209	
9	Salesperson 2	450	1584	1540	
10	Salesperson 3	1001	989	389	
11					📄 (Ctrl) ▾
12					
13					

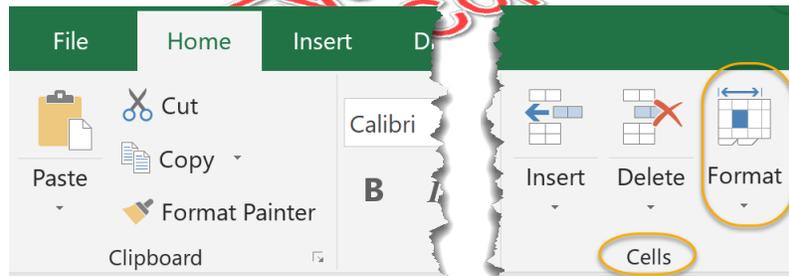


8.4. Setting Row Height and Column Width

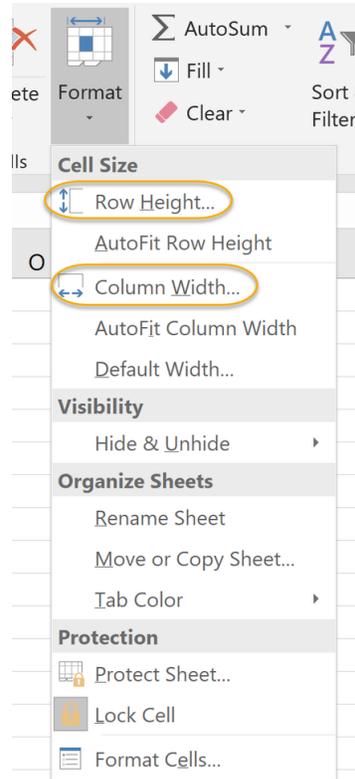
Set a Specific Height or Width

To change the row height or column width of rows and columns in a Microsoft Excel worksheet:

1. Select a cell in your worksheet in the row or column of which you wish to change the height or width. To change the height or width of multiple rows or columns, simply select multiple cells.
2. On the **Home** tab, in the **Cells** group, click the **Format** command.



3. Select **Row Height** or **Column Width**:



4. In the **Row Height dialog box** or the **Column Width dialog box**, enter the new size of the row or column:

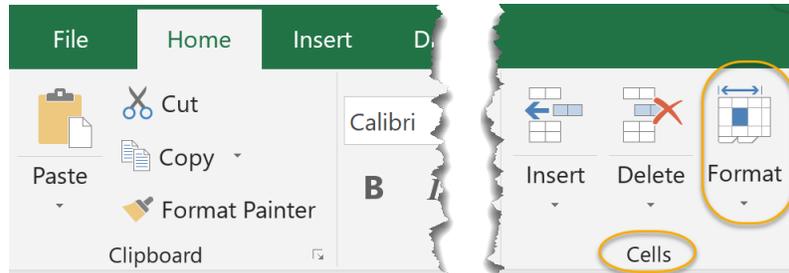


- A. Rows are measured in points, with each point equaling approximately 1/72 of an inch.
- B. Columns are measured in characters, so the value entered is equal to the number of characters that will fit in the cell (assuming you are using the standard font).

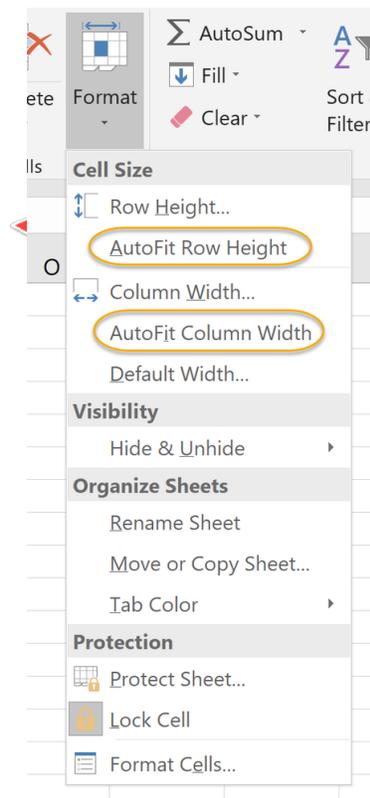
AutoFit Row Height or Column Width

When you AutoFit the row height or column width, Excel sets the height or width based on the contents in the row or column. To AutoFit the row height or column width:

1. Select a cell in your worksheet in the row or column of which you wish to change the height or width. To change the height or width of multiple rows or columns, simply select multiple cells.
2. On the **Home** tab, in the **Cells** group, click the **Format** command.



3. Select **AutoFit Row Height** or **AutoFit Column Width**:

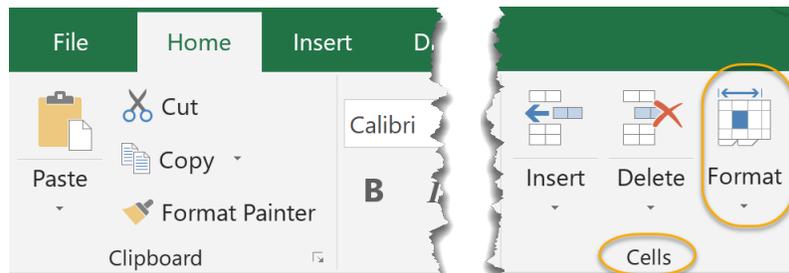


8.5. Hiding and Unhiding Rows and Columns

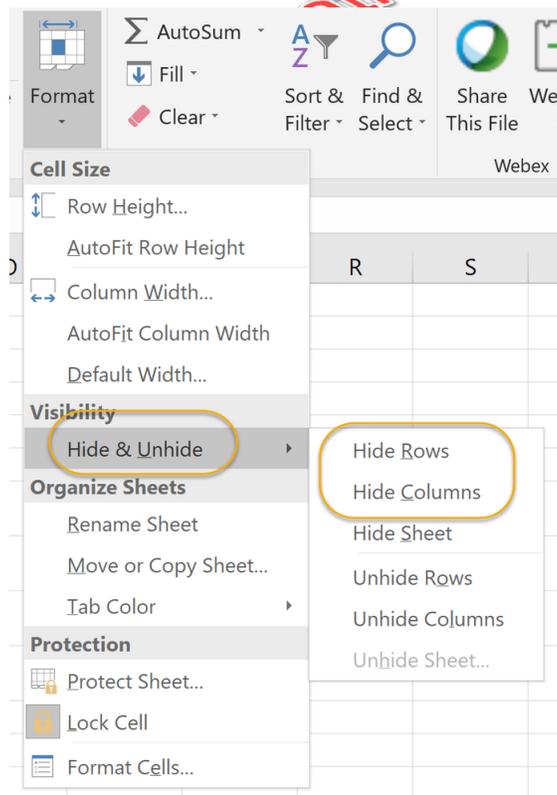
Hiding Rows and Columns

To hide rows or columns in a Microsoft Excel worksheet:

1. Select a cell in your worksheet in the row or column you wish to hide. To hide multiple rows or columns, simply select multiple cells.
2. On the **Home** tab, in the **Cells** group, click the **Format** command.



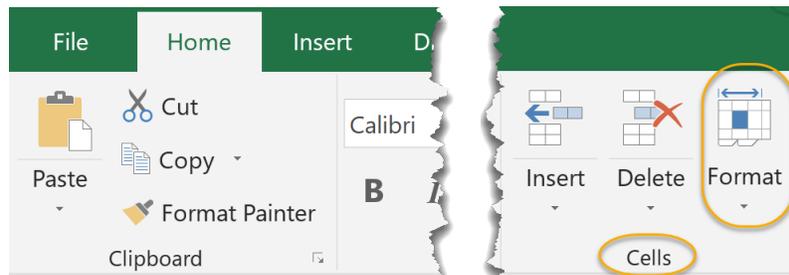
3. Select **Hide & Unhide** and then **Hide Rows** or **Hide Columns**:



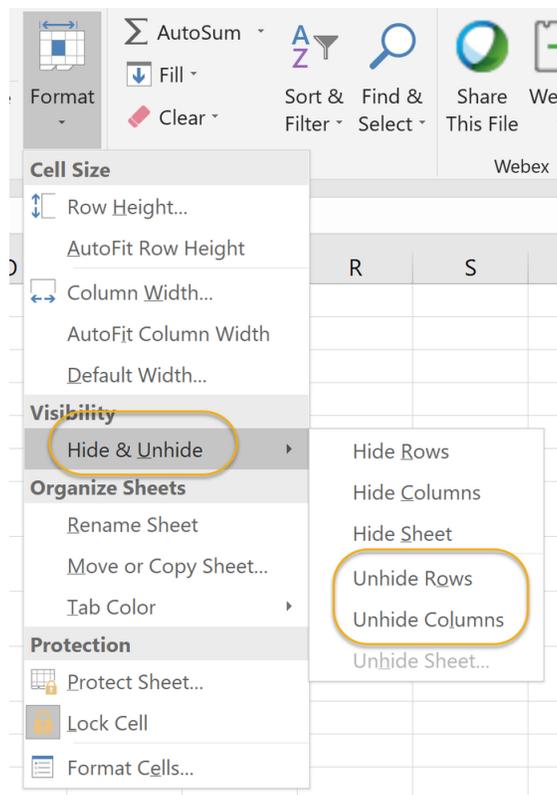
Unhiding Rows and Columns

To unhide rows or columns in a Microsoft Excel worksheet:

1. Select cells on either side (above and below or to the left and right) of the row(s) or column(s) you wish to unhide.
2. On the **Home** tab, in the **Cells** group, click the **Format** command.



3. Select **Hide & Unhide** and then **Unhide Rows** or **Unhide Columns**:



8.6. Freezing Panes

Freezing panes is a way of making one or more rows or columns stay at the top or left of your worksheet as you scroll through the worksheet. A common use of freezing panes is to keep a header row in view as you scroll through a large worksheet.

In the following example, notice that the top row includes labels for each column:

	A	B	C	D	E	F
1	House	Listing Price	Town	Square Feet	Bedrooms	Bathrooms
2	House1	129,000	Fayetteville	2,580	4	2
3	House10	79,000	Dewitt	1,580	4	3
4	House100	117,250	Dewitt	2,345	3	2
5	House101	121,250	Jamesville	2,425	4	2
6	House102	125,250	Cicero	2,505	3	1
7	House103	129,250	Fayetteville	2,585	2	3

After scrolling down in the worksheet, however, the top row is not visible:

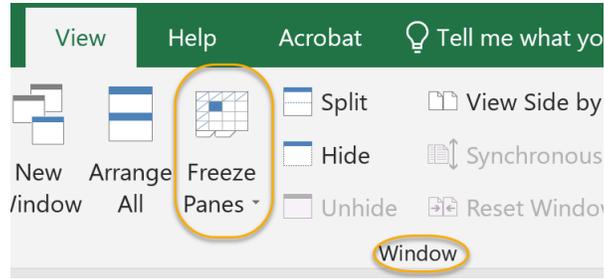
	A	B	C	D	E	F
16	House111	140,250	Manlius	2,805	4	4
17	House112	143,250	Dewitt	2,865	3	2
18	House113	146,250	Jamesville	2,925	3	2
19	House114	149,250	Cicero	2,985	2	2
20	House115	152,250	Fayetteville	3,045	3	1
21	House116	155,250	Camillus	3,105	4	2
22	House117	158,250	Manlius	3,165	4	2
23	House118	84,250	Dewitt	1,685	4	3
24	House119	88,250	Jamesville	1,765	3	2
25	House12	87,000	Cicero	1,740	3	2

In the following image, the top row is frozen, so the labels are visible even after scrolling down in the worksheet:

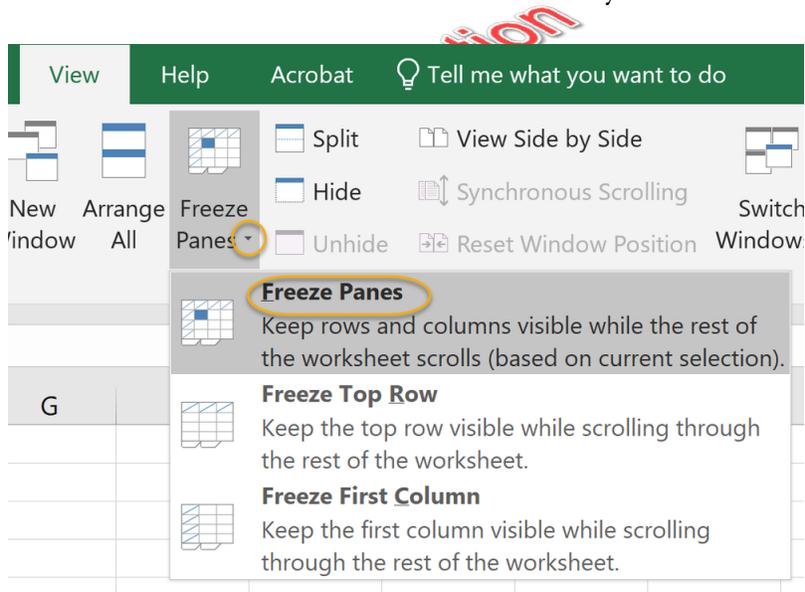
	A	B	C	D	E	F
1	House	Listing Price	Town	Square Feet	Bedrooms	Bathrooms
20	House115	152,250	Fayetteville	3,045	3	1
21	House116	155,250	Camillus	3,105	4	2
22	House117	158,250	Manlius	3,165	4	2
23	House118	84,250	Dewitt	1,685	4	3
24	House119	88,250	Jamesville	1,765	3	2
25	House12	87,000	Cicero	1,740	3	2
26	House120	92,250	Cicero	1,845	3	3
27	House121	96,250	Fayetteville	1,925	4	2
28	House122	100,250	Camillus	2,005	3	1
29	House123	104,250	Manlius	2,085	2	3

To freeze panes in a Microsoft Excel worksheet:

1. On the **View** tab, in the **Window** group, click the **Freeze Panes** command.



2. Select **Freeze Panes** to freeze the rows above and the columns to the left of the selected cell.
3. Select **Freeze Top Row** to freeze the top row only.
4. Select **Freeze First Column** to freeze the first column only.



Exercise 14: Working with Rows and Columns

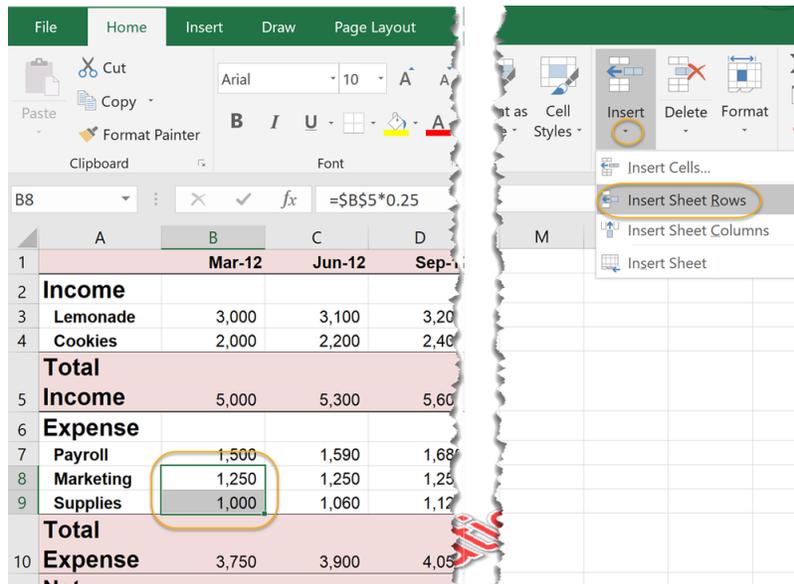
 5 to 10 minutes

In this exercise, you will insert rows into a Microsoft Excel worksheet, hide rows, and adjust column widths and row heights.

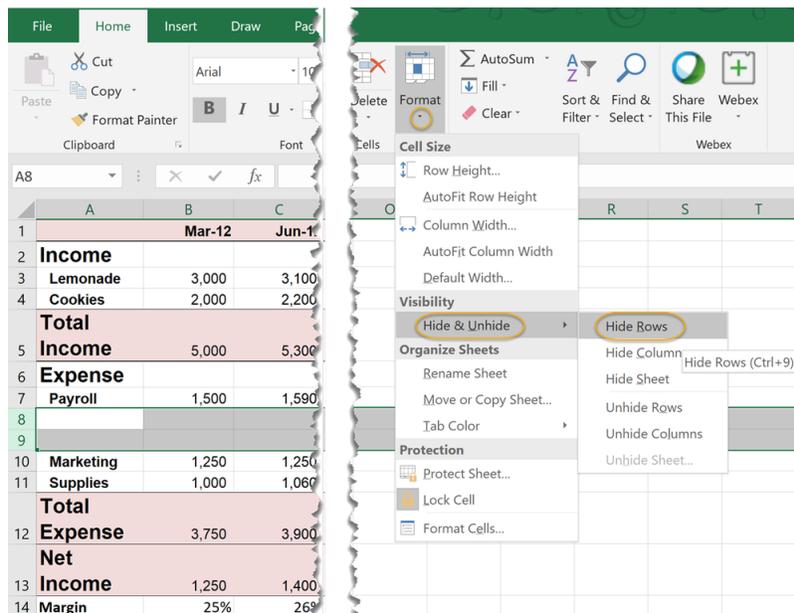
1. Continue working in the workbook from the last exercise or open Dave's Lemonade Stand - Working with Rows and Columns.xlsx from your Excel2019.1/Exercises folder.
2. Insert two rows between row 7 and row 8.
3. Hide the inserted rows.
4. Increase the width of column **A** to 25.
5. Increase the width of columns **B:E** to 17.
6. Autofit row heights for all active rows.
7. Save the workbook.

Solution

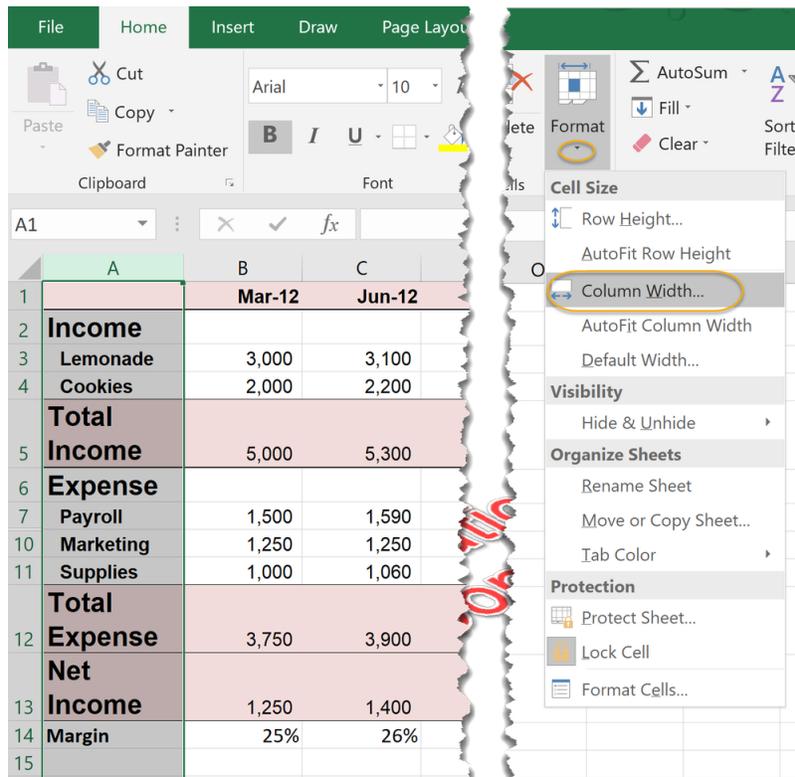
1. Open or go to the specified file.
2. Select cells in both row 8 and row 9 and then on the **Home** tab, in the **Cells** group, click **Insert** and then **Insert Sheet Rows**:



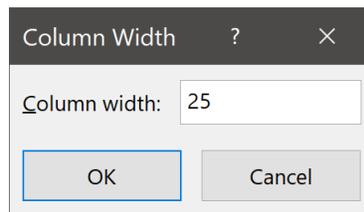
3. Select rows 8 and 9 and then on the **Home** tab, in the **Cells** group, click **Format** and then **Hide & Unhide** and then **Hide Rows**:



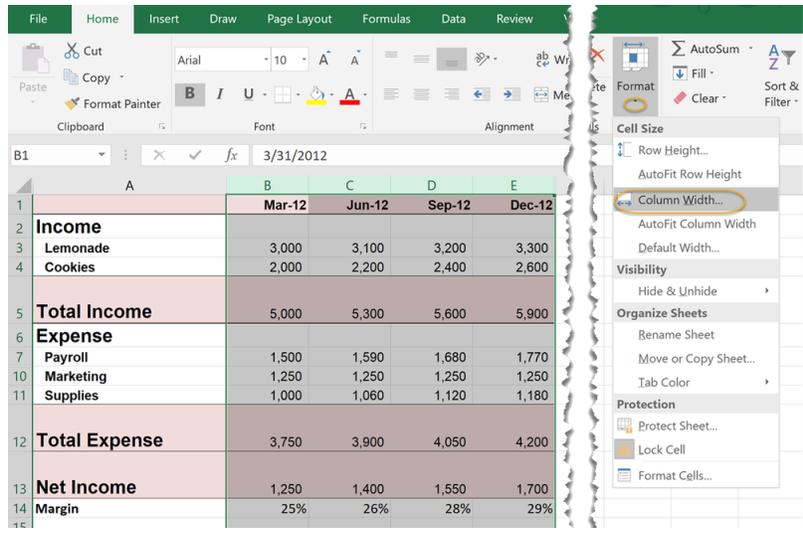
4. Select column **A** and then on the **Home** tab, in the **Cells** group, click **Format** and then **Column Width**:



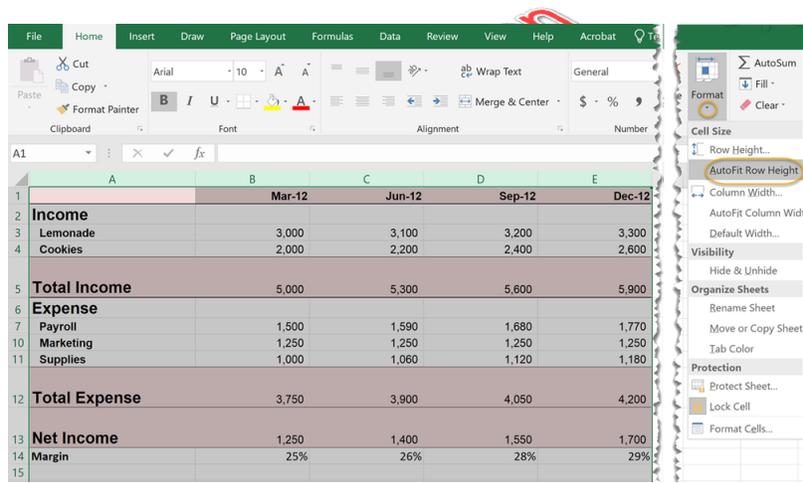
5. In the **Column Width** dialog box, enter “25” and click **OK**:



6. Select columns **B:E** and then on the **Home** tab, in the **Cells** group, click **Format** and then **Column Width**:



7. In the **Column Width** dialog box, enter “17” and click **OK**.
8. Select all active rows and then on the **Home** tab, in the **Format** group, click **AutoFit Row Height**:



9. Save the workbook.

Conclusion

In this lesson, you learned to insert rows and columns in Microsoft Excel worksheets, to delete rows and columns in Microsoft Excel worksheets, as well as to transpose rows and columns, to change row heights and column widths, to hide and unhide rows and columns and to freeze panes.

LESSON 9

Editing Worksheets

Topics Covered

- Find.
- Find and Replace
- Cut, Copy, and Paste.
- Format Painter
- Managing comments.

Introduction

Evaluation
Copy

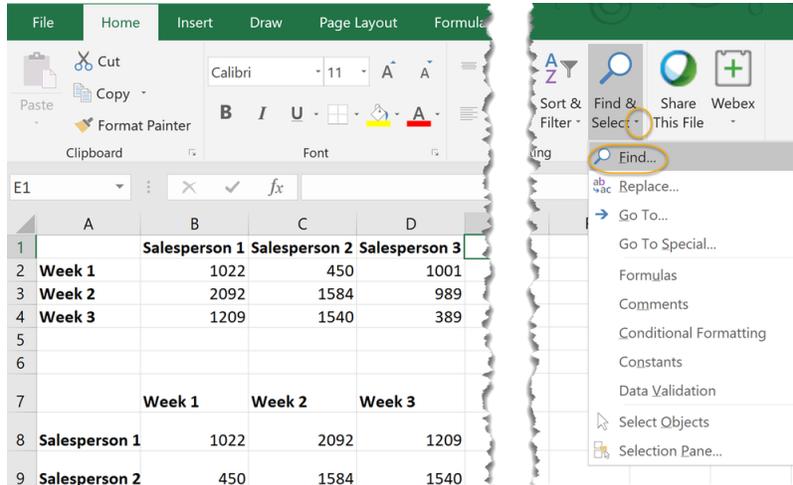
In this lesson, you will learn to locate information in your worksheet using **Find**, to use **Find and Replace** to quickly replace data with other data, to use the Cut, Copy, Paste and Format Painter commands to edit worksheets, and to manage comments.



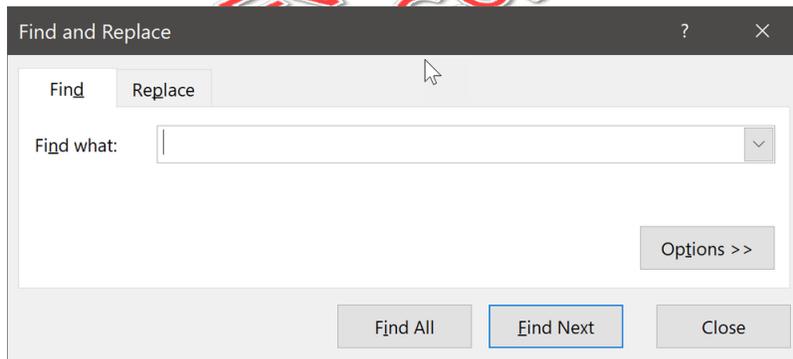
9.1. Find

Use the **Find** command to find instances of words or numbers within a worksheet. To use the **Find** command:

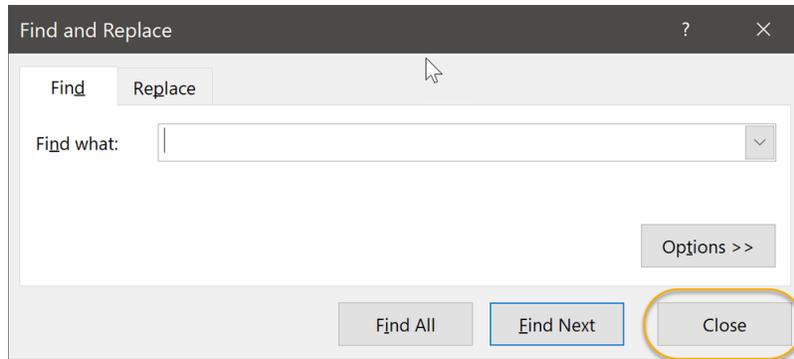
1. On the **Home** tab, in the **Editing** group, click the **Find & Select** command and then select **Find**:



2. Type the word or number you wish to find in the **Find and Replace** dialog box and press **Enter** on your keyboard:



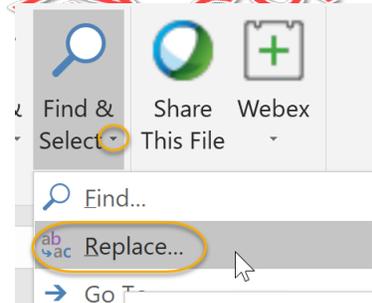
3. Press **Enter** repeatedly to circle through the instances of the word or number you are searching for.
4. Click **Close** to close the **Find and Replace** dialog box:



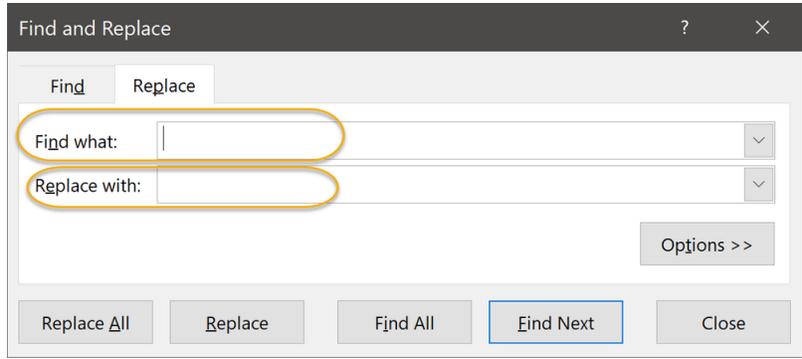
9.2. Find and Replace

Use the **Replace** command to find instances of words or numbers within a worksheet and replace them with other words or numbers. To use the **Replace** command:

1. On the **Home** tab, in the **Editing** group, click the **Find & Select** command and then select **Replace**:



2. In the **Find and Replace** dialog box that appears, enter both the word or number you wish to find and the word or number you wish to replace it with.
3. Click:
 - A. **Replace** to replace the highlighted selection.
 - B. **Replace All** to replace all search results with the new text.
 - C. **Find Next** to leave the highlighted selection as is and highlight the next search result.
 - D. **Find All** to see a list of the instances of the word or number in your worksheet.
 - E. **Close** to discontinue the search.



Exercise 15: Using Find and Replace

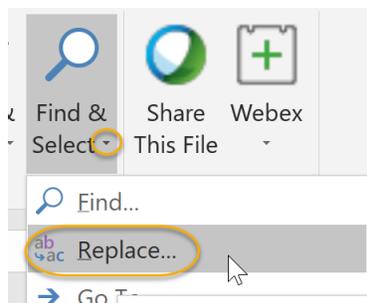
 5 to 10 minutes

In this exercise you will find and replace text in a worksheet.

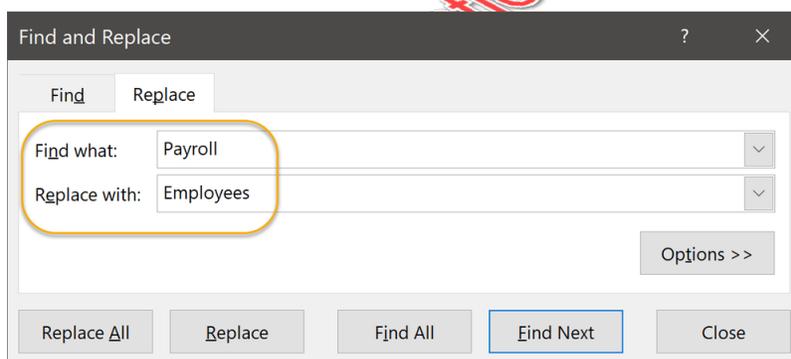
1. Continue working in the workbook from the last exercise or open Dave's Lemonade Stand - Using Find and Replace.xlsx from your Excel2019.1/Exercises folder.
2. Use **Find and Replace** to change the word "Payroll" to "Employees".

Solution

1. Open or go to the specified file.
2. From the **Editing** group on the **Home** tab, select **Find & Select** and select **Replace**:



3. In the dialog box, enter:
 - A. **Find what:** "Payroll"
 - B. **Replace with:** "Employees"
4. Click **Replace All**:



5. Click **OK**.

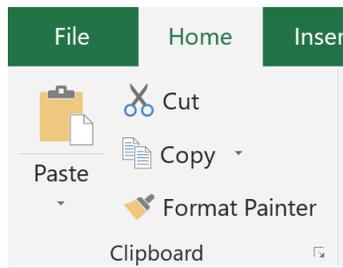


9.3. Using the Clipboard

The **Clipboard** group, located on the **Home** tab, contains four commands:

1. **Cut.** Use the **Cut** command to *cut* a selection from your document. The cut selection is saved on the **Clipboard** for use elsewhere - either in the current workbook or another one (or even in a separate application like Microsoft Word).

2. **Copy.** Use the **Copy** command to copy a selection to the **Clipboard** for use elsewhere - either in the current workbook or another one (or even in a separate application like Microsoft Word).
3. **Paste.** Use the **Paste** command to paste a selection from the **Clipboard** to the location in your workbook where you want it.
4. **Format Painter.** Use the **Format Painter** to copy the format from one section of your workbook and apply it to another section of your workbook.
 - A. Single-click the **Format Painter** command to copy the format for a single paste.
 - B. Double-click the **Format Painter** command to make it “sticky” so you can apply the format to multiple selections.



Exercise 16: Using the Clipboard

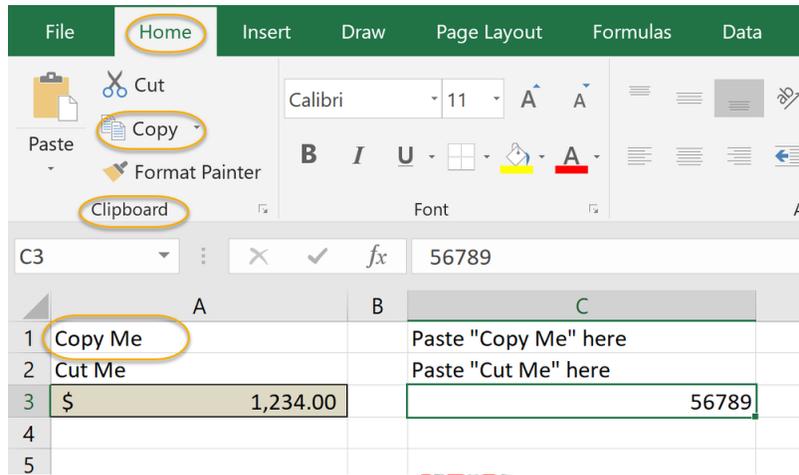
 5 to 10 minutes

In this exercise, you will use the clipboard to cut, copy, paste and format cells.

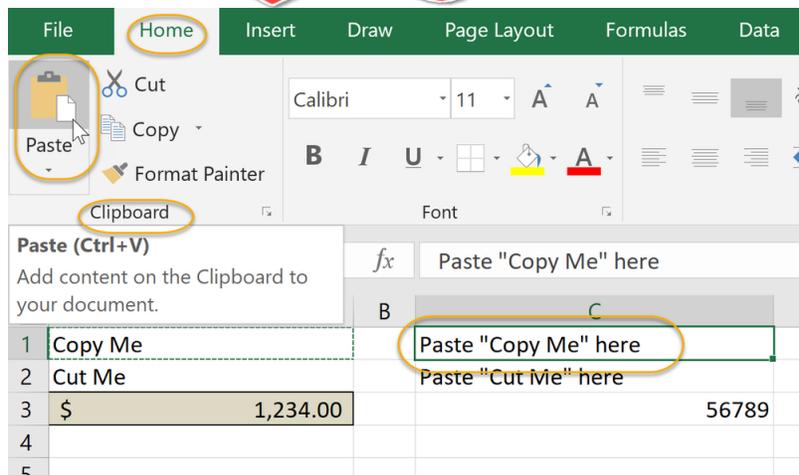
1. Open Clipboard exercise.xlsx from your Excel2019.1/Exercises folder.
2. Use the clipboard to:
 - A. Copy cell **A1** to cell **C1**.
 - B. Cut cell **A2** and paste it in cell **C2**.
 - C. Copy the format of cell **A3** to cell **C3**.

Solution

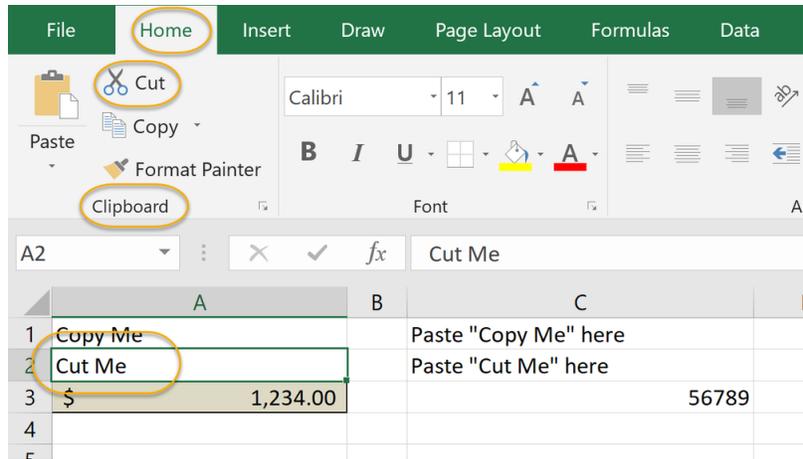
1. Select cell **A1** and on the **Home** tab, in the **Clipboard** group, click **Copy**:



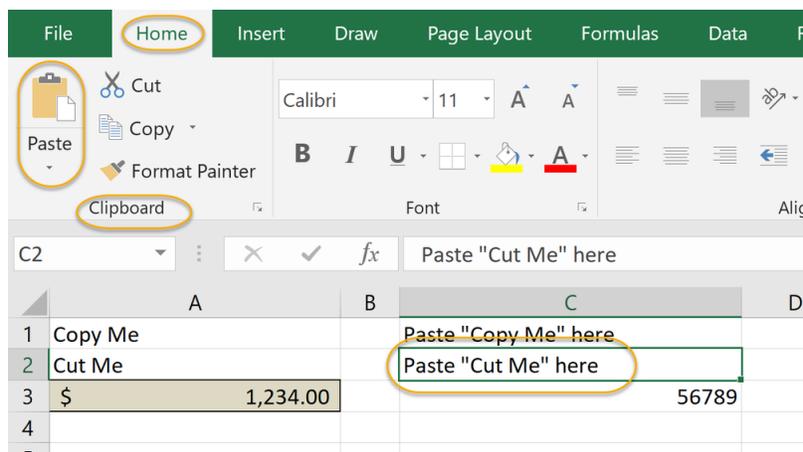
2. Select cell **C1** and on the **Home** tab, in the **Clipboard** group, click **Paste**:



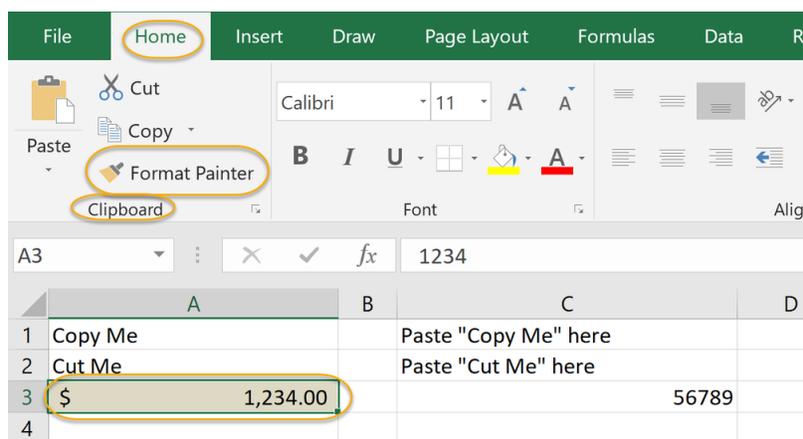
3. Select cell **A2** and on the **Home** tab, in the **Clipboard** group, click **Cut**:



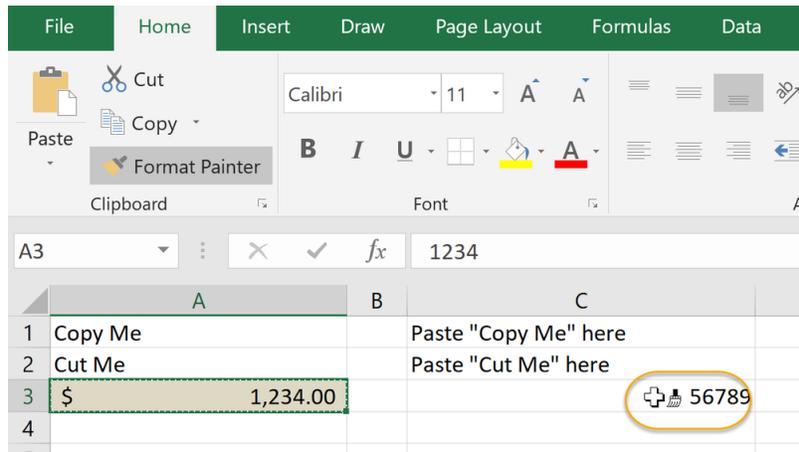
4. Select cell **C2** and on the **Home** tab, in the **Clipboard** group, click **Paste**:



5. Select cell **A3** and on the **Home** tab, in the **Clipboard** group, click **Format Painter**:



6. Select cell C3:



Exercise 17: Using Format Painter

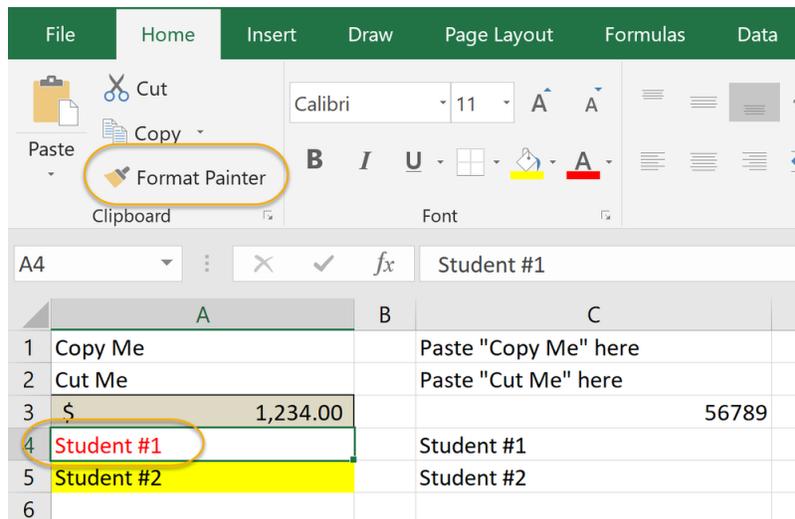
 5 to 10 minutes

In this exercise, you will use Format Painter.

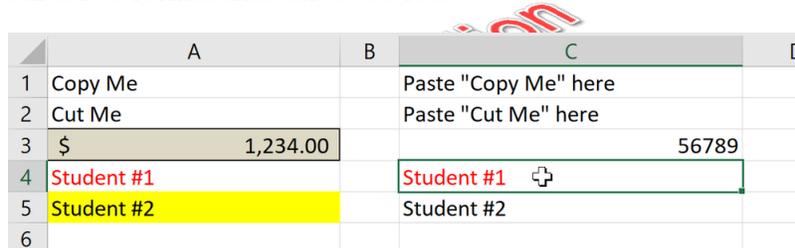
1. Open `Clipboard Format Painter exercise.xlsx` from your `Excel2019.1/Exercises` folder if it is not already open.
2. Use Format Painter to:
 - A. Copy the text color of cell **A4** to cell **C4**.
 - B. Copy the background color of cell **A5** to cell **C5**.

Solution

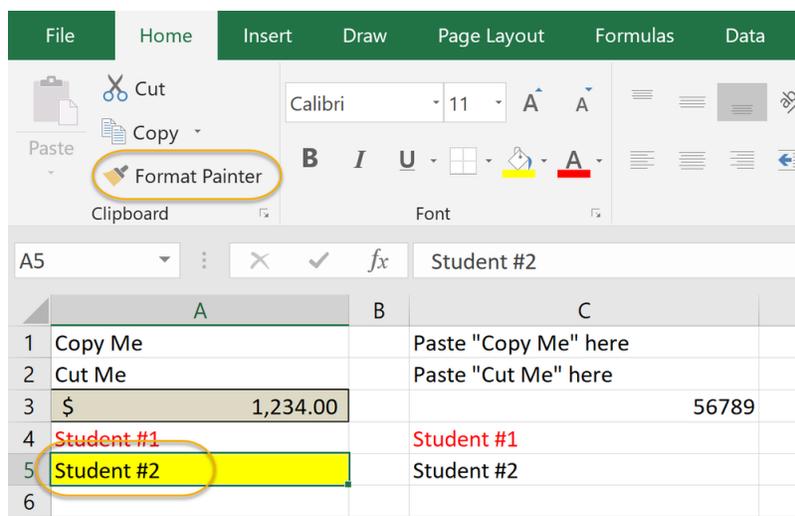
1. Select cell **A4** and on the **Home** tab, in the **Clipboard** group, click **Format Painter**:



2. Click in cell **C4** to format that text to be red:



3. Select cell **A5** and on the **Home** tab, in the **Clipboard** group, click **Format Painter**:



4. Click in cell **C5** to format that cell with the yellow background:

	A	B	C	D
1	Copy Me		Paste "Copy Me" here	
2	Cut Me		Paste "Cut Me" here	
3	\$ 1,234.00			56789
4	Student #1		Student #1	
5	Student #2		Student #2	
6				



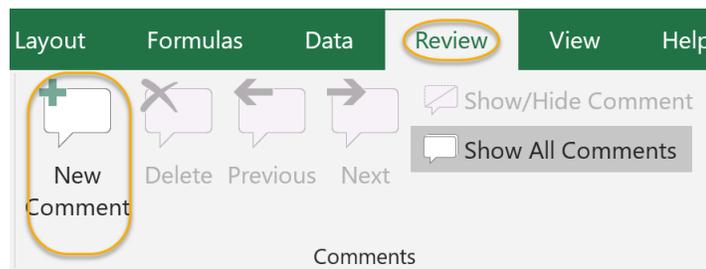
9.4. Managing Comments

You can add comments to worksheets and manage them in Excel using the **Comments** group of the **Review** tab of the Ribbon.

❖ 9.4.1. Adding Comments

To add a comment in Excel:

1. Click where you want to add the comment.
2. From the **Review** tab, in the **Comments** group, select **New Comment**.



3. Type your comment.

Salesperson 2	Instructor: Verify this information
456	
1584	
1540	

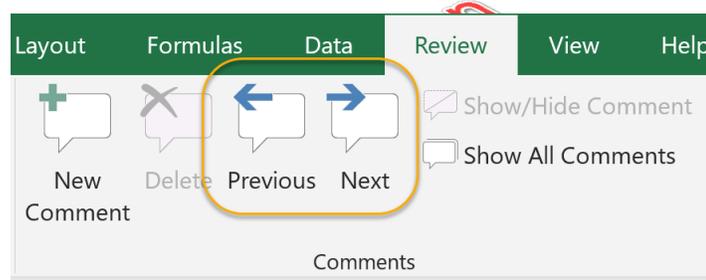
4. You will notice that Excel alerts you to the fact that there is an inserted comment with a triangular icon.

Salesperson 2	
456	
1584	
1540	

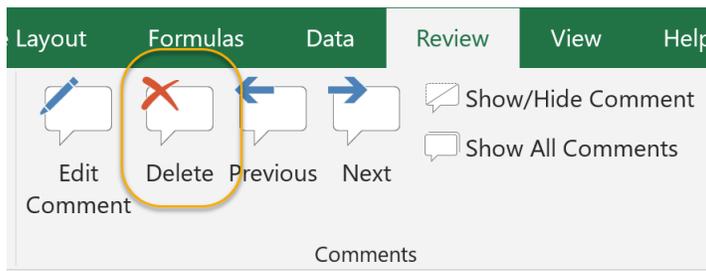
❖ 9.4.2. Working with Comments

To work with comments in Excel, use the options on the **Review** tab, in the **Comments** group:

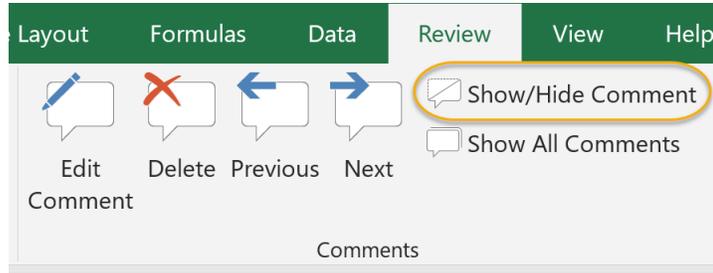
1. To move through the comments, select the **Previous** and **Next** options.



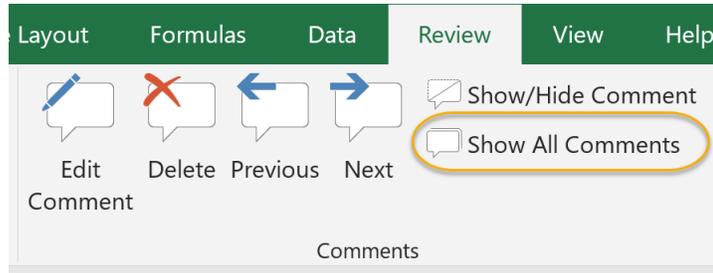
2. To delete a comment that is selected, select **Delete**.



3. To show or hide the text of a comment, select **Show/Hide Comment**.



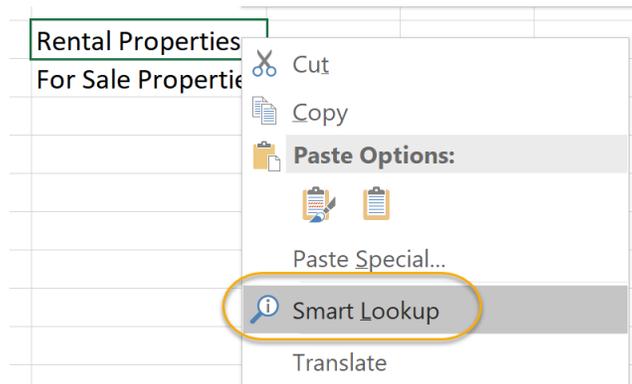
4. To show the text of all comments, select **Show All Comments**.



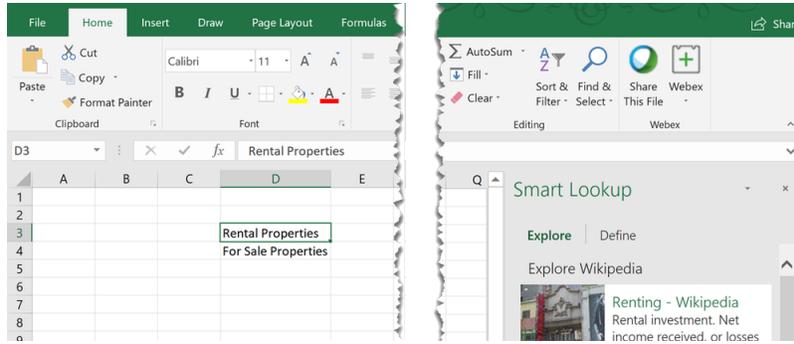
Evaluation
*
Copy

9.5. Smart Lookup

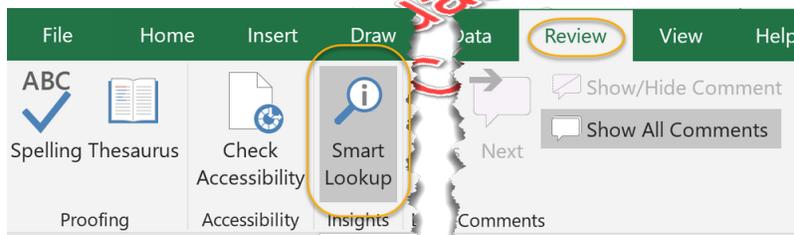
When you right-click an item in Excel, one of the available options is Smart Lookup.



This will launch the **Smart Lookup** pane. Articles, definitions, and so on will appear in the pane.



You can also launch the **Smart Lookup** pane by selecting the **Review** tab, and then selecting **Smart Lookup** in the **Insights** group.



Conclusion

In this lesson, you learned to use the **Find** command to locate information in your worksheet, to use **Find and Replace** to replace words or numbers in your worksheet with other words or numbers, to edit worksheets using the **Cut**, **Copy**, **Paste** and **Format Painter** commands, and to manage comments.

LESSON 10

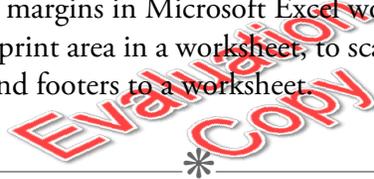
Finalizing Microsoft Excel Worksheets

Topics Covered

- Worksheet margins.
- Page orientation.
- Setting the print area.
- Scaling a worksheet.
- Headers and footers.

Introduction

In this lesson, you will learn to set margins in Microsoft Excel worksheets, to set the page orientation to portrait or landscape, to set the print area in a worksheet, to scale a worksheet so that all data prints on one page, and to add headers and footers to a worksheet.

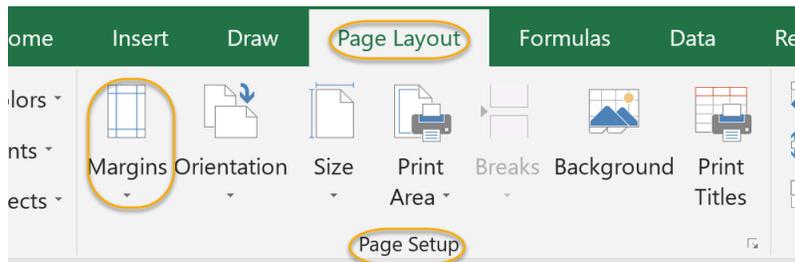


10.1. Setting Margins

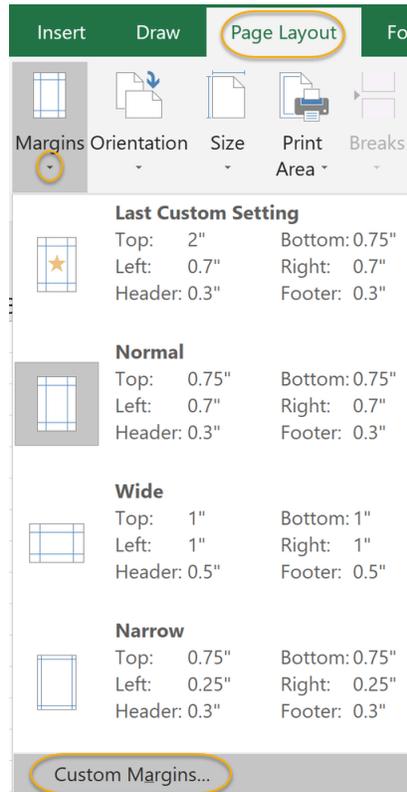
You can increase and decrease margins in Microsoft Excel worksheets to change the amount of whitespace that shows up between your data and the edge of the page when you print. By default, top and bottom margins are .75 inches, side margins are .7 inches, and header and footer margins are .3 inches.

To set the margins in a worksheet:

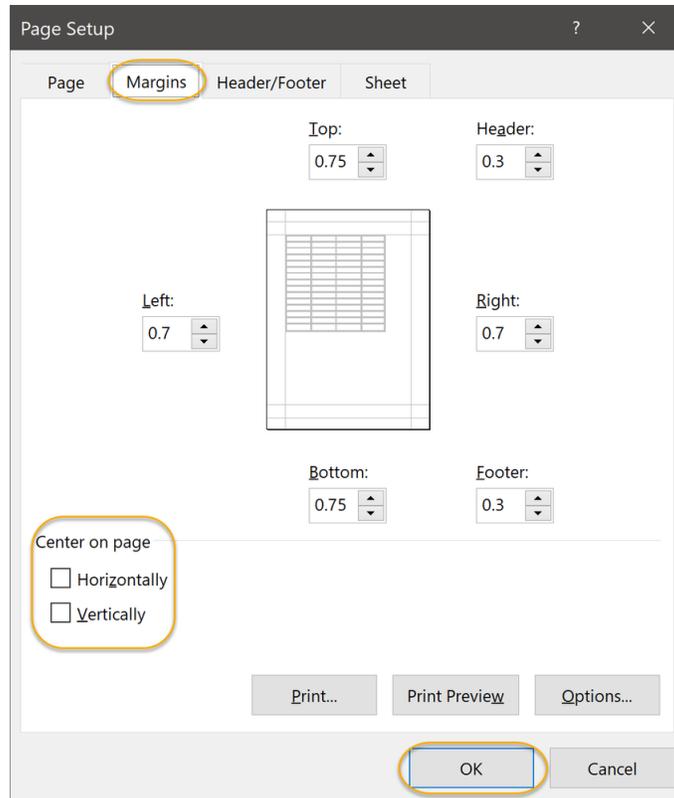
1. On the **Page Layout** tab, in the **Page Setup** group, click the **Margins** command:



2. Select from the options available (Last Custom Setting, Normal, Wide, or Narrow) or select **Custom Margins** to set your own margins:



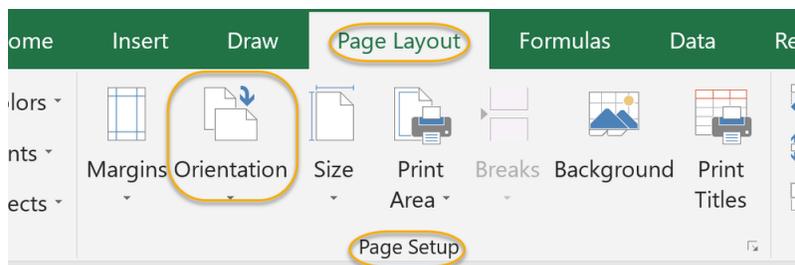
3. If you select **Custom Margins**, you will be presented with the **Page Setup** dialog box, where you can set all margins. Note that on the **Margins** tab of the **Page Setup** dialog box, you also have the option to center your data horizontally or vertically on the page. After setting your margins, click **OK**:



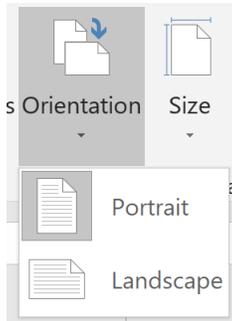
10.2. Setting Page Orientation

You can choose to orient your pages vertically (Portrait), which is the default, or horizontally (Landscape). To set the page orientation:

1. On the **Page Layout** tab, in the **Page Setup** group, click the **Orientation** command:



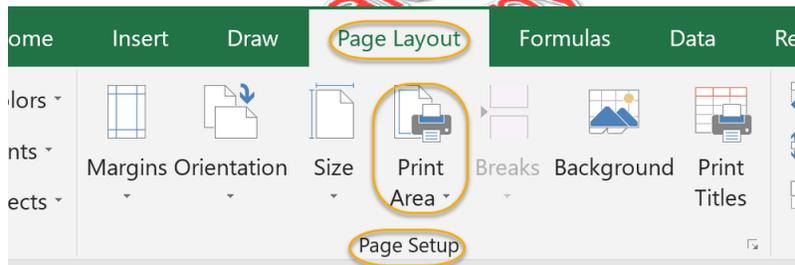
2. Select **Portrait** or **Landscape**:



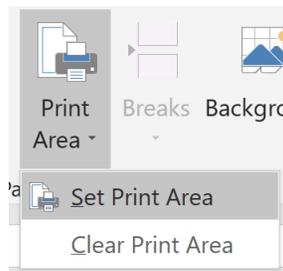
10.3. Setting the Print Area

Often times it is desirable to print only a section of a worksheet. To do this, you simply need to set this section as the print area. To set the **Print Area**:

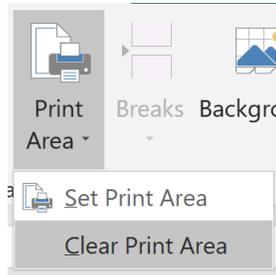
1. Select the cells you wish to print.
2. On the **Page Layout** tab, in the **Page Setup** group, click the **Print Area** command:



3. Select **Set Print Area**:



4. To clear the Print Area, select any cell in the worksheet and then click **Print Area** and **Clear Print Area**:

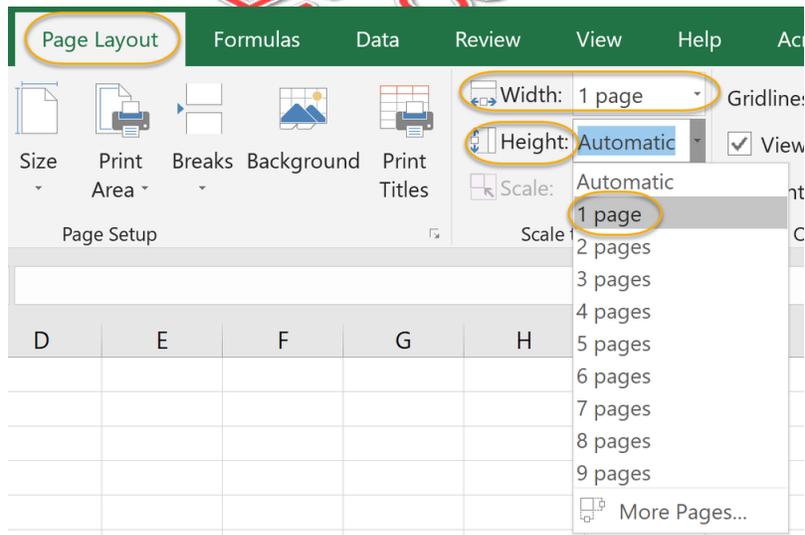


10.4. Print Scaling (Fit Sheet on One Page)

Often times it is desirable to print a whole worksheet on one page. Fortunately, there is an easy way to do this (you don't have to play with font sizes, column and row sizes, etc.).

To print a worksheet on one page:

1. On the **Page Layout** tab, in the **Scale to Fit** group, set the **Width** and **Height** to **1 page**:

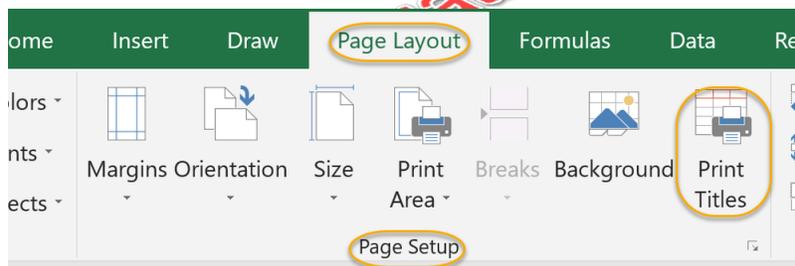


10.5. Printing Headings on Each Page/Repeating Headers and Footers

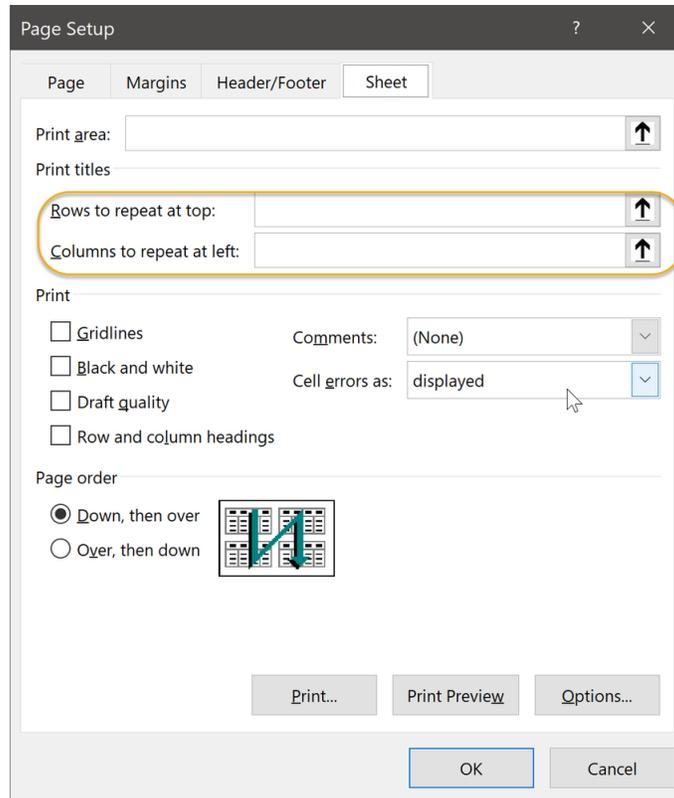
If your printout spans multiple pages, you may want to have column headers and/or row titles be repeated at the top and left of each page.

To print headings on each page:

1. On the **Page Layout** tab, from the **Page Setup** group, select **Print Titles**.



2. In the **Page Setup** dialog box, on the **Sheet** tab, under **Print titles**, type the references of the rows and columns that you want to appear, respectively, in the **Rows to repeat at top** and **Columns to repeat at left** options and click **OK**.



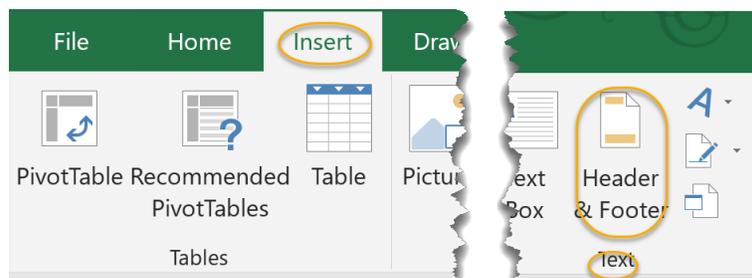
EM-301



10.6. Headers and Footers

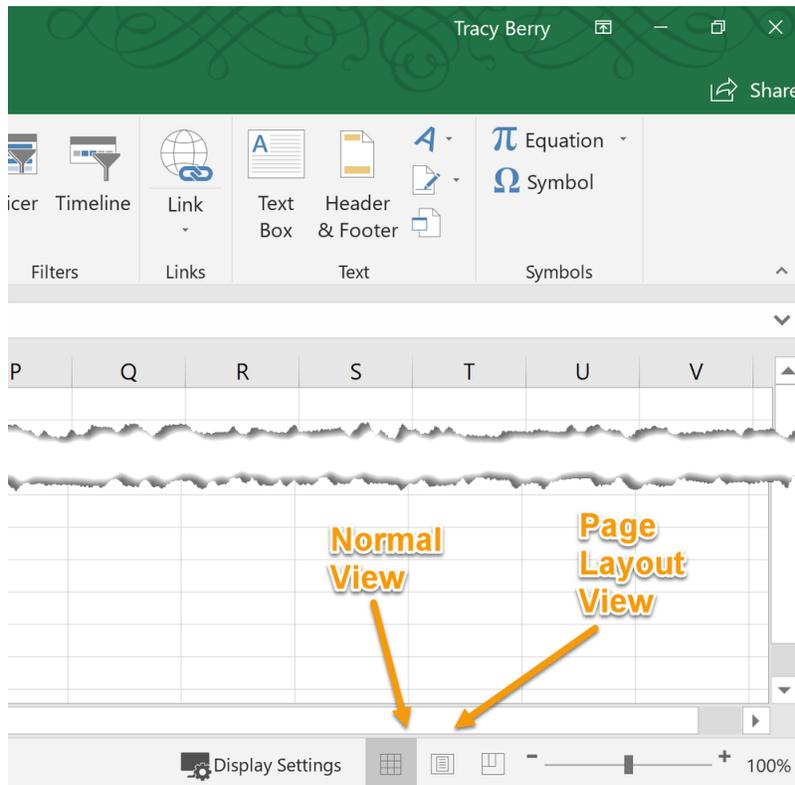
To insert a header or footer into a Microsoft Excel workbook:

1. On the **Insert** tab, in the **Text** group, click **Header & Footer**:



2. Note that:

- A. Excel has switched to the **Page Layout** view, in which the header and footer are visible. When done editing the header and footer, simply switch back to the **Normal** view:



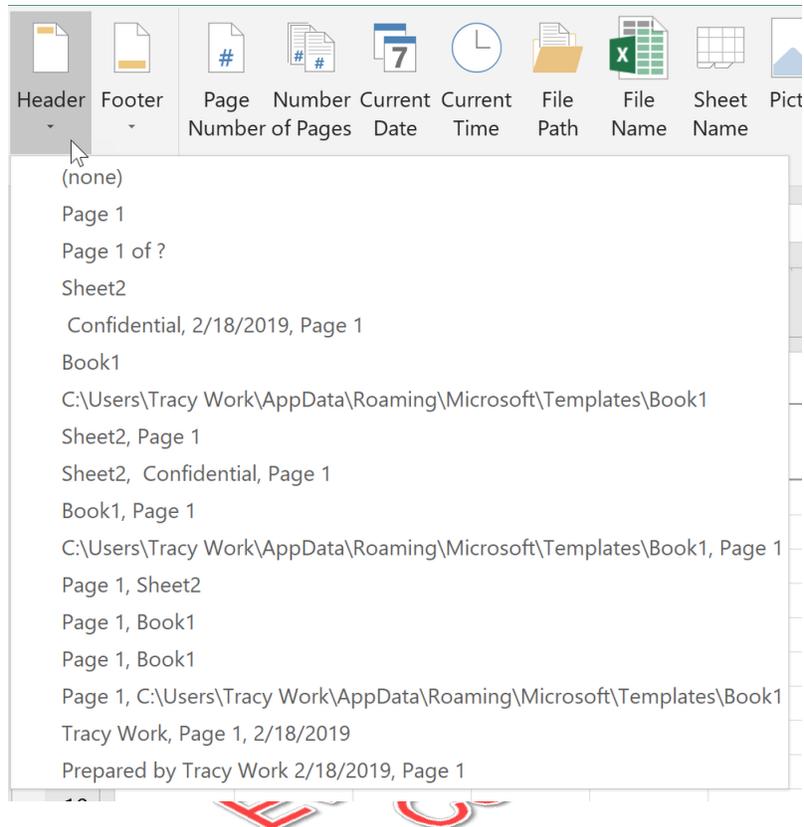
- B. The header contains three sections: left, center and right. By default your cursor starts in the center section of the header, but you can switch to one of the others by clicking it:



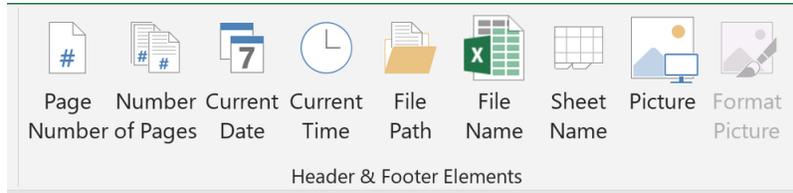
- C. Excel has automatically opened the **Header & Footer Tools Design** toolbar:



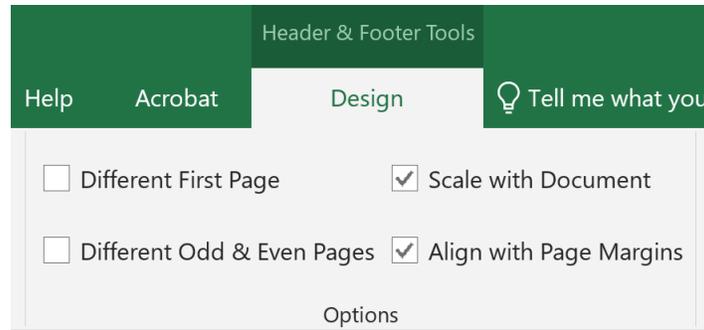
3. From the **Header & Footer Tools Design** toolbar you can:
- A. In the **Header & Footer** group, click **Header** or **Footer** and insert one of the options available:



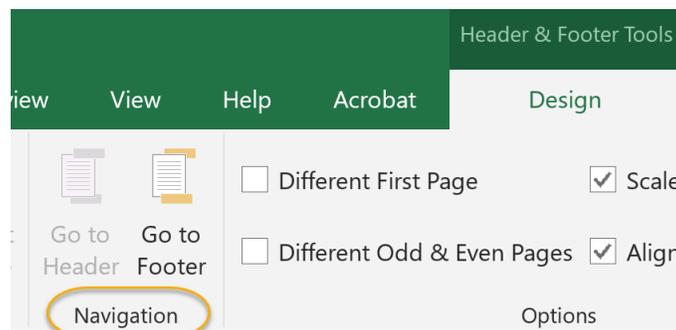
- B. In the **Header & Footer Elements** group, insert one of the following:
- i. **Page Number.** Adds the page number to the selected section of the header or footer.
 - ii. **Number of Pages.** Adds the number of pages to the selected section of the header or footer.
 - iii. **Current Date.** Adds the current date, at the time of printing, to the selected section of the header or footer.
 - iv. **Current Time.** Adds the current time, at the time of printing, to the selected section of the header or footer.
 - v. **File Path.** Adds the file path to the selected section of the header or footer.
 - vi. **File Name.** Adds the file name to the selected section of the header or footer.
 - vii. **Sheet Name.** Adds the sheet name to the selected section of the header or footer.
 - viii. **Picture.** Opens up the **Insert Picture** dialog box, where you can surf to and select a picture by clicking **Insert**.



- C. In the **Options** group, check **Different First Page** to set the header and footer such that they do not show on the first page:



4. To move between the header and the footer, click **Go to Footer** or **Go to Header** in the **Navigation** group:



If your worksheet spans more than one page when printing and you have entered a header or footer, it will be printed on each page.

Exercise 18: Preparing to Print

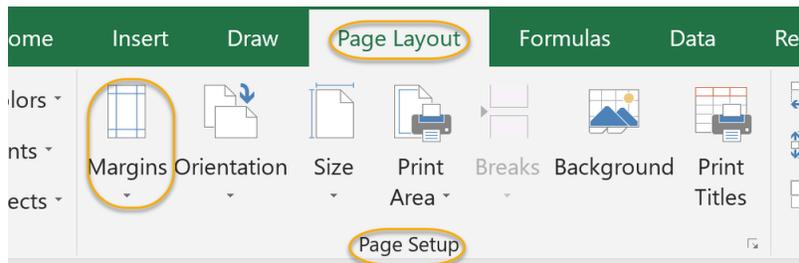
 10 to 20 minutes

In this exercise, you will prepare your worksheet for printing.

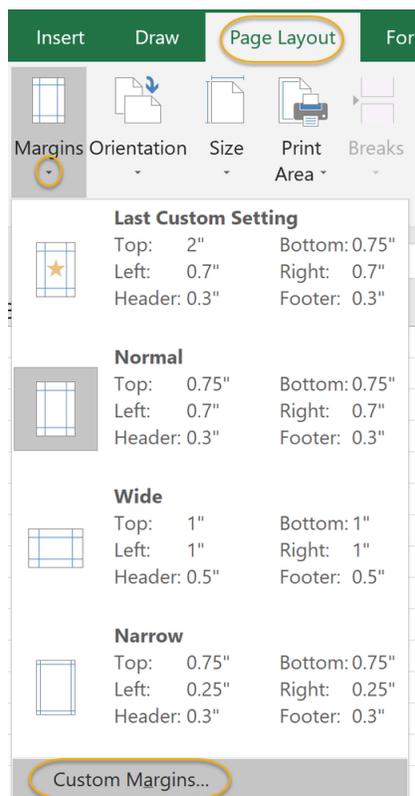
1. Continue working in the workbook from the last exercise or open Dave's Lemonade Stand - Preparing to Print.xlsx from your Excel2019.1/Exercises folder.
2. Center data horizontally and vertically on the page.
3. Set the page orientation to landscape.
4. Set the worksheet to print on one page.
5. Add the picture LemonadeLogo.gif, found in your Excel2019.1/Exercises folder, to the header in the center section.
6. Save the workbook.

Solution

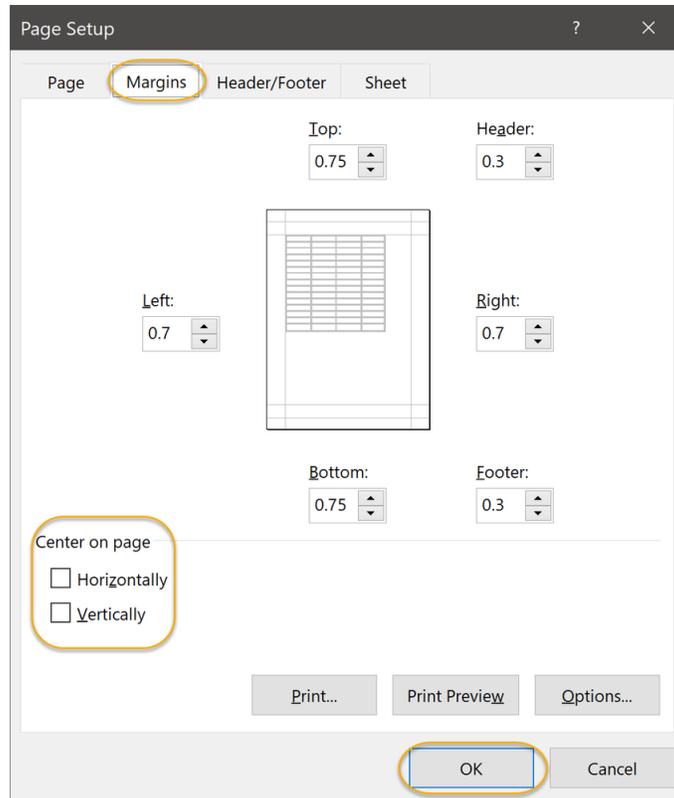
1. Open or go to the specified file.
2. To center data horizontally and vertically on the page:
 - A. On the **Page Layout** tab, in the **Page Setup** group, click the **Margins** command:



- B. Select **Custom Margins**:

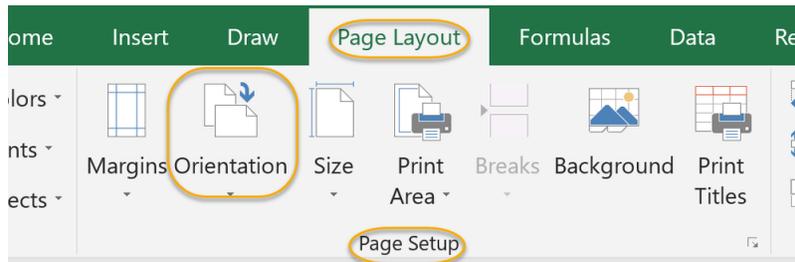


- C. In the **Center on Page** section, check both **Horizontally** and **Vertically** and click **OK**:

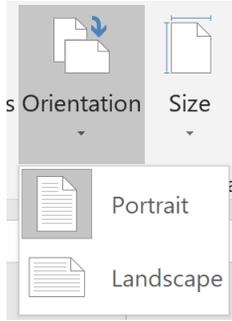


3. To set the page orientation to landscape:

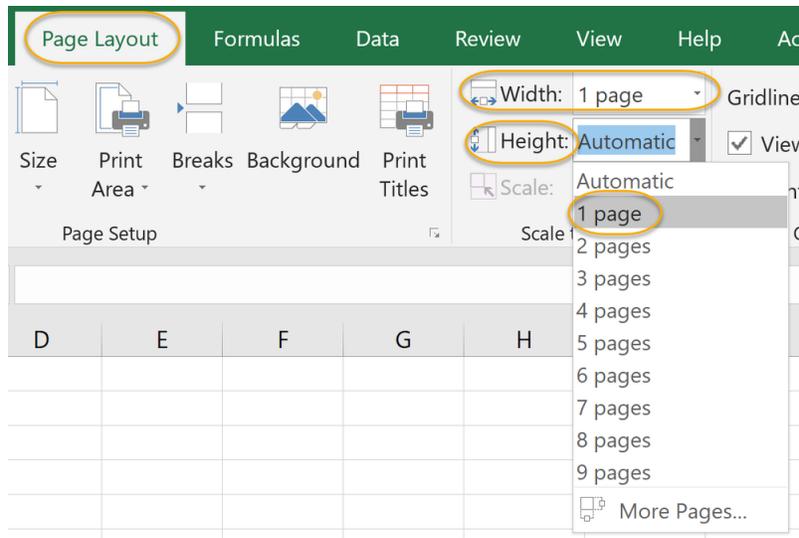
A. On the **Page Layout** tab, in the **Page Setup** group, click the **Orientation** command:



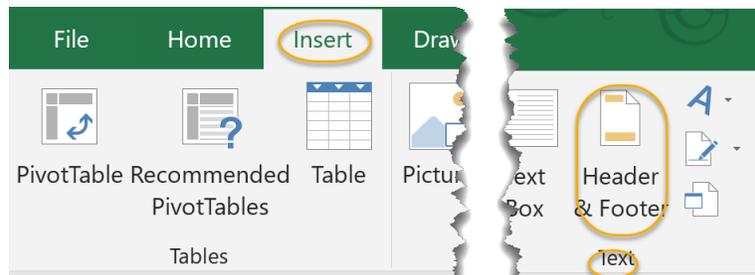
B. Select **Landscape**:



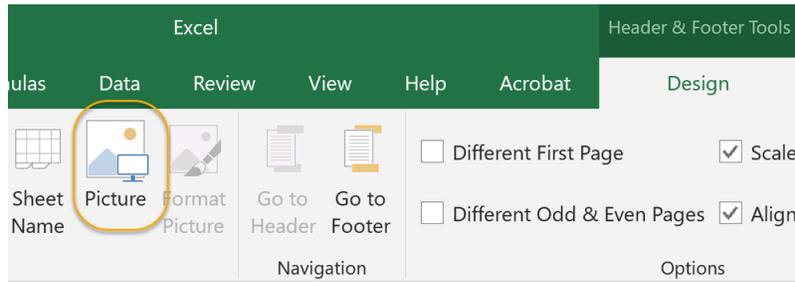
4. To set the worksheet to print on one page:
 - A. On the **Page Layout** tab, in the **Scale to Fit** group, set the **Width** and **Height** to **1 page**:



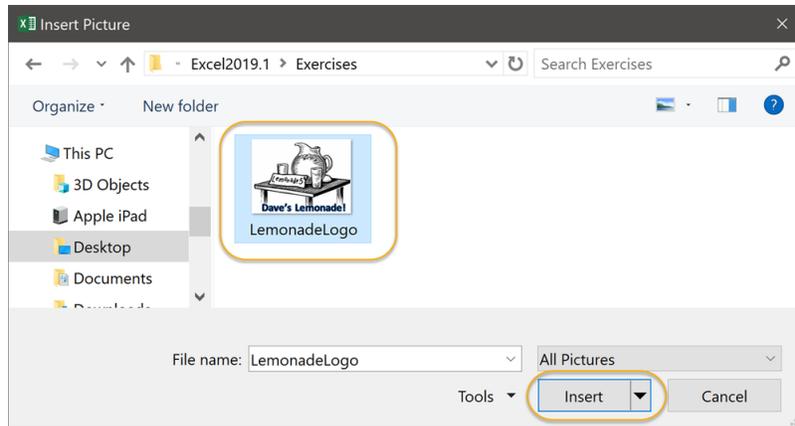
5. To add the logo to the header:
 - A. On the **Insert** tab, in the **Text** group, click **Header & Footer**:



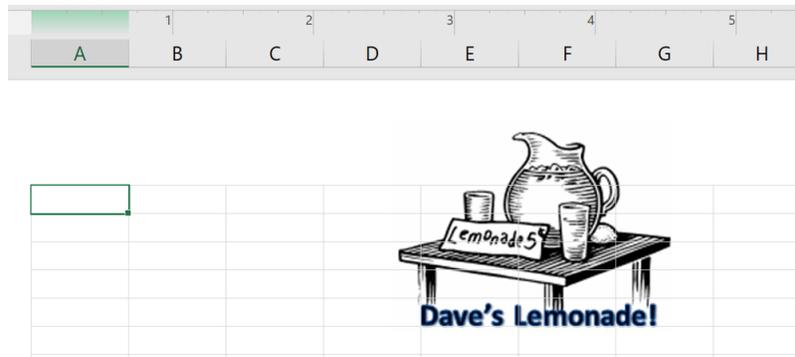
- B. On the **Header & Footer Tools Design** tab, in the **Header & Footer Elements** group, click **Picture**:



- C. Click **From a File**, then navigate to your **Excel2019.1/Exercises** folder, select **LemonadeLogo.gif**, and click **Insert**:



6. Save the workbook. If you print it, it should look like this:



Conclusion

In this lesson, you learned to set margins in Microsoft Excel worksheets, to set the page orientation to portrait or landscape, to set the print area in a worksheet, to scale a worksheet so that all data prints on one page, and to add headers and footers to a worksheet.