



Intro to Excel

ShortCourse Handout

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Introduction

- Excel is a spreadsheet program in the Microsoft Office system. You can use Excel to create and format workbooks (a collection of spreadsheets) in order to analyze data and make more informed business decisions. You can use Excel to track data, build models for analyzing data, write formulas to perform calculations on that data, pivot the data in numerous ways (using PivotTable or PowerPivot), and present data in a variety of professional looking charts. In this ShortCourse, you will become familiar with the BASIC fundamentals of Excel.

Course Objectives

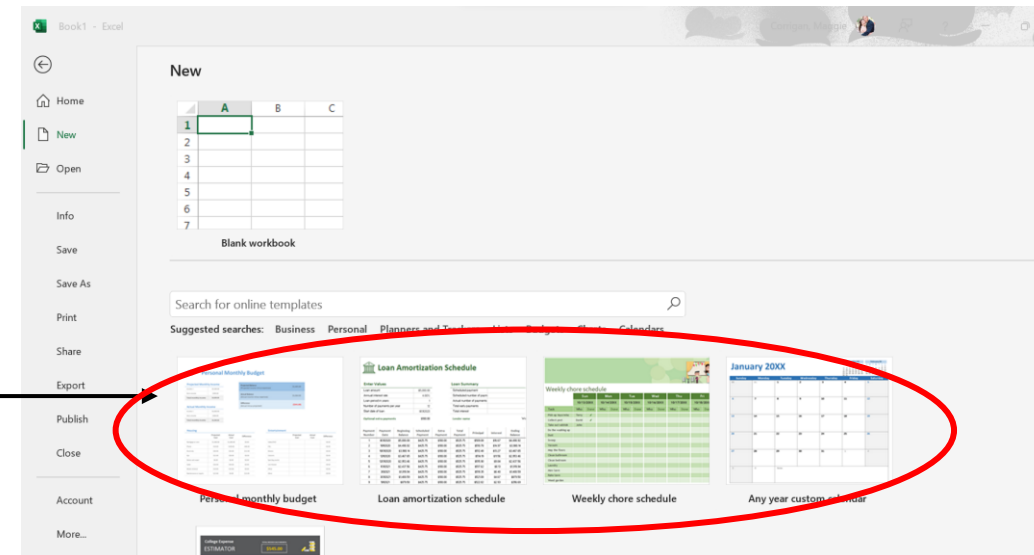
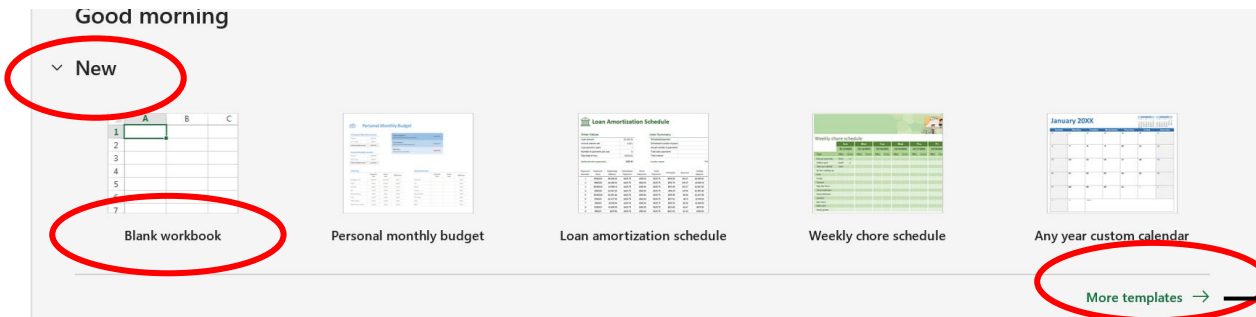
After completing this ShortCourse, you should be able to:

- Recognize the parts of the Excel workspace;
- Create and save a workbook;
- Work with editing tools;
- Resize, insert, and remove columns and rows;
- Enter Data & work with formulas
- Use Auto Fill features to fill data series;
- Insert, delete, move, and rename worksheets;
- Preview and print a workbook

Creating a Document

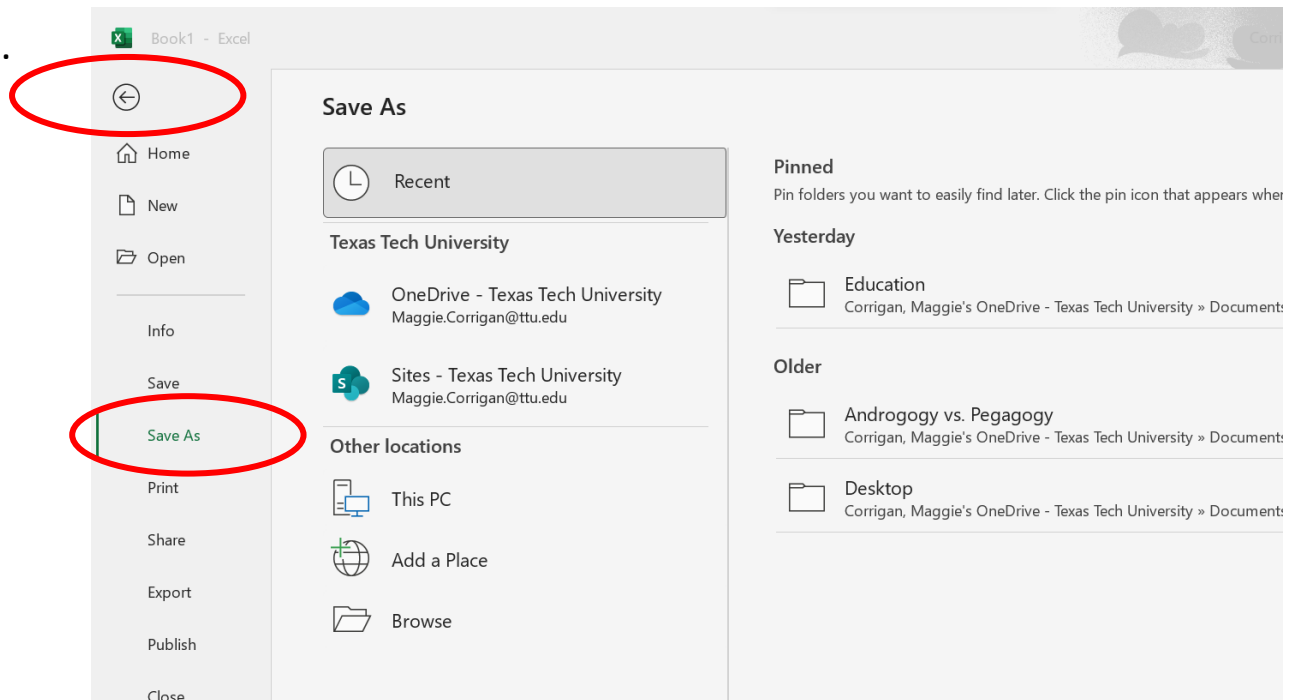
Creating a New Workbook

1. On the **File** tab, **New**, click the **Blank Workbook**.
2. Click on **more templates**, to base a new Workbook on a template.
3. Search for a template.



Saving a Workbook

1. From the **File** tab, click **Save As**.
2. Select a place to save your file.
3. In the **File name** box, enter a name for your workbook.
4. Click **Save** to finish.
5. Click the left arrow to go back to your file.



Definitions

- **Columns** are vertical group of cells denoted with an alphabetical header at the top, running left to right (A, B, etc.).
- **Rows** are horizontal group of cells denoted with numerical headers, running from top to bottom (1, 2, etc.).
- **Cells** are intersections of rows & columns.
- **Cell address** (aka Cell Reference) identifies the location of the cell in the spreadsheet. A cell address is a combination of column letter and row number of a cell, such as C4 or D8. Note: When identifying a cell by its address, the column letter is always listed first followed by the row number.
- **Cell Range** is a group of cells, such as D2:D4
- **Formula bar** is the area of the window where text and formulas can be edited and entered.
- **Worksheet** is a spreadsheet for text, numbers, formulas – it is the basic work area in Excel.
- **Workbook** is the entire Excel file. Think of the workbook as a three-ring binder. Each workbook automatically opens with three worksheets, but more can be added if needed.
- **Active Cell** is a cell with a bold outline around the cell.

Cell Basics

Cell Content

- Cells can contain **text**, such as letters, numbers, and dates.

	A	B	C	D	E
1	Date	Sales	Percentage of Total		
2	4/4/16	93	0.71		
3	4/5/16	42	0.78		
4	4/6/16	46	0.86		
5	4/7/16	73	0.28		
6	4/8/16	12	0.49		
7	4/9/16	24	0.65		
8	4/10/16	19	0.57		
9					
10					

Data Entry

To manually enter data:

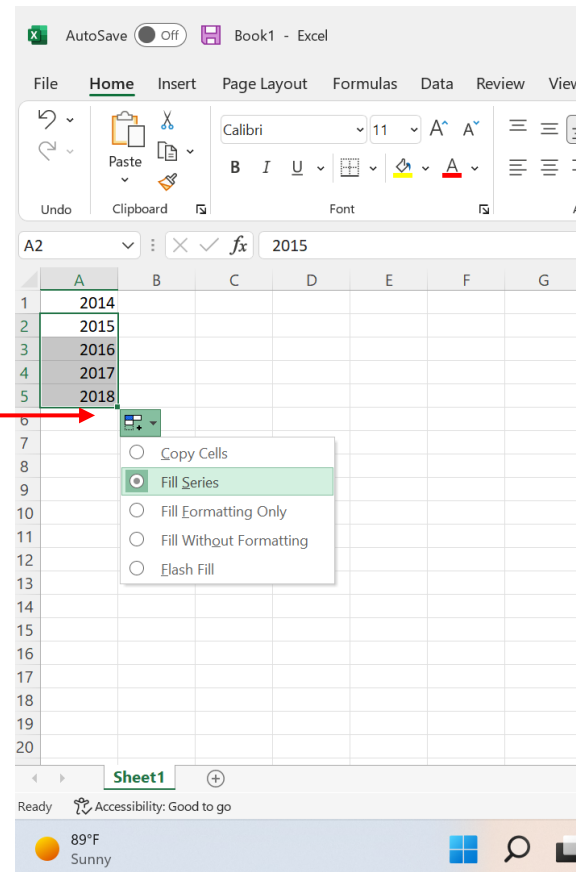
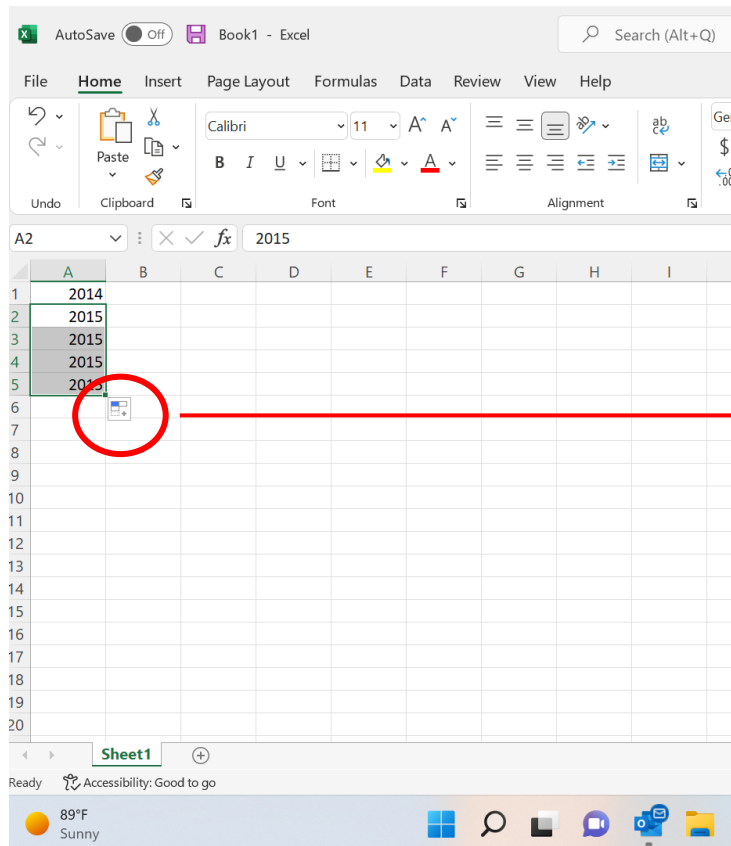
1. Select an empty cell, such as A1, and then type text or a number.
2. Press **Enter** or **Tab** to move to the next cell.

	A	B	C	D	E
1	Department	Q1	Q2		
2	Sales				
3	HR				
4					
5					

	Jan	Feb	Mar	Apr	May	Jun
2014						
2015						
2016						
2017						
2018						

Auto Fill (Filling in data from a series)

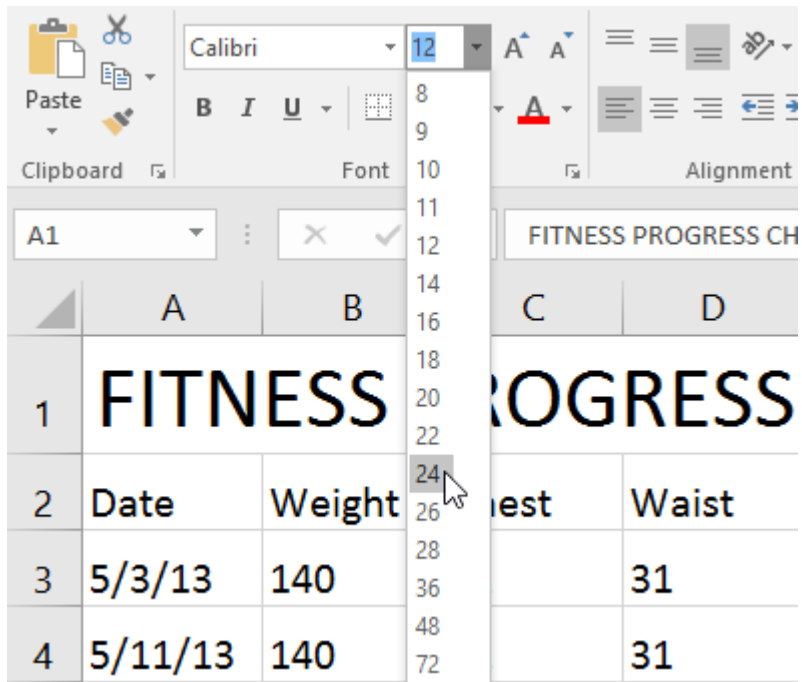
1. Enter the beginning of the series in two cells: such as Jan and Feb; or 2014 and 2015.
2. Select the two cells containing the series, and then drag the fill handle across or down the cells.



Formatting Cells

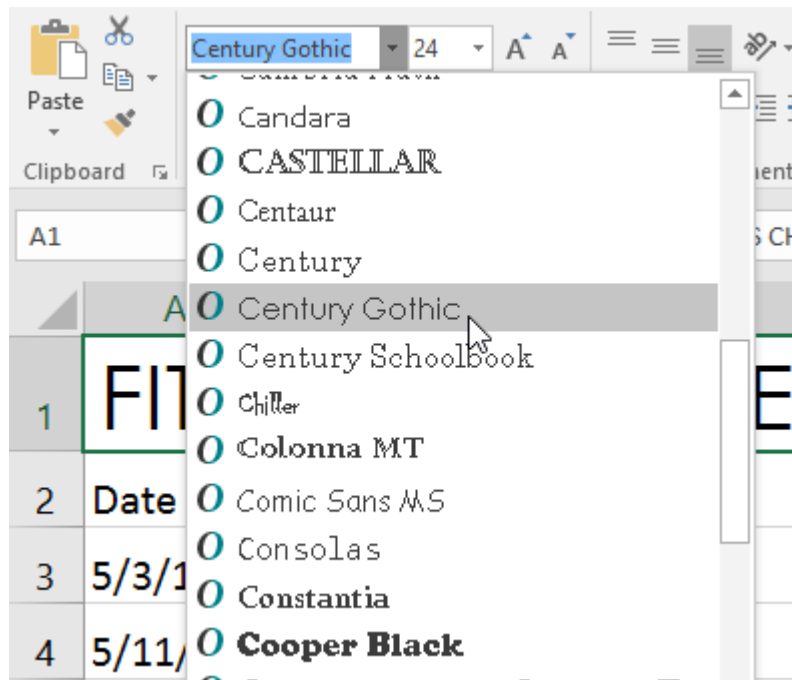
Font Size

1. Select the **cell(s)** you want to modify.
2. On the **Home** tab, click the **drop-down arrow** next to the **Font Size** command, then select the desired **font size**. In our example, we will choose **24** to make the text **larger**.



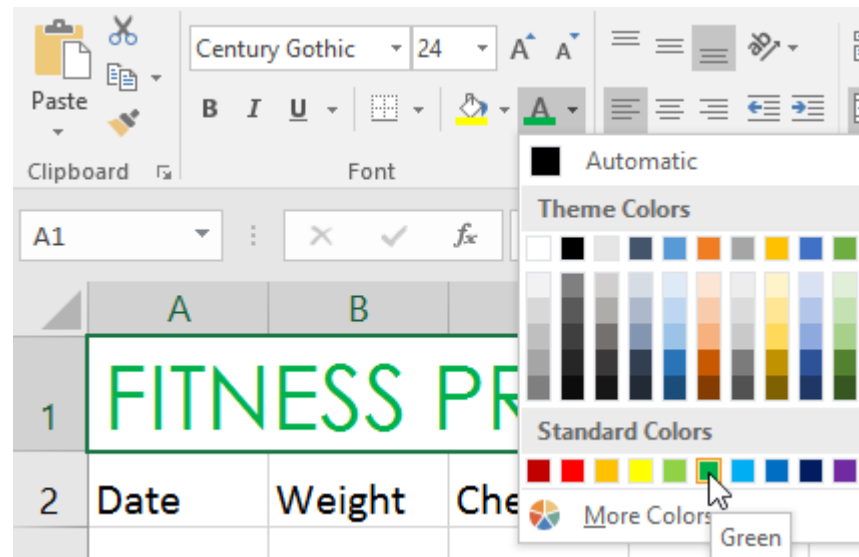
Changing the Font

1. Select the **cell(s)** you want to modify.
2. On the **Home** tab, click the **drop-down arrow** next to the **Font** command, then select the desired **font**. In our example, we'll choose **Century Gothic**.



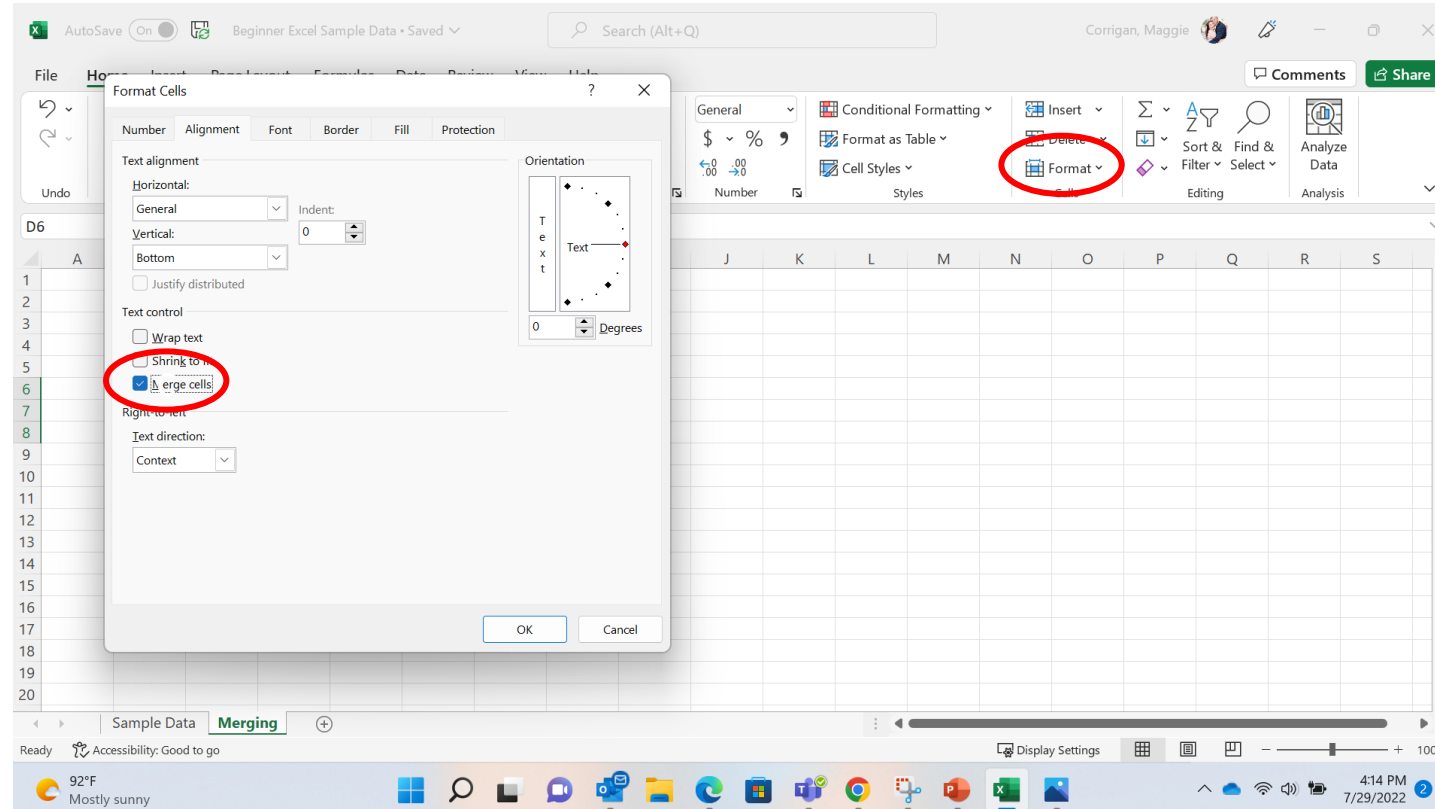
Changing Font Color

1. Select the **cell(s)** you want to modify.
2. On the **Home** tab, click the **drop-down arrow** next to the **Font Color** command, then select the desired **font color**. In our example, we'll choose **Green**.



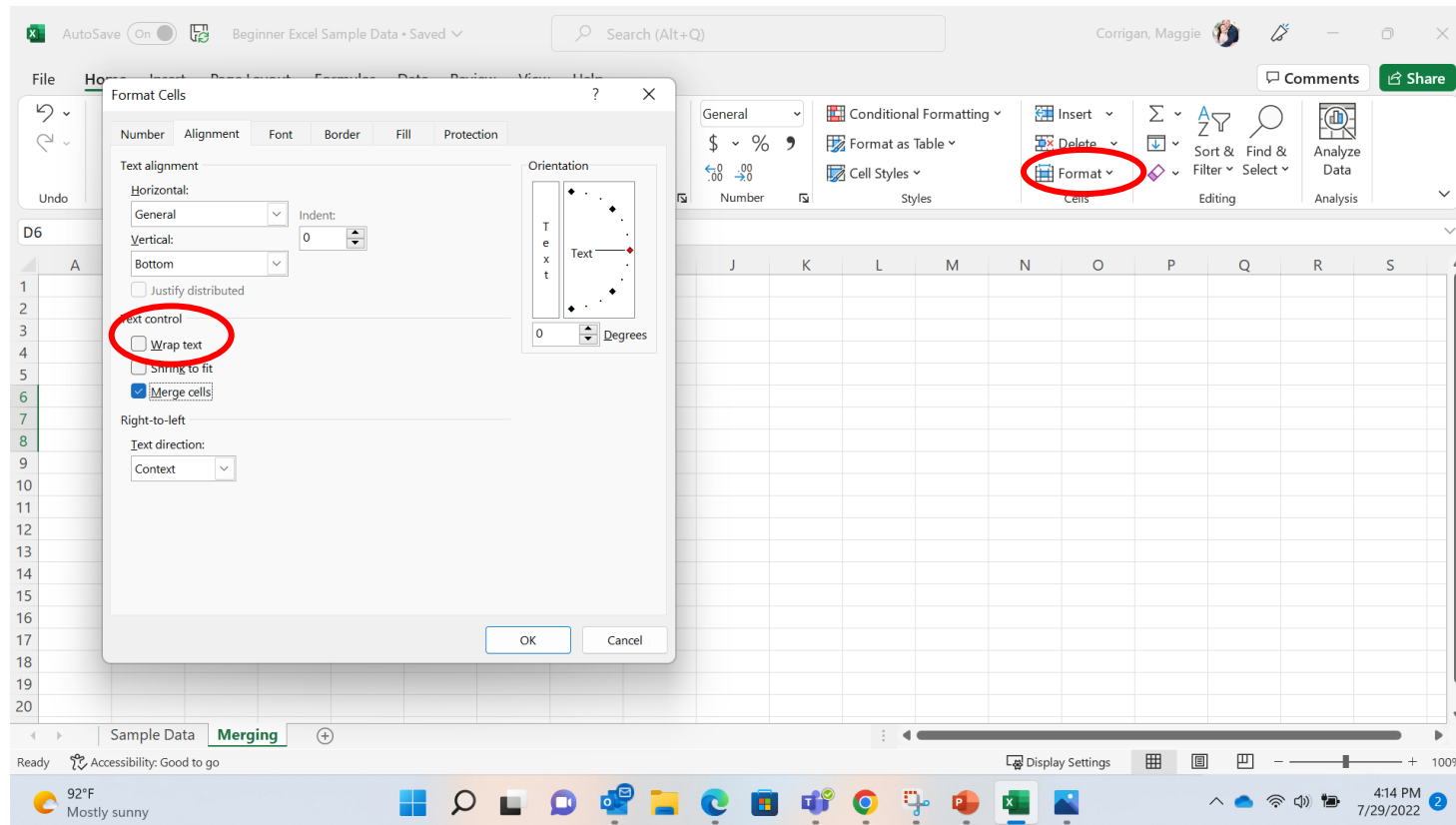
Merging Cells

- Select any given amount of cells
- Click **format > format cells**
- Click **merge cells**



Text Wrap

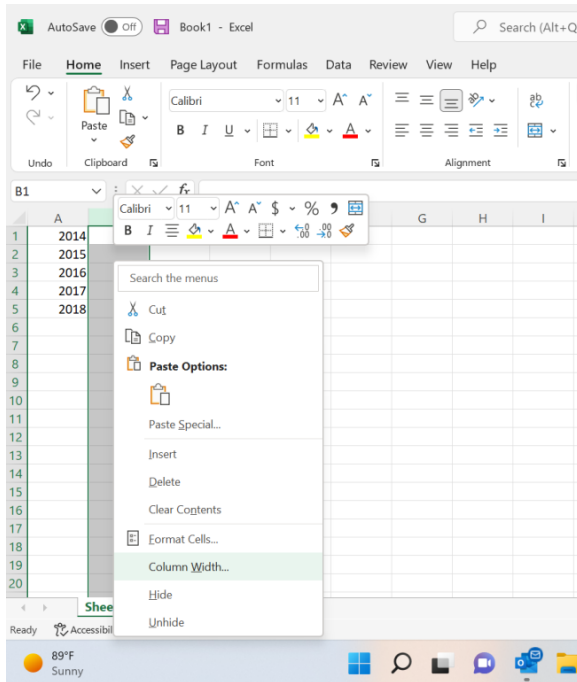
- Click **format > format cells**
- Click **wrap text**



Resizing Columns & Rows

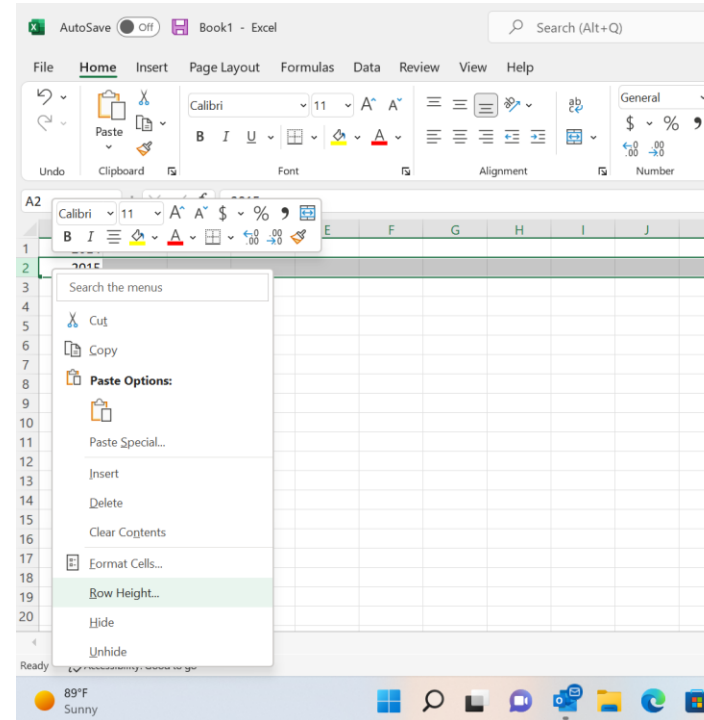
Columns

- **Right Click** on the **A** column
- Click on **Column Width**



Rows

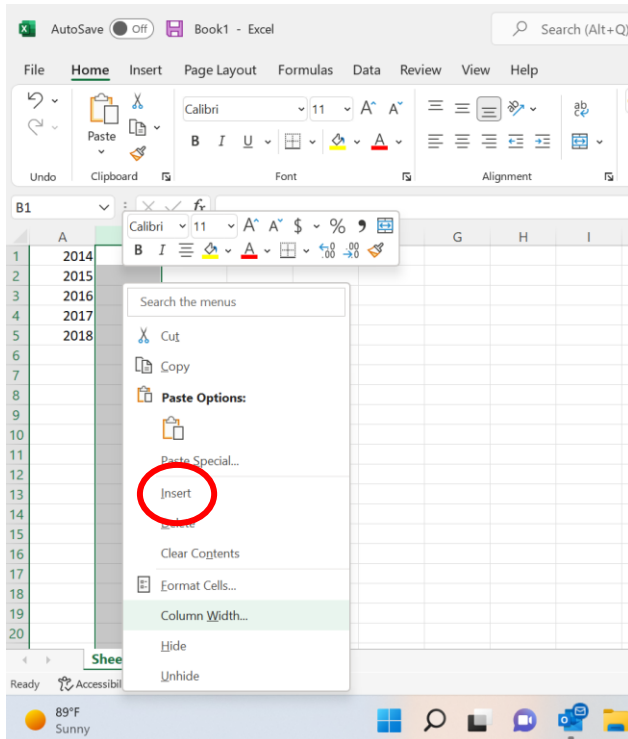
- **Right Click** on the **1** Row
- Click on **Row Height**



Adding/Deleting Columns & Rows

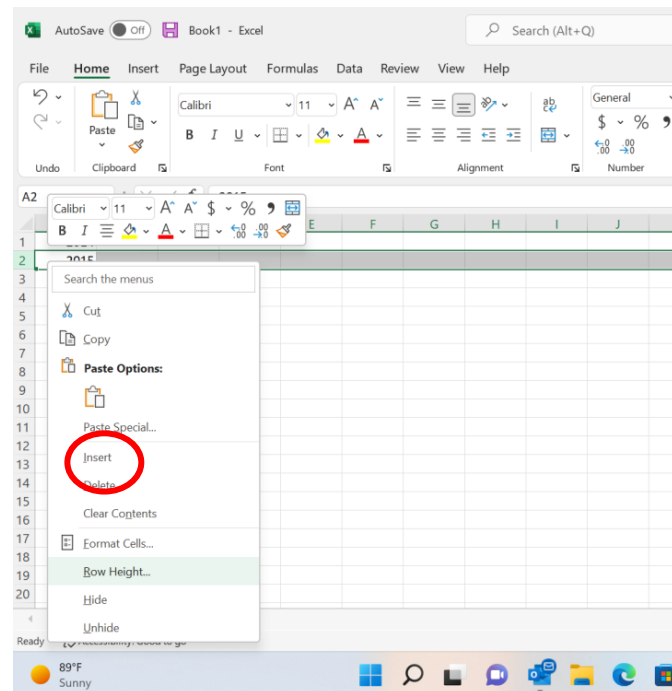
Columns

- **Right Click** on the **A** column
- Click on **insert**



Rows

- **Right Click** on the **1** Row
- Click on **Insert**



Number Formats

More Number Formats

The screenshot shows the Excel ribbon with the 'Number' group selected. The 'More Number Formats...' dialog box is open, displaying a list of categories and their corresponding sample values:

- General: No specific format
- Number: 41673.00
- Currency: \$41,673.00
- Accounting: \$41,673.00
- Short Date: 2/3/2014
- Long Date: Monday, February 3, 2014
- Time: 12:00:00 AM
- Percentage: 4167300.00%
- Fraction: 41673
- Scientific: 4.17E+04
- Text: 41673

The background spreadsheet shows a table with columns 'Shipping Date' and 'Expected Arrival Date'. Cell A2 contains '2/3/2014' and cell B2 contains '2/10/2014'.

The screenshot shows the same spreadsheet as the previous image, but with the 'Format Cells' dialog box open. The 'Number' tab is selected, and the 'Date' category is chosen. The 'Sample' field shows 'Monday, February 3, 2014'. The 'Type' list is expanded, and '*Wednesday, March 14, 2012' is selected. The 'Locale (location)' is set to 'English (United States)'.

Shipping Date	Expected Arrival Date
Monday, February 3, 2014	Monday, February 10, 2014

Formula Introduction

Basic Formula Operations

=A1+A2	Adds cells A1 and A2
=C4-3	Subtracts 3 from cell C4
=E7/J4	Divides cell E7 by J4
=N10*1.05	Multiplies cell N10 by 1.05
=R5^2	Finds the square of cell R5

Creating a Formula

1. Select the **cell** that will contain the formula
2. Type the **equals sign (=)**

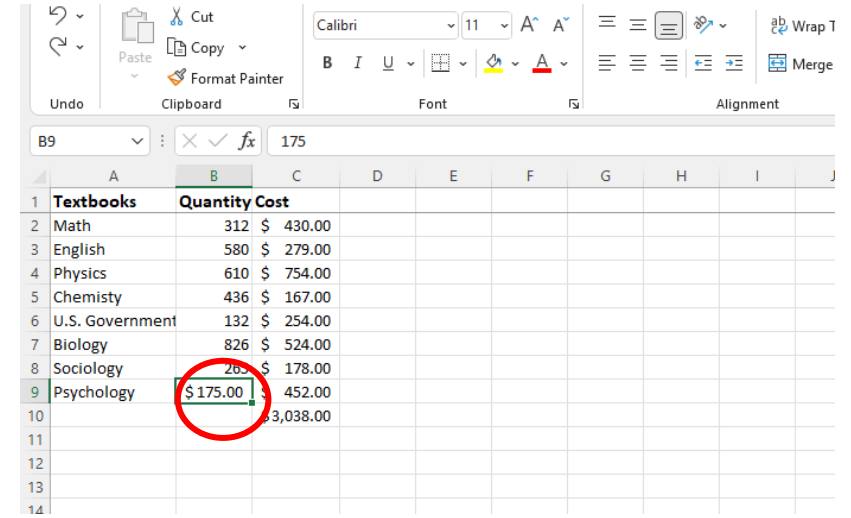
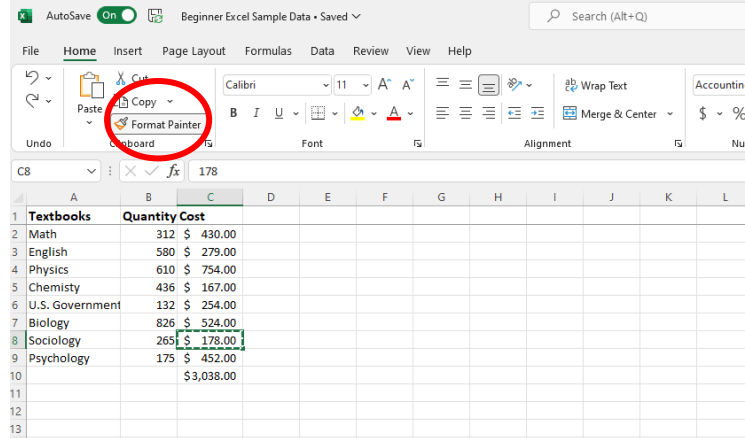
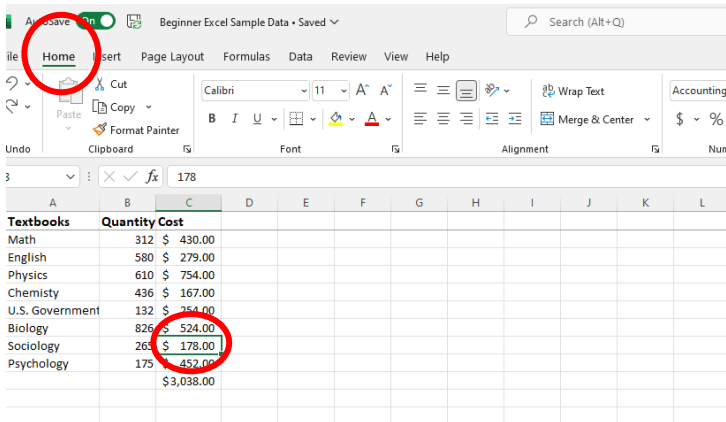
The screenshot shows an Excel spreadsheet with the following data:

	B	C	D
2			
3	QUANTITY	PRICE PER UNIT	LINE TOTAL
4	15	\$8.75	
5	18	\$2.59	
6	9	\$14.25	
7	12	\$2.99	
8			
9			
10		JUNE BUDGET	\$1,200
11		JULY BUDGET	\$1,500
12		TOTAL	=

The formula bar at the top shows the equals sign (=) being entered into cell D12.

Format Painter

- Click **Home** on the ribbon
- Click on a section of the working document with a format that can be replicated.
- Click **Format Painter**
- **Select** the cell(s) that you want the format applied to



Complex Formulas

Creating a Complex Formula

- In the example below, we are wanting to calculate **sales tax**

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E
2	MENU ITEM	UNIT PRICE	QUANTITY	LINE TOTAL	
3	Tamales: Carnitas	\$2.29	20	\$45.80	
4	Tamales: Vegetable	\$2.29	30	\$68.70	
5	Empanadas: Nutella & Banana	\$3.99	40	\$159.60	
6			TAX	$=(D3+D4+D5)*0.075$	
7	TOTAL				
8					

The formula bar at the top shows the formula $=(D3+D4+D5)*0.075$ being entered into cell D6.

Relative and Absolute Cell References

Copying a Formula Across Cells

1. Enter the **formula** to calculate the desired value. In our example, we'll type **=B4*C4**
2. Locate the **fill handle** in the bottom-right corner of the desired cell. In our example, we'll locate the fill handle for cell **D4**.

	A	B	C	D	E
3	MENU ITEM	UNIT PRICE	QUANTITY	LINE TOTAL	
4	Empanadas: Beef Picadillo	\$2.99	15	=B4*C4	
5	Empanadas: Chipotle Shrimp	\$3.99	10		
6	Tamales: Chicken Tinga	\$2.29	20		
7	Tamales: Vegetable	\$2.29	30		
8	Arepas: Carnitas	\$2.89	10		
9	Arepas: Queso Blanco	\$2.49	20		
10	Empanadas: Apple Cinnamon	\$3.19	40		
11	Beverages: Horchata	\$1.89	25		
12	Beverages: Lemonade	\$1.89	35		
13	Beverages: Tamarindo	\$1.89	10		
14	TOTAL			\$0.00	

	A	B	C	D	E
3	MENU ITEM	UNIT PRICE	QUANTITY	LINE TOTAL	
4	Empanadas: Beef Picadillo	\$2.99	15	\$44.85	
5	Empanadas: Chipotle Shrimp	\$3.99	10		
6	Tamales: Chicken Tinga	\$2.29	20		
7	Tamales: Vegetable	\$2.29	30		
8	Arepas: Carnitas	\$2.89	10		
9	Arepas: Queso Blanco	\$2.49	20		
10	Empanadas: Apple Cinnamon	\$3.19	40		
11	Beverages: Horchata	\$1.89	25		
12	Beverages: Lemonade	\$1.89	35		
13	Beverages: Tamarindo	\$1.89	10		
14	TOTAL			\$44.85	

3. Drag the fill handle down

Creating an Absolute Cell Reference

1. Select the cell that will contain the formula
2. Enter the formula to calculate the desired value. In our example, we'll type `=(B4*C4)*E2`, making `E2` an absolute reference.

	A	B	C	D	E
2				TAX RATE:	7.5%
3	MENU ITEM	UNIT PRICE	QUANTITY	SALES TAX	LINE TOTAL
4	Empanadas: Beef Picadillo	\$2.99	10	<code>=(B4*C4)*\$E\$2</code>	\$44.85
5	Empanadas: Chipotle Shrimp	\$3.99	10		\$39.90
6	Tamales: Chicken Tinga	\$2.29	20		\$45.80
7	Tamales: Vegetable	\$2.29	30		\$68.70
8	Arepas: Carnitas	\$2.89	10		\$28.90
9	Arepas: Queso Blanco	\$2.49	20		\$49.80
10	Empanadas: Apple Cinnamon	\$3.19	40		\$127.60
11	Beverages: Horchata	\$1.89	25		\$47.25
12	Beverages: Lemonade	\$1.89	35		\$66.15
13	Beverages: Tamarindo	\$1.89	10		\$18.90
14				TOTAL	\$537.85
15					

Functions

Most used Functions within Excel



SUM: This function **adds** all of the values of the cells in the argument.



AVERAGE: This function determines the **average** of the values included in the argument. It calculates the sum of the cells and then divides that value by the number of cells in the argument.



COUNT: This function **counts** the number of cells with numerical data in the argument. This function is useful for quickly counting items in a cell range.



MAX: This function determines the **highest cell value** included in the argument.



MIN: This function determines the **lowest cell value** included in the argument.

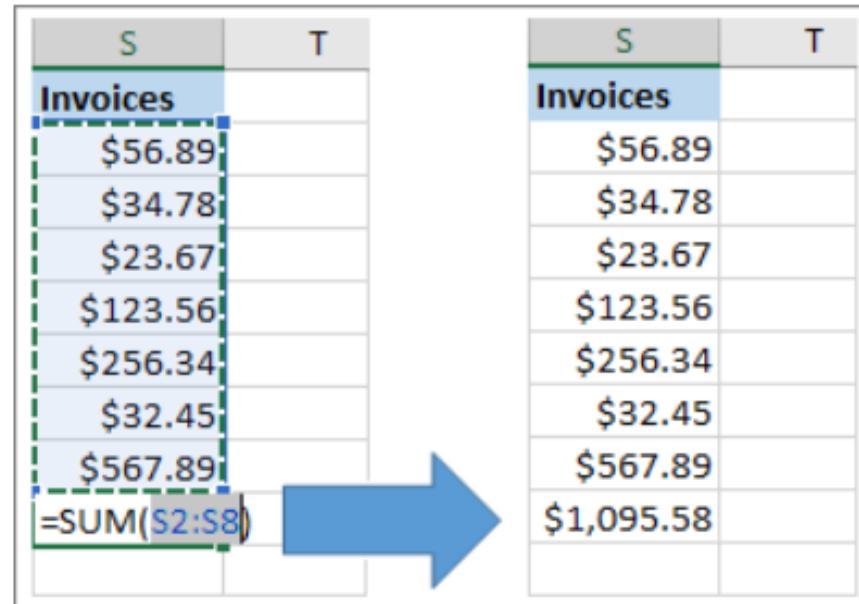
AutoSum

Quickly calculate with AutoSum

1. Select the cell below the numbers you want to add.
2. Select **Home** > **AutoSum**



1. Press **Enter**.

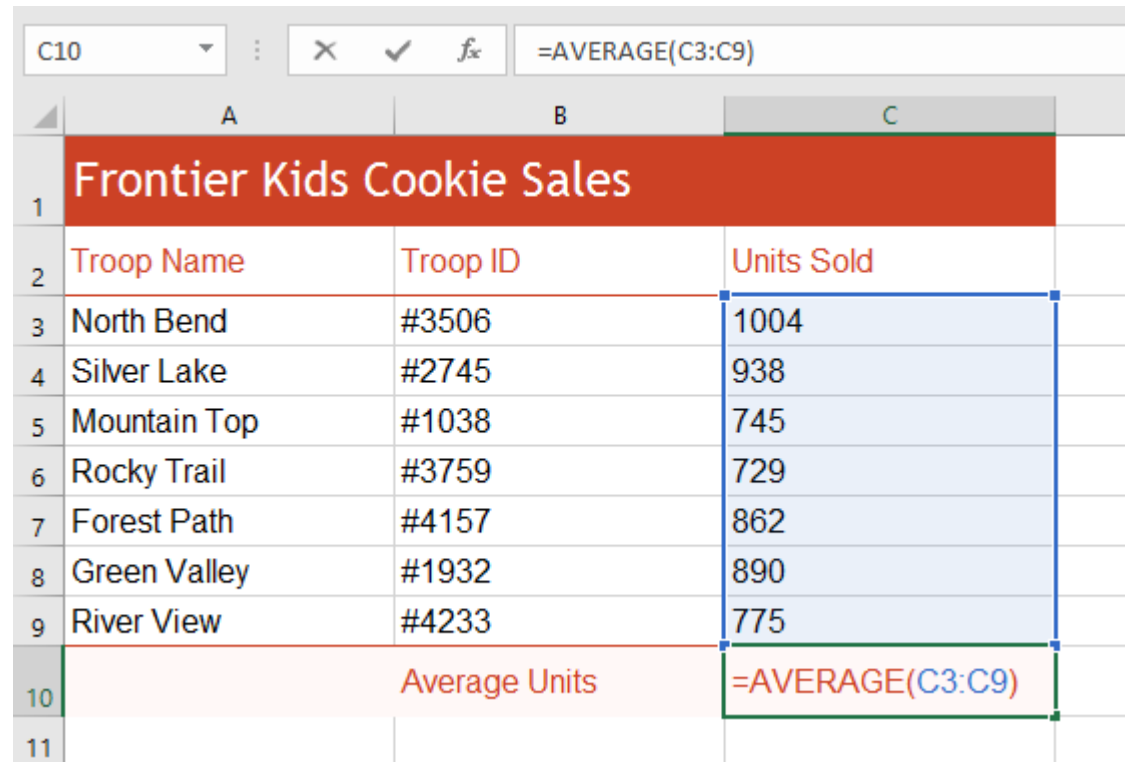
The diagram illustrates the AutoSum process in two stages. On the left, a table with columns S and T is shown. Column S contains the following values: Invoices, \$56.89, \$34.78, \$23.67, \$123.56, \$256.34, \$32.45, and \$567.89. A dashed green box highlights the range S2:S8. A blue arrow points from this range to the right. On the right, the same table is shown, but the cell S9 now contains the formula =SUM(S2:S8) and the result \$1,095.58.

S	T
Invoices	
\$56.89	
\$34.78	
\$23.67	
\$123.56	
\$256.34	
\$32.45	
\$567.89	
=SUM(S2:S8)	

S	T
Invoices	
\$56.89	
\$34.78	
\$23.67	
\$123.56	
\$256.34	
\$32.45	
\$567.89	
\$1,095.58	

Finding the Average

- Type =, then the word **AVERAGE**
- Enter the **cell range** for the argument inside parentheses



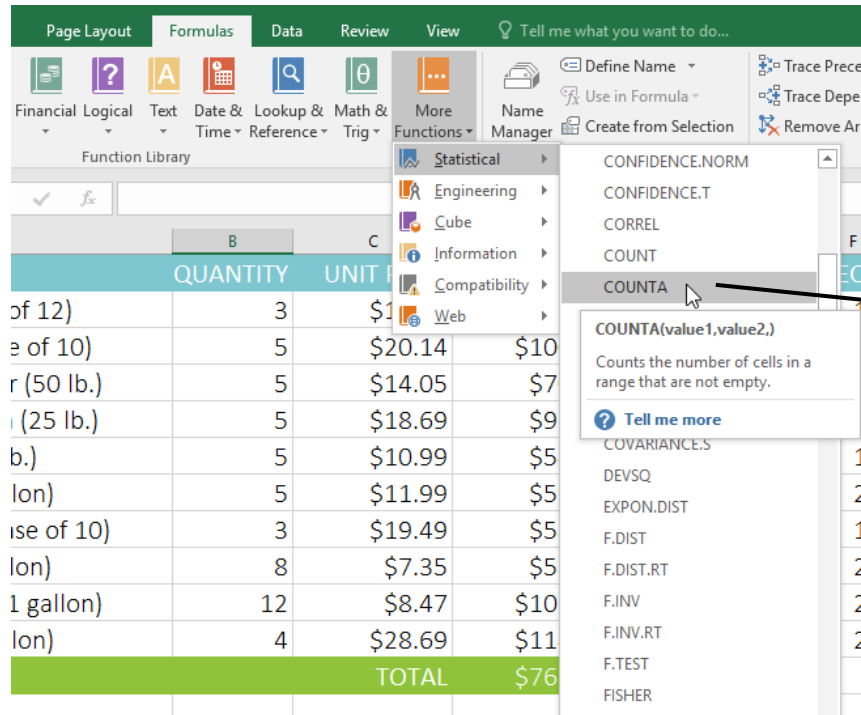
The screenshot shows an Excel spreadsheet with the following data:

Frontier Kids Cookie Sales		
Troop Name	Troop ID	Units Sold
North Bend	#3506	1004
Silver Lake	#2745	938
Mountain Top	#1038	745
Rocky Trail	#3759	729
Forest Path	#4157	862
Green Valley	#1932	890
River View	#4233	775
Average Units		=AVERAGE(C3:C9)

The formula bar at the top shows the formula `=AVERAGE(C3:C9)` being entered into cell C10. The spreadsheet has columns A, B, and C, and rows 1 through 11. The title bar shows 'C10' and the formula bar shows the formula being entered.

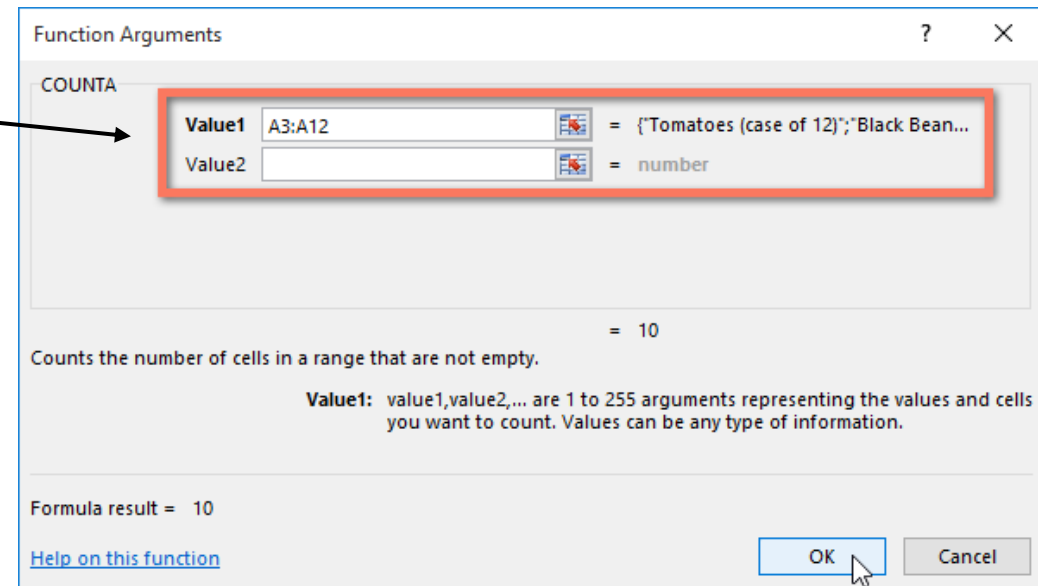
Finding the Count

1. Click on the **formulas tab > More Functions**
2. **Click Statistical > CountA**
3. **Select the desired cell range**



The screenshot shows the Excel ribbon with the 'Formulas' tab selected. The 'More Functions' dropdown menu is open, showing the 'Statistical' category. The 'COUNTA' function is highlighted. A tooltip for 'COUNTA' is visible, showing the formula 'COUNTA(value1,value2.)' and the description 'Counts the number of cells in a range that are not empty.' Below the ribbon, a table is visible with columns 'QUANTITY' and 'UNIT'. The table contains the following data:

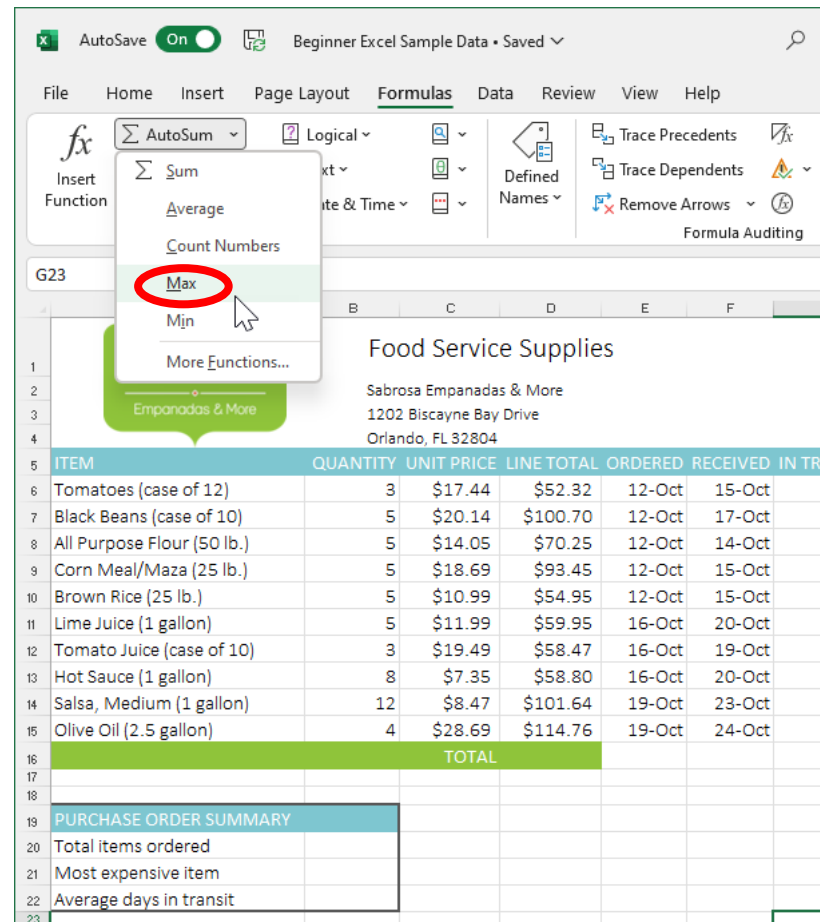
	QUANTITY	UNIT
of 12)	3	\$10.99
e of 10)	5	\$20.14
r (50 lb.)	5	\$14.05
i (25 lb.)	5	\$18.69
b.)	5	\$10.99
lon)	5	\$11.99
ise of 10)	3	\$19.49
lon)	8	\$7.35
1 gallon)	12	\$8.47
lon)	4	\$28.69
TOTAL	\$76	



The screenshot shows the 'Function Arguments' dialog box for the 'COUNTA' function. The 'Value1' field is set to 'A3:A12', and the 'Value2' field is empty. The dialog box displays the formula result as '= 10'. The description of the function is: 'Counts the number of cells in a range that are not empty.' The 'Value1' argument is described as: 'value1,value2,... are 1 to 255 arguments representing the values and cells you want to count. Values can be any type of information.' The 'Formula result' is shown as '= 10'. There are 'OK' and 'Cancel' buttons at the bottom right.

Max

1. Click **formulas > AutoSum**
2. Click **Max**
3. Enter in desired range of numbers



The screenshot shows the Microsoft Excel interface with the **Formulas** tab selected. The **AutoSum** dropdown menu is open, and the **Max** option is highlighted with a red circle. The spreadsheet below contains a table of food service supplies.

ITEM	QUANTITY	UNIT PRICE	LINE TOTAL	ORDERED	RECEIVED	IN TRANSIT
Tomatoes (case of 12)	3	\$17.44	\$52.32	12-Oct	15-Oct	
Black Beans (case of 10)	5	\$20.14	\$100.70	12-Oct	17-Oct	
All Purpose Flour (50 lb.)	5	\$14.05	\$70.25	12-Oct	14-Oct	
Corn Meal/Maza (25 lb.)	5	\$18.69	\$93.45	12-Oct	15-Oct	
Brown Rice (25 lb.)	5	\$10.99	\$54.95	12-Oct	15-Oct	
Lime Juice (1 gallon)	5	\$11.99	\$59.95	16-Oct	20-Oct	
Tomato Juice (case of 10)	3	\$19.49	\$58.47	16-Oct	19-Oct	
Hot Sauce (1 gallon)	8	\$7.35	\$58.80	16-Oct	20-Oct	
Salsa, Medium (1 gallon)	12	\$8.47	\$101.64	19-Oct	23-Oct	
Olive Oil (2.5 gallon)	4	\$28.69	\$114.76	19-Oct	24-Oct	
TOTAL						

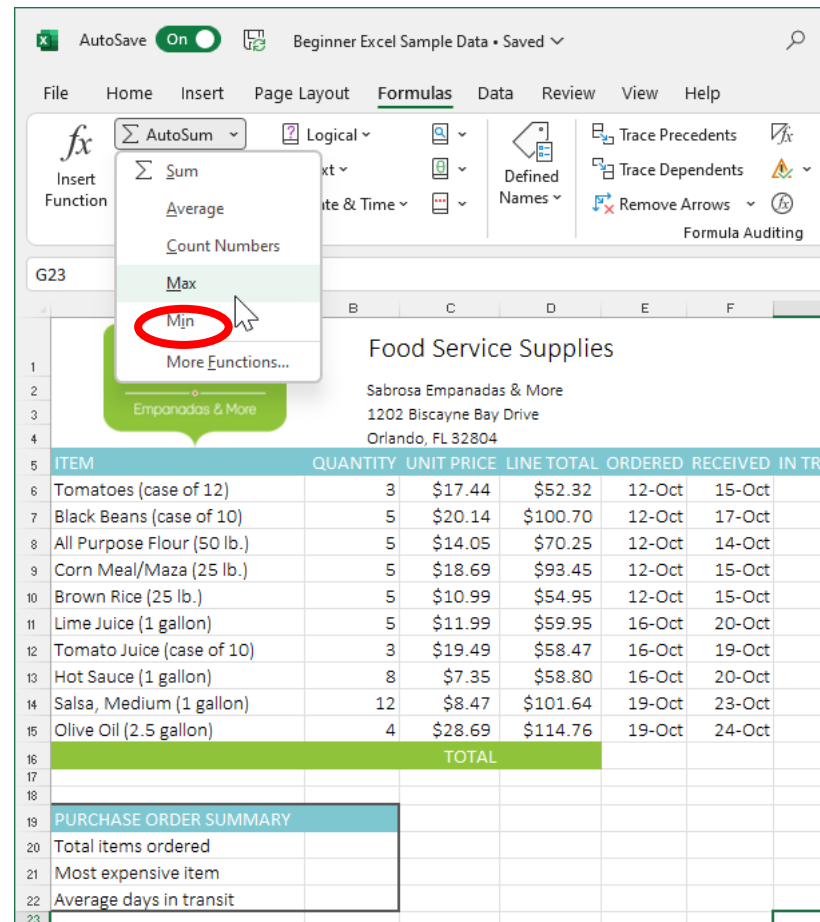
Food Service Supplies
Sabrosa Empanadas & More
1202 Biscayne Bay Drive
Orlando, FL 32804

PURCHASE ORDER SUMMARY

Total items ordered	
Most expensive item	
Average days in transit	

Min

1. Click **formulas > AutoSum**
2. Click **Min**
3. Enter in desired range of numbers



The screenshot shows the Microsoft Excel interface with the 'Formulas' tab selected. The 'AutoSum' dropdown menu is open, and the 'Min' option is highlighted with a red circle. The background shows a spreadsheet titled 'Food Service Supplies' with a table of items and their prices.

ITEM	QUANTITY	UNIT PRICE	LINE TOTAL	ORDERED	RECEIVED	IN TRANSIT
Tomatoes (case of 12)	3	\$17.44	\$52.32	12-Oct	15-Oct	
Black Beans (case of 10)	5	\$20.14	\$100.70	12-Oct	17-Oct	
All Purpose Flour (50 lb.)	5	\$14.05	\$70.25	12-Oct	14-Oct	
Corn Meal/Maza (25 lb.)	5	\$18.69	\$93.45	12-Oct	15-Oct	
Brown Rice (25 lb.)	5	\$10.99	\$54.95	12-Oct	15-Oct	
Lime Juice (1 gallon)	5	\$11.99	\$59.95	16-Oct	20-Oct	
Tomato Juice (case of 10)	3	\$19.49	\$58.47	16-Oct	19-Oct	
Hot Sauce (1 gallon)	8	\$7.35	\$58.80	16-Oct	20-Oct	
Salsa, Medium (1 gallon)	12	\$8.47	\$101.64	19-Oct	23-Oct	
Olive Oil (2.5 gallon)	4	\$28.69	\$114.76	19-Oct	24-Oct	
TOTAL						

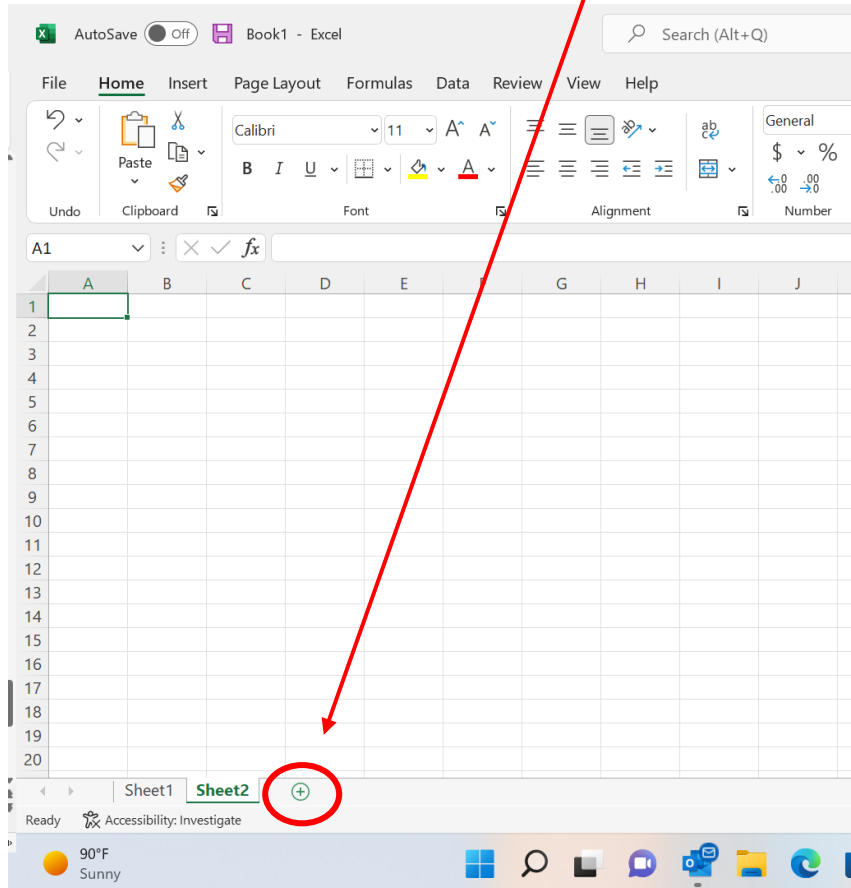
PURCHASE ORDER SUMMARY

Total items ordered	
Most expensive item	
Average days in transit	

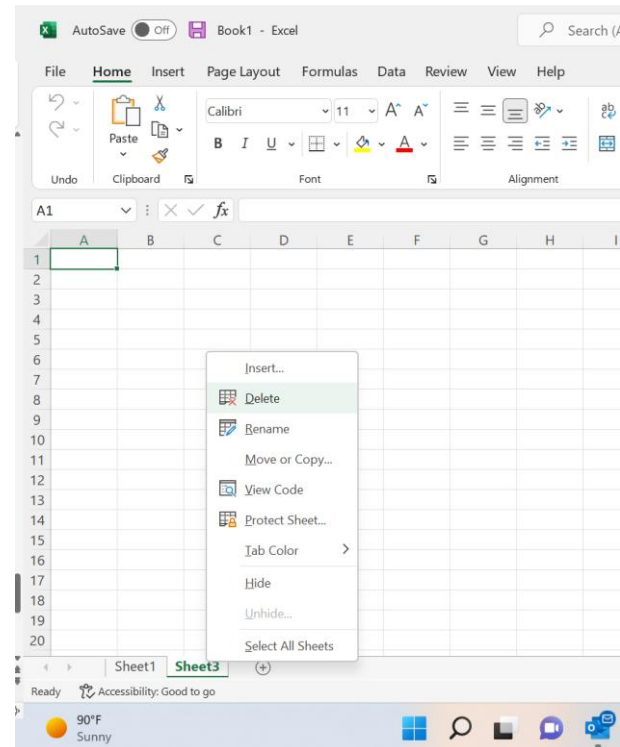
Basic Worksheet Functions

Insert/Delete Worksheets

At the bottom left hand on the screen click the **+** button to **add** a worksheet

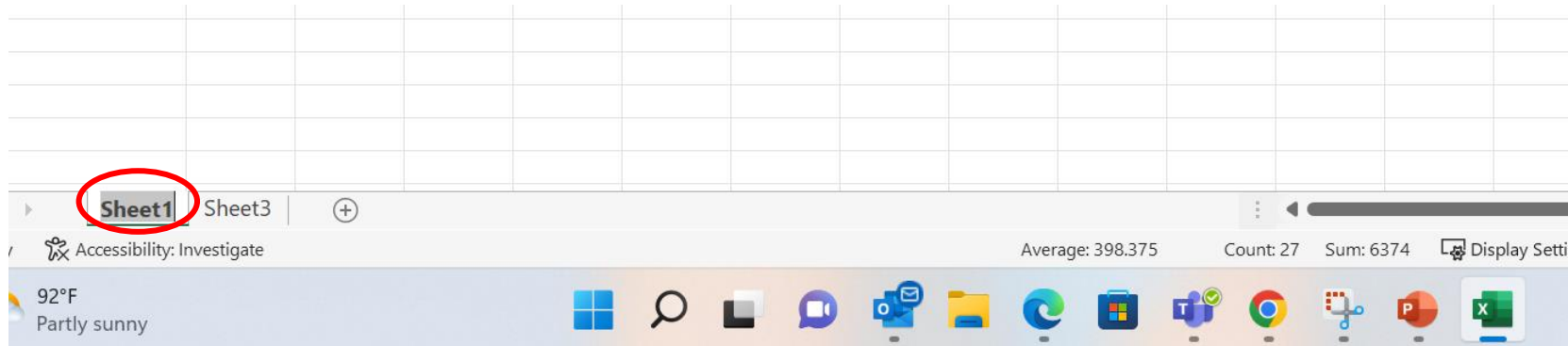


- To delete a worksheet, **right click** on the **sheet name**
- Click **delete**



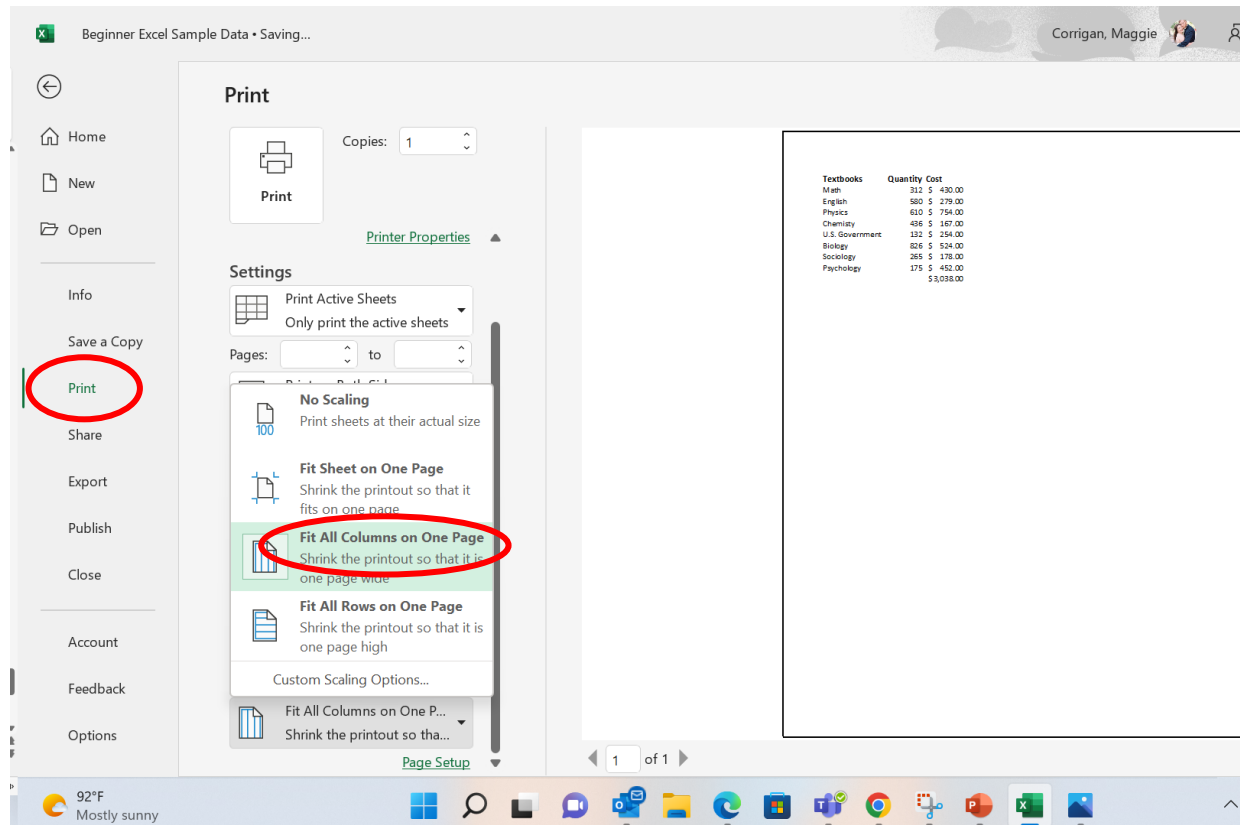
Renaming a Worksheet

- **Double click** the sheet name



Scaling options (fit all rows/columns to page)

- Click **file > print**
- Click **fit all columns to one page**

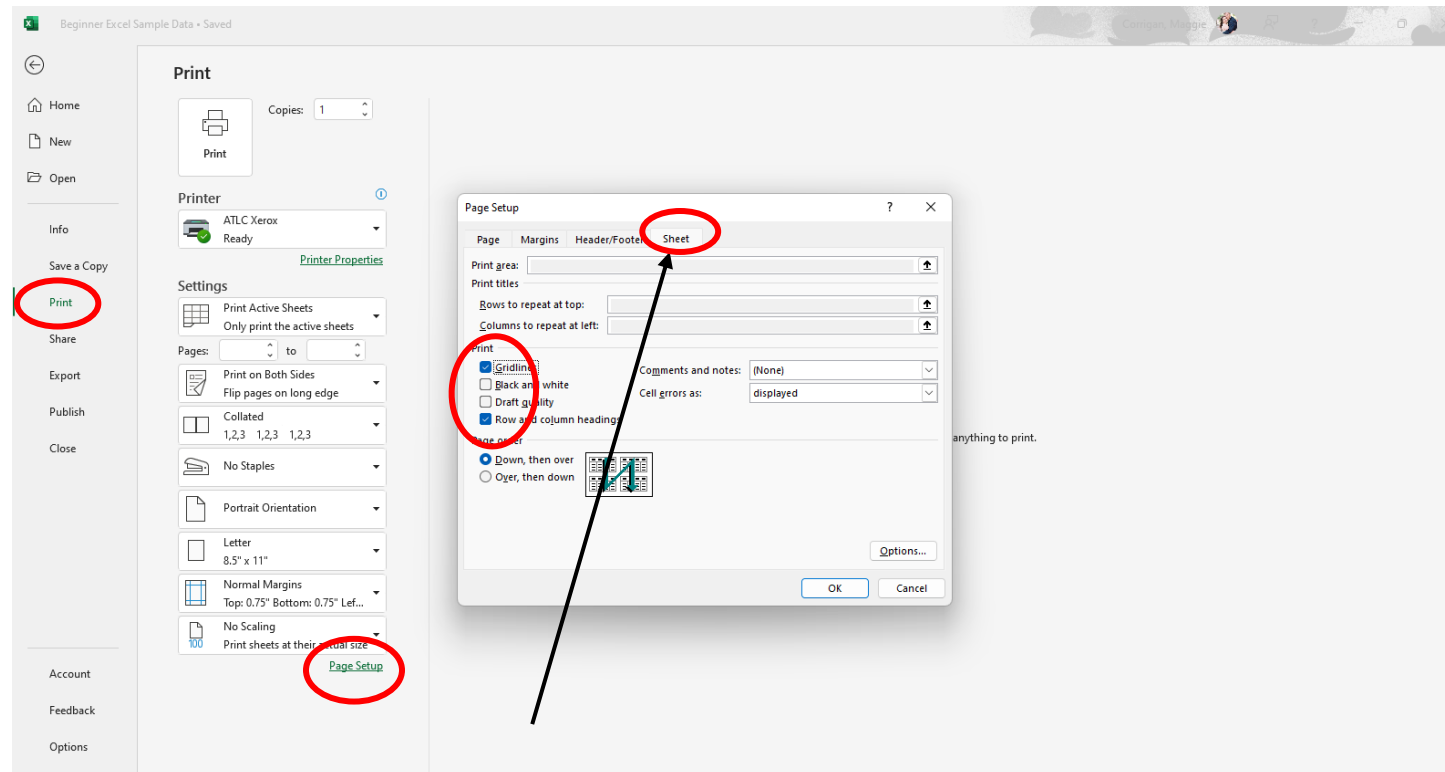


The screenshot shows the Microsoft Excel Print dialog box for a file named "Beginner Excel Sample Data". The "Print" button in the left sidebar is circled in red. The "Settings" section is expanded, and the "Fit All Columns on One Page" option is selected and circled in red. The preview window on the right shows a table of textbook data.

Textbooks	Quantity	Cost
Math	312	\$ 430.00
English	880	\$ 279.00
Physics	610	\$ 754.00
Chemistry	436	\$ 167.00
U.S. Government	132	\$ 254.00
Biology	826	\$ 524.00
Sociology	265	\$ 178.00
Psychology	175	\$ 452.00
		\$3,038.00

Page Setup (to show gridlines / column headings)

- Click **file > print**
- Click **Page Setup > sheet**
- Check **gridlines & row and column headings**



Resources



This handout was created using information from the following sites:



<https://support.microsoft.com/en-us/office/analyze-and-format-in-excel-11a632c1-197e-454f-a515-374a4aa2b3dd>

[Free Excel 2016 Tutorial at GCFGlobal](#)



Assistance at TTU

For technical assistance, please contact IT Help Central at (806) 742-HELP or ithelpcentral@ttu.edu.

More information and training resources, including training videos, can be found at:

<http://unifiedcommunications.ttu.edu>. You can also contact IT Education Services at iteducation@ttu.edu or call the ATLC at (806)742-1650.