

M365 Excel Basics Video 05: Calculate with Different Criteria

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Topics covered in the M365 Excel Basics Video 5:

- ❖ COUNT
- ❖ COUNTA
- ❖ COUNTIFS
- ❖ SUM
- ❖ SUMIFS
- ❖ AVERAGE
- ❖ AVERAGEIFS
- ❖ MINIFS
- ❖ MAXIFS
- ❖ UNIQUE LIST
- ❖ DATA VALIDATION

Region	SalesRep	Product	Revenue	COUNT	COUNTA	SUM	AVERAGE
Central	Cinderelli	Stuffed Animals/Bears	230.95	Counts Numbers	Counts cells not empty	Adds numbers	Arithmetic Mean of numbers
Central	Cinderelli	LOL OMG Surprise	88.27	Count ALL Numbers	Count ALL Words	Sum ALL Numbers	Average ALL Numbers
South	Carmen	LOL OMG Surprise	93.31	=COUNT(E12:E41)	=COUNTA(D12:D41)	=SUM(E12:E41)	=AVERAGE(E12:E41)
North	Cinderelli	LOL OMG Surprise	233.83				
South	Macen	Monster Trucks	197.36	Criteria			
West	Macen	LOL Surprise	72.67	SalesRep	Miles		
Central	Tiana	Hot Wheels	77.55				
NorthWest	Miles	Monster Trucks	100.98		COUNTIFS	SUMIFS	
NorthWest	Macen	Hot Wheels	291.98		Count w/ 1 or more criteria	Add w/ 1 or more criteria	
North	Carmen	Rainbow High Dolls	254.87	Criteria	Count	Sum	
South	Carmen	LOL OMG Surprise	272.04	Macen	=COUNTIFS(C12:C41,G22)	=SUMIFS(E12:E41,C12:C41,G22)	
Central	Cinderelli	LOL Surprise	196.26	Criteria	Count	Sum	
North	Miles	Hot Wheels	112.59	45143	=COUNTIFS(A12:A41,G24)	=SUMIFS(E12:E41,A12:A41,G24)	
NorthWest	Tiana	LOL Surprise	196.3	Criteria	Count	Sum	
West	Cinderelli	Monster Trucks	287.12	LOL Surprise	=COUNTIFS(D12:D41,G26)	=SUMIFS(E12:E41,D12:D41,G26)	
West	Cinderelli	Monster Trucks	133.05	Criteria	Count	Sum	
West	Tiana	Hot Wheels	137.51	South	=COUNTIFS(B12:B41,G28)	=SUMIFS(E12:E41,B12:B41,G28)	
NorthWest	Cinderelli	LOL Surprise	129				
Central	Cinderelli	LOL Surprise	266.74				
Central	Macen	LOL Surprise	190.62		AVERAGEIFS		
Central	Carmen	LOL OMG Surprise	163.83	Criteria			
Central	Macen	Hot Wheels	78.59	South	=AVERAGEIFS(E12:E41,B12:B41,G33)		
South	Cinderelli	Monster Trucks	170.26				
North	Miles	Hot Wheels	210.55		MINIFS		
West	Miles	Rainbow High Dolls	92.76	Criteria			
North	Miles	Rainbow High Dolls	289.65	LOL Surprise	=MINIFS(E12:E41,D12:D41,G37)		
South	Macen	Rainbow High Dolls	268.53				
North	Macen	Monster Trucks	109.05		MAXIFS		
NorthWest	Carmen	Monster Trucks	151.74	Criteria			
West	Miles	Hot Wheels	204.19	LOL Surprise	=MAXIFS(E12:E41,D12:D41,G41)		

Please note: For this class, we will use F12 to save our files for the first time and CTRL +S to save the changes we make to our files.

COUNT, COUNTA, SUM and AVERAGE

The built-in functions like SUM and AVERAGE are programmed to make defined calculations based on the formula inputs entered in the function’s arguments. There are more than 450 built-in Excel functions.

SUM: Sum function adds numbers

COUNT: Counts numbers

COUNTA: counts words

AVERAGE: Arithmetic mean of numbers to get the Average

Ranges: the term range, range of cells, range reference, and cell reference are all synonyms for two or more cells separated by a colon. For example, the range of D12:D41, D12 is the start cell and D41 is the end cell. All the cells between the start cell and the end cell are included in the range.

Aggregate calculation is a calculation that takes many items in a dataset and delivers a single result that represents the underlying data, for example the SUM function to get the total and for the arithmetic mean to get the average we use the AVERAGE function.

An example of these formulas is seen below:

COUNT	COUNTA	SUM	AVERAGE
Counts Numbers	Counts cells not empty	Adds numbers	Arithmetic Mean of numbers
Count ALL Numbers	Count ALL Words	Sum ALL Numbers	Average ALL Numbers
30	30	\$5,302.150	\$176.738333333
=COUNT(E12:E41)	=COUNTA(D12:D41)	=SUM(E12:E41)	=AVERAGE(E12:E41)

IFS Aggregate Functions SUMIFS, COUNTIFS, AVERAGEIFS, MINIFS, MAXIFS

Using IFS Aggregate Functions (SUMIFS, COUNTIFS, AVERAGEIFS, MINIFS, MAXIFS) to Calculate Based on AND Logical Test

Logical functions are used in spreadsheets to test whether a situation is true or false. Depending on the result of that test, you can then elect to do one thing or another.

IF is a logical function and we use the IF function to test one condition and the IFS function to test more than one condition that is multiple conditions or criteria. The IF Function allows you to make logical comparisons between a value and what you expect. With the IF Function, you can put one of two items in a cell but if you want to put one of three items in a cell in that case you can use the IFS function. When using a sum, count or average aggregate operations with one or more conditions, you can use the built-in Excel formulas SUMIFS, COUNTIFS, and AVERAGEIFS respectively.

When making reports and performing analysis, you will often need to do aggregate operations like adding, counting, averaging, and finding the minimum or maximum values. Most of the time you do not want to perform the calculation on all the records in a dataset but want to make calculations on records based on the conditions or criteria that you specify. Excel supports functions like SUM, COUNT, AVERAGE, MIN, and MAX with logical

expressions so we can calculate statistics only on those cells that will meet or match the logical condition or criteria.

We use the AND function to compare the results of more than one condition or criteria. This ensures that a calculation will not be performed unless all the specified conditions or criteria are met. This means that, the first and second and third (and so on) conditions must all be true before AND returns the value True.

There are up to 127 conditions or criteria in AND logical test although we rarely use more than 5 and, in this class, We will use 2 or 3 conditions.

Thus, we use the IF function to test for a collection of conditions.

Summary IFS Function:

- To count the number of cells within a range that meets the specified criteria use COUNTIFS
COUNTIFS: Counts matches *COUNTIFS(range, criteria)*
 Range references the range of the cells to be counted, and the Criteria is the value or the condition that defines which cell to include in the count.
- To add the sum of values for cells that meet the specified criteria use SUMIFS
SUMIFS: Adds Numbers *SUMIFS(sum_range, criteria_range, criteria)*
 The range is the range of the cells to be evaluated by the criteria specified in the criteria argument
 sum-range is the argument that specifies the range of values to add.
- To calculate the average of values for cells that meet the specified criteria, use AVERAGEIFS
AVERAGEIFS: Averages Numbers *AVERAGEIFS(average_range, criteria_range, criteria)*
 average range is the argument that specifies the range of values to average.
- **MINIFS:** Finds the smallest number *MINIFS(sum_range, criteria_range, criteria)*
- **MAXIFS:** Finds the largest number *MAXIFS(sum_range, criteria_range, criteria)*

NOTE: When you specify a "criteria" or "condition" you are saying: "ONLY make the calculation on some of the items, and NOT all of the items".

On the following pages you will see examples of using these formula functions as well as the functions used in each of the examples.

COUNT, SUM AND AVERAGE USING EXCEL FUNCTIONS

G14 : <input type="text" value="fx"/> =COUNT(E12:E41)													
A	B	C	D	E	F	G	H	I	J	K	L	M	N
9						<i>Example 1:</i>							
10													
11	Date	Region	SalesRep	Product	Revenue (\$)	COUNT	COUNTA	SUM	AVERAGE				
12	8/24/2023	Central	Cinderelli	Stuffed Animals/Bears	230.95	Counts Numbers	Counts cells not empty	Adds numbers	Arithmetic Mean of numbers				
13	8/23/2023	Central	Cinderelli	LOL OMG Surprise	88.27	Count ALL Numbers	Count ALL Words	Sum ALL Numbers	Average ALL Numbers				
14	8/7/2023	South	Carmen	LOL OMG Surprise	93.31	30	30	\$5,302.150	\$176.738333333				
15	8/11/2023	North	Cinderelli	LOL OMG Surprise	233.83	=COUNT(E12:E41)	=COUNTA(D12:D41)	=SUM(E12:E41)	=AVERAGE(E12:E41)				
16	8/26/2023	South	Macen	Monster Trucks	197.36								
17	8/22/2023	West	Macen	LOL Surprise	72.67								
18	8/26/2023	Central	Tiana	Hot Wheels	77.55	<i>Example 2:</i>							
19	8/15/2023	NorthWest	Miles	Monster Trucks	100.98		COUNTIFS	SUMIFS					
20	8/6/2023	NorthWest	Macen	Hot Wheels	291.98		Count w/ 1 or more criteria	Add w/ 1 or more criteria					
21	8/11/2023	North	Carmen	Rainbow High Dolls	254.87	Criteria	Count	Sum					
22	8/19/2023	South	Carmen	LOL OMG Surprise	272.04	Macen	7	\$1,209	=COUNTIFS(C12:C41,G22)	=SUMIFS(E12:E41,C12:C41,G22)			
23	8/10/2023	Central	Cinderelli	LOL Surprise	196.26	Criteria	Count	Sum					
24	8/5/2023	North	Miles	Hot Wheels	112.59	8/5/2023	1	\$113	=COUNTIFS(A12:A41,G24)	=SUMIFS(E12:E41,A12:A41,G24)			
25	8/11/2023	NorthWest	Tiana	LOL Surprise	196.3	Criteria	Count	Sum					
26	8/10/2023	West	Cinderelli	Monster Trucks	287.12	LOL Surprise	6	\$1,052	=COUNTIFS(D12:D41,G26)	=SUMIFS(E12:E41,D12:D41,G26)			
27	8/18/2023	West	Cinderelli	Monster Trucks	133.05	Criteria	Count	Sum					
28	8/30/2023	West	Tiana	Hot Wheels	137.51	South	5	\$1,002	=COUNTIFS(B12:B41,G28)	=SUMIFS(E12:E41,B12:B41,G28)			
29	8/14/2023	NorthWest	Cinderelli	LOL Surprise	129								
30	8/6/2023	Central	Cinderelli	LOL Surprise	266.74								
31	8/20/2023	Central	Macen	LOL Surprise	190.62	<i>Example 3:</i>							
32	8/31/2023	Central	Carmen	LOL OMG Surprise	163.83		AVERAGEIFS						
33	8/2/2023	Central	Macen	Hot Wheels	78.59	Criteria							
34	8/3/2023	South	Cinderelli	Monster Trucks	170.26	South	\$200.30	=AVERAGEIFS(E12:E41,B12:B41,G34)					
35	8/8/2023	North	Miles	Hot Wheels	210.55								
36	8/26/2023	West	Miles	Rainbow High Dolls	92.76		MINIFS						
37	8/8/2023	North	Miles	Rainbow High Dolls	289.65	Criteria							
38	8/28/2023	South	Macen	Rainbow High Dolls	268.53	LOL Surprise	\$72.67	=MINIFS(E12:E41,D12:D41,G38)					
39	8/2/2023	North	Macen	Monster Trucks	109.05								
40	8/28/2023	NorthWest	Carmen	Monster Trucks	151.74		MAXIFS						
41	8/26/2023	West	Miles	Hot Wheels	204.19	Criteria							
42						LOL Surprise	\$266.74	=MAXIFS(E12:E41,D12:D41,G42)					
43													

COUNT USING EXCEL FUNCTIONS - COUNTIFS

- GOAL:** Count how many products were sold
- Count how many products each SalesRep sold
- Count how many products were sold by each SalesRep in each Region

Note: **COUNTIF** adds with only one condition or criteria. **COUNTIFS** adds with one or more conditions or Criteria. For our class we will only use the **IFS** function.

=COUNTIFS(\$D\$12:\$D\$300,G13)				
Date	Region	SalesRep	Product	Sales
8/24/2023	Central	Cinderelli	Stuffed Animals/Bears	\$3,022.34
8/23/2023	Central	Cinderelli	LOL OMG Surprise	\$3,116.33
8/7/2023	South	Carmen	LOL OMG Surprise	\$3,007.85
8/11/2023	North	Cinderelli	LOL OMG Surprise	\$3,203.50
8/26/2023	South	Macen	Monster Trucks	\$2,337.88
8/22/2023	West	Macen	LOL Surprise	\$3,568.90
8/26/2023	Central	Tiana	Hot Wheels	\$2,631.83
8/15/2023	NorthWest	Miles	Monster Trucks	\$3,236.28
8/6/2023	NorthWest	Macen	Hot Wheels	\$3,343.37
8/11/2023	North	Carmen	Rainbow High Dolls	\$3,762.55
8/19/2023	South	Carmen	LOL OMG Surprise	\$2,840.65
8/10/2023	Central	Cinderelli	LOL Surprise	\$2,019.03
8/5/2023	North	Miles	Hot Wheels	\$3,305.75
8/11/2023	NorthWest	Tiana	LOL Surprise	\$2,919.19
8/10/2023	West	Cinderelli	Monster Trucks	\$2,166.96
8/18/2023	West	Cinderelli	Monster Trucks	\$3,939.65
8/30/2023	West	Tiana	Hot Wheels	\$3,932.60
8/14/2023	NorthWest	Cinderelli	LOL Surprise	\$3,339.41
8/6/2023	Central	Cinderelli	LOL Surprise	\$2,973.83
8/20/2023	Central	Macen	LOL Surprise	\$3,331.21
8/31/2023	Central	Carmen	LOL OMG Surprise	\$3,244.37
8/2/2023	Central	Macen	Hot Wheels	\$2,545.61
8/3/2023	South	Cinderelli	Monster Trucks	\$2,191.69
8/8/2023	North	Miles	Hot Wheels	\$2,034.11
8/26/2023	West	Miles	Rainbow High Dolls	\$2,686.71
8/8/2023	North	Miles	Rainbow High Dolls	\$3,446.64
8/28/2023	South	Macen	Rainbow High Dolls	\$3,150.23
8/2/2023	North	Macen	Monster Trucks	\$3,417.71
8/28/2023	NorthWest	Carmen	Monster Trucks	\$3,269.60
8/26/2023	West	Miles	Hot Wheels	\$2,672.91
8/4/2023	West	Macen	Monster Trucks	\$3,692.24
8/16/2023	Central	Tiana	Monster Trucks	\$2,669.70
8/8/2023	NorthWest	Macen	LOL OMG Surprise	\$2,975.80

Example 4:		
Count how many products were sold		
Product	Count of Products Sold	Count of Products Sold (DSF)
Hot Wheels	51	51
LOL OMG Surprise	53	53
LOL Surprise	53	53
Monster Trucks	46	46
Rainbow High Dolls	47	47
Stuffed Animals/Bears	39	39
=COUNTIFS(\$D\$12:\$D\$300,G13)		=COUNTIFS(D12:D300,G13:G18)

Example 5:		
Count how many products each SalesRep sold		
Sales Rep	Product	Count of Products Sold
Tiana	LOL Surprise	7
=COUNTIFS(C12:C300,G24,D12:D300,H24)		

Example 6:		
Count how many products were sold by each SalesRep in each Region		
Sales Rep	Region	
Cinderelli	NorthWest	
Product	Count of Sales	Count of Sales (DSF)
Hot Wheels	0	0
LOL OMG Surprise	2	2
LOL Surprise	5	5
Monster Trucks	3	3
Rainbow High Dolls	0	0
Stuffed Animals/Bears	1	1
=COUNTIFS(\$D\$12:\$D\$300,G34,\$C\$12:\$C\$300,\$H\$30,\$B\$12:\$B\$300,\$H\$31)		
		=COUNTIFS(D12:D300,G34:G39,C12:C300,H30,B12:B300,H31)

ADD USING EXCEL FUNCTIONS – SUMIFS

- GOAL: Add the Total Sales for Each Product
- Add the Total Sales for each Sales Rep
- Add the Total Sales for each region
- Add the Total Sales for each SalesRep in the specified Region

AND Logical Test: The Product Field, SalesRep Field and Region Field must contain the specified fields

SUMIF adds with only one condition or criteria
 SUMIFS adds with one or more conditions or Criteria

H16					=SUMIFS(E12:E300,D12:D300,G16:G21)					
Date	Region	SalesRep	Product	Sales						
8/24/2023	Central	Cinderelli	Stuffed Animals/Bears	\$3,022.34				**DSF - Dynamic Spill Formula		
8/23/2023	Central	Cinderelli	LOL OMG Surprise	\$3,116.33	Example 7:					
8/7/2023	South	Carmen	LOL OMG Surprise	\$3,007.85	Add the Total Sales for Each Product					
8/11/2023	North	Cinderelli	LOL OMG Surprise	\$3,203.50	Product	Sales (DSF)	Sales			
8/26/2023	South	Macen	Monster Trucks	\$2,337.88	Hot Wheels	148541.69	148541.69	=SUMIFS(E12:E300,D12:D300,G16:G21)		
8/22/2023	West	Macen	LOL Surprise	\$3,568.90	LOL OMG Surprise	157981.22	157981.22	=SUMIFS(\$E\$12:\$E\$300,\$D\$12:\$D\$300,G16)		
8/26/2023	Central	Tiana	Hot Wheels	\$2,631.83	LOL Surprise	164509.41	164509.41			
8/15/2023	NorthWest	Miles	Monster Trucks	\$3,236.28	Monster Trucks	140733.5	140733.5			
8/6/2023	NorthWest	Macen	Hot Wheels	\$3,343.37	Rainbow High Dolls	145090.26	145090.26			
8/11/2023	North	Carmen	Rainbow High Dolls	\$3,762.55	Stuffed Animals/Bears	117456.63	117456.63			
8/19/2023	South	Carmen	LOL OMG Surprise	\$2,840.65	Total Sales	874312.71	148541.69			
8/10/2023	Central	Cinderelli	LOL Surprise	\$2,019.03						
8/5/2023	North	Miles	Hot Wheels	\$3,305.75	Example 8:					
8/11/2023	NorthWest	Tiana	LOL Surprise	\$2,919.19	Add the Total Sales for each SalesRep					
8/10/2023	West	Cinderelli	Monster Trucks	\$2,166.96	Sales Rep	Sales (DSF)	Sales			
8/18/2023	West	Cinderelli	Monster Trucks	\$3,939.65	Carmen	\$153,559.21	\$153,559.21	=SUMIFS(E12:E300,C12:C300,G27:G31)		
8/30/2023	West	Tiana	Hot Wheels	\$3,932.60	Cinderelli	\$164,598.56	\$164,598.56	=SUMIFS(\$E\$12:\$E\$300,\$C\$12:\$C\$300,G27)		
8/14/2023	NorthWest	Cinderelli	LOL Surprise	\$3,339.41	Macen	\$168,258.55	\$168,258.55			
8/6/2023	Central	Cinderelli	LOL Surprise	\$2,973.83	Miles	\$222,142.29	\$222,142.29			
8/20/2023	Central	Macen	LOL Surprise	\$3,331.21	Tiana	\$165,754.10	\$165,754.10			
8/31/2023	Central	Carmen	LOL OMG Surprise	\$3,244.37	Total Sales	\$874,312.71	\$874,312.71			

Data Validation and UNIQUE Function

The following example we use the Data validation to create a drop-down list to cell H36 and cell H37. We also create a unique list for Region field.

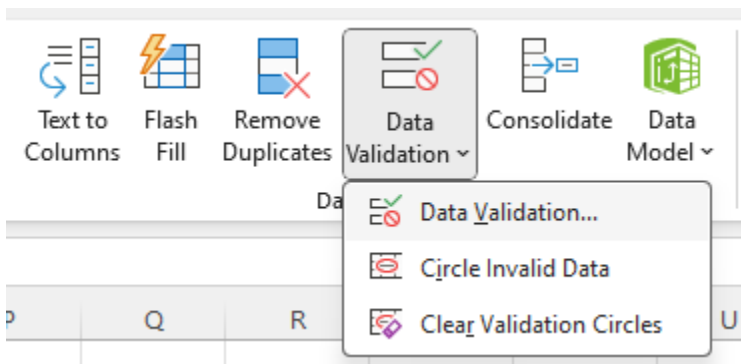
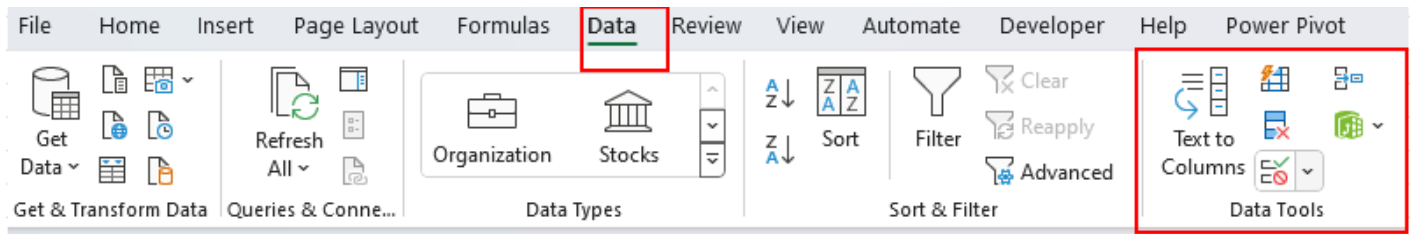
Data Validation List feature lets you add a drop-down list to a cell to allow a user to select from a valid list of names. The feature shows an error message if the user types something that is not in the validation list. UNIQUE array function allows you to look through a column and deliver a unique list of values without any duplicates. We then use the unique list of values to validate or for our data validation list.

An example of a sorted unique list

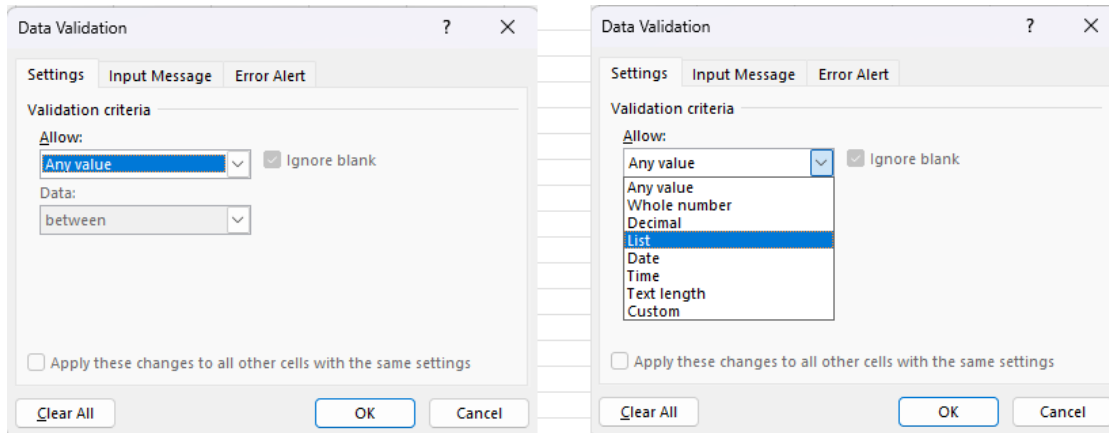
Sorted Unique List	
Region	
Central	=SORT(UNIQUE(B12:B41))
North	
NorthWest	
South	
West	

How to add Data Validation:

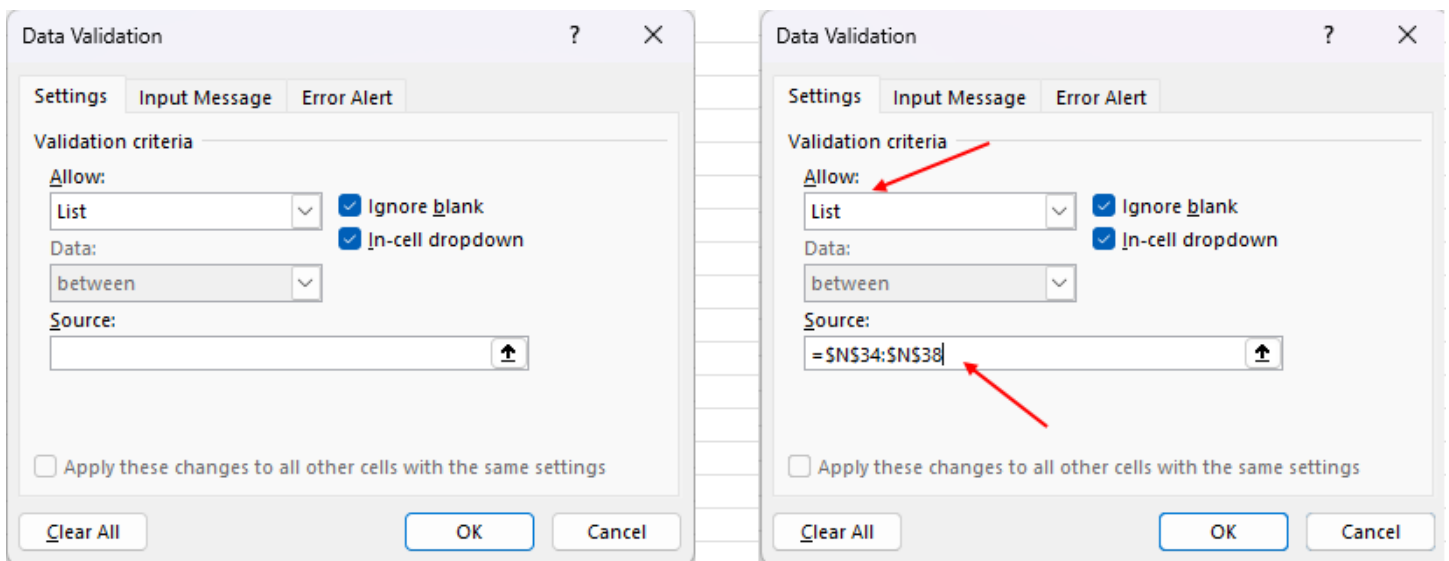
1. Select the cells that you would like to add the data validation list to, in our example: H36
2. On your Ribbon, click on the Data Tab.
3. On the Data Tools group, select the Data Validation button arrow and select Data Validation from the drop-down menu, this opens the Data Validation dialog box



- Make sure the Setting Tab is selected and from the Allow box, click on the arrow to change from the 'Any value' and select 'List' from the drop-down menu, this opens the Source box



- Click inside the Source box, this allows you to select the range where your validation list is coming from. In our example our validation list is the cell range N34:N38.
 - Note that the list in the source box is a cell reference and is locked to the range that you select.



- Once you select range of cells to add your validation list click ok to close the Data Validation dialog box and apply the Data Validation to your selected cell or range.

SUMIFS – More Examples:

					=SUMIFS(E12:E300,D12:D300,G16:G21)					
A	B	C	D	E	F	G	H	I	J	K
10										
11	Date	Region	SalesRep	Product	Sales					
12	8/24/2023	Central	Cinderelli	Stuffed Animals/Bears	\$3,022.34		**DSF - Dynamic Spill Formula			
13	8/23/2023	Central	Cinderelli	LOL OMG Surprise	\$3,116.33	Example 7:				
14	8/7/2023	South	Carmen	LOL OMG Surprise	\$3,007.85	Add the Total Sales for Each Product				
15	8/11/2023	North	Cinderelli	LOL OMG Surprise	\$3,203.50	Product	Sales (DSF)	Sales		
16	8/26/2023	South	Macen	Monster Trucks	\$2,337.88	Hot Wheels	148541.69	148541.69	=SUMIFS(E12:E300,D12:D300,G16:G21)	
17	8/22/2023	West	Macen	LOL Surprise	\$3,568.90	LOL OMG Surprise	157981.22	157981.22	=SUMIFS(\$E\$12:\$E\$300,\$D\$12:\$D\$300,G16)	
18	8/26/2023	Central	Tiana	Hot Wheels	\$2,631.83	LOL Surprise	164509.41	164509.41		
19	8/15/2023	NorthWest	Miles	Monster Trucks	\$3,236.28	Monster Trucks	140733.5	140733.5		
20	8/6/2023	NorthWest	Macen	Hot Wheels	\$3,343.37	Rainbow High Dolls	145090.26	145090.26		
21	8/11/2023	North	Carmen	Rainbow High Dolls	\$3,762.55	Stuffed Animals/Bears	117456.63	117456.63		
22	8/19/2023	South	Carmen	LOL OMG Surprise	\$2,840.65	Total Sales	874312.71	148541.69		
23	8/10/2023	Central	Cinderelli	LOL Surprise	\$2,019.03					
24	8/5/2023	North	Miles	Hot Wheels	\$3,305.75	Example 8:				
25	8/11/2023	NorthWest	Tiana	LOL Surprise	\$2,919.19	Add the Total Sales for each SalesRep				
26	8/10/2023	West	Cinderelli	Monster Trucks	\$2,166.96	Sales Rep	Sales (DSF)	Sales		
27	8/18/2023	West	Cinderelli	Monster Trucks	\$3,939.65	Carmen	\$153,559.21	\$153,559.21	=SUMIFS(E12:E300,C12:C300,G27:G31)	
28	8/30/2023	West	Tiana	Hot Wheels	\$3,932.60	Cinderelli	\$164,598.56	\$164,598.56	=SUMIFS(\$E\$12:\$E\$300,\$C\$12:\$C\$300,G27)	
29	8/14/2023	NorthWest	Cinderelli	LOL Surprise	\$3,339.41	Macen	\$168,258.55	\$168,258.55		
30	8/6/2023	Central	Cinderelli	LOL Surprise	\$2,973.83	Miles	\$222,142.29	\$222,142.29		
31	8/20/2023	Central	Macen	LOL Surprise	\$3,331.21	Tiana	\$165,754.10	\$165,754.10		
32	8/31/2023	Central	Carmen	LOL OMG Surprise	\$3,244.37	Total Sales	\$874,312.71	\$874,312.71		
33	8/2/2023	Central	Macen	Hot Wheels	\$2,545.61					
34	8/3/2023	South	Cinderelli	Monster Trucks	\$2,191.69	Example 9:				
35	8/8/2023	North	Miles	Hot Wheels	\$2,034.11	Add the Total Sales for each Sales Rep in the specified Region				
36	8/26/2023	West	Miles	Rainbow High Dolls	\$2,686.71	Sales Rep	Carmen			
37	8/8/2023	North	Miles	Rainbow High Dolls	\$3,446.64	Region	NorthWest			
38	8/28/2023	South	Macen	Rainbow High Dolls	\$3,150.23	Total Sales	\$32,383.69		=SUMIFS(E12:E300,C12:C300,H36,B12:B300,H37)	
39	8/2/2023	North	Macen	Monster Trucks	\$3,417.71					

Example 10:

Add the Total Sales for each region

Region	Sales (DSF)	Sales	
Central	\$153,616.78	\$153,616.78	=SUMIFS('HW 2'!E12:E300,'HW 2'!B12:B300,G43:G47)
North	\$198,178.22	\$198,178.22	=SUMIFS('HW 2'!\$E\$12:\$E\$300,'HW 2'!\$B\$12:\$B\$300,G43)
NorthWest	\$188,229.19	\$188,229.19	
South	\$140,969.83	\$140,969.83	
West	\$193,318.69	\$193,318.69	
Total Sales	\$874,312.71	\$874,312.71	

CALCULATE WITH AVERAGEIFS USING EXCEL FUNCTIONS

AVERAGEIF calculates the average with only one condition or criteria
 AVERAGEIFS calculates the average with one or more conditions or Criteria

GOAL: Average Sales for Each Product
 Average Sales for each Sales Rep

=AVERAGEIFS(E12:E300,D12:D300,G17:G22)					
Date	Region	SalesRep	Product	Sales	
8/24/2023	Central	Cinderelli	Stuffed Animals/Bears	\$3,022.34	**DSF - Dynamic Spill Formula
8/23/2023	Central	Cinderelli	LOL OMG Surprise	\$3,116.33	
8/7/2023	South	Carmen	LOL OMG Surprise	\$3,007.85	Example 11:
8/11/2023	North	Cinderelli	LOL OMG Surprise	\$3,203.50	Find the Average the Sales for Each Product
8/26/2023	South	Macen	Monster Trucks	\$2,337.88	Product
8/22/2023	West	Macen	LOL Surprise	\$3,568.90	Average Sales (DSF)
8/26/2023	Central	Tiana	Hot Wheels	\$2,631.83	Hot Wheels
8/15/2023	NorthWest	Miles	Monster Trucks	\$3,236.28	LOL OMG Surprise
8/6/2023	NorthWest	Macen	Hot Wheels	\$3,343.37	LOL Surprise
8/11/2023	North	Carmen	Rainbow High Dolls	\$3,762.55	Monster Trucks
8/19/2023	South	Carmen	LOL OMG Surprise	\$2,840.65	Rainbow High Dolls
8/10/2023	Central	Cinderelli	LOL Surprise	\$2,019.03	Stuffed Animals/Bears
8/5/2023	North	Miles	Hot Wheels	\$3,305.75	
8/11/2023	NorthWest	Tiana	LOL Surprise	\$2,919.19	Example 12:
8/10/2023	West	Cinderelli	Monster Trucks	\$2,166.96	Find the Average Sales for each SalesRep
8/18/2023	West	Cinderelli	Monster Trucks	\$3,939.65	Sales Rep
8/30/2023	West	Tiana	Hot Wheels	\$3,932.60	Average Sales (DSF)
8/14/2023	NorthWest	Cinderelli	LOL Surprise	\$3,339.41	Carmen
8/6/2023	Central	Cinderelli	LOL Surprise	\$2,973.83	Cinderelli
8/20/2023	Central	Macen	LOL Surprise	\$3,331.21	Macen
8/31/2023	Central	Carmen	LOL OMG Surprise	\$3,244.37	Miles
8/2/2023	Central	Macen	Hot Wheels	\$2,545.61	Tiana
8/3/2023	South	Cinderelli	Monster Trucks	\$2,191.69	
8/8/2023	North	Miles	Hot Wheels	\$2,034.11	
8/26/2023	West	Miles	Rainbow High Dolls	\$2,686.71	
8/8/2023	North	Miles	Rainbow High Dolls	\$3,446.64	

MINIMUM AND MAXIMUM NUMBERS USING EXCEL FUNCTIONS MINIFS AND MAXIFS

MINIFS Finds the Smallest Number
MAXIFS Finds the biggest number

GOAL: Daily Minimum Sales
 Daily Maximum Sales

=MINIFS(E12:E300,A12:A300,G12:G42)											
	A	B	C	D	E	F	G	H	I	J	K
7											
8								**DSAF - Dynamic Spilled Array Formula			
9											
10								Example 13:	Example 14:		
11	Date	Region	SalesRep	Product	Sales		Date	Min Sales	Max Sales		
12	8/24/2023	Central	Cinderelli	Stuffed Animals/Bears	\$3,022.34		8/1/2023	\$2,092.74	\$3,880.71		=MINIFS(E12:E300,A12:A300,G12:G42)
13	8/23/2023	Central	Cinderelli	LOL OMG Surprise	\$3,116.33		8/2/2023	\$2,441.39	\$3,709.03		=MAXIFS(E12:E300,A12:A300,G12:G42)
14	8/7/2023	South	Carmen	LOL OMG Surprise	\$3,007.85		8/3/2023	\$2,191.69	\$3,928.57		
15	8/11/2023	North	Cinderelli	LOL OMG Surprise	\$3,203.50		8/4/2023	\$2,369.06	\$3,747.31		
16	8/26/2023	South	Macen	Monster Trucks	\$2,337.88		8/5/2023	\$2,023.48	\$3,937.86		
17	8/22/2023	West	Macen	LOL Surprise	\$3,568.90		8/6/2023	\$2,060.17	\$3,984.38		
18	8/26/2023	Central	Tiana	Hot Wheels	\$2,631.83		8/7/2023	\$2,186.10	\$3,936.46		
19	8/15/2023	NorthWest	Miles	Monster Trucks	\$3,236.28		8/8/2023	\$2,034.11	\$3,917.87		
20	8/6/2023	NorthWest	Macen	Hot Wheels	\$3,343.37		8/9/2023	\$2,721.51	\$3,776.93		
21	8/11/2023	North	Carmen	Rainbow High Dolls	\$3,762.55		8/10/2023	\$2,019.03	\$3,961.85		
22	8/19/2023	South	Carmen	LOL OMG Surprise	\$2,840.65		8/11/2023	\$2,081.84	\$3,762.55		
23	8/10/2023	Central	Cinderelli	LOL Surprise	\$2,019.03		8/12/2023	\$2,695.00	\$3,974.75		
24	8/5/2023	North	Miles	Hot Wheels	\$3,305.75		8/13/2023	\$2,641.17	\$3,447.66		
25	8/11/2023	NorthWest	Tiana	LOL Surprise	\$2,919.19		8/14/2023	\$2,853.96	\$3,821.53		
26	8/10/2023	West	Cinderelli	Monster Trucks	\$2,166.96		8/15/2023	\$2,409.89	\$3,677.71		
27	8/18/2023	West	Cinderelli	Monster Trucks	\$3,939.65		8/16/2023	\$2,239.02	\$3,829.54		
28	8/30/2023	West	Tiana	Hot Wheels	\$3,932.60		8/17/2023	\$2,235.74	\$3,876.65		
29	8/14/2023	NorthWest	Cinderelli	LOL Surprise	\$3,339.41		8/18/2023	\$2,080.25	\$3,949.47		
30	8/6/2023	Central	Cinderelli	LOL Surprise	\$2,973.83		8/19/2023	\$2,039.36	\$3,948.62		
31	8/20/2023	Central	Macen	LOL Surprise	\$3,331.21		8/20/2023	\$2,160.61	\$3,836.02		
32	8/31/2023	Central	Carmen	LOL OMG Surprise	\$3,244.37		8/21/2023	\$2,176.74	\$3,773.23		
33	8/2/2023	Central	Macen	Hot Wheels	\$2,545.61		8/22/2023	\$2,327.37	\$3,647.65		
34	8/3/2023	South	Cinderelli	Monster Trucks	\$2,191.69		8/23/2023	\$2,781.90	\$3,392.21		
35	8/8/2023	North	Miles	Hot Wheels	\$2,034.11		8/24/2023	\$2,071.75	\$3,837.27		
36	8/26/2023	West	Miles	Rainbow High Dolls	\$2,686.71		8/25/2023	\$2,116.97	\$3,720.02		
37	8/8/2023	North	Miles	Rainbow High Dolls	\$3,446.64		8/26/2023	\$2,287.04	\$3,950.54		
38	8/28/2023	South	Macen	Rainbow High Dolls	\$3,150.23		8/27/2023	\$2,299.86	\$3,715.32		
39	8/2/2023	North	Macen	Monster Trucks	\$3,417.71		8/28/2023	\$2,815.50	\$3,790.28		
40	8/28/2023	NorthWest	Carmen	Monster Trucks	\$3,269.60		8/29/2023	\$2,084.60	\$3,699.68		
41	8/26/2023	West	Miles	Hot Wheels	\$2,672.91		8/30/2023	\$2,054.49	\$3,932.60		
42	8/4/2023	West	Macen	Monster Trucks	\$3,692.24		8/31/2023	\$2,111.27	\$3,872.73		
43	8/16/2023	Central	Tiana	Monster Trucks	\$2,669.70						