



Introduction to Excel Lookup Functions

Written and Presented by
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About the speaker:

David H. Ringstrom, CPA, is an author and nationally recognized instructor who teaches scores of webinars each year. His Excel courses are based on over 25 years of consulting and teaching experience. His mantra is “Either you work Excel, or it works you.” David offers spreadsheet and database consulting services nationwide.



Excel Versions

I'll be teaching from the Microsoft 365 version of Excel, and noting any differences or limitations in the legacy versions of Excel. References to Excel 2013+, Excel 2016+, and so on mean a feature is available in all subsequent versions, including Microsoft 365.

The Future of Excel

Microsoft 365 (Formerly Office 365)

Subscription-based version of Microsoft Office, which includes Excel. Use the software on multiple devices, new calculation engine, services and more features are rolling out that will dramatically set this version apart from past Excel versions.
www.microsoft365.com

Legacy Versions

Perpetual Licenses

Pay once for the software to use on a single computer. No new features added until you buy a new license. Includes

Excel 2019
Excel 2016
Excel 2013
Excel 2010
Excel 2007 and earlier

1 File Home Insert Page Layout

2 Cut Copy

Paste Format Painter

Calibri

B I U

I demonstrate each technique at least twice, first by way of numbered steps in PowerPoint, and then in Excel.

The following articles written by David Ringstrom include PDF of today's presentation along with an example workbook that contains most examples I'll teach from as well as related articles.

Email ask@davidringstrom.com if you haven't received the handouts.

Excel Tips, Data Entry Shortcuts

Related Articles Car Payme



Addresses

Office Warehouse					INVOICE					
1								Company Name	Address	City
2	44 West Elm				Date:	1/1/2018		Mainway Toys	840 View Road	Wil
3	Springfield, OH 45503				Invoice #:	10001		BLAND Corporation	3753 Elm Street	Ma
4	(555) 555-5555							Universal Export	3611 Fifth Street	Nor
5								Tip Top Cafe	2864 Main Avenue	Lag
6	Bill To:				Ship To:			Fake Brothers	3089 Maple Blvd.	Hol
7	Universal Export							ABC Telecom	1863 Lake Circle	Cor
8	3611 Fifth Street							SpringShield	1463 Lake Circle	Oro
9								Water and Power	3448 Oak Street	Gro
10								Krustyco	671 Pine Blvd.	Wy
11								Megadodo Publications	1500 Sixth Street	Her
12									3669 Ninth Street	Ala
13									4011 View Blvd.	Per
14									1083 Pine Blvd.	Nog
15									1334 View Road	Hai
16								Atlantic Northern	771 Oak Blvd.	Pal
17								Nordyne Defense Dynamics	4581 Fifth Street	Br
18	MAKE ALL CHECKS PAYABLE TO:				SUBTOTAL		0.00	Mammoth Pictures	1659 Lake Avenue	Gra
19	Office Warehouse				TAX RATE		7.00%	Central Perk	2865 Fifth Avenue	San
20	44 West Elm				SALES TAX		0.00	Vandelay Industries	1764 Sixth Blvd.	Sou
21	Springfield, OH 45503				TOTAL		\$0.00	Foo Bars	3845 Elm Street	Jack

Direct references such as this are only marginally better than manually copying and pasting data over and over again.

Look-up functions, such as VLOOKUP, can dynamically return the address based on changes to cell B7.

Invoice

Inventory List

Direct references such as this are only marginally better than manually copying and pasting data over and over again.

Look-up functions, such as VLOOKUP, can dynamically return the address based on changes to cell B7.



Function Wizard

Step 1: Select the cell where you want to put the formula. No need for an equal sign.

Step 2: Click on the Function Wizard.

Step 3: Type vlookup, lookup, or just look.

Step 4: Click on the Go button.

Step 5: Select a function: VLOOKUP

Step 6: Click on the OK button.

Office Warehouse INVOICE

ITEM ID	ITEM NAME	ITEM PRICE	ITEM QUANTITY	ITEM TOTAL
1	Office Warehouse	44 West Elm	Springfield, OH 45503	
2	Office Warehouse	44 West Elm	Springfield, OH 45503	
3	Office Warehouse	44 West Elm	Springfield, OH 45503	
4	Office Warehouse	44 West Elm	Springfield, OH 45503	
5	Office Warehouse	44 West Elm	Springfield, OH 45503	
6	Office Warehouse	44 West Elm	Springfield, OH 45503	
7	Office Warehouse	44 West Elm	Springfield, OH 45503	
8	Office Warehouse	44 West Elm	Springfield, OH 45503	
9	Office Warehouse	44 West Elm	Springfield, OH 45503	
10	Office Warehouse	44 West Elm	Springfield, OH 45503	
11	Office Warehouse	44 West Elm	Springfield, OH 45503	
12	Office Warehouse	44 West Elm	Springfield, OH 45503	
13	Office Warehouse	44 West Elm	Springfield, OH 45503	
14	Office Warehouse	44 West Elm	Springfield, OH 45503	
15	Office Warehouse	44 West Elm	Springfield, OH 45503	
16	Office Warehouse	44 West Elm	Springfield, OH 45503	
17	Office Warehouse	44 West Elm	Springfield, OH 45503	
18	Office Warehouse	44 West Elm	Springfield, OH 45503	
19	Office Warehouse	44 West Elm	Springfield, OH 45503	
20	Office Warehouse	44 West Elm	Springfield, OH 45503	
21	Office Warehouse	44 West Elm	Springfield, OH 45503	

Function Wizard

Search for a function: look

Or select a category: Recommended

Select a function: VLOOKUP

VLOOKUP(lookup_value,table_array,col_index_num,range_lookup)

Looks for a value in the leftmost column of a table, and then returns a value in the same row from a column you specify. By default, the table must be sorted in an ascending order.

Help on this function

OK Cancel



Lookup_value

Office Warehouse INVOICE

Company Name: Mainway Toys
Address: 840 View Road
City: Wil

44 West Elm
Springfield, OH 45503
(555) 555-5555

Bill To:
Universal Export
=VLOOKUP(B7)

ITEM ID

7

Subtotal: 0.00
Tax Rate: 7.0
Sales Tax: 0.0
Total: \$0.00

MAKE ALL CHECKS PAYABLE TO:
Office Warehouse
44 West Elm
Springfield, OH 45503

Inventory List

Function Arguments

VLOOKUP

Lookup_value: B7
Table_array: [blank]
Col_index_num: [blank]
Range_lookup: [blank]

Click the button next to the field if you wish to browse and select a cell.

Looks for a value in the leftmost column of a table, and then returns a value in the same row from a column you specify. By default, the table must be sorted in an ascending order.

Lookup_value is the value to be found in the first column of the table, and can be a value, a reference, or a text string.

Select the cell based on which you want the value to be looked up. This value typically will appear within the first column of your list, or will be a column to the left of the of the data you wish to return.

This section explains each of the arguments.



Table_array

Office Warehouse INVOICE

Company Name	Address	City
Mainway Toys	840 View Road	Wil
BLAND Corporation	3753 Elm Street	Mar
Universal Export	3611 Fifth Street	Nor
Up Cafe	2864 Main Avenue	Lag
Brothers	3089 Maple Blvd.	Hol
Telecom	1863 Lake Circle	Cor
Shield	1463 Lake Circle	Ord
Land Power	3448 Oak Street	Gro
Corp	4011 View Blvd.	Per
Enterprise	1083 Pine Blvd.	Nog
Northern	1334 View Road	Hai
Defense Dynamics	771 Oak Blvd.	Pal
Moith Pictures	4581 Fifth Street	Bra
al Perk	1659 Lake Avenue	Gra
	2865 Fifth Avenue	San
Vandelay Industries	1764 Sixth Blvd.	Sou
Foo Bars	3845 Elm Street	Jack

Function Arguments

VLOOKUP

Lookup_value: B7 = "Universal Export"

Table_array: H1:I21 = {"Company Name","Address","Main..."}

Col_index_num: = number

Range_lookup: = logical

Looks for a value in the leftmost column of the table, and then returns a value in the same row from the table. By default, the table must be sorted in ascending order.

8 Select a range of cells comprised of at least two columns. You do not need to select the entire list, but rather only up through the column you wish to return data from.

Excel displays the column names, and if there's room, part of the first item from the list.

Formula result =

[Help on this function](#)

OK Cancel

Invoice Inventory List

20 44 West Elm SALES TAX 0.00

21 Springfield, OH 45503 TOTAL \$0.00



Column_index_num

Office Warehouse				INVOICE					
1				Date:	1/1/2018	Company Name		Address	City
2	44 West Elm					Mainway Toys		840 View Road	Wil
3	Springfield, OH 45503			Invoice #:	10001	BLAND Corporation		3753 Elm Street	Mar
Function Arguments VLOOKUP Lookup_value B7 = "Universal Export" Table_array H1:I21 = ["Company Name","Address","Mainwa Col_index_num 2 = 2 Range_lookup = logical Looks for a value in the leftmost column of a table, and then returns a value in the same row from a column specified. By default, the table must be sorted in ascending order. 9 Indicate by position number which column from the table array that you wish to return data from. In this case column I is the second column, thus we enter a 2. Formula result = 2865 Fifth Avenue Help on this function OK Cancel Universal Export 3611 Fifth Street Nor op Cafe 2864 Main Avenue Lag Brothers 3089 Maple Blvd. Hol elecom 1863 Lake Circle Cor Shield 1463 Lake Circle Ord and Power 3448 Oak Street Gro ss 671 Pine Blvd. Wiv									

Notice the formula returns an incorrect result because VLOOKUP defaults to approximate matches, and we haven't yet specified an exact match.

ive Enterprise

1334 View Road

Hai

ic Northern

771 Oak Blvd.

Pal

ne Defense Dynamics

4581 Fifth Street

Bra

noth Pictures

1659 Lake Avenue

Gra

al Perk

2865 Fifth Avenue

San

Vandelay Industries

1764 Sixth Blvd.

Sou

Foo Bars

3845 Elm Street

Jack

Invoice

Inventory List



Range_lookup

Office Warehouse INVOICE

1 44 West Elm
2 Springfield, OH 45503

Function Arguments

VLOOKUP

Lookup_value: B7 = "Universal Export"

Table_array: H1:I21 = ("Company Name", "Address", "Mainwa"

Col_index_num: 2 = 2

Range_lookup: **False** = FALSE

Type the word False to indicate an exact match. The list does not need to be sorted in any particular order for exact matches.

Looks for a value in the leftmost column of a table, and then returns a value in the same row from a column you specify. By default, the table must be sorted in an ascending order.

Range_lookup is a logical value: to find the closest match in the first column (sorted in ascending order) = TRUE or omitted; find an exact match = FALSE.

Formula result = 3611 Fifth Street

[Help on this function](#)

OK Cancel

3611 Fifth Street

The formula returns the correct result now.

Company Name	Address	City
Mainway Toys	840 View Road	Wil
BLAND Corporation	3753 Elm Street	Ma
Universal Export	3611 Fifth Street	Nor
Op Cafe	2864 Main Avenue	Lag
Brothers	3089 Maple Blvd.	Hol
Telecom	1863 Lake Circle	Cor
Shield	1463 Lake Circle	Ord
and Power	3448 Oak Street	Gro
co	671 Pine Blvd.	Wye
Corp	4011 View Blvd.	Per
arkle	1083 Pine Blvd.	Nog
sive Enterprise	1334 View Road	Hai
ic Northern	771 Oak Blvd.	Pal
ne Defense Dynamics	4581 Fifth Street	Bra
noth Pictures	1659 Lake Avenue	Gra
al Perk	2865 Fifth Avenue	San
Vandelay Industries	1764 Sixth Blvd.	Sou
Foo Bars	3845 Elm Street	Jack

20 44 West Elm
21 Springfield, OH 45503

SALES TAX 0.00
TOTAL \$0.00

Invoice Inventory List



#N/A Error with VLOOKUP

Office Warehouse

44 West Elm
Springfield, OH 45503
(555) 555-5555

Bill To:
Tip Top Café
#N/A

`=VLOOKUP(B7,H1:I21,2,FALSE)`

Company Name

Mainway Toys	840 View R
BLAND Corporation	3753 Elm St
Universal Export	3611 Fifth S
Tip Top Cafe	2864 Main A
Fake Brothers	3089 Maple
ABC T om	1863 Lake O
Extensive Enterprise	1334 View
Atlantic Northern	771 Oak Blv
Nordyne Defense Dynamics	4581 Fifth S
Mammoth Pictures	1659 Lake A
Central Perk	2865 Fifth A
Vandelay Industries	1764 Sixth
Foo Bars	3845 Elm St

Address

Partial matches will cause an #N/A error.

Bill To:
Mainway
#N/A

`=VLOOKUP(B7,H1:I21,2,FALSE)`

Correct spelling is crucial, down to the exact character. VLOOKUP is not case-sensitive, but punctuation and spaces can cause conflicts.

#N/A signifies Not Available.

ITEM ID DESCRIPTION

MAKE ALL CHECKS PAYABLE TO:
Office Warehouse
44 West Elm
Springfield, OH 45503

Invoice Inventory List

(555) 555-5555

Bill To:
#N/A

`=VLOOKUP(B7,H1:I21,2,FALSE)`

Leaving the lookup_value cell blank causes #N/A as well.

Invoice Inventory



Overcoming Unwanted AutoCorrections

Excel Options

General Formulas Data **Proofing** Save Language Ease of Access Advanced Customize Quick Access Add-ins Trust Center

AutoCorrect: English (United States)

AutoCorrect AutoFormat As You Type Actions Math AutoCorrect

☒ Show AutoCorrect Options buttons

☒ Correct TWO Initial Capitals

☒ Capitalize first letter of sentences

☒ Capitalize names of days

☒ Correct accidental use of CAPS LOCK key

☒ Replace text as you type

Replace:	With:
cafe	café
cafe	cafe
character	character
calculated	calculated
calulated	calculated
can;t	can't

Replace Delete

OK Cancel

AutoCorrect Options...

Select the unwanted correction.



Extraneous Spaces Triggers #N/A in VLOOKUP

Office Warehouse

ITEM ID	DESCRIPTION
44 West Elm	Springfield, OH 45503
(555) 555-5555	
Bill To:	
Galaxy Corp	
#N/A	
FALSE	

Company Name

Mainway Toys
BLAND Corporation
Universal Export
Tin Toy Co.
ABC Telecom
SpringShield
Water and Power
Krustyco
Megadodo Publications
Monarch Playing Card Co.
Galaxy Corp
Mr. Sparkle
Enterprise
Northern
Nordyne Defense Dynamics
Mammoth Pictures
Central Perk
Vandelay Industries
Foo Bars

Address

840 View R
3753 Elm St
3611 Fifth S
2864 Main A
3089 Maple
1863 Lake C
1463 Lake C
3448 Oak St
671 Pine Bl
1500 Sixth S
3669 Ninth
4011 View
1083 Pine B
1334 View
771 Oak Bl
4581 Fifth S
1659 Lake A
2865 Fifth A
1764 Sixth
3845 Elm St

Callout 1: This cell contains one extra space at the end.

Callout 2: One way to deal with spaces that the end of text is to include "&"*" in the formula to find something that begins with Galaxy Corp

Callout 3: This formula returns TRUE if both cells are identical, or FALSE if they differ in any way.

Callout 4: The TRIM function is another way to deal with extraneous spaces. This function keeps one space between each word and discards all other spaces.



Using the Table feature with VLOOKUP

1 The Table feature makes VLOOKUP self-updating, but be sure to do these steps BEFORE you add any new rows of data.

2 Click any cell within the list.

3 Insert

4 Table

5 Create Table

6 Column headings move into the worksheet frame when the first row can't be seen on-screen.

7 The Table expands automatically when new rows are added.

8 The table_array expands automatically when based on a table.

Company Name **Address**

Atlantic Northern	771 Oak Blvd.
Nordyne Defense Dyn	4581 Fifth Street
Mammoth Pictures	1659 Lake Avenue
Spacely Corp.	123 Skypad Place
Astro Corp.	456 Rocket Road

Company Name **Address**

Mainway Toys	840 View Road
BLAND Corporation	3753 Elm Street
Tip	2631 Fifth Street
Fal	
ABC Telecom	1863 Lake Circle
SpringShield	1463 Lake Circle
Water and Power	2418 Oak Street

Company Name **Address**

Extensive Enterprise	1334 View Road
Atlantic Northern	771 Oak Blvd.
Nordyne Defense Dyn	4581 Fifth Street
Foo Bars	3845 Elm Street
Spacely Corp.	123 Skypad Place

Company Name **Address**

(555) 555-5555	
Bill To:	
Astro Corp.	
456 Rocket Road	

ITEM ID **DESCRIPTION**



Undoing the Table Feature

1 Design

2 Convert to Range

3 Light

4 The formatting is removed but the list is still a table.

5 Choose Convert to Range from the Design menu.

6 Yes

7 The list is now a regular range of cells with no special characteristics. Any formulas that refer to a former table must be manually edited going forward to include new rows of data.

	Company Name	Address	City	State	Zip
4	BLAND Corporation	3753 Elm Street	Mauldin	PA	85215
5	Central Perk	2865 Fifth Avenue	Sanger	CA	69161
6	Extensive Enterprise	1334 View Road	Hailey	OH	67463
7	Fake Brothers	889 Maple Blvd.	Holtsville	NY	12764
8	Foo Bars				
9	Galaxy Corp				
10	Krustyco	671 Pine Blvd.	Wyoming	CA	50593
11	Mainway Toys	840 View Road	Williston Park	ME	02041
12	Mammoth Pictures	1659 Lake Avenue	Grandview	OH	95211
13	Megadodo Publications	1500 Sixth Street	Hermitage	CO	77804
14	Monarch Playing Card Co.	3669 Ninth Street	Alamo	WV	93285



IFERROR Function with VLOOKUP

	A	B	C	G	H	I	J	K	L
5		=IFERROR(VLOOKUP(B7,H1:I22,2,FALSE),"Invalid Input")				2864 Main Avenue	Laguna Hills	FL	95606
6		Bill To:			Fake Brothers	3089 Maple Blvd.	Holtsville	NY	12764
7		Mr Sparkle			ABC Telecom	1863 Lake Circle	Congers	NJ	27782
8		Invalid Input			SpringShield	1463 Lake Circle	Oro Valley	AK	60236
9					Power	3448 Oak Street	Grove City	MO	83578
10					Krustyco	671 Pine Blvd.	Wyoming	CA	50593
13					Megadodo Publications	1500 Sixth Street	Hermitage	CO	77804
14					Monarch Playing Card Co.	3669 Ninth Street	Alamo	WV	93285
15					Galaxy Corp	4011 View Blvd.	Perry Hall	NJ	19876
16					Mr. Sparkle	1083 Pine Blvd.	Nogales	VA	29934
17					Extensive Enterprise	1334 View Road	Hailey	OH	67463
18					Atlantic Northern	771 Oak Blvd.	Palm Desert	KY	88134
19					Nordyne Defense Dynamics	4581 Fifth Street	Branford	MO	96043
20					Mammoth Pictures	1659 Lake Avenue	Grandview	OH	95211
21		=IFERROR(VLOOKUP(B7,H1:M21,2,FALSE),"Invalid Input")							
22					SpringShield	1463 Lake Circle	Oro Valley	AK	60236
23									
24									
25									
26									
27									

A period is missing from the name.

value
VLOOKUP(B7,H1:M21,2,FALSE)
 a calculation, such as VLOOKUP, that may return a # sign error

value_if_error
"Invalid Input"
 what to display in lieu of the # error; enclose text in quotes, or use two double-quotes together to make the cell appear blank

Invoice Inventory List



Other Types of VLOOKUP Errors

#REF! typically indicates a problem with the column_index_num argument, in this case referring to the second column of a single column table_array

#NAME? typically indicates that a function name has been misspelled, but can also signify that a range name the formula relied up on has been deleted

#VALUE! typically indicates that the lookup_value argument is missing.



Concatenate City, State and Zip

	H	I	J	K	L	M	N	O
1	Company Name	Address	City	State	Zip	City, State, ZIP		
2	ABC Telecom	1863 Lake Circle	Congers	NJ	27782	Congers, NJ 27782		
3	Atlantic Northern	771 Oak Blvd.	Palm Desert	KY	88134	Palm Desert, KY 88134		
4	BLAND Corporation	3753 Elm Street	Mauldin	PA	852	=J2&", "&K2&" "&TEXT(L2,"00000")		
5	Central Perk	2865 Fifth Avenue	Sanger	CA	69161	Sanger, CA 69161		
6	Extensive Enterprise	1334 View Road	Hailey	OH	67463	Hailey, OH 67463		
7	Fake Brothers	3089 Maple Blvd.	Holtsville	NY	12764	Holtsville, NY 12764		
8	Foo Bars	3845 Elm Street	Jackson	PA	36634	Jackson, PA 36634		
9	Galaxy Corp	4011 View Blvd.	Perry Hall	NJ	19876	Perry Hall, NJ 19876		
10	Krustco	671 Pine Blvd.	Wyoming	CA	50593	Wyoming, CA 50593		
11					41	Williston Park, ME 02041		
12					11	Grandview, OH 95211		
13	Megadodo Publications	1500 Sixth Street	Hermitage	CO	77804	Hermitage, CO 77804		
14	Monarch Playing Card Co.	3669 Ninth Street	Alamo	WV	93285	Alamo, WV 93285		
15	Mr. Sparkle							
16	Nordyne Defense							
17	SpringShield							
18								
19								
20								
21								

Alternative: CONCATENATE(J2," ",K2," ",TEXT(L2,"00000"))
Excel 2019/Office 365=CONCAT(J2," ",K2," ",TEXT(L2,"00000"))

=J2&", "&K2&" "&TEXT(L2,"00000")

J2 City from column J	&", "& Places a comma and a space after City	K2 State from column K	&" "& Places a space after State	TEXT(L2,"00000") Adds a leading zero if necessary to ZIP codes from column L
---------------------------------	--	----------------------------------	--	--

Invoice Inventory List +



City, State Zip - Formula

	B	G	H	I	J	K	L	M
1	Office Wa							
2	44 West Elm	ABC Telecom	1863 Lake Circle	Congers	NJ	27782	Congers, NJ 27782	
3	Springfield, OH 45503	Atlantic Northern	771 Oak Blvd.	Palm Desert	KY			
4	(555) 555-5555	BLAND Corporation	3753 Elm Street	Mauldin	PA		=J2&", "&K2&" "&TEXT(L2,"00000")	
5		Central Perk	2865 Fifth Avenue	Sanger	CA	69161	Sanger, CA 69161	
6	Bill To:	Extensive Enterprise	1334 View Road	Hailey	OH	67463	Hailey, OH 67463	
7	Universal Export		9 Maple Blvd.	Holtsville	NY	12764	Holtsville, NY 12764	
8	3611 Fifth Street	Foo Bars	3845 Elm Street	Jackson	PA	36634	Jackson, PA 36634	
9	Norridge, TX 52671		View Blvd.	Perry Hall	NJ	19876	Perry Hall, NJ 19876	
10		Krustyco	671 Pine Blvd.	Wyoming	CA	50593	Wyoming, CA 50593	
11	ITEM ID	Mainway Toys	840 View Road	Williston Park	ME	02041	Williston Park, ME 02041	
12								
13								
14								93285
15								29934
16								0 96043
17								AK 60236
18	MA							FL 95606
19	Office Warehouse	Universal Export	3611 Fifth Street	Norridge	TX	52671	Norridge, TX 52671	
20	44 West Elm	Vandelay Industries	1764 Sixth Blvd.	South Milwaukee	CA	69639	South Milwaukee, CA 69639	
21	Springfield, OH 45503	Water and Power	3448 Oak Street	Grove City	MO	83578	Grove City, MO 83578	
	Invoice	Inventory List						

=VLOOKUP(B7,H1:M21,6,FALSE)

lookup_value
B7
what to look for

table_array
H1:M21
Cell coordinates of the
address list

col_index_num
6
column to return
data from

range_lookup
FALSE
0 or FALSE: Exact Match
1 or TRUE: Approximate Match



Viewing Two Worksheets at Once

Excel 2010 and earlier or Excel 2013 and later with a single monitor.

Excel 2013 and later with multiple monitors: click Restore Down and move the window onto another monitor to see both worksheets side-by-side, skip remaining steps.

Choose the other worksheet you wish to view

Office Warehouse

Invoice **Inventory List**

Inventory List



Viewing Two Worksheets at Once

9 Excel 2013 and later: double-click any ribbon tab to collapse the menu and see more rows.

10 Excel 2013 and later: you must do step 9 in both windows.

11 After you've finished with formulas that cross worksheets click the X in either window to return to a single worksheet view.

12 Click the Maximize button to return the remaining worksheet to full-screen.

13 Excel 2013 and later: double-click any menu tab to restore the ribbon.

ITEM ID	DESCRIPTION
11	Red Widget
12	
13	



Look-Up Data From a Second Workbook

The image shows two Excel workbooks. The top workbook, 'VLOOKUP - Invoice.xlsx', displays an invoice form. The bottom workbook, 'Address List.xlsx', displays a list of addresses used for the lookup.

VLOOKUP - Invoice.xlsx - Excel

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

	A	B	C	D	E	F	G	H	I
6		Bill To:			Ship To:				
7		Mammoth Pictures							
8		1659 Lake Avenue							
9		=VLOOKUP(B7,'[Address List.xlsx]Sheet1'!\$A\$1:\$E\$21,2,FALSE)							
10									
11		ITEM ID	DESCRIPTION	QTY	UNIT PRICE	AMOUNT			
12									

Invoice Inventory List

Address List.xlsx - Excel

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

	A	B	C	D	E	F	G	H	I	J
1	Company Name	Address	City	State	Zip					
2	Mainway Toys	840 View Road	Williston Park	ME	02041					
3	BLAND Corporation	3753 Elm Street	Mauldin	PA	85215					
4	Universal Export	3611 Fifth Street	Norridge	TX	52671					
5	Tip Top Cafe	2864 Main Avenue	Laguna Hills	FL	95606					
6	Fake Brothers	3089 Maple Blvd.	Holtsville	NY	12764					
7	ABC Telecom	1852 Lake Circle	Congers	NY	93782					

Sheet1



Item ID Look-Up

	A	B	C	D	E	F
1	ID	Description	Price			
2	Red Widget	Red Widget with Sparkles	\$494.00			
3	Blue Widget	Blue Widget with Polka Dots	\$229.00			
4	Green Widget	Green Widget with Stripes	\$271.00			
5	Orange Widget	Orange Widget with Plaid	\$173.00			
6	Purple Widget	Purple Widget with Triangles	\$422.00			
7	Pink Widget	Pink Widget with Squares	\$300.00			
8	Black Widget	Black Widget with Hexagons	\$383.00			
9						
10						

Invoice **Inventory List** +

	B	C
11	ITEM ID	DESCRIPTION
12	Red Widget	Red Widget with Sparkles
13	Red Widget	Red Widget with Sparkles
14	Red Widget	#N/A
15		#N/A
16		#N/A
17		#N/A

These cells return #N/A because column B is blank.

Invoice **Inventory** ... +

	A	B	C	D	E	F	G
11		ITEM ID	DESCRIPTION	QTY	UNIT PRICE	AMOUNT	
12		Red Widget	Red Widget with Sparkles				
13		Red Widget	Red Widget with Sparkles				
14		Red Widget	#N/A				
15			#N/A				
16			#N/A				
17			#N/A				

Cell C14: The table_array rows have drifted so that Red Widget cannot be found.

=VLOOKUP(B12,'Inventory List'!A1:B8,2,FALSE)
 =VLOOKUP(B13,'Inventory List'!A2:B9,2,FALSE)
 =VLOOKUP(B14,'Inventory List'!A3:B10,2,FALSE)

	C	D	E
11	DESCRIPTION	QTY	UNIT P
12	Red Widget with Sparkles		
13	Red Widget wi		
14	#N/		
15	#N/		
16	#N/		
17	#N/		

Copy Cells
☐ Fill Formatting Only
☒ Fill Without Formatting
☐ Each Cell

1 Use the AutoFill button to remove extraneous borders.



Perfecting the Item ID Lookup

	A	B	C	D	E	F	G	H	I	
11		ITEM ID	DESCRIPTION	QTY	UNIT PRICE	AMOUNT		Megadodo Publication	1500 Sixth Street	Hermita
12		Red Widget	Red Widget with Sparkles					Monarch Playing Card	3669 Ninth Street	Alamo
13		Red Widget	Red Widget with Sparkles					Galaxy Corp	4011 View Blvd.	Perry Ha
14		Red Widget	Red Widget with Sparkles					Mr. Sparkle	1083 Pine Blvd.	Nogales
15			#N/A					Extensive Enterprise	1334 View Road	Hailey
16			#N/A					Atlantic Northern	771 Oak Blvd	Palm De
17			#N/A							Inford
18		MAKE ALL CHECKS PAYABLE TO:								
19		Office Warehouse								
20		44 West Elm								
		Invoice	Inventory List							

=VLOOKUP(B12,'Inventory List'!\$A\$1:\$B\$8,2,FALSE)

Use absolute references to prevent table_array rows from drifting. In Excel for Windows press F4 immediately after you select or type the table_array range address. Use Cmd-T in lieu of the F4 key.

	A	B	C	D	E	F	G	H	I	
11		ITEM ID	DESCRIPTION	QTY	UNIT PRICE	AMOUNT		Megadodo Publication	1500 Sixth Street	Hermita
12		Red Widget	Red Widget with Sparkles					Monarch Playing Card	3669 Ninth Street	Alamo
13		Red Widget	Red Widget with Sparkles					Galaxy Corp	4011 View Blvd.	Perry Ha
14		Red Widget	Red Widget with Sparkles					Mr. Sparkle	1083 Pine Blvd.	Nogales
15								Extensive Enterprise	1334 View Road	Hailey
16								Atlantic Northern	771 Oak Blvd	Palm De
17										Inford
18		MAKE ALL CHECKS PAYABLE TO:								
19		Office Warehouse								
20		44 West Elm								
		Invoice	Inventory List							

=IFERROR(VLOOKUP(B12,'Inventory List'!\$A\$1:\$B\$8,2,FALSE),"")

Use two double-quotes as the value_if_error argument for IFERROR to make cells with errors appear blank.



Price Look-Up

	A	B	C	D	E	F	G	H	I	
11		ITEM ID	DESCRIPTION	QTY	UNIT PRICE	AMOUNT		Megadodo Publication	1500 Sixth Street	Hermit
12		Red Widget	Red Widget with Sparkles		494.00			Monarch Playing Card	3669 Ninth Street	Alamo
13		Blue Widget	Blue Widget with Polka Dots		229.00			Galaxy Corp	4011 View Blvd.	Perry H
14					0.00	0.00		Mr. Sparkle	1083 Pine Blvd.	Nogale
15					0.00	0.00		Extensive Enterprise	1334 View Road	Hailey
16					0.00	0		Atlantic Northern	771 Oak Blvd.	Palm D
17					0.00	0.00		Nordyne Defense Dyr	4581 Fifth Street	Branfo
18		MAKE AL			SUBTOTAL	0.00		Mammoth Pictures	1650 Lake Avenue	Grandv
19		Office Wa			TAX RATE	7.00%		Centra	2003 Ninth Avenue	Sanger
20		44 West Elm			SALES					
21		Springfield, OH 45503			TOTAL	\$0.00		Foo Bars	3845 Elm Street	Jackson
22								Spacely Corp.	123 Skypad Place	Futurev
23								Astro Corp	456 Pocket Road	Houste

Unlike VLOOKUP, SUMIF returns a zero if a match isn't found.

`=IFERROR(VLOOKUP(B12,'Inventory List'!$A$1:$C$8,3,FALSE), "")`

`=SUMIF('Inventory List'!$A$1:$A$8,B13,'Inventory List'!$C$1:$C$8)`

=SUMIF('Inventory List'!\$A\$1:\$A\$8,B13,'Inventory List'!\$C\$1:\$C\$8)

range	criteria	sum_range
'Inventory List'!\$A\$1:\$A\$8	B13	'Inventory List'!\$C\$1:\$C\$8
where to look	what to look for	what to add up when matches are found

Invoice

Inventory List

+



VLOOKUP Approximate Matches

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1															
2		Subject	Score	Grade	Score	Grade		Sales	Commission Rate		Single	2020			
3		American Literature	83	B	0	F		0	5%		0	10.00%			
4		Calculus	60	F	65	D		50,000	6%		9,876	12.00%			
5		Physics	78	C	74	C		80,000	7%		40,126	22.00%			
6		U.S. History	65	D	83	B		120,000	8%		85,525	24.00%			
7		AP Spanish	100	A	92	A		150,000	10%		163,301	32.00%			
8		=VLOOKUP(C3,\$F\$2:\$G\$7,2,TRUE)													
9								Sales	165,053			207,351	35.00%		
10								Rate	10%			518,401	37.00%		
11											Income	81,359			
12								=VLOOKUP(J9,I3:J7,2,TRUE)			Tax Rate	22.0%			
13													=VLOOKUP(M11,L3:M9,2,TRUE)		
14															
15															
16															
17															
18															
19															
20															
21															

=VLOOKUP(C3,\$F\$2:\$G\$7,2,TRUE)

lookup_value C3 what to look for	table_array \$F\$2:\$G\$7 Cell coordinates of the score list	col_index_num 2 column to return data from	range_lookup TRUE 0 or FALSE: Exact Match 1 or TRUE: Approximate Match
--	--	--	---

VLOOKUP-Approximate Matches



Tax Rates

	A	B	C	D	E	F	G	H
1	Client	Taxable Income	Tax Rate		Taxable Income	Tax Rate		
2	Adam	88,780.00	25.0%		0	10.0%		
3	Br				9,275	15.0%		
4	Ja				37,650	25.0%		
5	Cheryl	143,352.00	28.0%		91,150	28.0%		
6	Brandon	443,411.00	35.0%		190,150	33.0%		
7					413,350	35.0%		
8					415,050	39.6%		

Improperly crafted approximate matches can result in errors that are hard to see; the table_array should be \$E\$2:\$F\$8.

=VLOOKUP(B6,\$E\$2:\$F\$7,2,TRUE)

=VLOOKUP(B6,\$E\$2:\$F\$7,2,TRUE)

lookup_value	table_array	col_index_num	[range_lookup]
B6	\$E\$2:\$F\$7	2	TRUE
what to look for (in this case 443,411)	incorrect cell coordinates of our list, should be \$E\$2:\$F\$8 or E:F	column to return data from	type of match 0 or FALSE - Exact Match 1 or TRUE - Approximate Match

Tax Rate



XLOOKUP Introduction (Microsoft 365)

	A	B	C	D	E	F	G	H	I
1		<u>March</u>		<u>Account #</u>	<u>Account Name</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>
2	40100	92,741		40100	Product Sales	99,738	113,689	92,741	109,467
3	40100	92,741		40200	Services	32,914	37,517	30,605	36,124
4				40300	Other Income	19,948	22,738	18,548	21,893
5				40400	Interest Income	2,992	5,684	3,710	3,284
6				=VLOOKUP(A2,D1:H5,5,0)					
7				=XLOOKUP(A3,D1:D5,H1:H5)					
8									
9									
10									
11									
12									
13									
14									
15									

=XLOOKUP(A3,D1:D5,H1:H5)

lookup_value A3 what to look for <i>(in this case, account 40100)</i>	lookup_array D1:D5 cell coordinates where to look	return_array H1:H5 cell coordinates of what to return
--	--	--

XLOOKUP-Introduction
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Thank you for attending!

I'm happy to hear from you. In particular let me know if you did not receive the handouts for this presentation.

David Ringstrom, CPA



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Is there something you were hoping to learn today but didn't?
Please let me know. You can ask me anything about Excel.