

An Excel Workshop

VLOOKUP

Vlookup can be a very useful tool in Excel Spreadsheets for finding information.

Vlookup searches for a value in the leftmost column of a table, and then returns a value in the same row from a column you specify in the table. It is perhaps easier to explain this by an example.

Let's suppose that you have a list of the parts you manufacture and the list contains details of components, quantities and operations as follows:

Parts List

<u>Description</u>	<u>Part Number</u>	<u>Component A</u>	<u>Qty Req'd</u>	<u>Component B</u>	<u>Qty Req'd</u>	<u>Component C</u>	<u>Qty Req'd</u>	<u>Operation 1</u>	<u>Operation 2</u>	<u>Operat</u>
Gear Assembly	123	Small Cog	2 each	Medium Cog	1 each	Bolt	4 each	Assemble Cogs	Fix Bolt	Test
Style A Shoe (Pair)	321	Sole	3 each	Upper	2 each	Laces	2 pairs	Glue sole to upper	Remove excess glue	Polish
Screws (500)	1122	Blank	10 metres	Coating	300 mls			Machine blank to form screw	Remove Sharp edges	Coat
Telephone	987	Base Unit	1each	Handset	1 each	Cable	2 metres	Attach cable to base	Attach handset to cable	Test
Car	123456	Engine	1each	Body	1 each	Wheels	5 each	Fix Wheels to Body	Fit Engine	Put petr
Sponge Cake	987654	Flour	250 grams	Butter	1 dollop	Sugar	1 tablespoon	Mix ingredients	Bake	Eat

For vlookup to work correctly the table must be sorted in ascending order using the first column.

To do this use first of all cover the complete table: -

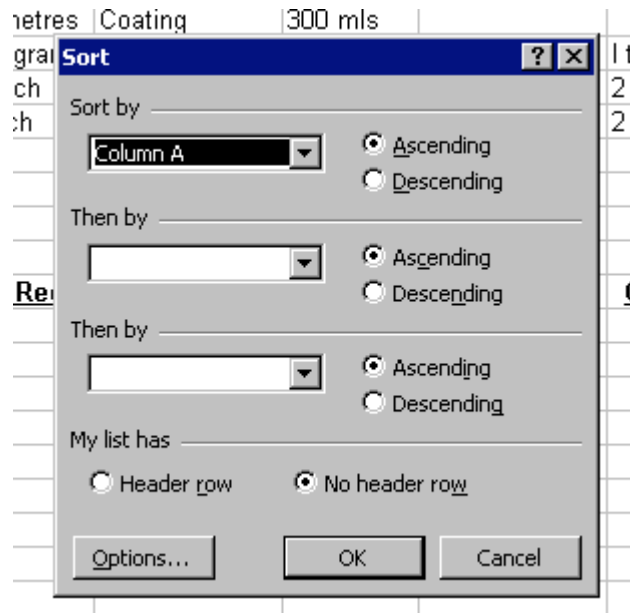
	A	B	C	D	E	F	G	H	I	
	Parts List									
	Description	Part Number	Component A	Qty Req'd	Component B	Qty Req'd	Component C	Qty Req'd	Operation 1	
	Gear Assembly	123	Small Cog	2 each	Medium Cog	1 each	Bolt	4 each	Assemble Cogs	Fix B
	Style A Shoe (Pair)	321	Sole	3 each	Upper	2 each	Laces	2 pairs	Glue sole to upper	Remo
	Screws (500)	1122	Blank	10 metres	Coating	300 mls			Machine blank to form screw	Remo
	Telephone	987	Base Unit	1each	Handset	1 each	Cable	2 metres	Attach cable to base	Attac
	Car	123456	Engine	1each	Body	1 each	Wheels	5 each	Fix Wheels to Body	Fit Er
	Sponge Cake	987654	Flour	250 grams	Butter	1 dollop	Sugar	1 tablespoon	Mix ingredients	Bake

Next choose Data – Sort: -

The screenshot shows the 'Data' menu in Microsoft Excel with the 'Sort...' option selected. The menu also includes options like Filter, Form..., Subtotals..., Validation..., Table..., Text to Columns..., Consolidate..., Group and Outline, PivotTable and PivotChart Report..., Get External Data, and Refresh Data.

mber	Component A	Qty Req'd	Component
23456	Engine	1 each	Body

Finally choose Column A and Ascending: -



The table will now be sorted into order: -

Parts List

<u>Description</u>	<u>Part Number</u>	<u>Component A</u>	<u>Qty Req'd</u>	<u>Component B</u>	<u>Qty Req'd</u>	<u>Component C</u>	<u>Qty Req'd</u>	<u>Operation 1</u>	<u>Operation 2</u>	<u>Operat</u>
Car	123456	Engine	1 each	Body	1 each	Wheels	5 each	Fix Wheels to Body	Fit Engine	Put petr
Gear Assembly	123	Small Cog	2 each	Medium Cog	1 each	Bolt	4 each	Assemble Cogs	Fix Bolt	Test
Screws (500)	1122	Blank	10 metres	Coating	300 mls			Machine blank to form screw	Remove Sharp edges	Coat
Sponge Cake	987654	Flour	250 grams	Butter	1 dollop	Sugar	1 tablespoon	Mix ingredients	Bake	Eat
Style A Shoe (Pair)	321	Sole	3 each	Upper	2 each	Laces	2 pairs	Glue sole to upper	Remove excess glue	Polish
Telephone	987	Base Unit	1each	Handset	1 each	Cable	2 metres	Attach cable to base	Attach handset to cable	Test

Now prepare an area with the same headings, they do not need to be in the same order nor do they need to include all the columns in your original table but in this example we will.

Parts Information

Description **Part Number** **Component A** **Qty Req'd** **Component B** **Qty Req'd** **Component C** **Qty Req'd** **Operation 1** **Operation 2** **Oper**

The first column 'description' is your key column and this is the only column in which you need to enter data. Here you will choose your part description and this is easiest done by choosing from a drop down list.



In the second column 'Part Number' you need the formula: -

=IF(\$A25="", "", VLOOKUP(\$A25, \$A\$14: \$L\$19, 2))

The first part of the formula =IF(\$A25="", "", says that if cell A25, this being where you will enter your first part description is blank put a blank in column 2.

The second part of the formula is split into sections: -

VLOOKUP(\$A25,

This says to look up the value in cell A25 i.e., your part description

\$A\$14:\$L\$19,

This is the area covered by your source table

Therefore look up your part description in the left most column of this table.

2))

This is the column in the source table that you want to pick the information from.

Therefore in this case in this column put the information that is in column two of the source table on the same line as the part description you have entered.

The formula remains the same in all other columns except that the number 2 at the end changes to 3, 4, 5 etc.

Now let's choose a part description from the drop down list: -



In this case we have chosen the gear assembly.

Now automatically all the information that we require relative to the gear assembly is automatically entered: -

<u>Parts Information</u>										
<u>Description</u>	<u>Part Number</u>	<u>Component A</u>	<u>Qty Req'd</u>	<u>Component B</u>	<u>Qty Req'd</u>	<u>Component C</u>	<u>Qty Req'd</u>	<u>Operation 1</u>	<u>Operation 2</u>	<u>Operation</u>
Gear Assembly	123	Small Cog	2 each	Medium Cog	1 each	Bolt	4 each	Assemble Cogs	Fix Bolt	Test

By using a drop down list you cannot enter an incorrect value but if you enter freehand and enter an incorrect value vlookup will enter the nearest information it finds in the table: -

<u>Parts Information</u>	<u>Part Number</u>	<u>Component A</u>	<u>Qty Req'd</u>	<u>Component B</u>	<u>Qty Req'd</u>	<u>Component C</u>	<u>Qty Req'd</u>	<u>Operation 1</u>	<u>Operation 2</u>	<u>Operation 3</u>
Hang Glider	123	Small Cog	2 each	Medium Cog	1 each	Bolt	4 each	Assemble Cogs	Fix Bolt	Test

In this case we have chosen a hang glider but as you can see it has entered the details for the gear assembly which is the nearest preceding part alphabetically to the hang glider.

To avoid this happening you need to enter the word FALSE at the end of your formulas as follows: -

```
=IF($A26="", "", VLOOKUP($A26,$A$14:$L$19,2,FALSE))
```

Now if the part can't be found the value #N/A will be shown which will highlight that you have chosen a part that is not in your source table.

<u>Parts Information</u>	<u>Part Number</u>
Hang Glider	#N/A

Vlookup is a very useful function and can be used in numerous situations and in more complex ways than shown above.

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