

Look Up and Reference Functions

Excel provides two functions that are able to pluck the desired data from a lookup table for use somewhere else. They work pretty much as you do when you look up information in a table.

The more commonly used of these functions is VLOOKUP, or “Vertical Lookup.” It searches a designated area of a worksheet for specific information, and it does it column by column.

When you look in a table, you generally will look down the leftmost column until you find the item for which you need information. Then you look to the right to the column with the heading indicating the detail you require.

For example, using the Stores.xls file as an example. I have the number of a store (let’s say 5008) and I want to “look up” the store’s name. I will look down the Store Number column until I find 5008. I will then look across into the Store Name column to the right to find the store’s name, in this case Northwich.

This is how VLOOKUP works. It looks for a specific record in the leftmost column. When it finds it, it retrieves the information from the relevant column to the right. Use VLOOKUP when the first (leftmost) column of the lookup table contains the “name” of the thing you are looking up, and the data you want about it is in one of the columns to the right.

The other lookup function is HLOOKUP. This gets used less, in part because it looks for a column heading first, then goes to a specific row and retrieves whatever it finds in that cell. This is a horizontal lookup approach. This “across and down” approach is contrary to the way we humans generally search. Use HLOOKUP when the “name” of the thing you are looking for is in the first row of the lookup table and the actual data is in one of the rows below it.

The LOOKUP functions have four arguments:

- Lookup_value identifies the value to be looked up; this can be a value, a text string, or a cell reference.
- The table_array (lookup table) in which the lookup value is stored; this is a range of cells, identified either in the usual “A1:B2” format, or given a range name (named ranges are preferred).
- An index number to identify the column (VLOOKUP) or the row (HLOOKUP) from which the value will come. These arguments are col_index_num for VLOOKUP and row_index_num for HLOOKUP.
- The range_lookup specifies either an exact match or an approximate match. If TRUE or empty, the function looks for an approximate match (the largest value that is less than the lookup_value). If FALSE, the function looks for an exact match with lookup_value.

How to use VLOOKUP

- Open the Store.xls file

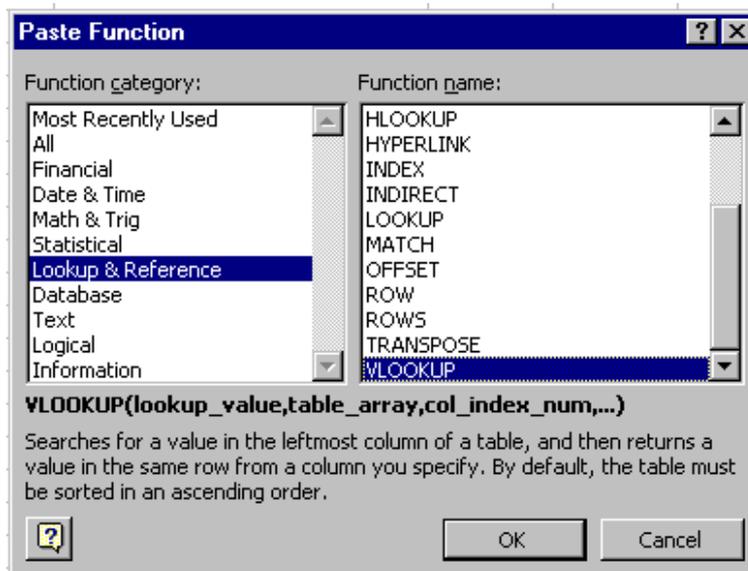
This file contains a list of stores and store names.

- Open the LookUp Example.xls file

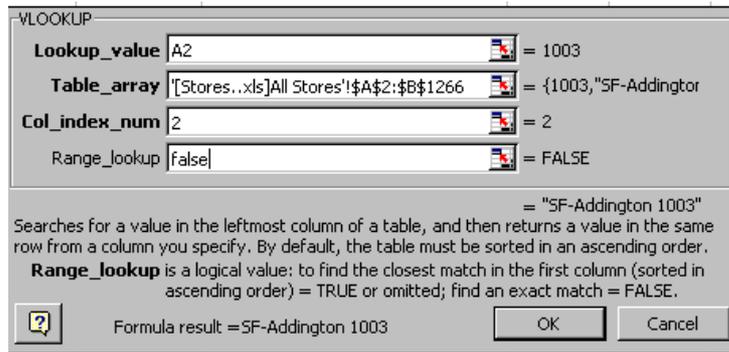
There are 4 columns in the file, with headings Store Number, Store Name, Employee Number and Employee Name. There are no entries in the Store Name column.

This example will show you how you can fill in the Store Name column in the spreadsheet.

- Click on cell B2
- Select the Paste function button  on the Standard toolbar.
- Select Lookup & Reference from the Function category and VLOOKUP as a function name.
- Click on OK

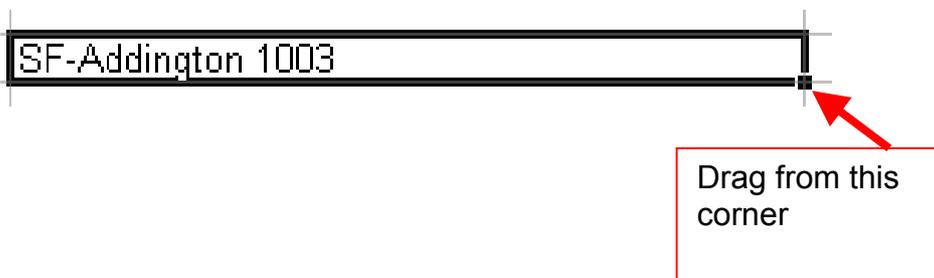


- Move the VLOOKUP box out of the way so you can see your data.
- Select cell A2
- Click in the Table Array box.
- Go back to the Stores.xls file.
- Highlight all Store Name and Store Number entries within the Stores.xls spreadsheet
- Enter 2 in the Col_index_num box
- Enter false (for an exact match) in the Range_lookup box
- Click on OK



Go back to the LookUp Example.xls file. Notice that the Store name now appears in cell B2.

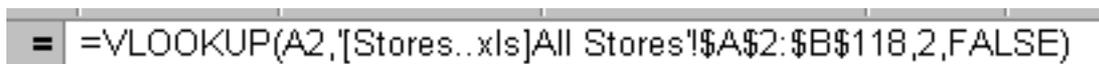
To repeat for all the Store Numbers, simply drag the bottom right hand corner of the B2 cell down the entire column.



How to Use Paste Special

In the LookUp Example.xls file click on the cell B2. Look at the formula bar.

You will notice that instead of SF-Addington 1003, the formula used to generate this value is displayed:



It is a good idea to change this so that the value is displayed. This will allow you to use the spreadsheet without it referencing your Stores.xls file. This is particularly important if you wish another user to see this information – particularly if they do not have Stores.xls on their PC or they do not have the drive where it is stored mapped to their PC.

- Insert a new column between columns A and B.
- Select and copy the data in the new column C.
- Select cell B1.
- Choose Edit -> Paste Special. Click on the Values radio button.
- Delete column C

Notice when you select cell B2 that the formula bar contains the value.

