

Excel Function Guide : vlookup

Excel's look up functions - as well as vlookup described here there's also hlookup - do exactly what they say. The vlookup function looks up either text or a number in the first column of a data set and returns what's in another column on the same row. It comes in two types. If the option "False" is used, the system will look for an exact match of the look up value (but not case sensitive). If the option "True" is used the system will look for a range that the look up value falls within. Both types are described below.

This first data set shows prices for different types of fruit. Our task is to look up the price of peaches and put this value in cell E3 (or any blank cell). If you have reproduced this data set in an Excel worksheet, then In cell E3, enter the following formula:

=VLOOKUP(D3,A2:B11,2,FALSE)

The first element in the brackets is the cell containing the look up value. As an alternative, the cell address D3 could have been replaced by the word "Peaches" in double quotes. The next element is the range containing the look up table. The system will always look for the look up value, in this case the word "Peaches", in the first column of this cell range. It finds this in cell A10. The next element in the brackets is the number 2. This instructs the

| | A | B | C | D | E |
|----|------------|--------------|---|---------|---|
| 1 | Fruit | Price per kg | | | |
| 2 | Apples | 3.18 | | | |
| 3 | Pears | 5.38 | | Peaches | |
| 4 | Oranges | 4.85 | | | |
| 5 | Lemons | 4.23 | | | |
| 6 | Bananas | 3.07 | | | |
| 7 | Grapes | 3.91 | | | |
| 8 | Melons | 3.32 | | | |
| 9 | Pineapples | 4.22 | | | |
| 10 | Peaches | 5.59 | | | |
| 11 | Apricots | 5.65 | | | |
| 12 | | | | | |

system to pick up the value in the second column of the range but on the same row as where the look up value was found. So, the system will pick up the value from cell B10. If the number was a 3 then it would look in the third column, and so on. Finally, the brackets contain the word FALSE. This instructs the system to look for an exact match of the look up value in the first column of the range. If it can't find an exact match, the system will generate an #N/A error. The word FALSE can be replaced by a zero. If the word "Peaches" occurred more than once in the first column, the system will just find the first match.

| | A | B | C | D | E |
|----|------------------|------|-------|----|----|
| 1 | Student | Mark | Grade | | |
| 2 | Joseph Cornish | 40 | | | |
| 3 | Sophie Burgess | 89 | | | |
| 4 | Oliver Allan | 56 | | 0 | E |
| 5 | Lauren Bond | 57 | | 50 | D |
| 6 | Kimberly Dickens | 68 | | 64 | C |
| 7 | Luke Paterson | 74 | | 72 | B |
| 8 | Isaac Butler | 67 | | 83 | A |
| 9 | Emily Quinn | 67 | | 90 | A+ |
| 10 | Wanda Sharp | 83 | | | |
| 11 | Sarah Miller | 52 | | | |
| 12 | Kylie Hughes | 90 | | | |

The second data set contains some exam marks for a number of students. In columns D and E is a small table which shows the equivalent grades. So, for example, a mark between 0 and 49 will be an E grade, between 50 and 63 it will be a D grade and so on. Students with a score of 90 or more will be awarded an A+. In cell C2 enter the following:

=VLOOKUP(B2,D4:E9,2,TRUE)

The use of the option TRUE means that the system will look for the interval that the look up value falls within. The look up value of 40 is in the 0 to 49 range. The lower end of this range is 0 so the value that appears in cell C2 is E. If the formula is copied down column C (remember to put dollar signs in so that the range reads D\$4:E\$9) the system will look up each of the marks in turn. Cell B3 contains the value 89 which is in the 83 to 89 range. So, cell C3 should contain an A. The word TRUE can be replaced with the number 1