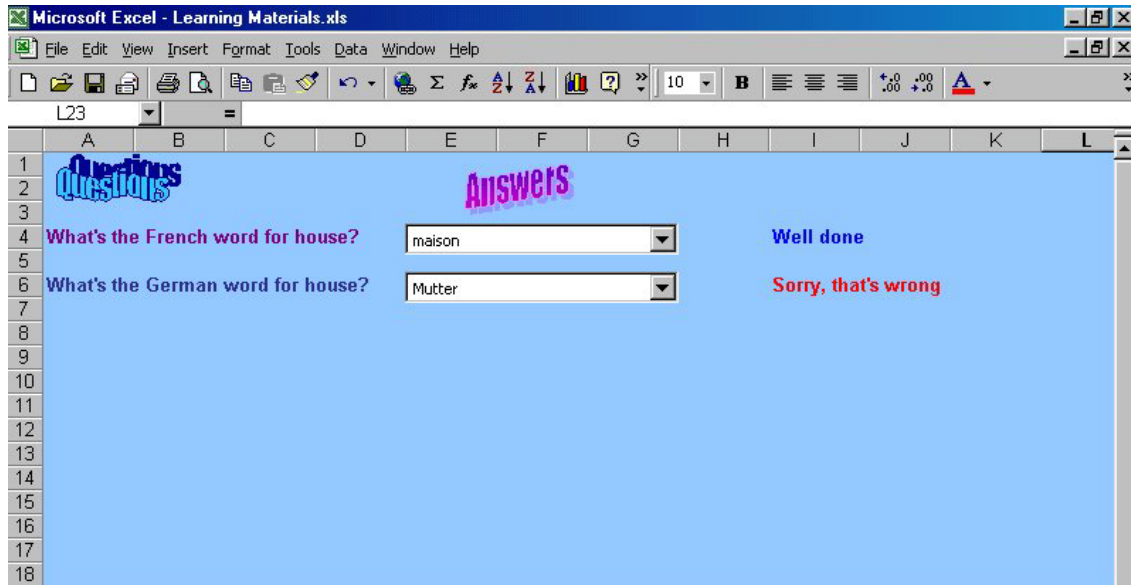


## Learning Resources – Self-Testing Forms in Excel

You can use forms in Microsoft Excel to develop a self-testing learning resource similar to this example below.



Open up Microsoft Excel and save the spreadsheet.

Click on Sheet 2 at the bottom of the spreadsheet and type in the following text.

	A	B	C	D	E
1	Question number		Q1	Q2	
2	Possible answers	1			
3		2	maison	Haus	
4		3	livre	Buch	
5		4	filie	Mutter	
6		5	jardin	Garten	
7					
8	Correct number		2	2	
9	User choice				
10	Difference				
11					
12	Message				
13					

If the cell columns aren't wide enough for the text, double-clicking on the line between the columns makes the columns automatically as wide as the text.

You need to give a number to each possible answer plus a blank answer to appear when the student first opens the spreadsheet (in column B), as Excel compares numbers rather than text. As the user changes the values in the box that you will set up, the number in user choice cells (C9 and D9) will change i.e. if the student picks "filie", the user choice will change to 4.

Cells C10 and D10 will show the difference between the number of the correct answer and the number of the answer chosen by the user.

In cell C10 type in =C9-C8

In cell D10 type in =D9-D8

Cell C12 sets up the message which will be shown when the user chooses the correct answer and the message which will be shown when the user chooses the incorrect answer.

In cell C12, type in the following IF statement: `=IF(C9=1,"Please choose your answer from the list",IF(C9="", "Please choose your answer from the list",IF(C10=0,"Well done","Sorry, that's wrong")))`

This means that if the user chooses the first choice on the list (shown in C9) which is blank, which should automatically appear first, the message "Please choose your answer from the list" will appear. If there is the difference in C10 between the user choice and the correct number is 0, then the message shown will be "Well done". If the difference is anything other than 0, the message will be "Sorry that's wrong", as the user has picked the wrong answer.

In cell D12, type in the following IF statement: `=IF(D9=1,"Please choose your answer from the list",IF(D9="", "Please choose your answer from the list",IF(D10=0,"Well done","Sorry, that's wrong")))`

This is the same as the previous statement, but it refers to question 2.

You then need to set up another sheet that the student will see. Click on Sheet 1 at the bottom of the spreadsheet.

You can use WordArt to create more interesting text.

Go to View, Toolbars and Drawing to bring up the toolbar with the WordArt icon on it.



Click on the WordArt icon. This will bring up the WordArt Gallery. If you double-click on one of the styles it will then bring up a box asking you to put your text in. You can change the font type and size in this box.

Type in Questions and click on OK, then click and drag the word to the top left-hand corner of the spreadsheet. To resize the word you need to click on the word and then use the double-headed arrow which appears if you point the mouse over one of the corner boxes. Resize the word so it takes up cells A1 to B2.

Click on another part of the spreadsheet to make sure that the word 'Questions' is not highlighted anymore, and then click back onto the WordArt icon. Double click on a style again and type in Answers and click on OK, then click and drag the word about halfway along the top of the spreadsheet. Resize the box so it takes up cells E1 to F2.

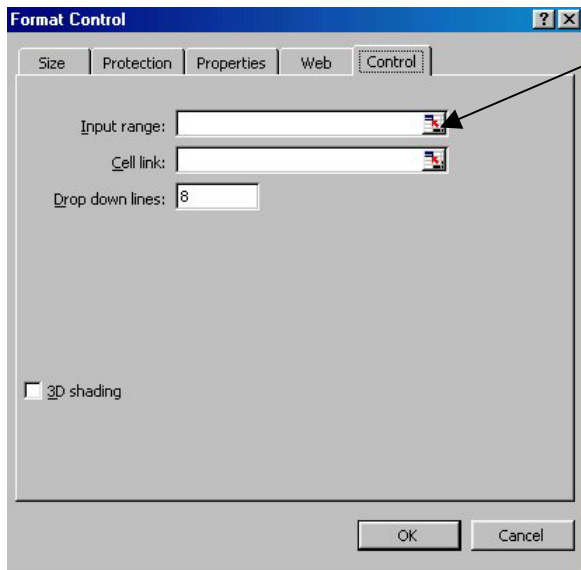
Underneath the word 'Questions' in cell A4 type in the first question What's the French word for house? and press return. If you want to change the font colour, click back onto cell A4 and go up to the Format menu, choose Cells, click on the Font tab at the top and choose a colour in the box underneath Color and click on OK. In cell A6 type in the second question What's the German word for house? and press return. Again you can choose a different font colour.



You will then have to set up the box where the students choose their answers.

Go to View, Toolbars, Forms to bring up the Form toolbar. Right click on the Combo Box and choose Format Control from the menu. This will bring up the box shown.

Click on the Combo Box to select it. Hold down the Alt key and use the mouse to draw a box around cells E4 to G4. The Alt key aligns the box with the cell gridlines.



Click on the red box to the right of Input range. *This is where you specify the information previously set up in Sheet 1.*

Click on Sheet 2 at the bottom of the spreadsheet and highlight cells C2 to C6. *This will provide the information for the list.*

Click back onto the red box to return to the Format Control dialogue box.

Click on the red box to the right of Cell link and click on Sheet 2 again, but this time click on cell C9. *This box will show what the student has chosen.*

Click on the red box again to return to the Format Control dialogue box.

In the Drop down lines box type in 5 as there are only 5 different answers. This can be increased if more choices are added. Click in the 3D shading box to make the box look more impactful and click on OK.

Choose the Combo Box again from the Form toolbar. Hold down the Alt key and draw a Combo Box on the spreadsheet around cells E6 to G6.

Right click on the Combo Box and choose Format Control from the menu. Click on the red box to the right of Input range and click on Sheet 2 and highlight cells D2 to D6. Click on the red box to return to the Format Control dialogue box.

Click on the red box to the right of Cell link and click on Sheet 2 again and click on cell D9. Click on the red box again to return to the Format Control dialogue box.

In the Drop down lines box type in 5 again. Click in the 3D shading box and click on OK.

In cell I4 type =Sheet2!C12

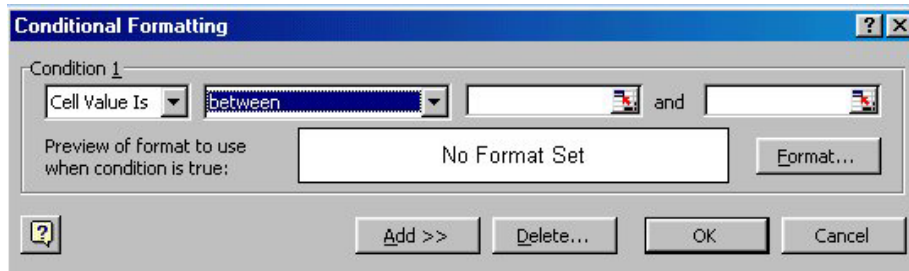
This will tell the student whether Question 1's answer is right or wrong.

In cell I6 type =Sheet2!D12

This will tell the student whether Question 2's answer is right or wrong.

To make the "Well done" or "Sorry, that's wrong" stand out more, you could apply conditional formatting so that they appear in a different colour.

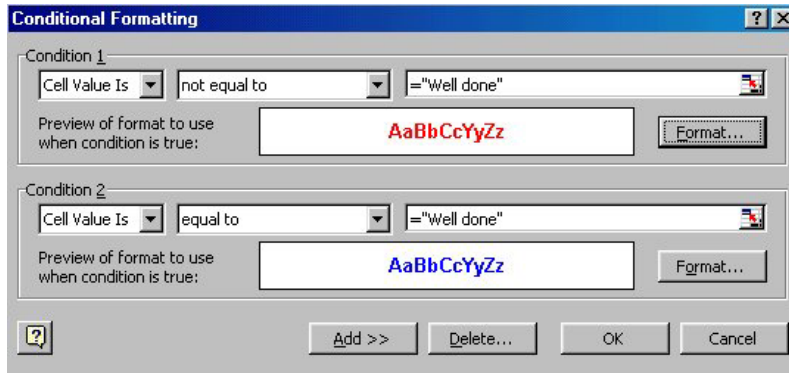
Click on cell I4. Go to the Format menu and choose Conditional Formatting.



Click on the arrow next to the box that says "between", and choose "not equal to" and in the box next to it, type ="Well done" Click on the Format button and under

Font style choose Bold from the drop-down list. Under Color, pick a colour from the drop-down list (for example red) and click on OK. This takes you back to the first box.

Click on the Add>> button. Under Condition 2 click on the arrow next to the box that says "between", and choose "equal to". In the box next to it type in ="Well done". Click on the Format button and under Font style choose Bold from the drop-down list. Under Color, pick a different colour (for example blue) and click on OK. The first box should appear again with two conditions in it as shown. Click on OK.



Click on cell I6 and repeat the process under the Format menu.

If the student picks the correct answer "Well done" will appear in blue emboldened text.

Any other text will appear in red emboldened text.

If you want the same formatting for the cells you can use Format Painter to copy the format from cell I4 to cell I6. Click on I4 then click on the Format Painter icon on the toolbar and then click on cell I6.

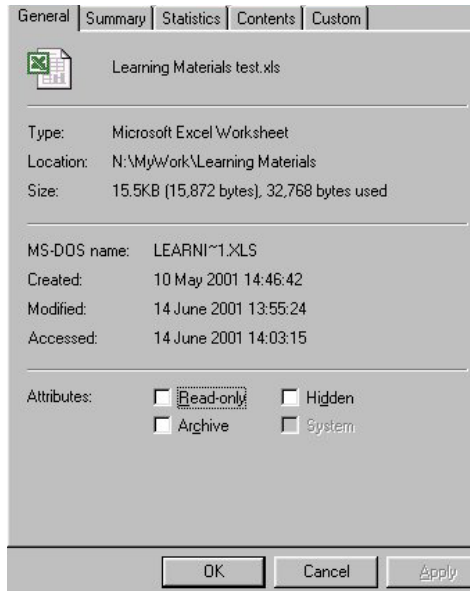


If you want you can insert pictures by going to the Insert menu and choosing Picture and Clip Art. Alternatively you could put a background colour on the sheet to make it look less like a spreadsheet. Click on the square at the left-hand top corner between 1 and A to select the whole spreadsheet then go to Format, Cells and then click on the Patterns tab. Under the cell shading you can choose a colour or a pattern (make sure that you can read your text over the top of the background colour!) and click on OK.

## **Protecting your Worksheet**

If you want to make sure that nobody changes your worksheet, there are a number of things you can do. Most importantly, keep a master copy!

The easiest way to protect the worksheet is to make it **read only**, so the students can save it to another area if they want e.g. their work area or a disk, but can't make any changes to the original.



To make the worksheet read only, save it as normal and close it then open My Computer and double click on the drive the file is on (e.g. the A drive if it's on a floppy). Right click on the spreadsheet file and choose Properties from the menu that appears.

Click in the box next to Read-only and click on OK.

Now anyone can open the file but if they make any changes they will be asked if they want to save the file as something else.

If you don't want the file read-only any more, just repeat the process and take the tick out of the Read-only box.

You can also protect the individual worksheets so they can't be changed whilst the students are working on them. Make sure that the spreadsheet is **NOT** read-only first.

By default, the cells in a spreadsheet are locked, but this isn't activated until you protect the whole sheet. You have to make sure, however, that the information for the combo box in cells C2 to D12 in Sheet 2 is **NOT** protected, as the student must be able to change it. On Sheet 2, highlight C2 to D12, choose Format, Cells, click on the Protection tab and take the tick out of the Locked box by clicking in it and then click on OK.

Go to the Tools menu and choose Protection and Protect Sheet. You can set a password at this stage, but if you do, you need to remember it, as you can't unprotect the sheet without your password. Click on OK.

On Sheet 1, click on the box on the top left-hand side between 1 and A to choose all the cells in the spreadsheet and make sure that they've got the Locked box ticked under Format, Cells and Protection. Go to Tools, Protection and choose Protect Sheet. Set a password if you want and click on OK.

You can also hide Sheet 2 by going to the Format menu, choosing Sheet and Hide and repeating this on any other sheets by clicking on the sheet itself and repeating what you've just done so the students can only see Sheet 1 where they choose the answer. If you want to see the sheets again, you go to the Format menu, choose Sheet and Unhide and then choose which sheet you want to unhide.

## **Learning Resources – Self-Testing Forms in Excel (2)**

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You can also use Microsoft Excel to produce a self-testing form where the students have to type in their own answer, rather than choose from a list of answers.

Open up Microsoft Excel and save the spreadsheet.

In cell A1 type in the first question: **What's the French word for house?** Pressing return will move to another cell. Double click on the line between Column A and Column B to make the column automatically as wide as the text.

Leave Column B blank then type in cell C1 the following formula:

**=IF(B1="", "Please type your answer in Column B", IF(B1="maison", "Well done", "The correct answer is maison"))**

This tells Excel to show the message "Please type your answer in Column B" if there is nothing in Column B. If the student chooses the correct answer "maison", the message "Well done" will appear, otherwise the message "The correct answer should be maison" will be shown.

In cell A2 type in the second question: **What's the German word for house?**

Leave Column B blank then type in cell C2 the following formula:

**=IF(B2="", "Please type your answer in Column B", IF(B1="Haus", "Well done", "The correct answer is Haus"))**

Double click on the line between Column C and D to make the column as wide as the text.

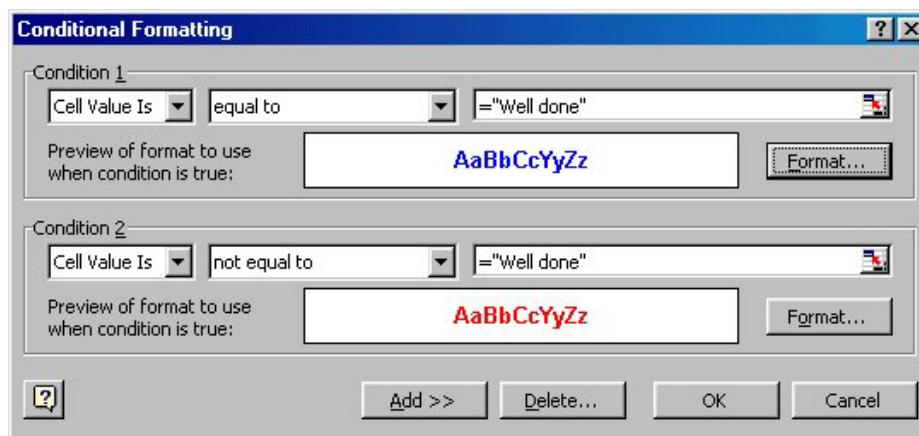
You would just repeat this for any other questions, typing the question in Column A and changing the formula in Column C to reflect the row number (i.e. B3, B4, B5 etc.) and changing the correct answer from Haus or maison.

You can then change the font colour on the Columns if you want. Click on the A to highlight all of Column A then go to **Format, Cells, Font** and choose **Bold** under **Font Style** and choose a font colour under **Color** and click OK. You could choose a different font colour for the column in which the students input their answer by clicking on B to highlight Column B and repeating what you did to change the font colour on Column A.

You could change the colour of the spreadsheet but use a different colour for Column B to make it more obvious to the students where to type their answer in. Click on the top left-hand square between 1 and A to highlight the whole spreadsheet, then click on **Format, Cells, Patterns** and choose a colour and click on OK (make sure you can still read the text). To change the colour of Column B, click on B to highlight the column and go to **Format, Cells, Patterns**, pick a different colour and click on OK.

You could use **conditional formatting** to emphasise the messages which appear for the correct and incorrect answers. Click on cell C1 and choose **Format** and then **Conditional Formatting**. Under Condition 1, click on the arrow next to between and change it to **equal to**. In the next box type in **"Well done"** and then click on the **Format** button. Choose **Bold** under **Font** style and choose a different colour under Color (e.g. blue) and click on OK, which will take you back to the original box.

Click on the Add>> button. Under Condition 2, click on the arrow next to between and change it to **not equal to**. In the next box type in **="Well done"** and then click on the **Format** button. Choose **Bold** under **Font** style and choose a different colour under **Color** (e.g. red) and click on OK. You should have the following box on your screen.



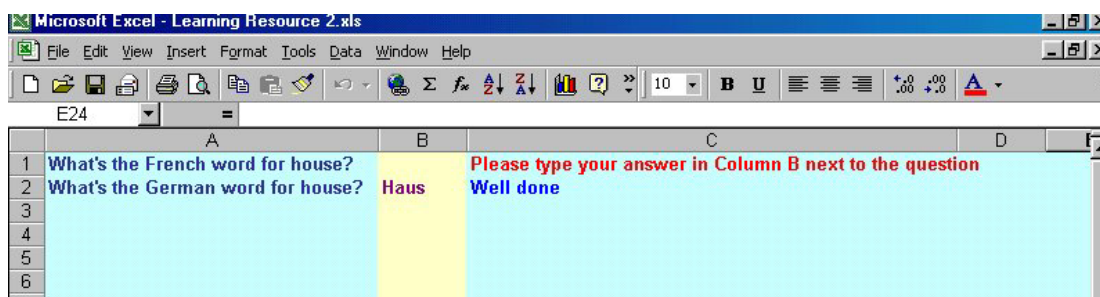
Click on OK again, then click on cell C2 and repeat the conditional formatting. If the answer doesn't fit in the column, double click on the line between the columns to make it automatically fit.

You could also protect the spreadsheet except for Column B, which the students will have to change in order to input their answers.

Click on B to highlight Column B and then choose **Format, Cells** and click on the **Protection** tab. Take the tick out of the **Locked** box by clicking in it and then click on OK.

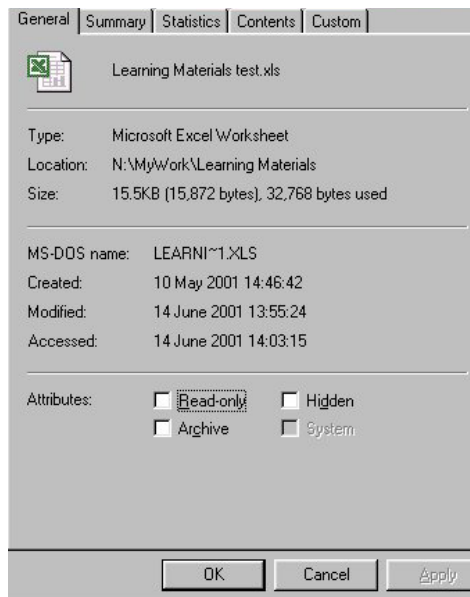
Go to **Tools, Protection, Protect Sheet** and choose a password if you want (remember the password as you will not be able to unprotect the sheet without it) and click on OK.

Your sheet should look like this and the students should just be able to change Column B.



An easier way to protect the worksheet is to make it **read only**, so the students can save it to another area if they want e.g. their work area or a disk, but can't make any changes to the original.

To make the worksheet read only, save it as normal and close it then open My Computer and double click on the drive the file is on (e.g. the A drive if it's on a floppy). Right click on the spreadsheet file and choose Properties from the menu which will appear. The following screen will appear.



Click in the boxes next to Read-only and click on OK.

Now anyone can open the file but if they make any changes they will be asked if they want to save the file as something else.

If you don't want the file read-only any more, just repeat the process and take the tick out of the Read-only box and you will be able to make changes to the file.