

# Excel Next Steps 2



Trust for London

Tackling poverty and inequality

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## Splitting columns

Often there is a need to break down data to make it easier to work with. For example, if you want to sort people in alphabetical order using their surname you will need to make sure their name is split into first name & surname columns.

Tip: Create a column to the right of the column you wish to split for the results.

1. Click on the **Data** tab

2. Highlight the column to split

3. Click on the **Text to Columns** command button

4. The **Convert Table to Columns** wizard will open

5. Select **Delimited** & then click on **Next**

| Ref | Name            | Prison          | Age at registration | Ins |
|-----|-----------------|-----------------|---------------------|-----|
| 1   | Wolfgang Puck   | HMP Pentonville |                     | Ba  |
| 2   | Julie Walters   | HMP Bronzefield |                     | Ba  |
| 3   | Margaret Atwood | HMP Bronzefield |                     | Dr  |
| 4   | Usain Bolt      | HMP Manchester  | 36015               | Dr  |
| 5   | Alain Prost     | HMP Manchester  | 26459               | Gu  |
| 6   | Andre Agassi    | HMP Swansea     | 20924               | Gu  |
| 7   | Harper Lee      | HMP Bronzefield | 20706               |     |

Convert Text to Columns Wizard - Step 1 of 3

The Text Wizard has determined that your data is Delimited.

If this is correct, choose Next, or choose the data type that best describes your data.

Original data type

Choose the file type that best describes your data:

Delimited - Characters such as commas or tabs separate each field.

Fixed width - Fields are aligned in columns with spaces between each field.

Preview of selected data:

```
1 Kate White
2 Sorrel Parsons
3 Sue Quilter
4 Colin Cregan
5 Nine Htet
```

A **Delimiter** is a blank space, comma, or other character or symbol that indicates the beginning or end of a character string, word, or data item

6. Select what delimiter to use to separate the data into columns. In this example the data to split is separated by a space

7. The wizard displays how the text will be split

Delimiters

Tab

Semicolon

Comma

Space

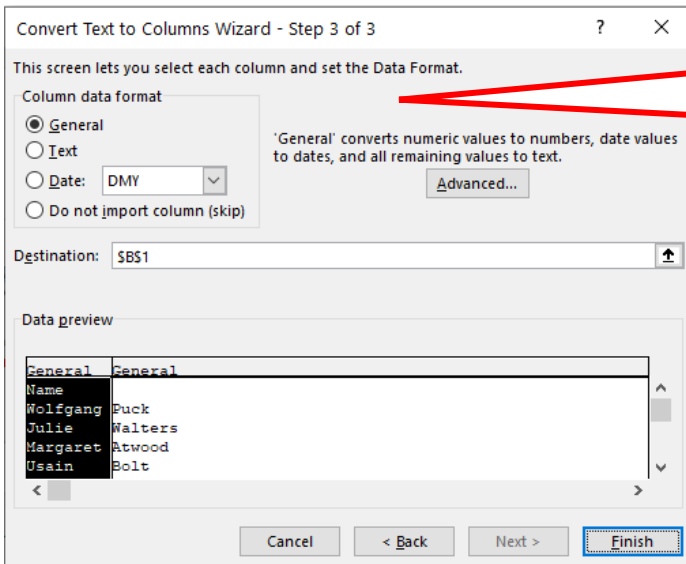
Other:

Treat consecutive delimiters as one

Text qualifier:

Data preview

```
Kate White
Sorrel Parsons
Sue Quilter
Colin Cregan
Nine Htet
```



8. Select the data format for each column. **General** automatically converts the column to the most appropriate format. You can override that now or later after the split

## Merging columns together (CONCAT)

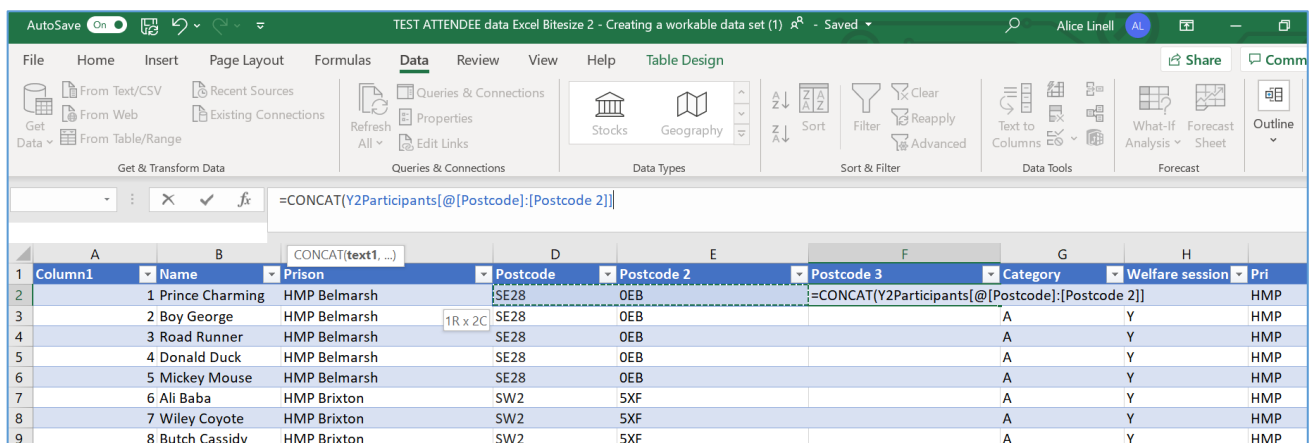
Excel has a built in function to merge text strings together. For example, if you have a first name column and a last name column but you want a Full name column where first and last name are joined together.

The function, when using a table, is as follows:

`=CONCAT(TableName[@[tablecolumnname1]:[tablecolumnname2]])`

But Excel can build the formula for you:

1. Add an extra column in your table to the right of the two columns you are merging
2. Enter the = sign and start typing CONCAT
3. Select the CONCAT function suggested by Excel
4. Select the first cell in the 2 columns you want to join together.

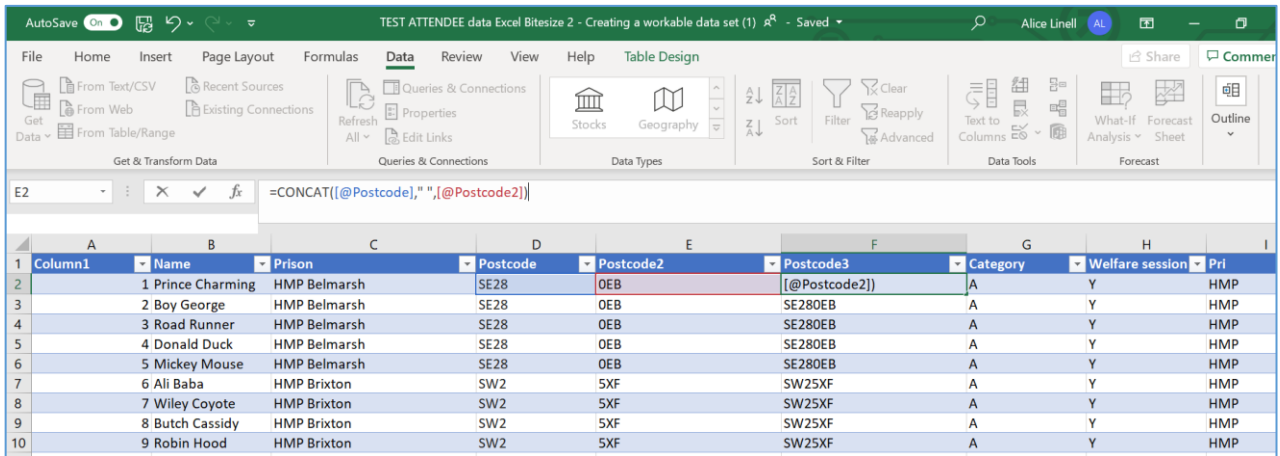


If you want to add a space between the text you will need to use a slightly different technique:

5. Add an extra column in your table to the right of the two columns you are merging
6. Enter the = sign and start typing CONCAT
7. Select the CONCAT function suggested by Excel

8. Select the first cell you want to join, then add to the formula, " ", and then select the next cell you want to join together. See the screen print below.

=CONCAT([@tablecolumnname1]," ",[@ tablecolumnname2])

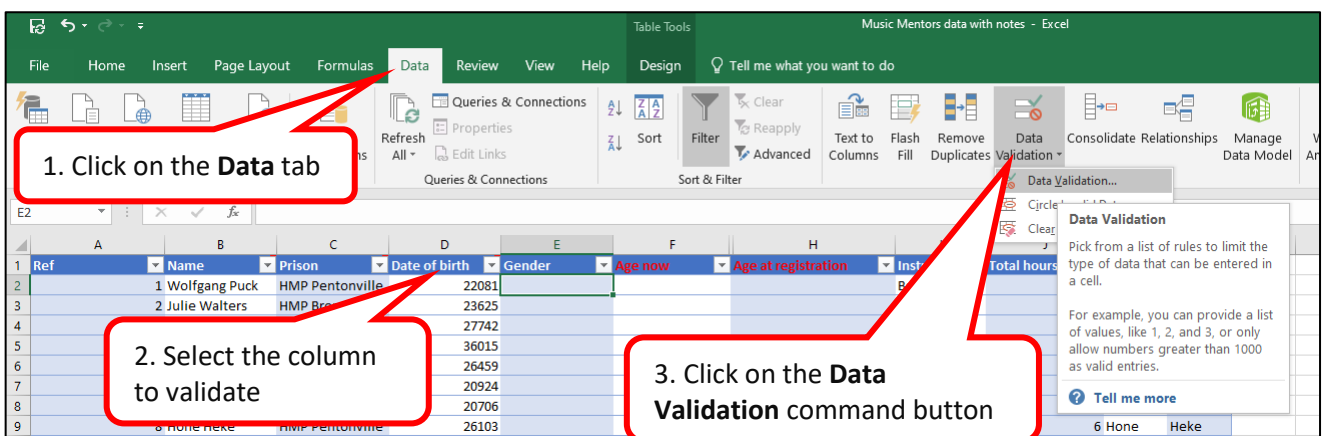


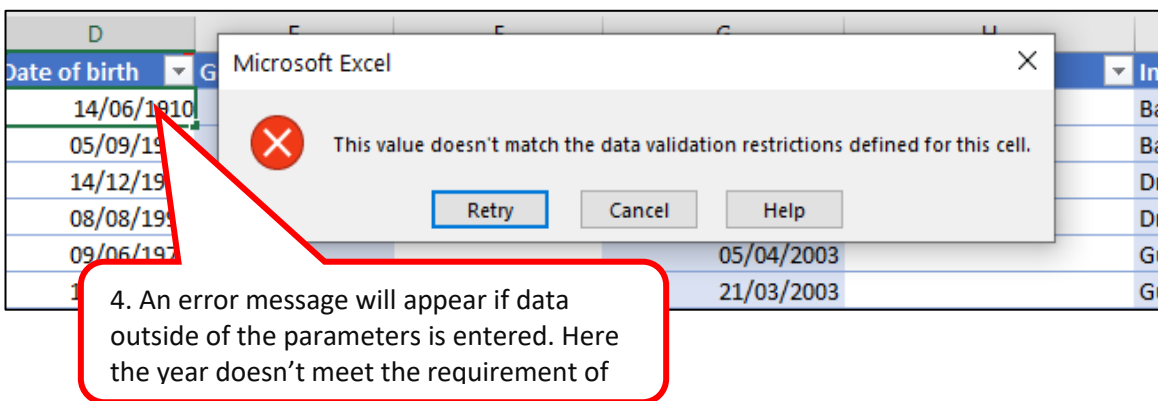
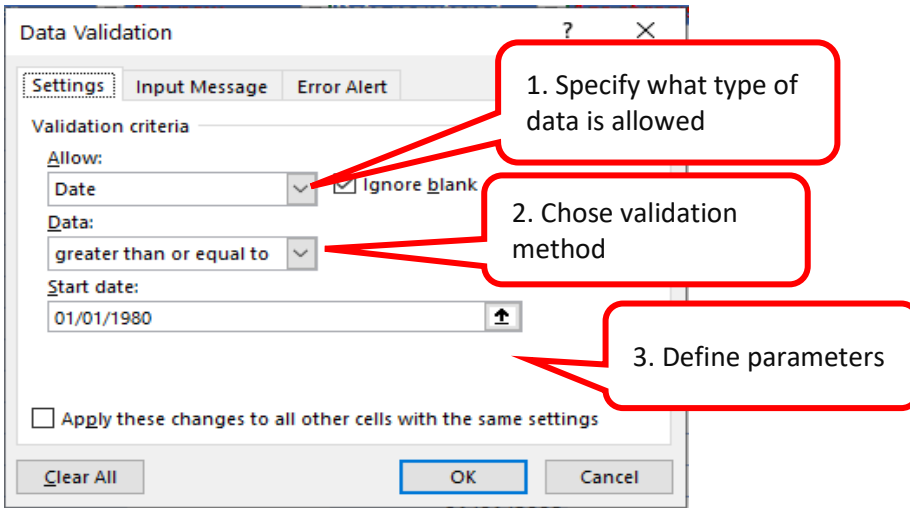
## Data Validation

The Data Validation feature in Microsoft Excel controls what can be input into a cell to ensure accurate and consistent data. Here we're

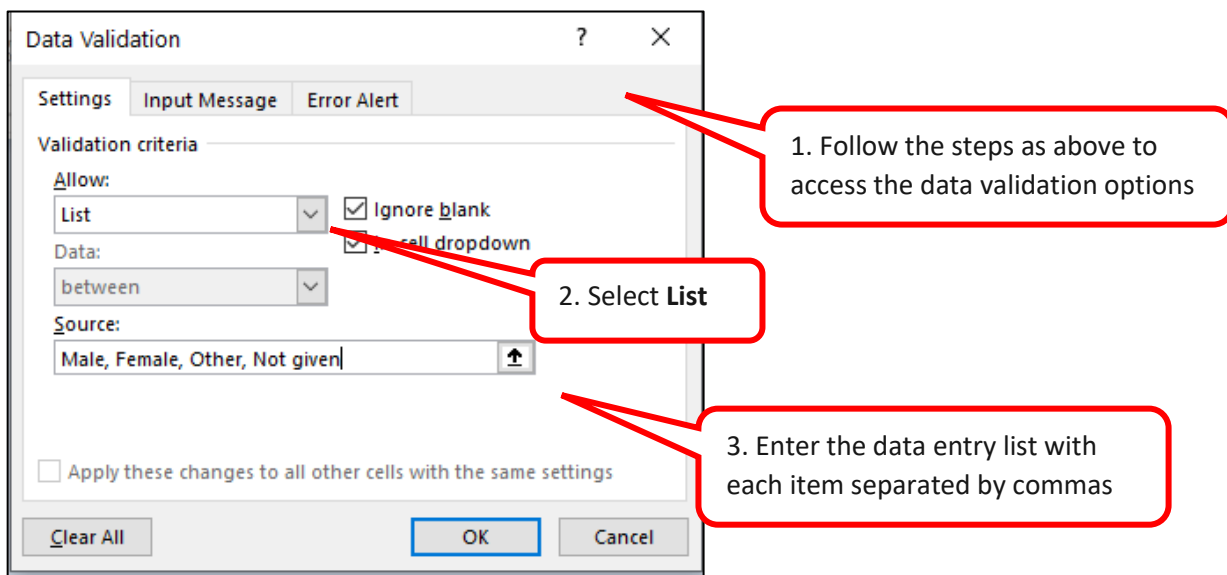
1. Ensure Correct data format
2. Limit data entry options to a list

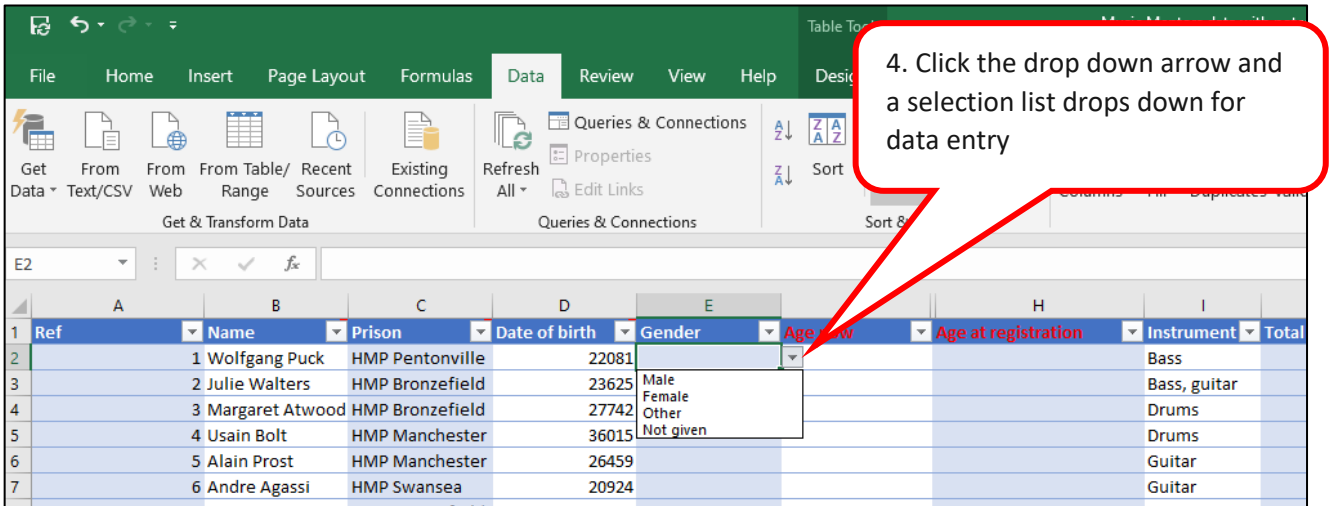
## Data Validation for data format



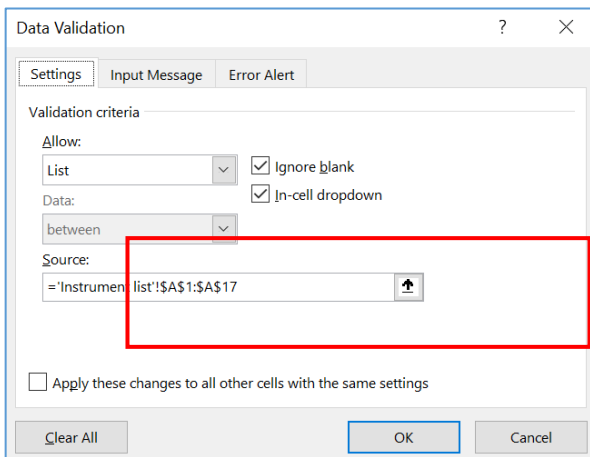


## Data Validation with list options

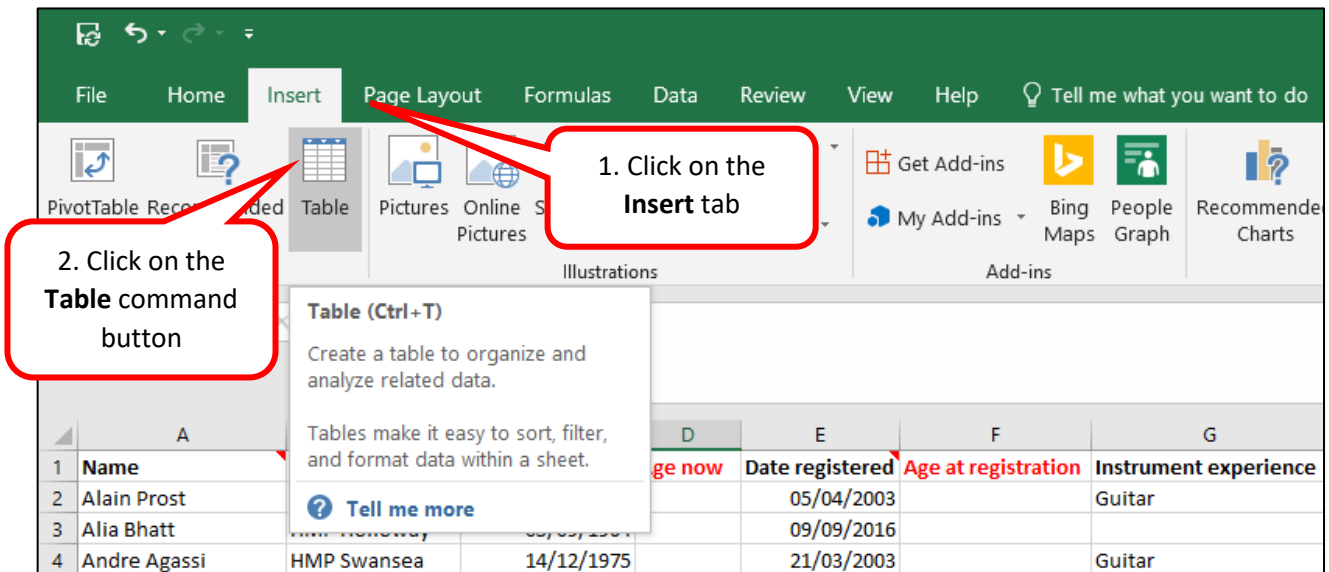




An alternative to typing the list in is to use source data you already have. For that you'll need to put the cell references of where the data is into the Source field. Where this is in another sheet – just move to this sheet and select the Column containing the list of options you want displayed.



## Make your data into a table



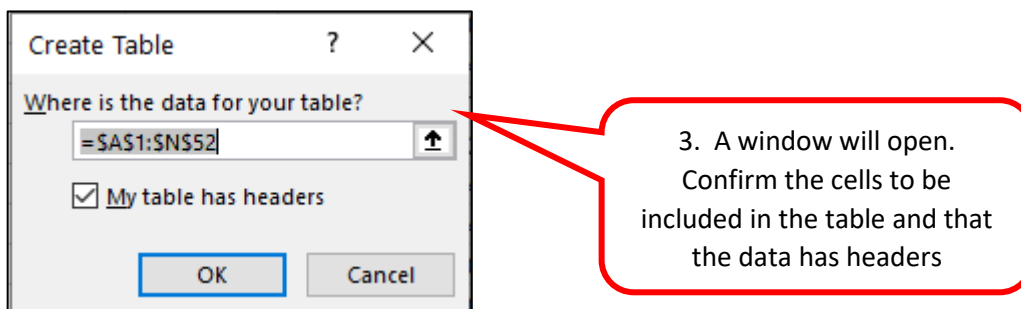
1. Click on the **Insert** tab

2. Click on the **Table** command button

**Table (Ctrl+T)**  
Create a table to organize and analyze related data.  
Tables make it easy to sort, filter, and format data within a sheet.  
[Tell me more](#)

| Name         | Age now     | Date registered | Age at registration | Instrument experience |
|--------------|-------------|-----------------|---------------------|-----------------------|
| Alain Prost  |             | 05/04/2003      |                     | Guitar                |
| Alia Bhatt   |             | 09/09/2016      |                     |                       |
| Andre Agassi | HMP Swansea | 14/12/1975      | 21/03/2003          | Guitar                |

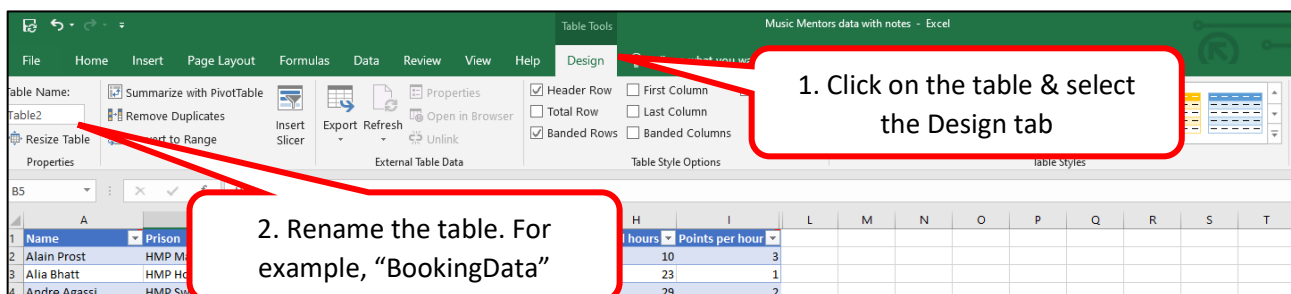
→ Alternative shortcut: Ctrl + T



3. A window will open. Confirm the cells to be included in the table and that the data has headers

## Name the table

It is good practice to name the table as it makes life much easier later when working with formulas. Naming the formula is basically giving your data set a name which will enable you to recognise which data set you need to be working with.



1. Click on the table & select the **Design** tab

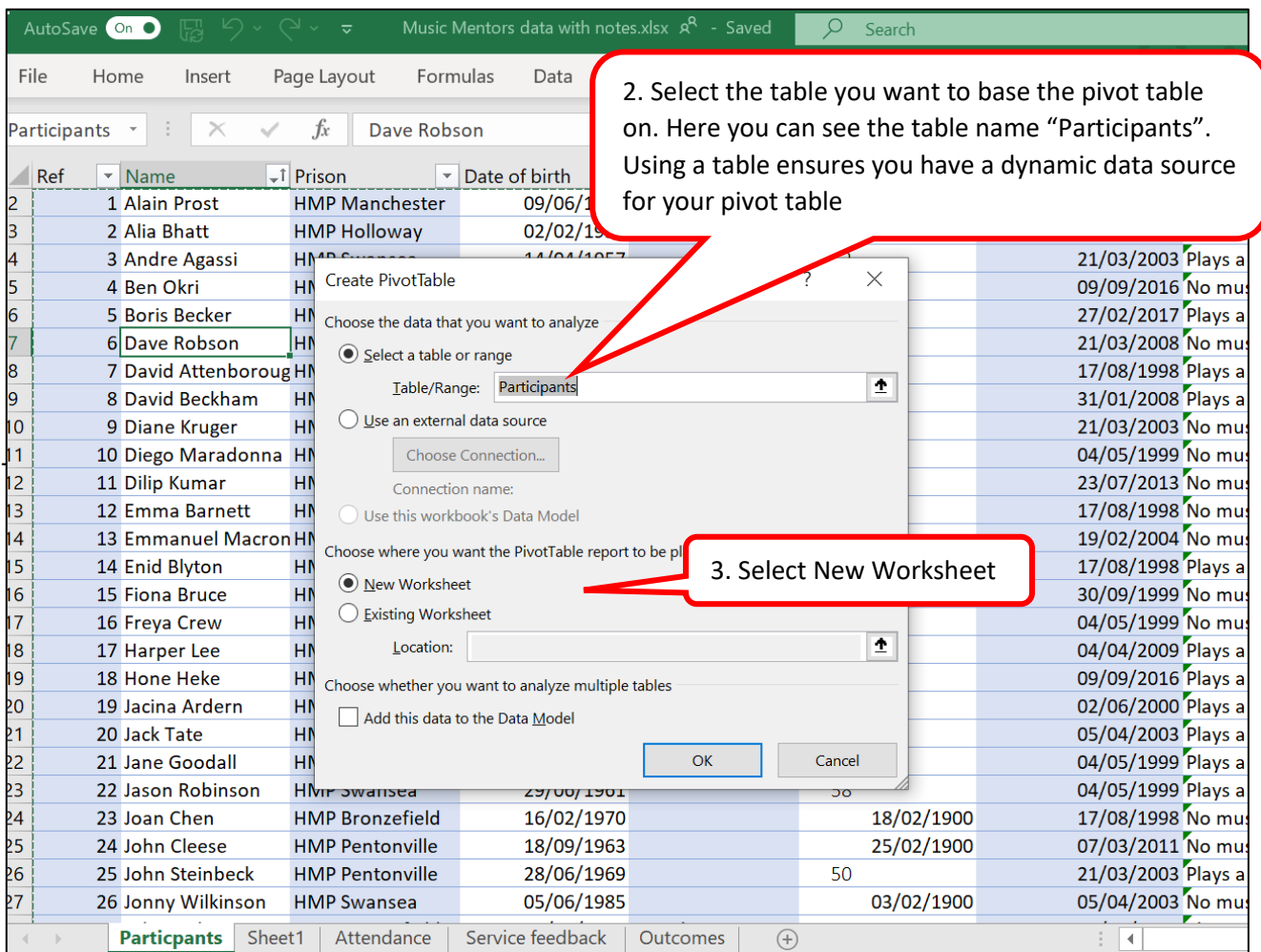
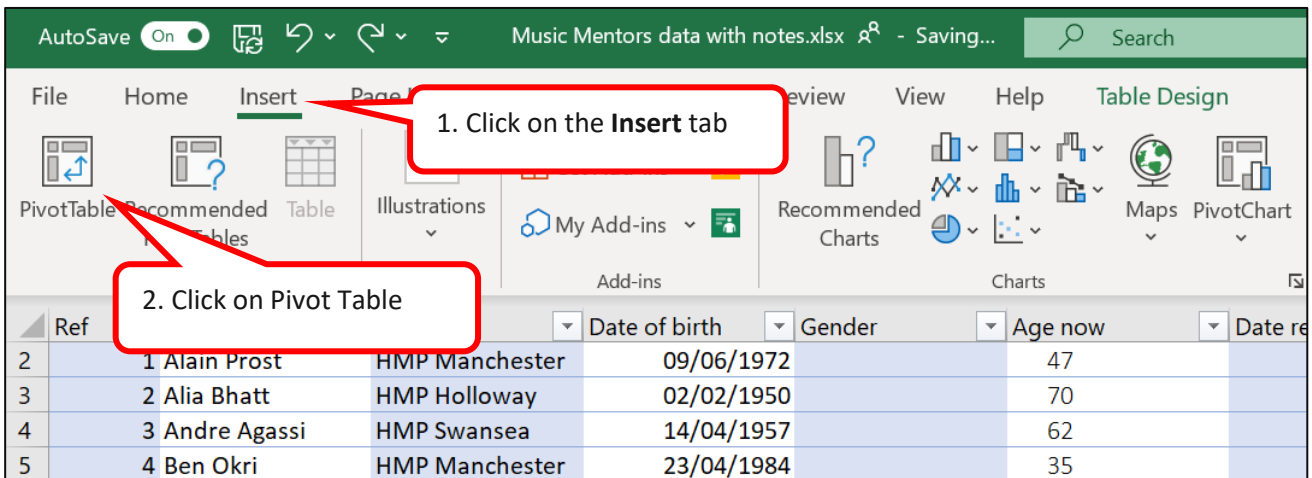
2. Rename the table. For example, "BookingData"

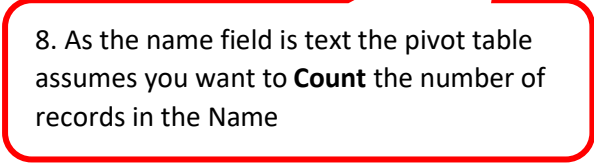
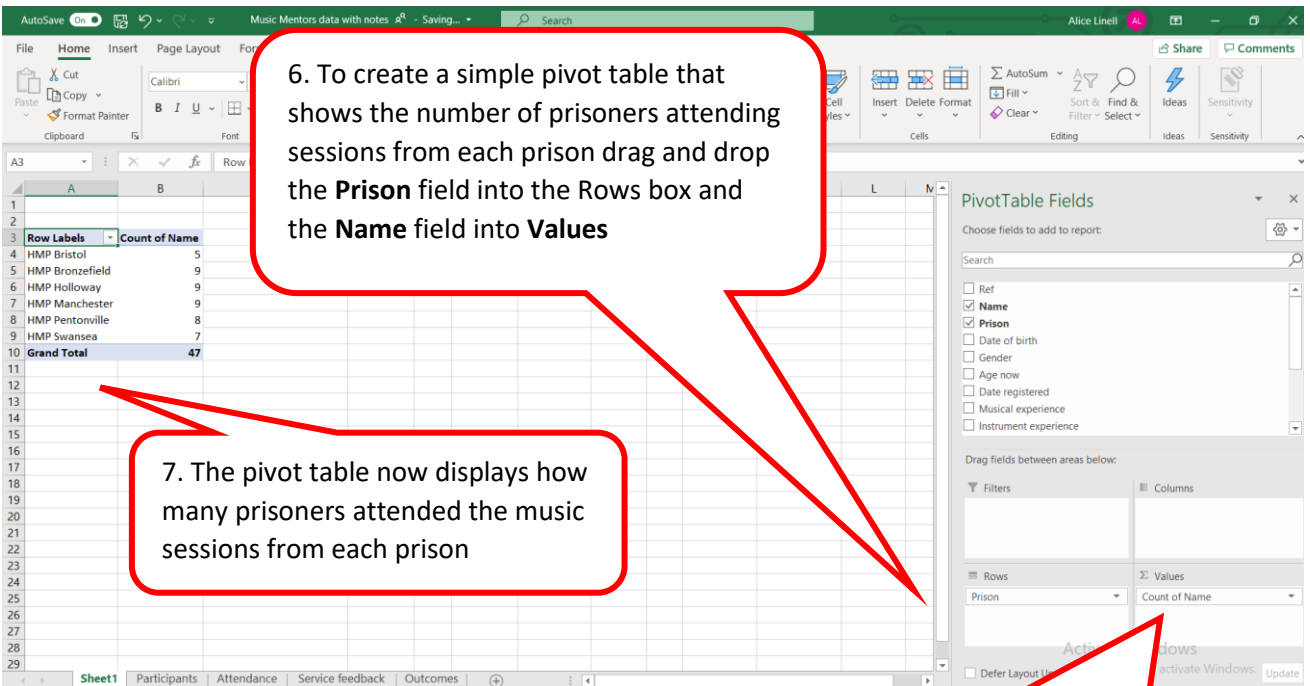
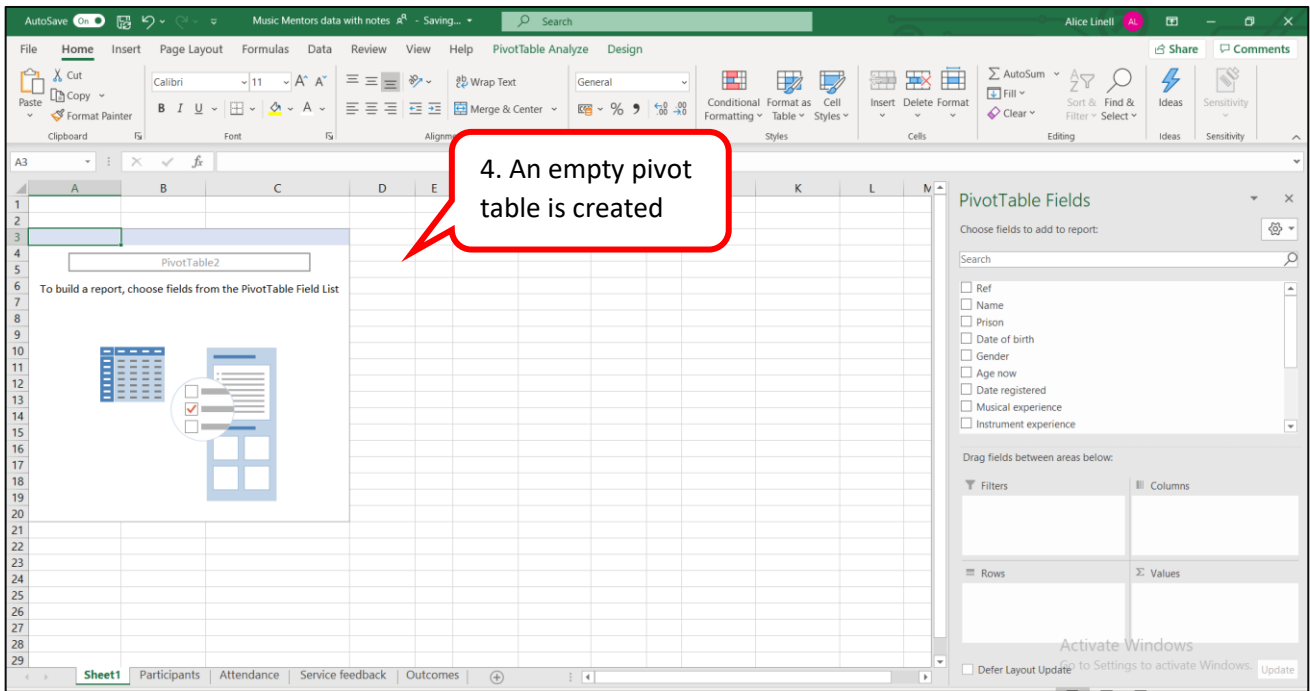
| Name         | Prison    | Hours | Points per hour |
|--------------|-----------|-------|-----------------|
| Alain Prost  | HMP M...  | 10    | 3               |
| Alia Bhatt   | HMP H...  | 23    | 1               |
| Andre Agassi | HMP Sw... | 29    | 2               |



# Pivot Tables

## Creating a pivot table





9. Add complexity to your Pivot table. To show how many of the attendees from each prison already had musical experience, add the field Musical experience to the Columns field

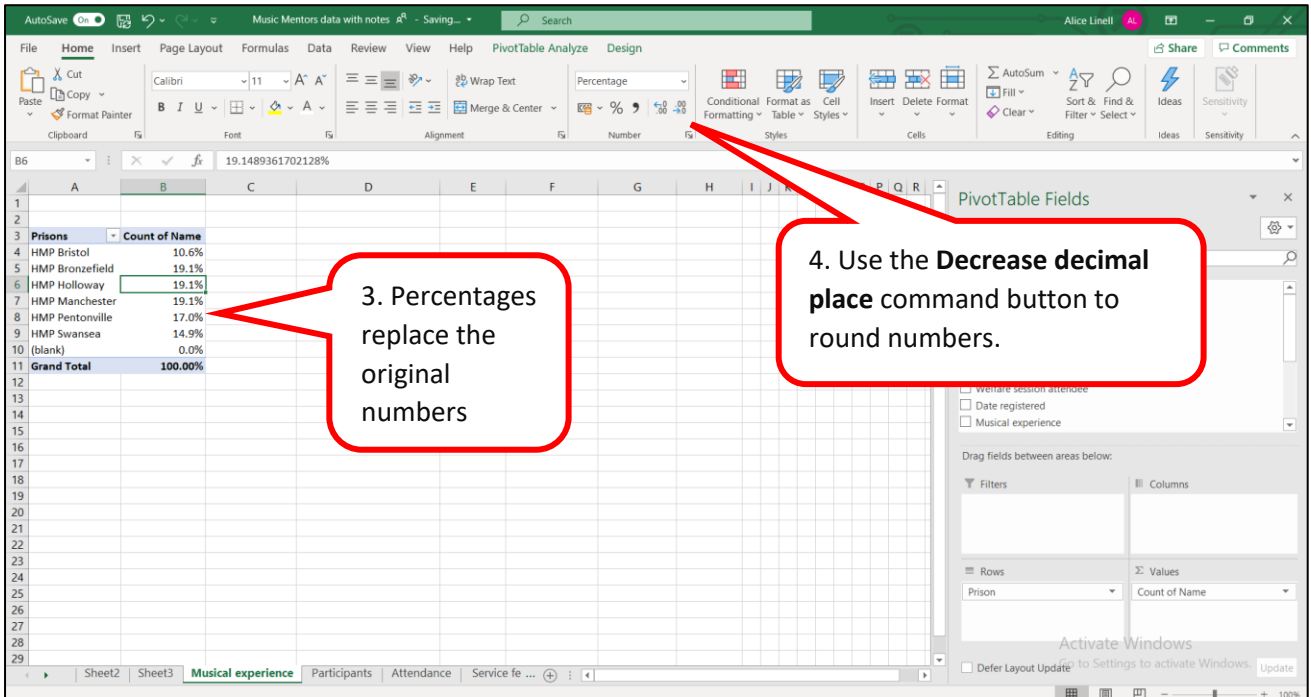
| Count of Name      | Column Labels         |              |                            |             |
|--------------------|-----------------------|--------------|----------------------------|-------------|
| Prisons            | No musical experience | Not recorded | Plays a musical instrument | Grand Total |
| HMP Bristol        | 1                     |              | 4                          | 5           |
| HMP Bronzefield    | 3                     | 1            |                            | 9           |
| HMP Holloway       | 6                     |              | 3                          | 9           |
| HMP Manchester     | 4                     | 1            |                            | 9           |
| HMP Pentonville    | 3                     |              | 5                          | 8           |
| HMP Swansea        | 3                     | 1            |                            | 7           |
| <b>Grand Total</b> | <b>20</b>             | <b>3</b>     | <b>24</b>                  | <b>47</b>   |

## Field values

1. Highlight the fields you want to display as a percentage.

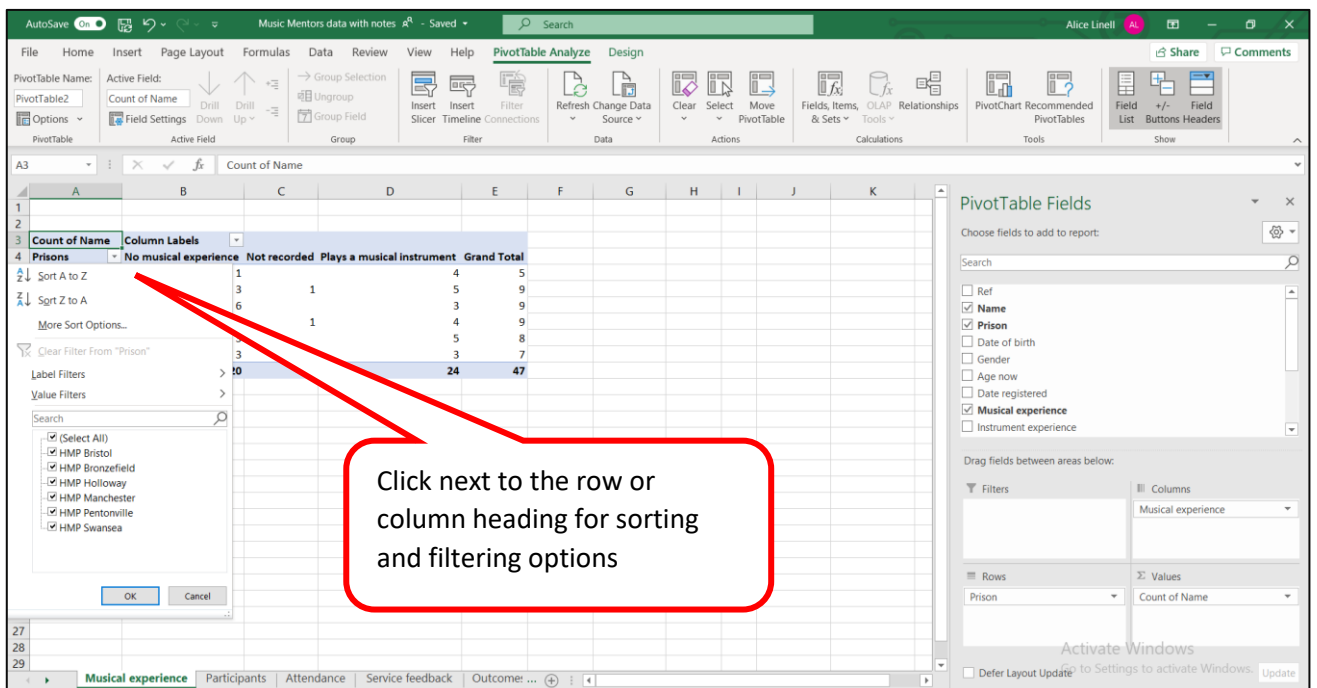
2. Select Show Values As and then % of Grand Total

| Prisons            | Count of Name |
|--------------------|---------------|
| HMP Bristol        |               |
| HMP Bronzefield    |               |
| HMP Holloway       |               |
| HMP Manchester     |               |
| HMP Pentonville    |               |
| HMP Swansea        |               |
| (blank)            |               |
| <b>Grand Total</b> |               |



## Sorting & Filtering a pivot table

Simple sorting and filtering work exactly the same as elsewhere in Excel.



## Add a Slicer to a pivot table

1. Click on Insert Slicer

| Count of Name      | Column Labels         |              |                            |             |  |
|--------------------|-----------------------|--------------|----------------------------|-------------|--|
| Prisons            | No musical experience | Not recorded | Plays a musical instrument | Grand Total |  |
| HMP Bristol        | 1                     |              | 4                          | 5           |  |
| HMP Bronzefield    | 3                     | 1            | 5                          | 9           |  |
| HMP Holloway       | 6                     |              | 3                          | 9           |  |
| HMP Manchester     | 4                     | 1            | 4                          | 9           |  |
| HMP Pentonville    | 3                     |              | 5                          | 8           |  |
| HMP Swansea        | 3                     | 1            | 3                          | 7           |  |
| <b>Grand Total</b> | <b>20</b>             | <b>3</b>     | <b>24</b>                  | <b>47</b>   |  |

## Formatting a pivot table

Like Tables, Pivot Tables can be formatted.

1. Click on the pivot table and then on the Design tab

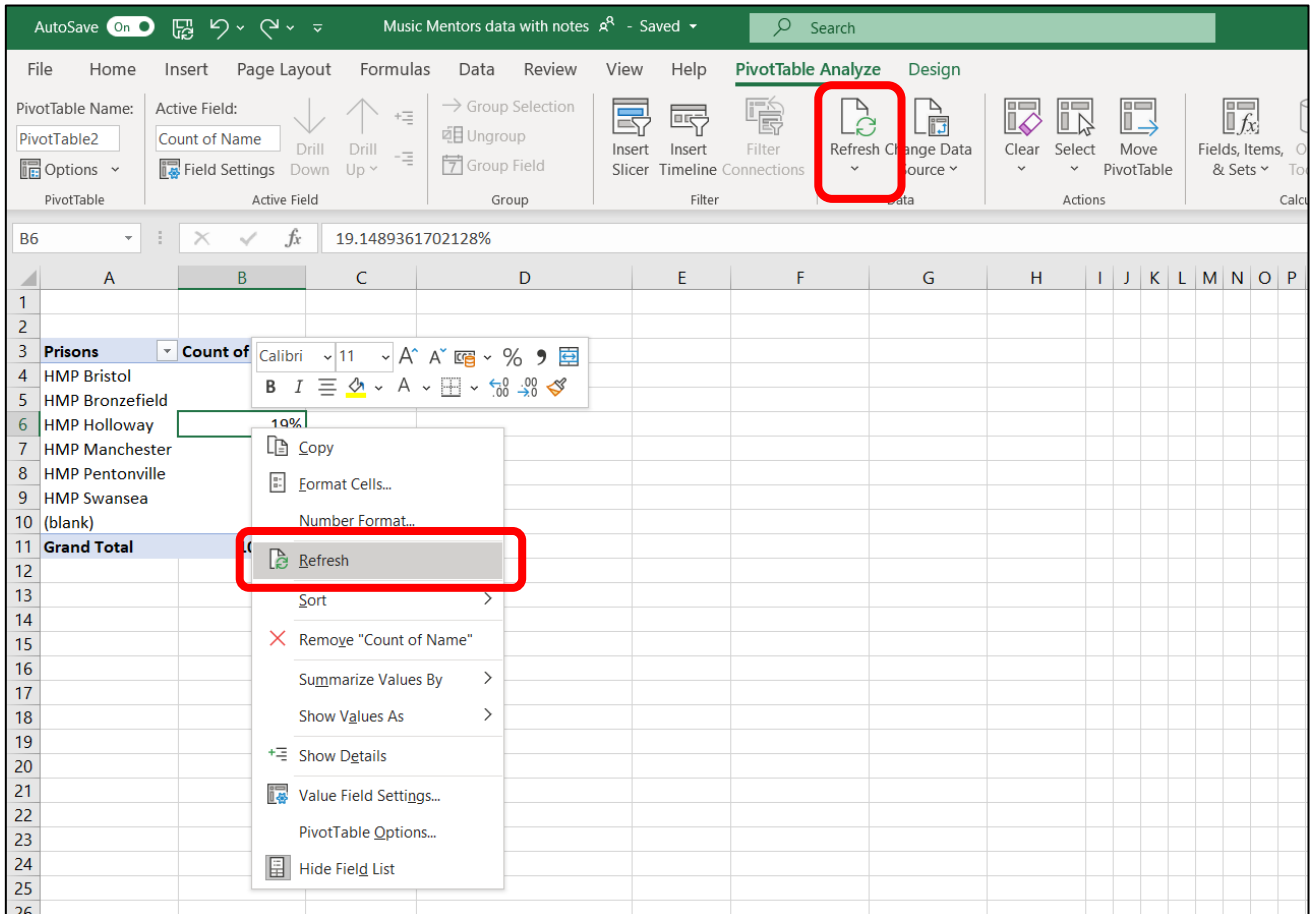
2. Add and remove specific headers or banding for rows & columns

3. Change the format (colours, banding, outline etc)

| Count of Name      | Column Labels         |              |                            |             |  |
|--------------------|-----------------------|--------------|----------------------------|-------------|--|
| Prisons            | No musical experience | Not recorded | Plays a musical instrument | Grand Total |  |
| HMP Bristol        | 1                     |              | 4                          | 5           |  |
| HMP Bronzefield    | 3                     | 1            | 5                          | 9           |  |
| HMP Holloway       | 6                     |              | 3                          | 9           |  |
| HMP Manchester     | 4                     | 1            | 4                          | 9           |  |
| HMP Pentonville    | 3                     |              | 5                          | 8           |  |
| HMP Swansea        | 3                     | 1            | 3                          | 7           |  |
| <b>Grand Total</b> | <b>3</b>              |              | <b>24</b>                  | <b>47</b>   |  |

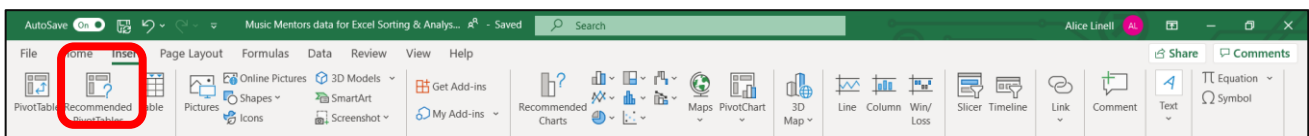
## Refreshing data in a Pivot table

If you make changes to the data set being used to the pivot table, you might need to refresh the chart so that the changes are immediately reflected in the chart.



## Recommended Pivot Tables

A short cut to creating pivot tables can be to use the recommended Pivot table function.



## Changing value field settings

In pivot tables you can select different types of setting for the values portion of your Pivot table. You can:

- Give the value set a custom (display) name
- Specify how you want to summarise values
- Specify how you want to display values

1. Right mouse click on the Value eg Sum of Client ID and select the option **Value Field Settings**

| Row Labels  | Sum of Client ID |
|-------------|------------------|
| 2019        | 3003             |
| 2020        | 1183             |
| Grand Total | 4186             |

## Custom value name

Type in the name you would like to use for the value field.

Value Field Settings

Source Name: Client ID

Custom Name: Sum of Client ID

Summarize Values By: Show Values As

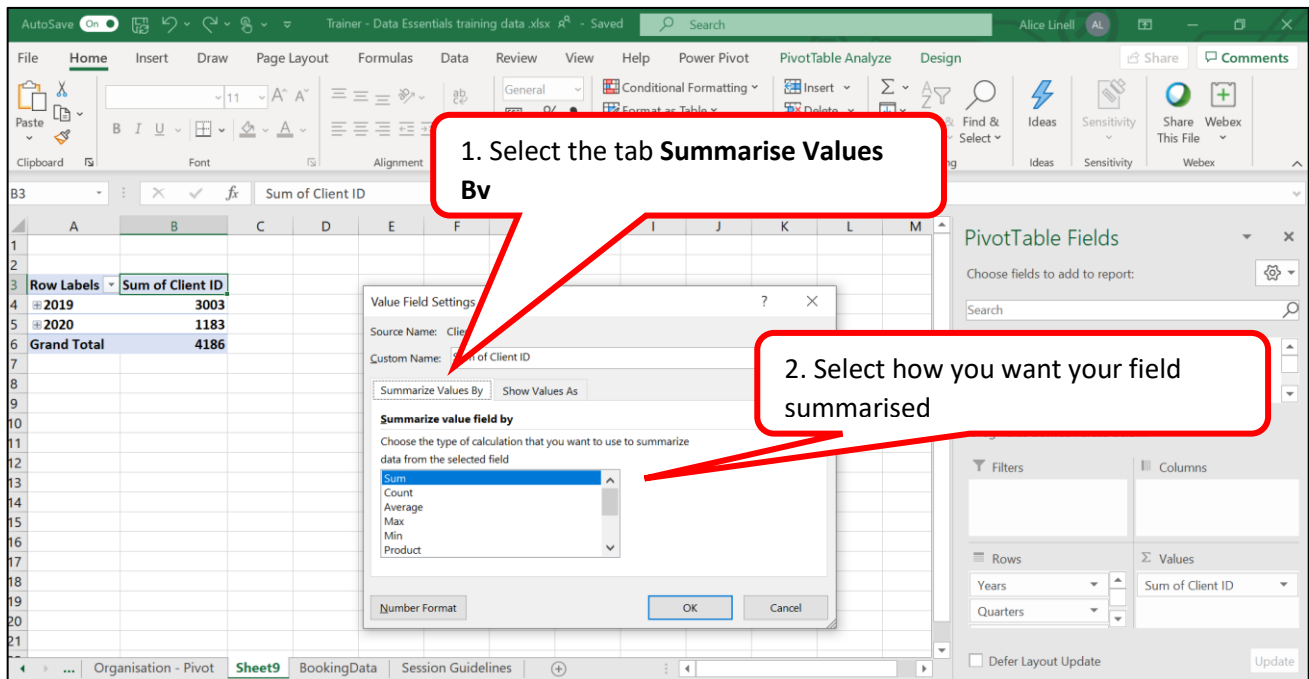
Summarize value field by

Choose the type of calculation that you want to use to summarize data from the selected field

Sum  
Count  
Average  
Max  
Min  
Product

Number Format OK Cancel

## Summarise values by

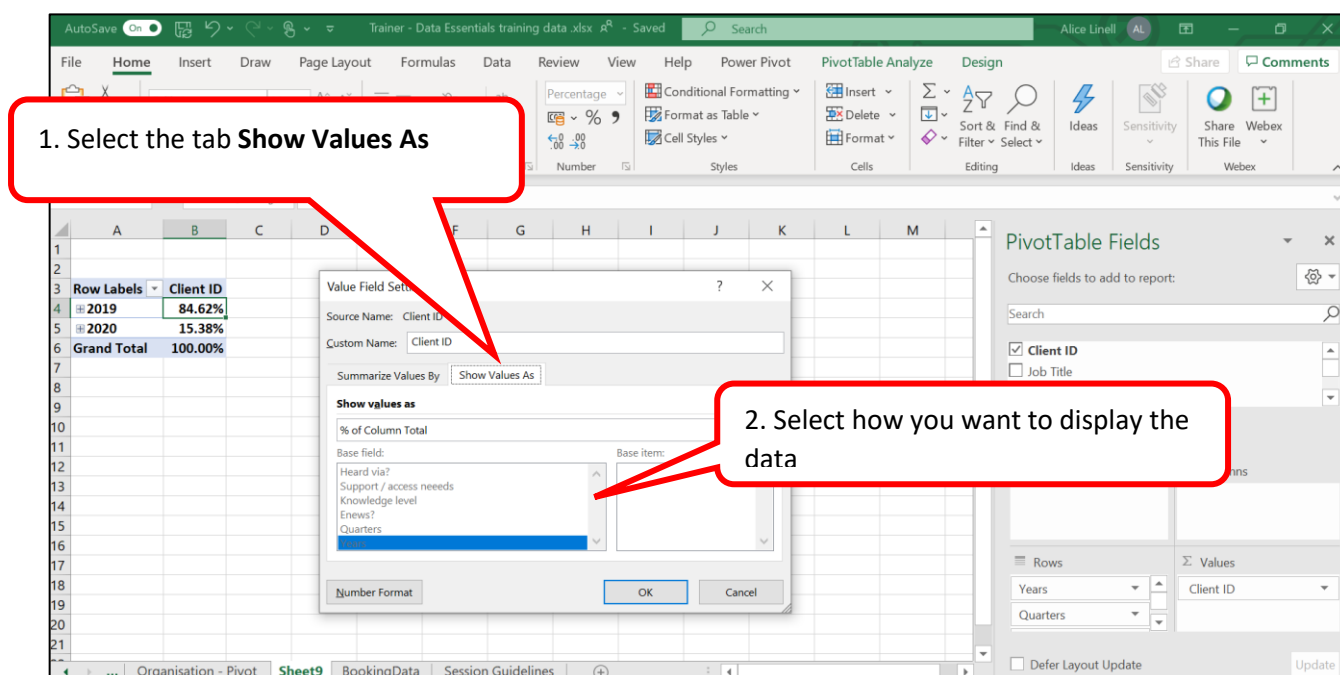


Most common calculations used to summarise data:

| Function       | Summarizes   |
|----------------|--|
| <b>Sum</b>     | The sum of the values adds all the values in the selected data range. This is the default function for numeric values.   |
| <b>Count</b>   | The number of values. The Count summary function works the same as the COUNTA worksheet function. Count is the default function for values other than numbers.   |
| <b>Average</b> | The average of the values. The average is the mean average of the numbers. To calculate: Excel adds up all the numbers, then divides by how many numbers there are. In other words it is the sum divided by the count. |
| <b>Max</b>     | The largest value.   |
| <b>Min</b>     | The smallest value.  |
| <b>Product</b> | The product of the values. The product is the result of multiplying the numbers eg the product of 2 and 3 is 6.  |



## Show values As



Most common ways of displaying data:

| Use this calculation            | To   |
|---------------------------------|--|
| <b>No calculation</b>           | Turn off custom calculation.   |
| <b>% of Column Total</b>        | Display all the values in each column or series as a percentage of the total for the column or series.   |
| <b>% of Row Total</b>           | Display the value in each row or category as a percentage of the total for the row or category.  |
| <b>Rank smallest to largest</b> | Display the rank of selected values in a specific field, listing the smallest item in the field as 1, and each larger value with a higher rank value. Create a new column for Rank if you want to show the specific amounts too. |
| <b>Rank largest to smallest</b> | Display the rank of selected values in a specific field, listing the largest item in the field as 1, and each smaller value with a higher rank value. Create a new column for Rank if you want to show the specific amounts too. |

## Changing the sort order

1. Right mouse click on a value in the data set you want to sort

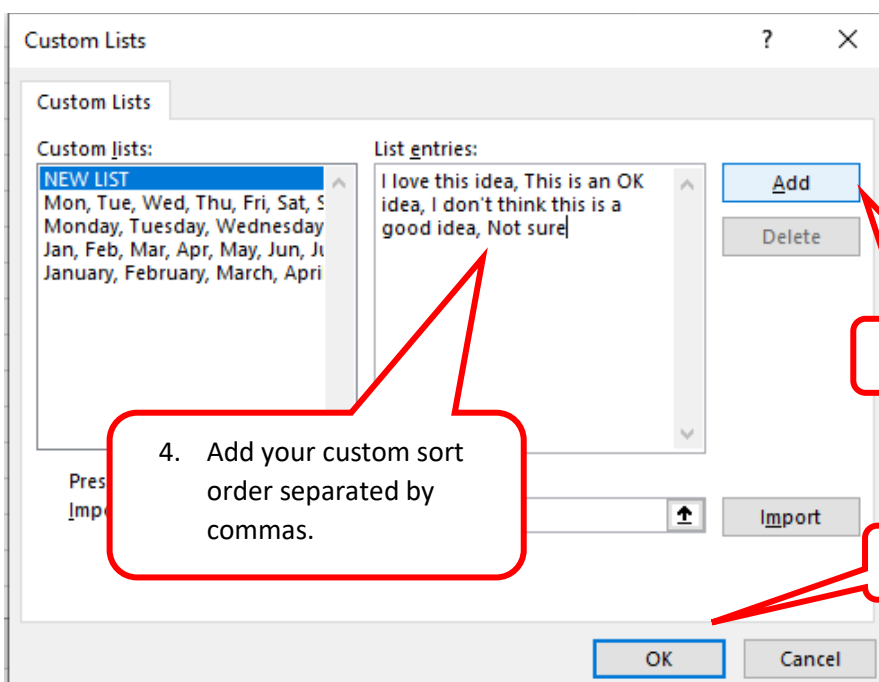
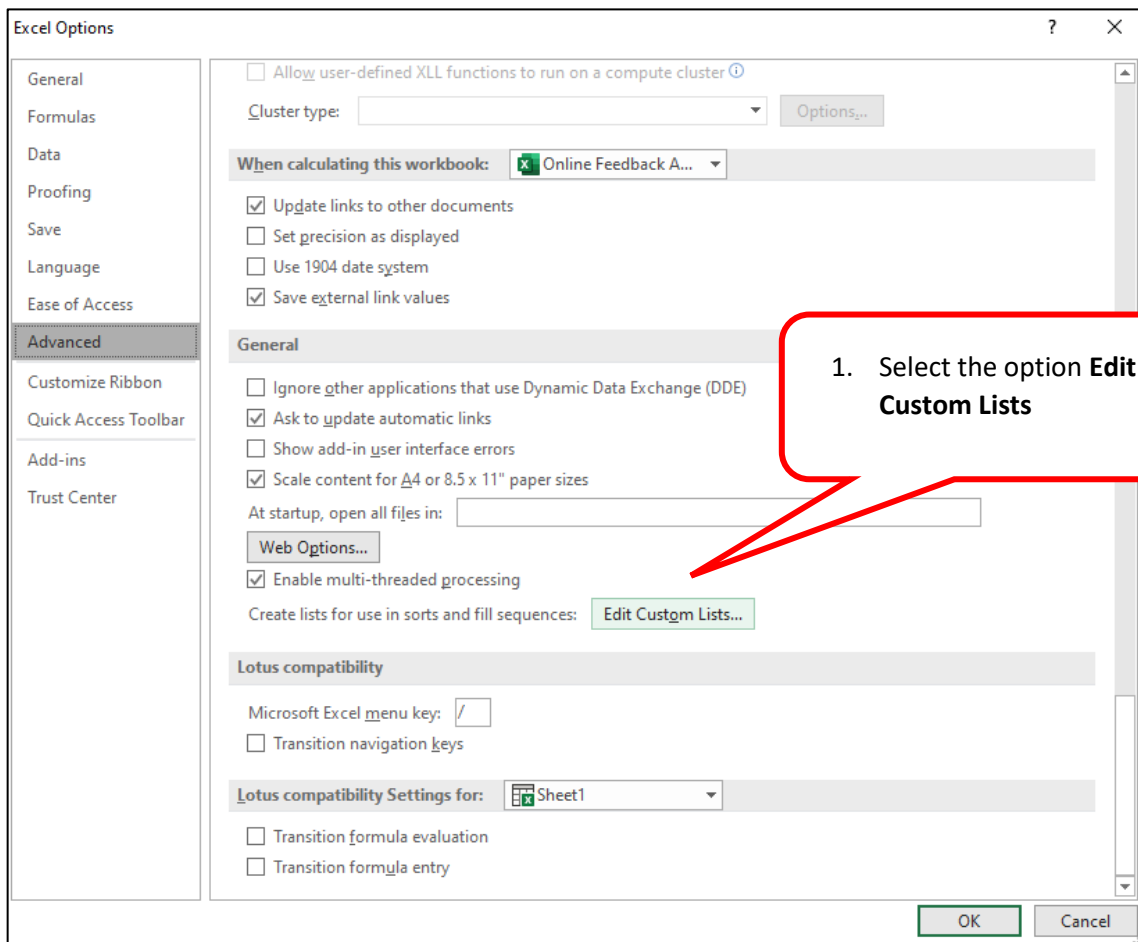
2. Select sort and the sort order you require

More sort options allows you to input a specific sort order

| Row Labels      | Count of Customer ID |
|-----------------|----------------------|
| Email           | 19                   |
| Internet        | 1                    |
| Internet search |                      |
| Newsletter      |                      |
| Twitter         |                      |
| Unknown         |                      |
| Word of Mouth   |                      |
| Grand Total     | 42                   |

## Custom sort order

Go to File > Options > Advanced



## Grouping dates

In Excel 2016 and later versions, Excel automatically groups dates by months & quarters. If you are working with an Excel version prior to that or you want to change the automatic grouping you can manually group dates.

2. Right mouse click on a date value

1. Select the Grouping you require

| Row Labels  | Count of Cust |
|-------------|---------------|
| 2019        | 77            |
| Qtr4        | 77            |
| Nov         | 38            |
| Dec         | 39            |
| 2020        | 32            |
| Qtr1        | 32            |
| Jan         | 18            |
| Feb         | 14            |
| Grand Total | 109           |

## Sub totals and Grand totals

2. Click on the Pivot table

1. Click Subtotals or Grand Totals to show or not show totals

| Customer ID | Count of Cust |
|-------------|---------------|
| 3           | 1             |
| 6           | 5             |
| 9           | 1             |
| 10          | 5             |
| 11          | 1             |
| 12          | 5             |
| 13          | 1             |
| 14          | 5             |
| 15          | 1             |
| 16          | 5             |
| 17          | 1             |
| 18          | 5             |
| 19          | 1             |
| 20          | 5             |
| 21          | 1             |
| 22          | 5             |
| 23          | 1             |
| 24          | 5             |
| 25          | 1             |
| 26          | 5             |

## Summary sheets

In a summary sheet you can display data held in various other sheets in your workbook to see alongside each other. The data in the sheet will dynamically update if new data is added to the other sheets in question.

The screenshot shows the Excel interface with the following elements:

- Formula Bar:** Displays the formula `=Prison info!F2`.
- Worksheet Headers:**
  - Row 1: Music Mentor programme
  - Row 2: Prison Information
- Table Data:**

| Prison Name         | Postcode | Category | Gender | Supervisor        | Number of Mentors |
|---------------------|----------|----------|--------|-------------------|-------------------|
| HMP Birmingham      | B18 4AS  |          |        | Michael Rosenberg | 5                 |
| HMP Brixton         | SW2 5XF  |          |        | Asif Kahn         |                   |
| HMP Bronzefield     | TW15 3JZ | B        | Female | Deepak Patel      |                   |
| HMP Eastwood Park   | GL12 8DB | C        | Female | Kathleen O'Leary  |                   |
| HMP Foston Hall     | NG32 2LG | C        | Female |                   |                   |
| HMP Manchester      | M60 9AH  | A        | Male   |                   |                   |
| HMP Pentonville     | N7 8TT   | B        | Male   |                   |                   |
| HMP Wormwood Scrubs | W12 0AN  | B        | Male   |                   |                   |
- Callout Box 1:** "Click in the cell you want to bring data into and start by entering ="
- Callout Box 2:** "Now click on the sheet holding the data, in this case Prison info, and click in the cell with the number of mentors. Now click Enter."
- Callout Box 3:** "In the formula bar you'll see the 'name of the sheet'! and the cell reference"
- Footer:**
  - Row 14: \* Participants who selected "Enjoyed" or "Really Enjoyed"
  - Row 15: \*\* Participants who selected "Agree" or "Strongly Agree"
  - Row 16-18: Empty rows.
  - Sheet Tabs: Guidelines, Participants, Validation lists, Survey Results, Attendance, Prison info, Summary sheet, Exercise 1, Exercise 2

You can then copy down the formula as usual.