

Producing a Climate Graph in Excel 2019

Note: you need to be using the **desktop version** of Excel to do this. The online version that you access through your web browser isn't good enough.

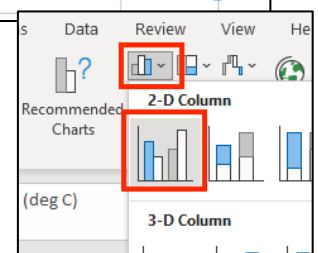
Save a copy of the **Barcelona Climate Data Spreadsheet** (find it at the web address in the header – go into the Geography section) and use this as a base to work from – you can change the data.

I recommend turning **Autosave off** (top left). That way, if you make a mistake you can start again.

Step 1 – Basic column chart

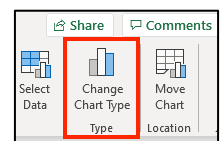
1. **Highlight** cells **A4 to C16** - the area shown on the screenshot (make sure to include the months and the headings)
2. Click **Insert** and choose **Column** from the Charts section on the ribbon > choose the standard **2-D column chart** shown on the right.

	Temperature (deg C)	Rainfall (mm)
Jan	9.5	31
Feb	10.5	39
March	12.5	48
April	14.5	43
May	17.5	54
June	21.5	37
July	24.5	27
Aug	24.5	49
Sept	22	76
Oct	18	86
Nov	13.5	52
Dec	10.5	45

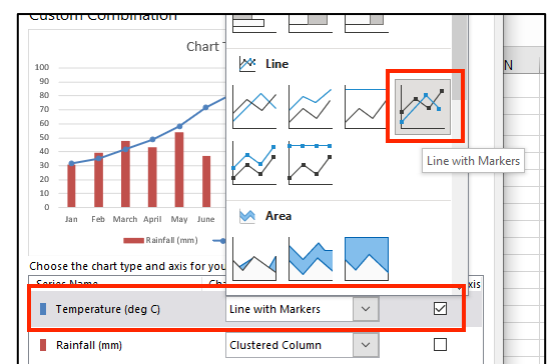


This will produce a set of bar charts. Now let's get a line for the temperatures.

3. Click one of the **temperature** columns (the left column in each set – they are probably blue) to select them all
4. Click **Change Chart Type** on the **Chart Design** tab of the ribbon (on the right)
5. Use the drop down menus at the bottom to change the **Temperature chart** type to **Line with Markers**
6. **IMPORTANT:** Tick the **Secondary axis box** on the right of the drop down.
7. Click **OK**



The temperatures will now be shown as a line.



To get a **smooth line** instead see the note at the end of page 3 of this document

Step 2 – Titles and Labels

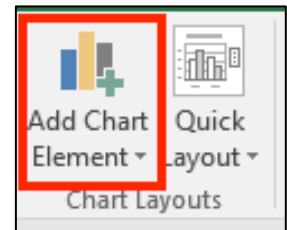
The chart title will be a placeholder. Click to change this to something like **Climate Graph for Barcelona**.

Click the **Chart Design** tab and find the **Add Chart Element** button on the left.

Using this you can add labels and so on to the chart.

I'd suggest adding:

- Axis titles > Primary Horizontal: Months
- Axis Titles > Primary Vertical: Precipitation (mm) (or Rainfall)
- Axis Titles > Secondary Vertical: Temperature (deg C)
- Legend > None (we know bars are precipitation and lines are temperature)

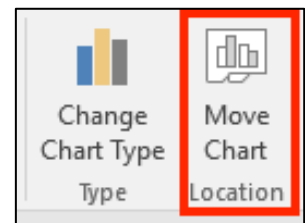


Step 3 – Put the chart on its own page

You don't **have** to do this, but personally I prefer it.

1. Click the **Chart Design** tab
2. Choose **Move Chart** on the right and select **New Sheet > OK**

If you don't want the chart on its own page then you might need to resize it at some point.



Step 4 – Showing the data table

You might need to show the actual climate data underneath the chart. This is easy to do.

1. Click the **Chart Design** tab
2. Choose **Add Chart Element** (on the left) > **Data Table**

You probably want to choose the Data Table with **No Legend Keys**.

You might find the data is a little tricky to read. This is where a full page chart becomes much easier to cope with.

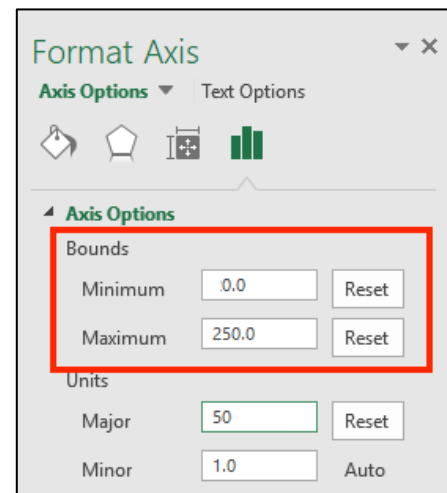
Step 5 – Formatting Axes

You may need to change the maximum and minimum values on the axes of the graphs. This is particularly useful if you need to compare two climate graphs with very different values.

To do this:

1. **Right click** on the axis you want to change (it's easiest to click on one of the numbers)
2. Choose **Format Axis** – a sidebar pops up on the right
3. In the **Bounds** section, change the values you need as the maximum or minimum. You can also deal with the major and minor units at this point - these determine where gridlines appear.

You can do this on both vertical axes – you may need to do it on the temperature axis to get the line in the right sort of place.



Step 6 – Remove Gridlines

On the **Chart Design** tab click the **Add Chart Element** button on the left of the ribbon

Choose **Gridlines** and remove (or add) any gridlines you want.

To get a smooth line:

When you choose the line type in step 1 part 5, rather than selecting **Line** choose **X Y (Scatter)** and then select the **Scatter with Smooth Lines and Markers** option